Brainware for Invoices

User's Guide

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Hyland

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Table of Contents

About Brainware for Invoices 21
Accounts Payable solution overview *21*
About the supported Accounts Payable documents 21
About the supported languages 21
Project Configuration 21
About Brainware for Invoices solution architecture 22
About early archive architecture *22*
About architecture with SAP *22*
About the SAP solution architecture with workflow 22
About the SAP solution architecture without workflow 24
About Workday Integration *26*
About the solution features 26
What is the automatic tax determination and validation? *26*
About data export options *26*
About document management system integration *28*
About ERP system integration *28*
About solution reporting *28*
About project fields and features 28
Document Type *29*
Invoice Type *29*
PO Type *29*
Invoice Number *30*
Invoice Date *31*
Company Code *31*
Vendor ID / Site ID / Internal Vendor ID *32*
Purchase Order Number / PO Extension *33*
Bill-To Name *34*
Invoice Subtotal *34*
Invoice Freight Amount *34*
Invoice Miscellaneous Charge *34*
Invoice Tax Amount *35*

Invoice Withholding Tax Amount / ISR Retention (Mexico) *35*
Provincial Sales Tax *35*
Invoice Header Discount Amount *36*
Invoice Total *36*
Currency *36*
Bank Account / Bank Account Code *37*
Payment Order Reference Number / Subscriber Number *37*
Payment Reference *37*
Exchange Rate / Local VAT Amount *38*
Account Number *38*
Priority Flag *38*
Scan Date *38*
Batch Name *39*
URN *39*
Invalid Reason *39*
Invalid Reason Code *43*
Employee ID *43*
Employee Name *43*
Line Item Detail *43*
Vendor VAT Registration Number / Bill-To VAT Registration Number *46*
ICMS Tax Amount *47*
Delivery Note *47*
Due Date *47*
Delivery Date *47*
VAT Table *47*
Delivery Notes *48*
IBAN *48*
BIC *48*
Your Ref *48*
Alternate Payee *48*
Harmonized Sales Tax *49*
Invoice Code CN *49*
Invoice Password CN *49*

Mexican UUID number *49*
Brazilian CDA *49*
Central Goods & Services Tax (CGST) *50*
State Goods & Services Tax (SGST) *50*
Payment terms *50*
Project Configuration 50
Client Configuration 51
Assign documents to a client *52*
Assign a client ID using a document filename 52
Assign a client ID using a database lookup 53
Database lookup Client ID Errors 53
Assign a client ID using UserExitAssignClientIDToDocument 54
Processing Profile Configuration 54
Create a new processing profile *54*
Profile Groups *55*
Define a profile group *55*
Assign processing profiles to a profile group *55*
Field Configuration 56
Field Settings *56*
Switch fields on and off *57*
Set fields to mandatory or optional *57*
Apply a country filter *57*
Force a field to require verification *58*
Label a field in Dynamic Verifier *58*
Add a new language for an existing label 58
Set field default values *58*
Setting field types *59*
Configuring date fields *59*
Date validity range 59
Date format options 60
Configuring amount fields *60*
Amount field cross-validation 61
Amount validation without the VAT table 61

Amount validation with the VAT table ... 61
Deactivating amount field cross-validation ... 61
Configure separators for amount field export ... 62
Configuring text fields ... *62*
List of special fields ... 63
Working with custom fields ... 65
Using document classes for special field rules ... 66
User Exit For Text Fields ... 66
Using substitution rules ... 66
Dynamic Verifier Form ... 67
Activate the Dynamic Verifier form ... *67*
Change the Dynamic Verifier form field order ... *67*
Dynamic Verifier form language translations ... *69*
User Management ... 71
Add a new user ... *72*
Configure an automatic import job ... *74*
Automatic import job errors ... 74
Processing Instructions ... 74
Create instructions for the Dynamic Verifier form ... *75*
Assign instructions to a client ... *75*
Review States ... 75
Set a review state ... *76*
Activate document review for a client ... *76*
Activate document review for specific users ... *76*
Visibility Configuration ... 77
Configure Visibility reporting ... *77*
Document splitting in Visibility ... *78*
Brainware for Invoices Password Encryption ... 79
Generate an encrypted Brainware for Invoices database password ... *79*
Configure the Brainware for Invoices database to use an encrypted password ... *80*
Vendor Configuration ... 80
About vendor partitions ... *80*

Activate use of vendor partitions ... 81
Create a new vendor partition ... 81
Assign a vendor partition to a client ... 81
Prepare the vendor master data for import ... *81*
Use a site ID and external vendor ID ... 83
Configure the Associative Search Engine ... *85*
Configure the Associative Search Engine to use a CSV file ... 85
Configure the Associative Search Engine to use a database ... 85
Configure the vendor search to use the Remote Matching Service ... 86
Configure the Associative Search Engine vendor pool ... *87*
Map vendor master fields ... *88*
Work with addresses in non-Western languages ... *88*
Configure vendor validation ... *88*
Configure force verify per vendor ... *90*
PO Number Configuration ... 90
Configure purchase order number formats ... *91*
Configure the maximum number of OCR words ... 92
Configure PO number formats for JD Edwards ... 92
Configure PO number formats for Peoplesoft ... 92
Configure purchase order number validation ... *93*
JD Edwards purchase order validation ... 95
Peoplesoft purchase order validation ... 96
Validation for alternative purchase order number types ... 96
Configure the relationship between the PO and invoice vendor ... 97
Default the purchase order currency ... 97
Configure the PO type field ... 98
Configure padding for extracted PO numbers ... 99
Configure the purchase order line item lookup ... *99*
Additional purchase order line item mappings ... 101
Configure database validations using a stored procedure ... *105*
Set up stored procedure parameters ... 105
Configure the purchase order look-up to use a stored procedure ... 106
Use a stored procedure for the purchase order line item look-up ... 106

Purchase Order Stored Procedures in Oracle 106
UserExitReadPODetails *107*
Use the user exit to read purchase order line item data *108*
Use Purchase Order Partitions *120*
Register the purchase order partition 120
Assign the purchase order partition to a client 120
Activate usage of the purchase order partition 121
Map the partition ID column for the purchase order line item data 121
Invoice Type Configuration 121
Business Requirement 1 ..... *122*
Business Requirement 2 ..... *122*
Business Requirement 3 ..... *123*
Alternate Payees 124
Activate the Alternate Payee field *124*
Alternate payee functionality *125*
Configure the full alternate payee functionality 125
Assign permitted payees to vendors 125
Dynamic Payment Terms Selection 126
Dynamic payment terms selection process *126*
Create a payment terms profile *127*
Assign the payment terms profile to a client *127*
Maintain the payment terms configuration table *128*
Configure the payment terms code conversion *129*
Activate a country for dynamic payment terms processing *129*
Map the payment terms field from the purchase order header *130*
Map the payment terms field on the vendor master *130*
Activate the dynamic payment terms selection *130*
VAT Compliance 131
Maintain the country table *132*
Configure the company code look-up *132*
Configure VAT compliance *133*
VAT compliance for non-EU countries *134*
Tax compliance for India *135*

Golden Tax 136
Use BFI with Golden Tax *136*
Special configuration for the invoice password *137*
Line Pairing 137
Activate line pairing *139*
Line pairing for material invoices *140*
Identify the corresponding purchase order line item 140
Identify a goods receipt document 141
Convert the invoice quantity to the purchase order unit of measure 141
Compare the invoice line item unit price to the purchase order unit price 141
Line pairing for service invoices *142*
Single line limits purchase order 142
Multiline limits purchase order 142
Configure tolerances 143
Service entry sheets purchase order 144
Other service purchase order type 144
Line pairing and Visibility reporting *144*
About line pairing for third-party freight invoices *147*
Miscellaneous Charges 147
Miscellaneous charge categories *148*
Create a miscellaneous charge category *148*
Assign fields and line items to a miscellaneous charge category *149*
Assign header fields to a miscellaneous charge category 149
Assign line items to a Miscellaneous Charge Category 150
Configure processing of miscellaneous charge categories *150*
Post miscellaneous charges using a specific line type 150
Process miscellaneous charges as unplanned costs 151
Post miscellaneous charges to planned conditions 151
Post miscellaneous charges to a general ledger account 153
Third-party freight *155*
Add new miscellaneous charge fields *156*
Automatic Tax Code Determination 157

Tax code determination for countries without tax jurisdictions *158*
Tax table structure 159
Tax table access sequence 160
Populating the tax table 161
Handle special cases for tax codes 162
Tax codes for India 163
Tax code determination for countries with tax jurisdictions *164*
Activate automatic tax code determination for countries with tax jurisdictions 166
Configure tax codes for countries with tax jurisdictions 166
Default a purchase order tax code 167
Configure state-specific exceptions 168
Unit of Measure Conversions 168
Activate the unit of measure conversion check *169*
Unit of measure conversion for custom items *169*
About the unit of measure conversion table 170
Unit of Measure Triangulation 171
Configure usage of the Unit Of Measure Conversion Table 172
Configure unit of measure aliases 173
Data Export 174
Add Export Profiles *174*
Configuring the export directory *175*
Export TIFF images *175*
Export a configurable TIFF image *176*
Configure the DPI and the compression type for TIFF images 176
Export a PDF file *176*
Database Export *177*
Configure database export 177
Configure invoice header database export 177
Configure line item database export 178
Notes 179
Configure general ledger account database export 179
Configure tax table database export 180
Add additional fields to the database header export 181

XML File Export *182*
XML file sections 182
Activate output to an XML file 183
Add document level fields into the XML file 183
Add invoice header fields into the XML file 185
Add invoice line item fields into the XML file 185
Add general ledger fields into the XML file 186
Adding tax item fields into the XML file 186
Add a custom header field into the XML file *187*
Add matching code into the XML export user exit 187
Write data to a CSV file *188*
Configure the CSV file 188
Activate CSV file output at the global level 188
Activate CSV file output for each CSV file 189
Add a new header field to the CSV file 190
Add a new line item field to the CSV file 191
Export data to Process Director *191*
Configuring output to Process Director 192
Configuring usage of the Process Director generic function 192
Invoice data passed to Process Director 193
Process Director and document archiving 193
Early archiving with Process Director (standard function) 194
Early archiving with Process Director (generic function) 195
Late archiving and Process Director 196
Process Director returned values 196
Process Director standard user exit 197
Process Director generic function user exit 197
OCR XML file export *198*
OCR XML file structure 198
OCR XML file configuration options 199
Set up a custom export *200*
Configure and activate a custom export 200

SAP Configuration ... 202
Install the SAP .NET Connector ... *202*
Set up a SAP user ID ... *203*
Configure a connection to SAP using the SAP .NET Connector ... *204*
Configure a connection to SAP using web services ... *205*
Configure the web service for the purchase order number look-up ... 205
Configure the web service for the company code look-up ... 206
Configure the web service for the service entry sheet look-up ... 206
Configure the web service for the general data look-up ... 207
Configure the web service for SAP document creation ... 207
Configure the web service for document archiving ... 208
BAPI functions ... *209*
Troubleshoot SAP connection issues ... *210*
Configure SAP validations and business rules ... *210*
Configure the vendor ID field for SAP ... 210
Configure validation of purchase order numbers against SAP ... 210
Configure the SAP company code look-up ... 212
Configure the SAP currency look-up ... 212
Configure the SAP plant look-up ... 212
Withholding Tax/ ISR Retention ... 213
Post Date/Baseline Date ... 214
SAP document types ... 214
Payment terms ... 214
Partner bank type determination ... 214
Configure the Calculate Tax flag ... 215
Activate tax validation ... 216
Down payments ... 216
Evaluated Receipt Settlement (ERS) ... 217
Configure export to SAP ... *217*
Activate the creation of SAP documents ... 218
Configure the creation of MM-LIV documents ... 218
Configure the creation of FI documents ... 219
SAP workflow integration ... 219

Configure line pairing for SAP ... 220
Activate line pairing for SAP ... 220
Configure line pairing for material invoices ... 221
Configure unit of measure conversions using SAP ... 221
Configure line pairing for service invoices ... 222
Configure extraction for multiline limit purchase orders ... 223
Document archiving with SAP ... *223*
Configure early archiving with SAP ... 223
Configure late archiving for SAP ... 224
Configure archiving to an external DMS connected to SAP ... 224
Configure archiving to the Visibility Reporting database ... 225
Configure archiving to a storage directory ... 225
Configure image linking ... 225
Configure the link using SAP ArchiveLink ... 226
Configure the link using a URL ... 226
SAP duplicate checking ... *227*
SAP user exits ... *228*
UserExitCreateSAPDocument user exit ... 228
Custom SAP BAPI Calls ... *237*
Solution.SAP.ConnectToBAPI ... 237
SAPFunction ... 237
SAPStructure ... 239
SAPTable ... 241
BAPI call coding example ... 242
Workday Integration ... 243
Configure a connection to Workday ... *243*
Configure the purchase order look-up ... *243*
Configure the purchase order header look-up ... 244
Configure the purchase order line item look-up ... 244
Configure the company code look-up ... *244*
Configure the data export to Workday ... *245*
Configure Workday image linking ... *247*

ALM Integration 247
Configure a connection to ALM *248*
Configure fields with use with ALM *248*
Configure the automatic ALM learnset update *249*
Configure the vendor invoice frequency check *251*
Configure ALM verifier users *252*
Activate ALM for a custom base class *253*
Assign a custom base class to an ALM project 253
Configure custom fields for ALM 254
Add the tmpRTSExtractionResults, tmpVerifierAudit and tmpALMReporting fields to the custom base class 254
Add script to custom base class 255
ALM and Visibility Reporting *256*
BRWDocument 256
BRWDistillerFields 257
Project Customization 258
Sequence of class dependencies *259*
Project script organization *259*
Project script class 259
Global functions script class 259
User exits script class 271
Invoices script class 271
AP packaged / generic script classes 271
Solution functions *271*
Settings library 271
Utility library 276
Lookup library 284
Export library 286
Document data library 286
Project data library 286
SAP Library 286
ALM Library 286
User exits *287*

User exits 288
User exit parameters 313
Project data types 315
WWLineData 315
WWPOHeaderStructure 318
WWPOLineItemsStructure 319
WWPOKey 321
WWTaxData 321
VendorAddress 322
Tolerance 324
DocumentFlags 325
POHeader 326
UserData 327
PlantData 328
CompanyData 328
WWAccountingData 329
WWClientData 332
WWCountryData 332
WWFieldSettings 333
WWWithTax 335
WWPOLine 336
WWCondData 339
WWPlantData 340
CandidateCtx 341
WordCtx 341
PaymentTerms 342
Triggering sequence of user exits in Verifier 343
General actions 343
Specific actions 343

Custom settings ... 346
Single settings ... 346
Indexed settings ... 347
Custom error messages ... 348
Reporting and custom base classes ... 348
Add a custom script to the Document PreExtract and Document Validate events ... 349
Add the tmpCLSRES field ... 350
Adding additional custom fields ... *350*
Create an additional field in the Brainware Intelligent Capture Designer module ... 350
Add the standard validation script to the Invoices class ... 350
Add an entry into the field configuration table ... 351
Insert the custom field onto the Dynamic Verifier Form ... 352
Configure Automatic Extraction for Custom Fields ... 352
Set up a field analysis profile ... *353*
Set up a field evaluation profile ... *354*
Set up a field extraction profile ... *354*
Restricting candidate generation by page region ... 356
Assign a field extraction profile to a custom field ... *356*
Appendix A: SAP BAPIs ... 357
BAPI_PO_GETDETAIL ... *357*
BAPI_INCOMINGINVOICE_CREATE ... *357*
BAPI_INCOMINGINVOICE_PARK ... *357*
BAPI_ACC_INVOICE_RECEIPT_POST ... *357*
RFC_READ_TABLE ... *357*
ARCHIV_CONNECTION_INSERT ... *357*
Z_BW_ARCHIVE_IMAGE ... *358*
BAPI_COMPANYCODE_GETDETAIL ... *358*
SO_FOLDER_ROOT_ID_GET, SO_OBJECT_INSERT, and BINARY_RELATION_CREATE ... *358*
Z_BW_PARK_FI_INVOICE ... *358*
BAPI_TRANSACTION_COMMIT ... *358*
BAPI_TRANSACTION_ROLLBACK ... *358*
BAPI_ENTRYSHEET_GETDETAIL ... *358*

Appendix B: Solution Configuration Manager Settings 358
INI File settings *358*
Solution Configuration Manager *359*
Data Input Controls 359
Profile Types 360
Processing profile 360
Export profile 360
Instructions profile 360
Processing Profile Settings 360
ALM Settings 360
ALM General Settings 360
ALM Classes 362
ALM Field Settings 363
Amount Settings 363
Bill-To Configuration 364
Bill-To Formats 364
Bill-To Settings 365
Company Code Settings 365
Content Configuration 366
Content Settings 366
Content Settings Codes 368
Currency Settings 368
Date Settings 370
Document Type Settings 371
Field Settings 372
Invoice Type Settings 376
Invoice Number Settings 378
Line Item Table Settings 383
Line Pairing Settings 386
Material Number Settings 398

Misc Charge Settings Group 399
Misc Charge Categories 399
Misc Charge Settings 401
Payment Method Settings 402
PO Number Settings 403
PO Number Formats 403
PO Number Validation 403
Profile Settings 409
SAP Configuration 409
Tax Settings 419
Tax Configuration 419
Tax Jurisdiction Codes 426
Unit Of Measure Settings Group 427
Unit Of Measure Settings 427
Unit Of Measure Types 428
Vendor Settings 428
Global Settings 430
ASE Settings 431
Country Settings 433
Currency Settings 434
Custom Extraction Profiles 434
Analysis Profiles 435
Evaluation Profiles 435
Extraction Profiles 436
Custom Settings 439
Single settings 439
Indexed settings 440
Database Settings 440
Display Text Settings 441

Document Type Text Settings 441
Field Text Settings 441
General Text Settings 442
Invalid Reason Text Settings 442
Invoice Type Text Settings 443
PO Type Text Settings 443
Document Type Formats 443
Error Message Settings 444
General Settings 444
Import Settings 446
Information Messages 448
Information Settings 448
Information Message Settings 448
Invalid Reasons 449
Invalid Reason Settings 449
Invalid Reason Display Text 449
Partition Settings 451
Employee Partition Settings 451
PO Number Partition Settings 451
Tax Partition Settings 452
Vendor Partitions 452
Profile Group Settings 452
Profile Group Definition 453
Assign Processing Profiles to Profile Groups 453
Payment Terms Settings 453
Payment Terms Profile Settings 453
Payment Terms Configuration 453
Reporting Settings 454
Search Field Mapping 455

Stored Procedure Settings 459
Substitution Rules 460
Tolerance Settings 460
User Management 461
Vendor Force Verify Settings 462
Export Settings 463
Export Mapping 463
CSV Export Configuration 464
GL Export Mapping 469
Header Field Export Mapping 470
Line Item Export Mapping 470
Tax Export Mapping 471
Export Options 471
Client Settings 480
Instruction Settings 482
Instructions Profile Settings 483
Project Configuration Packets 483
Export a Project Configuration Packet 483
Import a Project Configuration Packet 483
Settings Excluded from Standard Migration Packets 484
Appendix C: Deactivating ASE fields 485
Delete the Associative Search Engine field settings *485*
Switch off the Associative Search Engine field *485*
Appendix D: Intercompany Vendors 485
Vendor extracts *485*
Configure the intercompany classification *486*
Example 1 486
Example 2 486
Example 3 487
Appendix: Perceptive Content integration 487

About Brainware for Invoices

Brainware for Invoices is a multi-tenanted, out-of-the-box Accounts Payable solution that automates data entry for invoices and credit notes.

The solution is able to capture invoice information such as the invoice number, purchase order number and dates, identify the invoice vendor and line items automatically, and then make this data available to use with your business information and document management systems. Brainware for Invoices also includes processes for line pairing, VAT compliance checking, the automatic assignment of ERP system tax codes to invoice line items, miscellaneous charge handling, and solution reporting.

Brainware for Invoices can be integrated with almost any environment and includes the following components.

- Visibility for auditing and reporting purposes.
- Thick and thin Verifier clients for document quality-assurance purposes.
- Perceptive Content (optional).

Accounts Payable solution overview

About the supported Accounts Payable documents

Brainware for Invoices currently supports the following document types.

- Vendor invoices
- Vendor credit memos
- Third-party freight invoices

You need to configure any additional document types, such as statements or travel and expense forms, as new document classes within the solution.

About the supported languages

To view the list of languages supported by Brainware for Invoices, refer to the Technical Specifications document.

Project Configuration

Project requirements are configured through the project INI file and Solution Configuration Manager.

These settings overwrite the property settings within the Brainware for Invoices project itself. However, these settings are overwritten by the settings configured within the Brainware Intelligent Capture Runtime Server for the defined project. The solution permits the configuration of the following components.

- Setting up clients and client-specific settings
- Business rules relating to predefined data fields and document scope
- Database connection settings for validations and reporting through the Visibility Reporting Database
- Connection settings to Oracle eBusiness Suite
- Connection settings to SAP R/3, version 4.6c and higher
- Data export settings for non-ERP connections, such as MS SQL or Oracle DB, or file export
- Document archiving and exporting image file formats
- Error messaging, color scheme, and presentation of field data you want to display within Thick Verifier
- Tax code validation and determination

About Brainware for Invoices solution architecture

You can integrate the Brainware for Invoices solution with almost any existing environment. This section provides several possible examples.

About early archive architecture

This section provides an overview of early archive architecture.

Invoice documents are scanned directly into the existing document management system (DMS) solution. A copy of the document (1 file per invoice) and URL are passed to the Brainware Intelligent Capture Runtime Server. For documents requiring client processing, you must incorporate the ID of the client into the image file name. The document is processed by Brainware for Invoices with the metadata then being exported to the target ERP, ECM solution or Hyland OnBase workflow process (optional). The Visibility reporting product is used for auditing and reporting purposes. The Verifier workstations are used for document quality analysis (QA) if required.

Hyland OnBase workflow can be used for exception handling and other AP functions prior to the invoice being booked in the ERP system. These workstations also access Visibility. Data validation is through a live connection to the enterprise resource planning (ERP) system or alternative data source.

About architecture with SAP

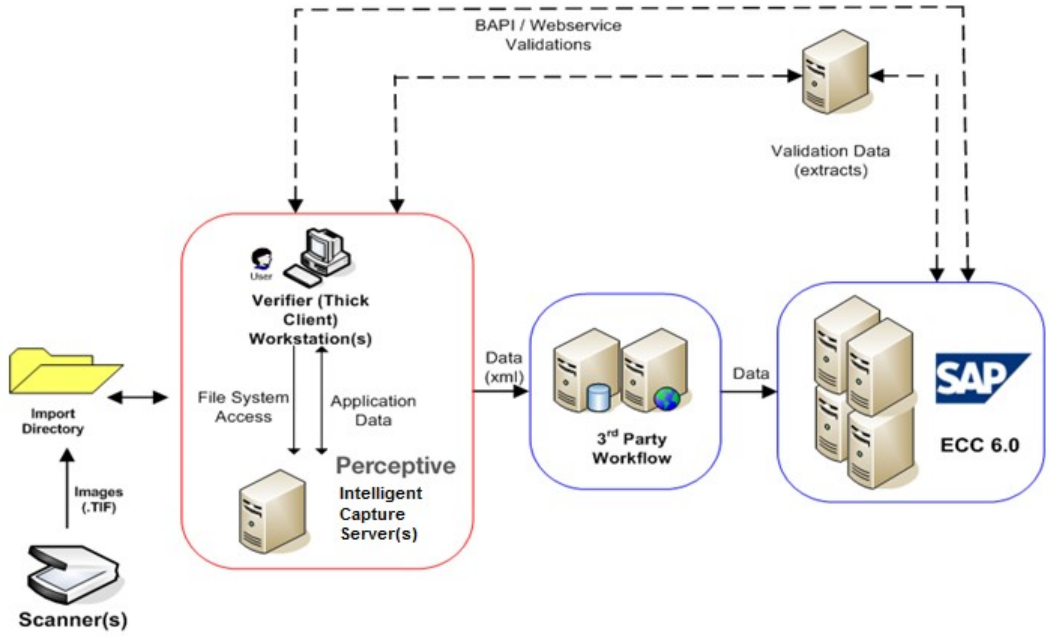
There are two broad architectural options available for passing invoices.

- Invoices pass directly to SAP from Brainware for Invoices.
- Invoices pass through a third-party workflow system before arriving in SAP.

About the SAP solution architecture with workflow

The following image illustrates the system architecture for a solution that utilizes a third-party workflow between the Brainware for Invoices server and SAP.

In this configuration, the invoices are scanned and passed into an import directory located on the Brainware for Invoices server. The images are subsequently imported into batches and passed through OCR. Brainware for Invoices then performs the document classification and extraction. Once extracted, the data is validated "live" against the SAP system using Business Application Programming Interface (BAPI) calls. You can invoke the BAPI calls through web services or through the solution by logging into SAP directly.



Brainware for Invoices uses standard SAP guaranteed and released BAPI calls for the purposes of data validation. The exception is the vendor ID, which is determined and ascertained from a flat file generated from SAP.

If an invoice cannot be read correctly or any of the data validations fail, the invoice is sent to the Verifier application for a user to make the necessary corrections.

When the data is complete and correct, instead of being sent over to SAP directly, it is passed to a third-party workflow application, which sits between Brainware for Invoices and SAP. Integration to the workflow application is possible from Brainware for Invoices through the following methods.

- Databases
- XML
- CSV files

The most common method of integration is for Brainware for Invoices to write out data extraction results to the workflow database tables, a process that subsequently triggers an instance of the third-party workflow.

In addition to managing the posting of invoices into SAP, the third-party workflow application typically performs the following functions.

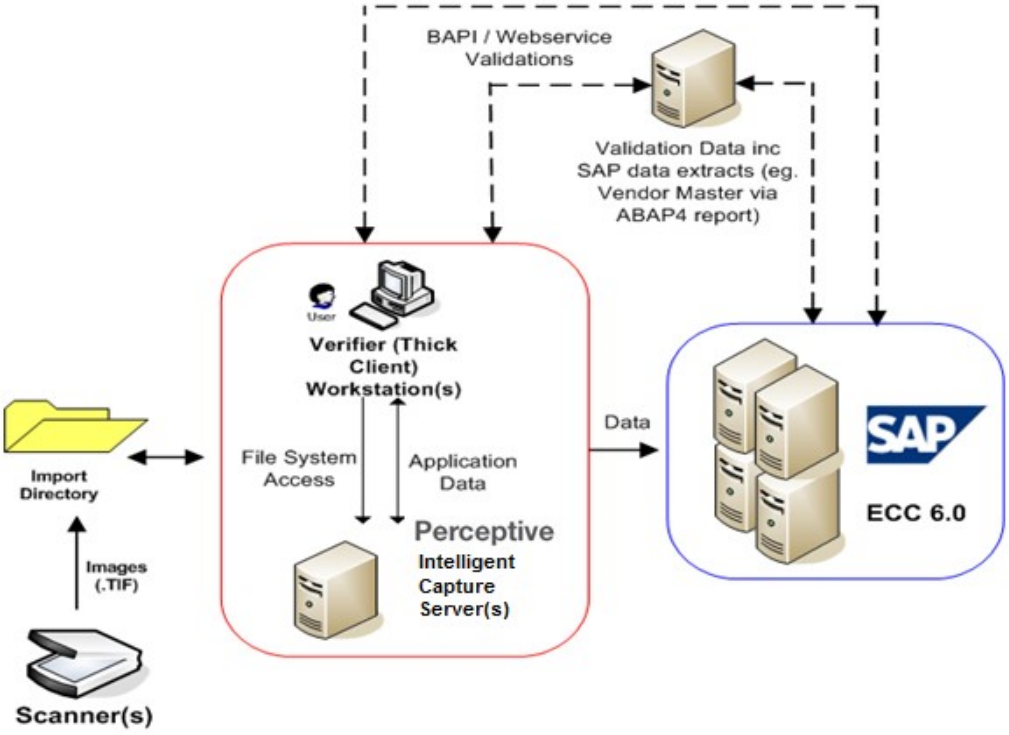
- Manages invoices with missing or invalid POs
- Provides an interface for the coding and approval of FI invoices
- Manages FI invoices from new vendors.
- Manages “non-compliant” invoices, such as those that do not balance or do not meet legal or fiscal requirements
- Provides an interface for completing MM-LIV invoices. For example, this may be necessary when the invoice line item data cannot be reconciled with the purchase order line item data or in instances where mandatory goods receipts are missing.
- Manages invoice blocks resulting from a failed three-way match in SAP
- Carries out any required archiving or image linking activities

The Brainware for Invoices export fails if the integration steps to the third-party workflow are not completed. If this occurs, the document is returned to the Verifier user specifying the reason so that action can be taken.

About the SAP solution architecture without workflow

The following image illustrates the system architecture for a solution that does not use a third-party workflow between the Brainware for Invoices server and SAP.

In this example, the invoices are scanned and passed into an import directory located on the Brainware for Invoices server. The images are subsequently imported into batches and then run through an optical character recognition (OCR) system. Brainware for Invoices then performs the document classification and extraction process. Once extracted, the data is validated “live” against the SAP system using Business Application Programming Interface (BAPI) calls. These BAPI calls are invoked either through web services or through the solution logging into SAP directly.



Brainware for Invoices uses standard SAP guaranteed and released BAPI calls for the purpose of data validation. The exception to this is the vendor ID, which is determined and ascertained from a flat file that is generated from SAP.

If an invoice cannot be read correctly, or any of the data validations fail, it is sent to the Verifier application for a user to make the necessary corrections.

Once the data is complete and correct, the system exports it to SAP.

Data export to SAP uses BAPI calls that post and park invoices, either through the “FB6” or “MIRO” SAP transaction. The export fails if a document is not created in SAP. If this occurs, the document is sent back to the Verifier user specifying the reason why the document was not created in SAP so that action can be taken.

Typically, MM-LIV invoices are posted if possible and parked if a posting cannot be made; FI invoices are always parked at header level. Downstream workflows or reports in SAP are expected to manage the resolution of a parked document, as well as posted documents should they block for payment.

About Workday Integration

Workday is a hosted, cloud-based ERP system that allows integration via web services. You can configure Brainware for Invoices to communicate with Workday and support the following functionalities.

- Validation and retrieval of purchase order data.
- Validation and retrieval of company code data.
- Creation of invoices and credit notes in Workday.
- URL and image attachment to created documents in Workday.

Brainware for Invoices uses Workday API version 28.0.

About the solution features

What is the automatic tax determination and validation?

The Brainware for Invoices solution incorporates an automatic tax code determination and validation feature to ensure that the document is correctly coded for tax prior to submission to the downstream ERP system.

This feature is in place so that a fully complete document can be created downstream; therefore, manual rework in the ERP system is not required.

The determination of tax codes only applies to invoices that relate to purchase orders and is only carried out when a line item is paired to its purchase order counterpart.

The system supports tax determination for countries with or without tax jurisdictions.

About data export options

Brainware for Invoices provides several standard export options. These export options are listed below.

- Export to database tables
- Standard extraction results file
- CSV file output
- XML file output
- TIFF file output
- Fully text-searchable PDF file output
- Integration to archive systems
- Creation of posted and parked SAP documents
- Export to Dolphin workflow
- Export to Process Director for SAP

- Export to Perceptive Content / Perceptive Integration Framework
- OCR XML File

A user exit is provided for additional export requirements. Export options can be switched on and off with the parameters set within the system configuration.

The export event fails if any of the following conditions occur.

- Late archiving is required but the document cannot be archived.
- The system is required to read the Brainware for Invoices Tax Table for the purposes of tax determination but cannot read the tax table.
- The system is required to read the Miscellaneous Charges Account Assignment table to code a general ledger entry but cannot read the table.
- The system is required to export the TIFF image to a designated directory but cannot write the image.
- The system is required to export a PDF to a designated directory but cannot create the document.
- A standard Brainware for Invoices results file needs to be created in a designated directory but the file cannot be created.
- A CSV output file needs to be created in a designated directory but the file cannot be created.
- Export needs to be written to a database but the database insert or update is unsuccessful.
- An XML file needs to be created in a designated directory but the file cannot be created.
- An OCR XML file needs to be created in a designated directory but the file cannot be created.
- The system is required to create posted or parked SAP documents but these cannot be created, and no alternative option has been set up in UserExitSAPPostingFailure.
- The system is required to do line pairing but connectivity issues arise when trying to read purchase order data or service entry sheet data.
- A custom export fails.
- Export to Process Director for SAP fails.
- Export to Perceptive Content fails.
- An unexpected error occurs.

Under such circumstances, the document is set to state 750 (failed export), with an error message indicating the problem set against the invoice number field. Further detail is written into the standard Brainware for Invoices log file for the RTS instance that performed the export.

The export does not fail under the following conditions.

- Line pairing was unsuccessful.
- A document could not be successfully coded or validated for tax.
- The update to the invoice number history database was unsuccessful.
- A database error occurred during the unit of measure conversion component of line pairing.

Unsuccessful SQL statements, such as those carried out for reporting, are written into the standard Brainware for Invoices log file for an RTS instance that performed the export step. You can manually execute these at a future point in time.

If there are multiple export options activated, export terminates at the point at which the first export option fails. This sends the document to state 750 denoting an export failure. Upon retrying the export, only the export options that did not complete successfully upon the previous attempts are carried out. You can configure the system to repeat all export options, irrespective of whether they were completed beforehand, if required.

About document management system integration

Brainware for Invoices supports integration to document management systems (DMS) in both the early and late archiving scenarios.

During early archiving, the image is archived prior to reaching Brainware for Invoices. In this scenario, Brainware for Invoices requires a copy of the archived image with the unique archive document ID embedded into the document file name. Configuration options define whether this unique archive document ID constitutes the entire file name or a component of that file name. At the time of document export, the archive document ID is passed downstream through the Brainware for Invoices URN field.

During late archiving, the image is archived after processing in Brainware for Invoices. The standard CSV file output can be configured to produce an import file compliant with Oracle ECM.

About ERP system integration

Integration to downstream ERP systems with Brainware for Invoices is possible through the following interfaces.

- Flat file transfer.
- Export to database staging tables.

The various export options can be activated in the system configuration.

About solution reporting

Brainware for Invoices contains out-of-the-box connectors to populate the Visibility reporting tables for solution reporting.

About project fields and features

The following section provides details on the standard fields delivered in the Brainware for Invoices Solution and the additional features and integration options that are available.

Document Type

The document type field denotes whether the incoming document is an invoice or a credit memo.

The system automatically determines the field result, which can be changed within the Verifier application.

Using the system configuration options, the system administrator may enter indicative words and phrases for a credit memo that can influence the document type selection. The system default value is INVOICE.

Invoice Type

The invoice type field denotes whether the invoice is purchase order (PO) or non-purchase order related (NO-PO).

The invoice type determines the following information.

- Whether line items are required from the invoice.
- How the invoice should be handled downstream.
- Whether a purchase order number is required.

Within the system configuration settings, you can configure a default value for this field.

For example, in an environment where the majority of invoices are purchase order related, you can set this default to PO.

Further configuration options are available to complete the following actions.

- Overwrite a NO-PO default and set it to PO based upon whether a purchase order number is detected or a valid purchase order number is detected.
- Overwrite the default based upon an attribute in the ERP vendor master data that would indicate whether NO-PO invoices from this vendor are permitted. For example, the vendor account group, the vendor industry sector, whether the vendor has a purchasing view, and so on.
- Overwrite the default based on a component of the image file name set by the scanning software where PO and NO-PO invoices are sorted upfront and scanned using different scan jobs.

PO Type

The PO type field denotes whether the extracted purchase order relates to materials or services.

The system default is MATERIAL but it is possible to configure the system to switch this to SERVICE depending on the following purchase order characteristics.

- Purchase order document type.
- Line type / item category of the purchase order lines.
- The unit of measure on the purchase order lines.
- The prefix of the extracted purchase order number. For example, if service purchase orders all begin with 52 and 523456 is extracted as the purchase order number, then 52 should be entered as the service PO prefix.

The content of the PO type field controls whether line items are required, whether just the total of each line item and a description is required, and how the system handles the invoice during the line-pairing event at document export.

Invoice Number

This is the document number for an invoice or credit memo.

Field formatting options are available to perform the following actions.

- Remove all special characters from an extracted invoice number.
- Remove special characters if they appear at the start or end of the invoice number (Brainware recommends that this setting is always switched on).
- Retain only a specified set of special characters.
- Remove spaces from within an invoice number.
- Remove any leading zeroes from the invoice number.

The formatting helps promote a common standard of invoice number entry to increase the efficacy of a duplicate invoice detection routine in the downstream process.

An extracted invoice number can be marked as invalid under the following conditions.

- OCR errors are detected in one or more of the characters where the confidence level falls below the required minimum (default 50 percent).
- The system identified more than one candidate on the document whose respective confidences are closer than the distance setting against the field (default 10 percent).
- The format of the invoice number in terms of its length and sequence of alpha and numeric characters does not match previous invoice numbers submitted from the same vendor as stored in the invoice number validation table.
- The invoice number confidence falls below a configurable threshold.

The validation for comparing the format of the invoice number with the previous invoice numbers submitted from the same vendor is optional. It can also be specified how many previous invoice numbers the current invoice number should be compared against, and how many hits qualify as a successful validation. This check is not carried out in the Verifier application as user input is assumed to be correct.

At the point of document export, it is possible to configure the system to update the invoice number history table automatically with the results for the current document. As vendors often use a different numbering sequence for invoices and credit notes, the system accounts for the document type when performing this check.

It is also possible to configure the invoice number as an optional field for a utility invoice.

Invoice Date

The invoice date field is mandatory for all documents.

The system automatically converts the invoice date on the document, irrespective of how it is expressed, into the designated Verifier output format. The Verifier output format can be set to DD/MM/YYYY, MM/DD/YYYY, or YYYY-MM-DD.

This formatting relies on the vendor's country of origin being available within the vendor master data in order to handle ambiguous dates.

For example, 01/02/2009 is January 2, 2009 in the US, but reads as February 1, 2009 in Europe.

If the vendor country exists in a configurable list of countries where the national date preference is MM/DD/YYYY (for example, the US), then the system converts the date to 01/02/2009 if the Verifier output format is MM/DD/YYYY, and to 02/01/2009 if the Verifier output format is DD/MM/YYY.

If a date is entered manually in the Verifier application, then no conversion takes place unless the date entered is "impossible" for the Verifier output format.

For example, if the format is set to MM/DD/YYYY and the user enters 28/02/2009, the system automatically flips the date to 02/28/2009.

The system can be configured to invalidate the invoice date if any of the following conditions are true.

- It is more than x days in the future.
- It is not in the current month.
- It falls more than x days prior to the current date where x is configurable.

Machine and user local settings play no part in the system's internal handling of dates.

User input into the date field is not subject to the checks above as long as the date entered is valid for the output format.

If the downstream export event involves writing the extracted date into a flat file, or into a database table, the output format of the date can be set to DDMMYYYY, MMDDYYYY, or YYYYMMDD with an optional separator.

The system is able to handle dates expressed in the Gregorian calendar and the Japanese Emperor's calendar. The system also supports the Thai Buddhist calendar.

Company Code

The company code field represents the unique ID of the legal entity within the customer's wider organization for which the invoice is intended.

For implementations involving Oracle e-Business Suite, this field represents the organization ID; for implementations involving PeopleSoft, this field represents the accounts payable business unit.

The field can be determined by one of the following methods.

- Through parsing the image filename if the company code is set at the point of scan.
- Using the Associative Search Engine pointing to a CSV or database extract of the master company code data.
- Through a lookup to a database table or downstream ERP system based on the extracted purchase order number (PO invoices only). If a value is found and the system is configured to take the company code from the purchase order in all cases, this overwrites any company code determined through other means.

The company code can be validated against a downstream ERP system or a database table.

Vendor ID / Site ID / Internal Vendor ID

Brainware for Invoices employs its unique associative search engine to ascertain the invoice vendor. Multiple instances of vendor master data within a single data source (each instance referred to as a vendor partition) is also supported by the solution.

By pointing Brainware for Invoices to an extract of the client's vendor master, whether in a flat file or in a database table, the system analyzes the text of the invoice. The system then selects the closest matching vendor record in a fault-tolerant manner that accounts for spelling differences, OCR errors, abbreviations, and vendor details embedded within logos on the invoice.

If the system is not confident enough that the closest matching vendor from the extract is the correct vendor, the field is marked invalid and the document is sent to a Verifier. The Verifier user can either accept this vendor or select an alternative using the vendor search facility within the Verifier application.

If the Verifier user knows the Vendor ID, they can enter it manually into the validation form. In most cases, this value validates successfully when the user presses Enter, except when an external Vendor ID and/or Site ID is specified in the master vendor extract file for that vendor. In this case, the Vendor ID field validation fails and the workaround is to use the Vendor Search to populate the vendor fields.

The vendor ID is a mandatory field for both PO and NO-PO invoices.

For PO invoices, the vendor is defaulted from the purchase order and is compared against the vendor determined by the associative search engine for validation purposes only. It is possible to configure the system to ignore the purchase order vendor and take the associative search engine vendor in all cases.

For ERP systems, such as Oracle Financials that use a vendor ID and a site ID, only the vendor ID component is used within the validation and the vendor pay-to site does not have to be the same as the order-from site on the purchase order. The automatic extraction of the vendor looks for a vendor at a specific site.

The site ID cannot be entered manually in the Verifier application, but is populated through the chosen result of the vendor search.

If the Verifier user wants to select a vendor that is not represented on the purchase order (for example, an alternate payee or a third-party freight vendor), then this is possible if the vendor exists in the vendor master extract and an appropriate invalid reason is set.

For NO-PO invoices, if the invoice vendor does not exist within the vendor master extract, then the invoice may only pass if an appropriate invalid reason is set.

Brainware for Invoices also supports scenarios where the ERP uses an external vendor ID for display to the user, but another vendor ID internally. In this scenario, the Verifier application displays the external vendor ID but the system still stores the internal vendor ID so that both values are available for export downstream.

Purchase Order Number / PO Extension

If activated, the purchase order number field is mandatory for all invoices where the invoice type is PO, unless an appropriate invalid reason is selected.

The system only extracts a purchase order if it matches a valid format specified in the system configuration.

Further configuration options allow this field to be validated against a database table or against a downstream ERP system. If such a validation is set, the purchase order must exist in that system.

On the server side, an additional check is made to ensure that the pay-to vendor set against the extracted purchase order matches the vendor details on the invoice, but it is possible to configure the system to consider and validate the vendor ID and purchase order number independent of each other.

Within Verifier, the user may change the purchase order or vendor and the system lets them pass as long as the chosen vendor is referenced on the purchase order. If an alternate vendor is required, an appropriate invalid reason must be selected from the field drop-down. For ERP systems that use a site ID as well as a vendor ID to identify a unique vendor address, only the vendor ID component needs to be common between the vendor ID field and the purchase order details.

If the user changes the purchase order and the new purchase order does not contain the vendor currently set in the vendor ID field, an information message displays, inviting the user to accept the new vendor or continue with the current vendor. A similar message displays for the currency field if the currency is set to default from the purchase order.

The vendor ID and the purchase order can be entirely decoupled from one another through a setting in the system configuration.

If the new purchase order has not been released and the system does not require line items to be mandatory under this circumstance, a message displays informing the Verifier user.

If the new purchase order is a one-to-one match with the invoice in terms of its overall value or the value of goods received against the purchase order but not yet invoiced (MIRA scenario) and the system does not require line items to be mandatory under this circumstance, a message appears informing the Verifier user.

If the purchase order number is missing or invalid, the Verifier user should select an appropriate invalid reason from the field drop-down box to progress the invoice through the system.

A purchase order must be present and valid for the line-pairing feature to be activated during document export. Multiple purchase orders on a single invoice are supported if activated in system configuration, but are handled only at time of line pairing. From the point of view of extraction and operation in Verifier, only a single purchase order number is required.

The PO extension field is populated in implementations involving JD Edwards or PeopleSoft. In JD Edwards implementations, this holds the purchase order type (for example: OP); in PeopleSoft implementations, this holds the purchasing business unit.

Bill-To Name

The bill-to name represents the name of the legal entity for which the invoice is intended.

This field can be used to check that the incoming document is intended for a valid company within the customer's organization.

Within system configuration, the system administrator can specify words and phrases that anchor a valid bill-to name. At runtime, the system extracts the full bill-to name.

If no anchors are specified or an appropriate anchor is missing, no value is extracted into the field. Hence, the document is sent to Verifier for a user to review.

Invoice Subtotal

This field is used to capture the subtotal of the invoice.

The invoice subtotal is neither a mandatory field, nor a field relevant for export. It is only used as part of the mathematical calculation applied to all invoice amounts to ensure correct extraction of the invoice total, taxes, and line items.

The field is formatted automatically to use a period/full-stop as the decimal separator.

Invoice Freight Amount

This field is used to capture a freight charge specified by the vendor at the invoice header level, but it can also capture a freight amount at the line item level.

The freight amount field is formatted automatically to use a period/full-stop as the decimal separator and forms part of the mathematical calculation applied to all invoice amounts to ensure correct extraction of the invoice total, taxes and line items.

Freight and other fields used to capture miscellaneous charges are assigned to miscellaneous charge groups, which determine how they are processed during line pairing and how they are exported.

Irrespective of where it appears on an invoice, freight forms part of the invoice line item data as it is one of the items that the vendor is billing for. Hence, no freight is exported for any documents where line item extraction is not required.

Invoice Miscellaneous Charge

This field is used to capture a non-freight miscellaneous charge specified by the vendor at invoice header level.

For example, a fuel surcharge, administration charge, customs charge, pallet charge, and so on. The system is also able to capture miscellaneous charges at the line item level.

The miscellaneous charge field is formatted automatically to use a period/full-stop as the decimal separator and forms part of the mathematical calculation applied to all invoice amounts to ensure correct extraction of the invoice total, taxes, and line items.

Miscellaneous charges are assigned to miscellaneous charge groups, which determine how they are processed during line pairing and how they are exported.

Irrespective of where it appears on an invoice, the miscellaneous charge forms part of the invoice line item data as it is one of the items for which the vendor is billing. Hence, no miscellaneous charge is exported for any documents where line item extraction is not required.

Invoice Tax Amount

This field is used to capture the total invoice tax amount, such as US sales and use tax, and European VAT. It is also used to capture Canadian GST/HST tax amounts and Brazilian IPI tax amounts.

The tax amount field is formatted automatically to use a period/full-stop as the decimal separator and forms part of the mathematical calculation applied to all invoice amounts to ensure correct extraction of the invoice total, taxes and line items.

The system does not permit a total tax amount to pass if it is a negative value and the invoice total is a positive value.

If line pairing is activated to occur during document export, the system attempts to determine the correct manner in which the tax should be booked in the downstream ERP system.

At time of export, the system sums together all tax amounts read from the document and passes the total value through the tax amount export field.

Invoice Withholding Tax Amount / ISR Retention (Mexico)

The withholding tax amount fields capture the portion of the invoice total amount that should be withheld by the party settling the invoice for payment to the government as opposed to the vendor.

The ISR Retention field is used specifically to capture the ISR retention component of withholding tax, which can appear on Mexican invoices. The IVA retention component is captured in the regular withholding tax field.

Both withholding tax amount fields are formatted automatically to use a period/full-stop as the decimal separator and form part of the mathematical calculation applied to all invoice amounts to ensure correct extraction of the invoice total, taxes, and line items.

At the time of export, the system outputs withholding tax as a separate header level field with the ISR retention amount added to it. The ISR retention field is also available as a separate export parameter. The system outputs invoice total amount with the withholding tax and ISR retention amounts added back on.

Provincial Sales Tax

This field is used to capture the Provincial Sales Tax (PST/QST) component of Canadian tax.

The system attempts to extract the PST/QST amount from a document if the vendor country of origin is Canada. The regular invoice tax amount field is used to capture the GST component of Canadian tax.

The PST field is formatted automatically to use a period/full-stop as the decimal separator and forms part of the mathematical calculation applied to all invoice amounts to ensure correct extraction of the invoice total, taxes, and line items.

At the time of document export, the tax amount exported is the sum of the regular tax field and the PST field, although the PST component is available separately.

Invoice Header Discount Amount

This field is used to capture a discount given by the vendor at the invoice header level.

The discount amount is formatted automatically to use a period/full-stop as the decimal separator and forms part of the mathematical calculation applied to all invoice amounts to ensure correct extraction of the invoice total, taxes and line items.

Invoice Total

This field is used to capture the total amount of the invoice. The field is mandatory and cannot be zero as long as an invalid reason designating otherwise has not been set.

The invoice total is formatted automatically to use a period/full-stop as the decimal separator and forms part of the mathematical calculation applied to all invoice amounts to ensure correct extraction of the invoice total, taxes, and line items.

Currency

The Currency field is used to extract the invoice currency and convert it to the standard ISO-code.

If no currency is captured or no currency appears on the invoice (which is common for domestic transactions), the currency field can be set to default to the currency associated with the vendor’s country of origin, or the currency in which the purchase order was raised.

It is possible to validate an extracted or user-entered currency against a database table or a downstream ERP system. Hyland is able to provide an SQL script to create a fully populated table of all world currencies and the countries in which they are used.

Within the configuration, it is also possible to specify which currency symbols and terms are associated with each individual currency (for example, “pounds”, “sterling” and “£” are associated with GBP). At runtime, if the corresponding currency symbol is found and this symbol is unique to one particular currency, then this currency is selected. Terms take priority over currency symbols. Additionally, the higher the currency up the list in the system configuration, the greater weight the system attaches to this currency.

If the currency symbol is ambiguous, then the vendor’s country of origin is used to find the corresponding currency ISO-code.

For example, “$” is found on the document and the vendor is from Canada, hence the currency is set to ‘CAD’.

Bank Account / Bank Account Code

The bank account number is used to capture the bank account into which the vendor has requested payment to be made.

The bank account code field represents the identification of that bank account for that vendor from the point of view of the downstream ERP system.

The bank account is determined based on whether the bank details are available within the vendor master data.

For each account specified where the account currency matches the currency of the invoice, the system looks for the bank details on the document. If they are found, the first matching bank account number and the corresponding bank account code are copied into the fields. It is possible to configure the system to ignore the currency when choosing an account.

If the user enters a new purchase order or vendor within the Verifier application, the bank account details are reassessed automatically by the system.

It is possible to limit the identification of bank accounts only to those vendors who require payment to be made through a bank transfer. In this scenario, the system only looks to extract a bank account if the list of vendor payment methods contains an entry that denotes a bank transfer as a permitted payment method.

Payment Order Reference Number / Subscriber Number

The payment order reference (POR) number is a 27-character transaction ID applied to the invoice by the Swiss Postal Service.

Brainware for Invoices extracts this value from the document (typically domestic invoices supplied by Swiss vendors) and places it in the POR number field.

The POR number is only passed downstream during data export if the vendor has a POR subscriber number available within the vendor master data extract or if a POR subscriber number has been extracted from the document. The POR subscriber number in the vendor master takes priority over a POR subscriber number extracted from the invoice.

Payment Reference

This field is used to capture the vendor’s payment reference as specified on the invoice.

The payment reference is used in the Nordic countries of Norway, Sweden, Finland and Denmark. In Norway, for example, it is referred to as the KID number. In Sweden, it is referred to as the OCR number. In Finland, it is referred to as the Viite number. In Denmark, it is referred to as the FIK number.

It is possible to configure the payment reference field as relevant only for the Nordic countries. Checksum validation is applied to all extracted or user-entered values.

Exchange Rate / Local VAT Amount

The exchange rate and local VAT amount fields are used as part of the VAT compliance check. If a vendor charges VAT and the invoice currency is not equal to the currency of the taxing country, the law requires that the vendor must state the VAT in the local currency, or provide the exchange rate used at the time the invoice was generated.

This system checks for this scenario and sets the exchange rate and local VAT amount fields to mandatory accordingly. The user can populate either field.

The exchange rate should be the value by which the invoice tax amount is multiplied to get the same tax amount in the local currency.

At the time of export, only the exchange rate is passed downstream. If a local VAT amount was entered, the system calculates the exchange rate from the invoice currency to the local currency automatically.

Account Number

The account number field represents the unique identification number of the client from the point of view of the vendor.

This is a mandatory field to use instead of the invoice number for invoices from utility vendors, if the invoice number in the system configuration is set to skip invoice number extraction for utility vendors.

In all other cases, the field is not mandatory.

Priority Flag

The priority flag field is set to YES or NO depending on the urgency of processing.

The value of this field defaults to NO but can be overwritten by one of the following options.

- The Verifier user
- A component in the document file name

At the point of document export, this value can be passed to the downstream workflow so that the item can be prioritized accordingly.

To increase the item priority in Brainware for Invoices, documents should be sorted according to priority during the scanning process, then output to a different Brainware for Invoices import directory that is swept by an RTS instance that sets the priority of all imported documents to 1.

Scan Date

This scan date field represents the date upon which the invoice was scanned.

This is not extracted from the document but is set through a mapping to the field from the document file name. You can configure the expected format of the date lifted from the document file name. The system subsequently converts the date into the Verifier output format.

If the downstream export event involves writing the scan date into a flat file or into a database table, the output format of the date can be set to DDMMYYYY, MMDDYYYY, or YYYYMMDD with an optional separator.

Batch Name

The batch name field represents the name of the batch into which the invoice was scanned.

This is not extracted from the document but is set through a mapping to the field from the document file name.

URN

The URN field is the unique reference number assigned to the document in the upfront scanning process.

This is tied to the Brainware for Invoices field through a mapping from the document file name. If the field is not mapped to a specific file name component, then the value of the URN field is set by the system to be the entire document file name minus the path and file extension.

The URN can be used by Brainware for Invoices to:

- Set a key for the document record within the database reporting.
- Set a key for the document record for the purposes of database export and a unique file name for the purposes of flat file export.
- Denote the unique archive document ID for the image as determined by an early archiving process.

Invalid Reason

The invalid reason field contains a list of possible exceptions that could prevent a Verifier user from being able to correct a document in its entirety.

The system default is NONE but a Verifier user may change this value when a particular exception is encountered so that the document may be progressed out of the Verifier application.

The following table contains a list of the system delivered invalid reasons, their corresponding rule, when they should be selected, and the effect of selecting them.

Invalid Reason	Usage	Effect
VENDOR NOT FOUND	The user should select this invalid reason if the invoice vendor cannot be found using the vendor search function. This applies to both PO and NO-PO invoices.	Rule: SETVENDORTOVALID The vendor ID field is set to valid. You can configure whether line items are still required or not. If you configure the Brainware for Invoices export event to create documents directly in a downstream ERP system, document export fails for NO-PO invoices as the ERP system does not permit an invoice to be created without a vendor ID. Line pairing is not carried out at the

Invalid Reason	Usage	Effect
		time of document export. If activated, the VAT registration compliance check is not carried out. No vendor details are exported. For a purchase order invoice, if a vendor does not exist in the Vendor Search pool, then this is a configuration issue. For a purchase order document, the SETVENDORTOVALID rule sets the Vendor field temporarily to valid, but the following PO Number validation sets it back to invalid with an error description, "Purchase order vendor cannot be validated against data source (EN082)". For a NON-PO invoice, the Vendor is set to valid and remains valid.
MISSING/INVALID PO	The user should select this invalid reason if the invoice is purchase order related but the vendor has failed to quote a purchase order number or the purchase order number they did quote was invalid for the invoice.	Rule: SETPOTOVALID The purchase order number field is set to valid. You can configure whether line items are still required or not. Line pairing is not carried out at the time of document export. If activated, the VAT compliance check is not carried out.
MISSING/INVALID VENDOR & PO	The user should select this invalid reason if both the vendor and the purchase order are invalid or do not exist.	Rule: SETVENDORANDPOTOVALID The vendor ID, the PO number, and the line items are all set to valid. Line pairing is not carried out at the time of document export. If the Brainware for Invoices export event has been configured to create documents in a downstream ERP

Invalid Reason	Usage	Effect
		system, document export fails. No vendor details are exported. If activated, the VAT compliance check is not carried out.
PO VENDOR <> INVOICE VENDOR	The user should select this invalid reason if the user wishes to pass a different vendor ID to what is set against the purchase order.	Rule: ALLOWNONPOVENDOR The purchase order and vendor ID fields are set to valid providing the vendor exists in the vendor master data extract and the purchase order number passes validation.
INVOICE AMOUNTS DO NOT ADD UP	The user should select this invalid reason if the invoice is not mathematically correct and the figures do not add up within the specified tolerance.	Rule: SETAMOUNTSTOVALID All amount fields and all the line items are set to valid. Line pairing is not carried out. If activated, the VAT registration compliance check is not carried out.
THIRD PARTY FREIGHT	The user should select this invalid reason if the invoice is from a 3 rd party freight vendor quoting the material purchase order from another vendor where they have not been set up as the vendor responsible for freight.	Rule: THIRDPARTYFREIGHT The vendor ID field is set to valid as long as the vendor exists and line items are not required in Verifier. During line pairing, the net amount of the invoice is posted either to unplanned delivery costs, to condition records, or to a general ledger account, depending on the rules for the miscellaneous charge category assigned to third-party freight vendors.
NON VAT COMPLIANT	The user should select this invalid reason if the vendor has not complied with EU regulations and stated the required VAT registration numbers on the document, or they have not provided a local VAT amount or exchange rate if the invoice currency is not the same as the currency	Rule: NONVATCOMPLIANT The vendor VAT registration number, bill-to VAT registration number, local VAT amount, and exchange rate fields are set to valid. If activated, the tax rate column in

Invalid Reason	Usage	Effect
	of the taxing country, or if they have quoted a rate of VAT not relevant for the taxing country.	the VAT table is also set to valid. Document export runs as normal with the invalid reason and its associated code being passed to the downstream system.
STOCK INVOICE	The user should select this invalid reason for PO invoices where the vendor legitimately does not quote a purchase order number on the document. For example, invoices that use retrospective purchase orders.	Rule: STOCKINVOICE The PO number field is allowed to pass blank but all other fields require completing as normal. Instead, the purchase order number is decided programmatically at time of document export through user exit UserExitSetPO ForLinePairing if line pairing is required.
ZERO VALUE INVOICE	The user should select this invalid reason if the invoice has a legitimate zero amount for the total.	Rule: ZEROVALUEINVOICE This permits a zero value invoice total to pass as long as the overall invoice is in balance.
VENDOR ADDRESS INVALID	The user should select this invalid reason if the vendor can be found in the vendor search but the vendor address does not match what is on the invoice.	Rule: SETVENDORTOVALID The vendor ID field is set to valid. You can configure whether line items are still required or not. If the Brainware for Invoices export event is configured to create documents directly in a downstream ERP system, document export fails for NO-PO invoices as the ERP system does not permit an invoice to be created without a vendor ID. Line pairing is not carried out at the time of document export. If activated, the VAT registration compliance check is not carried out. No vendor details are exported.

Note: With the exception of PO VENDOR <> INVOICE VENDOR, NON VAT COMPLIANT, THIRD PARTY FREIGHT, and STOCK INVOICE, line pairing is not carried out during document export if an invalid reason is selected.

Configuration options allow an administrator to change the text, rule, and export code associated with an invalid reason. The administrator can also add new invalid reasons based on an existing invalid reason rule. The table above provides the invalid reason rules available.

Invalid Reason Code

The invalid reason code is the value that the system assigns to a selected invalid reason for the purposes of document export so that a downstream workflow of the ERP system can act upon that code and behave accordingly.

Employee ID

The employee ID field represents the identification number or user name of an employee found on the document.

The can be used in a downstream workflow to route the document to the relevant person within your organization. For example, for invoice coding and approval.

The field can also be used to detect an employee, a department, or even a ship-to address on the document to help determine the cost object against which a NO-PO invoice should be posted. In conjunction with the automatic general ledger account coding feature, this enables the complete coding of NO-PO invoices.

The field is determined using the Brainware for Invoices Associative Search engine pointing to a CSV or database extract of the employee master data.

Employee Name

The employee name is set by the results of the Brainware for Invoices Associative employee search.

Line Item Detail

Brainware for Invoices attempts to capture information at the line item level in the following columns.

Line Item Field	Description
PO	Purchase order number to which the invoice line item belongs.
Line	Purchase order line item number to which the invoice line item relates.
Material Number	Material number associated with the invoice line item.

Line Item Field	Description
GL Account	General Ledger Code to which the line item should be booked. This column is available for custom purposes.
Description	Description of the invoice line item. This field is mandatory for multi-line limits purchase orders.
Quantity	Quantity invoiced. This field is mandatory.
UOM	Unit of measure expressed in the invoice quantity.
Unit Price	Line item unit price. This field is mandatory.
Price Unit	The number of units for which the unit price is quoted. For example, for a line item where 5000 units are invoiced at 100 dollars per 1000 units, the line item total is 500 dollars. In this case, the price unit is 1000. This value defaults to 1.
Discount	Discount given by the vendor against the quoted unit price. This field can represent either a discount expressed as a percentage or a hard amount to be subtracted from the quoted unit price. This field needs to be populated if the unit price captured is not the net unit price of any discounts.
Total	Invoice line item total. This field is mandatory.
Category	Miscellaneous charge category applied to the invoice line item based on the extracted line item description.
VAT Rate	Tax percentage rate applied to the invoice line item. If a valid value is captured, this is used by the system in the tax determination routine for countries that do not use tax jurisdictions.

Line Item Field	Description
	During document export, tax rates at line item level are cleaned up (for example, if the total invoice tax amount is zero, then a rate of zero is set for every line item; if the value captured is not between 0 and 100, it is blanked out). Additionally, if automatic tax determination is activated and tax codes are to be determined through a database lookup, the system removes any tax rates that do not correspond to valid percentages listed in the table for the country in which tax applies. To increase extraction of tax rates, valid rates must be specified against the primary and secondary rate parameters in the system tax configuration. The system does not currently have the ability to extract custom vendor tax rate codes at line-item level, then subsequently perform a conversion to an actual percentage rate based on a legend the vendor specifies elsewhere on the invoice.
VAT Amount	VAT amount applied to the invoice line item. This column is also available for a user to enter line level ICMS tax amounts, which are mandatory for multi-line Brazilian Note Fiscal invoices where ICMS tax is being charged and no corresponding line level tax rates have been captured.
Delivery Note	Line item delivery note number. This value is only exported for line items that are not paired. Extraction has been optimized for English language invoices only.

System configuration options allow you to determine when line items are needed for a particular document. The options you can activate and deactivate are as follows.

- Line items are required for any document.
- Line items are required for NO-PO documents.
- Line items are required for credit memos.
- Line items are required for invoices relating to a service purchase order.
- Only the line item total is required for invoices relating to a service purchase order.

- Only the line item total and description are required for invoices relating to a multi-line limits service purchase order.
- Line items are required if the purchase order has not been released.
- Line items are required for the MIRA scenario, which is when there is a one-to-one relationship between invoice and purchase order (that is, the total value of the invoice matches either the total value of the purchase order or the total value of all goods receipts against the purchase order that has not yet been invoiced).
- Line items are required if either the VENDOR NOT FOUND or MISSING/INVALID PO invalid reasons have been selected by the user in Verifier.
- Line items are required if the vendor is a utility vendor.

If line items are not required or if an appropriate invalid reason is set, the line item table is set to valid irrespective of content.

Each line item within the table is subject to the following validation formula.

```
Line Total = Quantity * {( Unit Price – Discount ) / Price Unit }
```

The discount can either be a hard value that is subtracted from the unit price or as a percentage discount from the unit price.

If the invoice relates to a service purchase order, then the above check is skipped if only the line total column is required.

Vendor VAT Registration Number / Bill-To VAT Registration Number

The Vendor VAT Registration Number and Bill-to VAT Registration Number are available to satisfy a European legal/fiscal compliance ruling, which states that if value added tax is to be charged, it is incumbent on the vendor to state their VAT registration number on the invoice. Some countries may also require the VAT registration number of the bill-to party.

Brainware for Invoices is able to carry out this compliance check automatically if VAT compliance checking is activated.

If activated, the system looks for the appropriate VAT registration numbers on the document, and any values found are extracted into their corresponding fields. A valid vendor and company code must be present for this to occur.

If one or both VAT registration numbers cannot be found, tax is being charged, and both the vendor and company code are in EU member states, the document is presented to a user in the Verifier application for them to key in the missing data. For the data to be accepted, both sets of VAT registration numbers must have the same ISO-code country prefix.

The VAT registration number compliance check can be switched on or off on a company code by company code basis. It is also possible to configure the system to require the vendor VAT registration number only. VAT registration number checking is also supported for cross-border EU transactions where the VAT is zero-rated and both registration numbers are required to appear on the document.

ICMS Tax Amount

ICMS tax is a form of sales tax applied to material items in Brazil.

It appears on a Brazilian Nota Fiscal invoice as a standalone tax value that cannot be validated in the same way as regular sales tax because the line item amounts on the invoice are already INCLUSIVE of this tax.

Brainware for Invoices captures the total ICMS tax amount in the ICMS field. The regular AmountTax field is used to capture the IPI tax amount.

A document stops in Verifier if the system believes it to be a Brazilian Nota Fiscal invoice referencing ICMS tax, yet no ICMS tax amount has been read. The user must then double-check whether ICMS tax was present on the invoice.

A captured ICMS tax value, or one entered by the user manually, is validated mathematically by the application under the following circumstances.

- More than one line item is captured from the invoice.
- The ICMS tax value is greater than zero.

If both of these conditions hold true, then the ICMS tax value must equal the sum of the values captured in the VAT Amount column in the table of line items. If no VAT amount at line item level has been extracted, then the system tries to use a captured VAT rate to determine what the VAT amount would have been. If this cannot be done, then the document stops in Verifier for a user either to correct the ICMS tax amount or to enter the line level ICMS tax amounts in the VAT amount column.

At time of export, the ICMS tax amount is added on to the total invoice tax value but is still available separately in its own export field. If line items are relevant for export, the line level unit prices and totals are outputted EXCLUSIVE of ICMS tax. During line pairing, the system assumes that pricing at the purchase order line item level is expressed exclusive of ICMS tax.

Usage of the ICMS tax amount must be activated in the system tax configuration.

Delivery Note

Use this field to capture the vendor delivery note number if stated on the invoice.

Due Date

This field captures the due date for payment.

Delivery Date

This field is used to capture the delivery date for the goods/services as stated on the invoice. You can configure the field to include capture of dates labelled as ship-to dates.

VAT Table

You can use the VAT table in lieu of the single AmountTax field to capture a greater level of tax detail from European VAT invoices.

As well as the VAT amount itself, the table also contains columns to capture the corresponding VAT rate and the corresponding invoice amount that is subject to VAT. The multi-line nature of the table also permits the capture of the details corresponding to multiple rates of VAT on a single invoice.

Each row in the table is validated mathematically to ensure that the taxable amount, the tax rate and the tax amount are in balance. It is also possible to validate that the VAT rate captured is valid for the taxing country as part of the VAT compliance checking.

Use of the VAT table automatically deactivates the AmountTax, AmountSubtotal, ICMS, HST, PST, CGST and SGST fields.

Delivery Notes

This is a table field where multiple delivery notes can be captured and entered.

This table can be used instead on the single delivery note field for projects that require the extraction of multiple delivery notes from a single invoice. Validation and formatting occurs per the options configured for the single delivery note field.

At time of data export, the delivery notes collected in the table are exported as a single value through the standard delivery note header export parameter. The separator used is configurable.

IBAN

The IBAN number represents the international bank account number for invoice payment. It is extracted by the system in conjunction with the BIC or SWIFT code.

If an IBAN number is extracted and the field is activated within the project, the system performs a checksum validation to ensure that the account number was captured correctly. If the number does not pass this validation, the field is marked as invalid and the document is sent to Verifier.

BIC

The BIC or SWIFT code is an internationally assigned code to identify a unique banking institution.

Use this code in conjunction with IBAN numbers to indicate payment details through a bank transfer.

The solution attempts to find a BIC code on the document in conjunction with an IBAN number.

Your Ref

Use this field to capture a reference number specified on the invoice that relates to the party being billed. It can often consist of a contact name, a reference number, or a combination of both.

Alternate Payee

The alternate payee field is a supplementary field to the Vendor ID and represents the party to whom actual invoice payments should be made.

Harmonized Sales Tax

Harmonized Sales Tax (HST) is a type of sales tax adopted by many Canadian states that combines the traditional Goods & Service Tax (GST) and Provincial Sales Tax (PST) into one single tax amount.

The HST can be stated on an invoice on top of GST and PST as a tax in its own right, which means that the system needs to be able to capture all three tax components for the invoice to pass. In this case, the HST amount needs to be extracted into its own field, which requires activating within the system tax configuration.

The HST amount is formatted automatically to use a period/full-stop as the decimal separator and forms part of the mathematical calculation applied to all invoice amounts to ensure correct extraction of the invoice total, taxes and line items.

At time of document export, the tax amount exported is the sum of the regular tax field, the HST and the PST fields, although the HST component is available separately.

Invoice Code CN

The invoice code field is used for domestic VAT invoices in mainland China and refers to the ten digit numeric code that habitually appears in the top left hand corner of the document.

Extraction of this field is optional depending on whether the client wishes to use the system to capture data relevant to the Golden Tax invoices validation process.

Invoice Password CN

The invoice password field is used for domestic VAT invoices in mainland China and refers to the encrypted 4 line coding block that appears in the top right hand quadrant of the invoice document. Configuration options are available to specify permitted lengths and also the special characters that may appear within the coding block.

Extraction of this field is optional depending on whether the client wishes to use the system to capture data relevant to the Golden Tax invoices validation process.

Mexican UUID number

The Mexican UUID is an electronic invoice number provided by the Mexican SAT authorities and appears as standard on electronic documents. It is 36 characters long and must be captured for government reporting purposes. A value is only extracted if the vendor country of origin is Mexico.

Extraction of this field is optional and a standard user exit ‘UserExitMexicanUUIDValidate’ is available to support custom field formatting and validation requirements.

Brazilian CDA

This field is used to capture the Chave De Acesso number that appears on Brazilian Nota Fiscal invoices.

A value is only extracted if the vendor country of origin is Brazil. A checksum 11 operation is performed on all extracted or user-entered values.

Central Goods & Services Tax (CGST)

This field is used to capture the Central Goods & Services Tax (CGST) from domestic invoices in India. The system only attempts to extract the CGST amount from a document if the vendor country of origin is India or the country cannot be identified. A separate field is available to capture State Goods & Services Tax (SGST). Integrated Goods & Services Tax (IGST) is captured in the regular invoice tax amount field. The CGST field is formatted automatically to use a period/full-stop as the decimal separator and forms part of the mathematical calculation applied to all invoice amounts to ensure correct extraction of the invoice total, taxes and line items. At the time of document export, the total invoice tax amount exported is inclusive of the CGST amount, but CGST is available to be exported separately.

State Goods & Services Tax (SGST)

This field is used to capture the State Goods & Services Tax (SGST) from domestic invoices in India. The system only attempts to extract the SGST amount from a document if the vendor country of origin is India or the country cannot be identified. A separate field is available to capture Central Goods & Services Tax (CGST). Integrated Goods & Services Tax (IGST) is captured in the regular invoice tax amount field. The SGST field is formatted automatically to use a period/full-stop as the decimal separator and forms part of the mathematical calculation applied to all invoice amounts to ensure correct extraction of the invoice total, taxes and line items. At the time of document export, the total invoice tax amount exported is inclusive of the SGST amount, but SGST is available to be exported separately.

Payment terms

This field is used to capture the payment terms as stated by the vendor on the invoice.

Project Configuration

Project requirements are configured through the project INI file and Solution Configuration Manager.

These settings overwrite the property settings within the Brainware for Invoices project itself. However, these settings are overwritten by the settings configured within the Brainware Intelligent Capture Runtime Server for the defined project. The solution permits the configuration of the following components.

- Setting up clients and client-specific settings
- Business rules relating to predefined data fields and document scope
- Database connection settings for validations and reporting through the Visibility Reporting Database
- Connection settings to Oracle eBusiness Suite
- Connection settings to SAP R/3, version 4.6c and higher
- Data export settings for non-ERP connections, such as MS SQL or Oracle DB, or file export
- Document archiving and exporting image file formats
- Error messaging, color scheme, and presentation of field data you want to display within Thick Verifier
- Tax code validation and determination

Client Configuration

Brainware for Invoices is a multi-tenanted solution and supports multiple configuration sets within a single installation.

The basic installation creates a single client with a client ID of 0 (zero), and this is the default client the system uses.

Each document that passes through the system is pre-assigned to a client. The client controls the following.

- The overall document flow.
- The fields that are extracted.
- The mandatory and optional fields, and their corresponding validation rules.
- The data sources that are used for field validation.
- How data is exported.

When you configure a Brainware for Invoices client, you must consider how the client is utilized for your business needs. For example,

- If the end user is a BPO, a client can be used to represent a single customer of the BPO or a division of a single customer.
- If you have one user working in multiple regions or with multiple divisions with their own requirements, a client can be used to represent each region or division.
- If you have one user working with multiple ERP systems, each ERP system can be set up as an individual client for the different ERP-system connections and processing rules.

Client settings and properties are contained in the client configuration table within Solution Configuration Manager. Using this table, you can edit an existing client, copy a client, or create a new client.

To create a new client, complete the following steps within Solution Configuration Manager.

1. Select the project to be used.
2. Select **Client Settings** from the **Settings** drop-down. The client configuration table is then displayed.
3. Scroll to the last row in the table where you have the option to create a new entry.
4. Populate **Client ID** with the client ID you would like to use. The ID must be a unique numeric integer.
5. Enter a short description of your client in **Client Name**.
6. Choose the processing profile you wish to assign to the client by selecting the processing profile ID number from the **Processing Profile ID** drop-down.
7. Choose the export profile you wish to assign to the client by selecting the export profile ID number from the **Export Profile ID** drop-down.
8. Choose the instructions profile you wish to assign to the client by selecting the instructions profile ID number from the **Instructions Profile ID** drop-down.

9. Select the **Force Verify** check box if you want all documents belonging to this client to stop in Verifier for a user to review.
10. Enter the client group you want the client to be assigned to in **Client Group**. A client can only be assigned to a single client group. The client group is used to assign users to client documents in the user management table.
11. Select the **Requires Review** check box if you want all documents belonging to this client to be subject to the document supervisor review step.
12. Choose the vendor partition you wish to assign to the client by selecting the vendor partition ID number from the **Vendor Partition** drop-down. Use of vendor partitions must be active in **Global Settings > General Settings** for the selection here to take effect.
13. Choose the employee partition you wish to assign to the client by selecting the employee partition ID number from the **Employee Partition** drop-down. Use of employee partitions must be active in **Global Settings > General Settings** for the selection here to take effect.
14. If you are using a partitioned database table to validate purchase order numbers, choose the purchase order partition you wish to assign to the client by selecting the purchase order partition ID number from the **PO Partition** drop-down. Use of PO partitions must be active in **Processing Settings > PO Number Settings > PO Number Validation** for the selection here to take effect.
15. If you are using a partitioned tax table for VAT type tax code determination during line pairing, choose the tax partition you wish to assign to the client by selecting the tax partition ID number from the **Tax Partition** drop-down. Use of tax partitions must be active in **Processing Settings > Tax Settings > Tax Configuration** for the selection here to take effect.
16. Select a priority indicator to be assigned to client documents by selecting a number from the **Priority** drop-down. A value of 0 indicates the highest level of priority. A value of 9 indicates the lowest level of priority. The default value assigned is 5. Any value outside of the range 0-9 is ignored. Documents set to a high priority appear at the top of the Verifier worklist and receive priority processing from the Runtime Server. If you want to use this feature, you must configure the Runtime Server instances to import documents as batches into the database. The client priority level overrides any priority level set in the Runtime Server instance configuration as long as the **Set Batch Priority From RTS** check box is not selected in **Global Settings > General Settings**.
17. Click the **Insert** hyperlink to save your changes.

Assign documents to a client

Documents must be pre-assigned to clients prior to being captured by the system. You can assign documents using the document filename, a database lookup, or via UserExitAssignClientIDToDocument. If no configuration is in place to assign a client using any of these methods, the document is assigned the default client ID of zero automatically and no error is raised.

Assign a client ID using a document filename

BFI uses a parameter in the image filename to identify the client to which a document must be assigned. Therefore, a client ID must be embedded within the image filename and separated by an underscore.

To assign a client ID using a document filename, complete the following steps.

1. Select the project to be used.
2. Select **Global Settings** from the **Settings** drop-down.

3. Within the **Global Settings** hierarchy tree, navigate to the **Import Settings** node.
4. Enter the filename component in **Client ID**. This should be in the format of COMPONENT1, COMPONENT2, COMPONENT3 and so on.

   Example A document intended for client 2 has a client ID embedded in the filename as follows: 12345_2_20120901.tif. The first component of the filename is 12345, the second component and client identifier is 2, and the third component is 20120901. To tell the system that the client ID is the second component, enter COMPONENT2 in **Client ID**.

   If the client ID does not exist in the filename location specified, or the client ID does not exist within the solution, document processing will fail. If no filename component is specified, the system will use client zero for all documents.
5. Enter the single character delimiter used to separate the filename components in **Separator**. If no value is populated, the system will use an underscore.
6. Save the changes.

Assign a client ID using a database lookup

You can derive the client ID using a database look-up based on either the document filename or the URN component of the document filename. If the client ID database look-up is configured, it will take precedence over any client ID filename mapping configured elsewhere. To assign a client ID using a database lookup, complete the following steps in Solution Configuration Manager.

1. Select the project to be used.
2. Select **Global Settings** from the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **Import Settings** node.
4. Select the **Import Client ID From DB** check box. This then reveals further options.
5. Select the SQL connection group that represents the connection to your client ID look-up database using the **SQL Connection Group** drop-down.
6. If you want to query the client ID look-up table using the document filename (without the filepath and file extension), select **FILENAME** from the **Client Key** drop-down. If you want to use the component of the filename mapped in **URN**, select **URN** from the **Client Key** drop-down.
7. Enter the technical name of the client look-up table in **DB Table Name**.
8. Enter the technical name of the client look-up table column that contains the URN into **DB URN**.
9. Enter the technical name of the client look-up table column that contains the client ID into **DB Client ID**.
10. Save the changes.

Database lookup Client ID Errors

The system displays an error if any of the following conditions occur.

- The client ID look-up table is not mapped or is incorrect.
- The column names for the URN and client ID have not been mapped or are incorrect.
- **Client Key** is set to URN, but no URN has been mapped or a URN does not exist in the filename location specified.
- A connection to the client look-up database cannot be established.
- There is no entry in the look-up table for the document filename or URN.
- There is an entry in the look-up table for the document filename or URN, but the client ID is not populated or is not numeric.
- The client ID read from the table does not exist within the solution.
- There are multiple entries in the look-up table for the same document filename or URN with different client IDs.

Assign a client ID using UserExitAssignClientIDToDocument

You can use **UserExitAssignClientIDToDocument** to apply custom logic for assigning a client ID to a document. This user exit is called each time the solution settings are loaded and a workdoc is available. This is typically during the core platform **Document_PreExtract** event. It is called before the system tries to assign a client ID using the document filename or database look-up.

If a client ID has already been assigned to the document, the user exit is not called.

Within the user exit, you can set the **strClientID** string parameter to the client ID you want to use. The client ID should be an integer that is zero or greater. The system raises an error and document processing fails if the client ID is set to an invalid value. If the **strClientID** parameter is left blank, no error is raised and the system continues to try and determine the client using the document filename or database look-up.

Processing Profile Configuration

A processing profile is a collection of settings that controls the way that a document is processed. It controls what fields are needed, and also how those fields are formatted and validated.

During installation, a single default processing profile is created with a profile ID of zero.

The configuration of this profile can be changed and/or additional processing profiles can be created.

Create a new processing profile

You can create a processing profile that contains all of the validation and formatting settings in the Solution Configuration Manager. This profile can then be shared between multiple clients, enabling validation and formatting behavior for one or more clients with minimal effort. If none of the available profiles are appropriate for a specific client, additional profiles can be created.

To add a new processing profile to your project, complete the following steps in Solution Configuration Manager.

1. Select a project from the list.

An additional **Settings** list is displayed.

2. From the **Settings** list, select **Processing Profile Configuration Settings**. An additional **Profile** list is displayed.
3. Select the profile from the **Profile** list that contains settings that are the closest to those you want in your new profile.

   If you are not sure, select the default profile. An additional **Copy Profile** button will now appear.
4. Click **Copy Profile**.

   A **Copy Profile** window is displayed.
5. Keep the default option for the **Profile ID**.

   This is a unique number and it is easiest if you just accept the one provided as it is the next unique number in the sequence.
6. Enter a short **Profile Name** that is easy to remember.
7. Enter a brief description of the profile in **Profile Description**.
8. Click **Save**.

   Your new processing profile will now be available to select in the **Profile** drop-down.

Profile Groups

A profile group allows you to group together multiple processing profiles under a single group ID. The profile group ID can subsequently be used when configuring applicable solution functionality. For example, you can use a profile group when configuring which vendor invoices should force stop in Verifier. Assigning a profile group means that all invoices from that vendor will stop for all processing profiles belonging to that group.

Define a profile group

To define a profile group, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Global Settings** from the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **Profile Group Definition** node.
4. Scroll down to the last row in the table where you have the option to create a new entry.
5. Populate **Profile Group ID** with the profile group ID you would like to use. The ID must be a unique numeric integer.
6. Enter a short description of your profile group in **Description**.
7. Click **Insert** to save your changes.

Assign processing profiles to a profile group

To assign processing profiles to your profile group, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Global Settings** from the **Settings**.

3. Within the **Global Settings** hierarchy tree, navigate to the **Assign Processing Profiles to Profile Groups** node.
4. Scroll down to the last row in the table where you have the option to create a new entry.
5. Select the relevant profile group from the **Profile Group ID** drop-down.
6. Select the processing profile that you wish to assign to the group from the **Profile ID** drop-down.
7. Click **Insert** to save your changes.

> **Note:** You can add a new row if you want to assign more than one processing profile to a profile group. One processing profile can belong to more than one group.

Field Configuration

Field configuration within Brainware for Invoices is done using the field configuration table. Each processing profile has its own field configuration settings.

Field Settings

The Field Settings section within Solution Configuration Manager allows you to select the fields relevant for the processing profile, and also to configure formatting and validation.

To navigate to Field Settings, complete the following steps in Solution Configuration Manager.

1. Select a project from the list.
   An additional **Settings** list is displayed.
2. From the **Settings** list, select **Processing Profile**. An additional **Profile** list is displayed.
3. Select the processing profile you wish to use.
4. Within the **Processing Profile Configuration Settings** hierarchy tree, navigate to the **Field Settings** node.
   The field configuration table is then displayed.

   The settings within the field configuration table allow you to do the following.
   - Switch fields on and off.
   - Set fields to mandatory or optional.
   - Set default field values.
   - Set different field rules depending on the document classification result.
   - Set a field type, such as date, amount, table, text, and corresponding validation rules.
   - Allocate usage of custom fields.

> **Note:**
> The name of the field is displayed in the FieldName column. This name must not be changed.

Switch fields on and off

Fields that are not active do not appear on the Dynamic Verifier form. If a standard field in the project is not listed in the field configuration table, it is considered inactive. To turn a field on or off, complete the following steps.

1. Locate the row for the field you wish to switch on or off in the field configuration table.
2. To turn a field on, select the **Active** check box.
3. To turn a field off, clear the **Active** check box.
4. Save the changes.

Set fields to mandatory or optional

Whether a field is mandatory or optional is controlled using the **Required In RTS** and **Required In Verifier** check boxes. The following table describes the effect of selecting and clearing these boxes in isolation and in tandem.

Required In RTS	Required In Verifier	Effect
Cleared	Cleared	The field is entirely optional within the project.
Selected	Cleared	If the system does not extract a value into this field automatically, the field is marked invalid and the document is sent to Verifier. The user is permitted to leave a blank value in Verifier.
Selected	Selected	If the system does not extract a value into this field automatically, the field is marked invalid and the document is sent to Verifier. The user must enter a value in Verifier.
Cleared	Selected	This is an optional field within the project.

Apply a country filter

Some fields required by the solution are mandatory or optional depending on the country to which the invoice relates.

For example, the payment reference field needs to stop in Verifier if nothing is extracted when the document is a Danish, Swedish, Finnish or Norwegian invoice, but not when it is from any other country.

The country filter permits a country-specific dimension to determine whether a field is needed or not.

Within the field configuration table, the **Country Filter** column can be populated with a comma-separated list of country ISO-codes. Examples of ISO-codes for the four Nordic countries are DK, SE, FI, and NO.

This means that, if a field is configured as mandatory, and the extracted vendor's country of origin is not specified in the list of countries, the field is permitted to pass as a blank value.

Force a field to require verification

To configure a field so it is always marked invalid and then reviewed by a user in Verifier, complete the following steps.

1. Locate the row for the required field in the field configuration table.
2. Select the **Force Verify** check box.
3. Save the changes.

Label a field in Dynamic Verifier

To control how a field is labeled on the Dynamic Verifier form, complete the following steps.

1. Locate the row for the required field in the field configuration table.
2. Note the Text Element ID that has been assigned to the field in the **Verifier Text ID** column.
3. From the **Settings** drop-down, select **Global Settings**.
4. Within the **Global Settings** hierarchy tree, navigate to the **Field Text Settings** node. This displays the field text table.
5. Within the field text table, navigate to the row that matches the Text Element ID noted in step 2 for the appropriate display language.
6. Change the content of the **Display Text** column to reflect how you would like the field to be labeled.
7. Save the changes.

> **Note:** If no Verifier Text ID is assigned to the field in the field configuration table, or if the text element has no content in the field text table for the Verifier user language, the system will use the text in the **Verifier Label** column in the field configuration table as a default. This can also be changed, if required.

Add a new language for an existing label

To add a new language for an existing label, complete the following steps.

1. Scroll to the bottom of the field text table.
2. Populate the **Text Element ID** column with the appropriate ID.
3. Populate the **Language ID** column with the ISO-Code for the appropriate language, such as 'DE' for German, 'FR' for French.
4. Populate the **Display Text** column with the desired text.
5. Click the **Insert** hyperlink.

Set field default values

There are two default settings for every field, and their usage depends upon how the default should be applied. To set the default values for a field, complete one of the following steps within the field configuration table.

Field default values apply irrespective of whether the field is active or not.

1. To specify a fixed value for a field that overrides any extracted value and any user input in Verifier,

enter the default value in the **Default Value** column.

2. To specify a default value to be used only in the event that the system does not extract anything else automatically, enter the default value in the **Default If Nothing Extracted** column.
3. Save the changes.

Note: Field default values apply irrespective of whether the field is active or not.

Setting field types

The field type governs which of the additional settings in the table affect the validation of the field.

The following are the four field types you can assign to each field.

- Date
- Amount
- Text
- Table

The field type is assigned using the **Field Type** drop-down. The different types, along with their respective configuration options, are described in the following sections.

Configuring date fields

For a 'DATE' type field, any value extracted must be in a legitimate date format in the Gregorian calendar. If it is not, and the system is unable to convert it, then the field is marked as invalid and the document is sent to Verifier.

You can also configure a validity range for a date anchored to the present day; the display format in Verifier; and the format for export.

Date validity range

You can set a field-specific date validity range that extends between a previous date and a future date with respect to the current date. This is controlled using the Future Days and No. Days In Past columns in the field configuration table.

To configure a date validity range, complete the following steps in Solution Configuration Manager.

1. Locate the row for the required date field in the field configuration table.
2. In the **Future Days** column, enter a numerical value that indicates the number of days in the future from the present date that an extracted date is considered valid. For example, if today's date is March 20th and a date is extracted as March 31st, and the value is set to 10, then the system will mark the field invalid as the extracted date is 11 days in the future. If future dates are not permitted, set the value to 0 (zero). To disable the check entirely, set the value to -1.
3. In the **No. Days In Past** column, enter a numerical value that indicates the number of days in the past from the present date that an extracted date is considered valid. For example, if today's date is March 20th and a date is extracted as March 9th, and the value is set to 10, then the system will mark the field invalid as the extracted date is 11 days in the past.

If past dates are not permitted, then this must be set to 0 (zero). To disable the check entirely, the column value must be set to -1.

The validity range only applies to dates extracted automatically. In Verifier, the user is permitted to pass any value as long as it is a date.

4. If you want to force an extracted date to stop in Verifier if the extracted date is not in the current month, select the **Date Only In Current Month** check box.
5. Save the changes.

Date format options

You can configure different display and output formats for date fields. These settings apply globally for all dates within a processing profile.

1. Within the **Processing Settings** hierarchy tree, navigate to the **Date Settings** node.
2. Choose how you want dates to appear in Verifier using the **Verifier Format** drop-down. This setting applies globally to all date fields used by the processing profile.
3. To display the date as MM/DD/YYYY in Verifier, select `MMDDYYYY`. To display the date as DD/MM/YYYY, select `DDMMYYYY`. To display the date as YYYY-MM-DD, select `YYYYMMDD`.
4. Choose the date format you want to use for document export by using the **Export Format** drop-down. This setting applies to all dates for the processing profile.
5. Enter the separator you wish to use for exported dates in **Export Separator**. This may be left blank. This setting applies to all dates for the processing profile.
6. Save the changes.

Configuring amount fields

If the field type is set to 'AMOUNT', the field configuration table provides additional options for formatting amount fields at the time of data export.

To configure amount field export formatting, complete the following steps.

1. Locate the row for the required amount field in the field configuration table.
2. Choose what type of amount the field represents using the **Amount Type** drop-down list. The available options are **TAX**, **MISC** and **OTHER**. If you choose **TAX**, any value extracted into this field is handled internally as a sales tax type amount. If you choose **MISC**, any value extracted is handled internally as a miscellaneous charge. In both cases, the values are included in the standard mathematical validation for amount fields. If you choose **OTHER**, the field is handled as a standalone value. The **Amount Type** option only takes effect for custom fields 1-5.
3. Enter the number of decimal places that should be used for the exported amount field in the **Decimal Places** column. The system will default '2' for the standard amount fields.
4. Choose how you would like negative amounts to be exported using the **Negative Type** drop-down. You can select one of the following integers (0-3).
    - 0 - no special formatting is applied and the amount is exported as extracted.
    - 1 - this formats the amount so that the minus sign appears at the end, such as 100.00-.
    - 2 - this formats the amount so that the minus sign appears at the beginning, such as -

100.00.

- 3 - this formats the amount to appear in parentheses, such as (100.00).

5. If an alternative value needs to be exported if the extracted value is either empty or zero, enter the alternate value in the **Output For Zero** column.
6. If an alternative value needs to be exported if the extracted value is greater than zero, enter the alternate value in the **Substitute Value If Over 0** column.

Amount field cross-validation

Following extraction, the standard amount fields are validated mathematically to check that the invoice is in balance. The calculation applied depends upon whether the VAT table is being used or not.

Amount validation without the VAT table

If the VAT table is not being used, the following calculation is applied.

```
AmountTotal = Sum of LineItems + ( AmountTax + PST + HST + CGST + SGST ) + (
AmountFreightPrepaidAndAdded + AmountMisc ) – AmountDisc – (
AmountWithholdingTax + ISRRetention )
```

If the above calculation fails and line items are not required for the document, the amount fields can still be validated using the calculation below.

```
AmountTotal = AmountSubtotal + ( AmountTax + PST + HST + CGST + SGST ) + (
AmountFreightPrepaidAndAdded + AmountMisc ) – AmountDisc – (
AmountWithholdingTax + ISRRetention )
```

Amount validation with the VAT table

If the VAT table is being used, the following calculation is applied.

```
AmountTotal = ( Sum of tax amount column + sum of taxable amount column ) – (
AmountWithholdingTax + ISRRetention )
```

If line items are required for the document, the following additional calculation is also applied.

```
AmountTotal = Sum of LineItems + ( sum of tax amount column ) + (
AmountFreightPrepaidAndAdded + AmountMisc ) – AmountDisc – (
AmountWithholdingTax + ISRRetention )
```

Deactivating amount field cross-validation

The calculations above are always applied on the server side in order to set the initial validity of the field, but can be switched off in Verifier.

To switch off the mathematical validation in Verifier, complete the following steps in Solution Configuration Manager.

1. Within the **Processing Settings** hierarchy tree, navigate to the **Amount Settings** node.
2. Select the **Deactivate Cross Validation check box.**
3. Save the changes.

Note: We recommend deactivating the check if all fields included in the calculation above are not in scope for the client. Otherwise, a Verifier user is unable to process a document because information needs to be entered or corrected for a field that does not exist on the form.

Configure separators for amount field export

To configure the separators that appear in amounts during export, complete the following steps in Solution Configuration Manager.

1. Within the **Processing Settings** hierarchy tree, navigate to the **Amount Settings** node.
2. Populate the **Export Thousand Separator** and **Export Decimal Separator** fields with the separators you wish to use. The following table displays the effect upon the output of the amount 10,000 if the number of decimal places in the field configuration table is set to 2. These settings apply for all amount fields within a processing profile.

Export Thousand Separator	Export Decimal Separator	Output for a value of TEN THOUSAND to 2 decimals
,	.	10,000.00
.	,	10.000,00
(blank)	.	10000.00
(blank)	(blank)	10000.00
'	.	10'000.00

Configuring text fields

Text fields are fields that can contain numeric and alphanumeric characters. Examples of text fields within the project include the invoice number, the line item description, and the vendor ID.

The field configuration table contains various options you can use to control the formatting and validation of text fields, ranging from setting a minimum and maximum length, the treatment of special characters to setting an input mask.

To configure a text field, complete the following steps in the field configuration table.

1. Locate the row for the required text field.
2. In the **Min Length** column, enter a numeric value that represents the minimum permitted length of the field. Any extracted value or user input below this length is not permitted. If you enter zero, the minimum length check is not carried out.
3. In the **Max Length** column, enter a numeric value that represents the maximum permitted length of the field. Any extracted value or user input that exceeds this length is not permitted. If you enter zero, the maximum length check is not carried out.

4. In the **Pad Char** column, enter the single character you wish to use to pad out the field content to the right until the maximum field length entered in the **Max Length** column is met. For example, if a value of '1234' is extracted or entered into a field where the pad character is '0' and the maximum field length is set to '10', the field content is subsequently formatted to '1234000000'.
5. If you want to have the field value padded by characters added to the left instead of the right, such as 000001234, select the **Right Justify** check box.
6. To remove all special characters from an extracted or user-entered value, select the **Remove All Specials** check box.
7. To specify exceptions to the **Remove All Specials** setting above, enter the special characters you wish to keep in the **Keep Certain Specials** field. You can enter more than one special character here.
8. To remove special characters only from the beginning or the end of an extracted or user-entered value, select the **Remove Start End** check box and ensure that the **Remove All Specials** check box remains cleared.
9. To remove all spaces from an extracted or user-entered value, select the **Remove Blanks** check box.
10. You can trim or take part of an extracted or user-entered value by using the substring functionality. To define the starting point for trimming an extracted value, enter the numeric index of the starting position in the **Substring Start Pos** column where '1' would denote the first character in the string. Now, enter the desired length of the substring in the **Substring Length** column.

    Example If you enter a positive number in the **Substring Start Pos** column, the system will count from the beginning of the string moving rightwards. If you enter a negative number in the **Substring Start Pos** column, the system will count from the end of the string moving leftwards.

    For example, a business requirement states that invoice numbers cannot be more than five characters, but '123456789' has been extracted. With a 'Substring Start Pos' of 1 and a 'Substring Length' of 5, the invoice number is trimmed to '12345'. With a 'Substring Start Position' of -5 and a 'Substring Length' of 5, the invoice number is trimmed to '56789'.
11. To remove any leading zeroes from an extracted or user-entered value, select the **Remove Leading Zeroes** check box.
12. To set a validation field mask, enter a comma-separated list of the field masks you wish to use in the **Field Mask** column. For example, if you enter 'ABCD,WXYZ', then no value is permitted in this field unless it is equal to either ABCD or WXYZ. In case of wildcard characters, a hash symbol (#) is used to represent any number, an 'at' symbol (@) is used to represent any letter, and a question mark (?) is used to represent either a number or a letter. Hence, if you enter '@@-#####', then the system will enforce entry to correspond to two alpha characters followed by a hyphen, then followed by five numeric characters, such as AB-12345.

List of special fields

The following is a list of special fields that have additional configurable validations and extraction influences on top of the options available within the field configuration table.

Fieldname	Additional validations

DocumentType	You can choose to stop all documents where the document type is 'CREDIT' by selecting the **Stop All Credits** check box in Processing Settings > Document Type Settings.
PONumber	You can configure valid purchase order number formats per processing profile via Processing Settings > PO Number Settings > PO Number Formats. The system cannot extract a purchase order number if the format has not been configured. It is also possible to configure purchase order validation against a database or SAP via Processing Settings > PO Number Settings > PO Number Validation.
InvoiceNumber	You can choose to validate the format of an extracted invoice number against a database table of past examples received from the same vendor via Processing Settings > Invoice Number Settings.
BillToName	You can configure valid bill-to name formats per processing profile via Processing Settings > Bill-To Configuration > Bill-To Formats. The system cannot extract a bill-to name if the format has not been configured.
IBAN	Checksum validations are applied.
PaymentReference	Checksum validations are applied for any extracted value if the vendor is from Denmark, Sweden, Finland, or Norway.
VendorID	You can choose to validate an extracted vendor ID against the vendor pool via Processing Settings > Vendor Settings.
Currency	You can choose to validate an extracted currency against SAP or against a database via Processing Settings > Currency Settings. An extended currency validation check is also available. Currencies for extraction are set up globally for the project (independent of the profile) via Global Settings > Currency Settings.
CompanyCode	You can choose to validate an extracted company code against SAP or against a database via Processing Settings > Company Code Settings.
AmountTax / VAT Rate (in the line items table)	You can configure the expected VAT tax rates as a comma-separated list in the **Primary Rates** and **Secondary Rates** fields in Processing Settings > Tax Settings > Tax Configuration. In order to extract a VAT rate in the line items table, the rate must be listed in either of these fields. The primary rates column is intended for the headline rates of VAT in the countries within scope for the profile ID. The secondary rate column is intended for the reduced rate of VAT. It is not necessary to include zero in the list of valid rates. We recommend maintaining this list of values for the benefit of extraction of the invoice tax amount.

Alternate Payee	This field operates in conjunction with the Vendor ID field. You can activate the alternate payee functionality by selecting the **Check For Alternate Payee** check box in Processing Settings > Vendor Settings. The system then tries to identify the party who should receive payment for the invoice as well as the main invoice vendor. Cross-validation between the vendor ID and alternate payee is also activated so that a payee cannot be selected unless it has been assigned as a permitted payee of the main invoice vendor.
HST	For Canadian invoices, you can choose whether you want the HST amount extracted into the dedicated HST field by selecting the **Extract HST Separately** check box in Processing Settings > Tax Settings > Tax Configuration.
PasswordCN	For domestic Chinese VAT invoices, you can specify the valid password lengths and permitted special characters in Processing Settings > Tax Settings > Tax Configuration.
DeliveryDate	You can specify whether you wish to consider the invoice shipping date as a delivery date by selecting the **Delivery Date Includes Ship Date** check box in Processing Settings > Date Settings.
BrazilianCDA	A checksum validation is applied if the vendor is from Brazil.

Working with custom fields

The following custom fields are included with the **<project>.sdp** file and can be set up as per your business needs.

- Custom 1
- Custom 2
- Custom 3
- Custom 4
- Custom 5

This means that for each processing profile, five additional fields are available on top of the standard delivered fields. You can activate and configure these as either a date, an amount, or a text value field. These fields cannot be configured as a table type field. Automatic extraction can be configured for these fields by assigning an extraction profile via the **Extraction Profile** column in the field configuration table. However, any additional configuration within the project file, such as field training or scripting would apply globally across the project for all clients.

Using document classes for special field rules

It is possible to configure the system to use alternative field rules depending on the result of the document classification as it stands prior to extraction.

For example, if a custom child class of the main 'Invoices' class, called 'SpecialVATInvoice' is created and this class requires certain length and formatting rules for the Vendor and Bill-to VAT registration number fields, then two additional rows can be added into the field configuration table for 'VendorVATRegNo' and 'BillToVATRegNo', but with the class name column set to 'SpecialVATInvoice'. The class name column is not case sensitive.

Thus, if a document is classified to 'SpecialVATInvoice', the field rules are lifted from the field configuration table entries for that classname. For other invoices, or for other fields that exist on the 'SpecialVATInvoice' class that do not have special class-specific entries, the system continues to use the entry where the classname is set to 'INVOICES', which is the default setting.

Hence, the logic for loading the settings for each individual field is that the system checks for class specific rules using the document class name in the first instance, then, if none exist, the field settings for the 'INVOICES' class are used.

User Exit For Text Fields

To permit specific formatting and validation coding that cannot be achieved using the regular configuration options, UserExitTextFieldFormatting is available for this purpose within the project file user exit events. For more information, contact your administrator.

Using substitution rules

Within the field configuration table, a text field can be assigned a substitution rule, which permits an extracted text value to be substituted in part, or as a whole, with another value. This works in a similar way to the standard VB replace command. One substitution rule can be assigned per field. Substitution rules take effect only during data export, and so the effects would not be seen within the Verifier application.

To create a substitution rule, complete the following steps in Solution Configuration Manager.

1. Select the project to be used.
2. Select **Global Settings**.
3. Within the **Global Settings** hierarchy tree, navigate to the **Substitution Rules** node. This displays the substitution rule configuration table.
4. Scroll to the last row in the table.
5. Populate the **Substitution Rule** column with the next available unique numeric index. Make a note of this new index as you will need it to assign the substitution rules to your field. The **Original** and **Replace** columns must not be populated for substitution rule 0.
6. Populate the **Original** column with the value you wish to replace. This is case sensitive.
7. Populate the **Replace** column with the value you wish to substitute the original value with.
8. Click the **Insert** hyperlink to add your new entry into the table.
9. From the **Settings** drop-down, select **Processing Settings**.
10. Select the processing profile you want to use.

11. Within the Processing Settings hierarchy tree, navigate to the **Field Settings** node. This displays the field configuration table.
12. Locate the row for the field where you wish to add a substitution rule.
13. Using the **Substitution Rule** drop-down, select the ID of the substitution rule created in step 5.
14. Save the changes.

Dynamic Verifier Form

The Dynamic Verifier form is a form that is displayed to the Verifier user and adjusts automatically to display only those fields which are relevant for the document being processed. Additionally, form texts, dialog boxes, field drop-downs, and error messages are displayed using the language preference of the user.

Activate the Dynamic Verifier form

As a project global setting, if the Dynamic Verifier form is activated, all documents imported into Brainware for Invoices will use the Dynamic Verifier form from that point forward.

To activate the Dynamic Verifier form, complete the following steps in Solution Configuration Manager.

1. Select the project to be used.
2. Select **Global Settings**.
3. Within the **Global Settings** hierarchy tree, navigate to the **General Settings** node.
4. Select the **Use Dynamic Verifier Form** check box.
5. Save the changes.

Change the Dynamic Verifier form field order

The Dynamic Verifier form only displays fields that are activated in the field configuration table for the processing profile. The default order of fields is as follows.

1. InvalidReason
2. VendorID
3. SiteID
4. AlternatePayee
5. DocumentType
6. InvoiceType
7. POType
8. CompanyCode
9. InvoiceNumber
10. InvoiceDate
11. DueDate
12. YourRef
13. DeliveryDate
14. DeliveryNote

15. DeliveryNotes
16. AccountNumber
17. PONumber
18. POExtension
19. PORNumber
20. PORSubscriberNo
21. BillToName
22. VendorVATRegNo
23. BillToVATRegNo
24. EmployeeID
25. PaymentReference
26. BankAccount
27. BankAccountCode
28. IBAN
29. BIC
30. AmountSubtotal
31. AmountFreightPrepaidAndAdded
32. AmountMisc
33. AmountDiscount
34. AmountTax
35. HST
36. PST
37. CGST
38. SGST
39. ICMS
40. AmountWithholdingTax
41. ISRRetention
42. VATTable
43. AmountTotal
44. Currency
45. ExchangeRate
46. LocalVATAmount
47. Custom1
48. Custom2
49. Custom3
50. Custom4
51. Custom5

52. InvoiceCodeCN
53. PasswordCN
54. MexicanUUID
55. BrazilianCDA
56. LineItems

You can change the order of the fields as they appear on the Verifier by using the **Tab Order** column within the field configuration table in Solution Configuration Manager.

For example, if the value in the Tab Order column corresponding to the AlternatePayee field is "40", and there are only three other active fields with a lower tab order value (for example, 10, 22 and 37), the AlternatePayee field will be placed fourth from the top on the form. If there are only two other active fields with a lower tab order value, the AlternatePayee field will be placed third from the top.

Some fields in the list above have supplementary fields that are included on the form automatically, and some fields will not appear on the form unless another field is also present. The relationships are as follows.

- The VendorID field also includes the read-only VendorASSA field, which is used to display the corresponding name and address display.
- The EmployeeID field also includes the read-only EmployeeASSA field, which is used to display the corresponding employee details.
- The AlternatePayee field also includes the read-only AlternatePayeeAddress field, which is used to display the corresponding alternate payee name and address. The VendorID field must also be configured to appear on the form for these fields to appear. Both fields are inserted as a block, where the tab order is set relative to the VendorID field.
- The SiteID only appears on the form if the VendorID field is activated. The SiteID field is placed adjacent to the VendorID field on the form with the tab order set relative to the VendorID field.
- The POExtension only appears on the form if the PONumber field is activated. The POExtension field is placed adjacent to the PONumber field on the form with the tab order set relative to the PONumber field.

When you enter document correction within Verifier, the focus moves automatically to the first invalid field. If you press the Tab key, the focus will move to the next field in the list. Verifier also has a setting "Tab through invalid fields only," which moves the field focus through invalid fields only.

Dynamic Verifier form language translations

Brainware for Invoices contains a dynamic language translation feature for the Verifier application. If the project uses the dynamic language form, you can select the language you want. When the user logs in, the system translates the Verifier user interface to the language selected. This translation includes all field and column labels, dialog box and message boxes, search dialogs, drop-down options for the document type, invoice type, Purchase Order type, invalid reason fields, and standard system error messages. The Verifier language preference is set per user in the **Language Code** column within **Global Settings > User Management**. If no language preference is set, the system defaults to English. Brainware for Invoices includes two language packs for English and Simplified Chinese, but additional translations can be configured

within the solution. The following table lists each type of text element and the corresponding area within Solution Configuration Manager where they can be set.

Text element	Table
Field and Column labels	Field and column labels can be maintained via **Global Settings > Display Text Settings > Field Text Settings**. The field and column labels texts defined here are linked to their corresponding fields in the field configuration table via the **Verifier Text ID** column. If the **Verifier Text ID** column is populated within the field configuration table and a corresponding field text has been maintained in the user language, then this overrides any other label defined in the **Verifier Label** column.
Standard system error messages	System error messages can be maintained via **Global Settings > Error Message Settings**. If no error message is defined for the Verifier language preference, the system by default displays the corresponding message in English. If an English language version of the message is not defined, a generic default error message appears. Each error message is presented to the user suffixed by an error code (for example: CN201). This code is present to facilitate easy cross-referencing to the standard system error message. Standard error messages written to the system export log are in English.
Invalid reason drop-down	Invalid reason texts can be maintained via **Global Settings > Display Text Settings > Invalid Reason Text Settings**. The invalid reason texts defined here are linked to their corresponding invalid reasons via the **Text Element ID** column. The value of this column must correspond to the index of an invalid reason defined in the invalid reason configuration table (Global Settings > Invalid Reasons > Invalid Reason Configuration). If no invalid reason text exists for the Verifier user language preference, the system uses the default text defined in the invalid reason configuration table.
Document Type drop-down	Document type display texts can be maintained via **Global Settings > Display Text Settings >**

Text element	Table
	Document Type Text Settings. The valid values for the **Text Element ID** column are 1 or 2, where 1 indicates an invoice, and 2 indicates a credit memo. The system rejects any other entries.
Invoice Type drop-down	Invoice type display texts can be maintained via **Global Settings > Display Text Settings > Invoice Type Text Settings**. The valid values for the **Text Element ID** column are 1 or 2, where 1 indicates an invoice type of PO, and 2 indicates an invoice type of NO-PO. The system rejects any other entries.
PO Type drop-down	PO type display texts can be maintained via **Global Settings > Display Text Settings > PO Type Text Settings**. The valid values for the **Text Element ID** column are 1 or 2, where 1 indicates a PO type of MATERIAL, and 2 indicates a PO type of SERVICE. The system rejects any other entries.
Classnames, search dialog labels and information dialog labels	Classnames, search and information dialog labels can be maintained via **Global Settings > Display Text Settings > General Text Settings**. If no entry exists for the Verifier language preference, the system uses the entry for English by default.
Information box texts	Information box texts can be maintained via **General Settings > Information Messages > Information Message Settings**. If no entry exists for the Verifier language preference, the system uses the entry for English by default.

User Management

Users are maintained using the User Management table within Solution Configuration Manager. You can use this table to configure the following user attributes.

- The user permissions within Brainware for Invoices.
- The user login authentication for a user using Windows authentication, or supply a static user name and password.
- The client groups a user can access.
- The users that are subject to quality reviews.
- The Verifier user language preference for the dynamic Verifier form.

After you configure the user management table, you can configure a server job to automatically import the table into Brainware for Invoices.

Add a new user

The User Management table is keyed by a unique combination of the user name and the client group to which they are assigned. If a user is assigned to multiple client groups, then multiple rows need to be added into the table. For example, if user JSMITH needs to be assigned to client groups 1 and 2, two rows need to be created for 'JSMITH', one for client group 1 and the other for client group 2.

To add a new user to the user table, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Global Settings**.
3. Within the Global Settings hierarchy tree, navigate to the **User Management** node. This displays the user management table.
4. Scroll down to the end of the table where there is a special row where a new user can be added.
5. Enter the user name in the **User ID** column.
6. Select the client group to be assigned to the user by using the **Client Group** drop-down. If the user is an administrator, then any client group can be selected as the system provides administrators access to all client groups.
7. If you want the user to log in with a user name and password, enter a password in the **Password** column. You can alternately enter an encrypted password in the **Encrypted Password** column, ensuring that the regular **Password** column is left blank. If you want the user to log in using Windows Authentication, leave both columns blank. For more information, refer to the Brainware for Invoices Password Encryption section.
8. If you want users to log in using Windows Authentication, enter the Windows domain information in the **Domain** column.
9. To configure whether verification performed by the user is subject to quality control review, select the **Requires Review** check box.
10. Enter the user group name in the **Primary Group Name** column, such as 'VERIFIERS'. You can enter an existing group name or a new group name, which the system subsequently creates in the background.
11. Choose the permissions you wish to grant the user by selecting a value from the **Authority Level** drop-down. The table below describes the choices available. All users automatically inherit the standard filtering permission ‘FLT’.

Authority Level value	Description
ADM	This is the administrator role that allows a user to manage users, groups, and user-to-group assignments. Administrators install Brainware for Invoices, configure applications, and manage data. They also design and maintain projects. This role is the most powerful of the roles, because it encompasses the permissions for all other authority objects. Administrators have access to all client groups.
SLM	This is the Supervised Learning Manager role that allows a user to define, modify, and maintain the Learnset. This functionality is accessible only through Verifier.
SLV	This is the Supervised Learning Verifier role that allows a user to collect and manage local training data. Supervised Learning Verifiers are subject-matter experts who train Learnset candidates to improve system performance. This functionality is accessible only through Verifier.
VER	This is the Verifier role that allows a user to verify documents that could not be automatically processed. Typically, members of the Verifier group are clerks. This functionality is accessible only through Verifier.
SET	This is the Verifier Settings role that allows a user to change the Brainware for Invoices for Verifier configuration. This role is given to users who are considered to have enough knowledge of the application to make changes that are beneficial to all Verifier users.
AEB	This is the role for a server user required in order to perform automatic import using the import API provided by the Brainware 5.9 core platform.

12. Type the Verifier user language preference into the **LanguageID** column. Enter the two character, standard ISO-code. For example, enter 'EN' for English and 'CN' for Chinese.
13. Click the **Insert** hyperlink to save the changes.

Configure an automatic import job

After the User Management table has been configured, you need to configure an automatic import job to import users into the main Brainware Intelligent Capture database. The automatic import job is configured in the RTS Management Console against the RTS instance that is carrying out document import. To configure an automatic import job, complete the following steps.

1. Open the RTS Management Console.
2. On the **General** tab, complete the following substeps.
    1. Configure the frequency of the system security updates using the drop down options provided. For example, every 2 days, or every 30 minutes.
    2. Configure the user update starting date and time.
    3. Ensure that the Update system security check box is selected.
3. On the **General** tab, click **OK**.

Automatic import job errors

Error messages are located in the Intelligent Capture log file for the RTS instance performing the user import job. An error is displayed and the import fails if any of the following conditions are met.

- An invalid connection string or invalid credentials have been supplied for the Brainware platform database in Global Settings > Database Settings.
- The system is unable to connect to the Brainware platform database.
- The **User ID** column is blank in the user management table.
- The **Client Group** column is blank in the user management table and the user is not an administrator.
- The **Client Group** column in the user management table does not contain a numeric value.
- The **Primary Group Name** column is not populated in the user management table.
- You have not allocated clients to the client group in the client configuration table.
- The user the system is trying to add already exists as a user that was created through the Designer application.

Processing Instructions

Within a BPO operation, it is common for specific processing instructions to be in effect for a particular client.

BFI provides a mechanism by which specific client instructions can be relayed to a Verifier user, which manifests itself as a button on the Dynamic Verifier form adjacent to the **Document Type** field.

Clicking the button, or pressing F2, will display the instructions to a user via a dialog box.

Create instructions for the Dynamic Verifier form

To create a set of processing instructions for the Dynamic Verifier form, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. Select **Instruction Settings** from the drop-down.
3. Choose an existing instructions profile that is to be used as a basis to create your new instructions profile.
4. Click the **Copy Profile** button. A dialog box will appear.
5. Enter the new profile ID. It is recommended to use the one defaulted by the system.
6. Enter a short name for your instructions profile in **Profile Name**.
7. In the **Instructions** field, enter the instructions that you want to be displayed when a user clicks the Instruction button on the Dynamic Verifier form.
8. Click the **Save** button.

Assign instructions to a client

To assign instructions to a client, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. Select **Client Settings** from the drop-down. This will display the client configuration table.
3. Locate the row in the table that relates to the client to which you wish to link an instructions profile.
4. In the **Instructions Profile ID** column, select the instructions profile ID that you wish to assign using the drop-down.

Review States

A second verification step can be turned on or off at either the user or the client level. The purpose of this review step is to allow for additional quality control of either automatic extraction or user entry prior to the export of the document.

All fields are extracted by the system automatically. The document flow is as follows.

Import > OCR > Classification > Extraction > Review > Export

If one or more fields requires user attention, the document flow is as follows.

Import > OCR > Classification > Extraction > Verification > Review > Export

When a document goes to review, it is set to a specific state of 699 by default.

Note:
This state must be accessible only by members of the BPO organization who are authorized to review documents.

When reviewers enter the batch using the Verifier application, they can either make changes to any fields if problems are detected, or if no problems are found, they can press Enter on the first editable field. The document then moves to the regular export.

The before and after values for each field are stored in the Intelligent Capture Visibility reporting database along with the review start and end time, and the ID of the reviewer.

Set a review state

To set a review state, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. Select **Global Settings**.
3. Within the **Global Settings** hierarchy tree, navigate to the **General Settings** node.
4. Set the Review State parameter to `699`.

   Note:
   It is recommended that you use 699 for the parameter, but you can use any values between 650 to 699 or 701 to 749.

5. Save the changes.

Activate document review for a client

You can activate document reviews at the client level to send every processed document for a specific client to the review state prior to data export.

To activate document review for a client, complete the following steps in Solution Configuration Manager.

1. Select the project to be used.
2. Select **Client Settings**. This displays the client configuration table.
3. Locate the row for the relevant client within the table and select the **Requires Review** column check box.
4. Save the changes.

Activate document review for specific users

You can also activate document reviews at the individual user level. If you implement review states for users, then all documents processed by that user are sent for further review, regardless of the setting at the client level.

This can be relevant for operations who would wish documents processed by less-experienced users to be subject to supervisory review until the user becomes more proficient.

To configure user-specific document review, complete the following steps in Solution Configuration Manager.

1. Select the project to be used.
2. Select **Global Settings**.
3. Within the **Global Settings** hierarchy tree, navigate to the **User Management** node.
4. Select the **Requires Review** check box for the relevant user(s).
5. Save the changes.

Visibility Configuration

Brainware Visibility is a reporting tool that provides access to solution performance data using a web interface.

Brainware Visibility is a separate component for Intelligent Capture for Invoices. The tool contains over 40 standard reports that allow process supervisors to do the following.

- Obtain solution key performance metrics.
- Monitor documents as they move through the system.
- Identify solution bottlenecks.
- Report on productivity at the project and client levels.
- Report on user productivity.

The Brainware Visibility portal points to a standard table schema held in a reporting database, which is populated by the Intelligent Capture solution as documents move through the system.

As a prerequisite, the reporting database must already have been created, and the scripts required to create the tables successfully executed before Brainware Visibility is installed and configured.

Configure Visibility reporting

To configure the connection to Visibility reporting, complete the following steps in Solution Configuration Manager.

1. Select the project to be used.
2. Select **Global Settings**.
3. Within the **Global Settings** hierarchy tree, navigate to the **Database Settings** node. This displays the database connection configuration table.
4. Check to see whether the database connection to Visibility already exists. Typically, the connection with Index ID '3' is used by default. You can change the details of this connection if needed. You can also insert a new connection by filling out the last row in the table with the required data and clicking the **Insert** hyperlink.
5. Save any changes made.
6. Within the **Global Settings** hierarchy tree, navigate to the **Reporting Settings** node.
7. Select the **Connect to Reporting DB** check box, which will open up further configuration options.
8. Using the **SQL Connection Group** drop-down, select the connection to the Visibility database as configured in step 4. By default, this is set to '3'.
9. Brainware Intelligent Capture begins the reporting trail for each document upon the initial import of

the document into the system, but if you want reporting to start sooner, such as at scan time, then clear the **StartNewRecordForImportedDocument** check box.

10. Choose the unique ID you want to use for each new document record inserted into the Visibility database using the **Reporting Key** drop-down. If you want to use the original document filename (without the filepath and file extension), then this can be left blank. If you want to use the document URN mapped in Global Settings > Import Settings, then select 'URL' from the drop-down.
11. Optional. If you have created the Visibility tables in the reporting database using a different naming convention, you need to update the **Reporting DB Document Table**, **Reporting DB Field Table**, **Reporting DB History Table**, and **Reporting DB Image Table** fields with the new table names.
12. Optional. Information is not written to a database from any documents processed in the Designer module. However, you can have information written to a database from any document processed in the designer for testing and debugging purposes by selecting the **Reporting In Designer** check box.

    Note:
    In production environments, this check box must always be cleared.

13. Optional. If you want to use the Visibility Reporting database to house an image of the document, select the **Store Image In Reporting Tables** check box.

    Note:
    Only configure this parameter if you are using Visibility reporting for late archiving. In all other cases, Visibility accesses document images from a directory. You need to enter the path to this directory in the **Storage Directory** field so that the system knows where to create a copy of the image for Visibility to use.

14. Optional. To activate line item reporting, select the **Activate Line Item Reporting** check box.
15. Optional. To retrieve a document stored within the Visibility tables using a URL, which is both stored against the record in the reporting database and is also available for export to a downstream system, populate the **Archive URL** field with the retrieval web URL. This could be as per the URL in the example below.

    Example `http://archivesystem.perceptive.com/Page.aspx?URN=XXXXX`

    XXXXX is the point in the URL where the unique document indicator is inserted by the system to retrieve the image.

Document splitting in Visibility

Within the Verifier application, a user has the ability to split a single document image into two or more document images. If the documents are invoices, then one invoice becomes two or more individual invoices. This means that the corresponding number of new records need to be created in Visibility.

The system creates these new records when the user manually reclassifies the new individual documents, which initially have a status of unclassified in the Brainware for Invoices workflow. Before manual reclassification, the user must ensure that all necessary splits have taken place for a given original image file, otherwise orphan Visibility records remain in the database, which would skew processing statistics.

If usage of the document splitting capability is required, and the system is configured to export data using the standard database, CSV or XML methods, or the file is to be archived into the Visibility database, it is not possible to use the URN as mapped to a component of the document filename as the document key for those exports. This is because the URN remains constant for multiple documents, hence database conflicts occur, and export files may overwrite one another.

Brainware for Invoices Password Encryption

Password encryption for database connections is a standard feature in Brainware for Invoices.

When configuring a database connection string, if you are using SQL-based authentication, then you need to include the database user name and password within the connection string, which will subsequently be visible in the project ini file or from within Solution Configuration Manager. Your IT security policy may not permit a plain text password to be visible in this manner, therefore a form of password encryption is required.

Brainware for Invoices uses RSA1024 password encryption. If you are using Brainware Intelligent Capture version 5.9.1 or higher, you can also use RSA3072 to encrypt your passwords.

Generate an encrypted Brainware for Invoices database password

To generate an encrypted Brainware for Invoices database password, complete the following steps.

1. Make sure that the CdrCryptDLL was registered correctly during the Brainware for Invoices installation by running the Register Applications.bat file.
2. In Notepad, open the **Password_Encrypt.bat** file. This .bat file is used for RSA1024 encryption. If you want to encrypt the password using RSA3072, open the **Password_Encrypt_RSA3072.bat** file.
3. The file is comprised of the following components.
    - The location of DstCrypt.exe file, which forms part of the core product installation.
    - The password to be encrypted.
    - The public key used for the encryption. This must not be modified.
    - The location of the output file that contains the encrypted password.
4. Edit the file to reflect the appropriate file paths and the plain text password.

    Note:
    This password must not exceed 30 characters in length if RSA1024 encryption is used. For RSA3072 encryption, the password must not exceed 280 characters in length.

5. Save and run the BAT file.
6. Navigate to the location where the output file was created and open in Notepad. The encrypted string following Text [password] encoded to is the encrypted version of the plain text password.

Note:
The encrypted string may change each time the Password_Encrypt.bat file or the Password_Encrypt_RSA3072.bat file is run, even if the plain text password remains the same. This is normal functionality.

Configure the Brainware for Invoices database to use an encrypted password

To configure the database to use an encrypted password, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. Select **Global Settings**.
3. Within the **Global Settings** hierarchy tree, navigate to the **Database Settings** node.
4. Enter the encrypted password for the appropriate database connection string in the **Encrypted Password** column.
5. If the connection string already contains a password, the password parameter can either be removed, or the password can be deleted within the connection string. If the plain text password is left in the connection string, the system will continue to use it instead of the encrypted password.

Vendor Configuration

Brainware for Invoices uses the Associative Search Engine to determine the vendor ID.

You can point the engine at a source of vendor master data held either within a database table or within a flat CSV file. The engine then imports this data and creates a vendor data pool. At the time of data extraction, the engine looks at the text on the document and performs a fuzzy search to find a matching record within the pool using search criteria that you can configure. The closest matching record is then copied into the vendor ID field ready for validation.

About vendor partitions

Vendor partitions allow you to hold multiple sets of vendor master data all within a single database table or CSV file. This reduces overhead in maintaining multiple data sources. Use of vendor partitions applies globally across all processing profiles.

A vendor partition represents a single set of vendor master data records. A vendor partition also has a unique ID which must be assigned to all vendors that belong to that set, so that the system knows which vendor belongs to which partition.

Hence, within the data source, whether it be a vendor master database table or CSV file, you must include a column to represent the vendor partition ID. This column must be populated for each row within the data source.

The vendor partition is subsequently assigned to a client via the client configuration table so that the system knows which vendor set belongs to which client. Multiple clients may share the same vendor partition.

When the vendor is being determined by the system at runtime, the system only takes into account vendors that belong to the partition assigned to the document client. Within the Verifier application, when the user executes a search, only vendors assigned to that client are included in the results.

If you only have one set of vendor master data then this step can be skipped.

Activate use of vendor partitions

To activate use of vendor partitions, complete the following steps in Solution Configuration Manager.

1. Select the project to be used.
2. Select **Global Settings** from the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **General Settings** node.
4. Select the **Activate Vendor Filtering** check box. This then displays a further setting.
5. Enter the technical name of the database table column or the name of the column in your CSV file that you are using to represent the vendor partition ID in **Vendor Filter Column**.
6. Save the changes.

Create a new vendor partition

To create a new vendor partition, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Global Settings** from the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **Vendor Partitions** node. This then displays the vendor partition configuration table.
4. Scroll down to the last row in the table where you have the option to create a new entry.
5. Enter a unique ID for your vendor partition in **Vendor Partition**.
6. Enter a short description for your partition in **Description**.
7. Click the **Insert** hyperlink to save your changes.

Assign a vendor partition to a client

To assign a vendor partition to a client, complete the following steps in Solution Configuration Manager.

1. Select the project to be used.
2. Select **Client Settings** from the **Settings** drop-down. The client configuration table is then displayed.
3. Locate the row for the client to which you want to assign a vendor partition.
4. Choose the vendor partition you wish to assign to the client by selecting the vendor partition ID number from the **Vendor Partition** drop-down.
5. Save the changes.

Prepare the vendor master data for import

Vendor master data can be imported into the system from a database table or a CSV file.

Brainware for Invoices includes standard database table **BRWVendorMaster** that can be used for this purpose. We advise using this table as it includes all of the columns that the system requires across the solution. It is also easier to manage and saves configuration time as the default vendor settings elsewhere in the solution assume usage of this table.

Vendor master data must be presented in a certain format in order to be accepted by the system.

If you are using a CSV file, each row in the file must use a semi-colon as the column delimiter and each row must have an equal number of columns. The file should also be free of double quotes ("). If the CSV file includes non-Western characters, the file must have an encoding type of UNICODE. The system does not support ANSI or UTF-8 encoding.

It is advisable to include a column label line as the first line in the file. Each individual column label should be meaningful and entered without spaces or special characters. When you later import the file, the system uses the label line to assign a meaningful technical name to each column as opposed to an unhelpful column index. It is also advisable to use the same column labels as **BRWVendorMaster** as this simplifies future configuration steps.

The following is a set of rules that must be followed for each vendor master data set that is included in the vendor master database table or CSV file.

Each row in the table or CSV file must represent a unique vendor at a unique address. Each row must also have a unique identifier. Within **BRWVendorMaster**, the **IndexID** column is used for this purpose.

The unique identifier can simply be the vendor ID if you are not using a vendor partition.

If you are using a vendor partition, the unique identifier must be the vendor partition ID followed by a hyphen and then the vendor ID. The partition ID column must also be populated.

At a minimum, the vendor name and country columns must be populated, but you should try to populate as much information as possible. The country column must be populated using the two character country ISO-code.

The table below shows an example row in **BRWVendorMaster** for a UK-based vendor that belongs to vendor partition 0.

IndexID	PartitionID	ID	Name	Address1	City	State	Zip	Country
0-12345	0	12345	Hyland Software	110 Nottingham Road	Nottingham		NG9 6DQ	GB

The **ID** column is populated with the vendor number for the supervised learning workflow. This number is used as part of the naming convention for custom classes created by the supervised learning workflow feature. If you already have another column that contains the exact same information, you do not need to populate the **ID** column.

The following is a list of additional columns available in **BRWVendorMaster** that you need to populate to make use of Brainware for Invoices standard features.

- If you want to use the VAT compliance check, you must populate the **VATRegNo** column and put an appropriate value in the **EUMember** column for relevant vendors. The value used to denote membership of the European Common VAT Framework is configurable.
- If you want to set a currency based upon the vendor as default, you must populate the **Currency** column.
- If you want to use the automatic tax code determination feature for countries using tax jurisdictions, you must populate the **State** column.
- If you want to configure different behavior for utility vendors in relation to invoice number and line item validation, you must populate the **UtilityFlag** column with an appropriate value for relevant vendors. The value used to denote a utility vendor is configurable.
- If you want to set the invoice type (PO or NO-PO) based on the vendor, you must populate the **InvoiceType** column with appropriate values. The values used to denote a PO or NO-PO vendor are configurable.
- If you want to use the alternate payee functionality, you must enter a comma-separated list of permitted payees into **PermittedPayees** for relevant vendors.
- If you want to extract a bank account number and bank account code, you must enter a colon-separated list of bank accounts in **BankDetails**.
- If you want to process withholding tax for SAP at time of document export, you must enter a colon-separated list of withholding tax codes in **WithholdingTaxDetails**.

For the Associative Search Engine to work effectively, it is essential that the vendor data only consist of third party vendors. Intercompany vendors or company employees set up as vendors must be removed.

Use a site ID and external vendor ID

Some ERP systems such as Oracle Financials and Peoplesoft use a combination of a vendor ID and a site ID to identify a unique vendor at a unique address. If your vendor master is set up in this way, you must provide additional columns in your vendor master data.

If you are using a vendor partition, the unique row identifier for a vendor is constructed as follows.

```
Partition ID + hyphen + Vendor ID + configurable separator + Site ID
```

If you are not using a vendor partition, the unique row identifier is constructed as follows.

```
Vendor ID + configurable separator + Site ID
```

You must also populate the site ID column and the external vendor ID column for each vendor.

The table below shows how to populate BRWVendorMaster correctly for a single vendor with two site locations. In this example, a tilde is used as the configurable separator.

IndexID	Partition ID	ID	SiteID	Name	City	State	Country	ExternalVendorID
0-12345~1000	0	12345	1000	Hyland Software	New York	NY	US	12345
0-12345~2000	0	12345	2000	Hyland Software	Tampa	FL	US	12345

Oracle Financials also has a concept of an internal and external vendor ID. The external ID is the vendor ID that is displayed to the user through the Oracle Financials interface. The internal ID is the vendor ID that the system uses at database level.

If you want the system to populate the BFI Vendor ID field with the external vendor ID, you need to put the external ID in the external vendor ID column. You must continue to use the internal vendor ID within the unique row identifier.

You can use external vendor IDs with or without site IDs. If you do choose to use an external vendor ID, you will not be able to change the vendor in Verifier by typing the number directly into the Vendor ID field and pressing enter. You must use the vendor search feature instead.

The table below shows how to populate BRWVendorMaster correctly for a single vendor with two site locations that uses HYLAND1 as the external vendor ID.

IndexID	Partition ID	ID	SiteID	Name	City	State	Country	ExternalVendorID
0-12345~1000	0	12345	1000	Hyland Software	New York	NY	US	HYLAND1
0-12345~2000	0	12345	2000	Hyland Software	Tampa	FL	US	HYLAND1

The separator that is used between the vendor ID and site ID in the unique row identifier can be configured per processing profile. The default separator is a tilde.

To assign a separator for the site ID, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.

4. Within the **Processing Settings** hierarchy tree, navigate to the **Vendor Settings** node.
5. Enter the separator you want to use in **Alph Num Site Separator**.
6. Save the changes.

Configure the Associative Search Engine

There are multiple ways to configure the Associative Search Engine within Solution Configuration Manager. You can configure the engine to read data from a CSV file, from a database table like BRWVendorMaster or you can use the Remote Matching Service.

Each time you make changes to the configuration settings below, or when you move a project file to an environment that has different Associative Search Engine settings, you must ensure that these new settings are saved permanently within the project file, otherwise, any automatic refresh of the data pool performed by RTS will continue to use the old settings.

To update the settings within the project file, complete the following steps.

1. Using Designer, open the **<project>.sdp** file.
2. Navigate to Definition Mode.
3. Save the project.

Configure the Associative Search Engine to use a CSV file

To configure the Associative Search Engine to use a vendor CSV file, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Global Settings** from the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **ASE Settings** node. The Associative Search Engine configuration table is then displayed.
4. Locate the row for the **VendorASSA** field for the **Invoices** class.
5. Ensure that the **Alpha Numeric** check box is selected.
6. Enter the name of the pool directory in **Pool Directory**.
7. If the pool directory is in the same directory as the BFI project file, select the **Pool Relative** check box. If the pool directory is in another location, enter the UNC path in **Pool Path**.
8. Ensure that the **File Relative** check box is selected. This means that the system will look for the vendor CSV file in the same directory as the BFI project file.
9. Enter the name of the vendor CSV file in **Import File Name**.
10. Select **FILE** from the **Auto Import Option** drop-down.
11. Save the changes.

Configure the Associative Search Engine to use a database

Brainware Intelligent Capture requires a user DSN to be created which reflects a connection to the vendor master database using SQL Server-based authentication. If you are using table BRWVendorMaster, the user DSN must be created for the Brainware for Invoices database.

For more information about creating a user DSN, refer to Windows documentation.

To configure the Associative Search Engine to use a database, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Global Settings** from the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **ASE Settings** node. The Associative Search Engine configuration table is then displayed.
4. Locate the row for the **VendorASSA** field for the **Invoices** class.
5. Ensure that the **Alpha Numeric** check box is selected.
6. Enter the name of the pool directory in **Pool Directory**.
7. If the pool directory is in the same directory as the BFI project file, select the **Pool Relative** check box. If the pool directory is in another location, enter the UNC path in **Pool Path**.
8. Enter the name of the user DSN you created to represent the connection to your vendor master database in **Import ODBC DSN**.
9. Enter the select statement required to retrieve all rows from the vendor master database table in **Import ODBC Select**.
10. Enter the database user name in **Import ODBC User**.
11. Enter the database user password in **Import ODBC Password**. You can leave this blank if you want to use an encrypted password.
12. Enter the database user encrypted password in **Import ODBC Encrypted Password**.
13. Select **ODBC** from the **Auto Import Option** drop-down.
14. Save the changes.

Configure the vendor search to use the Remote Matching Service

The Remote Matching Service can be used instead of a local search using the Associative Search Engine. This approach is recommended for large vendor master data extracts.

To configure the vendor search to use the remote matching service, complete the following steps in Solution Configuration Manager.

Note:
For details on how to obtain the correct URL and connection string, refer to the Remote Matching Service documentation.

1. Select the project you want to use.
2. Select **Global Settings** from the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **ASE Settings** node. The Associative Search Engine configuration table is then displayed.
4. Locate the row for the **VendorASSA** field for the **Invoices** class.
5. Enter the name of the pool directory in **Pool Directory**. The pool directory name must match the corresponding search index used in the Remote Matching Service.

6. Select the **Use RMS** check box.
7. Enter the URL to the Remote Matching Service in **RMS URL**.
8. Enter the connection string to the Remote Matching Service in **RMS Connection String**.
9. Save the changes.

Configure the Associative Search Engine vendor pool

To create the Associative Search Engine vendor pool, complete the following steps using the Designer application. These steps are not required if you are using the Remote Matching Service.

1. Using Designer, open the **<project>.sdp** file and navigate to the **VendorASSA** field on the Invoices class.
2. Display the field settings.
3. If you are using a CSV file for your vendor master data and the CSV file includes a label line, select the **Import field names from first row** check box.
4. On the **Import** tab, click the **Import** button to import the vendor records. If successful, a message will be displayed indicating the number of vendor records imported. If unsuccessful, an error message will be displayed. In the event of an error, close the project file, correct any configuration errors in the Associative Search Engine configuration table and then retry.
5. Once imported, the vendor field list on the **General** tab is then updated based upon what was available in the data source. Each item in the list is named according to the corresponding table column if you imported the data from a database table, or the column label if you imported the data from a CSV file. On the **General** tab, complete the following substeps.
    1. Ensure that the **Used core engine** drop-down is set to **Brainware V3**.
    2. In the **ID** column, click the field that represents the unique row identifier. If you are using **BRWVendorMaster**, this field is called **IndexID**. It is usually the first field in the list.
    3. In the **Filter** column, click the field that represents the vendor partition. If you are using **BRWVendorMaster**, this field is called **PartitionID**.
    4. In the **Search** column, using the check boxes provided, select fields that are strong identifiers for the vendor and are highly likely to appear in the documents you are processing. Strong identifiers include the vendor name, street address, zip code, telephone number and tax numbers. Weak identifiers include the vendor state, the vendor country and any processing flags. These should not be selected.
    5. Enter the field names that represent that vendor name and the vendor number for supervised learning workflow in the format [Name]_[ID] into **Class name** format.
    6. Enter the vendor address display format you want to see in Verifier in **Field contents format**. This is a multi-line field and the first row must be the unique row identifier, which is **IndexID** if you are using BRWVendorMaster. An example format is shown below.

        Example

        ```
        [IndexID]
        [Name]
        [Address1]
        [City]
        [State] [Zip]
        ```

6. Return to the **Import** tab and click the **Import** button to re-import the pool.
7. Save and close the project file.

Map vendor master fields

To complete configuration of the vendor extraction, you need to map the technical names of the columns in the vendor master database table or the column labels in the CSV file to the vendor master fields provided by the solution so that the system understands what each column is intended to represent.

To map columns in the vendor master data to vendor master fields, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Global Settings** from the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **Search Field Mapping** node. This then displays a list of the solution vendor master fields.
4. For each vendor master field displayed, enter the technical name of the corresponding database column, or the corresponding column label used in the CSV file. Entry here is case-sensitive. If no corresponding data is available, the field must be blank.
5. Enter the value that you use within the vendor master data to represent membership of the European Common VAT Framework in **EU Member Alias**.
6. Save the changes.

Work with addresses in non-Western languages

If you are using the thick client Verifier and have vendor addresses that incorporate Cyrillic, Greek or CJKT characters, you must set the desktop locale to use the non-Western language as the language for non-unicode applications. This limits the display to one non-Western alphabet in thick client Verifier at a time.

Multiple non-Western language display is only possible within the thin client Verifier.

Configure vendor validation

Once the Associative Search Engine has selected a vendor, the system then moves on to perform vendor validation.

Vendor validation involves retrieving key address details from the vendor master record and then checking for the existence of those details on the document. The vendor is assigned a score based on the number of address details that match.

The score allocated is calculated as per the table below.

Matching data	Score Added
Zip	10

Matching data	Score Added
Zip + Address1	20
Zip + Name	20
Zip + VAT Reg No	20
Zip + Address1 + Name	30
Zip + VAT Reg No + Name	30
Zip + VAT Reg No + Address1	30
Zip + VAT Reg No + Address1 + Name	40
PO Box Zip + Name	20
PO Box Zip + PO Box	20
PO Box Zip + VAT Reg No	20
PO Box Zip + PO Box + Name	30
PO Box Zip + PO Box + VAT Reg No	30
PO Box Zip + VAT Reg No + Name	30
PO Box Zip + VAT Reg No + Name + PO Box	40
Siret ID	20
Vendor Identifier	20

The system marks the vendor ID as valid if a score of 20 or more is attained and the second best matching vendor does not attain the same score or greater. Otherwise, the field is marked invalid and the document is sent to Verifier for a user to review manually.

To configure vendor validation, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Vendor Settings** node.
5. Select the **Validate From ASSA** check box.

6. If you want to configure a default country to be used if no vendor is identified or the vendor does not have a country assigned, enter the two character ISO-Code for that country in **Default Country**.
7. If you want the system to consider the bill-to address location (if available) when choosing a vendor to extract, select the **Use Bill To Based Vendor Extraction** check box. This is not recommended.
8. If you want to add the vendor score to the vendor candidate weighting during extraction, select the **Refine Vendor Extraction** check box. This is recommended.
9. If you do not want a vendor to be marked valid for a NO-PO document unless the vendor name is explicitly found on the invoice, select the **Check Name For NO-PO** check box.
10. Save the changes.

Configure force verify per vendor

You can configure the system to stop an invoice based upon the extracted vendor ID. You may wish do this if you have certain vendors whose invoices require extra manual checks before they are released downstream.

You can configure invoices to stop for a given vendor on a solution-wide basis, or for a specified processing profile group.

To configure the system to force verification for a given vendor, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Global Settings** from the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **Vendor Force Verify Settings** node. This then displays the vendor force verification table.
4. Scroll down to the last row in the table where you have the option to create a new entry.
5. Select the relevant vendor partition ID from the **Vendor Partition ID** drop-down. If you are not using vendor partitions, select vendor partition 0.
6. Enter the vendor number in **Vendor ID**. If your vendor master data is set up to use external vendor IDs, it is the internal vendor ID you must enter here. You do not need to enter a site ID.
7. Enter the name of the vendor in **Vendor Name**.
8. Clear the **Set as Profile Specific** check box if you want force verify to apply to the vendor globally across all processing profile.
9. If you want force verify to apply to the vendor only for a specific processing profile group, select the **Set as Profile Specific** check box and select the relevant processing profile group using the **Profile Group** drop down.
10. Click **Insert** to save your changes.

PO Number Configuration

Brainware for Invoices is able to extract and validate purchase order numbers that relate to data held in ERP system database tables.

Different ERP systems have different ways of organizing data in their underlying databases, which necessitates an alternative approach to data validation depending on what type of ERP system is being used.

As standard, the following types of purchase order numbers are supported for database validation.

- Standard purchase order numbers (as used by SAP & Oracle e-Business Suite)
- JD Edwards purchase order numbers
- Peoplesoft purchase order numbers
- ERP systems where the database record is keyed from the purchase order number and company code

In order to extract a purchase order number, the expected format or formats must first be configured within the processing profile.

Purchase order number validations are configured per profile ID within PO Number Validation. Purchase order line level configuration that is to be used as part of line pairing is configured per profile ID within Line Pairing Settings. If line pairing is to be used, both the header level validation and the line level validation must be configured within PO Number Validation and Line Pairing Settings.

Purchase order number validation is also configured per processing profile and only one approach to validation can be used within a single processing profile.

The validation process involves performing a look-up to a purchase order header table and a purchase order line item table. If you are using the system to perform line pairing, both the header and the line item validations must be activated. If you are not using the system to perform line pairing, you can choose to validate the purchase order via a look-up to the purchase order header table only.

Configure purchase order number formats

Purchase order number formats can be configured within the PO number format configuration table. Each row in the table represents a single purchase order number format. A processing profile supports one or more purchase order number format, which is represented by multiple rows in the table.

To configure the format of the purchase order number, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **PO Number Formats** node. This then displays the PO number format configuration table. During installation, a single row is created which you can amend or you can create a new entry.
5. Scroll to the last row in the table where you have the option to create a new entry.
6. Populate the **Index** column with the next available sequential number.
7. Enter the simple expression that represents your purchase order number in **Format**. It is recommended to define the format in the tightest manner possible. For example, if customer purchase order numbers always begin with '45' or '55' and are ten digits long, it is better to configure two rows for '45#########' and '55#########' than it is to enter a single format for '##########'.
8. Enter any characters you wish your simple expression to ignore in **Ignore Characters**.
9. Click the **Insert** hyperlink to save the changes.

Configure the maximum number of OCR words

You can also configure the maximum number of OCR words that is permitted within a single purchase order number. To do this, complete the following steps in Solution Configuration Manager.

1. Within the **Processing Settings** hierarchy tree, navigate to the **PO Number Validation** node.
2. Enter the maximum OCR word count in **Max Word Count**. The recommended maximum is 3.
3. Save your changes.

Configure PO number formats for JD Edwards

JD Edwards purchase orders are different from standard purchase orders because the JD Edwards ERP system identifies a purchase order uniquely within the purchase order header table (F4311) using four keys.

The keys are follows.

- PONUMBER
- COMPANYCODE
- POTYPE
- POSUFFIX

On the invoice, the vendor is expected to state the purchase order number and the purchase order type concatenated together.

For example, if the purchase order number is '12345' and the purchase order type is 'OP', '12345OP' will be stated on the invoice. This must be accounted for when configuring purchase order formats. The recommended simple expression to capture the above is '1####OP'. As 'OP' is commonly used within JD Edwards as a standard purchase order type, and is frequently misread as '0P' by the OCR engine, it is also recommended to add '1####0P' as an additional format. If this type of error is detected, the system will correct the value to 'OP' automatically.

The purchase order number and the purchase order type are later split into separate fields during purchase order number validation.

Configure PO number formats for Peoplesoft

The Peoplesoft ERP system uses a double key to identify a purchase order number uniquely within the purchase order header table, PS_PO_HDR. This key consists of the purchase order number and the purchasing business unit.

The Peoplesoft ERP system uses the following unique keys.

- PO_ID
- BUSINESS_UNIT

On the invoice, the system expects the vendor to include the purchase order number and the purchasing business unit concatenated together.

For example, if the purchase order number is '12345' and the purchasing business unit is 'BWARE', either '12345BWARE' or 'BWARE12345' will be stated on the invoice. This must be accounted for when configuring purchase order formats. The recommended simple expressions to capture the above are '1####BWARE' and 'BWARE1####'.

These two values are later split out into separate fields during purchase order number validation.

Configure purchase order number validation

Standard purchase orders are those which can be identified uniquely in the downstream ERP system using the purchase order number alone. In other words, the ERP system purchase order header table has a single key field called Purchase Order Number.

An example purchase order header table structure (with sample data) reflecting this arrangement would be as follows.

PONUMBER	VENDORID	COMPANYCODE	POTYPE	CURRENCY
1928370	100010	GB01	GD	GBP

When a purchase order number is extracted in the purchase order number field, the system can be configured to validate the order against a database, and also to bring back other items of data, such as the vendor ID, the company code, the purchase order type, and the currency.

To configure purchase order number validation using a database, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Global Settings** using the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **Database Settings** node.
4. Create a new SQL connection entry that represents the connection to your purchase order database.
5. Save the changes.
6. Now select **Processing Settings** from the **Settings** drop-down.
7. Select the processing profile you want to use.
8. Within the **Processing Settings** hierarchy tree, navigate to the **PO Number Validation** node.
9. If you want to restrict the extraction of the purchase order number to the first page of the document, select the **Restrict to First Page Only** check box.
10. Click **Validate From DB**.
11. Select the SQL connection group that represents the connection to your purchase order database using the **SQL Connection Group** drop-down.
12. Select the **Keep Case Sensitive** check box if the purchase order header table database is case sensitive.
13. Select the **Use PO Partition** check box if your purchase order header table uses a partition and then enter the technical name of the table partition column in **PO Partition Column**. If selected,

when accessing the PO header table, the system will only look for entries belonging to the partition configured for the client to which the document belongs. The client purchase order partition is configured using the drop-down against the **PO Partition** column in the client configuration table.

14. Enter the technical name of the purchase order header table in **DB Table Name**.
15. To complete the configuration, there are two mandatory columns that must be mapped, the PO number and the vendor ID. If the vendor numbering system also includes a site ID, this must also be mapped. You can add additional columns too. The following sample configuration reflects the purchase order header table structure above.

Setting in PO Number Validation	Value
DB Table Name	PO_HEADER
DB PO	PONUMBER
DB Vendor ID	VENDORID
DB Site ID	
DB Currency	CURRENCY
DB Company Code	COMPANYCODE
DB Payment Terms	
DB Status	
DB Doc Type	POTYPE
DB Business Unit	

16. Select the **Set Company Code From PO** check box if you want the system to overwrite the company code field with the one on the purchase order.
17. Select the **Stop ERS PO** check box if you want purchase orders with one or more line items marked for Evaluated Receipt Settlement to stop in Verifier for user review.
18. Select the **Stop ERS PO In Verifier** check box if you do not want a user to be able to pass a purchase order if one or more line items is marked for Evaluated Receipt Settlement.
19. Select the **Skip Duplicate PO Check** box if you want the system to ignore instances where more than one matching record is found in the purchase order header table for the same purchase order number. It is recommended that this check box be cleared.
20. Save your changes.

Result The system now validates any extracted purchase order against the content of this table. If the purchase order is not present, or if a connection to the table cannot be established, or if the column mapping is incorrect, the system will mark the purchase order number field as invalid, and the document will be sent to Verifier.

JD Edwards purchase order validation

If you are working with JD Edwards purchase orders, additional configuration steps are required to enable purchase order validation. This is because the purchase order header table used by JD Edwards identifies a unique purchase order using four key fields, which are the purchase order number, the purchase order type, the company code and the purchase order suffix.

The purchase order suffix, which is seldom used within JD Edwards, is currently not supported within the BFI solution.

The first step is to configure the system to recognize valid purchase order types so that an extracted purchase order value can be parsed correctly into its two constituent components. If parsing is successful, the purchase order number component will be placed into the BFI 'PONumber' field, and the purchase order type will be placed in the 'POExtension' field. Both of these fields must be activated within the field configuration table.

The second step is to map additional columns for the additional key fields for the purchase order header look-up.

As the company code field forms part of the key for reading the purchase order, it cannot be defaulted from the same purchase order. The strategy to derive the company code must be either to default it based on part of the image filename set during the scanning process in Global Settings > Import Settings, or to use the Associative Search Engine to derive it based on the bill-to details on the invoice. We always recommend the former approach.

To configure the system to handle JD Edwards purchase orders, complete the following additional steps in Solution Configuration Manager.

1. Within the **Processing Settings** hierarchy tree, navigate to the **PO Number Validation** node.
2. Clear the **Set Company Code From PO** check box if it is already selected.
3. Select the **JDE PO** check box. This then reveals an additional setting.
4. Enter the list of expected JD Edwards purchase order document types in **JDE PO Types**. You can enter multiple purchase order document types as a comma-separated list.
5. Enter the technical name of the column in the purchase order header table that represents the company code in **DB Company Code**.
6. Enter the technical name of the column in the purchase order header table that represents the purchase order document type in **DB Doc Type**.
7. Save the changes.

Peoplesoft purchase order validation

If you are working with Peoplesoft purchase orders, additional configuration steps are required to enable purchase order validation. This is because the purchase order header table used by Peoplesoft identifies a unique purchase order using two key fields, which are the purchase order number and the purchasing business unit.

The first step is to configure the system to recognize valid purchasing business units so that an extracted purchase order value can be parsed correctly into its two constituent components. If parsing is successful, the purchase order number component will be placed in the BFI PONumber field, and the purchasing business unit will be placed in the POExtension field. Both of these fields must be activated within the field configuration table.

The second step is to map an additional column for the additional key field for the purchase order header look-up.

To configure the system to handle Peoplesoft purchase orders, complete the following additional steps in Solution Configuration Manager.

1. Within the **Processing Settings** hierarchy tree, navigate to the **PO Number Validation** node.
2. Select the **Peoplesoft PO** check box. This then reveals an additional setting.
3. Enter the list of expected Peoplesoft purchasing business units in **Peoplesoft Business Units**. You can enter multiple business units as a comma-separated list.
4. Enter the technical name of the column in the purchase order header table that represents the purchasing business unit in **DB Business Unit**.
5. Save the changes.

Validation for alternative purchase order number types

Alternative PO number types refer to those where a unique purchase order is identified in the purchase order header table by a combination of the PO number itself and the company code. To configure the system for alternative PO number type validation, complete the following additional steps in Solution Configuration Manager.

1. Within the **Processing Settings** hierarchy tree, navigate to the **PO Number Validation** node.
2. Clear the **Set Company Code From PO** check box if it is already selected.
3. Select the **PO Key Uses Company Code** check box. Enter the list of expected Peoplesoft purchasing business units in **Peoplesoft Business Units**. You can enter multiple business units as a comma-separated list.
4. Enter the technical name of the column in the purchase order header table that represents the company code in **DB Company Code**.
5. Save the changes.

Configure the relationship between the PO and invoice vendor

For purchase order invoices, the invoice vendor is typically driven by what is stated on the purchase order. This means that the extraction result for the vendor ID field must always be set to the purchase order vendor ID and cannot be changed to anything else unless the PO VENDOR <> INVOICE VENDOR invalid reason is selected.

It is possible to configure the system to select the invalid reason automatically if a validated vendor independently determined by the Associative Search Engine appears to be a better fit for the document than the vendor on the purchase order.

It is also possible to decouple the relationship entirely so that the invoice vendor is determined independently, but this is not usually recommended.

If the vendor identifier also includes a site ID, the system will use the highest weighted site ID derived by the Associative Search Engine while continuing to use the vendor number from the purchase order. It is possible to configure the system so that the site ID on the purchase order is always used.

To configure the relationship between the invoice and purchase order vendor, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Vendor Settings** node.
5. Select the **Ignore PO Vendor** check box if you want to decouple the relationship between the invoice and purchase order vendor. This is usually not recommended.
6. Select the **Use ASSA If PO Vendor Invalid** check box if you want the system to use the vendor determined by the Associative Search Engine when the purchase order vendor does not appear to be a good match to the document.
7. Select the **Always Use PO Vendor Site ID** check box if the system must always use the site ID on the purchase order.
8. Save the changes.

Default the purchase order currency

You can configure the system to use the currency of the purchase order as the invoice currency if no other currency has been extracted from the invoice, or has defaulted from the vendor or the currency field settings.

To configure the system to use the PO currency as a default for the invoice currency, complete the following steps within Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Currency Settings** node.
5. Select the **Default PO Currency** check box.
6. Save the changes.

Note: If you have selected the **Default Vendor Currency** check box, a vendor currency will take priority over a PO currency.

Configure the PO type field

The purchase order type field denotes whether the purchase order was raised for material or services. The system uses this information to determine how the document is processed during line pairing and whether line items are required.

When implementing the BFI solution, it is critically important to have a strategy to distinguish material and service purchase orders in order to maximize the success of line pairing, and also to prevent users from being forced to enter line item information in Verifier that will later be discarded.

The purchase order type field defaults to MATERIAL, but standard configuration options are provided to set it to SERVICE based upon the purchase order document type, the purchase order number range, the purchase order line item category, the purchase order line item order quantity unit of measure and the purchase order line item unit price.

To configure the purchase order type field, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **PO Number Validation** node.
5. Enter a comma-separated list of service purchase order types in **Service PO Types**.
6. Enter a comma-separated list of purchase order number range prefixes in **Service PO Prefixes**. For example, if purchase order numbers for service orders always begin with either 42 or 43, you can enter '42,43' into this field.
7. Enter a comma-separated list of purchase order line item categories that are used to denote service line items in **Service PO Item Categories**.
8. Enter a comma-separated list of service units of measure in **Service PO UOMs**. For example 'HR' for hours or 'AU' for activity units.
9. Select the **Check Service Unit Price** check box if you want the system to consider a purchase order line item with a unit price of 1 to be for a service.
10. Save the changes.

Note:
All lines on the purchase order must have either a service item category, a service unit of measure or a unit price of one for the **PO Type** field to be changed to **SERVICE** unless otherwise set by the purchase order document type or purchase order number range.

Configure padding for extracted PO numbers

You can configure the system to pad an extracted purchase order number with leading zeroes so that it matches data held in the purchase order header table. To configure padding for extracted PO numbers, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Field Settings** node. The field configuration table is then displayed.
5. Locate the row for the purchase order number field.
6. Enter the maximum length permitted for the field in **Max Length**.
7. Enter 0 in **Pad Char**.
8. If you want to add leading zeroes from the left, that is 0000012345, select the **Right Justify** check box.
9. Save the changes.

Configure the purchase order line item lookup

You can configure the system to perform a look-up to a purchase order line item table for the following reasons.

- To perform line pairing.
- To assess whether the purchase order type is MATERIAL or SERVICE.
- To determine whether the invoice is a MIRA (that is there is a 1-1 relationship between the net invoice amount and either the total purchase order value or the total value of goods receipt not yet invoiced). You can configure the system to make line item entry optional for a MIRA invoice.

The structure of the purchase order line item database table varies depending on the ERP system. An example purchase order line item database table would be as follows.

PONUMBER*	LINE*	LINETYPE	MATERIAL	DESCRIPTION	ORDER_QTY	ORD_UOM	UNIT_PRICE	PRICE UNIT	ORDER_AMT
1928370	10	GOODS	1234A	Concrete	2000	KG	500.00	1000	1000.00

Note that this table uses the purchase order number and purchase order line item number as the key to identify a unique row. For Peoplesoft and JD Edwards, additional key fields will also be needed, which are the purchasing business unit and the company code/purchase order type respectively.

To configure purchase order line item validation, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Line Pairing Settings** node.
5. Ensure that the **Do Line Pairing** check box is selected.
6. Select the **Get PO Lines from DB** radio button.
7. Select the SQL connection group that represents the connection to your purchase order line items database using the **SQL Connection Group** drop-down.
8. Enter the technical name of the purchase order lines database table in **DB Table Name**.
9. If you are using a purchase order partition, enter the technical name of the column in the purchase order line item table that represents the partition ID in **DB PARTITION ID**.
10. Enter the technical name of the column that represents the purchase order number in **DB PO**.
11. Enter the technical name of the column that represents the purchase order line item number in **DB LINE**.
12. If you are using JD Edwards or alternative purchase orders, enter the technical name of the column that represents the company code in **DB COMPANY CODE**.
13. If you are using JD Edwards, enter the technical name of the column that represents the purchase order document type in **DB ERP PO TYPE**.
14. If you are using Peoplesoft purchase orders, enter the technical name of the column that represents the purchasing business unit in **DB BUSINESS UNIT**.
15. Enter the technical name of the column that represents the line item material number in **DB MATERIAL NO**.
16. Enter the technical name of the column that represents the line item description in **DB DESCRIPTION**.
17. Enter the technical name of the column that represents the line item order quantity in **DB PO QUANTITY**.
18. Enter the technical name of the column that represents the line item unit price in **DB UNIT PRICE**.
19. Enter the technical name of the column that represents the line item total in **DB PO TOTAL**.
20. Enter the technical name of the column that represents the unit of measure for the line item order quantity in **DB UOM**.
21. Enter the technical name of the column that represents the line item price unit in **DB PRICE UNIT**.
22. Enter the technical name of the column that represents the category of line item in **DB ITEM CATEGORY**. The item category is used to help determine whether the line item is for materials or services.
23. Save the changes.

Additional purchase order line item mappings

The following table contains line item fields that may be mapped, and describes the circumstances under which mapping those fields is beneficial.

Column mapping parameter	Description
DB MATERIAL GROUP	This column represents the material group to which the purchase order line item material belongs. If available, it can be mapped simply to pass this data to a downstream system for a paired line item. It is also used in the automatic tax determination procedure if the selection of the correct tax code is driven by the material group of the item.
DB TAX CODE DB TAX JUR CODE	These two columns represent the tax information that was set when the purchase order was originally raised. For countries that do not use tax jurisdictions (that is where tax rates are set by government at the national level such as within the European Union), the tax code tells the ERP system how to handle tax for the line item in terms of the percentage rate of tax to be charged as well as describing whether the item is a service, tax-exempt, or zero-rated because it is, for example, an EU cross-border transaction. The tax jurisdiction code is not used under this circumstance. For countries that do use tax jurisdictions (that is where tax rates are set at a local level such as in the US, Canada, India and Brazil), the tax code tells the ERP system whether the item is fundamentally subject to tax or not. The accompanying tax jurisdiction code, which is the identification number of a specific tax office, represents the actual percentage rate information. These columns need only be mapped if the automatic tax determination feature is being used.
DB PUOM	This column represents the order price unit of measure, which is the unit of measure that is associated with the unit price for the purchase order line item. It may differ from the regular unit of measure

<table>
<tr><th>Column mapping parameter</th><th>Description</th></tr>
<tr><td></td><td>(column DBUOM) which is associated with the order quantity on the purchase order line.

Example:

The client may raise a purchase order for 1000 each (EA) of product A, but the unit price of $10.00 is set per case (CASE).

If there are 10 EA per CASE, then the PO line will appear as follows.
<table>
<tr><th>Description</th><th>Quantity</th><th>UOM</th><th>UnitPrice</th><th>PUOM</th><th>Total</th></tr>
<tr><td>Product A</td><td>1000</td><td>EA</td><td>$10.00</td><td>CASE</td><td>$1000.00</td></tr>
</table>
The PUOM column <u>MUST</u> always be mapped in implementations where instances such as the above are possible within the client's ERP system. Not doing so may cause incorrect invoice quantities to be passed downstream for paired line items.</td></tr>
<tr><td>DB TOTAL QUANTITY DELIVERED

DB TOTAL VALUE DELIVERED

DB TOTAL QUANTITY INVOICED

DB TOTAL VALUE INVOICED</td><td>These four columns provide Brainware for Invoices with purchase order line item history data, so that the system knows exactly what has been invoiced and goods-receipted to date, in terms of both quantities and overall values.

The success rate of the line pairing operation can be higher if this information is available in the purchase order line item table, which may involve creating a view based on the standard line item table, and a separate history table.

Example 1:

An invoice is received for product A with a quantity of 2, a unit price of $10.00 and an overall line total of $20.00.

The corresponding purchase order has two line items, both for product A with the same quantities and pricing.
<table>
<tr><th>Line</th><th>Description</th><th>Order Qty</th><th>Unit Price</th><th>Total</th></tr>
<tr><td>1</td><td>Product A</td><td>2</td><td>$10.00</td><td>$20.00</td></tr>
<tr><td>2</td><td>Product A</td><td>2</td><td>$10.00</td><td>$20.00</td></tr>
</table>
During line pairing, the system would not be able to make a decision between these identical line items if</td></tr>
</table>

<table>
<tr><th>Column mapping parameter</th><th>Description</th></tr>
<tr><td></td><td>
the integrity check is enabled.

However, line item 1 has an open goods receipt against it, whereas there is no goods receipt against line 2. Hence, line 1 is the correct line to choose.

By mapping the additional history columns, it now becomes clear to the system which line to book against as, with this extra information, the lines are no longer identical.
<table>
<tr><th>Line</th><th>Description</th><th>Order Qty</th><th>Unit Price</th><th>Total</th><th>TQD</th><th>TVD</th><th>TQI</th><th>TVI</th></tr>
<tr><td>1</td><td>Product A</td><td>2</td><td>$10</td><td>$20</td><td>2</td><td>$20</td><td>0</td><td>0</td></tr>
<tr><td>2</td><td>Product A</td><td>2</td><td>$10</td><td>$20</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
</table>
In this case, the system books the invoice to line 1.

Example 2:

A second invoice comes in with identical line item detail as the invoice in example 1. As the first invoice has already been booked on the ERP system, the status of the history would have changed as line 1 is not only goods receipted, but fully invoiced as well.

Hence, the purchase order line detail appears as follows.
<table>
<tr><th>Line</th><th>Description</th><th>Order Qty</th><th>Unit Price</th><th>Total</th><th>TQD</th><th>TVD</th><th>TQI</th><th>TVI</th></tr>
<tr><td>1</td><td>Product A</td><td>2</td><td>$10</td><td>$20</td><td>2</td><td>$20</td><td>2</td><td>$20</td></tr>
<tr><td>2</td><td>Product A</td><td>2</td><td>$10</td><td>$20</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
</table>
In this instance, the system is able to see that the first purchase order line is already fully invoiced; hence the invoice line is paired to available PO line item 2.

In example 1 above, the MIRA condition would hold as the net value of the invoice would be equal to the total value of goods receipts not yet invoiced. Hence, by mapping these extra columns, not only would line pairing succeed, but also the user would not be required to validate line item extraction needlessly in Verifier.

Example 2 would also meet the MIRA condition if there was a $20 goods receipt value against line 2, but no invoices booked against it.

If line pairing is configured to ignore any completed purchase order lines, this means that any fully
</td></tr>
</table>

Column mapping parameter	Description
	booked purchase order lines (that is where the total quantity invoiced is greater than or equal to the quantity ordered) are not considered for line pairing under any circumstances. The first PO line in example 2 illustrates this scenario.
DB PLANT	The plant is a code set in the client ERP system that represents the physical location where the purchase order line goods are to be delivered, or where a service is to be performed. For example, it could represent a warehouse or an office building. The plant column can be mapped simply to pass that data to a downstream ERP system for each paired line item, but the system requires the information in either of the following cases. • The invoice includes a miscellaneous charge, and miscellaneous charges are set to be processed as general ledger account entries, where the corresponding coding string is driven by the plant on the purchase order; • The automatic tax code determination feature is being used and the country of the invoice company code cannot be used to determine where the goods were delivered. The specific address details related to each plant code, that is the country and the state, can be read from either a database or SAP.
DB CHARGE CODE DB CHARGE CODEID	These two columns are made available for implementations involving Oracle e-Business Suite where the charge code and charge code ID information needs to be brought into Brainware for Invoices, and then passed back out for each line item where line pairing has succeeded.
DB ERS	This column indicates whether the purchase order line is marked for evaluated receipt settlement. If you wish to stop ERS purchase orders in Verifier, this column must be mapped.

Configure database validations using a stored procedure

By default, the system accesses purchase order header and line item tables using an SQL select call. However, it is possible to use a custom stored procedure instead, which the customer may wish to do for data security purposes. The stored procedure must be written to return a record set in the same way that would have been achieved had a regular SQL select statement been executed. The system can be configured to use a custom stored procedure for both the purchase order header and purchase order line item look-ups.

To configure usage of a stored procedure, you must first create the parameters that need to be passed to the stored procedure so that it knows how to query the purchase order database. At a minimum, a parameter is needed for the purchase order number.

Secondly, the purchase order look-up must be configured to use a stored procedure using those parameters.

Set up stored procedure parameters

Stored procedure parameters are created globally and can be shared between processing profiles.

To create a stored procedure parameter, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Global Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Global Settings** hierarchy tree, navigate to the **Stored Procedure Settings** node. The stored procedure parameter configuration table is then displayed. Each row in the table represents a single stored procedure parameter. The table is populated with three rows of sample data.
5. Populate **Index** with the next available sequential number. The index serves as the unique identifier for a stored procedure parameter that is used to reference that parameter elsewhere in the configuration.
6. Enter the name of the parameter in **Parameter Name**.
7. Choose the type of parameter you want to create by selecting a value from the **Parameter Type** drop-down. The possible values are VARCHAR, INT, DATE, BOOLEAN, DOUBLE and UNKNOWN.
8. If you have selected a parameter type of VARCHAR, enter the permitted length into **Parameter Size**.
9. Enter the value you wish to assign the parameter in **Parameter Value**. You can either enter a hard value or enter the technical name of a Brainware for Invoices field, in which case the parameter will be given the content of that field. The Brainware for Invoices fieldname is case sensitive.
10. Choose the parameter direction by selecting a value from the **Parameter Direction** drop-down. The possible values are 'I' for input and 'O' for output. An input parameter is one that is passed to the stored procedure. An output parameter is one that is received back from the stored procedure.
11. Click the **Insert** hyperlink to save your changes.

Configure the purchase order look-up to use a stored procedure

To configure database validations using a stored procedure, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **PO Number Validation** node.
5. Select the **Used Stored Procedure** check box. Further configuration options are then displayed.
6. Enter the technical name of the stored procedure in **Stored Procedure Name**.
7. Enter the index of the relevant stored procedure parameters as a comma-separated list in **Stored Procedure Parameters**.
8. Save the changes.

Use a stored procedure for the purchase order line item look-up

If you are also using a stored procedure for the purchase order line item look-up, complete the following additional steps in Solution Configuration Manager.

1. Within the **Processing Settings** hierarchy tree, navigate to the **Line Pairing Settings** node.
2. Select the **Used Stored Procedure** check box. Further configuration options are then displayed.
3. Enter the technical name of the stored procedure in **Stored Procedure Name**.
4. Enter the index of the relevant stored procedure parameters as a comma-separated list in **Stored Procedure Parameters**.
5. Save the changes.

Purchase Order Stored Procedures in Oracle

When using an Oracle database, the following format is required for creating stored procedures to retrieve purchase order header data and purchase order line data. This requirement is not necessary when using a different database type, such as SQL Server.

Specifically, the last parameter in the parameter list must use the SYS_REFCURSOR parameter type with direction OUT . Without this, the stored procedure will not work as expected.

Important Do not create this parameter in Solution Configuration Manager > Global Settings > Stored Procedure Settings.

The following code displays an example of the correct syntax:

```
CREATE OR REPLACE PROCEDURE GETPOHEADERDATA (
PO IN VARCHAR2,
PODetails OUT SYS_REFCURSOR)
IS
BEGIN
  OPEN PODetails FOR
```

```
  SELECT ph.PO,
      ph.VENDOR_ID,
      ph.SITE_ID,
      ph.COMPANY_CODE,
      ph.CURRENCY,
      ph.PO_TYPE
  FROM  BW_PO_Header ph
  WHERE  ph.PO = GETPOHEADERDATA.PO;
END GETPOHEADERDATA;
```

UserExitReadPODetails

'UserExitReadPODetails' is available so that a developer may code an alternative approach to retrieve purchase order details (for example, using web services), rather than utilizing the standard functionality. Once retrieved, the details gathered must be populated into the POHeader structure and POLineItems array that form part of the user exit interface.

The user exit interface is as follows.

Import parameter	Type	Description
pWorkdoc	Workdoc object	This is the current workdoc object
POHeader	POHeaderStructure	This is the purchase order header structure that must be populated within the user exit.
POLineItems	POLineItemsStructurearray	This is a 1-based array for the purchase order line items and must be populated if required within the user exit.
POKey	POKey	This contains the details of the purchase order that is to be retrieved.
Client	ClientData	This is the client data object containing details of the document client.
Address	VendorAddress	This is the address structure containing details for the current invoice vendor.
strPOReadError	String	This must be set to an appropriate error message if a technical problem arises during the retrieval of the purchase order details. If a message is set, it stops a document in Verifier and also fails the document export.
blReadPOLines	Boolean	The system sets this flag to 'TRUE' if the retrieval

Import parameter	Type	Description
		of line item information is required for the profile of the current document. This field is read only.
blDuplicatePO	Boolean	This flag must be set to 'TRUE' if multiple records are returned during the retrieval of the purchase order header information.
blExport	Boolean	The system sets this flag to 'TRUE' if the user exit is being called during document export. During validation on the server side or in Verifier, it is set to 'FALSE'. This field is read only.
blPONotFound	Boolean	This flag must be set to 'TRUE' if the purchase order header does not exist in the external data source. It is optional to set it to 'TRUE' if the purchase order header look-up is successful, but the corresponding line items do not exist in the data source.

To activate the user exit, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **PO Number Validation** node.
5. Click **Read PO Header Via User Exit**.
6. Save the changes.

Use the user exit to read purchase order line item data

If you also want to use the user exit to read purchase order line item data, complete the following additional steps within Solution Configuration Manager.

1. Within the **Processing Settings** hierarchy tree, navigate to the **Line Pairing Settings** node.
2. Click **Get PO Lines via User Exit**.
3. Save the changes.

It is not possible to mix and match a custom read of the purchase order header and a standard read of the line item data, or vice versa. If the user exit is used to read the purchase order header, it must also be used to read the line items. User exit import parameter 'blReadPOLines' is set to 'TRUE' if the profile has been configured to read line items, thus notifying the developer that a read of the line item information is needed. If line items are not needed (that is blReadPOLines is set to 'FALSE'), but are retrieved anyway, they are ignored by the system.

The user exit is called when a purchase order number is validated both on server side and also in Verifier. It is also called during document export in order to retrieve the current purchase order details for line pairing. Import parameter 'blExport' provides a means for the developer to distinguish between the two. During validation, it is set to 'FALSE'; during document export, it is set to 'TRUE'.

The key of the purchase order to be retrieved is passed into the function using the the 'POKey' import parameter. The POKey has the following structure.

Structure element	Type	Description
PONUMBER	String	This contains the formatted purchase order number to be queried.
COMPANYCODE	String	This contains the invoice company code. This value is only populated if the company code forms part of the key to identify a unique purchase order.
POEXTENSION	String	This contains the JDE PO document type or Peoplesoft business unit, depending upon whether the profile has been configured for JD Edwards or Peoplesoft PO types respectively. If neither is used, the value is blank.

Within the user exit, the developer must use the details provided by the POKey structure to query the external system. If the processing profile ID is also required, then this is available in the 'ProfileID' component of the Client structure, which is also passed into the user exit.

If the client profile has been configured to use a purchase order data partition, the PO Partition ID is also passed into the user exit via the 'POPartition' component of the Client structure. This must be done in tandem with checking that the profile has been set-up to use partitions for the purchase order data.

For example, DicVal("UsePOPartition", "PON") = "YES"

If a technical error occurs when performing the look-up to the purchase order data source, 'strPOReadError' must be set to an appropriate error message. If this value is set to anything but blank, it has the effect of stopping the purchase order in Verifier with the error displayed in the field error text. During export, if 'strPOReadError' is set to an error message, the export fails and the document is sent to status 750. The error is subsequently written into the export instance log file and also displayed to a user in Verifier against the invoice number field.

If the look-up to the external data source is successful, but the PO cannot be found, the 'blPONotFound' import parameter must be set to 'TRUE'. This stops the document in Verifier with an appropriate error message, but, if this occurs at time of document export, the export as a whole does not fail. It is not recommended to set an error in 'strPOReadError' if the purchase order does not exist in the data source. If the processing profile has been configured to look for multiple purchase orders, this could lead to documents getting stuck needlessly at time of export. 'strPOReadError' must be reserved exclusively for the handling of technical configuration or connectivity issues.

If the purchase order header can be read, but the purchase order line items cannot be retrieved, then flag 'blPONotFound' may be to 'TRUE' if it is appropriate that the document must remain in Verifier until the line items become available. If the flag remains set as 'FALSE', then the purchase order number is accepted during validation, but it is not possible to carry out line pairing during document export. This, however, does not let the document export as a whole to fail.

If multiple records are returned for the purchase order header look-up, indicating that duplicate purchase orders exist in the external data source, parameter 'blDuplicatePO' must be set to 'TRUE'. Doing so activates the standard purchase order duplicate handling functionality as long as it has not been deactivated.

Once the data is retrieved successfully, the components of the POHeader structure and the POLineItems array can be populated. The following table describes the structure of the purchase order header (POHeader), explains which of the components are mandatory and which are optional, and also provides hints for populating each component.

Structure element	Mandatory?	Type	Description
DOCTYPE	No	String	This is the purchase order document type. It must be populated if configuration exists to set the POType field to 'SERVICE' based upon a purchase order document type.
COMPANYCODE	No	String	This is the purchase order company code. This needs to be populated if the processing profile is configured to default a company code based upon the purchase order number look-up.
VENDORID	Yes	String	This is the PO order-from vendor and is a mandatory item to populate. If the field is not populated, then the system raises a configuration error. Hence, the purchase order number field is set to invalid and the document is sent to

Structure element	Mandatory?	Type	Description
			Verifier; if this issue occurs during export, export fails and the document is sent to a 750 state.
SITEID	Yes if the document profile uses a site ID	String	This is the site ID for the purchase order vendor. It is mandatory to populate this component if the profile of the document requires a site ID. If the field is not populated, and a site ID is needed, the system raises a configuration error. Hence, the purchase order number field is set to invalid and the document sent to Verifier; if this issue occurs during export, export fails and the document is sent to a 750 state.
CURR	No	String	This is the purchase order currency. This component must be populated if the processing profile of the document is set to default a currency from the purchase order. The currency must also be populated for line pairing to be carried out.
RELEASEFLAG	No	String	This is the purchase order release flag. If purchase orders in the downstream ERP system are subject to a release strategy

Structure element	Mandatory?	Type	Description
			meaning that the invoice cannot be processed until the purchase order is released, and the purchase order has still not been released, then this field must be populated with a value. Under all other circumstances, it must be left blank. Populating this field with a value has the effect of notifying the Verifier user that the PO has not been released. During export, line pairing is not carried out.
DOCCOND	No	String	This is the ID of the group of SAP condition records that belong to the purchase order.
DIFFINV	No	String	This is the remit-to vendor ID. If an order-from and a remit-to vendor are present on the purchase order, the remit-to vendor takes priority in terms of the vendor that is displayed to the Verifier user and exported.
STATUS	No	String	This is the purchase order document status.
EXRATE	No	Double	This is the exchange rate between the purchase order currency and the local currency of the company code in

Structure element	Mandatory?	Type	Description
			which the purchase order was created. It is expressed as the factor by which the purchase order totals must be multiplied to convert from the PO currency to the company code currency. For example, if the purchase order document currency is 'CNY' and the company code currency is 'GBP', then, assuming that 1 GBP = 10 CNY, the exchange rate must be set to 0.1. For example, 10 CNY (total in PO currency) * 0.1 (exchange rate) = 1 GBP (total in company code currency) It is not mandatory to populate this field, but if the purchase order currency differs from the company code currency and the invoice is presented in the company code currency, then line pairing cannot be performed.
PAYMENTTERMS	No	String	These are the purchase order payment terms. If you want to use the dynamic payment terms selection feature, you must populate this field so that the system is able to compare the payment terms on the purchase order to the terms on the invoice.

The following table describes the structure of the purchase order line items array (POLineItems), explains which of the components are mandatory and which are optional, and also provides hints for populating each component.

Although all but one of the fields are optional, it is recommended to populate as many relevant fields as possible in order to maximize the success of line pairing. The relevant fields that fall into this category are.

- MATERIALNO
- DESCRIPTION
- POQUANTITY
- UOM
- UNITPRICE
- PUOM
- PRICEUNIT
- TOTAL
- TOTALQUANTITYDELIVERED
- TOTALVALUEDELIVERED
- TOTALQUANTITYINVOICED
- TOTALVALUEINVOICED

Structure element	Mandatory?	Type	Description
LINENO	Yes	String	This is the purchase order line item number. This is a mandatory component used to identify a purchase order line item uniquely within the purchase order. The system raises a configuration error if it is left empty. Hence, the purchase order number field is set to invalid and the document sent to Verifier; if this issue occurs during export,

Structure element	Mandatory?	Type	Description
			export fails and the document is sent to a 750 state.
MATERIALNO	No	String	This is the purchase order line item material number.
MATERIALGROUP	No	String	This is the purchase order line item material group.
DESCRIPTION	No	String	This is the purchase order line item description.
POQUANTITY	No	Double	This is the line item order quantity.
UOM	No	String	This is the purchase order line item quantity unit of measure.
UNITPRICE	No	Double	This is the line item unit price.
PUOM	No	String	This is the purchase order line item price unit of measure.
PRICEUNIT	No	String	This is the purchase order line item price unit. If this value is not populated, the default value is '1'.
TOTAL	No	Double	This is the line item order total.
TAXCODE	No	String	This is the purchase order line item tax code. It is recommended to

Structure element	Mandatory?	Type	Description
			populate this field if the automatic tax determination feature is being used.
TAXJURCODE	No	String	This is the purchase order line item tax jurisdiction code, which represents the ID of a tax office relevant to the location where the purchase order item is ultimately to be consumed or used. Tax jurisdiction codes are typically used in the US or any country where the rates of sales/use tax are set in law at the provincial level, as opposed to a fixed rate of sales tax set at the national level (such as VAT within the EU). If relevant for the downstream ERP system, It is recommended to populate this field.
TOTALQUANTITYDELIVERED	No	Double	This is the total quantity already delivered for the purchase order line item.
TOTALVALUEDELIVERED	No	Double	This is the total value of the goods already delivered for the purchase order line item.

Structure element	Mandatory?	Type	Description
TOTALQUANTITYINVOICED	No	Double	This is the total quantity that has already been invoiced for the purchase order line item.
TOTALVALUEINVOICED	No	Double	This is the total value of the goods already invoiced for the purchase order line item.
ITEMCATEGORY	No	String	This is the purchase order line item category. This must be populated if the document processing profile has been set up to determine whether the POType is 'SERVICE' based upon the purchase order line item categories.
PLANT	No	String	This is the ID of the purchase order line item plant (that is where the goods are to be delivered). This must be populated if the automatic tax determination feature is activated as it specifies the ship-to state/country for the purchase order line item.
CHARGECODE	No	String	This is the purchase order line item charge code.
CHARGECODEID	No	String	This is the purchase order line item charge

Structure element	Mandatory?	Type	Description
			code ID.
ERS	No	Boolean	This flag must be set to 'TRUE' if the purchase order line item is marked for ERS (Evaluated Receipt Settlement). If the system has been configured to stop ERS purchase orders, this has the effect of rejecting the invoice to a Verifier user, as, for ERS type purchase orders, no paper invoice is expected as it must be processed electronically as part of an EDI-type transaction.
GRIV	No	Boolean	This is a SAP-specific flag that must be set to 'TRUE' if the purchase order line item has been set up for goods receipt based invoice verification.
SRIV	No	Boolean	This is a SAP-specific flag that must be set to 'TRUE' if the purchase order line item has been set up for service based invoice verification.
MULTIPLEACCOUNT ASSIGNMENT	No	String	This is an indicator as to whether the purchase order line item has been set up

Structure element	Mandatory?	Type	Description
			with a multiple account assignment. It must be left blank if no multiple account assignment exists.
ACCOUNTASSIGNMENT CATEGORY	No	String	This is the purchase order line item account assignment category. It must be populated if the automatic tax determination feature is being used and configuration exists to default a tax code based upon the purchase order line item account assignment category.

A suggested overview of the process flow in the script is as follows

1. Connect to the purchase order header data source and query using the key provided in 'POKey';
2. If any connection or configuration issues arise, set 'strPOReadError' to an appropriate error message and exit;
3. If the purchase order does not exist in the data source, set 'blPONotFound' to 'TRUE' and exit;
4. If multiple purchase order headers are retrieved, set 'blDuplicatePO' to 'TRUE' and exit;
5. Populate the POHeader object;
6. If 'blReadPOLines' is set to 'FALSE', exit at this point;
7. Connect to the purchase order line item data source and query using the key provided in 'POKey';
8. If any connection or configuration issues arise, set 'strPOReadError' to an appropriate error message and exit;
9. If no line item data exists for the purchase order, the 'blPONotFound' flag may be set to 'TRUE', but this is optional depending upon project requirements;
10. Loop around the line items returned and copy the data into the POLineItems array;
11. Exit the subroutine.

If a custom validation is also required within the user exit where the desired behavior is such that the document must stop in Verifier with an error message notifying the user of a problem, but the user may still accept the purchase order, then a new step may be inserted between steps 3 & 4 where the error message is passed via 'strPOReadError' only if 'blExport' is 'FALSE' and 'fnIsVerifier' is also 'FALSE'.

```
If Not blExport And Not fnIsVerifier Then
  ' Report error to user from custom validation
strPOReadError = "Custom validation failed – please check the purchase
order."
End If
```

Use Purchase Order Partitions

Purchase order partitions provide the capability to house multiple sets of purchase order data within a single purchase order header table and a single purchase order line item table. For implementations involving multiple clients with multiple sets of purchase order database tables, the use of purchase order partitions can drastically reduce the administrative effort associated with maintaining so many tables.

The single purchase order header and purchase order line item tables include a partition ID column, which contains an ID that tells the system which rows in the table belong to which client. This ensures that the data for one client is not confused with data belonging to another client.

The steps to create and assign a partition are as follows.

Register the purchase order partition

To register a new purchase order partition, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Global Settings**.
3. Within the **Global Settings** hierarchy tree, navigate to the **PO Number Partition Settings** node. This then displays the purchase order partition configuration table.
4. Scroll to the last row in the table where you have the option to create a new entry.
5. Enter a unique ID for your purchase order partition in **PO Partition ID**.
6. Enter a short description for your purchase order partition in **Description.**
7. Click the **Insert** hyperlink to save the changes.

Assign the purchase order partition to a client

To assign the purchase order partition to the client, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Client Settings**. This then displays the client configuration table.
3. Locate the row for the relevant client within the table.
4. Choose the purchase order partition you wish to assign to the client by selecting a value from the **PO Partition** drop-down.
5. Save the changes.

Activate usage of the purchase order partition

To activate usage of the purchase order partition, complete the following steps.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **PO Number Validation** node.
5. Select the **Use PO Partition** check box. This reveals an additional setting.
6. Enter the technical name of the column in the purchase order header table that represents the partition ID in **PO Partition Column.**
7. Save the changes.

Map the partition ID column for the purchase order line item data

If the client profile is also set to read purchase order line item data, the purchase order line item database column, which represents the partition ID, must also be mapped.

To accomplish this, complete the following steps in Solution Configuration Manager.

Note:
If the purchase order header data is set to use a partition, the system expects that the purchase order line item database table also uses a partition.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Line Pairing Settings** node.
5. Enter the technical name of the column in the purchase order line item table that represents the partition ID in **DB Partition ID.**
6. Save the changes.

Invoice Type Configuration

The invoice type field represents whether the invoice is related to a purchase order or not. The possible field values are **PO** or **NO-PO**. This controls whether the purchase order number and line item fields are mandatory, and how the document is handled at the point of export.

You can configure the system to set an initial value for this field. You can also configure how the system configuration determines the initial value for this field, as well as the circumstances under which the field value can be changed.

The following sections contain three typical example business requirements and the corresponding configuration required.

Business Requirement 1

The business requirement is that the invoices should be processed as NO-PO, unless a purchase order number is found on the document.

To configure the system to meet this business requirement, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Invoice Type Settings** node.
5. Set the default invoice type to NO-PO by selecting **NPO** from the **Default** drop-down.
6. Ensure the **Set By Vendor** check box is cleared.
7. Ensure that **Set By Vendor CoCode Exception** is not populated.
8. Select the **Set To PO If PO Found** check box if you want to set the invoice type field to **PO** if any value is extracted automatically into the purchase order number field.
9. Select the **Set To PO If Valid PO Found** check box if you only want to set the invoice type field to **PO** if a valid purchase order is extracted into the purchase order number field. The **Set To PO If PO Found** check box must not be selected if you decide to use this option.
10. Select the **Set PO If PO Populated** check box if you want to set the invoice type field to **PO** automatically if the user enters a purchase order number in Verifier.
11. Save the changes.

Business Requirement 2

The business requirement is that all invoices must state a purchase order number unless the vendor is permitted to supply invoices without a purchase order and no purchase order number can be found on the invoice.

In preparation for this, you need to have a column in the vendor master data that indicates whether the vendor is permitted to supply NO-PO invoices. If you are using BRWVendorMaster for your vendor master data, the InvoiceType column is provided for this purpose. You need to populate this column with a value that indicates that a NO-PO invoice is allowed for this vendor. This can be any value, but you must remember the value you chose in order to complete the rest of the configuration.

Typically, this field is populated with an item drawn from the ERP vendor master data that can help indicate the expected invoice type. This item could be the vendor industry key, the vendor classification, the vendor account group or whether the vendor has a purchasing view created.

Once you have decided upon which column to use and have populated the column appropriately, you can complete the remaining configuration items. You must remember to reimport the Associative Search Engine vendor pool following any changes to vendor master data.

To complete the configuration, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Global Settings** from the **Settings** drop-down.

3. Within the **Global Settings** hierarchy tree, navigate to the **Search Field Mapping** node.
4. Enter the technical name of the database column in BRWVendorMaster that represents your invoice type in **Invoice Type**. If you are using a CSV file for your vendor master data, enter the appropriate CSV file column name. This is case-sensitive.
5. Save the changes.
6. Select **Processing Settings** from the **Settings** drop-down.
7. Select the processing profile you want to use.
8. Within the **Processing Settings** hierarchy tree, navigate to the **Invoice Type Settings** node.
9. Set the default invoice type to **PO** by selecting **PO** from the **Default** drop-down.
10. Select the **Set By Vendor** check box.
11. Enter a comma-separated list of exception company codes in **Set By Vendor Co Code Exception**. The system does not execute the vendor specific invoice type check for company codes entered into this field. If you only want to execute the vendor specific invoice type check for company codes entered in this field, clear the **Set By Vendor** check box.
12. Enter the value you chose to indicate that a vendor may supply NO-PO invoices into **NPO Value**.
13. If you also chose a value to indicate that a vendor is expected to supply PO invoices, enter this value in **PO Value**.
14. Select the **Set To PO If PO Found** check box.
15. Save the changes.

Business Requirement 3

The business requirement is that the invoice type is determined at the point of scan and passed to the system through a value contained in the document filename.

1. Select the project to be used.
2. Select **Global Settings** from the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **Import Settings** node.
4. Enter the filename component in **Invoice Type**. This must be in the format of COMPONENT1, COMPONENT2, COMPONENT3, and so on.

   Example

   A customer sets up their scanning software to put 'MM' in the image filename if the invoice if it a PO and 'FI' if the invoice is NO-PO. If the document filename is 12345_FI_20120901.tif, the first component of the filename is 12345, the second component is FI, and the third component is 20120901. To tell the system that the invoice type is the second component, enter COMPONENT2 in **Invoice Type**.

5. Save the changes.
6. Select **Processing Settings** from the **Settings** drop-down.
7. Select the processing profile you want to use.
8. Within the **Processing Settings** hierarchy tree, navigate to the **Invoice Type Settings** node.
9. Ensure the **Set By Vendor** check box is cleared and the **Set By Vendor Co Code Exception** field has no content.

10. Enter the value the customer sets at scan time to indicate PO invoice in **PO Value**.
11. Enter the value the customer sets at scan time to indicate a NO-PO invoice in **NPO Value**.
12. Ensure that **Set To PO If PO Found** and **Set To PO If Valid PO Found** are both selected.
13. Save the changes.

Alternate Payees

An alternate payee is the party to which payment should be made that is different from the party that supplied the goods or services.

The Invoice Vendor Identification functionality includes the option of specifying an alternate payee.

For example, if an invoice is processed for vendor 1000, and an alternate payee of 2000 is specified, the invoice is created in the downstream ERP system against vendor 1000, but when the payment run is executed, vendor 2000 is the recipient of the funds.

In an ERP system, the relationship between a vendor and one or more alternate payees is tightly defined in the vendor master data. At the time of invoice entry, a user may only specify an approved alternate payee that has been set up against the invoice vendor. Possible alternate payees for a vendor are known as permitted payees. Alternate payees exist as vendor records within the vendor master data in their own right, but they are typically blocked for direct posting and may have a different account group. The alternate payee field and associated functionality can be activated per processing profile ID.

As the alternate payee is a supplementary field to the vendor ID, the vendor ID must also be an active field.

If you activate the alternate payee in the field configuration table, the **Alternate Payee** field becomes active within the **<project>.sdp** file, and will be available as a supplementary field to the vendor ID on the Dynamic Verifier form. However, the field only functions in relation to settings in the field configuration table, effectively becoming an extra free text field that can be used as necessary. The UserExitAlternatePayeeValidate user exit is also available for any custom validation logic.

If you then, in addition, activate the alternate payee field in the field configuration table and also activate the alternate payee functionality via Processing Profile Settings > Vendor Settings, then the field is available for use and the standard functionality around the field usage is activated. Activating an alternate payee in **Vendor Settings** without activating the field in the field configuration table will have no effect.

Activate the Alternate Payee field

To activate the Alternate Payee field, complete the following steps in Solution Configuration Manager.

1. Select the project to be used.
2. Select **Processing Settings**.
3. Select the Profile ID to be used.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Field Settings** node.
5. Locate the row for the AlternatePayee.
6. Select the **Active** check box.
7. Ensure that the VendorID field is also activated.
8. Save the changes.

Result The steps above only activate the alternate payee field to serve as a supplementary field to the vendor ID on the Dynamic Verifier form. However, the field only functions in accordance with the settings in the field configuration table, effectively becoming an extra free text field that can be used as necessary. The UserExitAlternatePayeeValidate user exit is also available for any custom validation logic.

Alternate payee functionality

If the full alternate payee functionality has been activated, when a vendor is identified, either by the ASE or derived from a purchase order, the system checks to see whether the vendor has any permitted payees assigned. If it does, and one of the permitted payees is identified on the invoice, then this payee is copied into the Alternate Payee field.

If none of the permitted payees appear to match the invoice details, the Alternate Payee field is marked as invalid, and the document is sent to Verifier for review.

Within Verifier, the user has the option to enter an alternate payee or to confirm that no alternate payee is appropriate for the document. A Payee selection button is provided on the Verifier form which invokes a dialog box displaying the permitted payees available for the vendor.

An alternate payee is only accepted by the system as long as it is in the list of permitted payees assigned to the vendor. The vendor record for the alternate payee need not exist in the vendor master extract, but if it does not, then no name and address details are displayed in Verifier. If a payee is entered who is not in the list of permitted payees, the system displays a message, and the content in the Alternate Payee field is removed.

If vendor partitioning is being used, it is not necessary to prefix the list of permitted payees with the partition ID and separator. The system assumes that the permitted payees belong to the same partition as the vendor to which they are assigned. For that reason, it is not possible to have permitted payees spanning multiple partitions.

Configure the full alternate payee functionality

To configure the full alternate payee functionality, complete the following steps in Solution Configuration Manager.

1. Select the project to be used.
2. Select **Processing Settings**.
3. Select the Profile ID to be used.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Vendor Settings** node.
5. Select the **Check for Alternate Payees** check box.
6. Save the changes.

Assign permitted payees to vendors

To assign permitted payees to vendors, complete the following steps.

1. Open the **BRWVendorMaster** table.
2. In the **Permitted Payee** column, enter the permitted payees as a comma-separated list. For example, 2000,4000.
3. Save the changes.

4. Open Solution Configuration Manager.
5. Select the project to be used.
6. Select **Global Settings**.
7. Within the **Global Settings** hierarchy tree, navigate to the **Search Field Mapping** node.
8. Under the **Permitted Payee** parameter, enter the technical name of the database column that contains the permitted payees configured in step 2, such as PermittedPayee.
9. Save the changes.

Dynamic Payment Terms Selection

The invoice payment terms describe the payment arrangement a vendor is prepared to offer for settlement of an invoice. They tell the customer when the payment is due, and may also offer a discount if the invoice is settled early.

Common payment terms include Net 30, which means that the invoice should be settled within 30 days of the invoice date, and 2% 10 days, 30 days net, which means that the invoice should be settled within 30 days of the invoice date, but a 2% discount applies if it is settled within 10 days.

Payment terms can also be found in vendor master data and on a purchase order. These terms usually reflect a general agreement with the vendor as to the nature of the payment arrangement and are the default terms that an ERP system would propose at the time of invoice processing. However, it can be the case that the terms on an individual invoice offer a still more preferential payment arrangement that the customer would wish to take advantage of.

The dynamic payment terms selection feature provides the system with the ability to extract and compare the terms on the invoice with the terms set on the vendor master and purchase order, and then to choose the most favorable terms automatically based on a configurable hierarchy of preference. The preferred payment terms are subsequently exported downstream.

Dynamic payment terms selection process

Within ERP systems, expected payment terms are configured and each term is assigned a code. This code acts as a shorthand way of expressing the detail of the payment arrangement that the ERP system can understand. For example, code 0001 could denote immediate payment, and code 0005 could mean that payment is required within 60 days, but a 5% discount is offered if the invoice is settled within 15 days.

If you are using multiple ERP systems, you can enter or upload multiple sets of payment terms. Each set of payment terms is identified by a payment terms profile ID, which is subsequently assigned to a client so that the system knows which set of payment terms is relevant for which client.

During document processing, the system attempts to extract the payment terms from the invoice into the Payment Terms field. If terms are extracted and payment terms code conversion is activated, the system attempts to identify the corresponding payment terms code using the payment terms configured. If successful, the code is populated into the Payment Terms Code field. You can configure the system to stop the document in Verifier if the extracted terms could not be reconciled to a code. If multiple codes are found, the system automatically selects the code with the highest priority. If all terms have the same priority, the system uses the first code found, but the Payment Terms Code field is set to invalid.

In Verifier, a search facility is provided for a user to select the payment terms code they want to use based on what is available in the payment terms profile. Any user entry is validated against these terms. The user may pass blank if they wish. A Payment Terms Description field is also provided on the form so that the user can see what the payment terms code represents.

At the time of document export, the system compares the priority of the invoice payment terms code with the purchase order payment terms code and the payment terms code on the vendor master, if available. The code with the highest priority is exported. If all codes have the same priority, the content of the Payment Terms Code field will be exported. Any payment terms codes with a priority of zero is not considered. If all codes have a priority of zero, no payment terms code is exported.

If the invoice relates to multiple purchase orders, the system will take the payment terms code from the PO Number field.

If the payment terms code on the purchase order or on the vendor master do not exist in the payment terms configuration table, they are not considered. If no invoice payments terms code is available, or it no longer exists in the payment terms configuration table, the dynamic selection of payment terms step is skipped.

Create a payment terms profile

To create a new payment terms profile, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Global Settings** from the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **Payment Terms Profile Settings** node.
4. Scroll down to the last row in the table where you have the option to create a new entry.
5. Populate **Payment Terms Profile ID** with the payment terms profile ID you would like to use. The ID must be a unique numeric integer.
6. Enter a short description of your payment terms profile in **Profile Description**.
7. Click **Insert** to save your changes.

Assign the payment terms profile to a client

To assign a payment terms profile to a client, complete the following steps in Solution Configuration Manager.

1. Select the project to be used.
2. Select **Client Settings** from the **Settings** drop-down. The client configuration table is then displayed.
3. Locate the row for the client to which you want to assign a payment terms profile.
4. Choose the payment terms profile you wish to assign to the client by selecting the payment terms profile ID number from the **Payment Terms Profile** ID drop-down.
5. Save the changes.

Maintain the payment terms configuration table

Each payment term is defined by two percentage fields and three day limit fields. This provides support for up to two discount percentages being offered within a single payment term.

The following examples show how the fields should be populated.

Example 1: Pay immediately / pay upon receipt.

Days 1	Percentage 1	Days 2	Percentage 2	Days 3
0	0	0	0	0

Example 2: Net 30

Days 1	Percentage 1	Days 2	Percentage 2	Days 3
30	0	0	0	0

Example 3: 2% 10 days, 40 days net

Days 1	Percentage 1	Days 2	Percentage 2	Days 3
10	2	40	0	0

Example 4: 5% 10 days, 2% 20 days, 30 days net

Days 1	Percentage 1	Days 2	Percentage 2	Days 3
10	5	20	2	30

To add a new payment term, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Global Settings** from the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **Payment Terms Configuration** node. The payment terms configuration table is then displayed.
4. Scroll down to the last row in the table where you have the option to create a new entry.
5. Choose the payment terms profile to which the payment terms belong by selecting the payment terms profile ID number from the **Payment Terms Profile ID** drop-down.
6. Enter the payment terms code in **Payment Terms Code**. The code you enter must be unique within the payment terms profile.
7. Enter a short description of the payment terms in **Description**. The description entered here

appears beside the payment terms code on the Verifier form and also in the payment terms search facility.

8. Enter the priority of the payment terms in **Priority**. This should be entered as an integer where 1 represents the highest level of priority. A priority of 0 means that the system will not consider the terms during the dynamic terms selection process.
9. Enter the first period of days in **Days 1**.
10. Enter the first discount percentage in **Percentage 1**.
11. Enter the second period of days in **Days 2**.
12. Enter the second discount percentage in **Percentage 2**.
13. Enter the third period of days in **Days 3**.
14. Click **Insert** to save your changes.

Configure the payment terms code conversion

To configure the conversion of the invoice payment terms to a payment terms code, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Payment Method Settings** node.
5. Select the **Convert Terms To Code** check box.
6. Select the **Stop In Verifier If Cannot Convert Terms** check box if you want to stop the document in Verifier if payment terms are extracted, but they cannot be converted to a code.
7. Select the **Terms Relevant For NO-PO** check box if you want NO-PO invoices to stop in Verifier if the **Stop In Verifier If Cannot Convert Terms** check box is selected, and you want dynamic payment terms selection to apply for NO-PO invoices at time of export.
8. Select the **Terms Relevant For PO** check box if you want PO invoices to stop in Verifier if the **Stop In Verifier If Cannot Convert Terms** check box is selected, and you want dynamic payment terms selection to apply for PO invoices at time of export.
9. Save the changes.

Activate a country for dynamic payment terms processing

Payment terms are activated on a country by country basis, where the country is determined by the invoice company code. For that reason, the company code look-up must be activated for the full payment terms functionality to become available.

If the invoice pertains to a country which is not relevant for payment terms, then the invoice will not stop in Verifier if the extracted payment terms cannot be converted into a code. In addition, the dynamic selection of payment terms will not take place at time of document export.

To activate a country for the payment terms process, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.

2. Select **Global Settings** using the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **Country Settings** node. The country configuration table is then displayed.
4. Locate the row for the country you wish to activate for payment terms processing.
5. Select the **Relevant For Dynamic Terms** check box.
6. Save the changes.

Map the payment terms field from the purchase order header

If you are validating the purchase order using a database look-up, you need to map the payment terms code field on the purchase order header so that system can retrieve the code for the dynamic payment terms selection.

To map the purchase order header payment terms field, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **PO Number Validation** node.
5. Enter the technical name of the purchase order header table in **DB Payment Terms**.
6. Save the changes.

Map the payment terms field on the vendor master

If you are validating the purchase order using a database look-up, you need to map the payment terms code field on the purchase order header so that the system can retrieve the code for the dynamic payment terms selection.

To map the purchase order header payment terms field, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Global Settings** from the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **Search Field Mapping** node. This then displays a list of the solution vendor master fields.
4. In **Payment Terms**, enter the technical name of the corresponding database column, or the corresponding column label used in the CSV file. Entry here is case-sensitive. If no corresponding data is available, the field must be blank.
5. Save the changes.

Activate the dynamic payment terms selection

To configure the dynamic payment terms selection at time of document export, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.

3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Payment Method Settings** node
5. Select the **Enable Dynamic Terms Selection** check box.
6. Save the changes.

VAT Compliance

Brainware for Invoices provides a VAT compliance check to satisfy an EU legal requirement that applies to invoices in scope for value added tax.

This requirement states that if the goods and services being invoiced on the document are within the scope of VAT, the vendor must quote their VAT registration number (the vendor VAT registration number).

In the case of cross-border transactions within the EU where VAT is zero-rated on invoices if both parties are VAT registered, the vendor must also quote the VAT registration number of the party being invoiced (the bill-to VAT registration number). You can configure the system to require both VAT registration numbers on a company code by company code basis.

Also, if VAT is to be charged, the currency of the invoice must be the local currency of the country whose VAT rates are being applied. For example, if a German vendor registered for VAT in the UK sends an invoice charging UK VAT, the invoice currency must be UK pounds sterling (GBP). If the invoice is issued in the local currency of Germany (EUR) then the invoice must quote one of the following.

- The UK pounds sterling equivalent of the VAT amount, such as the local VAT amount.
- The exchange rate at time of invoice issue between UK pounds sterling and Euros.

Brainware for Invoices detects these and requires the user to enter either a local VAT amount or an exchange rate if no value is captured automatically.

If the VAT table is used for capturing the invoice tax amounts, it is also possible to extend the VAT compliance check. This is done to verify that the VAT rates captured within the table are valid for the country where VAT is applied if the total invoice tax amount is greater than zero. The country where VAT is applied is derived firstly from the country code represented by the first two characters of an extracted vendor VAT registration number. If not available, the vendor country of origin is used.

The VAT compliance check is configured per processing profile and can be switched on and off depending on the invoice company code.

Prerequisites for VAT compliance checking are as follows.

- The vendor ID, company code, vendor VAT registration number, bill-to VAT registration number, exchange rate, and local VAT amount fields are all active within the field configuration table for the processing profile. The company code and vendor ID fields must both be mandatory for all documents.
- Vendor master data is available with the vendor country and the vendor VAT registration number or numbers available within the data source. If a vendor has multiple VAT registration numbers, these must be expressed as a comma-separated list.

- The company code look-up has been activated and points to a data source that contains the company code country and VAT registration number(s). If a company code has multiple VAT registration numbers, these should be expressed as a comma-separated list.
- VAT registration numbers held within the company code and vendor data sources must be prefixed by a two character country code.
- The country look-up has been activated and points to a data source that contains the national currency, the current VAT rates and a flag to indicate whether the country is or is not a member of the European VAT framework.

Maintain the country table

The VAT compliance check uses a configurable table of countries which provides the system with details regarding the currency and current VAT rates used by a given country as well as information regarding whether the country is a member of the European Union VAT directive. The country configuration table is pre-populated with data at time of install, but may require periodic updates to reflect changes in national circumstances.

To maintain the country table, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Global Settings** using the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **Country Settings** node. The country configuration table is then displayed.
4. Locate the row for the country you wish to maintain.
5. Select the **EU Tax Member** check box if the country participates in the European Union VAT directive.
6. Enter the official currency used by the country in **Currency**.
7. Enter a comma-separated list of VAT rates used by the country in **VAT Rates**. This must be populated if you wish the system to validate tax rates extracted into the VAT table.
8. Save the changes.

Configure the company code look-up

The VAT compliance check requires a company code look-up in order to retrieve the bill-to VAT registration number or numbers and the company code country of origin. The company code look-up should be performed against a database table populated by the customer.

To configure the company code look-up, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Company Code Settings** node.
5. Click **Validate From DB**. This then reveals further configuration options.
6. Choose the SQL connection group that represents the connection to your company code database by selecting a value from the **SQL Connection Group** drop-down.

7. Enter the technical name of the company code look-up table in **DB Table Name**.
8. Enter the technical name of the column that represents the company code in **DB Company Code**. This column is mandatory.
9. Enter the technical name of the column that represents the company code currency in **DB Currency**. This column is mandatory.
10. Enter the technical name of the column that represents the company code VAT registration number in **DB VAT Reg Nos**. This column is mandatory.
11. Save the changes.

Configure VAT compliance

If the VAT compliance check is activated for the invoice company code, the corresponding system behavior is as follows.

- If tax is being charged on the invoice, the vendor VAT registration number field must be populated. It is possible to configure certain company codes to require both VAT registration numbers. If both are required, they must have the same two character country prefix.
- If no tax is being charged on the invoice, the vendor VAT registration number field and the bill-to VAT registration number fields must be populated if both parties belong to a European VAT framework member country.
- If tax is being charged on the invoice and the invoice currency differs from the national currency of the country where tax is levied, either the Exchange Rate or Local VAT Amount fields must be populated.

The vendor and company code fields must be populated with valid data for the above checks to be carried out.

If the Verifier user is unable to confirm that the invoice is complete from a VAT perspective, they can select NON TAX COMPLIANT from the invalid reason field drop-down to allow the invoice to pass.

The VAT compliance check is not carried out if the user has selected an invalid reason other than NONE, THIRD PARTY FREIGHT, PO VENDOR <> INVOICE VENDOR or STOCK INVOICE.

To configure VAT compliance, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Tax Configuration** node.
5. Select the **Activate VAT Compliance Check** check box.
6. Enter a comma-separated list of company codes that are not relevant for the VAT compliance check in **VAT Check Company Code Exceptions**. If the **Activate VAT Compliance Check** check box is cleared, the compliance check will only be executed for company codes listed in this field.
7. Select the **Vendor VAT Check Only** check box. If tax is being charged on the document, the vendor VAT registration number field will become mandatory. The bill-to VAT registration number field will remain optional.

8. Enter a comma-separated list of company codes where both the vendor VAT registration number and bill-to VAT registration numbers are required if tax is being charged on the invoice in **Vendor VAT Check Company Code Exceptions**. If the **Vendor VAT Check Only** check box is cleared, then the vendor VAT registration number and bill-to VAT registration number fields will become mandatory if tax is being charged for all company codes except the ones listed in this field.
9. Select the **Check VAT Cross Border** check box. If no tax is being charged on the document, but both the vendor and company code belong to countries that are members of the European VAT framework, the vendor VAT registration number and bill-to VAT registration number fields will become mandatory.
10. Enter a comma-separated list of company codes not relevant for the cross border VAT check in **Cross Border Company Code Exceptions**. If the **Check VAT Cross Border** check box is cleared, the system will carry out the cross border VAT check only for company codes listed in this field.
11. Select the **Extract Tax Into VAT Table** check box if you want to extract the invoice tax into the VAT table. The VAT table must be active in the field configuration table. This is appropriate for a processing profile that is processing European invoices only.
12. Select the **Check VAT Rates** check box if you want the system to check that any VAT rates extracted into the VAT table are relevant for the country where tax is being charged.
13. Save the changes.

VAT compliance for non-EU countries

You can extend the check for vendor and bill-to tax registration numbers to include non-EU countries through the use of non-EU tax groups.

A non-EU tax group represents an independent system of invoice compliance checking used in other countries that is separate from that used within the European Union. You can assign the group to one or more countries in the country configuration table. For example, if you wanted the system to check for GST registration numbers on domestic invoices within India, you can create a non-EU tax group TAXINDIA and assign this group to India in the country configuration table.

When processing an invoice, if the VAT compliance check is activated for the invoice company code and the vendor and company code are both located in India, the system will look for the vendor and bill-to GST numbers on the document, and will stop the invoice if they are not found. If you then assign non-EU tax group TAXINDIA to a second country, then the system will extend the compliance check to that country and also to invoices concerning transactions between that country and India, as would be the case between two EU member states.

To assign a country to a non-EU tax group, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Global Settings** using the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **Country Settings** node. The country configuration table is displayed.
4. Locate the row for the country you wish to maintain.
5. Enter the name of the non-EU tax group you want to assign to the country in **Non EU Tax Group**.

You can use any name you want to.

6. Save the changes.

Result

The non-EU compliance check applies only to the vendor and bill-to tax registration numbers. It does not include the check for foreign currency or VAT rates in the VAT table.A country cannot be an EU tax member and also belong to a non-EU tax group. If a country is erroneously designated as both, the EU tax member flag takes priority.

Tax compliance for India

In addition to checking for the presence of tax registration numbers on the invoice, India has tax compliance requirements as well. A valid tax invoice must include the following information:

- The PAN number
- The invoice total amount in words
- The HSN code
- The place of supply
- The state code of the place of supply
- Document must contain the words TAX INVOICE.
- Document must contain the words ORIGINAL FOR RECIPIENT or a variation of the same.

You can configure the solution to check for these items of information on domestic invoices from India. If activated, seven fields representing these items appear on the dynamic Verifier form. You do not need to activate them separately in the field configuration table. The additional compliance checking occurs if tax is charged on the invoice, and the vendor and company code countries are both set to IN for India. If any of the seven items cannot be found, the document stops in Verifier for a user to perform the check manually. The user can confirm the presence of each field by entering text into the field input box. The NON TAX COMPLIANT invalid reason can be selected to allow the document to pass if any of the seven fields were not stated on the document.

To configure tax compliance for India, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Tax Configuration** node.
5. Select the **Enable India Tax Compliance** check box.
6. Save the changes.

Golden Tax

Golden Tax is the name given to a government project in mainline China aimed at providing an integrated, nationwide VAT monitoring system. As such, when a VAT invoice is generated by a vendor, it is done so via government-certified Golden Tax software so that the VAT aspect of the invoice is recorded and monitored centrally. All companies and individuals are required by law to raise domestic VAT invoices in this manner.

When an invoice is received by a buyer, key details stated on the invoice are validated against the central Golden Tax database to confirm that the invoice is genuine. Only invoices that validate against this central database may be included in a company VAT return for which a VAT refund from the government may be due. Hence, it is in the buyer's interest to ensure that only Golden Tax-certified invoices are being processed.

Use BFI with Golden Tax

BFI has the ability to extract the relevant details from standard, domestic Chinese VAT invoices that are required for the purposes of the Golden Tax validation process. These details can subsequently be included in a standard export, such as XML, database export or CSV file export, and passed to the relevant systems downstream.

The relevant fields are as follows.

- Invoice code
- Invoice password
- Invoice number
- Invoice date
- Invoice total amount
- Invoice tax amount
- Bill-to VAT registration number
- Vendor VAT registration number

Invoices relevant for the Golden Tax process are identified using classification. That is, they are classified initially to the 'Invoice_CN' class, before being returned up to the parent 'Invoices' class. It is also possible to classify documents manually into the 'Invoice_CN' class, or to re-classify invoices back to the 'Generic' class in the event of a misclassification.

In the field configuration table, it is possible to specify whether a field is needed or not needed based upon the initial document class, hence the Golden Tax specific fields and corresponding validation rules which are particular to domestic VAT invoices can be configured as separate entries in the field configuration table relating exclusively to the 'Invoice_CN' class.

Class-specific rules are configured via specifying the initial classname in the 'Class Name' column in the field configuration table. Hence, if a class-specific rule exists, two rows can exist in the field configuration table for the same field - one for the regular 'Invoices' class, and one for the specific class. When reading the field

configuration table, the system initially looks for a class-specific entry. If one exists, it will be used; if a class-specific entry does not exist, the entry for the 'Invoices' class will be used. If none exist, the field is considered inactive and not relevant for the processing profile ID.

Typically, the invoice number, date, total amount and tax are already mandatory fields for any BFI project, but, via configuration, the additional fields, namely invoice code, invoice password, the bill-to VAT registration number and the vendor VAT registration number can all be made mandatory with the relevant formatting and validation rules added. The system attempts to extract all of these field automatically for documents classified to the 'Invoice_CN' class.

Special configuration for the invoice password

The invoice password, which appears as a four-line block in the top right hand corner of a standard Chinese VAT invoice, is subject to additional formatting rules. The invoice password is a string of either 84 or 108 characters, consisting of numbers and special characters. You can configure the valid lengths and permitted special characters for this field.

The standard installation comes pre-configured with the appropriate formatting rules for the invoice password as of April 2018, but these can be changed, if required.

To set the formatting rules for the Chinese invoice password, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Tax Configuration** node.
5. In the **CN Password Specials** field, enter the special characters that are permitted to appear in the invoice password.
6. In the **CN Password Valid Length** field, enter the valid lengths that are permitted for the invoice password. If multiple lengths are permitted, then these must be entered as a comma-separated list.
7. Save the changes.

Line Pairing

The Brainware for Invoices line pairing feature is a process that takes place at time of document export. It leverages the solution's unique search technologies to reconcile the invoice line items with line items that the ERP system allows you to post against. Normally, these ERP system line items are purchase order line items, but, depending on the ERP system, they may also be goods receipts, service entry sheets or planned conditions for miscellaneous charges.

This is a critical operation for creating a complete purchase order related invoice in the downstream enterprise resource planning (ERP) system, as ERP systems at least require a purchase order line item number for each invoice line entered. Typically, a client's purchase order line item number does not appear on vendor invoices and, when they do, they are not always stated correctly. The Brainware for Invoices line pairing feature is able to overcome this and derive the correct purchase order line item number and any other relevant data automatically through comparing the extracted invoice line item data with what is available on the purchase order.

The Brainware for Invoices differentiator allows the system to employ the product's patented fuzzy search technologies to perform the down-to-the-line item description level, which delivers an industry-leading success rate.

Without this feature, even though the document may pass straight through the Verifier application without requiring data correction, the document needs to stop in the ERP system for manual completion. Often this manual completion of the line item data can prove extremely time-consuming, especially when dealing with large purchase orders and a large number of invoice lines.

For example, if the purchase order contains 300 line items and an invoice referencing this purchase order has 60 line items, the user would need to pick the right 60 lines from a list of 300 lines. This is why straight-through processing for purchase order related invoices becomes impossible unless you deploy some form of line pairing.

In addition to this, the line-pairing feature can also perform the following functions.

- Perform checks to ensure that the invoice quantity is being booked in the correct unit of measure and convert to the purchase order unit of measure, if required.
- Reconcile the invoice data to blanket and service purchase orders within the ERP system.
- Handle the posting of invoice miscellaneous charges, such as freight and customs charges, in accordance with client business rules. This is covered in a later section.
- Handle the same material that appears on the purchase order more than once.
- Handle multiple purchase orders that appear on a single invoice.
- Process third-party freight invoices against a purchase order created for a different vendor.

Line pairing is not carried out if any of the following conditions exist.

- Line pairing is deactivated in the system configuration.
- Line-item extraction is deactivated in the system configuration.
- The invoice type is NO-PO.
- The document type is CREDIT.
- The PO type is SERVICE and line pairing is deactivated for service PO types.
- The vendor is a utility vendor and line item extraction is switched off for utility vendors.
- The Verifier user has selected an invalid reason of VENDOR NOT FOUND or VENDOR ADDRESS NOT FOUND, and line item extraction is deactivated for that invalid reason.
- The Verifier user has selected an invalid reason of MISSING/INVALID PO, MISSING/INVALID VENDOR & PO, or INVOICE AMOUNTS DO NOT ADD UP.
- The purchase order has not been released and line item extraction is deactivated for unreleased purchase orders.
- The purchase order does not have any line items in the data source.

- All lines on the purchase order are fully invoiced and the system is configured to ignore completed purchase order lines.
- A purchase order to be used against line pairing has a duplicate record in the purchase order header database and duplicates are not allowed.
- The invoice currency does not match either the purchase order currency or the local currency of the PO company code.
- The invoice currency does not match the purchase order currency, but does match the local currency of the PO company code, but no exchange rate for conversion between the PO currency and company code currency is available on the purchase order header.

None of the conditions listed above cause document export to fail.

Activate line pairing

To activate line pairing, perform the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Line Pairing Settings** node.
5. Select the **Do Line Pairing** check box.
6. Select the **Do Line Pairing For Service** check box if you also want the system to do line pairing for service invoices.
7. Select the **Check For Multiple POs** check box if you receive invoices where more than one purchase order number is stated on a single invoice.
8. Select the **Multi Pairing To Single PO Line** check box if you receive invoices where there are multiple invoice lines for the same material which need to be paired to one single line on the purchase order. This can happen in cases where the vendor submits a monthly invoice covering multiple, itemized deliveries where the same material features in more than one delivery, but all need to be paired to the same purchase order line item.
9. Select the **Ignore Completed PO Lines** check box if you do not want the system to consider purchase order lines which have already been fully invoiced. A fully invoiced purchase order line means that the quantity already invoiced is either greater or equal to the quantity ordered.
10. Save the changes.

Next

To read the purchase order data required for line pairing, Brainware for Invoices can be pointed to an ERP system or a purchase order database. You can find information on configuring the purchase order line item look-up elsewhere in this user’s guide depending on the data source you are using.

If a technical error occurs when trying to retrieve the purchase order, export fails and the document is sent to a state of 750.

The line-pairing feature operates differently depending on whether the invoice purchase order is for materials or services.

Line pairing for material invoices

If the invoice relates to a material purchase order, the system undertakes four steps before pairing a line item.

1. Identify the corresponding purchase order line item.
2. Identify a goods receipt document, if required.
3. Convert the invoice quantity to the order unit of measure specified on the purchase order line.
4. Compare the invoice line item unit price to the purchase order unit price (optional).

The process is repeated for all line items on the invoice.

If the invoice only has one line item and the purchase order also only has one available line item because any other lines were all either marked for deletion or fully invoiced, then the system skips the first step and proceeds to evaluate the single PO line through steps 2 to 4.

If any of the four steps fail, the invoice line item is not paired.

Identify the corresponding purchase order line item

In this step, the system initially looks at the invoice material number, unit price and description in that order and tries to find a purchase order line that is a unique match.

If a unique match can be found, the system selects this purchase order line and moves to the next step.

If multiple matches are found, the system also considers the quantity and pricing to see whether a unique match can be found. If a unique match still cannot be found, but the multiple matching lines are all for the same material (this means that the purchase order lines have the same unit price and also the same description or material number), the system by default selects the first available matching purchase order line, but you can configure the system to make no decision in this case. In the multiple material case, you can also configure the system to reject the pairing unless a purchase order number and purchase order line item number can be found in the OCR text around the invoice line item.

If no match can be found, the line is not paired.

For an initial match made using the unit price, you can use the Unit Price Tolerance parameter to reject the pairing if another purchase order line item has a unit price close in value that falls within the percentage range you specify. For example, if the parameter is set to 10, the invoice unit price is $20, and the system finds a single PO line also for $20, but another PO line exists for $22, then the system will reject the initial unit price based pairing as $22 is within 10% of $20.

You can configure tolerances for cases where the initial pairing is made using a fuzzy match using the item description. The Description Threshold controls the minimum percentage by which the extracted description needs to match the purchase order line item description. The Description Distance parameter allows you to specify the percentage distance that the best matching line needs to clear the second best match. Description-based line pairing only takes place if the extracted invoice line item description is more than four characters in length and it contains either one word with four letters or more, or at least two three letter words.

To configure the relevant parameters, perform the following steps in Solution Configuration Manager.

1. Select the project you want to use.

2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Line Pairing Settings** node.
5. Enter the description threshold you want to use in **Description Threshold**. It is recommended to use the default value of 30. A blank entry is understood to be a threshold of zero.
6. Enter the description distance you want to use in **Description Distance**. It is recommended to use the default value of 10. A blank entry is understood to be a distance of zero.
7. Enter the unit price tolerance you want to use in **Unit Price Tolerance**. If you leave this value blank, the additional unit price range check is not performed.
8. Select the **Enable Integrity Check** check box if you do not want the system to select the first matching line item if there are multiple identical purchase lines for the same material.
9. Select the **Require PO Details For Multiple Materials** check box if you do not want the system to make a decision on a multiple materials case unless the specific purchase order number and purchase order line item number is stated on the invoice.
10. Save the changes.

Identify a goods receipt document

In this step, the system checks to see if the purchase order line item identified in step 1 is configured in the enterprise resource planning (ERP) system to require a specific goods receipt. (The PO line is set for goods receipt based invoice verification.) If a specific goods receipt is required for invoice entry, then the system looks at all of the available goods receipts for that purchase order line, and selects a goods receipt (or combination of goods receipts) that reflect the amounts and delivery note details supplied on the invoice.

If an appropriate goods receipt cannot be determined, then line pairing fails. If the purchase order line does not require a specific goods receipt to be specified when creating an invoice, then the system skips this check.

Configuration options for this step can found in the specific sections concerning the relevant ERP systems.

Convert the invoice quantity to the purchase order unit of measure

The next step is to ensure that the quantity extracted on the invoice is expressed in the same unit of measure as the purchase order line and performs a conversion if necessary.

You can find more information on this step in the Unit Of Measure Conversions chapter.

Compare the invoice line item unit price to the purchase order unit price

The final step is an optional check that involves checking that the invoice line item unit price falls within a specified range when compared to the purchase order line item unit price. This range is configured as a percentage using the Description Tolerance parameter. If the invoice unit price falls out of range, the line item pairing is rejected.

For example, if the range is set to 20% and the invoice line is paired to a purchase order line where the unit price is $20, the line item is not paired if the invoice unit price is less than $16 or more than $24.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.

3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Line Pairing Settings** node.
5. Enter the unit price tolerance you want to use in **Description Tolerance**. The unit price check is not carried out if the parameter is left blank.

Line pairing for service invoices

The Brainware for Invoices solution provides functionality for service invoice line pairing, which functions in a different way to material line pairing. Invoices are sent down the service line pairing route if the PO Type field is set to SERVICE. You can find more information on configuring the PO Type field in the PO Number Configuration chapter in this document.

The following service purchase order types are supported.

Single line limits purchase order

A single line limits purchase order is one which has a single line item with either an item category of 1, or a unit price of 1.

It is common practice among many companies to use a unit price of 1 for a service line item on the purchase order, effectively turning the quantity into a de-facto amount field. For example, instead of creating a purchase order line item with a quantity of 1, a unit price of $5000 giving a total value of $5000, the line is created with a quantity of 5000, a unit price of $1 giving a total value of $5000.

This is done for the following reasons.

- This removes the need to pro-rata the quantity based on the invoice net total as a proportion of the overall purchase order line total at the time of invoice entry. For example, if an invoice arrived for $2478.93 against a service purchase order line created with a quantity of 1 and a unit price of $5000, then the quantity would need to be booked as 0.495786 (2478.93 / 5000). This is more complex for a user to process and the ERP system may not support the required number of decimal places.
- This prevents the purchase order line being fully invoiced with the difference being posted to profit and loss.

In the single line limits scenario, line item detail is not extracted from the invoice since the line item breakdown provided by the vendor seldom mirrors the manner in which a service purchase order is raised.

For example, a vendor providing consulting services may provide a complete breakdown of all time and costs spent on an engagement, each item of which constitutes an invoice line item. However, purchasing departments are inclined to raise a single line, blanket purchase order marked for "Consulting Services". At time of line pairing, the net invoice amount is booked against this single purchase order line.

Multiline limits purchase order

A multiline limits purchase order is one every line item has either an item category of 1, or a unit price of 1.

In this scenario, invoice line item extraction is required. To activate line item extraction for invoices relating to multi-line limits purchase orders, perform the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.

3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Line Item Table Settings** node.
5. Clear the **Skip For Multiline Limits** check box.
6. Save the changes.

Next

Once this change has been made, line items become mandatory if the invoice relates to a multi-line limits purchase order. Only the description and total columns need to be populated for each line. Line pairing fails for multi-line purchase orders if no line items are available.

At time of line pairing, the system uses the item description and total to identify the correct line item on the purchase order.

Configure tolerances

You can configure tolerances for cases where pairing is made using a fuzzy match using the item description. These settings are distinct from those used for material line pairing to allow a more precise calibration for service invoices. The Limits Description Threshold controls the minimum percentage by which the extracted description needs to match the purchase order line item description. The Limits Description Distance parameter allows you to specify the percentage distance that the best matching line needs to clear the second best match. Description-based line pairing only takes place if the extracted invoice line item description is more than four characters in length.

You can use the Limits Description Tolerance parameter to reject a pairing if the value of the invoice line is x% greater than the total outstanding amount available against the purchase order line. The total outstanding amount available is calculated as the purchase order line item total minus the total sum of invoices already booked to that line. For example, if the total outstanding amount for a given purchase order line is $500 and the Limit Description Tolerance parameter is set to 10, then the system rejects any pairing where the invoice line is greater than $550.

To configure the tolerance parameters, perform the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Line Pairing Settings** node.
5. Enter the description threshold you want to use in **Limits Description Threshold**. It is recommended to use the default value of 50. A blank entry is understood to be a threshold of zero.
6. Enter the description distance you want to use in **Limits Description Distance**. It is recommended to use the default value of 10. A blank entry is understood to be a distance of zero.
7. Enter the value tolerance you want to use in **Limits Description Tolerance**. If you leave this value blank, the value tolerance check is not performed.
8. Save the changes.

Service entry sheets purchase order

A service entry sheet is a goods receipt made for purchase order service line items in the ERP system. At time of invoice posting, the invoice details are paired to either a service entry sheet as a whole, or specific line items on the service entry sheet. Hence, the service entry sheet has to exist in the ERP system before posting an invoice is possible.

Use of service entry sheets is not common to all ERP systems. More information on the configuration options available can be found in the specific chapters in this document concerning those ERP systems.

Line pairing does not support a combination of service entry sheet type purchase order lines and any other type of purchase order line items.

Other service purchase order type

Any invoices for services that does not fall into any of the above categories is processed as an other purchase order type. For this purchase order type, line item extraction is not required and it is expected that the purchase order only has one line item. Line pairing fails if the purchase order has more than one line item.

At time of line pairing, the system books the invoice net amount to the single purchase order line, pro-rating the quantity if required.

Line pairing and Visibility reporting

After line pairing has been carried out, the system updates the Visibility reporting database with statistical information. This happens during document export.

In reporting table **BRWDocument**, the following columns are updated.

Column	Description
LP_PAIRED	This is the number of invoice lines that were paired.
LP_TOTAL	This is the total of the number of paired and unpaired invoice line items.
LP_STATUS	This is the line pairing status code.

The LP_STATUS column contains the line pairing status code. The status codes and their meanings are listed in the table below.

Status code	Meaning	Description
0	Not relevant for line pairing	This means that the document was not relevant for line pairing (for example, it was a NO-PO invoice) so line pairing was not carried out.

Status code	Meaning	Description
1	Unable to resolve currencies	This means that the invoice currency did not match the purchase order currency or the currency of the company code for which the purchase order was created. Hence, the system was unable to perform line pairing as there was no way to compare the invoice and purchase order pricing data.
2	All PO lines used or deleted	This means that all lines on the purchase order were either marked for deletion in the ERP system, or were fully invoiced and you have the **Ignore Completed PO Lines** check box selected in **Line Pairing Settings.** A fully invoiced purchase order line item is one where the quantity already invoiced is equal to or greater than the original order quantity. Hence, the system was unable to perform line pairing as there were no available purchase order lines to use.
3	No available PO lines	This means that line pairing was not carried out because no PO lines could be retrieved for invoice purchase order.
4	Missing goods receipt	This means that the system tried to pair one or more material invoice line items to a line on the purchase order that required a mandatory goods receipt, but no goods receipt existed for that PO line. Hence, line pairing failed.
5	Missing service entry sheet	This means that the system tried to pair the invoice to a service entry sheet type purchase order, but no service entry sheets existed for that PO. Hence, line pairing failed.
6	Unpaired material invoice	This means that line pairing failed for a material invoice.
7	Unpaired service invoice	This means that line pairing failed for a service invoice.
8	Unable to resolve misc charges	This means that, for an invoice with miscellaneous charge, line pairing for the material line items was successful, but you have configured one of more miscellaneous charge types to book against planned conditions in the ERP system and the system was not able to book them correctly. Hence, line pairing failed.
9	Unpaired third party	This means that, for a third party freight invoice, the system was unable to book the freight charges to planned conditions in the ERP system.

Status code	Meaning	Description
	freight	Hence, line pairing failed.
10	Line pairing successful	This means that line pairing was successful for all items on the invoice.
11	PO number not unique in database	This means that the system found multiple records in the PO header table for a given purchase order. Hence, line pairing could not be performed.
12	PO too large	This means that a purchase order was rejected programmatically in **UserExitAbortSAPReadPO**. Hence, line pairing could not be performed.
13	Missing PO currency	This means that a currency was unavailable in the purchase order header. Because of this, the system was unable to compare the invoice and purchase order amounts. Hence, line pairing could not be performed.
14	Missing exchange rate on purchase order	This means that the invoice currency did not match the purchase order currency, but did match the purchase order company code currency. In this situation, line pairing can proceed as long as the exchange rate between the PO currency and company code currency is present on the PO header so the system can convert the amounts. However, the exchange rate was not available so line pairing could not be performed.
15	Unit price out of tolerance	This means that one or more material invoice lines could not be paired due to differences between the invoice and purchase order unit price. This difference exceeded the tolerance you have configured using the **Description Tolerance** setting in **Line Pairing Settings**. Hence the line pairing failed. Documents failing line pairing with this status code does not necessarily mean that the tolerance you have configured is too strict. The primary purpose of this setting is to prevent lines from being paired incorrectly. For that reason, before making any adjustments, it is important to look at each case to determine whether it is a genuine case of an overly strict tolerance, or whether the setting is actually stopping the system from making an incorrect pairing decision.

About line pairing for third-party freight invoices

Within Brainware for Invoices, a third-party freight invoice refers to a very specific business scenario whereby an invoice is received from a vendor billing for freight, yet that vendor legitimately quotes the purchase order number of another vendor (the material vendor), and it is against this material vendor's purchase order that the freight charge needs to be booked.

Brainware for Invoices handles freight invoices that do not fall into this category as regular invoices. Third party freight invoices can be identified through the following.

- The identified vendor is not the material vendor for whom the purchase order was raised, but is the vendor set against a planned condition on any of the purchase order line items.
- A user selects the "Third-Party Freight" invalid reason within the Verifier application.

Brainware for Invoices does not extract line items from third-party freight invoices. Instead, at the time of line pairing, the system books the net invoice amount according to the miscellaneous charge group settings assigned to third-party freight vendors in the BRWMSC table. The rules for posting third-party freight and other miscellaneous charges are described in detail in the Third-party freight section of this document.

Miscellaneous Charges

Miscellaneous charges refers to the additional items a vendor may include on an invoice document that have to be booked with the primary invoice items.

Examples include a freight charge, a customs charge, an energy surcharge or an administration charge.

Miscellaneous charges can appear at both header and item level from an invoice presentation point of view, but are ultimately treated as line items from an accounting point of view as they form part of the items that a vendor is billing you for.

At the header level, Brainware for Invoices provides two fields for this purpose. These fields are AmountFreightPrepaidAndAdded and AmountMisc.

At the line item level, the category column is used to identify and classify any miscellaneous charges captured that the vendor specifies as a line item on the invoice. This category is set automatically by Brainware for Invoices drawing based upon configuration in the miscellaneous charge configuration table.

The handling of miscellaneous charges is dependent on the business rules of the client. The solution configuration options allow the following.

1. Miscellaneous charges to be booked against planned condition types on the purchase order. (SAP only)
2. Miscellaneous charges to be booked as 'unplanned delivery costs'. (that is a single, header-level amount field within the downstream ERP system)
3. Miscellaneous charges to be booked as a separate invoice line item with a specific line type. (Oracle Financials)
4. Miscellaneous charges to be booked as a direct general ledger account entry.

These events occur during the line pairing operation carried out during document export. Hence, line pairing must be activated for miscellaneous charge processing to occur. In addition, the document must be relevant for line item extraction. If line pairing is deactivated, then any miscellaneous charges will be outputted in the form in which they were captured from the invoice.

Note:
The system always checks for the existence of a regular purchase order line item representing the miscellaneous charge before applying the configured processing option. If one is found, then this line item is used. Miscellaneous charges set up as regular purchase order line items are identified by the purchase order line item description and the extent to which it fits with the aliases configured as described in the "Assign Line Items to a Miscellaneous Charge Category" section below.

Miscellaneous charge categories

Miscellaneous charge categories are configured per processing profile using the miscellaneous charge configuration table within Solution Configuration Manager.

Each row within the table represents a miscellaneous charge category. The category denotes the type of miscellaneous charge, such as a freight charge, a customs charge, and so on.

The number of categories that must be configured is dependent on how you want to process these charges, and the number of miscellaneous charge categories is driven by the number of different processes you want to use.

For example, if all miscellaneous charges, irrespective of what they are, must be summed and booked as a single general ledger account entry in the downstream ERP system, then only one miscellaneous charge category needs to be configured.

However, if you want to book specific miscellaneous charges to a specific general ledger account depending on what type of charge it was, such as account 1000 for freight; account 2000 for customs charges; account 3000 for pallet charges, and so on, then there must be as many miscellaneous charge categories as the number of possible general ledger codes to book them against.

Each miscellaneous charge category is assigned a name and a code. In the Dynamic Verifier application, if a line item is identified as belonging to a particular miscellaneous charge category, the code set for that group in the system configuration will be copied into the category column for that particular line item.

Configurating a miscellaneous charge category involves assigning header and line item fields to that category, and then deciding how you want the process those charges during line pairing.

Create a miscellaneous charge category

The system is preconfigured with three miscellaneous charge categories. You can adapt or remove these categories for your purposes, or you can create new miscellaneous charge categories to meet the business need.

To create a new miscellaneous charge category, complete the following steps within Solution Configuration Manager.

1. Select the project you want to use.

2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Misc Charge Categories** node. This displays the miscellaneous charge configuration table.
5. Scroll to the last row in the table where you have the option to create a new entry.
6. Populate the **Index** column with the next available sequential number.
7. Enter a short description of your miscellaneous charge category in the **Type** column. The text you enter here is used as the description if the miscellaneous charge is exported as a line item.
8. Enter the code you would like to use for your miscellaneous charge category in the **Code** column. This should be a single character that is not used by any other miscellaneous charge category.
9. Click the **Insert** hyperlink to save your changes.

Assign fields and line items to a miscellaneous charge category

Miscellaneous charge categories are assigned fields at header level and lines at line item level. The amounts extracted into those header fields are summed together with the line item totals to give the total value of charges belonging to that category.

For example, if the system captures a freight amount of $100.00 in the header level freight field, and also recognizes two freight charges captured within the line items table for $20.00 and $40.00, then the total value of a miscellaneous charge category configured for freight is $160.00.

Assign header fields to a miscellaneous charge category

You can assign amount type fields that exist within the BFI invoices project to your miscellaneous charge category. You must take care only to assign fields that represent miscellaneous charges, as opposed to other amount fields such as those for tax.

To assign a header field to a miscellaneous charge category, complete the following steps in Solution Configuration Manager.

1. Within the **Processing Settings** hierarchy tree, navigate to the **Misc Charge Categories** node. This displays the miscellaneous charge configuration table.
2. Locate the row representing the relevant miscellaneous charge category.
3. Enter the technical name of the BFI header field in the **Header Field** column. You can enter multiple header fields as a comma-separated list and entry is not case sensitive. You must ensure that the same header field is not assigned to more than one miscellaneous charge category, otherwise, the value of the miscellaneous charge will be double-counted for each additional category it is assigned to leading to an invoice that is out of balance.
4. Save the changes.

Assign line items to a Miscellaneous Charge Category

The assignment of line items to a miscellaneous charge category occurs using the extracted line item description. Within the miscellaneous charge configuration table, you can define a list of phrases associated with a given miscellaneous charge category. If an extracted or user-entered description for a line item matches one or more of these phrases, then the system will assign that line item to that miscellaneous charge category.

You can also configure forbidden phrases to prevent assignment of a line item to a miscellaneous charge category.

For example, if you have **Delivery** configured as an identifying phrase, and the invoice line item description for a material is **Water Delivery Pump**, then the system would incorrectly recognize the line item as a freight charge. This incorrect assignment can be prevented by configuring **Water** or **Pump** as a forbidden phrase.

To assign line items to a miscellaneous charge category, complete the following steps in Solution Configuration Manager.

1. Within the **Processing Settings** hierarchy tree, navigate to the **Misc Charge Categories** node. This displays the miscellaneous charge configuration table.
2. Locate the row representing the relevant miscellaneous charge category.
3. Enter a list of identifying phrases in the **Alias** column. The list must be comma-separated and is not case sensitive. You must ensure that the same phrase is not assigned to more than one miscellaneous charge category, and also that the chosen phrase does not overlap with any other miscellaneous charge categories defined.
4. Enter a list of forbidden phases in the **Negative Alias** column. This list must be comma-separated and is not case sensitive. It does not matter if the same phrase is used across multiple miscellaneous charge categories.
5. Save the changes.

Configure processing of miscellaneous charge categories

After creating a miscellaneous charge category and determining which fields and line items belong to that category, the next step is to decide how you want the system to handle the miscellaneous charge during line pairing.

The following options are available.

Post miscellaneous charges using a specific line type

This option can be used for ERP systems that require a miscellaneous charge to be passed at line item level with an identifying column indicating what type of miscellaneous charge it is. Within BFI, the line item export parameter 'LineType' is used for this purpose.

If you configure the system to process the miscellaneous charge using a specific line type, the system will create an extra line in the line item output setting the line item total column to the sum of the miscellaneous charge category and the line type column to a value you specify.

To configure the processing of miscellaneous charges to a specific line type, complete the following steps in Solution Configuration Manager.

1. Within the **Processing Settings** hierarchy tree, navigate to the **Misc Charge Categories** node. This displays the miscellaneous charge configuration table.
2. Locate the row representing the relevant miscellaneous charge category.
3. Populate the **Line Type** column with the value that you want the system to export for the **LineType** parameter for the line item export. Entering a value here overrides any other type of miscellaneous charge processing activity configured.
4. Save the changes.

Process miscellaneous charges as unplanned costs

If you want to export a miscellaneous charge as part of the invoice header data, you need to configure the miscellaneous charge category to handle the charge as an unplanned cost.

During export, the system takes all miscellaneous charges configured to export as unplanned costs, sums them together and exports the total through the single UnplannedFreight export parameter.

To configure a miscellaneous charge category to process charges as an unplanned cost, complete the following steps in Solution Configuration Manager.

1. Within the **Processing Settings** hierarchy tree, navigate to the **Misc Charge Categories** node. This displays the miscellaneous charge configuration table.
2. Locate the row representing the relevant miscellaneous charge category.
3. Ensure the **Line Type** column is empty.
4. Select the **Always Book To Unplanned** check box.
5. Save the changes.

Post miscellaneous charges to planned conditions

Planned conditions are used in implementations involving SAP. When the purchase order is raised, if the buyer expects additional charges, they can add these charges as condition records into the pricing behind the purchase order line items that are affected. Each condition record has a code (the SAP condition type) and a quantity and value. The condition type denotes the type of miscellaneous charge from an SAP point of view.

At time of manual invoice entry, these condition records manifest themselves as proposed invoice lines against which the user can post miscellaneous charges.

During line pairing, the system looks at the available condition records and tries to pair these up with the miscellaneous charges presented on the invoice. The system only chooses condition records belonging to purchase order line items that were used the material line pairing process. For that reason, posting to planned conditions is only possible if line pairing succeeded for all of the standard line items on the invoice.

Line pairing fails if condition records are available, but the system is unable to match them to the miscellaneous charges. If multiple condition records are selected for a single miscellaneous charge, the system will apportion the charge across those condition records using a ratio determined by the value of the material line item in relation to the overall invoice value.

Miscellaneous charges successfully paired to condition records are added into the line item export. The number of lines added depends on the number of condition records chosen for each miscellaneous charge category. For each line item added, the system will populate the following export parameters:

- The PO number
- The PO line item number
- The condition type
- The condition step number
- The condition count
- The freight vendor ID
- The description (set from the content of the miscellaneous charge category Type column)
- The quantity
- The order unit of measure
- The line item total
- The line item tax code
- The line item tax jurisdiction code

To configure a miscellaneous charge category to post the charges against condition records on the SAP purchase order, complete the following steps within Solution Configuration Manager.

1. Within the **Processing Settings** hierarchy tree, navigate to the **Misc Charge Categories** node. This displays the miscellaneous charge configuration table.
2. Locate the row representing the relevant miscellaneous charge category.
3. Ensure that the **Line Type** column is empty.
4. Ensure that the **Always Book To Unplanned** check box is cleared.
5. Select the **Always Book To Planned** check box.
6. Enter the relevant SAP condition types in the form of a comma-separated list in the **Valid Conditions** column. You need to ensure that a single condition type is not used by more than one miscellaneous charge category.
7. Select the **Book To Unplanned If No Planned** check box if you want to process the miscellaneous charge as an unplanned cost in the event that no condition records exist for the purchase order lines used in the material line pairing process.
8. Select the **Book to GL If No Planned** check box if you want to book the miscellaneous charge as a general ledger account entry in the event that no condition records exist for the purchase order lines used in the material line pairing process.
9. Save the changes.

Post miscellaneous charges to a general ledger account

Miscellaneous charges can be configured to post to a general ledger account. This means that the miscellaneous charge is exported as a general ledger account line item as opposed to a regular line item. One general ledger line item is exported for each miscellaneous charge category that is configured to post to a general ledger account.

A general ledger account line item consists of the following components.

- A general ledger account code representing the type of expense.
- A Cost object, such as a cost center, an internal order, a profit center, a project.
- A tax code.

To configure the system to create a general ledger line item for your miscellaneous charge, complete the following steps in Solution Configuration Manager.

1. Within the Processing Settings hierarchy tree, navigate to the Misc Charge Categories node. This displays the miscellaneous charge configuration table.
2. Locate the row representing the relevant miscellaneous charge category.
3. Ensure that the Line Type column is empty.
4. Ensure that the Always Book To Unplanned check box is cleared.
5. Ensure that the Always Book To Planned check box is cleared.
6. Select the Always Book To GL Account check box.
7. Enter the general ledger account you want to use in the GL Account column.
8. Select the Get Cost Object From PO Line check box if you want the system to use the cost object from the first purchase order line paired to in the first instance. If no cost object is available, the system will use the default cost objects configured for the miscellaneous charge category.
9. Enter a default cost center in the Default Cost Center column. The system uses this cost center if no other cost center can be determined.
10. Enter a default profit center in the Default Profit Center column. The system uses this profit center if no other profit center can be determined.
11. Enter a default tax code in the Default Tax Code column. The system uses this tax code if no tax code can be determined from the first paired invoice line item.
12. Save the changes.

To facilitate greater versatility when posting freight as general ledger account entries, a miscellaneous charge account coding look-up table (BRWMISCACC) can be used so that specific general ledger account codes, cost objects and tax codes can be assigned on a company code by company code basis and a plant by plant basis incorporating the purchase order line type, if required.

This table is available as a supplementary table to the standard BFI configuration tables and must be installed separately.

The following table contains an example for populating BRWMISCACC for company code GB01.

Company Code	Category	Line Type	Plant	GL Account	Cost Center	Profit Center	Tax Code
GB01	F	A	1000	1000	2000	3000	I0
GB01	F	(space)	1000	1000	3000	3000	I0
GB01	F	A	(space)	1000	3000	4000	I0
GB01	F	(space)	(space)	1000	2000	2000	I0

The company code, plant, line type and category columns are mandatory and form the unique key for each row in the table. A column populated with a space denotes a 'wildcard'. This means that this column is not required to match in order for the system to find a hit.

The system accesses the table according to the following sequence.

1. By miscellaneous charge category, company code, plant and line type.
2. By miscellaneous charge category, company code and line type using a wildcard for the plant.
3. By miscellaneous charge category, company code and plant using a wildcard for the line type.
4. By miscellaneous charge category and company code using wildcards for the plant and line type.

As soon as a matching record is found, the access sequence breaks and that record is used. The above must be considered when populating the table. The plant and line type used to interrogate the table are derived from the first paired line item. If no paired line items are available, the system will use the plant and line type from the first purchase order line.

For example, if a look-up is performed against BRWMISCACC as populated in the example above using miscellaneous charge category 'F', plant 1000, line type 'B' and company code 'GB01', access sequence steps one and two will fail, but access sequence step three will select the second row in the table as a match exists for company code 'GB01', category 'F' and plant '1000'. A match is not require for line type 'B' as the line type column for the second row is populated with the wildcard.

If no row can be identified, the system will set the general ledger account, cost object and tax code in accordance with settings applied in the miscellaneous charge configuration table.

If a row is identified, but no general ledger account is populated, the system will use the general ledger account configured for the miscellaneous charge category.

The system selects the cost object in the following order of priority.

1. The cost object of the first paired invoice line if the 'Get Cost Object From PO Line' check box is

selected for the miscellaneous charge category.

2. The cost object set against a row found in table BRWMISCACC.
3. The default cost center/profit center configured for the miscellaneous charge category.

The system selects the tax code in the following order of priority.

1. The tax code set against a row found in table BRWMISCACC.
2. The tax code from the first paired invoice line item.
3. The default tax code configured for the miscellaneous charge category.
4. For countries and ERP systems that use tax jurisdictions, the tax jurisdiction code is derived from the first paired invoice line.

If the general ledger account is not relevant for tax postings in the ERP system, a double asterisk (**) must be entered into the tax code column in the table. This has the effect of passing a blank tax code and a blank tax jurisdiction code downstream.

To activate usage of the miscellaneous charge account coding table (BRWMISCACC), complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Navigate to the 'Misc Charge Settings' node in the 'Processing Settings' hierarchy tree.
5. Select the **Validate From DB** check box. Further settings are then displayed.
6. Select the SQL connection group that represents the connection to the database that contains the miscellaneous charge account coding table using the **SQL Connection Group** drop-down.
7. If you have changed the name of the table from 'BRWMISCCACC' to something else, enter the new table name in the **DB Table Name** field.
8. Save the changes.

Result If an error is raised when trying to connect to table BRWMISCACC, export will fail for the document.

Third-party freight

Within Brainware for Invoices, a third-party freight invoice refers to a very specific business scenario whereby an invoice is received from a vendor billing for freight, yet that vendor legitimately quotes the purchase order number of another vendor (the material vendor), and it is against this material vendor's purchase order that the freight charge needs to be booked.

Freight invoices that do not fall into this category are handled as regular invoices.

Third party freight invoices are identified by one of the following.

- The identified vendor is not the material vendor for whom the purchase order was raised, but is the vendor set against a planned condition on any of the purchase order line items.
- A user selects the THIRD PARTY FREIGHT invalid reason within the Verifier application.

Line items are not required from third-party freight invoices.

During line pairing, the system books the net value of the invoice against the material vendor's purchase order according to the processing rules set against the miscellaneous charge category assigned to third-party freight vendors.

If the rule is set to post as unplanned, the system will also create a zero-value debit invoice line item against the first line item of the purchase order belonging to the material vendor.

If the rule is set to post against planned condition records on the purchase order, the condition records must be goods receipted.

To assign a miscellaneous charge category for third party freight, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Misc Charge Settings** node.
5. Enter the code for the miscellaneous charge category you wish to assign for third party freight in **Third Party Freight Code**.
6. Save the changes.

Add new miscellaneous charge fields

The Brainware for Invoices project file is bundled with two fields for capturing miscellaneous charges at the header level, specifically the AmountFreightPrepaidAndAdded and AmountMisc fields.

The AmountFreightPrepaidAndAdded field is pre-trained to extract freight and transportation costs from invoices. The AmountMisc field is not trained, so that flexibility is there to designate that field for a specific type of miscellaneous charge, such as a pallet charge or an energy surcharge. UserExitAmountMiscPostEvaluate is available for any custom script deemed appropriate to assist with the extraction of this field.

If a third field is required, it must be created at the Invoices level and must be called AmountMiscXXX, where XXX is a meaningful field descriptor. This ensures that the new miscellaneous charge field is included in the mathematical validation applied to the invoice header level amounts. Additionally, the new field must be added to the field configuration table for any relevant processing profiles.

Furthermore, a standard validation event for the new field must be added to the invoices class level containing script to call the system validation routines. The script that needs to be inserted is shown below.

```
Private Sub AmountMiscXXXX_Validate(pField As SCBCdrPROJLib.ISCBCdrField,
pWorkdoc As SCBCdrPROJLib.ISCBCdrWorkdoc, pValid As Boolean)

   If InitializeDLLAccess("Invoices AmountMiscXXXX_Validate") Then

      On Error GoTo Err_AmountMiscXXXX_Validate
```

```
      'Trigger event handling routine
      Field_ICALValidate(pField, pWorkdoc, pValid)

   End If

   Exit Sub

Err_AmountMiscXXXX_Validate:
   Project.LogScriptMessageEx(CDRTypeError,CDRSeverityLogFileOnly,"Error
AmountMiscXXXX _Validate(Invoices): " & Err.Description)

   Err.Clear

End Sub
```

Automatic Tax Code Determination

Different ERP systems have different ways of handling tax, but a common requirement is that the ERP system requires a tax code to be passed for each invoice line item. If any of the tax codes are missing, the ERP system will be unable to accept any affected line items, hence automatic processing is not possible.

The tax codes are specific to the ERP system and do not appear on the invoice itself.

Brainware for Invoices provides an automatic tax code determination feature that takes place during line pairing. When a line is paired, the system tries to determine the correct tax code based upon information that appears on the invoice and information derived from the purchase order.

Successful allocation of a tax code means that the invoice line item can now be accepted by the ERP system and no manual resolution process is necessary.

Prerequisites for using the automatic tax code determination feature are as follows.

- The company code field is active.
- The system is configured to validate the company code using a data source that returns the company code country.
- The vendor ID field is active.
- The system is configured to validate the vendor field against the vendor pool.
- The vendor pool data includes the vendor country of origin. The vendor state must also be included for processing tax for countries with tax jurisdictions.

To activate automatic tax code determination, complete the following steps in Solution Configuration Manager.

Note:
The method of tax determination depends upon whether the taxing country uses tax jurisdictions.

1. Select the project you want to use.

2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Tax Configuration** node.
5. Select the **Activate Tax Code Determination** check box.
6. Save the changes.

Tax code determination for countries without tax jurisdictions

A country without tax jurisdictions is one where a common rate of sales tax is established and applied at the national level. This means that all goods and services are subject to the same rate of sales tax, no matter where they are purchased within the borders of that country.

A good example of this is the European VAT system, however, similar types of systems can be found in Australia, Singapore and Latin America. This is in contrast to the systems used in countries with tax jurisdictions such as the US, Canada and Brazil, where each state or province within those countries is empowered to set its own local rate of sales tax.

In order to perform automatic tax code determination for countries that do not use tax jurisdictions, the system takes information from both the invoice and the purchase order and uses it to perform a look-up to a tax table in order to ascertain the correct ERP tax code for the line item.

The tax table is installed into either an Oracle or SQL Server database using an install SQL script that we provide. It is usual practice to create the table in BFI configuration database.

Additional prerequisites for using the automatic tax code determination feature are as follows.

- The countries in scope for the tax compliance check are maintained in **Global Settings > Country Settings**

To configure automatic tax code determination using the tax table, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Tax Configuration** node.
5. Select the **Activate Tax Code Determination** check box. Further settings are then displayed.
6. Select the **Always Use PO Tax Code** check box if you want the system to use the tax code found on the original purchase order line. If the purchase order line item does not have a tax code, the system will proceed with the tax table look-up. If the customer always populates the tax code on the purchase order and that tax code is always correct, then selecting this check box completes the configuration. You cannot use this option if you also use the same processing profile to process invoices that require the automatic tax code determination feature for countries that use tax jurisdictions.
7. Select the **Validate From DB** check box. Further settings are then displayed.
8. Select the SQL connection group that points to the database where the tax table is located using the **SQL Connection Group** drop-down.

9. If you have changed the name of the tax table from 'BRWTAX' to another value, enter the new table name in **DB Table Name**.
10. Select the **Use Tax Partition** check box if you are using a tax partition. If selected, when accessing the tax table, the system will only look for entries belonging to the partition configured for the client to which the document belongs. The client tax partition is configured using the **Tax Partition** drop-down in the client configuration table.
11. If you want to derive the ship-to location from the country of the company code instead of the country of the plant, select the **Derive Ship-to From Company Code** check box. If you choose this option, you do not need to configure the plant look-up.
12. Select the **Read Plant For DB** check box if you want to read details of the plant from a database. The plant look-up is mandatory if you want to use the automatic tax code determination feature. Further settings are then displayed.
13. Select the SQL connection group that points to the database where the plant table is located using the **Plant SQL Connection Group** drop-down.
14. Enter the technical name of the plant look-up table in **DB Plant Table**.
15. Enter the technical name of the column that represents the unique plant ID in **DB Plant**.
16. Enter the technical name of the column that represents the plant country in the **DB Plant Country**.
17. Save the changes.

Tax table structure

The columns in the tax table are as follows:

Column name	Type	Description
Country	String	Country code for the country to which the tax code applies. It represents the country in which the company code is legally registered. For example, GB, FR, CH, DE, and so on. This column must be populated for all records in the table.
TaxCode	String	Tax code
ShipTo	String	Ship-to country code This is the country code for the country to which the goods were shipped. This is compared by the system either to the country of the company which received the goods, or the country of the plant set on the relevant purchase order line item depending on the configuration specified in the TAX section. If the ship-to country is the same as the company code country, then it must be entered as it is. If it is different, but is an EU member state, it must be set to EU; if it is a non EU-member state, it must be set to XX. This column must be populated for all records in the table.
ShipFrom	String	Ship-from country code. This is the country code for the country from where the goods were shipped. This is compared by the system to the

Column name	Type	Description
		country of the order-from vendor. If the ship-from country is the same as the company code country, then it must be entered as it is. If it is different, but is an EU member state, it must be set to EU; if it is a non EU-member state, it must be set to XX. This column must be populated for all records in the table.
Service	"X" or blank	This denotes that the record in the tax table is relevant for a service, as opposed to a material line item.
MaterialGroup	String	Purchase order material category/type/group or class.
MaterialNo	String	Purchase order material number.
VendorID	String	Order-from vendor ID.
Percentage	Number (two decimal places)	Percentage rate associated with the tax code (for example, 17.5, 19.6, 10, 18, and so on). This value is compared with the tax rate captured at the line-item level to support mixed tax rates on a single invoice, or, if no rate is captured, then it is compared to the overall tax rate for the invoice as a whole. When populating the tax table, 999 denotes a blank or unknown percentage. If the percentage is zero, then 0 must be entered.
IndiaInState	Boolean	This column is used for domestic invoices in India only and specifies whether the tax code relates to an in-state or out-of-state transaction.The default value is false.

Tax table access sequence

At runtime, Brainware for Invoices uses an access sequence to interrogate the tax table in order to find the correct tax code for each invoice line.

This step is not carried out if the system is configured to use the purchase order line tax code in all cases and that tax code is populated or if the tax table is not populated with any entries relating to the country of the invoice company code.

The following steps indicate the access sequence.

1. Check for combination of vendor, material group, ship-to and ship-from.
2. Check for vendor and combination of ship-to and ship-from.
3. Check for material number and combination of ship-to and ship-from.
4. Check for material group and combination of ship-to and ship-from.

5. Check for combination of percentage, ship-to, ship-from, and service indicator.
6. Check for combination of ship-to, ship-from, and service indicator.
7. Check for combination of ship-to, ship-from, and tax percentage.
8. Check for ship-to and ship-from combination (default tax code for the country).

The system begins at step 1. If a tax code is found for that step in the access sequence, the corresponding tax code is used; if not, the system moves to step 2, and so on.

If, at the end of step 8, no tax code can be determined, then the invoice is considered to be an exception for reasons of a missing tax code.

Populating the tax table

The following table shows an example of how the tax code table might typically be populated for the UK (Country Code = GB).

Country	TaxCode	VendorID	ShipTo	Ship From	Service	Material Group	Material No	Percentage
GB	V0		'GB	GB				0
GB	V1		GB	GB				17.5
GB	V3		GB	EU				999
GB	V4		GB	EU	X			999
GB	V6		GB	GB				8
GB	V9		GB	GB				15
GB	VF		GB	XX				999
GB	V9		GB	GB				999

Using this configuration, the system behaves as follows as a result of each record in turn.

If it is a domestic transaction, and no tax is charged, then tax code V0 is always used.

1. If it is a domestic transaction, and tax at the rate of 17.5% is charged on the invoice, then tax code V1 is always used.
2. If the goods are shipped from an EU member state country to the UK, then tax code V3 is always used.
3. If the invoice is from an EU member state vendor and the service is performed in the UK, then tax

code V4 is always used.

4. If it is a domestic transaction, and tax at the rate of 8% is charged on the invoice, then tax code V6 is always used.
5. If it is a domestic transaction, and tax at the rate of 15% is charged on the invoice, then tax code V9 is always used.
6. If the invoice is from a vendor outside of the EU, and the goods are shipped to the UK, then tax code VF is always used.
7. If no specific item tax percentage is determined from the invoice, but it is a domestic transaction, then tax code V9 is always used.

Step 8 represents the default tax code for a combination of ship-to and ship-from countries. The most common non-zero tax code must be set against this record.

If an additional business requirement involved a new tax code (VS) which must be used in instances where a non-EU member state vendor submitted an invoice for a service carried out outside the EU, and where tax was charged at 0%, then the following entry must be added to the tax table.

Country	TaxCode	VendorID	ShipTo	Ship From	Service	Material Group	Material No	Percentage
GB	VS		XX	XX	X			0

Equally, if a requirement arose whereby a different tax code (DS) must be used in all instances involving a service carried out domestically irrespective of whether tax is charged or not, the following entry must be added to the tax table.

Country	TaxCode	VendorID	ShipTo	Ship From	Service	Material Group	Material No	Percentage
GB	DS		GB	GB	X			999

Handle special cases for tax codes

The tax table provides functionality for handling special cases where a specific tax code is required.

The table permits the user to perform the following actions.

1. Allocate a specific tax code to a specific vendor irrespective of the type of transaction and the rate of tax charged.
2. Allocate a specific tax code for a specific material irrespective of the rate of tax charged.
3. Allocate a specific tax code for a specific material group irrespective of the rate of tax charged. This can be used in instances where the tax against an individual invoice is not VAT reclaimable, or only

partially reclaimable. For example, when all goods and services provided by vendor 12345 are only 50% VAT reclaimable, then a 50% VAT reclaimable tax code (VR) must always be used.

The corresponding tax table entry must appear as indicated in the following table.

Country	TaxCode	VendorID	ShipTo	Ship From	Service	Material Group	Material No	Percentage
GB	VR	0000012345	GB	GB	X			999

By creating entries that include a combination of the vendor, material number and the material group, these instances can be handled as the access sequence checks for these entries before selecting a tax code based solely on the type of transaction, for example, service, and the tax rate.

It is also possible to leave the tax code column blank for such special cases which must always force those invoices to exception in a downstream process for someone to review.

For all entries in the tax table relating to special cases, the ship-to and ship-from countries must continue to be populated.

Tax codes for India

You can use the tax table to assign tax codes for invoices from India.

In India, levying of sales tax for a domestic transaction is based on whether the transaction is in-state (i.e. the vendor and customer both operate in the same state), or out-of-state (i.e. the vendor and customer operate in different states).

If the transaction is in-state, then an invoice for a taxable transaction states two tax amounts, CGST and SGST. If the transaction is out-of-state, then the invoice just states a single tax amount, namely, IGST. ERP systems typically use different tax codes depending on which of these two situations is applicable.

In the tax table, the IndiaInState column can be used to differentiate between in-state and out-of-state tax codes. It should be set to “true” if the transaction is in-state, which reflects the CGST/SGST combination.

A sample tax table is shown below.

Country	TaxCode	VendorID	ShipTo	Ship From	Material Group	Percentage	India InState
IN	CG	-	IN	IN	-	18	True
IN	IG	-	IN	IN	-	18	False
IN	IT	-	IN	XX	-	0	False

In the example above, if a domestic Indian invoice has 9% CGST and 9% SGST, amounting to total 18% tax, the tax code CG is assigned to each paired invoice line item. If the invoice has 18% IGST, tax code IG is assigned. For an invoice where the vendor location is outside India where no tax is charged, the tax code IT is assigned.

The system looks for “true” in the IndiaInState column if the value of the CGST field is not equal to zero. The percentage is calculated from the total tax amount and total invoice amount and rounded off to an integer.

Due to the differing nature of sales tax in India, the system uses a special four step access sequence to access the table if the company code country is set to IN for India. The access sequence is as follows:

1. Check for combination of ship-to, ship-from, percentage, in-state flag, vendor and material group.
2. Check for combination of ship-to, ship-from, percentage, in-state flag and material group.
3. Check for combination of ship-to, ship-from, percentage, in-state flag and vendor.
4. Check for combination of ship-to, ship-from, percentage and in-state flag.

For India, the material and services columns are not used. Checking for the material group and vendor combinations upfront allows you to populate the table with special tax codes that should be used for certain vendors or materials groups on the purchase order line. This can help the system recognize transactions where Input Tax Credit (ITC) is allowable or not, which may require selecting a different tax code. For example, if you wanted to use code CA rather than CG if the purchase order line material group is 12345, but all other details remain the same, you can add the following row into the tax table.

Country	TaxCode	VendorID	ShipTo	Ship From	Material Group	Percentage	India InState
IN	CA	-	IN	IN	12345	18	True

This means that the system will select tax code CA if the material group is 12345, but tax code CG will continue to be used for all other material groups.

Tax code determination for countries with tax jurisdictions

A country that uses tax jurisdictions is one where there is no standard national rate of sales tax, but rather each individual region or province is empowered to set local rates of sales tax based on their own chosen criteria. They can also decide to exempt certain goods from sales tax as part of a wider economic strategy. The individual areas empowered to levy tax are referred to as tax jurisdictions. They are, in effect, local tax offices.

Countries that use tax jurisdictions include the US, Canada and Brazil.

The US, for example, has four levels of tax jurisdiction. The rate of sales tax is predominately set at the state level, but each county, city and district is allowed to add percentage points on to that rate in order to collect additional tax revenues to meet their own local requirements. This means that, within the same city, the rate of sales tax may differ depending on what part of the city you are in if a non-uniform district level sales tax has been applied. Currently, as a consequence of multi-level tax jurisdictions, there are over 14,000 separate tax jurisdictions in the US.

In common with most systems of taxation, tax is payable according to the rules of the geographical location where the goods were used or services performed, as opposed to the location where they were purchased. For businesses, this makes processing tax more complicated as it means that the tax position set out by the vendor on the invoice may not be what actually needs to be adhered to.

For example, if a vendor based in Texas orders goods from a vendor in California and those goods are to be used in Texas, then the purchase is subject to the tax rules in Texas. Under normal circumstances, the Californian vendor will not charge tax on the invoice as they are not responsible for collecting tax on behalf of the state of Texas. This does not mean that the buyer is not liable to pay tax, but rather that they must accrue the tax when processing the invoice. This means that they must declare the tax to the local authorities using the same rate as they would have done had they purchased the goods from a local vendor. From an invoice processing point of view, this means that the invoice items should be passed using a tax code that denotes an accrual.

Equally, if a vendor charges tax on the invoice for goods that are tax-exempt in the location where they are to be used, the buyer can deduct the tax when settling the invoice. This means that the invoice is entered as if tax was never charged on the invoice. This process is often referred to as a 'short pay'.

In the scenario where the goods are subject to tax and the vendor charges tax, it is common for the buyer to accept and pay the tax amount charged. This process is often referred to as 'pay tax as billed'.

When raising a purchase order, the buyer typically enters a tax code for each line item. This tax code specifies whether the item is subject to tax or tax-exempt for the tax jurisdiction where the goods are going to be used, or the services are going to be performed.

Unlike tax codes for countries that do not use tax jurisdictions, the tax code has no rate associated with it. It is effectively a processing instruction that tells the ERP system how to process the tax. The tax rate itself is specified using a tax jurisdiction code, which is a unique ID assigned to each tax jurisdiction. It is common for ERP system to be connected to a third party application such as Vertex or Taxware that are continually updated with the tax rules for each jurisdiction.

At the time of invoice entry, the AP user looks at the purchase order tax code and the tax position laid out by the vendor on the invoice. If they agree, the purchase order tax code can be assigned to the invoice line item. If they do not agree, then an alternative course of action is needed.

The table below shows the possible combinations and a common course of action that an AP user would take in a manual process.

Purchase order line tax code	**Vendor invoice tax position**	**Course of action**
Taxable	Vendor charges tax	Use PO tax code, pay tax as billed
Tax exempt	No tax on invoice	Use PO tax code
Taxable	No tax on invoice	Use accrual tax code
Tax exempt	Vendor charge tax	Use PO tax code, short pay invoice if this applies to all invoice lines

Automatic tax code determination for countries that use tax jurisdictions incorporates the same kind of decision-making process, and allows you to configure the system to allocate the correct invoice line item tax codes automatically.

Activate automatic tax code determination for countries with tax jurisdictions

To activate automatic tax code determination for countries with tax jurisdictions, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Tax Configuration** node.
5. Select the **Activate Tax Code Determination** check box.
6. Ensure that the **Always Use PO Tax Code** check box is cleared.
7. Ensure that the **Derive Ship-To From Company Code** check box is cleared.
8. Select the **Read Plant For DB** check box if you want to read details of the plant from a database. The plant look-up is mandatory if you want to use the automatic tax code determination feature for countries with tax jurisdictions. Further settings are then displayed.
9. Select the SQL connection group that points to the database where the plant table is located using the **Plant SQL Connection Group** drop-down.
10. Enter the technical name of the plant look-up table in **DB Plant Table**.
11. Enter the technical name of the column that represents the unique plant ID in **DB Plant**.
12. Enter the technical name of the column that represents the plant country in **DB Plant Country**.
13. Save the changes.

Configure tax codes for countries with tax jurisdictions

Brainware for Invoices provides a tax jurisdiction configuration table where you can set up and configure the processing behavior for each of the ERP tax codes used by the customer.

Each row in the table represents one tax code for one country.

After a line item has been paired, the system performs a look-up to the tax jurisdiction configuration table using the purchase order line item tax code and the country of the invoice company code. Based upon configuration within that table, the system decides whether the invoice line item can simply be assigned the purchase order tax code, or whether a new tax code is needed based upon the presence or absence of tax charged on the invoice.

This process is repeated for all paired line items.

If line pairing succeeds for all invoice lines, the system then checks for any special processing requirements by performing a second look-up to the tax jurisdiction configuration table to ascertain whether the invoice should be short paid or whether tax should be paid as billed based upon the invoice line item tax codes allocated.

At a minimum, you need to populate the table with the two tax codes that the ERP system uses to denote a tax exempt or subject to tax status on the purchase order. You do not need to create table entries for any tax codes used by purchasing if they do not need to be changed at the time of invoice entry and do not have any special processing requirements.

To add a new tax code into the tax jurisdiction configuration table, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Tax Jurisdiction Codes** node. This then displays the tax jurisdiction configuration table.
5. Scroll to the last row in the table where you have the options to create a new entry.
6. Populate the **Index** column with the next available sequential number.
7. Enter the tax code for which you want to create an entry in **Tax Code**.
8. Enter the two character ISO-code for the country to which the tax code applies in **Country**.
9. If you want the system to change this tax code to a different tax code if tax is charged on the invoice, enter the new tax code in **If Tax**.
10. If you want the system to change this tax code to a different tax code if no tax is charged on the invoice, enter the new tax code in **If No Tax**.
11. Select the **Pay Tax As Billed** check box if you want to pay the amount of tax as stated by the vendor on the invoice if any invoice line has been allocated this tax code.
12. Select the **Short Pay If Tax** check box if the tax code is relevant for short pay. The system will short pay the invoice if the vendor is charging tax and all line items have been assigned a tax code relevant for short pay.
13. Save the changes.

Default a purchase order tax code

If a tax code is not present on the purchase order line item, the system is able to default a tax code based on the purchase order line account assignment category.

To configure the system to set a default tax code based on the purchase order line item account assignment category, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Tax Jurisdiction Codes** node. This then displays the tax jurisdiction configuration table.
5. Locate the row for the tax code you want to default.
6. Enter the relevant account assignment category in **Account Assignment Categories**. If you want the default the tax code for multiple account assignment categories, the categories must be

entered as a comma-separated list.

7. Save the changes.

Configure state-specific exceptions

You can configure state-specific exceptions for any tax code in the tax jurisdiction configuration table.

State specific exceptions are considered when the system initially reads the table using the purchase order line item tax code after a line item is paired. They allow you to configure selection of a different tax code for assignment to the invoice line item based upon a combination of vendor and ship-to states.

The vendor state is derived from the state of the order-from vendor. The ship-to state is derived from the state assigned to the plant on the purchase order line item.

To configure state-specific exceptions, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Tax Jurisdiction Codes** node. This then displays the tax jurisdiction configuration table.
5. Locate the row for the tax code to which you want to add a state-specific exception.
6. Enter the relevant vendor ship-from states as a comma-separated list in **Vendor State**. A blank entry indicates that the state-specific exception applies to all vendor states. No state-specific exception is applied if **Ship To State** is also blank.
7. Enter the relevant ship-to states as a comma-separated list in **Ship To State**. A blank entry indicates that the state-specific exception applies to all ship-to states.
8. If you want the system to change this tax code to a different tax code if the state exception applies and tax is changed on the invoice, enter the new tax code in **If Tax State**.
9. If you want the system to change this tax code to a different tax code if the state exception applies and no tax is charged on the invoice, enter the new tax code in **If No Tax State**.
10. Save the changes.

Unit of Measure Conversions

Units of measure appear at line item level on an invoice. They describe the physical quantity to which the line item quantity relates. Common units of measure found on invoices include 'each', 'kilograms', 'lbs', 'boxes', 'cases', and for service invoices that are billing time expended, 'hours' and 'days'.

Brainware for Invoices looks for a unit of measure when extracting the invoice line items and a designated column is included in the line items table for that reason. This is not a mandatory entry.

When a purchase order is raised within an ERP system, each purchase order line item is assigned an order quantity unit of measure which applies to the order quantity. Some ERP systems also have an order price unit of measure, which denotes the unit of measure for which the purchase order line unit price is quoted. In the vast majority of cases, the order quantity unit of measure and the order price unit of measure is the same.

Within BFI, each invoice line has only one unit of measure, which is taken as both the invoice quantity unit of measure and invoice unit price unit of measure.

When exporting the line items, the order quantity unit of measure and the order price unit of measure passed downstream for a paired line item are always lifted from the purchase order line item that the invoice line paired to. This cannot be changed as ERP systems are unable to accept invoice line items where the units of measure differ from those used on purchase order.

Hence, if the invoice and purchase order units of measure differ, the system needs to convert the invoice quantity during line pairing so that it is expressed in the order quantity unit of measure used on the original purchase order line. This is in order to prevent the wrong quantity being sent to the ERP system.

In BFI, this conversion process is referred to as the unit of measure conversion check.

If the system is unable to carry out the conversion check successfully, line pairing will fail.

Activate the unit of measure conversion check

To activate the unit of measure conversion check, complete the following steps in Solution Configuration Manager,

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Line Pairing Settings** node.
5. Select the **UOM Check** check box.
6. If the ERP system uses an order price unit of measure, select the **PUOM Check** check box.
7. Enter the tolerance you would like to apply for unit of measure comparisons in **PUOM Tolerance**. This tolerance is the value by which the invoice unit price is allowed to vary from the purchase order unit price in order for the system to infer that the unit of measure for the invoice line must be the same as the order price unit of measure on the purchase order line. Entry must be in the form of a percentage. The default value is 10, denoting 10 percent.
8. Save the changes.

Unit of measure conversion for custom items

The unit of measure conversion check can be enhanced to work with special cases where the unit of measure conversion ratio between invoice line and purchase order line is neither clear from the pricing, nor a universal constant, for example, kilograms to tonnes.

The challenge that custom units of measure can bring is illustrated by the following example.

A construction company orders 100 bags of concrete, expecting to pay $69.90 US dollars per bag. The company material number for concrete is 1234A. The purchase order would appear as follows.

Material No	Description	Quantity	Unit of Measure	Unit Price	Unit Price
1234A	Concrete	100	BAG	$69.90	$6,990.00

The vendor then issues an invoice for a partial shipment of the concrete, but the vendor is invoicing in LBS. The line item on the invoice is presented as follows.

Description	Quantity	Unit Of Measure	Unit Price	Total
Concrete	30	LBS	$4.72	$141.60

As price differences between the order unit price and the invoice unit price can occur, converting the invoice quantity from LBS to bags is not possible unless you know how many LBS are in each bag of that particular type of concrete. As such, if the correct conversion ratio is not available, line pairing will fail for this example.

To mitigate this problem, during the unit of measure check conversion, BFI is able to perform a look-up to a unit of measure conversion table in order to find the correct conversion ratio.

The unit of measure conversion table is installed into either an Oracle or SQL Server database using an install SQL script that we provide. It is usual practice to create the table in BFI configuration database.

About the unit of measure conversion table

The unit of measure conversion table (BRWUOMConversions) is a supplementary table that can be installed into the solution database. It can be populated with the conversion ratio between the base unit of measure and a custom unit of measure for a given material.

Note:
If the database connection cannot be established, or incorrect configuration entries are present, then the system does not fail document export, but the line item is not paired. If line pairing logging is activated, then any error and tracking messages are recorded in the Brainware for Invoices log file.

The structure of BRWUOMConversions is as follows.

Column	Type	Description
MATERIAL	Varchar	Client material number.
BASEUOM	Varchar	Material base unit of measure in the ERP system which is used to account for all stock of that material in a common unit.
NUMERATOR	Decimal	Conversion ratio numerator.
DENOMINATOR	Decimal	Conversion ratio denominator.
UOM	Varchar	External unit of measure.

During the conversion, the system performs a look-up on this table using the external unit of measure read from the invoice (in this case, LBS) and the material number read from the purchase order (in this case, 1234A).

If a record is found, the system checks whether the order unit of measure on the purchase order (in this case, BAG) is equal to the base unit of measure for the material. If it is, the invoice quantity is converted as per the following calculation.

```
 Converted Quantity = Invoice Quantity * (Numerator / Denominator) = 30 * ( 1 / 15 ) = 2
```

Therefore, 30 pounds is equal to 2 BAGS, so 2 is the corresponding quantity expressed in the purchase order unit of measure.

Line pairing now succeeds for the invoice line, and the system then exports a quantity of 2, a unit of measure of BAG, and a total line item value of $141.60 to the downstream ERP system.

Unit of Measure Triangulation

A Unit of Measure Triangulation occurs when the order unit of measure for the purchase order line item is not the same as the base unit of measure for the material. Hence, three different units of measure are in play.

- The invoice line item unit of measure.
- The purchase order line item unit of measure.
- The base unit of measure for the material.

For example, the construction company in example 2 decides to order more concrete, though this time they wish to order 10 pallets. The purchase order would be raised as follows.

Material No	Description	Quantity	Unit of Measure	Unit Price	Total
1234A	Concrete	10	PAL	$1,398.00	$13,980.00

The vendor continues to bill in LBS, and submits their invoice as follows.

Description	Quantity	Unit of Measure	Unit Price	Total
Concrete	900	LBS	$4.72	$4248.00

Within the construction company's ERP system, the base unit of measure for the material remains as BAG.

Dealing with this situation requires an additional entry in the unit of measure conversion table to represent the conversion ratio between the material base unit of measure (in this case, BAG) and the purchase order unit of measure (in this case, PAL).

Each single pallet holds 20 bags; hence the additional entry must be as follows.

Material	BaseUOM	Numerator	Denominator	UOM
1234A	BAG	1	15	LBS
1234A	BAG	20	1	PAL

When converting the invoice quantity, the system first converts it to the quantity in the base unit of measure, then converts it again into the same quantity, but expresses it in the purchase order unit of measure.

The calculations are as follows.

When converting to base unit of measure, the following equation is used.

```
 Base UOM Quantity = Invoice Quantity * (Numerator / Denominator) = 900 * (1
/ 15) = 60
```

When converting to the purchase order unit of measure, the following equation is used.

```
 Converted Quantity = Base UOM Quantity * (Denominator / Numerator) = 60 * (1
/ 20) = 3
```

Line pairing now succeeds for the invoice line item, and a quantity of 3, a unit of measure of PAL, and a total of $4248.00 is passed to the downstream ERP system.

Under no circumstances must an entry in the table be made as follows.

Material	BaseUOM	Numerator	Denominator	UOM
1234A	PAL	1	300	LBS

Whereas this may be correct mathematically, it is INCORRECT from a table population point of view, and may lead to incorrect quantity conversions as the base unit of measure for the material is not pallets. The developer must always check with the client so that the base unit of measure for the material can be established correctly. The content of that column must be consistent for all entries in the table relating to a given material.

Configure usage of the Unit Of Measure Conversion Table

To configure usage of the unit of measure conversion table, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Line Pairing Settings** node.
5. Select the **Convert Quantity From DB** radio button.

6. Save the changes.
7. Within the **Processing Settings** hierarchy tree, navigate to the **Unit Of Measure Settings** node.
8. Choose the SQL connection group that represents the connection to the unit of measure conversion table's database by selecting the SQL connection group ID from the **SQL Connection Group** drop-down.
9. If you have changed the technical name of the unit of measure conversion table from **BRWUOMConversions** to another value, enter the new name in **DB Table Name**.
10. Enter the technical name of the material number column in **DB Material No.**
11. Enter the technical name of the column used for the base unit of measure in **DB Base UOM.**
12. Enter the technical name of the column used for the conversion numerator in **DB Base Numerator.**
13. Enter the technical name of the column used for the conversion denominator in **DB Denominator.**
14. Enter the technical name of the column used for the external unit of measure in **DB UOM.**
15. Save the changes.

Configure unit of measure aliases

When the system queries the unit of measure conversion table, it does so using the unit of measure code used by the customer ERP system. However, vendors commonly do not state this code on the invoice. For example, instead of using unit of measure codes 'TO' and 'EA' for 'tonnes' and 'each' respectively, the vendors often choose to use their own terminology, which would not be understood by the customer ERP system.

Hence, BFI provides a unit of measure translation table where unit of measure aliases used by vendors can be mapped to the codes used by the customer. The translation table is processing profile specific.

To configure the mapping of vendor unit of measure aliases to the codes used by the customer, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Unit Of Measure Types** node. The unit of measure translation table is then displayed.
5. Scroll to the last row in the table where you have the option to create a new entry.
6. Populate the **Index** column with the next available sequential number.
7. Enter the unit of measure code used by the customer in the **ISO Code** column.
8. Enter the aliases used by the vendor as a comma-separated list in the **Alias** column.
9. Click the **Insert** hyperlink to save the changes.

Data Export

Export is controlled via export profiles, which are in turn assigned to clients. During installation, export profile 0 is automatically installed and assigned to client 0. This export profile settings can be changed, if needed, or a new export profile can be added.

For each profile, you can configure the following export options for Brainware for Invoices.

- Export TIFF images.
- Export a PDF file.
- Export to database tables.
- Export to an XML file.
- Export to a CSV file.
- Export to ProcessDirector for SAP.
- Export to ProcessIT for Oracle EBS.
- Export an OCR XML file.
- Activate a custom export.

With the exception of the custom export, the options above only apply for documents classified to the 'Invoices' class, or to one of its child classes. For custom base classes, the data export will need to be coded programmatically within 'UserExitCustomExport' on the UserExits script class level.

Add Export Profiles

You can create an export profile in the Solution Configuration Manager. This profile can then be shared between multiple clients, enabling export behavior for one or more clients with minimal effort. If none of the available profiles is appropriate for a specific client, additional profiles are allowed.

To add an export profile to your project, complete the following steps.

1. Open the Solution Configuration Manager.
2. Select a project from the drop-down.
   An additional **Settings** list is displayed.
3. From the **Settings** list, select **Export Settings**.
   An additional **Profile** list is displayed.
4. Select the profile from the **Profile** list that contains settings that are the closest to those you want in your new profile.
   If you are not sure here, select the default profile.
   An additional **Copy Profile** button then appears.
5. Click **Copy Profile**.
   A **Copy Profile** window is displayed.

6. Keep the default option for the **Profile ID**.

   This is a unique number and it is the easiest if you accept the one provided by default as it is the next unique number in the sequence.

7. Under **Profile Name**, enter a short name that is easy to remember.
8. Under **Profile Description**, enter a brief description of the profile.
9. Click **Save**.

Configuring the export directory

The system writes export files to the export directory specified against the Runtime Server instance performing the export step.

You can configure an override export directory path at the export profile level. The override export directory takes priority over any export directory configured against the Runtime Server instance. This allows you to maintain the configuration of the export directory within the BFI configuration database. It also allows you to specify a different export directory at the export profile level without having to create multiple runtime server instances. You can also configure a default export directory path.

This directory is used if no directory is specified against the RTS instance and no override export directory is configured. The core platform does not permit a blank export directory on an RTS instance performing export, hence usage of the default export directory path is limited, but it could be invoked in custom script.

To configure an override and default export directory, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. Select **Export Settings**.
3. Select the relevant Export Profile.
4. Within the **Export Settings** hierarchy tree, navigate to the **Export Options** node.
5. Enter the default export directory path you want to use in **Default Export Path**.
6. Enter the override export directory you want to use in **Override Export Path**.
7. Save the changes.

Export TIFF images

Runtime Server settings can be used to export a copy of the original TIFF image to the export directory. It is recommended that this setting be used over custom settings. However, custom settings provide additional options for outputting a second TIFF image and must be used when one or more of the following applies.

- A second TIFF file is required during document export.
- The TIFF filename must be set to the document URN rather than the original image filename.
- The TIFF image resolution needs to be changed from the original image resolution.
- The TIFF image compression ratio needs to be changed from that of the original image.

Export a configurable TIFF image

To export an additional TIFF image, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. Select **Export Settings**.
3. Select the relevant Export Profile.
4. Within the **Export Settings** hierarchy tree, navigate to the **Export Options** node.
5. Select the **Output TIFF File** check box. Further settings are displayed.
6. To set the name of the TIFF file to match the document URN mapped in Global Settings > Import Settings, in the **Tiff Name** drop-down, select `URN`. Otherwise, the name of the original imported document is displayed.
7. Save the changes.

Configure the DPI and the compression type for TIFF images

Configuring the DPI and image compression types is optional. To change the image DPI and compression, complete the following steps.

1. Within the **Export Settings** hierarchy tree, navigate to the **Export Options** node.
2. Set **Tiff DPI** to a DPI of your choice - for example, 200. The default image compression is 300 dots-per-inch.
3. Choose the desired image compression by choosing a value from the **Tiff Format** drop-down. The default used is G4FAX, but the four options available are as follows:
   - G4FAX This is standard Grade 4 compression.
   - G3FAX This is standard Grade 3 compression.
   - LZWFAX This is LZW compression.
   - HUFFAX This is HUF compression.
4. Save the changes.

Export a PDF file

You can output an invoice as a searchable PDF file. To export a PDF file, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. Select **Export Settings**.
3. Select the relevant Export Profile.
4. Navigate to **Export Options** on the **Export Settings** hierarchy tree.
5. Select the **Output PDF** check box. Further settings are displayed.
6. To set the name of the PDF file to match the document URN mapped in Global Settings > Import Settings, in the **PDFName** drop-down, select `URN`. Otherwise, the name of the original imported document is displayed.

Database Export

You can configure the system to export data to a downstream database of your choice. The database export can write the data into four different types of table.

- An invoice header data table
- An invoice line item data table
- An invoice general ledger account coding table
- An invoice tax line item table

Configure database export

To activate output to a database, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. Select **Global Settings**.
3. Within the **Global Settings** hierarchy tree, navigate to the **Database Settings** node.
4. Create a new entry that represents the SQL connection to the database that contains the target database tables to which you wish to export data. Make a note of the corresponding Index ID, such as 4.
5. Save the changes.
6. From the **Settings** drop-down, select **Export Settings**.
7. Select the relevant export profile.
8. Within the **Export Settings** hierarchy tree, navigate to the **Export Options** node.
9. Select the **Export to DB** check box. Further database export options are then displayed.
10. In the **SQL Connection Group** drop-down, select the index ID created earlier that represents the target database.
11. Save the changes.

Configure invoice header database export

If database export is required, then configuring the system to output data to an invoice header database table is mandatory. The invoice header contains items of data that apply to the document as a whole, such as the invoice number, the invoice date, and the vendor.

The target invoice header database table must have a field that represents the unique key for each row. By default, the system populates this field with the name of the image filename without the file extension. However, a document URN mapped in Import Settings can be used instead. To configure data export to an invoice header database table, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. From the **Settings** drop-down, select **Export Settings**.
3. Select the relevant export profile.
4. Within the **Export Settings** hierarchy tree, navigate to the **Export Options** node.
5. Enter the technical name of the target invoice header table in **DB Header Table**.

6. Enter the technical name of the field in the target header database table that represents the unique record identifier in **DB Header Key**.
7. In the **DB Key** drop-down, choose how you want the unique record identifier to be created. If you want to use the document URN mapped in Global Settings > Import Settings, select `URN`. If you want to use the original document filename (without the file extension and filetype), select `FILENAME`.
8. In the **DB Header Operation** drop-down, select `Insert` if the system should create a new record in the table for the document. If the system should update an existing record that was created in an upstream process, select `Update`.
9. Save the changes.
10. Within the **Export Settings** hierarchy tree, navigate to the **Header Field Export Mapping** node. A list of possible header export fields are then displayed.
11. Browse through the list of available header export fields. For each field that should be exported, populate the 'DB Column Name' column with the technical name of the field in the target database table where the value should be written. For example, to write an extracted invoice number into a database field with a technical name of 'INVNO', enter 'INVNO' into the 'DB Column Name' column.
12. Repeat the above two steps for all header fields for which database output is required, ensuring that the **DB Column Name** column is left blank for any field that is not relevant for database output.
13. Save the changes.

Configure line item database export

The output of invoice line items is optional. The system expects the destination line item table to have a composite key consisting of two fields. One is the document identifier which the system populates with a value identical to that passed into the header table unique key field, which must have the same technical column name. The second is a line item number index column, which the system will set from 1-n, where n is the number of line items.

To configure the output of line items to a target invoice line items database table, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. From the **Settings** drop-down, select **Export Settings**.
3. Select the relevant export profile.
4. Within the **Export Settings** hierarchy tree, navigate to the **Export Options** node.
5. Enter the technical name of the target database table where the line item data should be written in **DB Line Items Table**.
6. Enter the technical name of the field in the target line items database table where the unique line item row number should be written in **DB Line Items Key**.
7. Save the changes.
8. Within the **Export Settings** hierarchy tree, navigate to the **Line Item Export Mapping** node. A list of possible line item export fields are then displayed.
9. Browse through the list of available line item export fields. For each field that should be exported,

populate the **DB Column Name** column with the technical name of the field in the target database table where the value should be written.

10. Repeat the above two steps for all line item fields for which database output is required, ensuring that the parameters are left blank for any fields that are not relevant for database output.
11. Save the changes.

Notes

If no destination table is specified, no line items will be written out. If a table is specified, but no line items key field has been set, then the export will fail and the batch will go to a state of 750.

Additionally, the system will not write out line item data if any of the following conditions hold for any given document:

- The line items field is not active.
- Line items are not subject to validation as configured in Table Settings for the document processing profile.
- The document is a credit memo, and line items are not required for credit notes.
- The document is NO-PO, and line items are not required for NO-PO documents.
- The document is PO-related, but the PO has not been released, and line items are not required for documents with an unreleased PO.
- The user selected an 'INVOICE AMOUNTS DO NOT ADD UP' error code in Verifier.
- The user selected either a 'VENDOR NOT FOUND,' 'MISSING/INVALID PO' or a 'MISSING/INVALID VENDOR & PO' invalid reason in Verifier, and line items are not required for that particular invalid reason.
- The document is from a utility vendor, and line items are not required for utility vendors.

Result

For MIRA, third-party freight and service-PO invoices where line items were not required and line pairing was either unsuccessful or deactivated, a single line item will be written to the database with a quantity of '1', and a net price and line item total set to the net invoice value. The description is set to 'MIRA,' 'SERVICE' or 'THIRD PARTY FREIGHT' as appropriate.

When writing the line item information to the database, the system will first clear out any existing line item records that are present for the document in question. If the line item export to the database is not successful, the entire document record will be rolled back, which includes the header level entry and document export will fail, sending the batch to a status of 750.

Configure general ledger account database export

The output of general ledger line items is optional. The system expects the target general ledger account database table to have a composite key consisting of two fields. One is the document identifier, which is populated with a value identical to that passed into the header table unique key field, which must have the same technical column name. The second is a line item number index column, which the system sets from 1-n, where n is the number of general ledger line items.

To configure the output of GL items, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. From the **Settings** drop-down, select **Export Settings**.
3. Select the relevant export profile.
4. Within the **Export Settings** hierarchy tree, navigate to the **Export Options** node.
5. Enter the technical name of the target database table where the GL line item data should be written in **DB GL Items Table**.
6. Enter the technical name of the field in the target GL line item database table where the unique line item row number should be written in **DB GL Items Key**.
7. Save the changes.
8. Within the **Export Settings** hierarchy tree, navigate to the **GL Export Mapping** node. A list of possible GL line item export fields are then displayed.
9. Browse through the list of available GL line item export fields. For each field that should be exported, populate the **DB Column Name** column with the technical name of the field in the target database table where the value should be written.
10. Repeat the above step for all GL line item fields for which database output is required, ensuring that the parameters are left blank for any fields that are not relevant for database output.
11. Save the changes.

Result

If no table is specified, no GL items will be written out. If a table is specified, but no GL items key field is specified, then the export will fail and the batch will go to a state of 750.

When writing the GL account line item information to the database, the system will first clear out any existing GL item records that are present for the document in question. If the GL item export to the database is not successful, the entire document record will be rolled back, including the header level entry, and document export will fail, sending the batch to a status of 750.

Configure tax table database export

The output of tax line items is optional. The system expects the destination tax line item table to have a composite key consisting of two fields: one is the document identifier which will be populated with a value identical to that passed into the header table unique key field, which must have the same technical column name; the second is a tax line item number index column, which the system will set from 1-n, where n is the number of tax line items.

To configure the output of tax line items, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. From the **Settings** drop-down, select **Export Settings**.
3. Select the relevant export profile.
4. Within the **Export Settings** hierarchy tree, navigate to the **Export Options** node.
5. Enter the technical name of the target database table where the tax line item data should be written in **DB Tax Table**.
6. Enter the technical name of the field in the target tax line item database table where the unique line item row number should be written in **DB Tax Key** field.

7. Save the changes.
8. Within the **Export Settings** hierarchy tree, navigate to the **Tax Export Mapping** node. A list of possible tax line item export fields are then displayed.
9. Browse through the list of available tax line item export fields. For each field that should be exported, populate the **DB Column Name** column with the technical name of the field in the target database table where the value should be written.
10. Repeat the above step for all tax line item fields for which database output is required, ensuring that the parameters are left blank for any fields that are not relevant for database output.
11. Save the changes.

Result

If no table is specified, no tax line items will be written out; if a table is specified, but no tax line items key field is nominated, then the export will fail and the batch will go to a state of 750.

When writing the tax line item information to the database, the system will first clear out any existing tax line item records that are present for the document in question. If the tax line item export to the database is not successful, the entire document record will be rolled back, which includes the header level entry and document export will fail, sending the batch to a status of 750.

Add additional fields to the database header export

It is possible to add custom fields and values into the database header export.

To do this, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. From the **Settings** drop-down, select **Export Settings**.
3. Select the relevant export profile.
4. Within the **Export Settings** hierarchy tree, navigate to the **Header Field Export Mapping** node. A list of possible header export fields are then displayed.
5. Scroll to the bottom of the list of fields where you will see a special table row where new entries can be added.
6. Populate the **Field Name** column with the name of the new export field you wish to add. This could be the technical name of an actual field within BFI, or it could be a 'virtual' field.
7. Populate the **DB Column Name** column with the technical name of the field in the target database table where the value should be written.
8. Click the **Insert** hyperlink to the left of the row.
9. Save your changes.
10. Open the **<project>.sdp** file with the Designer module.
11. Go to Definition mode.
12. Right click the UserExits node on the project class tree and select Show Script from the context menu. A script window will appear.
13. Navigate to the **UserExitDBHeaderExport** subroutine and add the following line into the subroutine.

    Example

```
fnWriteDBHeaderField(strMappedField, strValue, strDBKeyName,
strFieldValue)
```

In this statement, 'strMappedField' must match the name of the field entered in the **Field Name** column in step 6. 'strValue' represents the value to be exported. The other two parameters must be left as they are.

Note:
If the database field being added is a date field, and that date field is in the Verifier output format that has been configured for the processing profile, then the fnWriteDBHeaderDateField function must be used instead. This function has an identical interface, but converts the date into the export output format configured for the processing profile.

14. Close the script window.
15. Save the changes and close the **<project>.sdp** file.

XML File Export

You can configure the system to output data in the form of a standard XML file which will be written to the export directory specified against the runtime server instance performing export.

XML file sections

The standard XML output file is divided into five sections.

Document section

This section includes global document fields that are separate from the type of business document they represent, such as the scan date, priority flag, the URN and so on. The following sections are children of the document section.

If you are using Brainware Intelligent Capture version 5.9.1 or higher, the document section also includes information on the document pages.

Invoice header section

This section includes fields associated with the invoice header, such as the invoice number, the invoice date, the vendor ID, and so on.

Invoice line items section

This section includes invoice line item information written in line-by-line, such as the line item quantity, the unit price, the line item total, and material number.

General ledger coding section

This section includes all of the general ledger account entries associated with the invoice, such as the general ledger account number, the cost center, the tax code, and the amount. This functionality is used within the solution for the automatic general ledger coding of invoice miscellaneous charges.

Tax line items section

This section includes all of the tax line items associated with the invoice, such as the tax base amount, the tax code, and the tax amount.

Each of the sections has a specific tag, as does each field within those sections. All tags are configurable within the system configuration. The system configuration also controls which fields are written into the file and which fields are not. The structure of the file is as follows.

```
<XML Encoding Header>
<Document>
   [Document level fields]
   <InvHeader>
      [Invoice header fields]
   </InvHeader>
  <InvLines>
      [Invoice line item fields – one set of entries per line item]
  </InvLines>
  <GLLines>
      [GL item fields – one set of entries per GL line]
  </GLLines>
        <TaxLines>
                    [Tax item fields – one set of entries per tax line]
       </TaxLines>
</Document>
```

Activate output to an XML file

To set up output to an XML file, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. From the **Settings** drop-down, select **Export Settings**.
3. Select the relevant export profile.
4. Within the **Export Settings** hierarchy tree, navigate to the **Export Options** node.
5. Select the **Output XML File** check box. Further options relating to XML output are then displayed.
    1. Choose how you want the XML file to be named using the **XML Filename** drop-down. If you select `FILENAME`, the XML file will be given the same name as the original image file, without the file extension and filepath. If you select `URL`, the system will name the file according to the URL mapped in Global Settings > Import Settings.
6. Enter the file extension you want the XML file to have into the **XML Type** field. The system uses a default of 'XML' if this is not populated.
7. Configure the desired encoding header for the XML file via the **XML Encoding Header** parameter if the default value is not appropriate. XML export will fail if an invalid encoding header is entered.
8. Save the changes.

Add document level fields into the XML file

The following table displays the document level fields.

Document Level Field	Description
BatchName	This is the batch name as derived from a mapping to the document filename in Global Settings > Import Settings.
ClientID	This is the client ID for the document.
DocClass	This is the Brainware for Invoices document class.
DocumentLink	This is the link to the document image.
PriorityFlag	This is the flag to indicate whether the document has a high priority.
ScanDate	This is the scan date as derived from a mapping to the document filename in Global Settings > Import Settings.
Status	This is the XML document status. You can configure the value to be outputted within the XML file configuration using the XML Status Exported field.
URN	This is the document URN as derived from a mapping to the document filename in Global Settings > Import Settings. If no mapping has been set, the document name, without the filepath and the file extension, is used.

To add document level fields into the XML file, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. From the **Settings** drop-down, select **Export Settings**.
3. Select the relevant export profile.
4. Within the **Export Settings** hierarchy tree, navigate to the **Export Options** node.
5. Enter the XML tag you would like to use for the document level of the XML file in **XML File Header**. For example, if you enter 'Document,' the system use the tags '<Document>' and '</Document>' to mark the beginning and the end of the document level data.
6. If you wish to add a status field into the XML file, populate the **XML Status Exported** parameter with the value you wish to be written into the file for this field.
7. Save the changes. Within the **Export Settings** hierarchy tree, navigate to the **Header Field Export Mapping** node. This displays the header field export configuration table.
8. Choose the document level fields you would like to export from the available list by populating the **XML Tag** column with the desired XML tag for that field. Any field that does not have an XML tag configured is not exported. The field list displayed is a combined list of document level and invoice header level fields. The relevant document level fields are listed in the table below.
9. Save the changes.

Add invoice header fields into the XML file

To add invoice header fields into the XML file, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. From the **Settings** drop-down, select **Export Settings**.
3. Select the relevant export profile.
4. Within the **Export Settings** hierarchy tree, navigate to the **Export Options** node.
5. Enter the XML tag you would like to use for the invoice header level of the XML file in **XML Invoice Header**. For example, if you enter 'Invoice,' the system will use the tags '<Invoice>' and '</Invoice>' to mark the beginning and the end of the invoice header level data.
6. Save the changes.
7. Within the **Export Settings** hierarchy tree, navigate to the **Header Field Export Mapping** node. This displays the header field export configuration table.
8. Choose the invoice header fields you would like to export from the available list by populating the **XML Tag** column with the desired XML tag for that field. Any field that does not have an XML tag configured will not be exported.
9. Save the changes.

Add invoice line item fields into the XML file

To add invoice line item fields into the XML file, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. From the **Settings** drop-down, select **Export Settings**.
3. Select the relevant export profile.
4. Within the **Export Settings** hierarchy tree, navigate to the **Export Options** node.
5. Enter the XML tag you would like to use for the invoice line item section of the XML file in **XML Line Items Header**. For example, if you enter 'Lines,' the system will use the tags '<Lines>' and '</Lines>' to mark the beginning and the end of the line item data.
6. Enter the XML tag you would like to use for each individual line item in **XML Line Items Tag**. For example, if you enter 'Line,' the system will use the tags '<Line>' and '</Line>' to mark the beginning and the end of each line item.
7. Save the changes.
8. Within the **Export Settings** hierarchy tree, navigate to the **Line Item Export Mapping** node. This displays the line item field export configuration table.
9. Choose the line item fields you would like to export from the available list by populating the **XML Tag** column with the desired XML tag for that field. Any field that does not have an XML tag configured will not be exported.
10. Save the changes.

Add general ledger fields into the XML file

The system will automatically create general ledger line items for invoices where a miscellaneous charge has been configured for booking to a general ledger account.

To add general ledger fields into the XML file, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. From the **Settings** drop-down, select **Export Settings**.
3. Select the relevant export profile.
4. Within the **Export Settings** hierarchy tree, navigate to the **Export Options** node.
5. Enter the XML tag you would like to use for the general ledger section of the XML file in **XML GL Lines Header**. For example, if you enter 'GLLines,' the system will use the tags '<GLLines>' and '</GLLines>' to mark the beginning and the end of the general ledger data.
6. Enter the XML tag you would like to use for each individual general ledger line item in **XML GL Lines Tag field**. For example, if you enter 'GLLine,' the system will use the tags '<GLLine>' and '</GLLine>' to mark the beginning and the end of each line item.
7. Save the changes.
8. Within the **Export Settings** hierarchy tree, navigate to the **GL Export Mapping** node within the **Export Settings** hierarchy tree. This displays the general ledger field export configuration table.
9. Choose the general ledger fields you would like to export from the available list by populating the **XML Tag** column with the desired XML tag for that field. Any field that does not have an XML tag configured will not be exported.
10. Save the changes.

Adding tax item fields into the XML file

To add tax item fields into the XML file, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. From the **Settings** drop-down, select **Export Settings**.
3. Select the relevant export profile.
4. Within the **Export Settings** hierarchy tree, navigate to the **Export Options** node.
5. Enter the XML tag you would like to use for the tax section of the XML file in **XML Tax Header**. For example, if you enter 'TaxLines,' the system will use the tags '<TaxLines>' and '</TaxLines>' to mark the beginning and the end of the tax line item data.
6. Enter the XML tag you would like to use for each individual tax line item in **XML Tax Tag**. For example, if you enter 'TaxLine,' the system will use the tags '<TaxLine>' and '</TaxLine>' to mark the beginning and the end of each line item.
7. Save the changes.
8. Within the **Export Settings** hierarchy tree, navigate to the **Tax Export Mapping** node.

9. Choose the tax line item fields you would like to export from the available list by populating the **XML** Tag column with the desired XML tag for that field. Any field that does not have an XML tag configured will not be exported.
10. Save the changes.

Add a custom header field into the XML file

You can insert custom fields into any section of the XML file.

The process of adding a field to the XML file consists of two steps. The first step is to add a new row to the appropriate export configuration table to represent the new field. The second step is to insert a matching line of code into the XML Export User Exit.

The export configuration table that is used depends on the type of field that needs to be written out. For fields that are written either to the document or invoice header level in the XML file, the header field export configuration table is used; for line item fields, the line item field export configuration table is used; for GL items, the general ledger field export configuration table is used; and for tax line items, the tax field export configuration table is used.

The exact naming of the field in the 'FieldName' column of the field export configuration tables does not need to be the same as the technical name of the relevant field, but must be meaningful. The name of the field also needs to be unique for the export profile ID.

To add a custom header field into the XML file, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. From the **Settings** drop-down, select **Export Settings**.
3. Select the relevant export profile.
4. Within the **Export Settings** hierarchy tree, navigate to the **Header Field Export Mapping** node. This displays the header field export configuration table.
5. Scroll to the bottom of the list of fields. At the end, there is a special table row where new entries can be added.
6. Populate the **Field Name** column with the name of the new export field you wish to add. This could be the technical name of an actual field within BFI, or it could be a 'virtual' field.
7. Populate the **XML Tag** column with the desired XML tag for that field.
8. Click the **Insert** hyperlink to the left of the row.
9. Save the changes.

Add matching code into the XML export user exit

To add matching code into the XML export user exit, complete the following steps.

1. With the Brainware Intelligent Capture Designer module, open the **<project>.sdp** file.
2. In Definition mode, highlight the UserExits class.
3. Right-click on the class and select **Show Script**.
4. Navigate to the UserExitXMLOutput user exit subroutine.

5. Add an `fnWriteXMLField` command or an `fnWriteXMLDateField` command below the 'Insert Code here' comment.
6. Save the changes.

Note:

- If the field being added is a date field, and the date field format matches the Verifier output format configured for the processing profile, then the 'fnWriteXMLDateField' function must be used instead. This function has an identical interface, but converts the date into the export output format configured for the processing profile.
- Additional values inserted into the XML file need not be tied to actual fields within the project file. You can also insert hard-coded values, or derive values from the document properties, for example, the document filename.

Examples
Header Field Export Mapping: FieldName: "DocInfo", XMLTag: "NewDocInfo"

fnWriteXMLField("DocInfo","New document information",cXMLDocHeader,xmlDoc)

will insert the tag "<NewDocInfo>New document information</NewDocInfo>" into the document level section.
Header Field Export Mapping: FieldName: "InvInfo", XMLTag: "NewInvInfo"

fnWriteXMLField("InvInfo","New invoice information",cXMLInvHeader,xmlDoc)

will insert the tag "<NewInvInfo>New invoice information</NewInvInfo>" into the invoice header section.

Write data to a CSV file

The structure of the CSV file is configurable for up to five lines per document at the header level, and one additional line for each line item. It is also possible to configure the CSV file output at the document or batch level, and to create multiple files depending on whether the invoice type is PO or NO-PO. You can output any number of different CSV files per document processed.

Configure the CSV file

Configuration of the CSV file output is performed at the export profile level using the CSV export configuration table within Solution Configuration Manager. Each row in the table represents a single CSV file for output. CSV files can be activated and deactivated using this table. In addition, there is a global switch that must be activated for any CSV output to occur.

Activate CSV file output at the global level

To activate CSV file output globally, complete the following steps within Solution Configuration Manager.

1. Select the project.
2. From the **Settings** drop-down, select **Export Settings**.
3. Select the relevant export profile.
4. Within the **Export Settings** hierarchy tree, navigate to the **Export Options** node.

5. Select the **Output CSV File** check box.
6. Save the changes.

Activate CSV file output for each CSV file

To activate output for each individual CSV file, complete the following steps. The naming of the CSV file depends upon whether output is required on a per-document or a per-batch basis.

1. Within the **Export Settings** hierarchy tree, navigate to the **CSV Export Configuration** node. This displays the CSV export configuration table. As part of the installation process, this table is populated with two sample entries, each denoting a single CSV file for output. These two sample entries can be adapted for your use, or you can insert a new entry into the last row of the table and click the **Insert** hyperlink.

   Choose the CSV files you would like to export by selecting the **Output File** check box. Remember to clear the box for any files you do not want.
2. If one file per batch is required, select the **Combined File Per Batch** check box. If one file per document is required, the check box should be cleared.
3. If you chose to output any of the CSV files on a per-batch basis in the step above, set the Document Grouping option for import in the RTS instance settings to `1 folder per batch or 1 batch per subdirectory, 1 folder per batch`.
4. Enter the path to the directory where you would like the CSV file to be exported in the **Filepath** column. If you wish to use the export directory configured on the RTS export instance, then this can be left blank.
5. Choose how you want the CSV file to be named using the drop-down options in the **Filename** column. If you select `FILENAME`, the system will name the CSV file after the original document filename, without the file extension. If you select URN, the system will name the CSV file using the URN mapped in Global Settings > Import Settings. This setting does not apply if you have selected the **Combined File Per Batch** check box as the name of the file will be derived from the Brainware Intelligent Capture batch number.
6. Enter the file extension you want for your CSV file into the **File Type** column. The system uses 'CSV' by default as the file extension if no entry is made here.
7. If you want to specify a prefix for the CSV file name to ensure unique naming in the event of a multi-CSV file export, you can enter the desired prefix in the **File Prefix** column.
8. Populate the **Separator** column with the single character you intend to use to separate values within the body of the CSV file. The system uses this to ensure that any separated values have this single character stripped out. If no separator is used, this can be left blank.
9. Choose the format for date output within the CSV file using the drop down options against the **Date Format** column. The possible choices are as follows.
   - YYYYMMDD
   - MMDDYYYY
   - DDMMYYYY
10. Choose the separator you wish to use for dates by entering one of the following in the **Date Separator** column.

- - (dash)
- / (forward slash)
- The separator can be left blank, if required.

11. You can restrict CSV file output by invoice type by using the **Invoice Type** drop-down. The options are as follows.
    - If you select 'PO', the CSV file will only be exported for PO invoices.
    - If you select 'NPO', the CSV file will only be exported for non-PO invoices.
    - If the field is left blank, the CSV file will be exported for both PO and non-PO invoices.
12. To output an additional copy of the original image to the destination directory, select the **Output Image** check box.
13. Configure how you want the content of the CSV file to appear for header fields using the **Format Line 1** to **Format Line 5** columns. You can use literals to mark the locations where extracted invoice values should be written. A full list of the available literals is available in the configuration settings overview.
14. Configure how you want the content of the CSV file to appear for line items using the **Line Items** column. You can use literals to mark the locations where extracted invoice values should be written. A full list of the available literals is available in the configuration settings overview.
15. Save the changes.

Add a new header field to the CSV file

Custom fields can be written into the CSV file. To add custom fields to the file, complete the following steps.

Prerequisite If the CSV field being added is a date field, and that date field is in the Verifier output format configured in Processing Profile Configuration Settings > Date Settings, then in the following steps you must use the fnWriteCSVDateField function instead. This function has an identical interface, but converts the date in the date format configured for the CSV file group. If no group format is set, the date is formatted according to the output date format setting in the Date Settings section.

1. With the Brainware Intelligent Capture Designer module, open the **<project>.sdp** file.
2. Navigate to the **Definition** mode section and highlight the **UserExits** class.
3. Right-click the class and select **Show Script**.
4. Navigate to the **UserExitCSVFile** user exit subroutine.
5. To add the **InvoiceCode** custom field to the file, add the following line to the subroutine.

   Example

   ```
   fnWriteCSVField(strRecordText, strKey, "<%myField>",pWorkdoc.Fields
   (“InvoiceCode”).Text)
   ```

   Note:

"<%myField>" is now a valid literal that can be used when defining the CSV header Format Lines.

6. Save the changes and close the script.

Note:
If the field being added is a date field, and the date field format matches the Verifier output format configured for the processing profile, then the 'fnWriteCSVDateField' function must be used instead. This function has an identical interface, but converts the date into the export output format configured for the processing profile.

Add a new line item field to the CSV file

Custom line item fields can be written into the CSV file. To add a new line item field, complete the following steps.

1. With the Brainware Intelligent Capture Designer module, open the **<project>.sdp** file.
2. Navigate to the **Definition** mode section and highlight the **UserExits** class.
3. Right-click on the class and select **Show Script**.
4. Navigate to the **UserExitCSVFileLine** user exit subroutine.
5. To add the line item field to the file, add the following line to the subroutine.

Example

```
fnWriteCSVField(strRecordText, strKey, "<%myfield>", "myvalue")
```

Note:
"<%myField>" is now a valid literal that can be used when defining the CSV line item format.

6. Save the changes and close the script.

Note:
If the field being added is a date field, and the date field format matches the Verifier output format configured for the processing profile, then the 'fnWriteCSVDateField' function must be used instead. This function has an identical interface, but converts the date into the export output format configured for the processing profile.

Export data to Process Director

Process Director is a packaged account payable workflow solution for SAP. BFI includes a standard integration so that, upon export, documents are sent to the Process Director module in SAP for further processing.

Configuring output to Process Director

Data is sent to Process Director via a Remote Function Call to SAP. The default remote function module used is called '/COCKPIT/RFC_DATA_SUBMIT' and this forms part of the standard Process Director installation.

To configure output to Process Director, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. From the **Settings** drop-down, select **Export Settings**.
3. Select the relevant export profile.
4. Within the **Export Settings** hierarchy tree, navigate to the **Export Options** node.
5. Select the **Export to Process Director** check box. This reveals the Process Director specific configuration options.
6. Optional. You can change the name of the Process Director remote function module used via **Process Director Function Name**.
7. Save the changes.

> **Note:** The system uses the SAP connection specified in the SAP Configuration settings for the processing profile ID. Within this settings group, the **Connect To SAP** check box must always be selected for any connection to take place.

Configuring usage of the Process Director generic function

You can also submit data to Process Director by using the generic function module. This module is an API supplied as part of Process Director, which can accept cross-applicational data. The advantages of using the generic function module are that there is no fixed data structure in terms of available fields that can be passed. In addition, the function includes a late archiving feature.

The default generic remote function module used is called '/EBY/PDBO_RFC_DATA_RECEIVE' and this forms part of the standard Process Director installation.

To configure output to PD using the generic function, complete the following steps in Solution Configuration Manager:

1. Within the **Export Settings** hierarchy tree, navigate to the **Export Options** node.
2. Ensure that the **Export To Process Director** check box is selected.
3. Select the **Use Generic Process Director function** check box. This reveals further settings related to the generic function module.
4. Populate the **Generic Mapping ID** field with the name of the Process Director mapping schema that should be used. This value should be 'BFI'. The export will fail if no mapping ID has been set.
5. Optional. If required, you can change the generic function to be called by entering the name of the new function in **Generic Process Director Name**.
6. Save the changes.

Result

The mapping ID is passed to the generic function via the 'IC_MAPID' import parameter. Additional import parameters 'IC_OBJ' and 'IC_ENV' are set to 'IV' and '02' respectively. If necessary, you can modify these parameters using 'UserExitSendToSAPProcessDirectorGeneric'.

Invoice data passed to Process Director

The following table provides an overview of the invoice data that BFI passes to Process Director out of the box, using both the standard and the generic function module.

Structure / Table / Node	Parent Node (generic function only)	Fields populated
I_STR_HEADER		COMP_CODE, CURRENCY_SAP, INVOICE_IND, DOCTYPE, PSTNG_DATE, REF_DOC_NO, PAYMT_REF, DOC_DATE, GROSS_AMOUNT, PMNTTRMS, KURSF, DIFF_INV, VENDOR_NO, PO_NUMBER, SGTXT, PMNT_BLOCK, BVTYP, ESRNR, ESRRE, DEL_COSTS, SHEET_NO Standard function only - EC_ARC_ID, EC_DBC_ID, E_ARC_OBJ.
I_TAB_ITEM	I_STR_HEADER	PO_NUMBER, PO_ITEM, QUANTITY, ITEM_AMOUNT, INVOICE_ITEM, TAX_CODE, TAXJURCODE, REF_DOC, REF_DOC_IT, REF_DOC_YEAR, SHEET_NO, SHEET_ITEM, COND_TYPE, COND_COUNT, COND_ST_NO, FREIGHT_VEN, TBTKZ, ITEM_TEXT
I_TAB_TAX	I_STR_HEADER	TAX_CODE, TAX_AMOUNT, TAX_RATE
IT_PROCESSLOG (used for invalid reasons)	I_STR_HEADER	TYPE, NUMBER, ID, MESSAGE_V1
I_TAB_ACCOUNT	I_STR_HEADER	GL_ACCOUNT, NET_AMOUNT, SHKZG, COMP_CODE, TAX_CODE, TAXJURCODE, COSTCENTER, ORDERID, PROFIT_CTR, WBS_ELEMENT, NETWORK, NETWORK_OP, SALES_ORD, S_ORD_ITEM, BUS_AREA

Process Director and document archiving

Document archiving is mandatory within Process Director because the subsequent work item created in the Process Director workflow must have an image attachment.

There are two available archiving options.

- Early archiving
- Late archiving

Early archiving refers to a scenario where the image is already archived (for example, in Perceptive Content) prior to receipt in BFI, hence Process Director requires the image details to create a link between the archived image and the work item in the Process Director workflow.

Late archiving refers to a scenario where the image itself is passed along with the invoice data to Process Director upon document export and Process Director carries out the archiving step. The late archiving scenario is only available if the generic function is used.

Early archiving with Process Director (standard function)

For the early archiving scenario using the standard function module, Process Director requires the archive image information for all documents it receives. The archive image information includes:

- The archive document ID
- The archive ID
- The SAP workflow document type

If any of these three things is absent, the document is not sent to Process Director and data export fails.

If you use early archiving, the archive document ID must be passed as part of the image filename, and the component of the filename that represents the archive document ID must be mapped as the document URN Global Settings > Import Settings. If no mapping is in place, the system will use the entire document filename (without the filepath and file extension) as the archive document ID.

It is also possible to use the independent late archiving feature with SAP to generate an archive document ID, rather than passing it via the image filename. This can be activated by selecting the **Archive Via SAP** check box within **SAP Configuration** for the processing profile.

You have two options to determine the archive ID.

- To set the archive ID on a document-by-document basis, it must be included as a component of the image filename and mapped to the **Destination Archive** parameter in Global Settings > Import Settings.
- To set the archive ID on a profile-by-profile basis, the **Destination Archive** parameter in the SAP Configuration settings for the processing profile must be set to the desired archive ID.

A document specific archive ID takes priority over a processing profile specific archive ID.

SAP workflow document types for MM/FI invoices and credit memos are also configurable in the SAP Configuration settings for the processing profile using parameters **MM Invoice Object**, **FI Invoice Object**, **MM Credit Object** and **FI Credit Object**.

The population of the interface for early archiving within the standard function module is as shown below.

Structure	Fields populated
I_STR_HEADER	EC_ARC_ID, EC_DBC_ID, E_ARC_OBJ

Early archiving with Process Director (generic function)

For early archiving using the generic function module, the following archive information must be provided.

- The archive document ID
- The archive ID
- The image document type (file extension)

If any of these three things is absent, the document is not sent to Process Director and data export fails.

The archive document ID must be passed as part of the image filename. The component of the filename that represents the archive document ID needs to be mapped as the document URN in Global Settings > Import settings. If no mapping is in place, the system will use the entire document filename (without the filepath and file extension) as the archive document ID.

It is also possible to use the independent late archiving feature with SAP to generate an archive document ID, rather than passing it via the image filename. This can be activated in by selecting the **Archive Via SAP** check box in the SAP Configuration settings for the processing profile. However, given that the generic function already comes equipped with a late archiving option, it is not expected that this combination would be used.

There are two possible ways to determine the archive ID.

- To set the archive ID on a document-by-document basis, it must be included as a component of the image filename and mapped to the 'Destination Archive' parameter in Global Settings > Import Settings.
- To set the archive ID on a profile-by-profile basis, the 'Destination Archive' parameter in the SAP Configuration settings for the processing profile must be set to the desired archive ID.

A document specific archive ID takes priority over a profile specific archive ID.

The document type (that is, the image file extension) is determined by the system automatically and no configuration is required. This is subsequently used in Process Director to determine the SAP workflow document type that must be used.

The population of the interface for early archiving within the generic function module is as follows.

Table	Fields populated
IT_ARC_HDR	ARC_DOC_ID, ARCHIV_ID, DOCUMENT_TYPE

Late archiving and Process Director

The late archiving option is available for use with the generic function only.

To activate late archiving, the 'LateArchiveViaPD' parameter must be set to 'TRUE' in the BRWEXP table. At the time of export, BFI loads the image file, converts it into hexadecimal, and sends it to the generic function via table 'IT_ARC_OBJ'. Each table row consists of a maximum of 1024 hexadecimal pairs, with each hexadecimal pair representing one byte of the file.

The image is archived in the format in which it exists at the time of export. Hence, if the project file is set to convert all files into TIFF images upon import, the document is archived as a TIFF image. It is possible to change this to PDF format by setting the parameter 'PDLateArchiveAsPDF' to 'TRUE' in the BRWEXP table . Activating this setting results in late archiving of every document as a PDF image. A temporary directory must also be specified in the 'PDTempDirectory' parameter, which is used by the system to create a temporary PDF file for the converted image before it is passed to Process Director.

If the temporary directory is not configured, or the document cannot be written to this location, then the document export fails.

Late archiving also requires the following information.

- The archive ID
- The image document type (file extension)

The archive ID can be configured either as a component of the document filename mapped using the 'Destination Archive' parameter in Global Settings > Import Settings, or using the 'Destination Archive' parameter in the SAP configuration settings for the processing profile. The former always takes priority, if available. If no archive ID can be determined, the export fails.

The document type, which is the image file extension, is determined by the system automatically and no configuration is required. This is subsequently used in Process Director to determine the SAP workflow document type that needs to be used.

The specific parameters populated within the generic function module relating to late archiving are as follows.

Table	Fields populated
IT_ARC_HDR	ARCHIV_ID, DOCUMENT_TYPE, BINLENGTH, FIRSTLINE, LASTLINE
IT_ARC_OBJ	LINE

Process Director returned values

When a document is successfully received by Process Director using either the standard or the generic function, it is assigned a work item ID number. This is returned back to BFI where it is stored in an internal field called 'tmpPDWorkItemID'. It is also written into the Visibility tables.

If Process Director is able to create a document immediately in SAP, this document number is also returned to the Brainware for Invoices field 'ERPDOCNO' and written into the Visibility reporting tables. The document number is not passed back if the generic function module is used.

If a work item cannot be created in Process Director, the export fails and diagnostic information is written into the Runtime Server export instance log file. Diagnostic information is also written into the log file if a document cannot be posted immediately.

Process Director standard user exit

User exit 'UserExitSendToSAPProcessDirector' is available to pass additional data to the Process Director remote function module at header level.

Within the user exit interface, the 'oBAPI' parameter represents the connection as the whole using a data type of SAPFunction; 'oBAPIHeader' represents the header data interface 'I_STR_HEADER' using a data type of SAPStructure.

You can use the SetValueByName and GetValueByName methods to adjust the values held in 'oBAPIHeader'.

If you want to abort the call to Process Director, you can set the parameter 'blAbort' to true. This has the effect of failing the export from BFI.

Process Director generic function user exit

User exit 'UserExitSendToSAPProcessDirectorGeneric' is available to pass additional data to the Process Director generic remote function module. It is called just before the actual call to SAP after all data structures are populated by the standard system.

Within the user exit interface, the 'oBAPI' parameter represents the connection as the whole and is the object with which the BAPI tables and structures must be accessed. The parameter has a data type of SAPFunction.

If you want to abort the call to Process Director, you can set the parameter 'blAbort' to true. This has the effect of failing the export from BFI.

You can use the ModifyPDGenericHeader method of the SAPFunction data type to add or change a value belonging to the 'I_STR_HEADER' node. The following code shows an example of how you can pass a new field called `'MYFIELD'` with the value `'HELLO'`:

```
oBAPI.ModifyPDGenericHeader("MYFIELD", "HELLO")
```

If `'MYFIELD'` already exists, the current value will be overwritten with `'HELLO'`. If `'MYFIELD'` does not exist, a new entry will be added.

OCR XML file export

The OCR XML file export outputs a file that contains the following information.

- All the document OCR words with positional information.
- All the document field data (excluding tmp fields) with positional information and validity status, including cell-by-cell content of table data.
- All the field candidate information (optional).

The file can be used by a downstream system that has a component similar to the Verifier application, thus avoiding the need for a second OCR.

OCR XML file structure

The structure of the XML file is as follows.

```
<OCR XML Header>
<Document>
   <Words>
      <Word>
         <ID>
         <Text>
         <Top>
         <Left>
         <Height>
         <Width>
      </Word>
   </Words>
<Fields>
   <Field>
      <Name>
      <Text>
      <Valid>
      <ErrorDescription>
      <PageNr>
      <Top>
      <Left>
      <Height>
      <Width>
```

--- The following appears for table fields only.

```
      <Rows>
         <Row>
            <ID>
            <Columns>
               <Column>
```

```
                  <Name>
                  <Text>
                  <Valid>
                  <ErrorDescription>
                  <PageNr>
                  <Top>
                  <Left>
                  <Height>
                  <Width>
               </Column>
            </Columns>
         </Row>
      </Rows>
```

--- The following appears if candidate information is required (non table fields).

```
      <Candidates>
         <Candidate>
            <ID>
            <Text>
            <PageNr>
            <Top>
            <Left>
            <Height>
            <Width>
         </Candidate>
      </Candidates>
   </Field>
</Fields>
</Document>
```

OCR XML file configuration options

To activate the output of the OCR XML file, complete the following steps in Solution Configuration Manager.

1. Select the project.
2. From the **Settings** drop-down, select **Export Settings**.
3. Select the relevant export profile.
4. Within the **Export Settings** hierarchy tree, navigate to the **Export Options** node.
5. Select the **Output OCR XML File** check box. This reveals the OCR XML file specific configuration options.
6. Choose how you want the OCR XML file to be named using the OCR XML File Key drop-down. If you select `FILENAME`, the OCR XML file will be given the same name as the original imported document. If you select `URN`, the system will use the document URN mapped in Global Settings > Import Settings.
7. Choose the file extension you want the OCR XML file to have using **OCR XML File Type**. The default value is 'XML' if this is not populated. If you have configured export to produce more than

one XML file, you must ensure that they are not going to overwrite one another by having a unique file extension.

8. Enter the XML file encoding header you want to appear as the first line in the file in **OCR XML Header**. You can use the default if you wish.
9. If you want the output file to include field candidate information for each non-table field, select the **Include Candidate Information** check box.
10. Save the changes.

Set up a custom export

If you have a required data export and the existing export options do not support the data export's format, or if you need to export data for a custom base class, you must create a custom export. The custom export must be scripted and executed within a special user exit. The following sections describe how to implement a custom export.

The user exit is called once for each document that is exported. Once a document is exported, the export history is updated against the document so that it is not unintentionally exported a second time. The history can be cleared by resetting the document back to state 200. If an export is not successful, the user exit is called again during the next attempt.

The script contents of a user exit can be set to anything that your business needs require.

You must check the document class before developing any script that refers to fields using hard-coded field names, particularly if the project uses custom base classes. If a field that does not exist is referenced against the document class, it results in a runtime error. The fnGetBaseClass global function, described in the Global Variables Script Class, can be used to check the document class.

Configure and activate a custom export

The script contents of the user exit can be set to anything that is required. To configure and activate a custom export, complete the following steps.

1. Within the Brainware Intelligent Capture Designer module, open the **<project>.sdp** file.
2. Navigate to **Definition** mode and highlight the **UserExits** class.
3. Right-click on the class and select **Show Script**.
4. Navigate to the **UserExitCustomExport** user exit subroutine.
5. Configure the parameters listed in the following table.

Parameter name	Description
pWorkdoc	This is the standard Workdoc object that provides access to all document field information (including the originally extracted line item data), the document classname, the document OCR text and the document filename.
ExportPath	This is the destination folder for file output. This value is taken from

Parameter name	Description
	the export filepath configured on the RTS instance responsible for document export. If the RTS instance path is blank, then document export will fail.
strDocLink	This is the path to the image of the document, which could be stored either in a storage director or the batch directory, or could be a URL to retrieve the image from an archive.
LineData	This multi-line array contains the line items available for export. This is populated for all documents classified as invoices where line items are relevant. Refer to the LineData Structure section in this document for more information.
GLData	This is the array based on the accounting data type defined on the global variables script level. This array is populated if the system determines that general ledger coding entries are required for the document being processed. In the standard solution, this is only populated for invoices where a miscellaneous charge extracted either at header or line item level is configured to be posted to a GL account. Refer to the AccountingData Structure section in this document for more information.
TaxData	This is the array containing the total tax amount that corresponds to each tax code determined during the automatic tax calculation procedure. Refer to the TaxData Structure section in this document for more information.
blLinesRequired	This is the flag indicating whether line item export is relevant for the invoice based on the invoice characteristics, any invalid reasons set, and the configuration in Processing Profile Configuration Settings > Line Item Table Settings. If set to TRUE, line items are relevant for export.
Address	This is the vendor address structure. This contains the address details for the document vendor. Refer to the AddressData Structure section in this document for more information.
Flags	These are the document validation flags. This structure contains document-specific flags which can be used to determine what data must be exported. Refer to the Flags Structure section in this document for more information.

6. To activate the custom export, in Export Options > Export Settings, select the **Custom Export** check box.
7. Save the changes.

SAP Configuration

Brainware for Invoices can be integrated with SAP and implemented in an environment where invoices are created in SAP.

Brainware for Invoices integrates with SAP using Business Application Programming Interface (BAPI) technologies. A BAPI is a function module in SAP which is typically called from an external system. The external system passes data to the BAPI through a defined interface. The BAPI carries out a function, such as creating an invoice, and the output is returned back to the calling system, such as the unique ID of an invoice that has just been created. The call to the BAPI occurs synchronously.

The connection to SAP and associated configuration is set per processing profile.

You can choose to connect to SAP either by using the SAP .NET Connector or by using a web service. The web service is available for the purchase order look-up only. You cannot configure the system to connect to SAP using a combination of both approaches within the same processing profile. If both approaches are activated, the system will connect to SAP using the SAP .NET Connector method only.

Install the SAP .NET Connector

Brainware for Invoices requires SAP .NET Connector 3.0 for .NET 4.0 on x86 to be installed on all machines running the solution. This requirement also applies if you are connecting to SAP using web services.

You can download this connector from the SAP Service Marketplace. The download is in the form of a zip file called sapnco30dotnet40P_21-20007347.zip.

The connector supports Unicode and non-Unicode SAP systems.

Once downloaded, complete the following steps to install and set up SAP for Brainware for Invoices.

1. Extract the ZIP file into the directory of your choice.
2. Double-click the file called NCo3021_Net40_x86.msi to launch the installer.
3. Follow the instructions provided by the installer and complete the installation. You do not need to install the assemblies to the GAC. The connector is installed in the C:\Program Files (x86)\SAP\SAP_DotNetConnector3_Net40_x86\directory, by default.
4. Finish.

If you have already installed the ICAL DLLs and now want to add integration to SAP, complete the following additional steps.

1. Within the connector install directory, locate **sapnco.dll** and **sapnco_utils.dll** and copy the two files to the clipboard.
2. Navigate to the folder where you have installed the Brainware for Invoices ICAL DLLs and paste in the two files.

3. Right click on **RegAppDev.bat** and select **Run As Administrator** from the context menu to register the ICAL dlls.
4. Finish.

Note: The connector supports Unicode and non-Unicode SAP systems.

Set up a SAP user ID

Brainware for Invoices requires a valid SAP user ID and password in order to log in to the downstream SAP system. A custom user is created in the customer SAP system for this purpose. The custom user must be of type communication. The decimal separator preferences for this user must always be set to use a period.

If you are already using SAP to process invoices, apply the roles assigned to a standard AP clerk to the custom user ID. These roles must include, as a minimum, authorizations that allow the posting and parking of invoices, the ability to read purchase order data, and the ability to connect to SAP using RFC.

SAP does not provide a standard role for this, so a custom role must be created. This role must have the authorization objects listed in the following table assigned at a minimum.

Purpose	Mandatory?	Authorization Objects
Allowing RFC access	YES	S_RFC, including function groups RFC1, SYST, RFCH, SDTX, BAPT, MRM_BAPI, SOC3, SOA1, BREL, ACC4, 0002, MLBO, OPTB and MEWP.
Reading PO data	YES	M_BEST_WRK, M_BEST_EKG, M_BEST_EKO, M_BEST_BSA Set these for activity 03 (display). Restrictions in terms of plants, documents types, purchasing groups and purchasing organizations can be applied as required.
Creating MM-LIV invoices	NO	M_RECH_WRK Set this for activity 01 (create). Plant restrictions can be applied as required.
Reading PO conditions	NO	S_TABU_DIS Set this for activity 03 (read only). The authorization group restriction must be set to VA (KONV) and MA (EKBZ).
Posting & parking FI invoices via FB60	NO	F_BKPF_BUK, F_BKPF_KOA Set these for activity 01 (create) and 77 (preliminary post). The restrictions in terms of company codes and account types can be set as required, but the account type must at least include K (vendor). If the custom Brainware supplied function module Z_BW_PARK_FI_INVOICE is used for parking documents, then the function group in which it is created must be added to the S_RFC function group restrictions.
Looking up unit of measure conversions	NO	S_TABU_DIS Set this for activity 03 (read only). The authorization group restriction must be set to MA (MARM).

Purpose	Mandatory?	Authorization Objects
Reading plant data	NO	S_TABU_DIS Set this for activity 03 (read only). The authorization group restriction must be set to MCOR (T001W).
Reading company code data	NO	S_TABU_DIS Set this for activity 03 (read only). The authorization group restriction must be set to FC01 (V_T001).
Reading currency data	NO	S_TABU_DIS Set this for activity 03 (read only). The authorization group restriction must be set to FC00 (TCURC).
Late archiving via SAP	NO	If you are using Brainware for Invoices to archive an image via SAP using Z_BW_LATE_ARCHIVE, then the function group in which it is created must be added to the S_RFC function group restrictions.
Reading downpayments for MM invoice vendors	NO	S_TABU_DIS Set this for activity 03 (read only). The authorization group restriction must be set to FA (LFC3).
Converting work breakdown structures from external to internal format	NO	S_TABU_DIS Set this for activity 03 (read only). The authorization group restriction must be set to CA (for PRPS).

Configure a connection to SAP using the SAP .NET Connector

To configure a connection to SAP using the SAP .NET Connector, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **SAP Configuration** node.
5. Click **Connect To SAP**. Further configuration options are then displayed.
6. If you want to connect to SAP using SAP Secure Network Communications, select the **Use SNC Connection** check box and enter the SNC name and quantity into **SNC Name** and **SNC Quality.**
7. Enter the SAP system ID in **System Name.**
8. Enter the SAP client you would like to use in **Client.**
9. Enter the name of the SAP user in **User**.
10. Enter the password used by the SAP user in **Password**. Alternatively, you can enter an encrypted password in **Encrypted SAP Password**. No password is required if you are using SAP Secure

Network Communications. For more information, refer to the Brainware for Invoices Password Encryption section.

11. Enter the language you would like to use in **Language**. Entry must be a two-character ISO-Code, that is 'EN' for English, 'DE' for German, and so on.
12. If you want to use load balancing, enter the message server and group name in **Message Server** and **Group Name** respectively.
13. If you do not want to use load balancing, enter the application server and system / instance number in **Application Server** and **System Number.**
14. If you are using SAProuter, enter the SAProuter string in **SAP Router**.
15. Save the changes.

Configure a connection to SAP using web services

You must install **SAP .NET Connector 3.0 for .NET 4.0 on x86** on all machines running the solution, including Verifier workstations, in order to connect using web services.

To configure a connection to SAP using SAP web services, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **SAP Configuration** node.
5. Click **Connect To SAP using Web Services**. Further configuration options are then displayed.
6. Enter the name of the SAP user in **Web Service User Name**.
7. Enter the password used by the SAP user in **Web Service Password**. Alternatively, you can enter an encrypted password in **Web Service Encrypted Password**. For more information, refer to the Brainware for Invoices Password Encryption section.
8. Save the changes.

Configure the web service for the purchase order number look-up

Prerequisite

The prerequisites for using SAP web services for the purchase order number look-up are as follows:

- You must obtain a URL for the SAP purchase order number look-up. This means that you must publish **BAPI_PO_GETDETAIL** as a web service from SAP using HTTPS with basic authentication (i.e. a user name and password only).
- If appropriate, you must install the web service certificate provided by the SAP system administrator in the **Trusted Root Certification Authorities** store on each machine that runs Brainware for Invoices. This includes Verifier workstations

To configure the purchase order look-up using SAP web service, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.

2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **SAP Configuration** node.
5. Enter the purchase order web service URL in **Web Service PO Lookup URL**.
6. Save the changes.

Configure the web service for the company code look-up

Prerequisite

The prerequisites for using SAP web services for the company code look-up are as follows:

- The system uses two different calls to look-up the company code in SAP. This means that you must publish **BAPI_COMPANYCODE_GETDETAIL** and B**BP_RFC_READTABLE** as web services from SAP using HTTPS with basic authentication (i.e. a user name and password only).
- If appropriate, you must install the web service certificate provided by the SAP system administrator in the **Trusted Root Certification Authorities** store on each machine that runs Brainware for Invoices. This includes Verifier workstations.

To configure the company code look-up using SAP web service, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **SAP Configuration** node.
5. Enter the web service URL that relates to **BAPI_COMPANYCODE_GETDETAIL** in **Web Service Company Lookup URL**.
6. Enter the web service URL that relates to **BBP_RFC_READ_TABLE** in **Web Service RFC Read Table Function URL**.
7. Save the changes.

Configure the web service for the service entry sheet look-up

Prerequisite

The prerequisites for using SAP web services for the service entry sheet look-up are as follows:

- You must obtain a URL for the SAP service entry sheet look-up. This means that you must publish **BAPI_ENTRYSHEET_GETDETAIL** as a web service from SAP using HTTPS with basic authentication (i.e. a user name and password only).
- If appropriate, you must install the web service certificate provided by the SAP system administrator in the **Trusted Root Certification Authorities** store on each machine that runs Brainware for Invoices. This includes Verifier workstations.

To configure the service entry sheet look-up using a SAP web service, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **SAP Configuration** node.
5. Enter the service entry sheet web service URL in **Web Service Entry Sheet Lookup URL**.
6. Save the changes.

Configure the web service for the general data look-up

Prerequisite

The prerequisites for using SAP web services for the general data look-up are as follows:

- You must obtain a URL for the SAP general data look-up. This means that you must publish **BBP_RFC_READTABLE** as a web service from SAP using HTTPS with basic authentication (i.e. a user name and password only).
- If appropriate, you must install the web service certificate provided by the SAP system administrator in the **Trusted Root Certification Authorities** store on each machine that runs Brainware for Invoices. This includes Verifier workstations.

To configure the general data look-up using SAP web services, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **SAP Configuration** node.
5. Enter the web service URL that relates to **BBP_RFC_READ_TABLE** in **Web Service RFC Read Table Lookup URL**.
6. Save the changes.

Configure the web service for SAP document creation

Prerequisite

The prerequisites for using SAP web services for SAP document creation are as follows:

- For the MIRO transactions, you must create and publish a single package level web service for SAP package **MRM** that includes methods for **BAPI_INCOMINGINVOICE_CREATE**, **BAPI_INCOMINGINVOICE_PARK**, **BAPI_TRANSACTION_COMMIT** and **BAPI_TRANSACTION_ROLLBACK**. These should be created as web services from SAP using HTTPS with basic authentication (i.e. a user name and password only).
- For parking invoices through SAP transaction FB60 / FV60, you must publish the custom FI parking function as a web service from SAP using HTTPS with basic authentication (i.e. a user name and password only).

- If appropriate, you must install the web service certificate provided by the SAP system administrator in the **Trusted Root Certification Authorities** store on each machine that runs Brainware For Invoices. This includes Verifier workstations.

To configure SAP document creation using SAP web services, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **SAP Configuration** node.
5. Enter the web service URL that relates to the package level web service for **BAPI_INCOMINGINVOICE_CREATE** and **BAPI_INCOMINGINVOICE_PARK** in **Web Service Invoice Post Park URL**.
6. Enter the web service URL that relates to the custom FI parking function in **Web Service FB60 Invoice Park URL**.
7. Save the changes.

Configure the web service for document archiving

BFI carries out archiving activities with SAP at time of document export. You can configure the system to late archive a document image to a document management system via SAP using SAP ArchiveLink. Furthermore, if you are using BFI to create posted or parked invoices in SAP, you can configure the system to create a link between the posted or parked invoice and the original image in a document management system. This link can be created either via SAP ArchiveLink or via SAP document services. SAP document services allow you to associate a posted or parked document with a URL or filepath that is held within a SAP office document.

The prerequisites for using SAP web services for SAP document creation are as follows:

- If you want to perform late archiving via SAP, you must publish function **Z_BW_LATE_ARCHIVE** as a web service in SAP and obtain a URL.
- If you want to link an archived document image with a posted or parked invoice that the system has created in SAP using SAP ArchiveLink, you need to make a copy of standard SAP function **ARCHIV_CONNECTION_INSERT** that includes a commit work statement. You then need to publish this function as a web service in SAP and obtain a URL.
- If you want to associate a URL with a posted or parked invoice that the system has created in SAP via a SAP office document, you need to publish SAP functions **SO_FOLDER_ROOT_ID_GET** and **SO_OBJECT_INSERT** as web services in SAP and obtain the corresponding URLs. In addition, you need to make a copy of standard SAP function **BINARY_RELATION_CREATE** and add a commit work statement in between the first call to method `cl_binary_relation=>create_link` and the subsequent RETURN statement. This should be approximately between lines 71 and 72. You then need to publish this function as a web service in SAP and obtain a URL.
- All of the above should be created as web services from SAP using HTTPS with basic authentication (i.e. a user name and password only).

- If appropriate, you must install the web service certificate provided by the SAP system administrator in the **Trusted Root Certification Authorities** store on each machine that runs Brainware For Invoices. This includes Verifier workstations.

To configure SAP document archiving using web services, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **SAP Configuration** node.
5. Enter the web service URL that relates to the SAP late archiving function **Z_BW_LATE_ ARCHIVE** in **Web Service SAP Archiving Function URL**. This must be populated if you want the system to archive an image via SAP.
6. Enter the web service URL that relates **ARCHIV_CONNECTION_INSERT** in **Web Service Archive Connection Insert URL**. This must be populated if you want the system to create a link between an archived image and a posted or parked document in SAP using SAP ArchiveLink.
7. Enter the web service URL that relates **SO_FOLDER_ROOT_ID_GET** in **Web Service SO Folder Root ID Get URL**. This must be populated if you want the system to create a SAP office document containing the URL to an image file, then attach that document to a posted or parked invoice in SAP.
8. Enter the web service URL that relates **SO_OBJECT_INSERT** in **Web Service SO Object Insert URL**. This must be populated if you want the system to create a SAP office document containing the URL to an image file, then attach that document to a posted or parked invoice in SAP.
9. Enter the web service URL that relates **BINARY_RELATION_CREATE** in **Web Service Binary Relation Create URL**. This must be populated if you want the system to create a SAP office document containing the URL to an image file, then attach that document to a posted or parked invoice in SAP.
10. Save the changes.

BAPI functions

The names of the BAPI functions that the system uses are preconfigured in Processing Profile > SAP Configuration. These can be changed to use alternatives, such as wrapper functions which carry out an additional task, as long as the interface for the alternate BAPI is either the same, or it contains the same parameters as the original BAPI as a subset.

The preconfigured BAPI names are listed in the following table.

SAP Configuration field	Value
PO LookUp	BAPI_PO_GETDETAIL
Invoice Post	BAPI_INCOMINGINVOICE_CREATE

SAP Configuration field	Value
FB60 Invoice Post	BAPI_ACC_INVOICE_RECEIPT_POST
FB60 Invoice Park	Z_BW_PARK_FI_INVOICE
Invoice Park	BAPI_INCOMINGINVOICE_PARK
Company Lookup	BAPI_COMPANYCODE_GETDETAIL
Entry Sheet Lookup	BAPI_ENTRYSHEET_GETDETAIL

If no function module name has been specified in **RFC Read Table Function**, the system will use RFC_READ_TABLE.

Troubleshoot SAP connection issues

If Brainware for Invoices is unable to connect to SAP, error messages are reported back to the user through the field error descriptions in Verifier. Additional information regarding silent connection failures can be found in the Brainware for Invoices log file.

Further details can also be found within a SAP specific dev_nco_rfc.trc log file which is written out to the same directory as the Brainware for Invoices project file.

Configure SAP validations and business rules

SAP-specific configuration settings can be configured for field and document validation per processing profile.

Configure the vendor ID field for SAP

Brainware for Invoices does not validate a vendor ID directly against SAP, but rather against a proprietary data pool that is generated using an extract of SAP vendor master data in a CSV file format. You must provide this CSV file in the correct format. Hyland supplies an ABAP/4 report called **ZBW_VENDOR_EXTRACT** which accomplishes this task.

You need to install this ABAP/4 report in your SAP system, and set it to run as a scheduled job, outputting the file to the Brainware for Invoices server. From there, you can configure the system to import the file directly into the vendor pool, or you can import the file into **BRWVendorMaster** and then build the pool based upon a database table.

Configure validation of purchase order numbers against SAP

The system validates each extracted or manually entered purchase order number against SAP using **BAPI_PO_GETDETAIL**.

The purchase order number field in Verifier is set to invalid if the purchase order does not exist in SAP.

To activate validation of the purchase order number against SAP, complete the following steps.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **PO Number Validation** node.
5. Click **Validate From SAP**.
6. Save the changes.

A purchase order within SAP can have multiple vendors assigned to it which are as follows.

- The vendor from whom the goods were ordered.
- The vendor who is expected to issue the invoice. This is known as the PI partner function vendor.
- Third party freight vendors set against the purchase order line item condition records.

In the first instance, the system assigns the PI partner function vendor to the vendor ID field. If this is not available on the purchase order, the order-from vendor ID is used instead. You can configure the system to use the order-from vendor ID in all cases by completing the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Vendor Settings** node.
5. Select the **Use PO Order Vendor** check box.
6. Save the changes.

If the vendor ID then cannot be validated, either through comparing it to the vendor result delivered independently by the Associative Search Engine, or through validating it directly against the document, it is possible to configure the system to check for any third party freight vendors that might exist on the purchase order.

If any available third party freight vendor can be matched to the Associative Search Engine result, the third party freight vendor is then assigned to the vendor ID field.

To configure the system to check for third party freight vendors, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Misc Charge Settings** node.
5. Select the **Read SAP PO Conditions** check box.
6. Save the changes.
7. Within the **Processing Settings** hierarchy tree, navigate to the **Vendor Settings** node.

8. Select the **Check Condition Vendors** check box.
9. Save the changes.

Configure the SAP company code look-up

The company code look-up is used to validate user entry in the company code field. It is also used to retrieve details for a company code which is used for VAT compliance checking and automatic tax code determination.

To configure the company code look-up to use SAP, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Company Code Settings** node.
5. Click **Validate From SAP**.
6. Save the changes.

Configure the SAP currency look-up

You can choose to validate a user-entered currency against the standard currency table within SAP. To do this, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Currency Settings** node.
5. Click **Validate From SAP**.
6. Save the changes.

Configure the SAP plant look-up

A plant is an organizational object that represents a location where a business client does business, such as office buildings and warehouses. In the context of the supply chain, the plant represents a location where goods are delivered, effectively the ship-to location. This is not an extraction field in the solution, but is read from a purchase order at line-item level, because each item in a purchase could be shipped to different locations. The plant look-up uses the RFC_READ_TABLE function module to read the state and the country in which the plant on the purchase order line is located. This is performed as part of the automatic tax code determination feature.

To configure the system to perform the plant look-up against SAP, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.

4. Within the **Processing Settings** hierarchy tree, navigate to the **Tax Configuration** node.
5. Click **Read Plant From SAP**.
6. Save the changes.

> **Note:**
> To minimize BAPI communication with SAP, it is possible to use a database table that is external to SAP to provide details for the plant. A data extract from SAP is required to populate this table.

Withholding Tax/ ISR Retention

Some countries require buyers of goods and services to collect income tax on behalf of the government when paying vendor invoices. The income tax deducted from the payment made to the vendor is referred to as withholding tax.

Often, the vendor specifies the withholding tax amount to be deducted on the invoice. The system captures this information in the standard Withholding Tax field. An additional withholding tax field is provided for Mexican ISR Retention.

When creating an invoice in SAP, the system looks at the active extended withholding tax codes that have been set up for the vendor in SAP. Each vendor can have multiple withholding tax codes assigned. As a prerequisite for use of the withholding tax functionality, the WithholdingTaxDetails column in BRWVendorMaster must be populated with these withholding tax codes. Moreover, it must be entered as a colon-separated list where each item in the list is in the comma-separated format of company code, then withholding tax type, then withholding tax code.

The system then creates the invoice using the invoice total before any withholding taxes are subtracted, and then creates a withholding tax entry within the document if only one withholding tax type and code for the invoice company code is active. If multiple active withholding tax codes exist, or no active codes exist, the document will be parked in SAP.

In some cases, a vendor can be set up for withholding tax, but does not state the expected withholding tax on the invoice. This is not a problem if the invoice is processed manually in SAP as SAP automatically copies the withholding tax codes into the invoice and performs the necessary withholding tax calculation. If you post the same invoice using a BAPI, the withholding tax codes are not copied automatically and need to be specified explicitly in the BAPI interface. A separate configuration option is provided to activate this.

When viewing the posted document in SAP, the calculated withholding tax amounts and base amounts are not visible on the MM-LIV document. They are only visible on the underlying FI accounting document.

To configure the processing of withholding tax even if not specified on the invoice, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **SAP Configuration** node.

5. Select the **Always Send Withholding Tax** check box.
6. Save the changes.

Post Date/Baseline Date

Posting Date and Baseline Date fields are not extraction fields, but fields that are required in order to create a posted or parked document.

At the time of posting, the system defaults the posting date to the current date, and the baseline date for payment is defaulted to the invoice date.

If alternative logic is required, you can accomplish this by adding custom script into the UserExitCreateDocument user exit.

SAP document types

The SAP document type is an internal two-character code that SAP requires in order to create a posted or parked document.

It is not an extraction field, but is determined by the combination of the Brainware for Invoices document type and invoice type fields.

To configure the SAP document types, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **SAP Configuration** node.
5. Enter the SAP document type you want to use for PO invoices in **MM Invoice Doc Type**.
6. Enter the SAP document type you want to use for PO credit notes in **MM Credit Doc Type**.
7. Enter the SAP document type you want to use for NO-PO invoices in **FI Invoice Doc Type**.
8. Enter the SAP document type you want to use for NO-PO credit notes in **FI Credit Doc Type.**
9. Save your changes.

Payment terms

For MM-LIV invoices with an available purchase order, the payment terms are set to the terms on the purchase order. In all other cases, the payment terms on the vendor master for the invoice company code are used. If alternative logic is required, this can be coded in the UserExitCreateSAPDocument user exit.

Partner bank type determination

Within the SAP vendor master, it is possible to register multiple bank accounts for a given vendor. Each bank account entry is given a four-character code, which is referred to as the partner bank type. The partner bank type is typically blank if the vendor only has a single bank account, but must be populated if the vendor has more than one. Usually the partner bank type naming convention is such that it includes the currency of the bank account, such as USD1, EUR1, or GBP2.

Brainware for Invoices attempts to determine the correct partner bank type for the invoice currency and bank details stated on the invoice using data within the vendor pool. If you are using table BRWVendorMaster for your vendor data, this information must be available in the BankDetails column. Moreover, it must be presented as a colon-separated list where each item in the list is in the comma-separated format of bank account number, then routing code, then partner bank type.

If a partner bank type can be determined, it will be displayed within the Bank Account Code field.

To be relevant for partner bank type determination, the vendor must also have a payment method code set in the vendor master data that indicates bank transfer as the preferred method for payment. If you are using table BRWVendorMaster for your vendor data, you need to populate the payment method code in the PaymentMethods column.

To configure the payment methods relevant for bank accounts, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Payment Method Settings** node.
5. Enter the payment method codes that denote a bank transfer in **Bank Methods**. If there are more than one applicable payment methods, entry must be in the form of a comma-separated list.
6. Select the **Account Currency Not Required** check box if you do not want the system to consider the invoice currency when choosing a bank account.
7. Save the changes.

Configure the Calculate Tax flag

When manually posting an invoice with tax in SAP, a user has the following options.

- To enter a hard tax amount.
- To let SAP calculate the tax amount automatically based on the tax codes and tax jurisdiction codes that are entered against the parameter in the Calculate Tax flag.

These two options are mutually exclusive. SAP does allow the entry of a hard tax amount in conjunction with the use of the Calculate Tax flag.

For invoices relating to countries that do not use tax jurisdictions, such as European countries, the calculate tax flag is not used by default. For invoices relating to countries that do use tax jurisdiction, such as the United States and Canada, the calculate tax flag is always used by default when the following is true.

- Automatic tax code determination is switched on.
- One of more invoices lines have a tax code that is configured in the tax jurisdiction code configuration table.
- None of the invoice line tax codes carries a pay tax as billed instruction.

To force the system to override these rules so that the Calculate Tax flag is always used, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Tax Configuration** node.
5. Select the **Always Use Calculate Tax Flag** check box.
6. If there are certain company codes to which this global rule does not apply, these can be entered as a comma-separated list in **Tax Flag Exception Company Codes**.
7. Save the changes.

> **Note:** If the **Always Use Calculate Tax Flag** check box is cleared, but exception company codes are defined, then the system will use the Calculate Tax flag for all documents belonging to these exception company codes.

Activate tax validation

If you are using the automatic tax code determination feature in conjunction with the tax look-up table to process tax for countries that do not use tax jurisdictions, you can activate an additional validation for the invoice tax amount prior to posting documents in SAP.

The tax validation looks at the tax code assigned to each paired line item and uses the percentage rate associated with those tax codes to calculate the expected invoice tax amount. This expected tax amount is then compared with the total tax amount read from the invoice.

If there is a discrepancy outside tolerance, the invoice will be flagged for parking in SAP.

This check is only carried out if line pairing was successful.

To activate tax validation, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Tax Configuration** node.
5. Select the **Validate Tax Amount** check box.
6. Save the changes.

Down payments

In a manual process where an invoice is to be booked against a purchase order where the invoice vendor has an outstanding down payment in SAP, the down payment has to be cleared manually following the creation of the invoice. Under such circumstances, an automatic posting may not be desirable if no system is in place to notify someone that they need to clear the down payment manually.

To configure the system to park an MM invoice if a down payment is detected against the invoice vendor, complete the following steps.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **SAP Configuration** node.
5. Select the **Park MM If Downpayment** check box.
6. Enter the special general ledger codes that SAP uses for down payments in **Downpayment SGL Codes**. These codes do not need to be entered as a comma-separated list.
7. Save the changes.

Evaluated Receipt Settlement (ERS)

An ERS or self-billing purchase order is a special type of order that has been set up for electronic invoice processing only. Often, the vendor may also provide a paper copy of the invoice as a courtesy. This invoice does not actually need to be processed.

Brainware for Invoices is able to detect such invoices based upon the purchase order and stop them in Verifier for a user to judge whether they should continue to be processed for whatever reason, or whether they should be voided. To configure the system to stop ERS orders for manual review, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **PO Number Validation** node.
5. Select the **Stop ERS PO** check box.
6. If Verifier is not permitted to advance an invoice that is tied to an ERS purchase order, you can also select the **Stop ERS PO In Verifier** check box.
7. Save the changes.

Configure export to SAP

The export of data to SAP occurs in the form of creating posted and parked invoice documents during the Brainware for Invoices export event.

A posted document within SAP is one where the document is complete and correct from a data entry point of view. SAP then looks at the document and judges whether it can be paid or whether further business approval is needed.

A parked document within SAP is one where the data is either incomplete or has not been confirmed as being correct, but sufficient data has been provided to create the skeleton of a document that SAP can save in the database. Parked documents in SAP have a status of A for MIRO invoices and V for FB60 invoices. This differs from other SAP partial-complete statuses such as Saved as Completed (status B) or Held (status D).

Activate the creation of SAP documents

To activate the creation of SAP documents, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **SAP Configuration** node**.**
5. Select the **Create SAP Documents** check box.
6. Save the changes.

Configure the creation of MM-LIV documents

By default, if line pairing and automatic tax code validation are successful, then the system will attempt to post the invoice. If either line pairing or automatic tax code validation fails, or an initial attempt to post the invoice is not successful, the document will be parked.

Brainware for Invoices always uses BAPI_INCOMINGINVOICE_CREATE to post MM-LIV invoices unless an alternative is specified. BAPI_INCOMINGINVOICE_PARK is used for parking MM-LIV invoices.

If line items are not available for parking, either because line pairing did not deliver any, or if parking with line items has been disabled, the invoice will be parked against the vendor ID. If a vendor ID is not available due to a user-selected invalid reason, the order-from vendor on the purchase order will be used instead if line pairing is activated. Additionally, if an MM-LIV invoice cannot be posted or parked, document export fails.

To configure the creation of MM-LIV documents, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **SAP Configuration** node.
5. Enter the name of the SAP BAPI you want to use to post MM-LIV invoices in **Invoice Post**.
6. Enter the name of the SAP BAPI you want to use to park MM-LIV invoices in **Invoice Park**.
7. If you want to allow the system to park MM-LIV invoices if they cannot be posted, select the **Park Invoice** check box.
8. If you want to park all MM-LIV invoices sent to SAP, select the **Always Park Invoice** check box.
9. If you want to allow the system to park documents with any paired line items, select the **Park With Lines** check box.
10. Select the **Convert WBS Elements** check box if you are posting or parking invoice lines against purchase order lines that use WBS Elements in the account assignment.
11. Save the changes.

Configure the creation of FI documents

Brainware for Invoices provides options to park FI invoices, either through the SAP FV60 or MIRO transactions, depending on your business needs. FI document posting is also available but can only be used for customized projects where the general ledger account coding has been completed prior to export.

Typically, FI documents are parked upon reaching SAP, where they are picked up by SAP workflow for coding and approval.

To configure the creation of FI documents, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **SAP Configuration** node.
5. To allow the system to park documents, select the **Park Invoice** check box.
6. If you want the system to park all FI invoices sent to SAP, select the **Always Park FI** check box.
7. If you want the system to park FI invoices using the FV60 transaction, select the **Park FI To FB60** check box. Enter the name of the BAPI you want to use to park FI invoices using the FV60 transaction in **FB60 Invoice Park**.
8. Save the changes.

SAP workflow integration

SAP has its own internal workflow engine, that includes standard workflow templates for many relevant accounts payable activities, such as completing parked invoices, coding and approving FI invoices, and resolving line-level blocks on MM-LIV invoices. You can also develop your own workflows in SAP.

For implementations that do not utilize a third-party workflow, SAP workflow can be used to complete invoice processing for documents where Brainware for Invoices was not able to create a document that is ready for payment in SAP. This may be because it is an FI invoice and coding or approval is required, or because line pairing could not be completed for an MM-LIV invoice, so the system had to park it. In these cases, the documents need to be routed to users in SAP so they can be completed.

An instance of SAP workflow is triggered by an event in SAP. This event could be document parking, or the line item on a posted MM-LIV invoice being blocked by the SAP during the three-way match process.

The simplest way to integrate Brainware for Invoices and SAP workflow is to leverage the workflow framework provided by SAP, and hang completion workflows from events that are generated when Brainware for Invoices creates an incomplete document.

The following table details some example SAP events that are generated when Brainware for Invoices creates an incomplete document.

SAP business object	Event	Description
BUS2081 (MM-LIV document)	PARKED	This system event is raised automatically by SAP when an MM-LIV document is parked, such as, the document has a status of A.
BUS2081	BLOCKEDPRICE	This system event is raised automatically by SAP when one or more line items on a posted MM-LIV document are blocked during the three-way match process on the grounds of price.
BUS2081	BLOCKEDQUANT	This system event is raised automatically by SAP when one or more line items on a posted MM-LIV document are blocked during the three-way match process on the grounds of quantity.
FIPP (parked FI document)	CREATED	This system event is triggered when an FI document is parked. The triggering of this event must be configured within the FI business framework in SAP (SAP transaction FIBF), and is done programmatically using SWE_EVENT_CREATE_FOR_UPD_TASK.

You are responsible for ensuring that the appropriate SAP workflows are available and are configured correctly. You can write a wrapper BAPI that shares the same interface as BAPI_INCOMINGINVOICE_PARK, which subsequent to parking a document, triggers an instance of the appropriate SAP workflow.

Configure line pairing for SAP

The line pairing function supports reconciliation of invoice lines with purchase order line items for the following purchase order types.

- Material purchase orders with or without GR-IV (blank item category on the PO line).
- Purchase orders using external service entry sheets with or without SR-IV (item category D).
- Blanket or limit purchase orders (item categories B or D).

The line pairing routine functions irrespective of whether the GR non-valuated flag is selected at the purchase order line item level.

The system supports multi-line versions of all of the purchase order types listed above. With the exception of purchase order lines that require external service entry sheets, the system also supports any combination of the above on a single purchase order.

Activate line pairing for SAP

To activate line pairing with SAP, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.

2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Line Pairing Settings** node.
5. Select the **Do Line Pairing** check box.
6. Click **Get PO Lines From SAP**.
7. Save the changes.

Configure line pairing for material invoices

If the invoice PO Type is MATERIAL, the system executes the material line pairing routine. The material line pairing routine includes support for pairing to purchase order lines which are set for goods receipt-based invoice verification. Within the line pairing configuration, there are additional options to control the behavior of line pairing in relation to selecting the correct goods receipt(s) once the purchase order line has been determined.

To configure line pairing for material invoices, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Line Pairing Settings** node.
5. To force the system to select a single goods receipt, rather than a combination of goods receipts, select the **Pair To Single GR** check box.
6. If you want the system to use a delivery note number to help identify the correct goods receipt, select the **Find GR With Delivery Number** check box.
7. If you want the goods receipt to be selected only by using the delivery note number, select the **Only Use Delivery Number To Find GR** check box.
8. Save the changes.

Configure unit of measure conversions using SAP

When Brainware for Invoices creates an invoice line, the unit of measure used for each line item must be identical to the unit of measure used on the purchase order line that the invoice line has been paired to. This means that if the vendor creates an invoice using a unit of measure other than the one used on the purchase order, the quantity invoiced must be converted to reflect the same physical quantity in the purchase order unit of measure.

The following prerequisites must be met in order for look up capability for SAP to perform the conversions if the correct ratios cannot be determined through any other means.

- The purchase order line item references a SAP material.
- The unit of measure, as read from the invoice, must be mapped to an SAP unit of measure (if different) in Processing Profile > Unit Of Measure Configuration > Unit Of Measure Types.
- There is a conversion ratio present on the material master between the invoice unit of measure and the material base unit of measure.

To configure the unit of measure conversion check to perform a look-up to SAP, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Line Pairing Settings** node.
5. Click **Convert Quantity From SAP**.
6. Save the changes.

Configure line pairing for service invoices

If the PO Type is SERVICE for a given document, Brainware for Invoices uses the service purchase order route during line pairing. To configure line pairing for service invoices, complete the following steps.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Line Pairing Settings** node.
5. Select the **Do Line Pairing For Service** check box.
6. If you want the system to use the invoice number to find the correct SAP service entry sheet, select the **Find SES With Invoice Number** check box.
7. If you only want the system to choose a service entry sheet using the invoice number, select the **Only Use Invoice Number To Find SES** check box.
8. If you do not want the system to post an invoice automatically to SAP if the service entry sheet does not have enough value remaining to cover the value of the invoice, select the **Park If SES Value Less Than Invoice Value** check box.
9. Save the changes.
10. Within the **Processing Settings** hierarchy tree, navigate to the **SAP Configuration** node.
11. If you are processing invoices that relate to service entry sheet type purchase orders, select the **Read Entry Sheet** check box.
12. Enter the technical name of the BAPI you want to use to read the SAP service entry sheet information in **Entry Sheet Lookup**. This field is pre-populated with the name of the standard BAPI that SAP provides for this purpose.
13. Save the changes.

Configure extraction for multiline limit purchase orders

A multiline limit purchase order is a type of service purchase order containing multiple line items where all line items have been set up using a limit type item category.

A limit type purchase order line item means that authorization has been granted to spend up to a specified amount for a particular service. The purchase order line has no quantity, no unit price and no units of measure, only a line item total. SAP will auto-approve all invoices posted against this purchase order line as long as the aggregate total does not exceed the pre-approved amount. Once the pre-approved amount has been exceeded, future invoices will be blocked until authorization for a higher level of spend is granted.

In SAP, a limit type item category is usually type 'B', but it is also possible to create a limit type line item using item category 'D' as long as the goods receipt requirement is switched off.

If you are processing invoices against multiline limit purchase orders, you must configure the system to require line items (description and total columns only) for this type of purchase order, otherwise line pairing will fail automatically. You can still continue to skip line item extraction for other service purchase order types.

To do this, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Line Item Table Settings** node.
5. Select the **Skip For Service** check box. This then reveals further settings.
6. Clear the **Skip For Multiline Limits** check box.
7. Save the changes.

Document archiving with SAP

Brainware for Invoices provides a number of archiving options if you are using the system with SAP.

Both the early and late archiving scenarios are supported.

Configure early archiving with SAP

Early archiving refers to the scenario where a document has already been archived prior to receipt by Brainware for Invoices.

If you are using the system to post or park documents in SAP, it is quite likely that the customer will want the invoice document in SAP linked to the original image in the document management system. That way, when they view the invoice record in SAP, they can easily pull up the original document image via the attachment list.

Brainware has the capability to carry out image linking for a document that has already been archived as long as the document management system is connected to SAP using SAP ArchiveLink and the archive document ID assigned by that document management system is included within the image filename.

The first step for creating the early archiving document link is to tell the system which part of the filename represents this archive document ID. This should then be mapped to the URN parameter in Global Settings > Import Settings.

Refer to the Configure the link using SAP ArchiveLink section for steps to complete the configuration.

Configure late archiving for SAP

Late archiving refers to the scenario where Brainware for Invoices is required to archive an image during document export.

You can choose between the following three options for late archiving that work in conjunction with SAP.

- Archive to a document management system connected to SAP using SAP ArchiveLink.
- Archive to the Visibility Reporting database.
- Archive to a storage directory.

If you are also using the system to post or park documents in SAP, additional options are available to link the archived image to the invoice record in SAP.

Configure archiving to an external DMS connected to SAP

You can configure the system to archive an invoice to a document management system connected to SAP using SAP Archivelink at time of document export.

As a prerequisite, you need to install the Z_BW_LATE_ARCHIVE function module provided by Hyland into the SAP system you are connecting to for archiving purposes. This function module converts the document image into hexadecimal and passes it directly to SAP. SAP in turn archives the document to the external document management system that you specify via the archive ID. Within SAP, a list of available archive IDs you can choose from is available to view using transaction OAC0.

If you are exporting data to Process Director, you can use this feature instead of the late archiving option provided by the Process Director generic function module.

To configure archiving to an external document management system connected to SAP, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **SAP Configuration** node.
5. Enter the destination archive ID in Destination Archive. The archive ID specifies the target document management system. Alternatively, you can include the archive ID within the document filename and map it to the Destination Archive parameter in Global Settings > Import Settings. This option allows you to set the destination archive on a document-by-document basis.
6. Select the **Archive Via SAP** check box.
7. If you want to archive the image as a PDF, select the **Archive As PDF** check box.
8. Enter the technical name of the SAP function module you want to call to perform the late archiving

through SAP in **SAP Archiving Function**. It is recommended to use the provided **Z_BW_LATE_ ARCHIVE** function for this purpose. This step is only required in you connect to SAP using RFC. It is not required if you use web services.

9. Save the changes.

Configure archiving to the Visibility Reporting database

The Visibility Reporting Tool provides functionality to store image data within its underlying database. This allows Visibility to serve as an image archive. Reporting must be switched on for this functionality to be available. To archive images to the Visibility reporting database, complete the following steps in Solution Configuration Manager.

1. Select the project to be used.
2. Select **Global Settings** from the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **Reporting Settings** node.
4. Select the **Store Image In Reporting Tables** check box.
5. If you have created the Visibility image storage table using a name other that BRWDOCIMAGE, enter the new table name in **Reporting DB Image Table**.
6. Enter the URL mask used to retrieve the image file in **Archive URL**. Within the URL you must insert XXXXX where you wish the system to place the image ID.
7. Save the changes.

Configure archiving to a storage directory

This option is appropriate in instances where either you do not have a document management system, or you do not want to use it as a storage system for invoices. In such instances, you may store the invoice images in a designated storage directory on a server.

During document export, the system places a copy of the image file into the directory you have specified.

If you are using the system to create posted or parked invoice in SAP, you can still create a link from the SAP invoice record to the image within the storage directory.

To configure archiving to a storage directory, complete the following steps in Solution Configuration Manager.

1. Select the project to be used.
2. Select **Global Settings** from the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **Reporting Settings** node.
4. Enter the path to the storage directory you want to use in **Storage Directory**.
5. Save the changes.

Configure image linking

Once the image has been archived, either using an early or late archiving method, you can configure the system to create a link between the archived image and a posted or parked document in SAP.

You can create the link either using SAP ArchiveLink, or by attaching a SAP Office Document containing the image link to the invoice record in SAP.

Configure the link using SAP ArchiveLink

This option can only be used for the early or late archiving scenario where the document image is stored within a document management system connected to SAP using SAP ArchiveLink. Within SAP, a list of connected archives can be viewed using the OAC0 SAP transaction. The archive system must have sufficient configuration on the SAP side so that it is possible to retrieve and display an image in the SAP frontend.

To configure the image link using SAP ArchiveLink, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **SAP Configuration** node.
5. Select the **Create Link To External Archive** option.
6. Enter the destination archive ID in **Destination Archive**. Alternatively, you can include the archive ID within the document filename and map it to the **Destination Archive** parameter in Global Settings > Import Settings. This option allows you to set the destination archive on a document-by-document basis.
7. Enter the SAP workflow document type you want to use for PO invoices in **MM Invoice Object**. For all SAP workflow document types entered here, the combination of destination archive and workflow document type must a valid entry in SAP transaction OAC3.
8. Enter the SAP workflow document type you want to use for PO credit memos in **MM Credit Object**.
9. Enter the SAP workflow document type you want to use for NO-PO Invoices in **FI Invoice Object**.
10. Enter the SAP workflow document type you want to use for NO-PO credit memos in **FI Credit Object**.
11. Save the changes.

Configure the link using a URL

This option is available only for the Visibility and storage directory late archiving scenarios.

Using this option has the effect of creating an attachment in the form of an SAP office document against a posted or parked SAP document. The SAP office document contains a URL link to the original image, which can be either a filepath or a web address. Opening the SAP office document automatically opens the image. To configure the link to use a URL, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **SAP Configuration** node.
5. Select the **Archive To URL** option.
6. Save the changes.

SAP duplicate checking

SAP has its own duplicate checking procedure that can be activated within the SAP IMG configuration to raise an error message if a user attempts to post a duplicate MM-LIV invoice manually. However, this check is only carried out during manual processing. SAP does not natively trigger the duplicate check for invoices posted using a BAPI. For that reason, you need to customize SAP in order to extend the same check to invoices created via BAPI calls.

To extend the SAP duplicate check to apply to invoices created using BAPI calls, complete the following steps in SAP.

1. In the LMR1M001 SAP enhancement project, in the SMOD transaction, activate the EXIT_SAPLMRMP_010 user exit.
2. Navigate to the SE37 transaction and display the function module source code for the EXIT_SAPLMR1M_010 user exit and double click the INCLUDE ZXM08U16 line.
3. Insert the following code.

Example

```
CALL FUNCTION 'MRM_DUPLICATE_INVOICE_CHECK'

EXPORTING

i_bukrs = E_TRBKPV-bukrs

i_lifnr = E_TRBKPV-lifnr

i_waers = E_TRBKPV-waers

i_xblnr = E_TRBKPV-xblnr

i_bldat = E_TRBKPV-bldat

i_rmwwr = E_TRBKPV-rmwwr

i_xrech = E_TRBKPV-xrech

EXCEPTIONS

invoice_already_exists = 1

OTHERS = 2.

IF sy-subrc ne 0.

MESSAGE ID sy-msgid TYPE sy-msgty NUMBER sy-msgno WITH sy-msgv1 sy-msgv2 sy-msgv3 sy-msgv4 .
```

```
ENDIF.

CALL FUNCTION 'MRM_DUPLICATE_INVOICE_CHECK'

EXPORTING

i_bukrs = E_TRBKPV-bukrs

i_lifnr = E_TRBKPV-lifnr

i_waers = E_TRBKPV-waers

i_xblnr = E_TRBKPV-xblnr

i_bldat = E_TRBKPV-bldat

i_rmwwr = E_TRBKPV-rmwwr

i_xrech = E_TRBKPV-xrech

EXCEPTIONS

invoice_already_exists = 1

OTHERS = 2.

IF sy-subrc ne 0.

MESSAGE ID sy-msgid TYPE sy-msgty NUMBER sy-msgno WITH sy-msgv1 sy-
msgv2 sy-msgv3 sy-msgv4 .

ENDIF.
```

4. Save and activate the ABAP/4 program.

Result After duplicate checking is configured, Brainware for Invoices is not able to post an invoice if it is a duplicate. Instead, the export fails and the document goes to a 750 status in Verifier.

SAP user exits

Brainware for Invoices includes a user exit framework specifically for aspects of SAP integration.

UserExitCreateSAPDocument user exit

This user exit is triggered just before the following.

- Brainware for Invoices calls a BAPI to post an MM invoice in SAP.
- Brainware for Invoices calls a BAPI to park an MM invoice in SAP.
- Brainware for Invoices calls a BAPI to park an FI invoice via MIRO in SAP.
- Brainware for Invoices calls a BAPI to park an FI invoice via FV60 in SAP.

You can use the oBAPIHeader user exit parameter to change invoice header data passed to SAP, or to pass additional data.

The following table lists the header elements that are available to be changed or passed in SAP version ECC 6, along with their link to the standard Brainware for Invoices fields, where relevant.

Header parameter	SAP field type	Length	Brainware for Invoices field	Description
INVOICE_IND	XRECH	1	DocumentType	This is X for an invoice, or blank for a credit memo.
DOC_TYPE	BLART	2		This is the SAP document type Brainware for Invoices lifts this value from the SAP settings.
DOC_DATE	BLDAT	8	InvoiceDate	This is the invoice date.
PSTNG_DATE	BUDAT	8		This is the posting date. By default, Brainware for Invoices sets this to the current date.
REF_DOC_NO	XBLNR	16	InvoiceNumber	This is the invoice number.
COMP_CODE	BUKRS	4	CompanyCode	This is the company code. If blank, but a

Header parameter	SAP field type	Length	Brainware for Invoices field	Description
				purchase order is available, Brainware for Invoices uses the company code set against the PO.
DIFF_INV	LIFRE	10	VendorID	This is the vendor number.
CURRENCY	WAERS	5	Currency	This is the invoice currency.
CURRENCY_ISO	ISOCD	3		This is the ISO currency code.
EXCH_RATE	UKURSP	9	ExchangeRate	This is the exchange rate.
EXCH_RATE_V	UKURSM	9		This is the indirect exchange rate.
GROSS_ AMOUNT	REWWR	23	AmountTotal	This is the invoice total amount. This may be adjusted if tax is short-paid or the invoice includes withholding tax.
CALC_TAX_IND	XMWST	1		This is the calculate tax flag. This is set dependent on tax configuration settings.
PMNTTRMS	ZTERM	4		Payment terms

Header parameter	SAP field type	Length	Brainware for Invoices field	Description
				key. This is set based upon the terms on the PO or in the vendor master data.
BLINE_DATE	ZFBDT	8	InvoiceDate	This is the payment baseline date.
DSCT_DAYS1	ZBD1T	3		This is the cash discount days 1.
DSCT_DAYS2	ZBD2T	3		This is the cash discount days 2.
NETTERMS	ZBD3T	3		This is the net payment terms period.
DSCT_PCT1	ZBD1P	5		This is the cash discount percentage 1.
DSCT_PCT2	ZBD2P	5		This is the cash discount percentage 2.
IV_CATEGORY	IVTYP	1		This is the origin of an LIV document.
HEADER_TXT	BKTXT	25		This is the invoice header text.
PMNT_BLOCK	ZLSPR	1		This is the invoice payment block. This may be set if a payment block has been set for

Header parameter	SAP field type	Length	Brainware for Invoices field	Description
				excessive unplanned delivery costs.
DEL_COSTS	BEZNK	23	AmountFreightPrepaidAndAdded AmountMisc LineItems	This is the unplanned delivery costs. This is populated if miscellaneous charges have been captured on the invoice and the corresponding charge categories have been configured to post as unplanned charges.
DEL_COSTS_ TAXC	MWSKZ_ BNK	2		This is the tax code for unplanned delivery costs.
DEL_COSTS_ TAXJ	TXJCD_BNK	15		This is the tax jurisdiction code for unplanned delivery costs.
PERSON_EXT	ERNAME	12		This is the external system user.
PYMT_METH	ZLSCH	1		This is the payment method.
PMTMTHSUPL	UZAWE	2		This is the payment method

Header parameter	SAP field type	Length	Brainware for Invoices field	Description
				supplement.
INV_DOC_NO	RE_BELNR	10		This is the SAP invoice reference document number.
SCBANK_IND	LFBKZ	3		This is the central bank indicator.
SUPCOUNTRY	LANDL	3		This is the supplying country.
BLLSRV_IND	DIEKZ	1		This is the service indicator for foreign payment.
REF_DOC_NO_ LONG	XBLNR_ LONG	35		This is the long reference document number.
DSCT_AMOUNT	WSKTO	23		This is the cash discount amount.
PO_SUB_NO	ESRNR	11	PORSubscriberNo	This is the POR subscriber number This may also be populated based on vendor master data.
PO_CHECKDG	ESRPZ	2		This is the POR number check digit.

Header parameter	SAP field type	Length	Brainware for Invoices field	Description
PO_REF_NO	ESRRE	27	PORNumber	This is the POR number.
PAYEE_PAYER	EMPFB	10		This is the alternate payee.
PARTNER_BK	BVTYP	4	BankAccountCode	This is the partner bank type.
HOUSEBANKID	HBKID	5		This is the house bank ID.
ALLOC_NMBR	ZUONR	18		This is the assignment.
PAYMT_REF	KIDNO	30	PaymentReference	This is the payment reference.
INV_REF_NO	AWREF_ REB	10		This is the SAP invoice reference document.
INV_YEAR	REBZI	4		This is the SAP invoice reference document year.
INV_REC_DATE	REINDAT	8		This is the invoice receipt date.
PLANNING_ LEVEL	FDLEV	2		This is the planning level.
PLANNING_ DATE	FDTAG	8		This is the planning date.
FIXEDTERMS	ZBFIX	8		This is the fixed terms date.

Header parameter	SAP field type	Length	Brainware for Invoices field	Description
BUS_AREA	GSBER	4		This is the business area.
LOT_NUMBER	LOTKZ	10		This is the lot number.
ITEM_TEXT	SGTXT	50		This is the invoice item text. This defaults to the reason why an invoice was unable to be posted.
J_1BNFTYPE	J_ 1BNFTYPE	2		This is the Brazilian nota fiscal type.
EU_TRIANG_ DEAL	XEGDR	1		This is the indicator for the EU triangular deal.
REPCOUNTRY	EGMLD_ BSEZ	3		This is the EU tax reporting country.
VAT_REG_NO	STCEG	20		This is the VAT registration number.
BUSINESS_ PLACE	BUPLA	4		This is the business place.
TAX_EXCH_ RATE	TXKRS_ BKPF	9		This is the exchange rate for taxes.
GOODS_ AFFECTED	XINVE	1		This is the capital goods affected flag.

Header parameter	SAP field type	Length	Brainware for Invoices field	Description
RET_DUE_PROP	RET_DUE_ PROP	8		This is the due date for retention.
DELIV_POSTING	XRECHL	1		This is the posting logic for delivery items.
RETURN_ POSTING	XRECHR	1		This is the posting logic for return items.

You can use the GetValueByName and SetValueByName methods of the oBAPIHeader object to get and set values in the invoice header.

A code example illustrating how you can pass an invoice header text to SAP via the BAPI interface, if it is not populated already, is as follows:

```
If oBAPIHeader.GetValueByName("HEADER_TXT") Then
  oBAPIHeader.SetValueByName("HEADER_TXT", strHeaderText)

Else
  oBAPIHeader.SetValueByName("HEADER_TXT", "")

End If
```

Note:
Parameter values passed to SAP BAPIs can sometimes be persistent between subsequent calls. Hence, you must explicitly pass blank for all parameters if they are not populated with a value.

To change an existing field, the coding is very similar. For example, to change the invoice number, the following code is used.

```
oBAPIHeader.SetValueByName("REF_DOC_NO", strMyNewInvoiceNumber)
```

Note:
Date fields must be passed to SAP in the YYYYMMDD format without a separator unless you are connecting to SAP using web services, in which case the date format must be passed as YYYY-MM-DD. Also, BAPI parameter names are case-sensitive.

You can use the blAbort boolean interface parameter to abort the call to the BAPI if necessary by setting the value to **True**.

Custom SAP BAPI Calls

Within certain user exits, you can insert custom script to call a BAPI within SAP. You must have ICAL_Invoices (3.3) added as a reference for the script class in order to access the solution SAP library properties and methods. The following object types and methods are provided for this.

Solution.SAP.ConnectToBAPI

This method provides a means to connect to SAP and instantiate a BAPI function. The interface of the method is as follows.

Parameter name	Parameter type	Description
BAPIName	String	This is the name of the BAPI you want to call.
BAPIFunction	SAPFunction	This is the local instance of SAPFunction that you want to instantiate.
ErrorMessage	String	This parameter returns an error message if, for example, the system cannot connect to SAP, or the BAPI does not exist.

The following is a coding example in Winwrap.

```
Dim oBAPI As SAPFunction
Dim strErrorMessage As String

Solution.SAP.ConnectToBAPI("BAPI_PO_GETDETAIL", oBAPI, strErrorMessage)

If strErrorMessage = "" Then
  ' Successfully connected
End If
```

When logging into SAP, the solution uses the connection details configured for the processing profile assigned to the current document.For that reason, the method can only be used if a processing profile has been assigned. This means that use of the function is only possible within user exits that are triggered during the extraction, validation and export workflow steps.

SAPFunction

The SAPFunction object type represents a BAPI function. You can instantiate a BAPI function using the Solution.SAP.ConnectToBAPI method described above. The SAPFunction object type has the following methods and properties.

Method / Property Name	Description

SetValueByName	This method allows you to set an import parameter in the BAPI interface. For example:
	`Dim oBAPIReadPO As SAPFunction`
	`Dim strErrorMessage As String`
	
	`Solution.SAP.ConnectToBAPI("BAPI_PO_GETDETAIL", oBAPIReadPO, strErrorMessage)`
	
	`oBAPIReadPO.SetValueByName ("PURCHASEORDER", myPONumber)`

GetValueByName	This method allows you to retrieve an export parameter returned from the BAPI. For example:
	`Dim oBAPI As SAPFunction`
	`strValue = oBAPI.GetValueByName ("RETURNEDVALUE")`

GetStructure	This method returns a structure of type SAPStructure from the BAPI interface. For example:
	`Dim oBAPICreateInvoice As SAPFunction`
	`Dim oInvoiceHeader As SAPStructure`
	`Dim strErrorMessage As String`
	
	`Solution.SAP.ConnectToBAPI("BAPI_INCOMINGINVOICE_CREATE", oBAPICreateInvoice, strErrorMessage)`
	
	`Set oInvoiceHeader = oBAPICreateInvoice.GetStructure ("HEADERDATA")`

GetTable	This method returns a table of type SAPTable from the BAPI interface. For example:
	`Dim oBAPICreateInvoice As SAPFunction`
	`Dim oInvoiceLines As SAPTable`

Method / Property Name	Description
	Dim strErrorMessage As String Solution.SAP.ConnectToBAPI("BAPI_ INCOMINGINVOICE_CREATE", oBAPICreateInvoice, strErrorMessage) Set oInvoiceLines = oBAPICreateInvoice.GetTable ("ITEMDATA")

Call	This method calls the BAPI. For example:
	Dim oBAPIReadPO As SAPFunction
	Dim strErrorMessage As String
	
	Solution.SAP.ConnectToBAPI("BAPI_PO_
	GETDETAIL", oBAPIReadPO,
	strErrorMessage)
	
	oBAPIReadPO.SetValueByName
	("PURCHASEORDER", myPONumber)
	If oBAPIReadPO.Call Then
	' Call successful
	Else
	' Call failed
	End If

Exception	This property is populated with any handled exception raised by the BAPI call. For example: If oBAPIReadPO.Call Then ' Call successful If oBAPIReadPO.Exception

SAPStructure

The SAPStructure object type represents a flat structure within the BAPI interface. It has the following methods and properties.

Method / Property Name	Description
SetValueByName	This method allows you to set the value of a member of

Method / Property Name	Description

	a SAP structure. If you are connecting to SAP using the RFC approach, this method can be used for all members of the structure. If you are using web services, this method can only be used for non-amount fields. For amount fields, you need to use the **SetAmountByName** method. For example:
	`Dim oBAPICreateInvoice As SAPFunction`
	`Dim oInvoiceHeader As SAPStructure`
	`Dim strErrorMessage As String`
	
	`Solution.SAP.ConnectToBAPI("BAPI_INCOMINGINVOICE_CREATE", oBAPICreateInvoice, strErrorMessage)`
	
	`Set oInvoiceHeader = oBAPICreateInvoice.GetStructure ("HEADERDATA")`
	`oInvoiceHeader.SetValueByName("REF_DOC_NO", "12345")`

GetValueByName	This method allows you to retrieve the value of a member of a SAP structure. If you are connecting to SAP using the RFC approach, this method can be used for all members of the structure. If you are using web services, this method can only be used for non-amount values. For amount fields, you need to use the **GetAmountByName** method.
	`Dim oPOHeader As SAPStructure`
	`Dim strVendorID As String`
	`Set oPOHeader = oBAPIPOLookUp.GetStructure("PO_HEADER")`
	`strVendorID = oPOHeader.GetValueByName ("VENDOR_ID")`

SetAmountByName	This method allows you to set the value of an amount type member of a SAP structure. If you are using SAP web services, you must use this method to set amount fields. Example coding: `Dim dblMyAmount As DoubledblMyAmount = 1000.00oInvoiceHeader.SetAmountByName ("GROSS_AMOUNT", dblMyAmount)`

Method / Property Name	Description
GetAmountByName	This method allows you to get the value of an amount type member of a SAP structure. If you are using SAP web services, you must use this method to get the value of amount fields. Example coding: `Dim dblMyAmount As DoubledblMyAmount = oInvoiceHeader.GetAmountByName("GROSS_AMOUNT")`

SAPTable

The SAPTable object type represents a table within the BAPI interface. The table is zero-indexed. It has the following methods and properties.

Method / Property Name	Description

RowCount	This property returns the number of rows in the table as an integer. You can use the following code to loop around a table.
	`Dim intRow As Integer`
	`Dim oPOLine As SAPStructure`
	`Dim oPOLineTable As SAPTable`
	`For intRow = 0 To oPOLineTable.RowCount-1`
	`  Set oPOLine = oPOLineTable.GetRow (intRow)`
	`Next intRow`

AddRow	This method adds a new row to the end of the table.
DeleteRow	This method deletes a specified row from the table. For example, the following code deletes the first line in the table.`SAPTable.DeleteRow(0)`
DeleteLastRow	This method removes the last row from the table.
GetRow	This method retrieve the row at the index specified and returns it as a SAPStructure object type. For example, the following code retrieves the first line of the table and copies it into oRow. `Dim oRow As SAPStructure`

Method / Property Name	Description
	Dim oTable As SAPTable Set oRow = oTable.GetRow(0)
GetLastRow	This method retrieves the last row in the table and returns it as a SAPStructure object type. For example, the following code adds a new row into a SAPTable object and then makes the new row available as a structure so that data can be populated. Dim oBAPI As SAPFunction Dim oRow As SAPStructure Dim oLineItems As SAPTable Solution.SAP.ConnectToBAPI("BAPI_INCOMINGINVOICE_CREATE", oBAPI, strErrorMessage) Set oLineItems = oBAPI.GetTable ("ITEMDATA") oLineItems.AddRow Set oRow = oLineItems.GetLastRow oRow.SetValueByName("ITEM_AMOUNT", "100")

BAPI call coding example

The following code illustrates a call to BAPI_PO_GETDETAIL where the vendor ID and currency is retrieved for a given purchase order number. This code is suitable for UserExitPostLinePairing where parameter strExportError is available in the user exit interface.

```
Dim oBAPIPO As SAPFunction
Dim oBAPIPOHeader As SAPStructure
Dim strVendor As String
Dim strCurrency As String

Solution.SAP.ConnectToBAPI("BAPI_PO_GETDETAIL", oBAPIPO, strExportError)

If strExportError <> "" Then
  Exit Sub
End If
oBAPIPO.SetValueByName("PURCHASEORDER", "4500012345")
If oBAPIPO.Call Then
  Set oBAPIPOHeader = oBAPIPO.GetStructure("PO_HEADER")
```

```
    strVendor =  oBAPIPOHeader.GetValueByName("VENDOR")
    strCurrency = oBAPIPOHeader.GetValueByName("CURRENCY")
  Else
    strExportError = oBAPIPO.Exception
  End If
```

Workday Integration

Workday is a hosted, cloud-based ERP system that allows integration via web services. You can configure Brainware for Invoices to integrate with Workday and perform the following functions.

In order to connect to Workday, you must ensure that each machine you are connecting from, has client TLS 1.2 protocols enabled and strong cryptography enabled. The certificate authority must also be trusted.

- Validate and retrieve purchase order data.
- Validate and retrieve company code data.
- Create invoices and credit notes in Workday.
- Attach URL and image to created documents in Workday.

Brainware for Invoices uses Workday API version 28.0.

Configure a connection to Workday

To configure the connection to Workday, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Workday Configuration** node.
5. Enter the URL used to connect to Workday in **Workday URL**.
6. Enter the Tenant ID in **Tenant ID**.
7. Enter the Workday User ID in **User ID**.
8. If you are using an encrypted password, enter it in **Encrypted Password**. If not, enter the unencrypted password in **Password**.
9. Save the changes.

Configure the purchase order look-up

Brainware for Invoices uses the Get_Purchase_Orders method to validate and retrieve data relating to the purchase order.

You can configure the purchase order look-up for reading header and line items.

Configure the purchase order header look-up

To activate the purchase order header look-up to use Workday, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **PO Number Validation** node.
5. Click **Validate From Workday**.
6. Select the **Is Workday PO** check box. This prevents the system from removing **PO** from the start of any extracted PO number, as PO is a common prefix for Workday purchase orders.
7. Save the changes.

Configure the purchase order line item look-up

To activate the purchase order line item look-up to use Workday, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Line Pairing Settings** node.
5. Click **Get PO Lines From Workday**.
6. Save the changes.

When creating a purchase order in Workday, service line items are entered on a different tab to material line items. When reading these service line items, the system treats these as limits type service lines and automatically assigns them an item category of 1.

Configure the company code look-up

Brainware for Invoices uses the Get_Workday_Companies method to validate and retrieve data related to the invoice company code.

To activate the company code look-up to use Workday, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Company Code Settings** node.
5. Select the **Validate From Workday** radio button.
6. Save the changes.

Configure the data export to Workday

Brainware for Invoices enables you to create invoices and credit memos directly in Workday at the time of document export.

You can use the web service method Submit_Supplier_Invoice for creating invoices. You can use the method Submit_Supplier_Invoice_Adjustment for creating credit memos.

Workday requires that each document submitted must have a valid vendor and, in the case of a PO invoice, a valid purchase order must also be available. For that reason, if the user has selected invalid reasons of VENDOR NOT FOUND or MISSING / INVALID VENDOR & PO or VENDOR ADDRESS INVALID in Verifier, then the export to Workday subsequently fails. If the document is a PO invoice, then the export also fails if an invalid reason of MISSING / INVALID PO is selected. The document is then returned to Verifier until a valid vendor and/or purchase order becomes available, at which point the document can be resubmitted. Brainware for Invoices is not able to post an invoice if it is a duplicate. In such cases, the export fails and the document goes to a 750 status in Verifier.

Incomplete invoices, or invoices that require additional user review, are created in Workday as drafts. Brainware for Invoices creates a draft document under any of the following scenarios.

- The invoice type is NO-PO.
- The document type is CREDIT.
- The user selected an invalid reason of NON TAX COMPLIANT or INVOICE AMOUNTS DO NOT ADD UP.
- The invoice type is PO and line pairing is switched off or did not succeed.
- The strError parameter was populated in UserExitPostLinePairing.
- The system attempted to submit a complete PO invoice, but Workday returned a validation error.

If system is unable to create any kind of document in Workday, export fails.

If the invoice or credit memo has tax, the document is created in Workday using a tax option reference of **Enter Tax Due To Supplier**. At line item level for **PO** invoices, the system uses the tax applicability reference from the purchase order line item

All credit notes and NO-PO invoices are created without any line items. When creating a PO invoice where line pairing failed, the system submits all purchase order lines not selected during line pairing as dummy invoice lines to Workday in addition to the paired line items. The dummy lines are created with a quantity of one and a total of zero. This is because you cannot use Workday to add a new invoice line item tied to a purchase order line item when editing an incomplete document. For that reason, if the invoice cannot be fully posted, the system has to send all potentially relevant line items, then you can delete the lines that you do not want. If the purchase order line item look-up is switched off in Line Pairing Settings or the system is unable to retrieve the lines, data export fails.

It is not possible to create a credit memo in Workday without specifying a credit note adjustment reason. By default, the system uses the adjustment reason with an ID of OTHER_TERMS, but you can configure this value. Document export fails if no adjustment reason ID is specified.

Workday offers two header fields for miscellaneous charges. These are Total Freight Charges and Total Other Charges. If line pairing is activated, the system populates the Total Freight Charges field with the total value of all invoice miscellaneous charges for belonging to miscellaneous charge category F if Always Book To Unplanned is selected. The Total Other Charges field is populated with the total value of all invoice miscellaneous charges belonging to all other miscellaneous charge categories that have Always Book To Unplanned selected.

To activate the data export to Workday, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Workday Configuration** node.
5. Select the **Create Workday Documents** check box.
6. Enter the credit memo adjustment reason ID you want to use in **Credit Note Adjustment Reason**.
7. Save the changes.

The following table provides an overview of the invoice data that BFI passes to Workday.

Workday Method	Data Element	Fields Populated
SUBMIT_ SUPPLIER_ INVOICE	SUPPLIER_ INVOICE_DATA	SUPPLIER_REFERENCE_NUMBER, INVOICE_ DATE, SUPPLIER_REFERENCE, COMPANY_ REFERENCE, CURRENCY_REFERENCE, PAYMENT_TERMS_REFERENCE, CONTROL_ AMOUNT_TOTAL, TAX_AMOUNT, FREIGHT_ AMOUNT, OTHER_CHARGES, MEMO, DOCUMENT_LINK, ATTACHMENT_DATA, SUBMIT, TAX_OPTION_REFERENCE INVOICE_LINE_REPLACEMENT_DATA: PURCHASE_ORDER_LINE_REFERENCE, QUANTITY, UNIT_COST, EXTENDED_AMOUNT, SPEND_CATEGORY_REFERENCE, TAX_ APPLICABILITY_REFERENCE
SUBMIT_ SUPPLIER_ INVOICE_ ADJUSTMENT	SUPPLIER_ INVOICE_ ADJUSTMENT_ DATA	SUPPLIER_REFERENCE_NUMBER, ADJUSTMENT_DATE, ADJUSTMENT_ REFERENCE_REASON, SUPPLIER_REFERENCE, COMPANY_REFERENCE, CURRENCY_ REFERENCE, PAYMENT_TERMS_REFERENCE, CONTROL_AMOUNT_TOTAL, TAX_AMOUNT, FREIGHT_AMOUNT, OTHER_CHARGES, MEMO, DOCUMENT_LINK, ATTACHMENT_DATA, INCREASE_LIABILITY, SUBMIT, TAX_OPTION_ REFERENCE

Configure Workday image linking

When creating a document in Workday, you can choose to send the image as an attachment to the Workday document. You can also choose to send the document URL so that it is populated in the Workday document header data. Images as attachments can be sent either as a tiff or a PDF. If you want to send the document as a PDF, you must specify a PDF temp directory in Export Settings so that the image can be converted if required. The image is cleaned up from the directory after the conversion has taken place.

To activate the image linking with Workday, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Workday Configuration** node.
5. Select the **Attach Image To Document** check box if you want to attach the image to the document in Workday.
6. Select the **Attach Image As PDF** check box if you want the attached image to be a PDF file. You must populate the **PDF Temp Directory** parameter in **Export Settings** with a valid directory path for this to take effect.
7. Select the **Send Document URL** check box if you want to populate the document link property of the Workday document header with the document link configured in **Reporting Settings**. This document link must be a URL that Workday can accept.
8. Save the changes.

ALM Integration

The ALE Learnset Manager (ALM) is a separate Hyland application that allows management of solution learnsets created using the Automatic Learning Engine (ALE). The Automated Learning Engine is a different technology to the Brainware Extraction Engine used within Brainware For Invoices.

For each processing profile, you can configure Brainware for Invoices to use ALM as an additional extraction resource in order to improve field extraction rates for documents classified as invoices. This capability applies only to header fields such as the invoice number and the invoice date. It does not apply to line item fields or fields that use the associative search engine. Within the configuration, you can choose which fields you want to use ALM for. For each field, you can decide whether the ALM result should take priority over the BFI result, or whether the ALM result should be used to increase the confidence of a field candidate generated by BFI.

You can also configure the system to update the learnset in ALM with new documents and the corresponding field data which has been confirmed to be correct by a Verifier user. This process occurs at time of document export. As more documents are added, the learnsets in ALM are refined further so that field extraction rates in BFI increase over a period of time.

It is also possible to configure the system to use ALM for fields belonging to custom base classes.

The system requires ALM 2.0 as a minimum version. If you have configured BFI to update the ALM learnset at time of document export, you do not need to set up any project, classes or fields in ALM in advance. These are created automatically by BFI.

Integration with ALM is performed using REST API calls. Any technical errors relating to use of ALM that occur during field extraction or document export do not cause the extraction and export workflow steps to fail. Instead, details of the error are written into the Runtime Server Instance log file.

Configure a connection to ALM

To configure a connection to ALM, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **ALM General Settings** node
5. Select the **Activate ALM** check box if you want to activate usage of ALM for field extraction.
6. In **Base URL**, enter the base URL to connect to the ALM instance. This must be entered in the format `scheme://host:port/` with no additional components. This is a mandatory field.

   Example

   Example: http://localhost:8080/.

7. Enter the ALM user ID in **User ID**. This is a mandatory field.
8. If you are using an encrypted password, enter it in **Encrypted Password**. If not, enter the unencrypted password in **Password**. Specifying a password is mandatory.
9. Enter the name of the ALM project used for invoices in **Invoices Project Name**. This is a mandatory field. If you are using the system to update the learnset in ALM, the system will create an ALM project automatically with the name you specify here if the project does not exist already.
10. Save the changes.

    If the system is not able to establish a connection to the ALM server, or there is missing or incorrect configuration, document processing in BFI does not stop. Instead, messages are written into the log file of the RTS instance that is performing extraction. Communication with ALM for the purposes of extraction occurs in the **Document PreExtract** event.

Configure fields with use with ALM

You can choose which fields you want to use with ALM along with how the ALM field extraction results should interact with the BFI field extraction results.

For each field relevant for ALM field extraction, the system looks at the candidate generated by ALM with the highest level of confidence. This candidate is then added to the list of candidates generated by BFI. If BFI has already generated a candidate for the same value, the ALM candidate is not added. Instead, the matching BFI candidate confidence is uprated from its original value using a percentage that you can configure.

For example, if BFI has generated a candidate for the invoice number with a confidence of 0.5 and the same value is also the top ALM result for the field, if you have configured 20% as the increase percentage, then the BFI candidate weight is uprated to 0.6.

You can also configure the system to ignore the BFI candidates and use the top ALM candidate in all cases if the ALM candidate exceeds a configurable confidence threshold. To configure the fields you want to use with ALM, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **ALM General Settings** node. This then displays the ALM field configuration table. This table contains a complete list of standard BFI fields that you are able to use ALM with.
5. Locate the row for the field you wish to configure.
6. Select the **Relevant For ALM** check box if you want to use ALM extraction for the field.
7. In the percentage by which a BFI field candidate confidence should be uprated if it matches the best ALM candidate in **Increase Percentage**. This should be an integer, so `10` would represent 10%. This setting does not apply to the currency field on the invoices class. For the currency field, only the **Always Use ALM Result** option is available.
8. Select the **Always Use ALM Result** checkbox if you always want to use the highest weighted candidate generated by ALM.
9. Enter the minimum confidence level that the top ALM candidate must have to be used as the field result in **Min ALM Confidence**. This setting is used in conjunction with **Always Use ALM Result**. This value should be entered as a value between `0` and `1`. If you always want to use the ALM result irrespective of weighting, then this value can be left as `0`.
10. Save the changes.

Configure the automatic ALM learnset update

You can configure the system to add a document to the ALM learnset during export. This option allows you to enhance the ALM learnset in an automated manner. Adding more documents to the ALM learnset helps familiarize the system with a broader range of invoice formats and can help improve the quality of extraction over a period of time.

ALM stores a project learnset in the form of ALM classes, where each class represents an invoice format. When ALM performs extraction on a given document, it uses the layout of the document to determine which ALM class should be used as the base learnset for field extraction. If the document layout cannot be associated with a class, then no ALM field extraction can be performed. Hence, creating new classes is the means by which the system is able to handle an ever-changing landscape of invoice formats.

Before adding a document to the ALM learnset, the system first checks to see if that document was classified to an existing ALM class during the extraction step. If it was classified to an ALM class, the document is added to that class. The ALM class is recreated if it was deleted subsequent to the extraction step.

If the document was not classified to an ALM class during the extraction step, the system automatically creates a new class. When a new class is created, the name of the class is derived using a combination of the vendor ID and the vendor name for the current document. The vendor ID is taken from the **VendorID** field. The vendor name is derived from the first line of the **VendorASSA** field. Using these two elements, the ALM class name is formed as **VendorName_VendorID**.

In addition, if the ALM project configured in I**nvoice Project Name** does not exist, this project is also created automatically.

Although ALM classes created automatically are named after the vendors for which they were initially created, a single ALM class can be used to aid extraction for multiple vendors that use the same invoice layout. As long as a class with a matching layout was determined during extraction, the system will not create additional classes for the same invoice format on the basis that they were provided by different vendors.

The system only adds a document to the ALM learnset if all of the following conditions are met.

- The automatic ALM learnset update is activated.
- If the document is classified to a custom base class, that custom base class has been registered in the ALM base class configuration table.
- The document only relates to a single image file - for example, it has not been created by merging multiple documents together in Verifier.
- The user who verified the document is permitted to add documents to the ALM learnset.
- The Verifier user corrected one or more fields that you have configured as being relevant for ALM.
- For each field corrected, the Verifier user either double-clicked or used a bounding box to select the correct value on the document so that the field result is associated with the correct field location.
- For each field corrected, there were no significant OCR errors on the value the user chose that would have prevented initial automatic extraction. This check does not apply to the currency field on the Invoices class.
- The document invalid reason is set to **NONE, STOCK INVOICE, THIRD PARTY FREIGHT** or **PO VENDOR <> INVOICE VENDOR**. For any other invalid reason, the document is not added to the ALM learnset.
- If the document is an invoice and the vendor invoice frequency check is activated, a sufficient number of records of past vendor invoices exist in the invoice number history table over the time period configured.

To control the growth of the learnset in ALM, you can specify additional criteria to determine whether a document should be added or not. You can configure the system to add a document only in the event that a minimum number of fields relevant for ALM were corrected by the Verifier user. You can also configure the system not to add a document to an ALM class learnset if the number of documents that are already present in that learnset exceeds a specified volume, or not to create a new class if the number of classes that already exist in the ALM project exceeds a value you can specify.

After a document is added to the ALM learnset, you can configure the system to learn the ALM project automatically. Learning the ALM project means that the learnset update becomes available to new documents being processed immediately. If your ALM project has a lot of classes, the learning process can be time consuming. Hence, you may not wish this step to be carried out by BFI automatically as it would hold up the RTS instance performing export. If you decide not to trigger automatic learning from BFI, you would need to trigger the project learning in ALM.

To configure the automatic ALM learnset update, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **ALM General Settings** node.
5. Select the **Update ALM At Export** check box.
6. Select the **Learn ALM At Export** check box if you want the system to trigger the learning process for the ALM project.
7. Enter the minimum number of fields that a Verifier user must have corrected in **Min Corrected Field Count** for the document to be relevant for adding to the ALM learnset. This must be an integer greater or equal to one.
8. Enter the maximum number of classes that are allowed to exist for an ALM project in **Max ALM Classes**. The system will not create a new ALM class, and hence not add the current document to the learnset, if the number of classes that already exist in the ALM project is greater to or equal to the value you specify here. A value of 0 denotes that there is no limit.
9. Enter the maximum number of documents that may exist within an **ALM class in Max Class Document Count**. If the number of documents that already exist in the ALM class learnset is equal to or exceeds the value entered, the system will not add the document to the ALM learnset. A value of 0 entered here specifies that there is no maximum limit.
10. Save the changes.

Configure the vendor invoice frequency check

The vendor invoice frequency check is an optional feature that allows you to control the automatic creation of classes in ALM based upon how often you receive you documents from each vendor.

For example, if one particular vendor only submits a single invoice once every five years, or you receive a lot of invoices from 'one-off' vendors, you may not want the system to expend resource creating ALM classes for these documents given how infrequently those classes would actually prove useful. You may only want the system to create ALM classes for vendors who send invoices at more regular intervals.

To determine how frequently a vendor submits invoices, the system looks at the number of records in the invoice number history table that you set up in **Processing Settings > Invoice Number Settings**. Each record in this table represents either an invoice or credit note submitted by one particular vendor that the system has processed in the past.

When you configure the frequency check, you can decide how many invoice number history records need to exist in the table for a specified time frame before the document should be added to the ALM learnset. The time frame is measured in days prior to the current date.

For example, if you want the system only to add a document to the ALM learnset if the vendor has previously submitted more than 5 invoices or credit notes in the last 100 days (excluding the current document), you would set the number of target records to **5** and the time period (past days) to **100**.

If the number of records in the invoice number history table does not reach the target, the document is not added to the ALM learnset.

The vendor invoice frequency check is only available for documents classified as invoices. It does not apply to custom base classes. The prerequisites for using the vendor invoice frequency check are as follows:

- The invoice number history check has been activated in **Processing Settings > Invoice Number Settings**.
- The invoice number history is stored in a table with the same columns as **BW_INVOICE_ NUMBER_FORMATS**.

To configure the vendor invoice frequency check for ALM, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **ALM General Settings** node.
5. Select the **Activate Frequency Check** checkbox.
6. Enter the target number of document in **Target Documents**. This value must be entered as an integer. If zero is entered, the system uses a value of 1. The value must be less than or equal to the maximum number of records that the invoice number history table is permitted to hold for a single vendor.
7. Enter the time period for the check in **Past Days**. This value must be entered as an integer. If zero is entered, the system uses a value of 365.
8. Save the changes.

Configure ALM verifier users

You can configure the system only to add documents to a learnset if they were verified by certain users. It may be that you only want to use documents corrected by senior or more experienced Verifier users as learnset candidates.

To configure the users permitted to update the learnset in ALM, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Global Settings**.
3. Within the **Global Settings** hierarchy tree, navigate to the **User Management** node. This displays the user management table.
4. Navigate to the row for the user that you want to allow to update ALM.
5. Select the **Relevant For ALM** checkbox.
6. Save the changes.

Activate ALM for a custom base class

By default, when ALM extraction is activated, it is only carried out for documents classified to the **Invoices** base class or one of its child classes. It is not carried out for any other classes, including the **Void** class.

However, it is possible to extend usage of ALM so that it is used for fields belonging to custom base classes. ALM cannot be used to drive classification within BFI. The steps to achieve this are described in the sections below.

Assign a custom base class to an ALM project

The first step is to register your custom base class as a class relevant for ALM and to assign it to an ALM project. It is recommended to use a separate ALM project per custom base class. If you have configured the system to update the ALM learnset at time of document export, the system will create the ALM project automatically if it does not exist already.

For each custom base class, you can configure the naming convention for the classes created in ALM during the automatic ALM learnset update. You do this by specifying an Associate Search Engine (ASE) field that exists on the custom base class, along with the field used to hold the ASE ID. The ALM classname is determined using the first line of the ASE field, then an underscore, then the content of the ASE ID field.

If you do not specify an ASE field, the system creates a single ALM class matching the custom base class name if it does not exist already. This approach is appropriate if you are using the custom base class for fixed forms. For semi-structured documents, you are advised to use an ASE field. To configure a custom base class for use with ALM, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **ALM Classes** node. This then displays the ALM base class configuration table.
5. Scroll to the last row in the table where you have the option to create a new entry.
6. Enter the base document class name in **Class Name**. This must be entered in upper case.
7. Enter the name of the ALM project you want to use for the custom base class in **Project Name**.
8. Enter the technical name of the ASE field you want to use for the ALM class naming in **ASE Field Name**. This is recommended if you are using the custom base class for semi-structured documents.
9. Enter the technical name of the ID field used for the ASE field in **ASE ID Field**. This field is mandatory if **ASE Field Name** is populated.
10. Click **Insert** to save your changes.

Configure custom fields for ALM

Each custom base class field you want to use with ALM must be registered in the ALM field configuration table. In addition, each field registered must have a corresponding record in the standard BFI field configuration table. You can view the standard BFI field configuration table in **Processing Setting > Field Settings**.

To add a new field into the ALM field configuration table, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **ALM Field Settings** node. This then displays the ALM field configuration table.
5. Scroll to the last row in the table where you have the option to create a new entry.
6. Enter the base document class name in **Class Name**. This must be entered in upper case.
7. Enter the technical name of the field in **Field Name**. This is case sensitive.
8. Select the **Relevant for ALM** check box.

   If necessary, adjust the remainder of the ALM field configuration options as you would do for a BFI standard ALM field.
9. Click **Insert** to save your changes.

Add the tmpRTSExtractionResults, tmpVerifierAudit and tmpALMReporting fields to the custom base class

This step is mandatory if you have configured the system to update the ALM learnset at time of document export.

The **tmpRTSExtractionResults** field is used to store the field extraction results determined by RTS. The field is populated during the **Document_Validate** event for the custom base class using the **ALMStoreRTSResults** method of the solution **ALMUtils** library. It is an internal field and does not require any action beyond its creation. If the field is not created, automatic ALM learnset updates do not occur.

The **tmpVerifierAudit** field is used to store the details of the user who verified the document. It is also populated during the **Document_Validate** event using the **ALMStoreRTSResults** method.

The **tmpALMReporting** field stores ALM field and candidate data to be written into the Visibility reporting database tables. You do not need to create this field if you are not using Visibility reporting.

To create the **tmpRTSExtractionResults** field, complete the following steps in Designer.

1. In the custom base class, go to the **Fields** view mode.
2. Right-click in the gray space and select **Insert Field Definition**.
3. Enter `tmpRTSExtractionResults` as the fieldname and press **Enter**. The field name is case sensitive.
4. Right-click on the new field and select **Show Properties**.

5. In the pane on the right side of the screen, select the **Validation** tab, and then select the **Always Valid** check box.
6. Repeat steps 3 to 5 but for a new field called `tmpVerifierAudit`. This field name is case sensitive.
7. Repeat steps 3 to 5 but for a new field called `tmpALMReporting`. This field name is case sensitive. These steps are only required if you are using solution reporting.
8. Save the project.

Add script to custom base class

The final step required to use ALM with a custom base class is to add script into the BFI project file. To open the script for your custom base class, complete the following steps in Designer.

1. Open Brainware Intelligent Capture Designer.
2. In the **Class view in definition** mode, highlight the custom base class, then right click and select **Show script**. This then displays the custom base class script window.

Next

Script needs to be added into the following events. You must create the event if it does not exist already.

Document_PreExtract

The following line of script must be added to the Document_PreExtract event.`Solution.ALMUtils.ExecuteALMExtraction(pWorkdoc)`

This method calls ALM and executes extraction for the current document. The method also refreshes the settings loaded from the BFI configuration database. Hence, if you are also calling the **UpdateSettings** method from the **Settings** library within the **Document_PreExtract** event, the call to **ExecuteALMExtraction** should be placed before this, otherwise previously loaded settings will be removed.

If you also have a call to **Solution.Document_PreExtract** for the purposes of reporting, the call to **ExecuteALMExtraction** should come before this. Hence, if you are using all three methods, the correct order should be:

```
Solution.ALMUtils.ExecuteALMExtraction(pWorkdoc)Solution.
Settings.UpdateSettings(pWorkdoc, false, false)Solution.Document_
PreExtract(pWorkdoc, "CustomBase")
```

Field_PostEvaluate

For each field that you wish to use with ALM, the following line of script must be added to the end of the field PostEvaluate event.

```
Solution.ALMUtils.ALMPostEvaluate(pField, pWorkdoc)
```

This method compares the candidates created for the custom base class field with the highest weighted candidate returned by ALM and adjusts the candidate list based on the way you have configured the field in the ALM field configuration table.

Document_Validate

If you have configured the system to update the learnset in ALM at time of document export, the following line of script must be added to the Document_Validate event.

```
Solution.ALMUtils.ALMStoreRTSResults(pWorkdoc)
```

This method updates the **tmpRTSExtractionResults** field with the field extraction results derived on server side. If you also have a call to **Solution.Document_Validate** for the purposes of reporting, the call to **ALMStoreRTSResults** should come before this.

ALM and Visibility Reporting

Brainware For Invoices writes additional information into the Visibility reporting database for each relevant document if use of ALM is activated.

This additional information can be used to create reports that allow you to track the performance of ALM at the document and field level and also to identify problematic ALM classes.

These additional items of information are written into the **BRWDocument** and **BRWDistillerFields** tables.

BRWDocument

The table below describes the additional data that is written into the **BRWDocument** table.

Column	Description
ALMEXTRACTION	If set to 'true', this means that the document was relevant for ALM field extraction. That is, ALM was active for the processing profile and the document class was a class relevant for ALM. This value is populated after extraction and validation has been completed.
ALMLEARNSET	If set to 'true', this means the document was added to the ALM learnset at time of export. This value is populated after extraction and validation has been completed.
ALMPROJECT	This is the ALM project used for the document. This value is populated after extraction and validation has been completed.
ALMCLASS	This is the ALM class used for the document. This value is populated after extraction and validation has been completed.

Column	Description
ALMPOSITIVEFIELDCOUNT	Total number of fields where extraction was positively impacted by using ALM. This is calculated at time of document export. This value is populated after document export has been completed.
ALMNEGATIVEFIELDCOUNT	Total number of fields where extraction was negatively impacted by using ALM. This is calculated at time of document export. This value is populated after document export has been completed.
ALMNETFIELDBENEFIT	This is calculated as `ALMPOSITIVEFIELDCOUNT` minus `ALMNEGATIVEFIELDCOUNT`. This value is populated after document export has been completed.

BRWDistillerFields

The table below describes the additional data for each extraction field that is written into the **BRWDistillerFields** table. The system only populates these data items if an ALM candidate was generated for a field configured as being relevant for ALM extraction.

Column	Description
BFIRESULT	This is the text of the candidate with the highest confidence weighting as determined by BFI prior to comparison with an ALM candidate. This value is populated after extraction and validation has been completed.
BFICONFIDENCE	This is the confidence weighting for the top BFI candidate as written into **BFIRESULT**. This value is populated after extraction and validation has been completed.
ALMRESULT	This is the text of the candidate with the highest confidence weighting returned by ALM. This value is populated after extraction and validation has been completed.

Column	Description
ALMCONFIDENCE	This is the confidence weighting of the top ALM candidate as written into **ALMRESULT**. This value is populated after extraction and validation has been completed.
ALMUSED	If set to 'true', this means that the ALM candidate was selected as the best candidate for the field. This value is populated after extraction and validation has been completed.
ALMCORRECT	If set to 'true', this means that the best ALM candidate matches the final value of the field. i.e. ALMRESULT = CONTENTV This value is populated after document export has been completed.
BFICORRECT	If set to 'true', this means that the best BFI candidate matches the final value of the field. i.e. BFIRESULT = CONTENTV This value is populated after document export has been completed.

Project Customization

Project customization includes such things as changing tolerances and thresholds within the project, adding new fields and classes, configuring existing ASE fields, changing or creating Verifier forms, and setting up new users. You can also add script customizations to the project.

The following customization options are available.

- Project setting customizations
- Script customizations

For custom fields and classes, scripts can be added to the appropriate custom field events and class script respectively. For customizations to the existing Invoices class, this must be done on the UserExits class script window.

Existing fields or classes must not be deleted or renamed under any circumstances. Doing so may cause the solution to stop responding.

Sequence of class dependencies

When making changes to the script, you must remember that dependencies exist between the various script layers, so it is not possible to execute one script if there is a dependency on a script which is not being executed. Executing a script also performs a syntax check.

For that reason, the scripts must be executed in the following sequence.

```
GlobalFunctions > UserExits > APPackaged > Project
```

Project script organization

The application script is organized logically across several classes.

Project script class

The project script class contains script associated with standard system events, which are known as the ScriptModule events.

These ScriptModule events are called at specific points within the Verifier workflow. For example, pre and post-import, pre and post-OCR, pre and post-classification, and at the time of document export.

Do not make any changes to the code on this class level. Doing so may cause the solution to stop responding.

Global functions script class

The global functions script class contains a series of useful public sub-routines and functions that accomplish common tasks required during solution customization. You can use these public functions within custom code placed in a user exit, or within code for any additional classes that are created.

The public functions, along with a description of their potential uses, are described in the following table.

Function/subroutine	Description
DicVal	This function returns the value of any parameter contained within the system configuration database. The function parameters are as follows. • strKey The name of the database parameter. • strDic The shortname of the DB table in which the parameter is held. Neither strKey nor strDic are case sensitive.For example, if parameter ExportFormat in the BRWDAT table contains MMDDYYYY, then the following command copies MMDDYYYY into local string variable `strOutputDateFormat.strOutputDateFormat = DicVal("ExportFormat", "DAT")` For the parameters that are Boolean, the function returns a value

Function/subroutine	Description
	of YES or NO.

SplitString	This subroutine splits a given string based on a delimiter, and returns the components of the string as an array, along with the number of values in the array.The interface parameters are as follows.
	• strSource The input string to be split.
	• strSplitArray The array containing the split results.
	• strDesignator The delimiter to be used when performing the split.
	• ArrayLineCount The number of array elements in the returned strSplitArray.
	For example:
	`Dim myString As String Dim Words() As String`
	`Dim intWordCount As Integer`
	`myString = "MARY HAD A LITTLE LAMB"`
	A space is set as the delimiter.`Call SplitString (myString, Words(), " ", intWordCount)` The returned words array would contain the following.
	`Words(1) = "MARY" Words(2) = "HAD" Words (3) = "A" Words(4) = "LITTLE" Words(5) = "LAMB"`
	The returned intWordCount parameter would be set to 5.

fnConvertToExternal	This function converts a date in the date format used internally within Brainware for Invoices (DD/MM/YYYY) to a date based on the format and separator. The interface parameters are as follows.
	• strDate The date to be formatted.
	• strFormat The format of date (either MMDDYYYY or, YYYYMMDD – any other entry returns DDMMYYYY).
	• strSeparator The separator to be used when converting the date.
	For example,
	`Dim myDate as string`
	`myDate = "12/08/2009"`

Function/subroutine	Description

	`'12th August 2009`
	`myDate = fnConvertToExternal(myDate, "MMDDYYYY", "-")`
	The value of myDate is now set as "08-12-2009".

fnConvertToInternal	This function is used to convert a date with a specified format into the date format used internally within Brainware for Invoices, (DD/MM/YYYY). The interface is as follows.
	• strDate The date to be formatted to DD/MM/YYYY.
	• strFormat The current format of strDate (either YYYYMMDD, MMDDYYYY – any other entry returns DDMMYYYY.
	• strSeparator The separator currently used in strDate.
	For example,
	`Dim myDate as String`
	`myDate = "2009-08-12"`
	`'12th August 2009`
	`myDate = fnConvertToInternal(myDate, "YYYYMMDD", "-")`
	The value of myDate is now set to "12/08/2009".

fnFormatDateForExport	This function converts a date in the Verifier output format, as configured in the DAT section of the system configuration, into a date in the export output format, as configured in Processing Profile Configuration Settings > Date Settings.For example, an invoice date can potentially appear in any format, but the system converts it to the export format specified in the Processing Profile Configuration Settings > Date Settings. If that format is MMDDYYYY, then 12th August 2009 is displayed in Verifier as 08/12/2009, which is also the technical content of the field object text property, for example the contents of pField.Text or pWorkdoc.Fields("MyDate").Text). fnFormatDateForExport takes the technical contents of the field, and converts it into the date format as specified in the Processing Profile Configuration Settings > Date Settings.Therefore, if the export format is YYYYMMDD with a hyphen (-) as the separator, then the following command populates string variable strDate with 2009-08-12.`strDate = fnFormatDateForExport`

Function/subroutine	Description
	(pWorkdoc.Fields("MyDate").Text) The interface of the function is as follows.strDate The date to be converted.
fnWriteXMLField	This function writes a single line into the XML file, and is intended for use within UserExitXMLOutput to provide a mechanism to add a custom field into the XML file with a single command.The interface of the function is as follows. • paramFieldName: The name of the parameter containing the tag for the XML field (Export Settings). • outputValue: The value of the field to be outputted. • xmlsectionIdentifier: String that specifies the section of the XML file where the field should be written. The following global constants are available. cXMLDocHeader:The document level section cXMLInvHeader:The invoice header sectioncXMLLineItems:The line items sectioncXMLGLItems:The general ledger line items sectioncXMLTaxItems:The tax line items section • xmlDoc: The XML document. For example, in Export Settings > Header Field Export Mapping, a new row is created for the fieldname InvoiceCode with a value of INVCODE in column XMLTag. A new field is created against the invoices class in the project called InvoiceCode which contains the extracted value of 12345, and this value must be written to the invoice header section of the XML file.This can be achieved by putting the following in UserExitXMLOutput.fnWriteXMLField ("InvoiceCode", pWorkdoc.Fields ("InvoiceCode").Text, cXMLInvHeader, xmlDoc) This writes out the following line into the invoice header section of the XML file.<INVCODE>12345</INVCODE>
fnWriteXMLDateField	This function is used to write out a date field to the XML file where the date to be written is in the Verifier output date format specified in Processing Profile Configuration Settings > Date Settings. As well as writing the value into

Function/subroutine	Description
	the XML file, the system converts the date passed into the date export format as specified in 'Export Format' setting of the Processing Profile Configuration Settings > Date Settings. The interface and function usage is identical to that of fnWriteXMLField as described above.
fnWriteDBHeaderField	This function is used to write an additional database header field into a downstream database if database export is activated in the Export Settings > Export Options. It is intended to provide a developer with a single command to accomplish this within UserExitDBHeaderExport.The interface of the function is as follows. • changeKeyName: The name of the parameter containing the table column mapping for the destination field in the database. • setValue: The field value to be written to the database. • dbKeyName: The current parameter being assessed by the database header output routine. This value is passed unaltered from the value passed into the user exit. • exportValue: The current value of the field to be written into the database header table. This value is passed unaltered from the value passed into the user exit. For example, in Export Settings > Header Field Export Mapping, a new setting is added for field name InvoiceCode where the 'XML Tag' option has a value of INVCODE, which denotes the technical column name of the downstream invoice header database table. A new field has been created against the invoices class in the project called InvoiceCode which contains the extracted value of 12345.To write the field value into the 'INV CODE' option in Header Field Export Mapping, insert the following code into UserExitDBHeaderExport. `fnWriteDBHeaderField ("InvoiceCode", pWorkdoc.Fields ("InvoiceCode").Text, dbKeyName, exportValue)` When the export runs, the database column INVCODE is populated with the value 12345.
fnWriteDBHeaderDateField	This function is used to write out a date field to the invoice header database table where the date to be written is in the

Function/subroutine	Description
	Verifier output date format specified in Processing Profile Configuration Settings > Date Settings. Apart from writing the value into the database table, the system also converts the date passed into the date export format as specified in column ExportFormat within Date Settings. The interface and function usage is similar to that of fnWriteDBHeaderField as described above.
fnGetFileName	This function receives a full filename, which includes the file path and file extension, and returns the name of the file itself. For example, if c:\My Documents\12345.tif is passed to the function, the output is 12345. The interface is strFileName.
fnGetBaseClass	This simple function returns the base class associated with the class passed to the function. If a base class is passed to the function, the same base class is returned. For example, if the function receives ExpenseSheets and that class is a child class of Invoices, then the function returns Invoices. The interface is strClass.
fnIsVerifier	This function returns a Boolean true value if the current Brainware Intelligent Capture Module executing the script is the Verifier Module, except when the Verifier runs the analysis scripts triggered by a manual document re-classification.
fnIsAlpha	This function returns a Boolean true value if the string passed with the parameter strString is made up entirely of alphabetic characters (upper or lower case). The interface is strString.
fnGetUserDecimalSeparator	This function reads the local Windows settings for the user logged onto the machine and returns either a full stop/period, or a comma, depending on the decimal separator preferences.
fnWriteCSVField	This function replaces a user-defined literal in the CSV file configuration with its corresponding value, and is intended for use within UserExitCSVFile to provide a developer with

Function/subroutine	Description
	a mechanism to add a custom field into the CSV 7 output file with a single command. The interface of the function is as follows. • strRecordtext The current text of line to be written into the CSV file. • strKey The CSV file group number, such as 01, 02 and so on. • strSymbol The user-defined literal to be replace, such as <%ZIC>. • strValue The value to replace the literal with. For example, If the CSV group in the Export Settings > CSV Export Configuration settings with IndexID 1 has <%ZIC> in the 'Format Line 1' option, where <%ZIC> is intended to represent the extracted value of custom field InvoiceCode, then the function is called as follows in UserExitCSVFile. `fnWriteCSVField(strRecordText, strKey, "<%ZIC>", pWorkdoc.Fields ("InvoiceCode").Text)`
fnWriteCSVDateField	This function replaces a user defined literal in the CSV file configuration with its corresponding date value, and is intended for use within UserExitCSVFile to provide a developer with a mechanism to add a custom field into the CSV output file with just a single command. This function must only be used if the date value to be written into the CSV file is in the Verifier Output Format configured in the Processing Profile Configuration Settings > Date Settings. The date is outputted in the date format configured for the CSV file group. If no configuration has been made here, it is formatted according to the date output format configured within Date Settings. The interface and function usage is identical to that of fnWriteCSVField.
fnSetDBConnection	This function can be called from a user exit in order to connect to a database. The function takes in a database connection string with the strConnection input parameter. If the connection is already

Function/subroutine	Description

	available, the index of the connection in global database connection array objDBConn is returned. If it is not available or not open, the function initializes the connection and return the relevant index of the objDBConn object.
	
	If the connection cannot be made, the function returns -1 and an appropriate error message is written into the standard Brainware Intelligent Capture logfile.
	
	For example, the following code instantiates a database connection and executes an SQL call where variable myDBConnection represent the connection string, and mySQL represents the SQL statement (both string variables):
	
	`Dim lngConnection As Long`
	`Dim myConnection As ADODB.Connection`
	`lngConnection = fnSetDBConnection (myDBConnection)`
	`If lngConnection = -1 Then`
	`'Connection could not be made - error handling`
	`Else`
	`'Execute SQL using connection`
	`Set myConnection = objDBConn (lngConnection) myConnection.Execute (mySQL)`
	`End If`
	
	objDBConn is a global database object available for use in any user exit.
	
	The interface is strDBConnection.
	
	Any connection string that does not use an encrypted password can be passed directly into this function.
	
	If the connection string uses an encrypted password, then the new command, Solution.Utils.GetDatabaseConnectionString (connectionGroup), can be used to retrieve the connection string. For more information, refer to the Brainware for Invoices Password Encryption section.

fnGetFieldAnalysisSettings	This function returns an instantiated AnalysisSettings object for the given Associative Search Engine field oASSA and document class strClass.

Function/subroutine	Description
	The interface is as follows. • strClass: The classname where the Associative Search Engine field is defined. • oASEField: Cedar Field interface that refers to an Associative Search Engine field. **Note:** The combination of strClass and oASEField must refer to an existing, non-inherited Associative Search Engine field, else an "ActiveX Object var is nothing" exception is triggered.
fnIsValueInList	This function takes a comma-separated list in input parameter strList and a value strValuePreserve. The function returns a Boolean true value if strValuePreserve is one of the values in the list. The interface is strList, strValuePreserve.
fnConvertToDouble	This utility function takes in a string strString and converts it to a double value in a way that is consistent with the locale settings of the machine. If the string cannot be converted, the output is zero. The interface is value.
fnIsNumeric	This utility function returns a Boolean true value if all characters passed in the input parameter strTemp are numeric, such as 0-9. The interface is value.
fnGetMiscChargeTotalForCode	This function adds up all of the invoice miscellaneous charges for a given miscellaneous charge code strCode as registered in Processing Profile Configuration Settings > Misc Charge Configuration > Misc Charge Categories, and returns this total The interface is pWorkdoc, strCode.
fnCalculateExchangeRate	This function calculates the correct exchange rate to pass during document export based upon user entry in the exchange rate and local VAT amount fields in the Verifier application. The exchange rate is passed out as a string via the function

Function/subroutine	Description
	module name. The example usage is as follows. Dim strExchRateExport As String strExchRateExport = fnCalculateExchangeRate(pWorkdoc) The interface is pWorkdoc.
fnCheckForNull	This function receives a value of type variant and returns the value as a string. If the field component has a null value, an empty string is returned. The interface is vInput.
fnConvertBoolean	This function receives a Boolean field component from a database record set and returns YES if the value is positive (and NO if the value is negative). The interface is booleanValue.
fnSetFromFileName	This function takes the name of an import file parameter mappable in Global Settings > Import Settings, along with the document filename, and parses out the corresponding value from the filename. If the field is a date, it is formatted in accordance with the VerifierFormat setting within Date Settings for the relevant processing profile. The interface is infoName, fileName.
fnGetClientDataForWorkdoc	This function returns the client settings configured in Client Settings that are associated with the current workdoc using the WWClientData structure. The example usage is as follows. Dim Client As WWClientData Client = fnGetClientDataForWorkdoc() The interface is pWorkdoc (Optional, not required since BFI 3.0).
fnGetFieldSettings	This is the function to retrieve the field settings from Processing Profile Configuration Settings > Field Settings for a given field name. The settings are passed back using the Field Settings structure. The example usage (to retrieve settings for the invoice

Function/subroutine	Description
	number associated with profile ID 1) is as follows. Dim FS as WWFieldSettings FS = fnGetFieldSettings("INVOICENUMBER", "1") The interface is strFieldName, strProfileID (Optional, not required since BFI 3.0).
fnFormatAmountForExport	This function receives an amount passed as a double, along with an optional field name as registered in Processing Profile Configuration Settings > Field Settings, and returns the amount back as a string having applied the export formatting rules configured in the Processing Profile Configuration Settings > Amount Settings and Field Settings. If no field name is passed, then the formatting rules set against AmountTotal in Field Settings for the current processing profile are used. The interface is dblAmount, strFieldName. **Note:** If the strFieldName is not known, only the export options for decimal and thousands separator are applied.
fnReadSubRule	This function receives a substitution rule ID as a string and returns the SubRule details. The interface is strRule.
fnGetValueForIR	This function receives the text for an invalid reason as displayed in the field in Verifier via parameter strIR and returns a corresponding property (specified by strValue) belonging to that rule. Possible values for strValue are RULEID and EXPORTCODE. The interface is ivrType, verifierDisplay.
fnFormatTextForExport	This function receives a string value and the name of a field registered in Processing Profile Configuration Settings > Field Settings and returns the text having applied the corresponding substitution rule for exporting. The interface is strText, strFieldName.

Function/subroutine	Description
fnReadCountryData	This function is used to retrieve details for a given country held in **Global Settings > Country Settings**. The country details are passed back using the CountryData structure. In order for the function to operate, the country look-up must be activated with Global Settings > Country Settings. Example usage (to retrieve details for the UK): Dim Country As WWCountryData Country = fnReadCountryData("GB") The interface is strCountry.
fnMultipleRecords	This function receives a recordset object and returns TRUE if there is more than one record in that record set. The interface is myRecordSet. **Note:** The recordset is set back to the first record after this function call.
fnGetIRNone	This function returns the text indicating that no invalid reason is set (default of 'NONE') based upon project configuration settings. The function has no input parameters.
fnReadText	This function receives a dictionary name and text ID and returns the corresponding text based upon the current language preference. Interface: strTextID, strDictionary
fnReadText	This function receives a dictionary name and text ID and returns the corresponding text based upon the current language preference. Interface: strTextID, strDictionary Supported dictionaries are "DTY", "ITY", "IVR" or "PTY".
fnIsNumberInList	This function takes in a comma-separated list of numbers in 'strList' and returns true if the parameter passed in 'strValuePreserve' is within that list. Interface: strList, strValuePreserve.

User exits script class

This class contains the project user exit script points. You must not remove or change the definitions of the provided user exits.

Invoices script class

The Invoices script class contains the source code for the invoice class validation events, which includes the logic that is used to validate fields and the document as a whole, as well as to control the behavior of the Dynamic Verifier form.

You can add new validation events that correspond to newly created fields on the Invoices script class. These extra events must be created at the end of the existing code in the area marked in the script.

No changes must ever be made to any of the existing code. Doing so may make the solution inoperable.

AP packaged / generic script classes

These scripts must not be deleted, changed, or renamed. The **<project>.sdp** file may not be recoverable if they are.

Solution functions

Solution functions are divided across four libraries. They are accessed in Winwrap using the following formula.

```
Solution.<Library>.<Function / Property>.
```

You must add the ICAL_Invoices (3.3) and ICAL_Invoices_PIC (3.3) DLLs as references to any script class that you require to have access to the data types used by these functions.

The section below lists the libraries and functions available.

Settings library

The settings library consists of the following:

Function/Property	Description
GetDictionarySetting	Internal use only
DicVal	This function returns the value of any parameter contained within the system configuration database. The function parameters are as follows: • strKey: The name of the database parameter. • strDic: The shortname of the DB table in which the parameter is held.

Function/Property	Description

	Neither strKey nor strDic are case sensitive. For example, if parameter ExportFormat in the BRWDAT table contains MMDDYYYY, then the following command copies MMDDYYYY into local string variable strOutputDateFormat. Example script:
	`strOutputDateFormat = DicVal("ExportFormat", "DAT")` For Boolean type parameters, the function returns a value of YES or NO as a string.
	Example script:
	`Dim strMyValue As String`
	
	`strMyValue = Solution.Settings.DicVal ("ConnectToSAP", "SAP")`
	`' Will return YES or NO depending on whether the system is configured to connect to SAP or not.`

DicValTable	This function can be used to retrieve indexed custom settings.The function parameters are as follows. • ParameterName - the name of the parameter. • GroupName - the name of the parameter group. • Index - the parameter index ID. For example, parameter 'MySetting' in group 'CUS' with an index ID of 5 can be retrieved using the following command.`strMySettings = Solution.Settings.DicValTable("MySetting", "CUS", 5)` For Boolean type parameters, the function returns a value of YES or NO as a string.
GetHighestIndexIDForGroup	This function returns the highest index ID found across all settings that exist within a specified parameter group. The index is returned as an integer. For example, if custom parameter group CUS has a parameter called 'MySetting' with indexes 1-5, and a second parameter called 'MyParameter' with a single index of 7, then the GetHighestIndexIDForGroup function will return 7 for parameter group CUS. The function takes a single parameter which is the parameter group name, for example, CUS or SQL. The function can be used in conjunction with the DicValTable function in user exits to help retrieve indexed custom settings. Example usage:

Function/Property	Description

	`Dim intHighestIndex As Integer`
	`Dim intIndexID As Integer`
	`Dim strSetting As String`
	
	`intHighestIndex = Solution.Settings.GetHighestIndexIDForGroup ("CUS")`
	
	`For intIndexID = 1 To intHighestIndex`
	`  strSetting = Solution.Settings.DicValTable ("MYSETTING", "CUS", intIndexID)`
	`Next intIndexID`

ClientData	The ClientData properties expose client data for the current document client mainly from the BRWClient table. ClientErrorDescription - Error description if client determination was invalid. ClientGroup - The client group.ClientID - The client ID. ClientName - The client name. EmployeePartition - The client employee partition ID. ExportProfileID- The client export profile ID. ForceVerify - Flag to indicate whether documents belonging to the client should force-stop in Verifier. InstructionsProfileID - The client instructions profile ID. POPartition - The client purchase order partition ID. Priority - The client document priority (0-9) ProfileID - The client processing profile ID. RequiresReview - Flag to indicate whether documents belonging to this client require review. TaxPartition - The client tax partition ID. ValidClientFound - Flag to indicate whether the document client is valid. VendorPartition - The client vendor partition ID. Example script:`Dim Client as ClientDataSet Client = Solution. Settings.ClientData`
GetDictionaryKeys	Internal use only
GetDictionaryValues	Internal use only
GetErrorMessage	This function returns the error message text associated with a given ID for the specified language. If no translation exists for the supplied language, the English version is returned. If no translation exists for any language, a message is returned that no error text is defined. The error messages are stored in table BRWERR.The function parameters are as follows.

Function/Property	Description

	• code The error code.
	• language The two-character language code i.e. "EN"
	Example script:
	`Dim strErrMsg as String`
	`strErrMsg = Solution.`
	`Settings.GetErrorMessage(1, "EN")`

GetInfoMessage	This function returns the information message text associated with a given ID for the specified language. If no translation exists for the supplied language, the English version is returned. If no translation exists for any language, a message is returned that includes the message code. The information messages are stored in table BRWINFType.The function parameters are as follows.
	• code The information code.
	• language The two-character language code i.e. "EN"
	Example script:
	`Dim strInfMsg as String`
	`strInfMsg = Solution. Settings.GetInfoMessage (1, "EN")`

GetText	This function returns the message text associated with a given ID for the specified language. If no translation exists for the supplied language, the English version is returned. If no translation exists for any language, an empty string is returned. The messages are stored in table BRWTexts.The function parameters are as follows.
	• code The information code.
	• language The two-character language code i.e. "EN"
	Example script:
	`Dim strMsg as String`
	`strMsg = Solution. Settings.GetText(1, "EN")`

GetValue	Internal use only
UpdateDicVal	This method allows you to update the value of a configuration setting within the current workdoc. The setting must already exist. It is not possible to create a new setting using this method. Once updated, the new setting value is saved to the workdoc.

Function/Property	Description
	The function parameters are as follows: • pWorkdoc – the current workdoc • parameterName – the name of the setting parameter you want to update • groupName – the settings group • value – the value you want the system to use for the setting parameter specified Example script: `Solution. Settings.UpdateDicVal(pWorkdoc, "DBTableName", "PON", "MyNewPOHeaderTable")`
UpdateSettings	This method can be used within the script of a custom base class in order to load the BFI configuration database settings. Before the settings are loaded, the method clears any existing settings from the system memory. The settings are loaded based on the client ID assigned to the current workdoc. An exception is raised if the client ID cannot be determined. You can choose to retrieve any existing settings from the workdoc by setting the **ReadFromStorageTable** parameter to **true**.. If no settings are present, the system loads the settings afresh from the BFI configuration database. Settings are stored against the workdoc in a table field called **tmpSettings** which must be created manually for the custom base class. It should have at least one column. The system does not throw an exception if the **tmpSettings** table does not exist, but does throw an exception if the field exists, but it not of type table or it does not have any columns defined. If you are using Brainware Intelligent Capture 5.9.1 or higher, you can choose to use the efficient memory storage feature to store the settings. This stores and retrieves the settings using named property **UserStrings_0**. More information on how to activate this can be found in **Global Settings > General Settings**. In this circumstance, you do not need to create the **tmpSettings** table. You can choose to write settings obtained from the BFI configuration database to the workdoc by setting the **WriteToStorageTable** parameter to **true**. An exception is raised if the system is unable to write the settings successfully.

Function/Property	Description
	The function parameters are as follows. • Workdoc - this is the workdoc • ReadFromStorageTable - flag to indicate whether the system should try to read existing settings stored within the current workdoc • WriteToStorageTable - flag to indicate whether the system should write the loaded settings to the current workdoc Example: `Solution. Settings.UpdateSettings(pWorkdoc, false, false)`

Utility library

The utility library consists of the following.

Function/Property	Description

AdjustEmployeeID	Adjust an employee ID by adding or removing the partition if employee filtering is active.The function parameters are as follows.
	• employeeId The ID to be adjusted.
	• addPartition Whether or not to add the employee partition to the ID
	If employee filtering is inactive or addPartition is False, the employee ID returned is unchanged. If employee filtering is active and addPartition is True, the employee ID returned is returned prefixed with the partition ID and a hyphen.Example script:
	`Dim strEmpID as String`
	`strEmpID = Solution. Utils. AdjustEmployeeID ("123", True)`

AdjustVendorID	Adjust a vendor ID by adding or removing the partition if vendor filtering is active.The function parameters are as follows. • VendorID The ID to be adjusted. • addPartition Whether or not to add the vendor partition to the ID

Function/Property	Description

	If vendor filtering is inactive or `addPartition` is False, the vendor ID returned is unchanged. If vendor filtering is active and `addPartition` is True, the vendor ID returned is returned prefixed with the partition ID and a hyphen.Example script:
	`Dim strVndID as String`
	`strVndID = Solution. Utils. AdjustVendorID ("123", True)`

ConvertDateToExternalFormat	Convert from an internal format date (DD/MM/YYYY) to a date based on the format and separatorThe function parameters are as follows.
	• Date The internal format date (DD/MM/YYYY).
	• format Output date format.
	• Separator Date part separator.
	This function reformats the supplied date into either MMDDYYYY or YYYYMMDD formats depending on the format passed. The date part separator indicates the required character between the day, month and year parts of the date - typically "-" or "/". Example script:
	`Dim strExternalDate as String`
	`strExternalDate = Solution. Utils.ConvertDateToExternalFormat ("19/11/2018", "YYYYMMDD", "-")`
	`' Returns: 2018-11-19`

ConvertDateToInternalFormat	Converts the supplied date to the internal format date (DD/MM/YYYY) from a date based on the format and separatorThe function parameters are as follows. • Date The original date. • format Input date format. • Separator Date part separator. This function reformats the supplied date into DD/MM/YYYY format from the format passed. The format can be MMDDYYYY or YYYYMMDD; any other format will not change the order of the supplied date. The date part separator indicates the character between the day, month and year parts of the date - typically "-" or "/". Example script: `Dim strInternalDate as String`

Function/Property	Description
	`strInternalDate = Solution.Utils.ConvertDateToInternalFormat ("2018-11-19", "YYYYMMDD", "-") ' Returns: 19/11/2018`
CurrentDir	This function returns the full path of the current working directory.
DecryptPassword	Internal use only
ExtractFromFilename	This function extracts a property from a file name.The function parameters are as follows. • fileNamePartIdentifier The part to extract. • filename The file name. For example: If the URN identifier is defined as COMPONENT1 and the supplied file name is abc_def_ghi, extracting URN from the file name will return "abc" if the separator is an underscore ("_").
FormatAmountForExport	This function formats a given amount to a string format for export based on the formatting settings you have configured for the field in the Field Configuration Table, and also the thousand and decimal separator settings you have configured in Amount Settings. The function parameters are: • Amount - the amount you want to format expressed as a double. • FieldName - the name of the field in the Field Configuration Table whose settings you want to use for the amount formatting. This is not case sensitive. If you do not specify a field, the system defaults to using the formatting settings of the **AmountTotal** field. `Dim strExportAmount as StringstrExportAmount = Solution.Utils.FormatAmountForExport(1.83, "AMOUNTTOTAL")`
GetAddress	This function returns the vendor address for the supplied ID as a VendorAddress data type.The function parameters are as follows. • wdoc The work document.

Function/Property	Description

	• id The ID.
	• employee Whether to look for an employee or a vendor ID.
	If the vendor does not exist, the system returns an initialized, but empty data type. Example script:
	`Dim vndAdd as VendorAddress`
	`Set vndAdd = Solution.Utils.GetAddress (pworkdoc, "0000100563", False)`

GetAddressCustom	This function returns an address for a given Associate Search Engine field and ID. It is designed for use in the validation and export scripts for custom base classes. The custom base class is expected to have an associate search engine field where the columns follow the naming conventions defined in **Global Settings --> Search Field Mapping**. The function provides the option to return all details specified in **Search Field Mapping**, or just the core details that relate to the address. The core address fields are the name, address1, address2, city, state, zip, country, tel no, partitionID, taxID1 and taxID2. You can choose to return only the core address fields by setting **addressonly** to **true**. Each time the function is called, **UserExitAddressArray** is called to allow custom logic for the fields returned. The system does not buffer the results. The function parameters are as follows: • field - The ASE field • wdoc - The workdoc • id - The unique ID of the record in the ASE pool • addressonly - Flag to indicate that only the core address details should be returned if set to **true**. This value defaults to **false** • defaultcountry (optional) - Default country to be set in the returned address if unavaibale in the associate search engine pool data If the record does not exist, the system returns an initialized, but empty data type. Example script:

Function/Property	Description
	Dim myAddress as VendorAddress Set myAddress = Solution.Utils.GetAddressCustom(pField, pworkdoc, "0000100563", False, "US")
GetBaseClass	This function returns the base class for the given class.The function parameters are as follows. • className The name of the class Example script: Dim strBaseClass as String strBaseClass = Solution.Utils.GetBaseClass ("Invoice_CN2") ' Returns: Invoices

GetCandidateContext	This function returns words and document texts surrounding a given candidate. The words and text are returned using the CandidateCtx data type.It can be used in field post evaluate events to adjust candidate weights based on the text information that surround the candidate.The function parameters are as follows.
	• Candidate - The candidate
	• wDoc - The workdoc
	• blKeepNonAlpha - Flag to indicate whether non-alpha characters should be retained in the words returned. This defaults to false.
	Example script:
	
	Dim CC As CandidateCtx
	Dim lngCandidate As Long
	Dim oCandidate As SCBCdrCandidate
	
	For lngCandidate = 0 To pField.CandidateCount-1
	  Set oCandidate = pField.Candidate (lngCandidate)
	  Set CC = Solution.Utils.GetCandidateContext (oCandidate, pWorkdoc)
	  If CC.WBC1.Text = "HELLO" Then
	  ' Custom logic based on the word before

Function/Property	Description
	the candidate End If Next lngCandidate This function replaces the previous 2.x function fnGetCandidateContext and fnGetCandidateContextNew.
GetDatabaseConnectionString	This function returns the database connection string for the supplied connection group.The function parameters are as follows. • connectionGroup The connection group. This function returns the connection string required to connect to the database.
GetMiscChargeTotalForCode	This function returns the total of all miscellaneous charges on the document that match the supplied charge code.The function parameters are as follows. • wdoc The work document. • code The miscellaneous charges category code. Example script: Dim tot as Double tot = solution.Utils.GetMiscChargeTotalForCode (pWorkdoc, "F")
GetPaymentTerms	This function returns all payment terms as a zero-based array of data type PaymentTerms for a given payment terms profile ID The function parameters are as follows. • PaymentTermsProfileID Example script: Dim PaymentTerms As VariantDim intTerm As IntegerPaymentTerms = Solution.Utils.GetPaymentTerms("0")For intTerm = 0 To UBound(PaymentTerms)…Next intTerm
GetValueForInvalidReason	This function returns information about an invalid reason.The function parameters are as follows. • value The information required.

Function/Property	Description

	• rule The invalid reason's Verifier display text.
	This function returns the information determined by the value parameter which can be RULEID, EXPORTCODE or VERIFIERDISPLAY for the invalid reason specified in the rule parameter.Example script:
	`Dim strIVRInfo as String`
	`strIVRInfo = Solution.Utils.GetValueForInvalidReason ("ruleid", "VENDOR NOT FOUND")`
	`' Returns: SETVENDORTOVALID`

GetVendorKey	This function returns the document's vendor key.The function parameters are as follows.
	• wdoc The work document.
	Example script:
	`Dim strVendorKey as String`
	`strVendorKey = Solution.Utils.GetVendorKey (pworkdoc)`

GetWordIDForList	This function looks for a specified list of words in the document OCR text using a Levenshtein search. Words found are returned as an variant array of data type WordCtx. The array is 1-based.The function parameters are as follows. • wdoc - The workdoc • List - The list of words you want the function to look for. • WordCount - The maximum number of OCR words that are allowed in each hit found. • Distance - The tolerance the system should use when looking for matches on the document. This is expressed as a value between 0 and 1. • IsList - Flag to indicate whether the list provided is a single phrase or a comma-separated list. • Ignore - List of characters that the system should ignore when performing the Levenshtein search. If no value is specified, the system will ignore the following characters: ,.-/()[] • Separator - This is the separator used to delimit the

Function/Property	Description

	word list provided. If no value is passed, the system will use a comma
	Example script:
	`Dim words As Variant`
	`Dim wordcount As Integer`
	`Dim intWord As Integer`
	`words = Solution.Utils.GetWordIDForList (pWorkdoc, "INVOICE,CREDIT", 1, 0.3, True)`
	`wordcount = UBound(words)`
	`For intWord = 1 To wordcount`
	`  strWord = words(intWord).Text`
	`Next intWord`

InvalidReasonNone	This function returns the default text for the invalid reason code None which can be set in Verifier.
IsAlpha	This function determines whether the supplied string contains only alphabetic characters.The function parameters are as follows. • str The string to check. For example: Solution.Utils.IsAlpha is True when the supplied string is "abc" but False when it's "abc123".
IsDigits	This function determines whether the supplied string contains only numeric characters.The function parameters are as follows. • str The string to check. For example: Solution.Utils.IsDigits is True when the supplied string is "0123" but False when it's "o123".
IsValueInList	This function determines whether the supplied string contains only numeric characters.The function parameters are as follows. • List The comma-separated list of strings. • Val The value to check. For example: Solution.Utils. IsValueInList is True when the supplied list is "one, two, three" and the value is "two" but False when the list is "one, two, three" and the value is "four".
MachineName	This function returns the name of the machine on which the script is running.

Function/Property	Description

ParseAmount	This function returns the numeric value of a string. The function parameters are as follows.
	• amount The value to be parsed.
	• currentCulture Whether to use the current culture or an invariant culture.
	This function parses amounts respecting decimal and thousands group separators. For the invariant culture, the decimal separator is a full stop and the thousands group separator is a comma. For the current culture on the machine where the script is running, the decimal separator is Solution.Utils.SystemDecimalSeparator and the thousands group separator is Solution.Utils.SystemThousandsSeparatorZero is returned if the string cannot be parsed as an amount. Example script:
	`Dim dblAmt as Double`
	`' Returns: 123456.78`
	`dblAmt = Solution.Utils.ParseAmount ("123,456.78", False)`
	`' Returns: 123456.78`

SetAddress	Internal use only
SystemDateSeparator	This function returns the character used to separate day, month and year in the current locale.
SystemDecimalSeparator	This function returns the character used to separate the integer part from the fractional part of a number in the current locale.In the US and UK, this is typically a full stop; in many other countries, it's a comma.
SystemThousandsSeparator	This function returns the character used to separate groups of thousands in numbers. In the US and UK, this is typically a comma; in many other countries, it's a full stop.

Lookup library

The Lookup library contains a series of methods that can be used to retrieve data provided by the solution look-ups. The functions available are listed in the following table.

Function / property	Description

GetCompanyData	This function returns data associated with a specified company code which is passed into the function as a string. The data is returned using the CompanyData data type. The function uses the configuration for the current document processing profile ID in order to perform the lookup, which is defined in **Processing Profile > Company Code Settings**. If the company code does not exist or the look-up is switched off, the function returns an empty, yet initialized data type. If a technical error occurs during the look-up, the function raises an exception. The function can only be used during the validation and export events. Example usage:
	`Dim CompanyData As CompanyData`
	`Dim strCountry As String`
	
	`Set CompanyData = Solution.LookUp.GetCompanyData ("2000")`
	`strCountry = CompanyData.Country`

GetCountryData	This is for internal use only. To retrieve country data, you can use the fnReadCountryData function provided on the GlobalFunctions class.
GetFieldSettings	This is for internal use only. To retrieve country data, you can use the fnGetFieldSettings function provided on the GlobalFunctions class.
GetPlantData	This function returns data associated with a specified plant. The plant is passed into the function as a string. The data is returned using the PlantData data type. The function uses the configuration for the current document processing profile ID in order to perform the lookup, which is defined in **Processing Profile > Tax Settings > Tax Configuration.** If the plant does not exist or the look-up is switched off, the function returns an empty, yet initialized data type. If a technical error occurs during the look-up, the function raises an exception. The function can only be used during the validation and export events. Example usage:

Function / property	Description

	`Dim Plant As PlantData`
	
	`Set PlantData = Solution.LookUp.GetPlantData("2000")`

GetUserData	This function returns data associated with a specified user. The user ID is passed into the function as a string, and data is returned using the UserData data type. If the user does not exist, the function returns an empty, yet initialized data type. Example usage:
	`Dim User As UserData`
	
	`Set UserData = Solution.LookUp.GetUserData ("JOHNSMITH")`

Export library

This is for internal use only.

Document data library

This is for internal use only.

Project data library

This is for internal use only.

SAP Library

The SAP library consists of the following:

Function / property	Description
ConnectToBAPI	This function connects to SAP via ICAL based upon the SAP connection details for the current document profile and instantiates a BAPI specified by the developer. For more information, refer to the SAP Configuration section.

ALM Library

The ALM library consists of the following:

Function / property	Description
ExecuteALMExtraction	This function connects to ALM and executes extraction for the current document. It is intended to be called from the **Document_PreExtract** event for a custom base class. Please refer to the ALM Integration section for more details and coding examples.
ALMPostEvaluate	This function compares the field candidates returned by BFI and ALM and makes a decision which one should be used. It is intended to be called from the **PostEvaluate** event for a field belonging to a custom base class. Please refer to the ALM Integration section for more details and coding examples.
ALMStoreRTSResults	This function stores the server side extraction results in the **tmpRTSExtractionResults** field and logs the Verifier data in **tmpVerifierAudit**. It is intended to be called from the **Document_Validate** event for a custom base class. Please refer to the ALM Integration section for more details and coding examples.

User exits

A user exit is a dedicated public subroutine or function on the UserExits class script level where custom code can be inserted.

Each user exit is called from a relevant point in the application layer baseline code and provides you with the opportunity to perform a custom activity for your implementation.

Customizations must be implemented in a modular fashion within the user exits. If any ancillary functions are required to support these modules, then these must be created as public functions.

These ancillary functions can be placed on the UserExits script class if they are only to be used locally. If they need to be accessed by custom script on other classes, they can be placed at the end of the existing script on the GlobalVariables class in the marked area.

User exits

The user exits that are available, along with their calling points and suggested uses can be found in the following table.

User exit	Call routine	Description
UserExitCustomExport	ScriptModule_ExportDocument	This is the user exit for custom export modules, such as for custom flat files or custom database updates. This is the only user exit which has a corresponding activation option within Export Settings > Export Options. The interface is pWorkdoc, ExportPath, strDocLink, LineData, GLData, TaxData, AccountingData, WHTax, blLinesRequired, Address, Flags, strExportError, strError, blShortPay, blCalculateTax, and dblUnplannedDelCost All parameters are read only apart from the strExportError parameter. This can be populated with an appropriate error message in the event the export fails. This sets the batch to a status of 750, with the error message set against the invoice number. This exit is only called for documents that have not been voided. Special handling for voided documents is inserted in the user exit UserExitVoidDocumentExport.
UserExitPostExtract	Document_PostEvaluate on the invoices class	This is the user exit used to set any custom field defaults, or to reevaluate any extracted fields. The interface is pWorkdoc.
UserExitRouteDocument	ScriptModule_RouteDocument	This is the user exit for performing any custom activity connected to the Brainware Intelligent Capture workflow state of each document, such as changing the state based on a property of the workdoc or document filename so that they can be filtered on a user-by-user basis. The interface is pWorkdoc, State.
UserExitPONumberPostEvaluate	PONumber_PostEvaluate on the invoices class	This is the user exit where a custom routine can be added to reevaluate the weightings for candidates for the purchase order number field, such as to check for their existence in an external database.

User exit	Call routine	Description
		The interface is pField, pWorkdoc.
UserExitVoidDocumentExport	ScriptModule_ ExportDocume nt	This is the user exit provided for the custom export of documents belonging to the void class. The interface is pWorkdoc, ExportPath, strDocLink, and strExportError. The strExportError parameter is populated with an appropriate error message if the export fails. This has the effect of setting the batch to a status of 750, with the error message set against the invoice number.
UserExitPONumberValidate	PONumber_ Validate on the invoices class	This user exit can be used for custom purchase order number validations. It is called subsequent to the purchase order number being validated against either the database table. The interface is pField, pWorkdoc, POHeader, POLines, pValid.The POHeader data object and POLines array contain the details for the current purchase order. The values cannot be changed.If the PO number valid flag is to be changed, then the values of pValid and pWorkdoc.Fields("PONumber").Valid is changed to the new Boolean value.If the purchase order details are being read from a database, the line item array is not populated if line pairing is switched off.
UserExitPOValidateStart	PONumber_ Validate on the invoices class	This is the user exit used for custom purchase order number validations to be undertaken at the start of the PO number validate routine. Included in the interface is the Address structure, which contains the full details of the current vendor. Also included is the POKey structure, the contents of which may be changed if required. The interface is pField, pWorkdoc, pValid, blExit, POKey, Address. If the PO number valid flag is to be changed, then the values of pValid and pWorkdoc.Fields ("PONumber").Valid is changed to the new Boolean value. If the parameter blExit is set to TRUE, the PO_ Validate routine exits immediately after returning from the user exit.

User exit	Call routine	Description
UserExitTerminate	ScriptModule_Terminate	This user exit is called from the beginning of ScriptModule_Terminate. It can be used to unload any global script objects employed in custom script. The interface is ModuleName.
UserExitPreImport	ScriptModule_PreImport	This user exit is called from the beginning of ScriptModule_PreImport. The interface is pWorkdoc, FilePath, FileType, pCancel.
UserExitPostClassify	ScriptModule_PostClassify	This user exit is called from the beginning of ScriptModule_PostClassify. The interface is pWorkdoc.
UserExitDocumentTypeValidate	DocumentType_Validate on the invoices class	This user exit is called at the beginning of DocumentType_Validate on the invoices class. The exit can be used to set the valid flag of the document type depending on whether it is an invoice or credit note. The interface is pField, pWorkdoc, pValid.
UserExitAmountMiscPostEvaluate	Internal application	This user exit can be used to evaluate the weighting of candidates for a miscellaneous charge in the AmountMisc field in a manner that is appropriate for the project implementation where the desired contents of the field can change depending on client requirements. The interface is pField, pWorkdoc.
UserExitChangeReportingCountry	Internal application	This user exit permits a change in the reporting country for countries that do not use tax jurisdictions. The parameter strCountry is initially set to the country of the company code to which the invoice is to be posted, which is assumed to be the tax reporting country. As some companies have sites abroad that are VAT registered in that country, the company code country is not appropriate as a key to retrieve the appropriate tax codes from the Brainware for Invoices Tax Table. This user exit provides an opportunity to implement specific business logic to select the correct country by setting the strCountry parameter to the desired value. All other parameters passed are read-

User exit	Call routine	Description
		only. The interface is strCountry, pWorkdoc, POLines (), PlantData().
UserExitSetTolerance	Internal application	This user exit allows greater flexibility for setting the tolerance against which amount fields are cross-validated mathematically within Brainware Intelligent Capture. Standard configuration permits different tolerance values to be assigned to different currencies, but if a further dimension is required, such as considering the company code, then this logic is implemented within this user exit. Adjusting the tolerances requires manipulating the Tolerance array. The interface is Tolerance, pWorkdoc.
UserExitDocumentOnAction	Document_ OnAction on the invoices class	This user exit provides an opportunity for a developer to add script that relates to custom buttons that they may elect to add to the Verifier form. The ActionName parameter, which is passed into the function, is populated with the technical name of the action associated with a user pressing the button as designated in Verifier Design Mode in the Brainware Intelligent Capture Designer. The interface is pWorkdoc, ActionName.
UserExitDBHeaderExport	Internal application	This user exit permits a developer to add custom header fields into the standard database export function, or to change the value of an existing field. A setting must be added to Export Settings > Header Field Export Mapping in order to designate the mapping between the export field and the column name of the invoice header database table into which the field is written. The interface is strDBKeyName, pWorkdoc, strDocLink, strFieldValue. strDBKeyName denotes the name of the field in the 'Field Name' option as per the new setting in Header Field Export Mapping. For example, if the 'Field Name' option is set to MyField, then strDBKeyName is set to MyField.

User exit	Call routine	Description
		strFieldValue is the value to be exported to the database. strDocLink is the link to the image of the document, and could be a filepath of a URL, depending on settings in Global Settings > Reporting Settings
UserExitXMLOutput	Internal application	This user exit is available for you to add any custom fields into the XML output file. The workdoc and the LineData, GLData and TaxData arrays are passed into the user exit, along with the XML document. The XML document is of type MSXML2.DOMDocument60 and can be enhanced using the MSXML2 references. Additionally, two global functions, fnXMLWriteField and fnXMLWriteDateField, are available to write data into any section of the xml document.
UserExitCSVFile	Internal application	This user exit is called for each header line outputted to the CSV file, and can be used to map custom user literals to their desired value counterparts, for example, to include a custom field in the CSV file output. Functions fnWriteCSVField and fnWriteCSVDateField are provided for this purpose to condense the operation into a single command. The parameter strRecordText contains the text of the current line to be written into the file and strKey is the CSV index group number for the file being processed. The interface is pWorkdoc, strRecordText, strKey.
UserExitCSVFileLine	Internal application	This user exit is called for each line item outputted to the CSV file, and can be used to map custom user literals to their desired value counterparts, for example to include a custom line item component in the CSV file output. Functions fnWriteCSVField and fnWriteCSVDateField are provided for this purpose to condense the operation into a single command. The parameter strRecordText contains the text of the current line to be written into the file, and strKey is the

User exit	Call routine	Description
		CSV group index number for the file being processed. The LineData structure is also passed in containing details of the current line being outputted. The interface is pWorkdoc, LineData, strRecordText, strKey
UserExitExportSuccess	ScriptModule_ExportDocument	This user exit is called at the point where it is known that all selected exports have been successful for the document being processed. It can be used to update additional reporting data if required. The interface is pWorkdoc.
UserExitExportFailure	ScriptModule_ExportDocument	This user exit is called at the point where it is known that export has failed for the document being processed. It can be used to update additional reporting data if required. The reason for the export failure can be found in strExportError. The interface is pWorkdoc, and strExportError.
UserExitValueCheck	Internal application	This user exit is called from the invoice number and invoice date post evaluate events for documents that are classified to the Invoices class. It is called once per candidate, and is provided as a window for a developer to insert script to disqualify illegal candidates for the invoice number or invoice date. The interface is pField, pWorkdoc, oCandidate.
UserExitLinePairingPOs	Internal application	This user exit provides functionality to edit the list of purchase orders that are to be considered during the line pairing operation. New purchase orders may also be added based on criteria that may be coded within the user exit. The interface of the user exit is as follows. pWorkdoc, PO(), and strExportError. The Brainware for Invoices workdoc object PO() array contains the details of the purchase orders to be used during line pairing. The array is 1-based. If an error occurs during the user exit code, the strExportError parameter is populated with the reason

User exit	Call routine	Description
		for the error. Populating this variable has the effect of failing the document export.
UserExitVerifierException	ScriptModule_ Verifier Exception	This user exit is triggered when a user sends a document to an exception state in Thick Verifier. The interface is pWorkdoc, Reason, CreateNewBatch, BatchName, BatchDocumentState, BatchPriority, BatchFolderName, ApplyExceptionHandling
UserExitFilterVendorSearch	Document_ Post Extract, internal application	This user exit allows a developer to filter the list of vendors shown in the vendor search facility, and also to change the information that is displayed. It can also be used to remove vendors that the system must not consider to be the correct vendor, or to adjust the confidence weightings of candidates that are under consideration to be the correct vendor. The interface is as follows. • pWorkdoc The Brainware for Invoices workdoc object. • oCandidate The vendor candidate object. • Address The vendor address structure. • strDisplay The current vendor search box display line for vendor. This is blank if the user exit is called prior to the initial determination of the correct vendor on server side. Checking whether this string is empty or not allows a different behavior to be defined between server side and search box functions. • blReject This is initially set to FALSE, but you can set it to TRUE if the vendor is excluded from the search results or from the extraction results. Example usage 1 You want to exclude any vendors from being extracted automatically and from appearing for selection in the vendor search if they are not set up for the invoice company code. This can be achieved through the following line of code.

User exit	Call routine	Description

		`If Not fnIsValueInList (Address.CompanyCodes, pWorkdoc.Fields("CompanyCode").Text) Then blReject = TRUE`
		
		This assumes that a comma-separated list of valid company codes for which the vendor is set up for is available in the vendor master extract, and the correct column is mapped against the CompanyCodes parameter in the SRC section of the system configuration.
		
		Example usage 2
		
		You want to exclude any vendors from being extracted automatically if they are not set up for the invoice company code, but wish to allow the Verifier user to select those vendors using a vendor search.
		
		This can be achieved with the following line of code.
		
		`If strDisplay = "" And Not fnIsValueInList(Address.CompanyCodes, pWorkdoc.Fields("CompanyCode").Text) Then blReject = TRUE`
		
		The same assumptions for example 1 apply.
		
		Example usage 3
		
		You want to lower the confidence of any vendor candidates that do not belong to the invoice company code by 30 percent.
		
		This can be achieved by the following line of code:
		
		`If strDisplay = "" And Not fnIsValueInList(Address.CompanyCodes, pWorkdoc.Fields("CompanyCode").Text) Then oCandidate.Weight = oCandidate.Weight - 0.3`
		
		Example usage 4
		
		The following line of code adjusts the display in the Vendor Search box so that only the vendor name, vendor street address and zip code are displayed:
		
		`If strDisplay <> ""`

User exit	Call routine	Description
		`Then strDisplay = Address.Name & ", " & Address.Address & ", " & Address.Zip` The interface is pWorkdoc, oCandidate, Address, strDisplay, blReject.
UserExitSetReportingLoginName	Internal application	This user exit allows a developer to change the name of the user as reported in the Visibility reporting database. This is used in Brainware for Invoices where the Web Verifier is being used. Otherwise, the system always populates the Thick Verifier user column in the reporting database with the Brainware Intelligent Capture service user. Input parameter strUserName contains the user name that the system is currently using. The interface is pWorkdoc, strUserName. It is no longer necessary to insert code into this user exit for Thick Verifier implementations. The system always uses the Thick Verifier logon ID as the user name.
UserExitPreMaterialLinePairing	Internal application	This user exit is called prior to the commencement of material line pairing. It is not called for the pairing of service line items. The LineData input parameter is always empty at this point. The dblPOTotal parameter contains the total value of all purchase orders being considered during line pairing. The dblGRTotal parameter contains the total outstanding value of all purchase order numbers being considered during line pairing, such as the value of total goods receipt against all purchase orders minus the value of total invoice receipt against all purchase orders. It can be used to skip the MIRA process of line pairing by setting dblPOTotal and dblGRTotal both to zero, although this is not recommended. All other parameters passed into the user exit are read only. The interface is pWorkdoc, LineData(), dblPOTotal, dblGRTotal, POLines(), GRLines(), POAccounts(),

User exit	Call routine	Description
		CondData(), ServiceAccounts(), ServicesLines().
UserExitPostLinePairing	Internal application	This user exit is called after the line pairing and automatic tax determination functions have been completed during document export, but before any data outputs have actually been carried out. It gives the developer an opportunity to look at the line pairing results (held in the LineData array) and make any changes or additional customizations as required. The LineData, TaxData, GLData and WHTax arrays can all be changed in this user exit. Interface parameter blLinesRequired is set to TRUE if line items are to be exported for the document in question. You can populate the strExportError parameter with an appropriate error to halt processing and fail document export. You can also use the strError parameter to force a document to park in SAP by setting its value to an appropriate message. The interface is pWorkdoc, LineData(), TaxData(), blLinesRequired, strExportError, POLines(), GRLines (), POAccounts(), CondData(), ServiceAccounts(), ServicesLines(), AccountingData(), GLData(), WHTax (), strError, blShortPay, blCalculateTax, and dblUnplannedDelCost The parameters in bold above can be changed in the user exit. The other parameters are all read only.
UserExitAddressArray	Internal application	This user exit is called each time the details for a vendor are read from the vendor pool. It gives the developer an opportunity to amend or add new parameters to the Address array. The user exit is not called if the vendor details have already been read and loaded into the local cache. For example, the client has been unable to supply the vendor country of origin as a standard two-character ISO-code, as required by the application. The client is only doing business with vendors from the US and Canada, and is able to provide USA and CAN as the

User exit	Call routine	Description
		country codes. As a result, you can add script to this user exit to convert a 3-character code to a 2-character code. The following script in the user exit converts the client's country code to the required application country code. Select Case Address.Country Case "USA" Address.Country = "US" Case "CAN" Address.Country = "CA" End Select The interface is oASSA, strVendorID, Address.
UserExitDocumentValidate	Document_ Validate on the Invoices class script level	This user exit is called from Document_Validate on the Invoices class script level. It can be used to code in additional document level validations and activities. The interface is pWorkdoc, pValid.
UserExitEditDocumentWeblink	Internal application	This user exit permits a developer to manipulate the document web link, as stored in the Visibility reporting database and exported downstream. The current web link is passed into the user exit using the strWebLink interface parameter, and this may be changed to meet your business needs. The current unique document ID is passed in the strDocID interface parameter, which may not be changed. The interface is strWebLink, strDocID.
UserExitInvoiceNumberValidate	InvoiceNumber_ Validate on the Invoices class	This user exit is available to include additional validations and formatting against the invoice number field. For example, your business rule states that if an invoice number is extracted that is longer than 16 characters, the system must format it so the last 16 characters are retained. The following line of code accomplishes this. If Len(pField.Text) > 16 Then pField.Worktext.Text = Right(pField.Text, 16) The interface is pField, pWorkdoc, pValid.
UserExitSetDocFlags	Internal	This user exit allows a developer to set the properties

User exit	Call routine	Description
	application	on the Flags object based on a custom set of requirements. The interface is pWorkdoc, Flags.
UserExitInvoiceDateValidate	InvoiceDate_ Validate on the Invoices class	This user exit is available for custom validation logic to be added to the invoice date field validation event. The interface is pField, pWorkdoc, pValid.
UserExitDueDateValidate	DueDate_ Validate on the Invoices class	This user exit is available for custom validation logic to be added to the invoice due date field validation event. The interface is pField, pWorkdoc, pValid.
UserExitDeliveryDateValidate	DeliveryDate_ Validate on the Invoices class	This user exit is available for custom validation logic to be added to the delivery date field validation event. The interface is pField, pWorkdoc, pValid.
UserExitVerifierFormLoad	ScriptModule_ Verifier FormLoad	This user exit is called at the end of ScriptModule_ VerifierFormLoad. The interface is pWorkdoc, FormClassName, FormName
UserExitSetVendorCountry	Internal application	This user exit allows a country to be set for the purposes of field formatting and validation. For example, if the country filter is being used, it determines a vendor from which the country would normally be derived. To set the country, import parameter strCountry is set to the two-character ISO-code for the country in question. The interface is strCountry, pWorkdoc.
UserExitScriptModuleInitialize	ScriptModule_ Initialize	This user exit is called at the end of ScriptModule_ Initialize. The interface is ModuleName.
UserExitPostImport	ScriptModule_ PostImport	This user exit is called from the beginning of ScriptModule_PostImport. The interface is pWorkdoc.

User exit	Call routine	Description
UserExitPostImportBatch	ScriptModule_ Post ImportBatch	This user exit is called at the beginning of ScriptModule_PostImportBatch. The interface is BatchDatabaseID, BatchName, Priority, BatchState, ExternalGroupID, ExternalBatchID, TransactionID, TransactionType.
UserExitTextFieldFormatting	Internal application	This user exit can be used to apply custom formatting and validations to fields of type TEXT in a way that can be used to augment that standard validations and formatting configurable using Processing Profile Configuration Settings > Field Settings. The interface is pField, pWorkdoc, pValid, FS, Client.
UserExitPreClassify	ScriptModule_ Pre Classify	This user exit is called from the beginning of ScriptModule_PreClassify. Interface: pWorkdoc
UserExitAlternatePayeeValidate	AlternatePaye e_ Validate on the Invoices class	This user exit is available for custom validation logic to be added to the alternate payee field validation event. The interface is pField, pWorkdoc, pValid.
UserExitUpdateSystemSecurity	ScriptModule_ Update SystemSecurit y	This is the user exit that is called during the system security update event that is set to run as a periodic background job on the runtime server. In Brainware for Invoices, the system security event is used to load users created in Global Settings > User Management into the main system user table. This user exit is triggered subsequent to that process. The interface is InstanceName.
UserExitMoveDocument	ScriptModule_ Move Document	This is the user exit that is called when a document is sent to an exception batch in Thick Verifier. The internal application uses this event to apprise the Visibility reporting tables of any change in the document batch ID. The interface is pWorkdoc, OldBatchID, NewBatchID, Reason.
UserExitBatchOpen	ScriptModule_ Batch Open	This is the user exit that is called upon the opening of a batch in Thick Verifier. The interface is UserName, BatchDatabaseID, ExternalGroupID, ExternalBatchID, TransactionID,

User exit	Call routine	Description
		WorkflowType, BatchState.
UserExitProcessBatch	ScriptModule_ ProcessBatch	This is the user exit that is called during the Custom Processing workflow step. The interface is pBatch, InputState, DesiredOutputStateSucceeded, DesiredOutputStateFailed.
UserExitBatchClose	ScriptModule_ Batch Close	This is the user exit that is called when a batch is exited in Thick Verifier. The interface is Username, BatchDatabaseID, ExternalGroupID, ExternalBatchID, TransactionID, WorkflowType, BatchState, BatchReleaseAction.
UserExitAppendWorkdoc	ScriptModule_ Append Workdoc	This is the user exit that is called when a user merges documents together in Thick Verifier. The interface is pLastWorkdoc, pCurrentWorkdoc, pAppendType.
UserExitPreOCR	ScriptModule_ PreOCR	This user exit is called from the beginning of ScriptModule_PreOCR. This routine is triggered just before a document is OCR'ed. The interface is pWorkdoc and pCancel.
UserExitPostOCR	ScriptModule_ PostOCR	This user exit is called at the beginning of ScriptModule_PostOCR. This routine is triggered just after the document is OCR'ed. The interface is pWorkdoc.
UserExitVerifierClassify	ScriptModule_ VerifierClassify	This user exit is called before and after the manual reclassification from Verifier. The interface is pWorkdoc, Reason, and ClassName.
UserExitPreClassifyAnalysis	ScriptModule_ Pre ClassifyAnalysis	This is the user that is called during the classification event where the classification matrix may be adjusted or extended to influence the classification result. The interface is pWorkdoc.
UserExitAbortSAPReadPO	Internal application	This user exit is called at the start of line pairing immediately after a purchase order is read from SAP.

User exit	Call routine	Description
		It provides a developer with an opportunity to abort line pairing for export performance purposes if the SAP purchase order has too many line items or too many goods receipts. lngPOItemCount contains the total number of PO items, and lngPOHistoryItemCount contains the total number of items in the SAP PO history table. blPOTooLarge can be set to abort line pairing if there are too many items; and strExportError can be set to fail document export. The interface is strPO, lngPOItemCount, lngPOHistoryItemCount, pTooLarge, and strExportError.
UserExitReadPODetails	Internal application	This user exit is called during the validation of the purchase order number on both server and Verifier side, as well as during document export prior to line pairing. The user exit allows a developer to implement a custom purchase order number look-up (for example, using a web service) instead of using the standard options. The interface is pWorkdoc, POHeader, POLineItems(), POKey, Client, Address, strPOReadError, blReadPOLines, blDuplicatePO, blExport, and blPONotFound. A detailed explanation on how to use this user exit can be found in the PO Number Configuration section.
UserExitPIFExport	Internal application	The user exit is called prior to the system sending an XML output to the Perceptive Integration Framework through a web service call. The user exit provides a developer with the opportunity to change the XML document that are sent to PIF through parameter 'xmlDoc'. Within the user exit, if it is decided that export must fail and the document must be sent to Verifier with a 750 state, this is achieved by setting the 'strExportError' parameter to an appropriate error message. The interface is pWorkdoc, LineData, TaxData, strDocLink, xmlDoc, Client, Address, blLinesRequired, Flags, and strExportError.
UserExitPOVendorValidate	PONumber_ Validate on the 'Invoices' class	This user exit is called on the server side only if a PO vendor is validated automatically by the system. It provides a developer with the opportunity to reject the validated PO vendor based upon custom criteria. To reject the PO vendor, the parameter 'blVendorOK'

User exit	Call routine	Description
		must be set to FALSE. The interface is pWorkdoc, POKey, Address, Client, and blVendorOK.
UserExitCompanyCodeValidate	CompanyCode_Validate on the 'Invoices' class	This user exit is available for custom validation logic to be added to the company code field validation event. The interface is pField, pWorkdoc, and pValid.
UserExitSetSAPPassword	Internal application	In this user exit, the password to log on to SAP can be hard-coded so that it is not exposed in the system configuration file. The password is set by setting the value of input/output parameter strPassword. The interface is strPassword.
UserExitCreateSAPDocument	Internal application	This is the user exit where additional parameters can be specified for the BAPI call to SAP that is used to create an invoice. The BAPI interface used matches that of BAPI_INCOMINGINVOICE_CREATE. You can use the BAPI to change or add new header parameters via the oBAPIHeader data type. BAPI parameters to be passed at header level must be populated via the oBAPIHeader structure, and line data must be added by manipulating the Brainware for Invoices LineData, GLData and TaxData arrays in 'UserExitPostLinePairing' The interface is pWorkdoc, LineData(), TaxData(), WHTax(), GLData(), blPost, blCompleteTax, oBAPIHeader, blAbort, oBAPIFunc, oSAPReturn(), strError. The messages returned from any previous BAPI calls are available in oSAPReturn(). The parameter blPost specifies whether the invoice is to be posted or parked. This is provided for information purposes and cannot be changed. The parameter blCompleteTax controls whether the BAPI is to park an invoice with any tax data gathered. strError holds the reason why a document is to be parked, rather than posted. If the document creation in SAP should be aborted, parameter blAbort should be set to TRUE.

User exit	Call routine	Description
UserExitSAPArchiving	Internal application	This user exit can be used to call a custom function to carry out image archiving using SAP. In order for this user exit to be called, the 'Activate SAP Archiving User Exit' check box must be selected within **SAP Configuration** for the relevant processing profile. If the archiving is not successful, the strExportError parameter must be set with the reason. If successful, parameter strArcDocID must be populated with the archive document ID generated for the newly archived image. Import parameter strDestinationArchive contains the archive ID for the repository into which the image must be stored. The interface is pWorkdoc, strDestinationArchive, strArcDocID, and strExportError.
UserExitSAPConditions	Internal application	This user exit is called during the miscellaneous charge handling procedure of the line pairing routine for a very specific situation. The user exit is called only if all of the following hold true. Material line pairing has been successful. The type of miscellaneous charge being processed, for example, freight, has been configured to be booked against conditions on a SAP purchase order. The number of available conditions to book against is exactly equal to the number of instances of that miscellaneous charge type read from the invoice (that is two itemized freight amounts on the invoice, two conditions relating to freight against the paired lines on the PO). The total value of the miscellaneous charge type is different from the total value of the SAP conditions that relate to that charge type. In this circumstance, it is not clear to the system which instance of the miscellaneous charge must go to which condition. Therefore, the user exit is available to add custom business logic in order to force a

User exit	Call routine	Description
		decision. If no business logic is added and this scenario arises, then line pairing fails as the miscellaneous charge cannot be allocated. The interface is pWorkdoc. LineData This is the array structure containing lines that have been paired successfully thus far. ICondData This is the array structure containing available conditions for the miscellaneous charge type. MiscCharges This is the single line structure containing the details of the miscellaneous charge being processed - the Items property of this structure is a sub-array containing the individual amounts read from the invoice relating to this miscellaneous charge type. lngMaterialLineCount This is the number of material lines in the LineData structure (for example, if set to 4, then the first 4 entries in the LineData array are material lines). blCondAllotted This is the boolean flag indicating whether the miscellaneous charge could be allocated to a condition. This is initially set to FALSE, but must be set to TRUE in the user exit code if the business logic added is able to allocate the charges to the correct conditions. strDescription This is the description of the miscellaneous charge type as read from the configuration.
UserExitDolphinWorkflow	Internal application	This user exit is triggered at the time of document export to the Dolphin workflow within SAP. It is called immediately before the call to SAP, which triggers an instance of the Dolphin workflow. Within the user exit, the parameters being passed to SAP through oBAPIDolphin and can be amended or added to. For example, to change the OCR type parameter from the default of K to S

User exit	Call routine	Description
		oBAPIDolphin.SetValueByName("OCRTYPE", "S") oBAPIDolphin uses a data type of SAPFunction The interface is pWorkdoc, oBAPIDolphin, LineData (), and strExportError. The LineData array contains the invoices lines. If an error occurs, you can stop document export by populating the strExportError parameter.
UserExitSAPPostingFailure	Internal application	This user exit is called if the 'Activate SAP Failure User Exit' check box is selected within **SAP Configuration** for the relevant processing profile and a SAP document fails to park or parking is disallowed and the document fails to post. Under those circumstances, export normally fails, sending the document to Verifier. In this user exit, a fall back export may be implemented, which could be outputting a flat file, or updating a database in the event that a document could not be created. If the fall-back export could not be performed, the strExportError parameter must be set to the reason for the error to fail the overall export. If this is not set, the export fails silently with the outward appearance of success. If another SAP document is to be created in the user exit, then the created SAP document number must be passed to the interface parameter strDocKey. The Address structure parameter contains the invoice vendor details, and the blLinesRequired flag indicates that the document is relevant for line item export if it is set to TRUE. The SAPReturn parameter displays the errors returned from the BAPI call indicating why the document did not post. The interface is pWorkdoc, LineData(), TaxData(), strDocKey, Address, blLinesRequired, SAPReturn, and strExportError.
UserExitSetReferenceForEntry	Internal	This user exit applies to SAP implementations only

User exit	Call routine	Description
Sheet	application	and is called during the line pairing routine at the point where the system is attempting to select the correct service entry sheet to post the invoice against it. You can select the service entry sheet based on a comparison between the service entry sheet external reference set in SAP, and the invoice number. To activate this functionality, the **Find SES With Invoice Number** check box must be selected within **Line Pairing Settings** for the relevant processing profile. The user exit is provided so that the invoice number could be substituted with something else (for example, a delivery note number) in order to help identify the right service entry sheet. The current reference value to be used, which automatically populates with the invoice number, is held in the strReference interface parameter. To change this to the delivery note number instead, the example code would be as follows. strReference = pWorkdoc.Fields("DeliveryNote").Text The dblServiceValue parameter contains the total amount of the service. The interface is pWorkdoc, strReference, dblServiceValue.
UserExitSAPPostingRetry	Internal application	This user exit is called when a SAP document fails to post. It provides an opportunity to change the parameters passed to SAP based on the error message from the first attempt so that the document may post upon a second attempt. You can set the blRetry parameter to TRUE if you want the system to try to post the invoice again. The system only carries out one posting retry per document. The reason why a document did not post is held in the SAPReturn array. The interface is pWorkdoc, LineData(), TaxData(), blRetry, SAPReturn, strError, blShortPay, blCalculateTax.

User exit	Call routine	Description
UserExitFocusChanged	Document_ Focus Changed on the 'Invoices' class	This user exit is called during the standard 'FocusChanged' event in Verifier. This event is called each time the field or table cell focus in Verifier is changed, or when the system moves to a new document. Any script inserted into this user exit must be kept to a minimum as overly time-consuming operations could make the Verifier application cumbersome to use. For example, the script that is relevant only when the system moves on to a new document would be better placed in 'UserExitVerifierFormLoad'. The interface is pWorkdoc, Reason, OldFieldIndex, NewFieldIndex.
UserExitCheckBank Account	VendorID_ Validate & PONumber_ Validate on the 'Invoices' class	The user exit is called during the bank account check, where the system attempts to determine the appropriate bank account based upon the content of the document and the bank records present in the vendor master data. It allows a developer to customize alternative logic for the bank account selection. The import parameter 'Address' contains the details for the currency vendor, which the bank account records specified against the 'BankDetails' property. The currency invoice is passed into the user exit via the 'strCurrency' parameter. The interface is pWorkdoc, Address, strCurrency
UserExitCellText Formatting	Internal application	This user exit is called for each table cell in the 'LineItems' table which is activated and set to type 'TEXT'. It can be used as a means for a developer to create custom validation and formatting routines for the table cell. The parameters passed into the user exit are as follows. pWorkdoc myWorktext - this is the table cell worktext object FS - field settings object containing the defined configuration for the table cell pTable - this is the 'LineItems' table object lngRow - the is the row index for the table cell strColumnName - this is the technical name of the column in 'LineItems' Client - client

User exit	Call routine	Description
		settings object pValid - cell valid/invalid flag strError - cell validation error message
UserExitSendToSAPProcess Director	Internal application	This is the user exit where additional parameters can be specified for the BAPI call to SAP that is used to send an invoice to ProcessDirector using function module 'RFC_DATA_SUBMIT'. BAPI parameters to be passed at header level must be populated via the oBAPIHeader object, and line data must be added by manipulating the Brainware for Invoices LineData, GLData and TaxData arrays. The interface is pWorkdoc, LineData(), TaxData(), GLData(), oBAPI, oBAPIHeader, blAbort. You can set the blAbort parameter to TRUE if you want to abort the export to ProcessDirector.
UserExitEmployeeIDValidate	EmployeeID_ Validate on the 'Invoices' class	This user exit is available for custom validation logic to be added to the employee ID field validation event. The interface is pField, pWorkdoc, and pValid.
UserExitAccountNumber Validate	AccountNumb er_ Validate on the 'Invoices' class	This user exit is available for custom validation logic to be added to the account number field validation event. The interface is pField, pWorkdoc, and pValid.
UserExitPreLinePairing	Internal application	This user exit is called during document export immediately before the commencement of the line pairing process, after purchaser order information has been read. It provides an opportunity for a developer to apply custom logic to the purchase order data returned. Interface: pWorkdoc, Client, Address, POLines(), GRLines(), POAccounts(), CondData(), ServiceAccounts(), ServicesLines().
UserExitReadSAPAccount Assignment	Internal application	This user exit allows mapping of custom fields within the SAP account assignment structure to a BFI data structure. The user exit is called once for each account assignment line read from SAP.

User exit	Call routine	Description
		These custom fields can subsequently be passed back to SAP when a document is created using UserExitPopulateSAPAccountAssignment. It is appropriate for use with material purchase order line items. Parameter oBAPIAccounts, which has a data type of SAPTable, contains all of the accounts read for a given purchase order. The SAPTable data type uses a zero-based index. lngRow provides the index of the current row within this table.You can copy data from oBAPIAccounts for storage in local structure AccountAssignment, which has a data type of WWAccountingData. AccountAssignment has five custom field properties available for this purpose. For example: `AccountAssignment.Custom1 = oBAPIAccounts.GetRow (lngRow).GetValueByName ("CUSTOM1")AccountAssignment.Custom2 = oBAPIAccounts.GetRow (lngRow).GetValueByName("CUSTOM1")` Interface: pWorkdoc, AccountAssignment, oBAPIAccounts(), lngRow.
UserExitPopulateSAP AccountAssignment	Internal application	This user exit allows mapping of custom fields within the BFI account assignment data structure back to the account assignment fields in a BAPI that creates a SAP document. For example, BAPI_ INCOMINGINVOICE_CREATE. The user exit is called once for each account assignment line passed to SAP. Through parameter AccountAssignment, which has a data type of WWAccountingData, you can retrieve the custom account assignment properties that were stored during the execution of UserExitReadSAPAccountAssignment. These custom properties can then be populated back to the account assignment table that the system sends to SAP. This account assignment table is represented by oBAPIAccounts, which has a data type of SAPStructure. Both AccountAssignment and oBAPIAccounts are

User exit	Call routine	Description
		single line structures, rather than arrays. You can move data between the two structures using the following example code. `oBAPIAccounts.SetValueByName ("Custom1", AccountAssignment.Custom1)oBAPIAccounts.SetValueByName("Custom2", AccountAssignment.Custom2)` Interface: pWorkdoc, AccountAssignment, oBAPIAccounts
UserExitSetEntrySheetNumber	Internal application	This user exit allows a developer to pass a service entry sheet number via the parameter 'strEntrySheetNo' for use during line pairing. Interface: pWorkdoc, strEntrySheetNo.
UserExitMexicanUUIDValidate	MexicanUUID_ Validate on the 'Invoices' class	This user exit is available for custom validation logic to be added to the Mexican UUID number field validation event. The interface is pField, pWorkdoc, and pValid.
UserExitFilterEmployeeSearch	Internal application	This user exit offers the same functionality as 'UserExitFilterVendorSearch' (described above), except that it relates to the employee field. The interface is pWorkdoc, oCandidate, Address, strDisplay, blReject.
UserExitRejectPOFor LinePairing	Internal application	This user exit offers the capability to reject an SAP purchase order or database purchase order for inclusion in line pairing based on custom criteria. For example, information contained within the purchase order header. You can set the blReject parameter to TRUE if you want to reject the purchase order. oPOHeader is the purchase order 'PO_HEADER' structure retrieved from using the purchase order look-up BAPI. It is a flat structure of type SAPStructure. You can retrieve the order-from vendor via the following command. `oPOHeader.GetValueByName("VENDOR")`

User exit	Call routine	Description
		The record set object DBPOHeaderRecordSet is used to return purchase order header data read from a database. You can access a column that contains the vendor ID with a technical name of 'VENDOR_ID' using the following command. DBPOHeaderRecordSet("VENDOR_ID"). To distinguish the method used to retrieve the purchase order header, parameter blSAP is included in the user exit interface. This is set to TRUE if the purchase order comes from SAP; and FALSE if it comes from a database. The interface is pWorkdoc, DBPOHeaderRecordSet, oBAPIPOHeader , POKey, blReject, blSAP.
UserExitOCRXMLOutput	Internal application	This user exit is designed to allow a developer to edit the body of the OCR XML file. It is called once the XML document is complete for output, but before it is written out to the export directory. The XML document is passed into the user exit via the xmlDoc parameter. The interface is pWorkdoc, xmlDoc.
UserExitSendToSAPProcessDirectorGeneric	Internal application	This is the user exit where additional parameters can be specified for the BAPI call to SAP that is used to send an invoice to Process Director using the generic function module '/EBY/PDBO_RFC_DATA_RECEIVE'. The BAPI parameters to be passed must be populated via the oBAPI object, which is of type SAPFunction. The interface is pWorkdoc, LineData(), TaxData(), GLData(), oBAPI, blAbort. If the export to Process Director should be aborted, the blAbort parameter should be set to TRUE.
UserExitPaymentReferenceValidate	PaymentReference_Validate on the 'Invoices' class	This user exit is available for custom validation logic to be added to the payment reference field validation event. The interface is pField, pWorkdoc, and pValid.

User exit	Call routine	Description
UserExitCustomFieldValidate	Validate events for custom fields 1-5 on the 'Invoices' class	This user exit is available for custom validation logic to be added for the validation events relating to custom fields 1-5. pField.Name is used to establish which of the custom fields the user exit is called for. The interface is pField, pWorkdoc, and pValid.
UserExitAssignClientIDToDocument	Internal application	This user exit is called each time the solution reads the solution settings where the document client ID has not yet been determined and a workdoc is available. This is typically during the core platform **Document_PreExtract** event. You can use the user exit to assign a client ID to a document using custom logic by setting the value of parmater **strClientID** to the client ID you want to use. The client ID should be an integer equal to or greater than zero. An error is raised if an invalid client ID is specified. The user exit is called before the system tries to establish a client ID using standard configuration options. If no client ID is set, the system continues to try and determine the client in the standard manner. The interface is pWorkdoc, strClientID.

User exit parameters

The following table provides an overview of common invoice solution specific parameters that are passed into user exits.

Parameter name	Data type	Description
dblUnplannedDelCost	Double	This holds the total of all miscellaneous charges that have been configured to output as an unplanned charge.
blShortPay	Boolean	This flag indicates whether the invoice should be short paid. Short paid means that the tax amount stated by the vendor on the document is ignored and is deducted from the invoice total amount.
blCalculateTax	Boolean	This flag denotes whether the calculate tax flag is checked when creating a document in SAP.

Parameter name	Data type	Description
blLinesRequired	Boolean	This flag indicates whether line item export is required for the current document.
strError	String	This parameter holds the text for a soft error explaining the reason why a document could not be posted in SAP.
strExportError	String	This parameter holds the text for a hard error. If set, document export fails and the text of the error is set against the invoice number field.
strDocLink	String	The document image link path.
Address	VendorAddress	This structure holds the associated details for a given vendor or employee.
Tolerance	Tolerance	This structure holds the various amount tolerances associated with the currency of the current document.
POHeader	POHeader	This structure holds the various amount tolerances associated with the currency of the current document.
LineData()	WWLineData	This array holds the line item data for export.
AccountingData()	WWAccountingData	This array holds the account assignments to be used when creating a document in SAP.
GLData()	WWAccountingData	This array holds the general ledger account entries. This is populated by the system automatically if invoice miscellaneous charges are configured to book to a general ledger account.
TaxData()	WWTaxData	The array holds the tax line item data for export.
WHTax()	WWWithTax	This array holds the withholding tax line item data for export.
POLines()	WWPOLine	This array holds the purchase order line items.
GRLines()	WWPOLine	This array holds the individual goods receipts and service entry sheets belonging to the purchase order

Parameter name	Data type	Description
		lines read in POLines().
ServiceLines()	WWPOLine	This array holds the service entry sheet line items that belong to an entry sheet held in GRLines().
POAccounts()	WWAccountingData	This array holds the account assignment data for the purchase order line items in POLines().
ServiceAccounts()	WWAccountingData	This array holds the service entry sheet account assignment data.
CondData()	WWCondData	This array holds the SAP condition records belonging to the purchase order lines read in POLines().
POKeys()	WWPOKey	This array holds the keys of the purchase orders to be read prior to line pairing.
PlantData()	WWPlantData	This array holds the data associated with the plants specified on the purchase order line items read in POLines().

Project data types

Brainware for Invoices uses a range of data types when passing data between user exits and the main solution, and also to return data from solution functions. The data types used are described in the section below.

WWLineData

This data type is used for line item data to be exported. The elements contained within the data type are listed in the following table.

Element Name	Type	Description
INVOICE_DOC_ITEM	Integer	This is the invoice line item number from 1-n.
PO_NUMBER	String	This is the purchase order number, and is populated only if line pairing has been successful for this item.
PO_ITEM	String	This is the purchase order line item number, and it is populated only if line pairing has been successful for this item.

Element Name	Type	Description
DE_CRE_IND	X or blank	This is the subsequent debit/credit indicator, and denotes whether the line item is a subsequent debit or credit line item. If this value is set to X and the document type is INVOICE, then the line item is treated as a subsequent debit (the amount only and not quantity). If the value is set to X and the document type is CREDIT, then the line item is treated as a subsequent credit. If the value is blank, the line item is treated as a regular line item.
QUANTITY	Double	This is the invoice line item quantity.
ITEM_AMOUNT	Double	This is the invoice line item total.
PO_UNIT	String	This is the order unit of measure, and it is populated with the purchase order line item order unit of measure if the line item has been paired.
PO_PR_UOM	String	This is the order price unit of measure, and is populated with the order price unit of measure from the purchase order line item if the line item has been paired. In all other cases, it is blank.
PO_PR_QNT	Double	This is the invoice line item quantity expressed in the order price unit of measure.
TAX_CODE	String	This is the invoice line item tax code, and it is populated using the tax determination procedure if a line item is paired.
TAXJURCODE	String	This is the invoice line tax jurisdiction code. It represents the downstream ERP system ID for the tax office to which tax is payable for this line item, as used in countries that have tax jurisdictions for their sales tax. It is populated only if the line item is paired.
UNIT_PRICE	Double	This is the invoice line item unit price, and it is only populated for unpaired line items. In all other cases, it has a value of zero.
DESCRIPTION	String	Invoice line item description. If the line item is paired, the description is set to the description on the purchase order. If the line is unpaired, this field contains the raw text description that was read from the

Element Name	Type	Description
		invoice. For third-party freight invoices, service invoices, and MIRA invoices where no line items were required in the TAB section, and line pairing was either not successful for any lines, or was not carried out, the description is set to THIRD PARTY FREIGHT, SERVICE and MIRA respectively.
MATERIAL_NO	String	Invoice line item material number. If the line item is paired, this is populated with the material number from the purchase order line item. If the line is not paired, this is populated with any values read from the invoice.
TAX_RATE	String	Invoice line item tax rate. This is the percentage rate of tax applied to the invoice line item. If no percentage tax rate at line item level can be ascertained, then this value is blank.
LINETYPE	String	Invoice line item type. This is lifted from the purchase order line item to which an invoice line is paired.
CHARGECODE	String	Invoice line item charge code. This is lifted from the purchase order line item to which an invoice line is paired.
CHARGECODEID	String	Invoice line item charge code ID. This is lifted from the purchase order line item to which an invoice line is paired.
MATERIALGROUP	String	Material group. This is lifted from the purchase order line item to which an invoice line is paired.
DISTILLER_LINE	String	Original Brainware Intelligent Capture line item number. This is the original line item number in the Brainware Intelligent Capture table field (as viewed in Verifier) that the invoice line was drawn from. This is always populated for unpaired line items and is a 1-based, not a zero-based index.
PLANT	String	Plant ID. This is lifted from the purchase order line item to which an invoice line is paired.

Element Name	Type	Description
COMPANYCODE	String	Company code to which the line item corresponds. This is lifted from the purchase order when an invoice line is paired.
POTYPE	String	This is populated only if line pairing has been successful for this item.
BUSINESSUNIT	String	This is populated only if line pairing has been successful for this item.
MISCCHARGE	'X' or blank	X indicates that this is a miscellaneous charge line item. The flag is blank if the system has identified the line as a non misc-charge item.
ITEM_TEXT	String	This is the item text for the line item.
PAIRINGRESULTTYPE	String	The is the pairing result type code for the line item.
SPENDCATEGORY	String	This is the Workday spend category.
DELIVERYNOTE	String	This is the line item delivery note number.
TAXAPPLICABILITY	String	This is the Workday tax applicability reference.

WWPOHeaderStructure

The WWPOHeaderStructure data type is used within UserExitReadPODetails. Within that user exit, it is populated with the details of a purchase order header retrieved by a custom look-up to an external datasource. The components of the data type are listed in the following table.

Element Name	Type	Description
DOCTYPE	String	This is the purchase order document type.
COMPANYCODE	String	This is the purchase order company code.
VENDORID	String	This is the purchase order-from vendor.
SITEID	String	This is the site ID for the purchase order vendor.
CURR	String	This is the purchase order currency.

Element Name	Type	Description
RELEASEFLAG	String	This is the purchase order release flag.
DOCCOND	String	This is the ID of the group of SAP condition records that belong to the purchase order.
DIFFINV	String	This is the remit-to vendor ID.
STATUS	String	This is the purchase order document status.
EXRATE	Double	This is the exchange rate between the purchase order currency and the local currency of the company code in which the purchase order was created. It is expressed as the factor by which the purchase order totals are multiplied to convert from the PO currency to the company code currency. For example, if the purchase order document currency is 'CNY' and the company code currency is 'GBP', then, assuming that 1 GBP is 10 CNY, the exchange rate is set to 0.1. For example, 10 CNY (total in PO currency) * 0.1 (exchange rate) = 1 GBP (total in company code currency)
PAYMENTTERMS	String	These are the purchase order payment terms.

WWPOLineItemsStructure

The WWPOLineItemsStructure data type is used within UserExitReadPODetails. Within that user exit, it must be populated with the details of a purchase order's lines retrieved by a custom look-up to an external datasource. The components of the data type are provided in the following table.

Element Name	Type	Description
LINENO	String	This is the purchase order line item number.
MATERIALNO	String	This is the purchase order line item material number.
MATERIALGROUP	String	This is the purchase order line item material group.
DESCRIPTION	String	This is the purchase order line item description.
POQUANTITY	Double	This is the line item order quantity.

Element Name	Type	Description
UOM	String	This is the purchase order line item quantity unit of measure.
UNITPRICE	Double	This is the line item unit price.
PUOM	String	This is the purchase order line item price unit of measure.
PRICEUNIT	String	This is the purchase order line item price unit.
TOTAL	Double	This is the line item order total.
TAXCODE	String	This is the purchase order line item tax code.
TAXJUSOURCE	String	This is the purchase order line item tax jurisdiction code.
TOTALQUANTITYDELIVERED	Double	This is the total quantity already delivered for the purchase order line item.
TOTALVALUEDELIVERED	Double	This is the total value of the goods already delivered for the purchase order line item.
TOTALQUANTITYINVOICED	Double	This is the total quantity that has been invoiced for the purchase order line item.
TOTALVALUEINVOICED	Double	This is the total value of the goods invoiced for the purchase order line item.
ITEMCATEGORY	String	This is the purchase order line item category.
PLANT	String	This is the ID of the purchase order line item plant (for example, where the goods are to be delivered).
CHARGECODE	String	This is the purchase order line item charge code.
CHARGECODEID	String	This is the purchase order line item charge code ID.
ERS	Boolean	This flag must be set to TRUE if the purchase order line item is marked for Evaluated

Element Name	Type	Description
		Receipt Settlement (ERS).
GRIV	Boolean	This is an SAP-specific flag that is set to TRUE if the purchase order line item is set up for goods-receipt-based invoice verification.
SRIV	Boolean	This is an SAP-specific flag that is set to TRUE if the purchase order line item is set up for service-based invoice verification.
MULTIPLEACCOUNTASSIGNMENT	String	This is an indicator as to whether the purchase order line item is set up with multiple account assignments. Leave this field blank if multiple account assignments do not exist.
ACCOUNTASSIGNMENTCATEGORY	String	This is the purchase order line item account assignment category.
SPENDCATEGORY	String	This is the Workday spend category.
TAXAPPLICABILITY	String	This is the Workday tax applicability reference.

WWPOKey

The WWPOKey structure contains the elements that comprise the unique key used to identify a single purchase order. The data type consists of the components described in the following table.

Element Name	Type	Description
PONUMBER	String	This is the purchase order number.
COMPANYCODE	String	This is the company code. This value is populated only if the company code forms part of the key to identify a unique purchase order.
POEXTENSION	String	This is the purchase order number extension. This field contains the additional key required to identify a purchase order uniquely.

WWTaxData

The WWTaxData data type holds the tax line items for export. The data type consists of the components listed in the following table.

Element Name	Type	Description
TAX_CODE	String	This is the ERP system tax code.
TAX_ AMOUNT	Double	This is the tax amount.
TAX_RATE	Double	This is the tax rate as a percentage. For example, 20 would be 20%.
TAX_BASE	Double	This is the invoice amount to which the tax applies.
EXTRACT_ LINE	String	This is the original line number (1-based index) of the VATTable where the value is captured. This value is only set if the TaxData structure is populated based on the content of the VAT table.

VendorAddress

The VendorAddress data type contains data elements associated with a particular vendor, such as the vendor ID, the vendor name, and address details, along with additional information.

The extent to which the data is populated depends on the availability of the data in the vendor extract and mapping in Global Settings > Search Field Mapping.

The data type consists of the parameters listed in the following table.

Element Name	Type	Description
NAME	String	This is the name of the vendor.
ADDRESS	String	This is the vendor street address line 1.
ADDRESS2	String	This is the vendor street address line 2.
ZIP	String	This is the vendor zip code or postal code.
ID	String	This is the unique ID from the point of view of the data extract, where each row must have a unique reference.
SITEID	String	This is the vendor site ID.
TELNO	String	This is the vendor telephone number.
CITY	String	This is the vendor city.

Element Name	Type	Description
STATE	String	This is the vendor state. For U.S. addresses, the state code is expected here, such as CA = California, or VA = Virginia.
COUNTRY	String	This is the vendor country. This must be the two character ISO-code for the country, such as US = United States of America, DE = Germany, GB = United Kingdom.
POBOX	String	This is the vendor Post Office (PO) box number.
POBOXZIP	String	This is the zip code or postal code associated with the vendor Post Office (PO) box.
EUMEMBER	Boolean	This is the Boolean indicator that denotes whether the vendor belongs to an EU member state country.
VATREGNO	String	This is the vendor VAT registration number. If the vendor is registered for VAT in more than one country, then multiple VAT registration numbers are provided in the form of a comma separated list.
TAXID1	String	This is the vendor tax ID 1.
TAXID2	String	This is the vendor tax ID 2.
TAXJURCODE	String	This is the ID of the tax office where the vendor is based.
CURR	String	This is the vendor currency.
INVOICETYPE	String	This is the vendor invoice type. This is set to a value that denotes either a Purchase Order-supplying vendor or a vendor who submits invoices that legitimately do not reference a purchase order. If this column is used to determine the invoice type field, the meaning of the values contained in the column must be mapped against the 'PO Value' and 'NPO Value' options in Invoice Type Settings for the relevant processing profile.
PAYMENTMETHODS	String	This is the comma-separated list of payment method codes appropriate for the vendor.
PAYMENTTERMS	String	This is the vendor payment terms code.
BANKDETAILS	String	This is the vendor bank account details. This must be a colon-

Element Name	Type	Description
		separated list in the following format. `BankAccount, SortCode, ERPBankAccountCode` A sortcode is the U.S. equivalent of a routing number.
IBAN	String	This is the vendor international bank account number.
UTILITYFLAG	String	This is the indicator as to whether the vendor is a utility vendor.
PORSUBNO	String	This is the vendor POR subscriber number used only for Switzerland.
EXTERNALID	String	This is the ERP system vendor ID if a site ID is used.
ACCOUNTGROUP	String	This is the ERP system vendor account group.
COMPANYCODES	String	This is the comma-separated list of company codes that are valid for the vendor.
SIRETID	String	This is the vendor SIRET ID. This is an ID code used in France that uniquely identifies a single vendor at a single address. It is often found on French invoices.
VENDORIDENTIFIER	String	This is the unique vendor identifier code, such as a Chinese tax number.
PARTITIONID	String	This is the vendor partition ID.
CUSTOM1 through CUSTOM5	String	Use these fields to store additional information about the vendor that is specific to your needs.

Tolerance

The tolerance data type holds the tolerance values that the system uses when performing mathematical validations on the amounts read from the invoice. The data type consists of the components listed in the following table.

Element Name	Type	Description
HEADERTOLERANCE	Double	This is the maximum amount by which the document header amounts, such as total = tax + freight + sum of line items/subtotal are allowed to deviate from one another

Element Name	Type	Description
		before the system marks them as being invalid.
TABLEROWTOLERANCE	Double	This is the maximum amount by which the line item level calculation, such as quantity * unit price = total is allowed to deviate before the system marks a line item as being invalid.
TAXTOLERANCE	Double	If automatic tax determination is activated, then this is the maximum amount by which a system calculated tax amount or tax rate is allowed to deviate from a tax amount read from the invoice, or a tax rate contained within the tax table.
NODECIMALPLACES	Boolean	This value is set to TRUE if the invoice currency does not have a subunit, such as pennies, cents. Common world currencies that do not have subunits are the Hungarian Forint and the Japanese Yen.

DocumentFlags

The DocumentFlags data type contains a range of Boolean indicators for document validation that you can use to determine which field items are relevant for export. The data type consists of the elements described in the following table.

Element Name	Type	Description
MIRA	Boolean	This flag is set to TRUE if the invoice is a MIRA and line item extraction is not required for MIRA invoices. The options within Line Item Table Settings for the relevant processing profile determine if line items are required.
INVALID	Boolean	This flag is set to TRUE if the user has selected the INVOICE AMOUNTS DO NOT ADD UP invalid reason in Verifier.
PONOTRELEASED	Boolean	This flag is set to TRUE if the PO has not been released and line item extraction is not required for invoices under that circumstance.
NOVENDOR	Boolean	This flag is set to TRUE if the user has selected either the VENDOR NOT FOUND or MISSING/INVALID VENDOR & PO invalid reasons in Verifier.

Element Name	Type	Description
NOPO	Boolean	This flag is set to TRUE if the user has selected either the MISSING/INVALID PO or the MISSING/INVALID VENDOR & PO invalid reason in Verifier.
CREDIT	Boolean	This flag is set to TRUE if the document type is CREDIT and line items are not required for credit memos.
SERVICE	Boolean	This flag is set to TRUE if the PO type is SERVICE and line items are not required for invoices that relate to service purchase orders.
FI	Boolean	This flag is set to TRUE if the invoice type is NO-PO and line items are not required for NO-PO invoices.
THIRDPARTYFREIGHT	Boolean	This flag is set to TRUE if the vendor is third party freight.
NOLINEITEMS	Boolean	This flag is set to TRUE if any of the following options are true. Line item extraction is switched off for the project. The line items table field is not activated in Field Settings for the profile ID. An invalid reason of MISSING/INVALID VENDOR & PO is set. An invalid reason of MISSING/INVALID PO is set and line items are not required under such circumstances. An invalid reason of VENDOR NOT FOUND is set and line items are not required under such circumstances. The vendor has been identified as a utility vendor and line items are not required for utility vendors.

POHeader

The POHeader data type contains data obtained from the purchase order look-up. The data type consists of the elements described in the following table.

Element Name	Type	Description
PONUMBER	String	This is the purchase order number.

Element Name	Type	Description
DOCTYPE	String	This is the purchase order document type.
COMPANYCODE	String	This is the purchase order company code.
VENDORID	String	This is the purchase order-from vendor.
SITEID	String	This is the site ID for the purchase order vendor.
CURR	String	This is the purchase order currency.
RELEASEFLAG	String	This is the purchase order release flag.
DOCCOND	String	This is the ID of the group of SAP condition records that belong to the purchase order.
DIFFINV	String	This is the expected 'invoice received from' vendor set on the purchase order. In SAP, this corresponds to the PI partner function vendor.
STATUS	String	This is the purchase order status.
EXRATE	String	This is the exchange rate between the purchase order currency and the local currency of the purchase order company code.
FREIGHTVENDORS	String	This is a tilde separated list of vendors that appear on the purchase order condition records.
BUSINESSUNIT	String	This is the Peoplesoft business unit.
PROFILEID	String	This is the processing profile of the current document.
POPARTITION	String	This is the purchase order partition ID.
MULTILINELIMITS	Boolean	This flag indicates whether this is a multiline limits purchase order.
PAYMENTTERMS	String	These are the purchase order payment terms.

UserData

The UserData data type contains information relating to a solution user. It consists of the components listed in the following table.

Element Name	Type	Description
UserID	String	This is the user logon ID.
LanguageID	String	This is the user preferred logon language returned as a two character ISO-code.
RequiresReview	Boolean	This flag indicates whether the documents verified by the user require review.
ClientGroup	String	This is the client group to which the user has been assigned.

PlantData

The PlantData data type contains information relating to a plant. It consists of the components listed in the following table.

Element Name	Type	Description
Plant	String	This is the plant ID.
Country	String	This is the two character ISO-Code for the country in which the plant is located.
State	String	This is the state in which the plant is located.
TaxJurCode	String	This is the tax jurisdiction code for the area where the plant is located.
ProfileID	String	This is the processing profile ID of the current document.

CompanyData

The CompanyData data type holds data associated with a given company code. It consists of the components listed in the following table.

Element Name	Type	Description
CompanyCode	String	This is the company ID.
Country	String	This is the two character ISO-code for the country in which the company is registered.

Element Name	Type	Description
Curr	String	This is the currency used by the company code for accounting purposes.
ProfileID	String	This is the processing profile ID of the current document.
VATRegNumbers	String	This is a comma separated list of VAT registration numbers used by the company.

WWAccountingData

The WWAccountingData data type is used to hold accounting strings relevant to the invoice and purchase order. The data type consists of the following components.

Element Name	Type	Description
INVOICE_DOC_ ITEM	Integer	This is the general ledger coding string line item number from 1-n.
PO_NUMBER	String	This is the purchase order number.
PO_ITEM	String	This is the purchase order line item number.
GL_ACCOUNT	String	This is the general ledger account number.
COMP_CODE	String	This is the coding string company code.
DB_CR_IND	String	This is the debit/credit indicator.
COSTCENTER	String	This is the cost center.
SERIAL_NO	String	This is the serial number.
PROFIT_CTR	String	This is the profit center.
WBS_ELEM	String	This is the work breakdown structure element.
PROFIT_SEGM_NO	String	This is the profit segment number.
CO_AREA	String	This is the controlling area.

Element Name	Type	Description
CMMT_ITEM	String	This is the commitment item.
FUNDS_CTR	String	This is the funds center.
BUS_AREA	String	This is the business area.
COST_OBJECT	String	This is the cost object.
FUNC_AREA	String	This is the functional area.
FUND	String	This is the fund.
REF_DATE	String	This is the reference date.
ORDERID	String	This is the internal order number.
SUB_NUMBER	String	This is the sub number.
NETWORK	String	This is the project network.
ACTIVITY	String	This is the project activity.
RL_EST_KEY	String	This is the real estate key.
ASSET_NO	String	This is the asset number.
SD_DOC	String	This is the sales order document number.
SDOC_ITEM	String	This is the sales order document item number.
TAX_CODE	String	This is the tax code.
TAXJURCODE	String	This is the tax jurisdiction code.
ITEM_AMOUNT	Double	This is the coding string amount.
QUANTITY	Double	This is the quantity.
PO_UNIT	Double	This is the order unit of measure relating to the Quantity element.
PO_PR_UOM	Double	This is the order price unit of measure.

Element Name	Type	Description
PERCENT	Double	This is the distribution percentage.
SHEET_NO	String	This is the service entry sheet number.
CUSTOM1 to CUSTOM5	String	These are custom account assignment fields that may be used by a developer.

WWClientData

The WWClientData data type holds element details for the current client. The components of the data type are listed in the following table

Element Name	Type	Description
CLIENTID	String	This is the client ID.
PROFILEID	String	This is the profile ID assigned to client.
EXPORTPROFILEID	String	This is the export profile ID assigned to client.
FORCEVERIFY	Boolean	If set to 'TRUE', all documents assigned to this client are sent to Verifier for manual review.
CLIENTGROUP	String	This is the group to which the client is assigned.
CLIENTNAME	String	This is the client name.
INSTRUCTIONS PROFILEID	String	This is the instructions profile ID assigned to client.
REQUIRESREVIEW	Boolean	This is the Requires review flag.
VENDORPARTITION	String	This is the vendor partition ID assigned to client.
EMPLOYEEPARTITION	String	This is the employee partition ID assigned to client.
POPARTITION	String	This is the PO partition ID assigned to the client.
TAXPARTITION	String	This is the tax partition ID assigned to the client.
PRIORITY	String	This is the batch priority level for client.
PAYMENTTERMSPROFILEID	String	This is the payment terms profile ID assigned to the client.

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WWCountryData

The country data type holds the basic settings for a country. The components of the structure are listed in the following table.

Element Name	Type	Description
COUNTRY	String	This is the country ISO-code ID.
EUMEMBER	Boolean	This is the flag to indicate membership of the European Common VAT Framework.
CURR	String	This is the local currency of the country.
NAME	Boolean	This is the name of the country.
VATRATES	String	This is a comma-separated list of VAT rates.
NONEUTAXGROUP	String	This is the non-EU tax group to which the country is assigned.

WWFieldSettings

The WWFieldSettings data type holds details associated with a given field as read from Field Settings for the relevant processing profile. The components of the data type are listed in the following table.

Element Name	Type	Description
FIELDNAME	String	This is the field name.
PROFILEID	String	This is the profile ID.
VERIFIERLABEL	String	This is the field verifier label.
ACTIVE	Boolean	This is the field active flag.
REQUIREDINRTS	Boolean	This denotes whether the field is required in RTS.
REQUIREDINVERIFIER	Boolean	This denotes whether field entry is mandatory in Verifier.
COUNTRYFILTER	String	This is the comma-separated list of countries that control whether the field is mandatory or not.
FIELDTYPE	String	This is the field type.
FORCEVERIFY	Boolean	This is the force verify indicator.

Element Name	Type	Description
DEFAULTVALUE	String	Field default value.
DEFAULTIFNOTHINGEXTR	String	This is the field default if no value is extracted automatically.
SUBRULE	String	This is the field substitution rule.
MINLENGTH	Integer	This is the field minimum length.
MAXLENGTH	Integer	This is the field maximum length.
RIGHTJUSTIFY	Boolean	This is the indicator as to whether the field must be right-justified if a pad character is used.
PADCHAR	String	This is the padding character.
REMOVEALLSPECIALS	Boolean	This is the flag to indicate whether special characters must be removed.
REMOVEBLANKS	Boolean	This is the flag to indicate whether blank spaces must be removed.
KEEPCERTAINSPECIALS	String	This is the list of special characters that must be retained.
REMOVESTARTEND	Boolean	This is the flag to indicate whether special characters must be removed from the start and end of the string.
SUBSTRINGSTARTPOS	Integer	This is the substring start position.
SUBSTRINGLENGTH	Integer	This is the substring length.
REMOVELEADINGZEROS	Boolean	This is the flag to indicate whether leading zeroes must be removed from a string.
DECIMALPLACES	Integer	This is the number of decimal places for an exported amount.
NEGATIVETYPE	Integer	This is the negative type code.
OUTPUTFORZERO	String	This is the export value if an amount field is zero.

Element Name	Type	Description
SUBSTITUTEVALUEIFOVER0	String	This is the export value if an amount is greater than zero.
FUTUREDAYS	Long	This is the number of days that an extracted date is permitted to be in the future.
NODAYSINPAST	Long	This is the number of days that an extracted date is permitted to be in the past.
DATEONLYINCURRENT MONTH	Boolean	This is the flag to indicate whether the date must only be in the current month.
FIELDMASK	String	This is the list of valid field masks for text fields.
EXTRACTIONPROFILEID	String	This is the extraction profile ID (for custom fields 1-5).
ANALYSISPROFILEID	String	This is the field analysis profile ID.
EVALUATIONPROFILEID	String	This is the field evaluation profile ID.
BASEWEIGHTING	Double	This is the base weighting to be accorded to all candidates generated for the field.
REMOVENONUMBERCANDIDATES	Boolean	This flag indicates whether candidates are removed if they do not contain at least one numeric character.
OVERWRITEWITHSEARCHSTRING	Boolean	This flag indicates whether the extracted value is overwritten by the string compare or Levenshtein search used to generate the candidate.

WWWithTax

The WWWithTax data type is used to hold withholding tax data to be passed to SAP. The components of the data type are in the following table

Element Name	Type	Description
SPLIT_	Integer	This is the withholding tax split key used to group together multiple types of

Element Name	Type	Description
KEY		withholding tax. For a single entry, this must be set to 1.
WI_TAX_ TYPE	String	This is the SAP withholding tax type.
WI_TAX_ BASE	String	This is the SAP withholding tax base amount, such as the proportion of the invoice amount to which the withholding tax applies.
WI_TAX_ CODE	String	This is the SAP withholding tax code.
WI_TAX_ AMT	String	This is the SAP withholding tax amount.

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WWPOLine

The WWPOLine data type is used to hold purchase order line item, goods receipt and service line item data. The components of the data type are in the following table.

Element Name	Type	Description
EBELN	String	This is the purchase order number.
EBELP	String	This is the purchase order line item number.
KNTTP	String	This is the account assignment category.
PSTYP	String	This is the line item category.
BUKRS	String	This is the purchase order company code.
MATNR	String	This is the material number.
MATKL	String	This is the material group.
MENGE	Double	This is the open goods receipt quantity that has not yet been invoiced.
BSMNG	Double	This is the order quantity.

Element Name	Type	Description
NETPR	Double	This is the order unit price.
NETWR	Double	This is the order line total.
MWSKZ	String	This is the line item tax code.
TXJCD	String	This is the line item tax jurisdiction code.
WRBTR	Double	This is the goods receipt total that has not yet been invoiced.
MEINS	String	This is the order quantity unit of measure.
PEINH	String	This is the price unit.
BPRME	String	This is the order unit price unit of measure.
LFBNR	String	This is the goods receipt document number.
LFGJA	String	This is the goods receipt document year.
LFPOS	String	This is the goods receipt document item number.
WEBRE	String (X or blank)	This indicates whether the line item is set for goods receipt based invoice verification (GR-IV).
LEBRE	String (X or blank)	This indicates whether the line item is set for service based invoice verification (SR-IV).
WEPOS	String (X or blank)	This indicates whether the line item is relevant for goods receipt.
WEUNB	String (X or blank)	This indicates whether the line item is relevant for non-valuated goods receipt.
WERKS	String	This is the plant to which the ordered goods are to be delivered.
XBLNR	String	This is the external document number.
TEXT	String	This is the line item description.

Element Name	Type	Description
MATCH	String (X or blank)	This indicates whether the line item was selected during line pairing.
REWWR	Double	This is the total value invoiced to date.
REMNG	Double	This is the total quantity invoiced to date.
WEWWR	Double	This is the total goods receipt value.
WEMNG	Double	This is the total goods receipt quantity.
EVERS	String	This is the purchase order line shipping conditions code.
CONN1	Double	This is the numerator for the formula that is used to convert the quantity in the order unit price unit of measure to the quantity in the order quantity unit of measure.
COND1	Double	This is the denominator for the formula that is used to convert the quantity in the order unit price unit of measure to the quantity in the order quantity unit of measure.
CONN2	Double	This is the numerator for the formula that is used to convert the quantity in the order quantity unit of measure to the quantity in the material base unit of measure.
COND2	Double	This is the denominator for the ratio that is used to convert the quantity in the order quantity unit of measure to the quantity in the material base unit of measure.
MULTI	String	This flag indicates whether the purchase order line item has a multiple account assignment.
EXTROW	String	This is the service entry sheet line item number.
CHARGECODE	String	This is the line item charge code.
CHARGECODEID	String	This is the line item charge code ID.
BUSINESSUNIT	String	This is the Peoplesoft business unit.
POTYPE	String	This is the JD Edwards purchase order type.

Element Name	Type	Description
ORDERVENDOR	String	This is the purchase order vendor ID.
POKEY	WWPOKey	This is the purchase order key.
ERS	String (X or blank)	This indicates whether the line item is relevant for evaluated receipt settlement.
SERIAL	String	This is the serial ID for a service entry sheet line item.
PROFILEID	String	This is the invoice document processing profile ID.
POPARTITION	String	This is the purchase order partition ID.
DELETEIND	Boolean	This flag indicates whether the line item has been marked for deletion.
HISTORYSTARTPOS	Integer	Internal usage only.
VEND_MAT	String	This is the material number used by the vendor.
BEDNR	String	This is the line item tracking number.
FINALINV	String	This is the final invoice indicator.
SPENDCATEGORY	String	This is the Workday spend category.
TAXAPPLICABILITY	String	This is the Workday tax applicability reference.

WWCondData

The WWCondData data type is used to hold data relating to SAP purchase order condition records. The components of the structure are in the following table.

Element Name	Type	Description
EBELN	String	This is the condition purchase order number.
EBELP	String	This is the condition purchase order line item number.
KSCHL	String	This is the condition type.

Element Name	Type	Description
STUNR	String	This is the condition step number.
ZAEHK	String	This is the condition count.
LIFNR	String	This is the condition vendor ID.
NETWR	Double	This is the order value of the condition.
WEWRT	Double	This is the total value of goods receipt booked against the condition to date in the local currency of the purchase order company code.
WEWWR	Double	This is the total value of goods receipt booked against the condition to date in the currency of the purchase order.
REWRT	Double	This is the total value of invoices booked against the condition to date in the local currency of the purchase order company code.
REWWR	Double	This is the total value of invoices booked against the condition to date in the currency of the purchase order.
LTYPE	String	This is the condition line type.
MENGE	Double	This is the condition goods receipt quantity that has not yet been invoiced.
WRBTR	Double	This is the condition goods receipt amount that has not yet been invoiced.

WWPlantData

The WWPlantData data type is used to hold the details of a given plant. This data type consists of the components listed in the following table

Element Name	Type	Description
Country	String	This is the two character ISO-code that represents the country in which the plant is located.
State	String	This is the state in which the plant is located.
TaxJurCode	String	This is the tax jurisdiction code for the area where the plant is located.

Element Name	Type	Description
ProfileID	String	This is the processing profile ID for the current document.

CandidateCtx

The CandidateCtx data type is used to hold the details of words and text that surround a candidate. This data type consists of the components listed in the following table.

Element Name	Type	Description
WBC1	WordCtx	The word to the left of the candidate.
WBC2	WordCtx	The word two words to the left of the candidate.
WBC3	WordCtx	The word three words to the left of the candidate.
WBC4	WordCtx	The word four words to the left of the candidate.
WAC1	WordCtx	The first word above the candidate.
WAC2	WordCtx	The second word above the candidate.
WAC3	WordCtx	The third word above the candidate.
WFC1	WordCtx	The word following the candidate.
CandidateLineText	String	The full text of the line in which the candidate appears.
CandidateLineTextAbove	String	The full text of the line above the candidate.
CandidateLineTextBelow	String	The full text of the line below the candidate.

WordCtx

The WordCtx data type holds the properties of a given word. This data type consists of the components listed in the following table.

Element name	Type	Description
ID	Integer	The word ID.

Element name	Type	Description
Left	Integer	The left position of the word in pixels.
Top	Integer	The top position of the word in pixels.
Height	Integer	The height of the word in pixels.
Width	Integer	The width of the word in pixels.
PageNr	Integer	The word page number.
Text	String	The word text.
WordCount	Integer	The number of OCR words in the word.
LineIndex	Integer	The ID of the textline that contains the word.
Confidence	Double	The word confidence.
Valid	Boolean	The word validity flag.

PaymentTerms

The PaymentTerms data type holds the properties of a given payment term.

This data type consists of the components listed in the following table.

Element name	Type	Description
PaymentTermsProfileID	Integer	The payment terms profile ID.
Code	String	The payment terms code.
Description	String	The payment terms description.
Priority	Integer	The payment terms priority.
Days1	Integer	The first discount period in days.
Percentage1	Decimal	The first discount percentage.
Days2	Integer	The second discount period in days.

Element name	Type	Description
Percentage2	Decimal	The second discount percentage.
Days3	Integer	The third discount period in days.

Triggering sequence of user exits in Verifier

User exits are triggered when a user is working a problem document in Verifier.

General actions

The following are a list of general user exit calls that apply to all fields in Verifier.

Verifier action	User exits
User presses Enter on any field.	UserExitSetVendorCountry
User presses Enter on any field set to type of TEXT in Field Settings for the relevant processing profile.	UserExitTextFieldFormatting

Specific actions

The following table lists the user exits that are fired when a user performs a certain task in the order in which they are fired.

Verifier action	User exits
User presses Enter on the document type field.	UserExitDocumentTypeValidate
User presses Enter on the invoice type field.	The following user exit is always called. • UserExitPOValidateStart The following user exits may be called. • UserExitReadPODetails (if a custom PO look-up is used) • UserExitCheckBankAccount (only if the PO is validated successfully against a database or SAP) • UserExitPOValidate (only if the PO is validated successfully against a database or SAP)

Verifier action	User exits
	• UserExitAddressArray (if a vendor has not been loaded into the buffer)
User presses Enter on the invalid reason field.	The following user exit is always called. • UserExitPOValidateStart The following user exits may be called. • UserExitReadPODetails (if a custom PO look-up is being used). • UserExitCheckBankAccount (only if the PO is validated successfully against a database or SAP). • UserExitPOValidate (only if the PO is validated successfully against a database or SAP). • UserExitAddressArray (if a vendor has not been loaded into the buffer).
User presses Enter on the invoice number field.	UserExitInvoiceNumberValidate
User presses Enter on the invoice date field.	UserExitInvoiceDateValidate
User presses Enter on the invoice due date field.	UserExitDueDateValidate
User presses Enter on the delivery date field.	UserExitDeliveryDateValidate
User presses Enter on the vendor ID field.	The following user exit is always called. • UserExitPOValidateStart The following user exits may be called. • UserExitReadPODetails (if a custom PO look-up is being used). • UserExitCheckBankAccount (if the invoice type is 'NO-PO', or only if the PO is validated successfully against a database or SAP if the invoice type is 'PO'). • UserExitPOValidate (only if the PO is validated successfully against a database or SAP). • UserExitAddressArray (if a vendor has not

Verifier action	User exits
	been loaded into the buffer).
User opens the vendor search box, or performs a vendor search.	The following user exits are always called: • UserExitFilterVendorSearch The following user exits may be called. • UserExitAddressArray (if a vendor has not been loaded into the buffer).
User clicks on a button on the Verifier form.	UserExitDocumentOnAction
User verifies the last invalid field on the Verifier form.	The following user exits are always called: • UserExitDocumentValidate The following user exits may be called. • UserExitSetReportingLoginName (if Visibility reporting is activated).
User presses Enter on the company code field.	UserExitCompanyCodeValidate
Cursor/field focus is changed or the system moves to a new document.	UserExitFocusChanged
User presses Enter on the purchase order number or purchase order number extension fields.	The following user exit is always called. • UserExitPOValidateStart The following user exits may be called. • UserExitReadPODetails (if a custom PO look-up is being used). • UserExitCheckBankAccount (only if the PO is validated successfully against a database or SAP). • UserExitPOValidate (only if the PO is validated successfully against a database or SAP). • UserExitAddressArray (if a vendor has not been loaded into the buffer).
User presses enter on the employee ID field.	UserExitEmployeeIDValidate

Verifier action	User exits
User presses enter on the account number field.	UserExitAccountNumberValidate
User presses enter on the Mexican UUID number field.	UserExitMexicanUUIDValidate

Custom settings

You can create custom settings within Solution Configuration Manager and retrieve the values through script.

There are two types of custom strings:

- Single settings
- Indexed settings

Single settings represent a single parameter value.

Indexed settings allow you to configure multiple entries for each parameter value with each entry identified using an index ID. This allows a developer to use custom parameters to simulate a look-up table within the configuration database.

Single settings

To create a new custom single setting, complete the following steps in Solution Configuration Manager.

1. Select the project to be used.
2. Select **Global Settings** from the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **Custom Settings > Single Settings** node.
4. Scroll to the last row in the table where you have the option to create a new entry.
5. Enter the group name for your custom settings in **Group Name**. The group name must be three alphabetic characters.
6. Enter the technical name of your custom setting in **Parameter Name**. This should not contain special characters or spaces.
7. Choose a type for your custom setting by selecting an option from the **Parameter Type** drop-down. The options are **VL** for a string, **BOOL** for a boolean value and **INT** for an integer.
8. Enter the value for your custom setting in **Value**.
9. Click the **Insert** hyperlink to save the changes.

Example

Within the script you can access the value of your custom setting using the following sample script for a VL type parameter called MYSETTING.

```
Dim mySetting as String
mySetting = DicVal(“MYSETTING”, “CUS”)
```

In the above example, the value of the MYSETTING parameter in the CUS group is copied into the local string named 'mySetting'.

If the setting does not exist, or is blank, the system will return an empty string. If the setting is of type Boolean, the system will return either YES or NO as a string.

Indexed settings

To create a new custom indexed setting, complete the following steps in Solution Configuration Manager.

1. Select the project to be used.
2. Select **Global Settings** from the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **Custom Settings > Indexed Settings** node.
4. Scroll to the last row in the table where you have the option to create a new entry.
5. Enter the group name for your custom settings in **Group Name**. The group name must be three alphabetic characters.
6. Enter the technical name of your custom setting in **Parameter Name**. This should not contain special characters or spaces.
7. Enter a unique index ID for your custom setting in **Index ID**. This must be an integer greater than zero.
8. Choose a type for your custom setting by selecting an option from the **Parameter Type** drop-down.
9. Enter the value for your custom setting in **Value**.
10. Click the **Insert** hyperlink to save the changes.

Within the user exit script you can access the value of your custom setting using the following sample script for a VL type parameter called MYSETTING with an index ID of 1. In this case, the index ID is added as a prefix to the parameter name.

```
Dim mySetting As String
mySetting = DicVal("1MYSETTING", "CUS")
```

Alternatively, you can access the parameter using the DicValTable function provided in the solution settings library, as per the example script line below. In this case, the index ID is passed as an integer.

```
Dim mySetting As String
mySetting = Solution.Settings.DicValTable("MYSETTING", "CUS", 1)
```

If the setting does not exist, or is blank, the system will return an empty string. If the setting is of type boolean, the system will return either YES or NO as a string. You can also loop around all available indexes in a settings group using the GetHighestIndexIDForGroup method of the solution settings library. The example code below shows how you can loop around all entries in the CUS group and retrieve the parameters you are interested in.

```
Dim mySetting As String
Dim intHighestIndex As Integer
Dim intRow As Integer

intHighestIndex = Solution.Settings.GetHighestIndexIDForGroup("CUS")

For intRow = 1 To intHighestIndex
  mySetting = Solution.Settings.DicValTable("MYSETTING", "CUS", intRow)
Next intRow
```

Custom error messages

You can create custom error messages in Solution Configuration Manager, rather than hard coding them within the script. The error message number range assigned for customer usage is 900-999, which must be adhered to in order to prevent any conflicts in the event of an upgrade.

To create a new error message, complete the following steps in Solution Configuration Manager.

1. Select the project to be used.
2. Select **Global Settings** from the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **Error Message Settings** node.
4. Scroll to the last row in the table where you have the option to create a new entry.
5. Populate **Error Number** with the number you wish to assign to your error message. This must be a number between 900 and 999.
6. Enter the two character language ISO-code for your error message in **Language ID**.
7. Enter the text for your error message in **Message**.
8. Save the changes.

Example

Within the script you can access the text of your error message using the error number you assigned. The following shows a sample script.

```
Dim myError As String
myError = DicVal(“900”, “ERR”)
```

When retrieving the error message, the system looks for the record with a language ID of EN. The only exception to this is if the command is executed in Verifier, in which case the Verifier user language preference is used.

Reporting and custom base classes

If you create a custom base class within the project, you must compete the following steps for the class to be included in the Visibility reporting results.

- On the custom base class, add script to the Document_PreExtract and Document_Validate events.

- On the base class, create the custom tmpCLSRES field.

Add a custom script to the Document PreExtract and Document Validate events

To insert a custom script to the Document_PreExtract and Document_Validate events, complete the following steps.

1. Open **Brainware Intelligent Capture Designer**.
2. In the **Class view in definition** mode, highlight the custom base class, then right click and select **Show script**.
3. Copy the following script into the script window.

   Example

```
Private Sub Document_PreExtract(pWorkdoc As
SCBCdrPROJLib.ISCBCdrWorkdoc)

   If InitializeDLLAccess("TestCustomBase Document_PreExtract") Then
      On Error GoTo Err_PreExtract
      'Trigger event handling routine
      Solution.Document_PreExtract(pWorkdoc, "CustomBase")
   End If
   Exit Sub

Err_PreExtract:
   Project.LogScriptMessageEx
(CDRTypeError,CDRSeverityLogFileOnly,"Error PreExtract
(TestCustomBase): " & Err.Description)
   Err.Clear
End Sub

Private Sub Document_Validate(pWorkdoc As
SCBCdrPROJLib.ISCBCdrWorkdoc, pValid As Boolean)

   If InitializeDLLAccess("Invoices Document_Validate") Then
      On Error GoTo Err_DocumentValidate
      'Trigger event handling routine
      Solution.Document_Validate(pWorkdoc, pValid, "CustomBase")
   End If
   Exit Sub

Err_DocumentValidate:
   Project.LogScriptMessageEx
(CDRTypeError,CDRSeverityLogFileOnly,"Error Document Validate
(TestCustomBase): " & Err.Description)
```

```
    Err.Clear
End Sub
```

4. Save the project and close **Brainware Intelligent Capture Designer**.

Add the tmpCLSRES field

The tmpCLSRES field is used to store the full classification results and weightings before they are written to the reporting database. It is an internal field and does not require any action beyond its creation. If the field is not created, the system will only log the final class determined for the document, and not the full classification results and weightings.

To create the tmpCLSRES field, complete the following steps in Designer.

1. In the custom base class, go to the **Fields** view mode.
2. Right-click in the gray space and select Insert **Field Definition**.
3. Enter `tmpCLSRES` as the fieldname and press **Enter**. The fieldname is case sensitive.
4. Right-click on the new field and select **Show Properties**.
5. In the pane on the right side of the screen, select the **Validation** tab, and then select the **Always Valid** check box.
6. Save the project.

Adding additional custom fields

Brainware for Invoices contains five custom fields that are available for use as required.

If the five fields are not sufficient for your business needs, it is possible to add additional custom fields.

The following sections explain the steps required.

Create an additional field in the Brainware Intelligent Capture Designer module

To create a new field in the Brainware Intelligent Capture Designer module, complete the following steps.

1. Using the Brainware Intelligent Capture Designer module, open the **<project>.sdp** file.
2. Click the **Spanner** icon to display the project class hierarchy.
3. Locate and double-click on the **Invoices** class within the project class hierarchy. This then displays the list of fields belonging to that class.
4. Scroll to the bottom of the field list, and then right-click and select Insert field definition.
5. Enter a name for the new field and click **OK**.
6. Save the project.

Add the standard validation script to the Invoices class

To add a validation script into the Invoices class, complete the following steps.

1. Using the Brainware Intelligent Capture Designer module, open the **<project>.sdp** file.
2. Click the **Spanner** icon.

3. Locate the **Invoices** class in the class hierarchy tree. Right-click on the class name and select **Show Script**.
4. Scroll to the bottom of the script and paste the following code, substituting `Custom6` for the name of the field you have created.

   Example

```
 Private Sub Custom6_Validate(pField As SCBCdrPROJLib.ISCBCdrField,
pWorkdoc As SCBCdrPROJLib.ISCBCdrWorkdoc, pValid As Boolean)

   If InitializeDLLAccess("Invoices Custom6_Validate") Then

      On Error GoTo Err_Custom6_Validate

      'Trigger event handling routine
      Field_ICALValidate(pField, pWorkdoc, pValid)

   End If

   Exit Sub

Err_Custom6_Validate:
   Project.LogScriptMessageEx
(CDRTypeError,CDRSeverityLogFileOnly,"Error Custom6_Validate
(Invoices): " & Err.Description)

   Err.Clear

 End Sub
```

5. Save the changes.

Add an entry into the field configuration table

After creating your custom field, you must add a corresponding entry in the field configuration table for all relevant processing profiles.

To do this, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Field Settings** node. This then displays the field configuration table.
5. Scroll to the last row in the table where you have the option to create a new entry.
6. Configure your field as per the instructions in the Field Configuration chapter. You must ensure that the field is active and a field label text has been defined for it to appear on the Dynamic Verifier

form. You must also enter a value in the **Tab Order** column to tell the system where you want the field to appear on the form.

7. Click the **Insert** hyperlink to save your changes.

Insert the custom field onto the Dynamic Verifier Form

After creating the custom field and creating a corresponding entry in the field configuration table, the field will now be visible and available to use on the Dynamic Verifier form in Thick Client Verifier only.

It is recommended to perform the following steps in order to save the new field permanently within the project file. This will also make the field available in Thin Client Verifier.

1. Ensure that the Dynamic Verifier form is activated in **Global Settings** > **General Settings**.
2. Open the project in **Designer**.
3. Open the project settings. You can do this via the **Options** > **Settings** menu.
4. On the **Compatibility** tab, select the **Allow firing of VerifierFormLoad event when in Verifier Test/Train Modes** check box. This ensures that the VerifierFormLoad event is triggered in **Verifier Test/Train Mode**.
5. Save the project file.
6. Go to Definition mode, fields view.
7. Analyze a document belonging to a client for which the new field is relevant.
8. After classification and extraction is complete, go to Verifier Test Mode. The new field is now visible on the Dynamic Verifier form.
9. Save the project file.

Configure Automatic Extraction for Custom Fields

Brainware for Invoices includes five custom fields (Custom 1 to Custom 5) which can be used for the extraction of data in addition to what is offered by the standard fields within the project.

It is possible to configure a level of automatic extraction for these fields per processing profile using Solution Configuration Manager.

The following limitations and prerequisites apply to automatic field extraction.

- Automatic field extraction is only available for fields Custom 1 to Custom 5.
- Automatic field extraction can only be carried out on documents that are initially classified either to the 'Generic' class or to one of its child classes.
- Analysis templates 'Custom 1' to 'Custom 5' must exist within the project - these are delivered as standard and must not be deleted, otherwise an error is raised during document processing.
- Analysis templates 'Custom 1' to 'Custom 5' must be assigned to their respective custom fields for automatic extraction to take place. The project file is delivered with this in place.
- The steps involved in configuring automatic field extraction are as follows.

Set up a field analysis profile

A field analysis profile is where format strings for field extraction candidates are defined. Each analysis profile has a unique ID, which is called the Analysis Profile ID. Field analysis profiles are global in nature and can be shared across processing profiles.

To create a new analysis profile, complete the following steps in Solution Configuration Manager.

1. Select the project to be used.
2. Select **Global Settings**.
3. Within the **Global Settings** hierarchy tree, navigate to the **Analysis Profile** node. This displays the analysis profile configuration table.

   Each row in the table represents one format string, with the unique key formed by the **Analysis Profile ID** and the **Index ID,** so that many format strings can be entered for one analysis profile. The table is pre-populated with a sample entry for analysis profile zero. This is meant for illustrative purposes and must not be used.
4. Scroll to the last row in the table where you can insert a new entry.
5. Populate the **Analysis Profile ID** and **Index ID** columns with the next available numbers in the sequence. You must not have any gaps in your index IDs.
6. Enter the format string you would like to use in the **Format** column.
7. Specify the type of format string you have entered by selecting the appropriate option from the **Compare Type** drop-down. The table below describes the possible options.

Compare type	Meaning
SIMPLE	Simple expression
REGULAR	Regular expression
TRIGRAM	Trigram compare method
LEVEN	Levenshtein compare method
STRINGCOMPARE	String compare method

8. Enter any characters you want the system to ignore when creating candidates for your format string in the **Ignore Candidates** column.
9. Click the **Insert** hyperlink to save the changes.
10. You can add as many format strings as you wish for a single analysis profile as long as each row shares the same analysis profile ID.

Set up a field evaluation profile

A field evaluation profile is where key words and key phrases used to evaluate candidates generated by a given field analysis profile are defined. Each evaluation profile has a unique ID, which is called the Evaluation Profile ID. Evaluation profiles are global in nature and can be shared across processing profiles.

To create a new evaluation profile, complete the following steps in Solution Configuration Manager.

1. Select the project to be used.
2. Select **Global Settings**.
3. Within the Global Settings hierarchy tree, navigate to the **Evaluation Profile** node. This displays the evaluation profile configuration table.

   Each row in the table represents one key word or phrase, with the unique key formed by the **Evaluation Profile ID** and the **Index ID,** so that many keywords can be defined for one evaluation profile. The table is pre-populated with a sample entry for evaluation profile zero. This is meant for illustrative purposes and must not be used.
4. Scroll to the last row in the table where you can insert a new entry.
5. Populate the **Evaluation Profile ID** and **Index ID** columns with the next available numbers in the sequence. New entries must use an ID of one or greater and you must not have any gaps in your index IDs.
6. Enter the keyword you wish to use to evaluate the field in the **Context** column. The system uses the value you entered to evaluate candidates by looking for matching context above or to the left of each candidate.
7. If the keyword entered is of high relevance to the identification of the correct candidate, you can select the **Strong** check box, so that the system accords a higher weighting to candidates nearer to this keyword.
8. Click the **Insert** hyperlink to save the changes.
9. You can add as many entries as you wish for an evaluation profile as long as each row shares the same evaluation profile ID.

Set up a field extraction profile

A field extraction profile brings together an analysis profile and optionally an evaluation profile to provide the system with a set of instructions with regard to how to extract a custom field. Extraction profiles are global and can be shared across processing profiles.

To create a new extraction profile, complete the following steps in Solution Configuration Manager.

1. Select the project to be used.
2. Select **Global Settings**.
3. Within the **Global Settings** hierarchy tree, navigate to the **Extraction Profile** node. This displays the extraction profile configuration table.

   Each row in the table represents a unique extraction profile. The unique key for each row is the extraction profile ID. The table is pre-populated with a sample entry for extraction profile zero. This is meant for illustrative purposes and must not be used. New extraction profiles need to be

created using an extraction profile ID of one and upwards.

4. Scroll to the last row in the table where you can insert a new entry.
5. Populate the **Extraction Profile ID** column with the ID you would like to use. This must be unique and greater than one.
6. Enter a meaningful name for your extraction profile in the **Description** column. This could describe the type of field you are trying to extract.
7. Choose the analysis profile you want to use for your extraction profile by selecting the relevant analysis profile ID using the Analysis Profile ID drop-down.
8. Choose the evaluation profile you want to use for your extraction profile by selecting the relevant evaluation profile ID using the **Evaluation Profile ID** drop-down. If you do not wish to assign an evaluation profile, for example, because you are able to extract the field using simply a base weighting, then you can leave the column populated with zero.
9. You can enter a base weighting which is then assigned to all candidates generated using your analysis profile in the **Base Weighting** column. This approach can be useful if the field value extracted is uniquely distinct on the document based upon its format, and any candidate that is generated can only be the correct value for the field. The base weighting is entered as a percentage. So a value of '50' means that the weighting of all generated candidates is increased by 0.5.
10. You can select the **Overwrite With Search String** check box if you are using a Levenshtein or string compare method to generate your candidates within the analysis profile and you want to substitute the candidate result text with the original search string. This mitigates any OCR problems if the expected field result must conform to a predefined set of values.
11. Select the **Remove No Number Candidates** check box if you want the system to remove any candidates that do not contain at least one digit.
12. Enter the candidate compare distance in the **Evaluation Distance** column. This value represents the degree of 'fuzziness' that the system applies when generating candidates based upon the format strings entered against the analysis profile. A value of 0 denotes an exact match to the format string; a value of 1 means that no match is required. The recommended value here is 0.3, which denotes that up to a 30% variance between format string and candidate is permitted. If a value less than 0 or greater than 1 is entered, the distance will be set to 0.3.
13. Enter the maximum number of OCR words for a candidate in the **Max Word Count** column.
14. Enter the maximum gap (in millimeters) that is permitted to appear between OCR words within a single candidate in the **Max Word Gap** column.
15. Enter the maximum permitted candidate length (in millimeters) in the **Max Candidate Len** column.
16. Select the **Case Sensitive** check box if you want to search for candidates in a case-sensitive fashion based upon the format strings configured. It is recommended that this check box is cleared.
17. Select the **Keep Spaces** check box if you want to retain a space between OCR words within the text of a generated candidate. It is recommended that this check box is cleared.
18. Click the **Insert** hyperlink to save your changes.

Restricting candidate generation by page region

If you want your extraction profile to restrict the generation of candidate by page region, complete the following steps within Solution Configuration Manager.

1. Select **Global Settings**.
2. Within the **Global Settings** hierarchy tree, navigate to the **Extraction Profile** node. This displays the extraction profile configuration table.
3. Locate the relevant extraction profile.
4. Select the **Use Regions** check box.
5. Select the **Use First Page** check box if you want the system to check for candidates on the first page of the document.
6. You can choose to restrict candidate generation to a defined region on the first page by populating the **First Top**, **First Bottom, First Left** and **First Right** columns. These values are expressed as percentages and are used to specify the boundaries of a rectangular area where candidates are generated.

   For example, a value of '0' in 'First Top' means that the topmost boundary of the rectangle is the very top of the first page of the document; a value of '20' means that the topmost boundary is 20% down the length of the page. A value of '100' in 'First Bottom' means that the lowermost boundary of the rectangle is right at the bottom of the first page (100% of the way down), a value of '80' means that the rectangular area stops 80% of the way down the page.

   Similarly, a value of '0' in 'First Left' means that the leftmost boundary of the rectangular area is the far left of the first page of the document; a value of '20' means that the search area starts 20% across the width of the page. A value of '100' in 'First Right' means that the rightmost boundary of the rectangular search area is at the far right of the page (100% of the way across), a value of '80' means that the rectangular area stops 80% of the way across the page.

   If a value entered into these columns is less than 0, then the system will consider the value to be 0; conversely, if a value entered is greater than 100, the system will consider the value to be 100.
7. Select the **Use Subsequent Page** check box if you want the system to check for candidate on all pages that lie between the first and the last page of the document. You can also configure a search region for the subsequent pages using the **Subsequent Top**, **Subsequent Bottom**, **Subsequent Left** and **Subsequent Right** columns.
8. Select the **Use Last Page** check box if you want the system to check for candidates on the last page of the document. You can also configure a search region for the last page using the **Last Top, Last Bottom**, **Last Left** and **Last Right** columns.
9. Save the changes.

Assign a field extraction profile to a custom field

Once your field extraction profile has been configured, you can assign it to one or more custom fields within the field configuration table.

To assign an evaluation profile to a custom field, complete the following steps within Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Processing Settings** from the **Settings** drop-down.
3. Select the processing profile you want to use.
4. Within the **Processing Settings** hierarchy tree, navigate to the **Field Settings** node. This displays the field configuration table.
5. Locate the row for the custom field to which you want to assign an extraction profile. It is only possible to assign an extraction profile to custom fields 1 to 5.
6. Select the extraction profile ID you want to use from the drop-down against the **Extraction Profile ID** column.
7. Save the changes.

Appendix A: SAP BAPIs

This appendix lists all of the BAPIs/function calls used by the solution.

BAPI_PO_GETDETAIL

This SAP function is used to retrieve the details of a given purchase order number.

BAPI_INCOMINGINVOICE_CREATE

This SAP function is used to create a posted MM or FI invoice.

BAPI_INCOMINGINVOICE_PARK

This SAP function is used to park an MM or FI invoice.

BAPI_ACC_INVOICE_RECEIPT_POST

This SAP function is used to post an FI invoice.

RFC_READ_TABLE

This SAP function executes a select on a standard SAP table if the user has the appropriate authorizations. It is used within the project in order to do the following.

- Validate a user-entered currency from SAP.
- Retrieve the purchase order line conditions and their respective vendors for posting miscellaneous charges and handling third-party freight invoices.
- Read plant data from SAP.

Aside from the purchase order line conditions, a database lookup alternative is available to minimize RFC communication with SAP.

ARCHIV_CONNECTION_INSERT

This function is used to create a link between an SAP document and an image within an external archive.

Z_BW_ARCHIVE_IMAGE

If late archiving is required, this custom SAP function module developed by Hyland is used to archive an image via SAP into an external archive.

BAPI_COMPANYCODE_GETDETAIL

This SAP BAPI is used to retrieve the details of a given company code.

SO_FOLDER_ROOT_ID_GET, SO_OBJECT_INSERT, and BINARY_RELATION_CREATE

These standard SAP functions are used in conjunction with one another to create a link between a posted or parked SAP document and an image URL.

Z_BW_PARK_FI_INVOICE

This custom SAP function module developed by Hyland has an identical interface to the BAPI_INCOMINGINVOICE_PARK function, but creates a parked FI invoice or credit memo as if it had been entered manually through SAP transaction FV60. SAP does not provide an equivalent, so this requires installation within the SAP environment if parking of FI invoices via FV60 is required.

BAPI_TRANSACTION_COMMIT

This SAP BAPI is used to commit changes to the SAP database once a document has been created.

BAPI_TRANSACTION_ROLLBACK

This SAP BAPI is used to rollback changes in the SAP database if the creation of a document fails.

BAPI_ENTRYSHEET_GETDETAIL

This standard SAP BAPI is used to read service entry sheet data from SAP.

It is used during the line pairing operation for all purchase orders that are set for service-based invoice verification (SR-IV) to read the entry sheet line item data, and also for non service-based invoice verification purchase orders to check for a multiple account assignment.

The call to this BAPI can be disabled if required in the system configuration, but if this is done, the system will not be able to complete line pairing against SR-IV purchase orders. It will also not be able to post against a non-SR-IV purchase order if the entry sheet has a multiple account assignment.

Appendix B: Solution Configuration Manager Settings

The configuration settings control the way in which the BFI project file behaves.

The project file can be configured using the **<project>.ini** file that resides in the same directory as the <**project>.sdp** file, and also the Brainware for Invoices database via Solution Configuration Manager.

INI File settings

The **<project>.ini** file is used to manage the connection to the BFI configuration database.

There are two settings.

Parameter	Type	Description
MasterConnectionString	Freetext	This represents the connection string to the BFI configuration database.
MasterEncryptedPassword	Freetext	Optional. This is the encrypted password to connect to the BFI configuration database. For more information, refer to the Brainware for Invoices Password Encryption section.

The INI file must be configured with the correct database details, else, no other project settings take effect and the solution will not function.

Solution Configuration Manager

Solution Configuration Manager is a web-based application for the administrators of Brainware Intelligent Capture solutions. The application serves as a user interface between a Brainware Intelligent Capture administrator and a Brainware Intelligent Capture solutions project database. This application allows you to configure and manage the database for Brainware packaged solutions.

Solution Configuration Manager has the capability to configure and manage database settings and manage the database connection. When your configuration settings are complete, you can export them as a migration packet.

The settings available in the Solution Configuration Manager are separated into global settings, client settings and profile-specific settings. Profiles are in turn assigned to clients, so having profile-specific settings means that you can configure different behavior for different clients.

For example, if client A requires ten fields, but client B only requires seven of those fields, extracting and validating all ten fields for both clients is unnecessary. You can deactivate the unnecessary fields for client B without affecting the processing of documents from client A.

Global settings apply solution-wide and any changes will affect all profiles.

Data Input Controls

Configuring Solution Configuration Manager requires working with the configuration options across multiple web forms. These forms have the following input controls.

- Text fields for inputting strings or numbers.
- Drop-down lists for selecting a pre-defined value.
- Check boxes to activate or deactivate a feature. Depending on the selection, additional options may become available.
- Option buttons for selecting from a pre-defined list of values. Depending on the selection, additional options may become available.
- Tables where you can define multiple instances of a set of values.

Profile Types

A profile enables you to configure different settings and then assign those settings to multiple clients with the same requirements. This minimizes configuration efforts.

There are three types of profiles.

Processing profile

A processing profile controls which fields are to be extracted, and also how they are to be formatted and validated. It can be assigned to one or more clients.

Export profile

An export profile controls how a document and its data are to be exported. For example, using an XML or CSV file, or writing the data to a downstream database. An export profile is then assigned to one or more clients.

Instructions profile

An instructions profile controls the instructions the users see on the Verification screen relating to the documents they are processing. It can be assigned to one or more clients.

Processing Profile Settings

A processing profile is a collection of different configuration settings, all relating to extraction, formatting and validation. Multiple processing profiles can exist within a single installation.

ALM Settings

These settings relate to configuration regarding the use of the ALE Learnset Manager (ALM) in Brainware For Invoices.

ALM General Settings

These settings allow you to configure whether ALM should be used, the ALM connection and project details and how the ALM learnset should be updated at time of document export.

Parameter	Description
Activate ALM	If selected, the system connects to ALM for the purpose of performing field extraction.
Base URL	This is the URL used to connect to ALM.
User ID	This is the user ID used to connect to ALM.
Password	This is the password used to connect to ALM. This can be left blank if an encrypted password is

Parameter	Description
	specified.
Encrypted Password	This is the encrypted password used to connect to ALM.
Invoices Project Name	This is the name of the ALM project used for invoices.
Update ALM At Export	If selected, the system updates the learnset in ALM with the current document if it meets the criteria to do so.
Learn ALM At Export	If selected, the system triggers the learning process in ALM following the learnset update.
Min Corrected Field Count	This is an integer value that represents the minimum number of fields a Verifier user must have corrected for the document to be relevant for adding to the ALM learnset.
Max ALM Classes	This is an integer value where you can specify the maximum number of classes that may be created automatically for an ALM project. When updating the ALM learnset, the system will not create a new class in ALM if the number of classes that already exist is greater than or equal to the value specified here. Hence, the document is not added to the learnset. A value of 0 denotes no limit to the number of ALM classes that the system is permitted to create.
Max Class Document Count	This is an integer value greater than zero where you can specify the maximum number of documents that the system is allowed to add to an ALM class. When updating the ALM learnset, the system will not add a document if the number of documents that already exist in the ALM class learnset is greater than or equal to the value specified here.
ActivateFrequencyCheck	If selected, the system performs the ALM vendor invoice frequency check for documents classified as invoices. You must have the invoice number history check

Parameter	Description
	activated in **Processing Settings > Invoice Number Settings** and use table **BW_INVOICE_ NUMBER_FORMATS** for storing the invoice number history records to be able to use this feature.
TargetRecords	Minimum number of records that must exist in the invoice number history table for a given vendor over the time period specified in **Past Days** in order to pass the vendor invoice frequency check. The value entered here must not exceed the value entered in **Max Records**in **Processing Settings > Invoice Number Settings**.
PastDays	The time period in days for the vendor invoice frequency check. Example: a value of 365 means that the system only considers records in the invoice number history table that were created up to 365 days before the current date.

ALM Classes

These settings are used to assign custom base classes to a project in ALM.

Parameter	Description
Class Name	This is the technical name of the custom base class in BFI. This must be entered in upper case.
Project Name	This is the technical name of the ALM project to which the custom base class is assigned.
ASE Field Name	This is the technical name of the custom base class Associate Search Engine you want to use to generate the ALM class name. The formula used to generate the ALM class name is the first line of the ASE field that you specify here, then an underscore, then the content of the ID field you specify in **ASE ID Field**.
ASE ID Field	This is the technical name of the field on the custom base class that contains the ID that you want the

Parameter	Description
	system to use to generate the ALM class name. This setting must be populated if a value is entered in **ASE Field Name**.

ALM Field Settings

These settings allow you to select and configure the fields for use with ALM.

Parameter	Description
Class Name	This is the technical name of the class in BFI. This must be entered in upper case.
Field Name	This is the technical name of the field in BFI. This entry is case sensitive.
Relevant For ALM	If selected, the field is relevant for ALM field extraction.
Increase Percentage	This is the percentage by which a BFI candidate confidence should be uprated if it matches the highest weighted candidate returned by ALM. For example, entering 10 denotes 10%.
Always Use ALM Result	If selected, the system always uses the highest weighted candidate returned by ALM if it meets the confidence threshold configured in **Min ALM Confidence**.
Min ALM Confidence	This is the minimum confidence that the highest weighting candidate returned by ALM must have to be selected as the best result for the field. It is used only if **Always Use ALM Result** is selected. It must be entered as a value between 0 and 1.

Amount Settings

These settings specify the format string and what characters are ignored for a valid amount.

Parameter	Description
Format	This is a simple expression that defines the format of an amount. This is set to `"#[2-10]"` by default. This means that a string with between two and ten digits is expected.
Ignore Characters	These are special characters that may appear in an amount, but can be ignored by the format string entered. It is set to " ,.'-_$£¥*^€" by default. For example, a value of 999.99 is accepted as an amount because it is between two and ten digits in length. The decimal point is ignored.
Deactivate Cross Validation	If selected, the mathematical checks applied to the extracted invoice amounts in Brainware Verifier are deactivated. This setting is cleared by default.
Export Thousand Separator	The thousand separator character that is used when formatting the amount for data export. This is set to " , " by default.
Export Decimal Separator	The decimal separator character that is used when formatting the amount for data export. This is set to " . " by default.

Bill-To Configuration

The bill-to settings are separated into two distinct configuration sets, Bill-To Formats and Bill-To Settings.

Bill-To Formats

You can use this table to configure multiple possible format strings for recognizing bill-to names on an invoice.

Parameter	Description
Index	The index for the bill-to name format. This is unique for each profile ID.
Format	This is a Levenshtein expression for the bill-to name. Multiple formats can be entered per profile ID, but only one per index. The format string entered is used to help the system locate the correct bill-to name. For example, if **Random House** is specified as a possible bill-to name, the system uses this to help anchor the bill-to name on the invoice. However, the

Parameter	Description
	extracted field is actually what appears on the document. Therefore, if the bill-to was actually **Random House UK Limited**, then this would be the extracted value.
Ignore Characters	These are special characters that may appear in a bill-to name, but can be ignored by the format string entered.

Bill-To Settings

This contains an additional setting that controls the extraction of a bill-to name.

Parameter	Description
Distance	Enter a value between 0 and 1 representing the fuzzy tolerance that is applied when looking for OCR text matching the formats configured in the Bill-To Formats.

Company Code Settings

These settings control how the company code field is validated.

Parameter	Description
Validate From SAP	This activates company code validation using SAP.
Validate From Workday	This activates company code validation using Workday.
Validate From DB	This activates company code validation using a database table.
SQL Connection Group	The SQL connection group that represents the connection to the company code database. If no connection group is specified, the system will use group 1.
DB Table Name	The name of the company code database table.

Parameter	Description
	This setting is mandatory for database lookups.
DB Company Code	This is the technical name of the company code column within the table specified. This setting is mandatory for database lookups.
DB Country	This is the technical name of the column that represents the country where the company code is legally based.
DB Currency	This is the technical name of the company code currency column in the table specified.
DB VAT Reg Nos	This is the technical name of the column in the company code database table that holds the VAT registration numbers for the registered company. If the company is registered for VAT in more than one country, data must be provided as a comma-separated list.

Content Configuration

The content settings are separated into two distinct configuration sets, Content Settings and Content Settings Codes.

Content Settings

These settings are used to manage connectivity between Brainware for Invoices and the Perceptive Integration Framework. There are also settings associated with activating connectivity to Perceptive Content messaging.

Parameter	Description
WriteExternalMessages	This flag indicates whether message writing to Perceptive Content is activated.
SQLConnectionGroup	This is the SQL connection group that represents the connection to the Perceptive Content database. If no connection group is specified, the system will use group 1.
External Message Schema	The name of the schema of tables for external messages. This schema name is needed when Brainware for Invoices attempts to connect to the database

Parameter	Description
	for external messages.
Use PIF integration	If selected, the system connects to the Perceptive Integration Framework (PIF). The integration to PIF takes two forms. The system updates PIF with the document status as it is routed through the BFI process. The system sends an XML result file to PIF through a web service call during document export. The XML web service export for an invoice is carried out using the structure defined for the standard XML export file. The standard XML file output does not need to be activated for this to occur. For non-invoice documents, the system uses the XML file header configured for an invoice, but the default XML body is `<%Classname>%Classname<%Classname>` where `%Classname` is the document classname, which can be configured to be the base class name or the child class name. The structure of the XML document for any document class can be changed using a script placed in UserExitPIFExport. If a status update to PIF fails, an error is written into the Runtime Server instance log file, but the processing continues. If the XML export fails, the export fails and the document is sent to the Verifier with a state of 750. In the event of a failed web service call, the system tries two more times automatically.
PIF Update Procedure	This is the name of the PIF update procedure. The default value is `rs/capture/update/`. This option is available only when "Use PIF Integration" is selected above.
PIF Export Procedure	This is the name of the PIF export procedure. The default value is `rs/capture/export/`. This option is available only when "Use PIF Integration" is selected above.
PIF Output Key	This setting controls the name of the PIF XML output file. If set to FILENAME, the name of the XML file will be set to the original image filename without the file path and file extension. If set to URN, the name of the XML file will be set to the document URN mapped in Global Settings > Import Settings. This option is available only when "Use PIF Integration" is selected above.
PIF Server	The name of the PIF server. This option is available only when "Use PIF Integration" is selected above.

Parameter	Description
Use Base Class Name	If selected, the document base class name is passed in the PIF export XML rather than a specific child class name. This option is available only when "Use PIF Integration" is selected above.

Content Settings Codes

This is a list of workflow status codes relevant for Perceptive Content.

Note:
Each status code corresponds to a specific step in the document workflow. It is not possible to add additional status codes.

Parameter	Description
Status Code	The status code number that appears in the log files when the status is reached.
Active Flag	If selected, the status code is activated.
Status Description	A description of the status code that appears in the log files when the associated status code is reached. The following status codes are available. It is recommended that you do not delete or add to this list. You can change the description of one of the codes to better suit your needs. • 100 - Ready for OCR • 150 - OCR failed • 200 - Ready for Classification • 250 - Classification failed • 300 - Ready for Extraction • 550 - Waiting In Verifier • 700 - Ready for Export • 750 - Export failed • 800 - Successfully processed

Currency Settings

These settings relate to the invoice currency.

Parameter	Description
Dollar Sign Is USD	If this check box is selected and no currency is identified on the invoice, but a $ sign is found in the OCR text, the currency will beset to "USD." This option is cleared by default.
Default PO Currency	If this check box is selected and no currency is identified on the invoice, the system will default the currency from the purchase order. This option is selected by default.
Default Vendor Currency	If this check box is selected and no currency is identified on the invoice, the system will default the currency from the vendor master record. If the document is purchase order related, the vendor currency default takes priority over the purchase order currency. This option is selected by default.
Validate From SAP	This activates currency validation using SAP.
Validate From DB	This activates currency validation using a database table.
SQL Connection Group	The SQL connection group that represents the connection to the currency database. If no connection group is specified, the system will use group 1.
DB Table Name	The technical name of the database table used to validate the currency. This setting is mandatory for database lookups.
DB Currency	The technical name of the currency column in the specified table. This setting is mandatory for database lookups.
Activate Extended Validation	When selected, extended validation is performed on the extracted currency. The extended validation compares the system-extracted currency to the following, in the order specified. • Permitted global currencies. See the "Global Currencies" setting below. • The vendor currency, if present in the vendor extract. • The currency associated with the vendor country of origin. • The currency of the company code. • The currency associated with the company code country.

Parameter	Description
	If the invoice currency does not match any of the above, then the currency will be set to invalid and sent to Verifier for a user to review. Errors caused by missing or incorrect configuration for the company code and country look-ups will also set the currency field to invalid. User input in Verifier is excluded from the above checks and is assumed to be correct. The extended validation is only carried out for invoices classified to the generic node.
Global Currencies	A comma-separated list of permitted global currencies. This is set to "USD,EUR" by default.

Date Settings

These settings configure the invoice date formatting and validation.

Parameter	Description
Verifier Format	The date format that is displayed in Verifier. Choose from: • `DDMMYYYY` • `MMDDYYYY` • `YYYYMMDD` This is set to "`MMDDYYYY`" by default. The "`DDMMYYYY`" and "`MMDDYYYY`" formats use a forward slash "/" as the date separator. The "`YYYYMMDD`" format uses a hyphen "-" as the separator.
Export Format	The output date format for export. This setting applies to database output and all flat file exports. Choose from: • `DDMMYYYY` • `MMDDYYYY` • `YYYYMMDD` This is set to "`MMDDYYYY`" by default.
Export Separator	The separator that is used when exporting a date. This is set to " / " by default.

Parameter	Description
MMDD Countries	A comma-separated list of countries that use `MM/DD/YYYY` for the date format. This is set to `"US"` by default. The countries must be entered as 2 character ISO-codes.
YYMMDD Countries	The comma-separated list of countries that use the `YY-MM-DD` date format. This is set to `"SE"` for Sweden by default. The countries must be entered as 2 character ISO-codes.
Delivery Date Includes Ship Date	If selected, this expands the scope of delivery dates to include ship dates as well. This means that dates with a label indicating a shipping date, such as "Shipped" are also extracted. This option is cleared by default.
Maximum Past Years	The system will not extract an invoice, delivery or due date if it falls in a year prior to the current year minus the number of years you specify using this parameter. This check is not carried out if the parameter is set to -1. The recommended default value is 10.

Document Type Settings

These are the settings that relate to the documenttype field.

Parameter	Description
Distance	A document is searched for terms that indicate if it is a credit memo. The distance indicates the fuzziness of a search. The value specified is between 0 and 1, where 0 requires an exact match, and 1 accepts values that do not match at all. This is set to `"0.17"` by default.
Stop All Credits	If selected, all documents identified as a credit memo are sent to Verifier for manual review. This option is cleared by default.
Ignore Negative Total	If selected, negative invoice amounts are not used to determine if a document is a credit memo. This option is cleared by default.

Field Settings

The field configuration table allows you to activate and configure fields within the solution.

Parameter	Description
Class Name	The class name of the document. This determines which field settings are applied. Typically, settings are provided for the "INVOICES" class which is the base class for all invoices. However, subclasses can have different settings. If subclass settings are provided, these override the base class settings. **Note:** When adding new fields, you must use uppercase for the "Class Name".
Field Name	The technical name of the Brainware for Invoices field. **Note:** Do not change the technical name of any standard fields.
Verifier Label	The default field label used in Verifier.
Active	If selected, the field is active for a processing profile. This means that field validation is activated and the field appears on the Dynamic Verifier Form.
Required in RTS	If selected, and no value for the field is extracted in RTS, the field will be marked invalid and sent for user review in Verifier.
Required in Verifier	If selected, the field is mandatory in RTS and a user is required to populate this field with a valid entry in Verifier.
Country Filter	The comma-separated list of country ISO-codes for which the field is mandatory. This setting is used in conjunction with "Required In RTS" and "Required In Verifier" check boxes. If a field is mandatory for either of these settings, and the vendor country of origin is not specified in the list, then the field reverts to optional.
Field Type	The type of a field. Select one of the following types.

Parameter	Description
	• AMOUNT • DATE • TEXT • TABLE
Amount Type	The type of amount. Select one of the following values. • TAX • MISC • OTHER If TAX is selected, the field is handled as a sales tax type amount, and is included in the amount field mathematical validation. If MISC is selected, the field is handled as a miscellaneous charge and is also included in the amount field mathematical validation. If OTHER is selected, the field is handled as a standalone amount. The Amount Type option only takes effect for custom fields 1-5.
Force Verify	When selected, a field is always marked as invalid and sent to Verifier for review.
Default Value	The default value of a field.
Default if Nothing Extracted	The default value of a field if the system does not automatically extract a value from a document.
Substitution Rule	The substitution rule applied to a text field. Substitution rules are configured in the Global Settings > Substitution Rules. These rules are applicable only at the time of export.
Min Length	The minimum text field length.
Max Length	The maximum text field length.
Right Justify	If selected, the system pads the field using the "Pad Char" character from the left, until the "Max Length" is reached.

Parameter	Description
Pad Character	The padding character applied to a text field if it does not meet the maximum length.
Remove All Specials	If selected, all special characters are removed from a text field. This means that all characters that are not letters, digits, or whitespace are removed. Exceptions are defined in "Keep Certain Specials" below.
Remove Spaces	If selected, spaces are removed from a text field.
Keep Certain Specials	A non-delimited list of special characters that are retained if "Remove All Specials" is enabled.
Remove Start End	If selected, all special characters are removed from the beginning and from the end of an extracted text value. The "Keep Certain Specials" list is not applied here. All characters that are not letters, digits, or whitespace, are removed, regardless of the special characters listed in "Keep Certain Specials".
Substring Start Position	The starting character used in conjunction with the "Substring Length" when trimming an extracted value. Positive numbers start from the left while negative numbers start from the right. For example, an invoice number can only be five characters, but the extracted value is "123456789." A "Substring Start Position" value of "-5" and a "Substring Length" value of "5" means that the field is formatted to "56789."
Substring Length	The length of a substring. This setting is used in conjunction with "Substring Start Position".
Remove Leading Zeroes	If selected, any leading zeroes are removed from an extracted text value.
Decimal Places	The number of decimal places that should be used when exporting an amount field.
Negative Type	This controls the output format during export if the extracted value for an amount field is less than zero. Choose one of the following settings.

Parameter	Description
	• 1 - This value means that the minus sign appears after the amount, such as 100.00-. • 2 - This value means that the minus sign appears before the amount, such as -100.00. • 3 - The value means that the minus sign does not appear, but the related value appears in parentheses. For example, (100.00).
Output For Zero	The value that is output during export if the amount is zero.
Substitute Value if Over 0	The value that is output during export if the amount is greater than zero.
Future Days	The number of days in the future that an extracted date is considered valid. For example, today is March 20 and an extracted date is March 31. If the value is set to 10, then the system marks the field invalid as the extracted date is 11 days in the future. If future dates are not permitted, set the column value to zero. To disable the check, set the value to -1. In Verifier, the user can pass any value as long as it is a valid date.
No. Days in Past	The numerical value that indicates the number of days in the past that an extracted date is considered valid. For example, today is March 20 and an extracted date is March 9. The value is set to 10, so the system marks the field invalid as the extracted date is 11 days in the past. If past dates are not permitted, set the value to zero. To disable the check entirely, set the column value to -1. In Verifier, the user can pass any value as long as it is a valid date.
Date Only in Current Month	If selected, an extracted date that is not in the current month is marked invalid and the document is

Parameter	Description
	sent to Verifier. In Verifier, the user can pass any value as long as it is a valid date.
Field Mask	A comma-separated list of characters allowed in an extracted or user-entered value. For example, if the content of this column is set to "ABCD, WXYZ," only values "ABCD" or "WXYZ" are permitted. Wildcard characters are also permitted, where # represents any number, an @ represents any letter, and a ? represents either a number or a letter.
Verifier Text ID	The text ID for the Verifier field display label. This must correspond to an existing Text Element ID in Global Settings > Display Text Settings > Field Text Settings. This takes priority over the text specified against the 'Verifier Label' setting.
Extraction Profile ID	The extraction profile ID assigned to custom fields (1 to 5) that are relevant for configurable automatic field extraction feature. The content of this column corresponds to an "Extraction Profile ID" value that is configured in the Global Settings > Custom Extraction Profiles > Extraction Profiles. A value of zero means that no configurable extraction is required for this field.

Invoice Type Settings

These configuration settings are used to determine the invoice type field.

Parameter	Description
Default	This value indicates whether the default invoice type is a purchase order or a non-purchase order. Select one of the following: • PO • NPO

Parameter	Description
	If the invoice type exists in the image filename and this has been mapped to the "Invoice Type" setting in the Global Settings > Import Settings, then the invoice type value here is overwritten by the value from the "Import Settings".
Set By Vendor	Specifies if the invoice type field is set by the extracted vendor.
Set By Vendor Co Code Exception	A comma-separated list of company codes that are exceptions to the above "Set By Vendor" parameter. For example, if "Set By Vendor" is selected, and this setting is set to "1000,2000," then the system sets the invoice type according to the vendor, except when the invoice belongs to company code "1000" or "2000." If "Set By Vendor" is cleared, then the system sets the invoice type according to the vendor, only if the invoice belongs to company code "1000" or "2000."
PO Value	The value used in the document filename or the Invoice Type column in the vendor master data to indicate a purchase order invoice. For example, MM.
NPO Value	The value used in the document filename of the Invoice Type column in the vendor master that represents a non-purchase order invoice. For example, FI.
Set To PO If PO Found	If this option is selected and a purchase order number is found, the invoice type is set to "PO" regardless of any default or vendor-specific settings.
Set To PO If Valid PO Found	If this option is selected and the purchase order is validated against a database or SAP, the invoice type is set to "PO" regardless of any default or vendor-specific settings.
Set To PO If PO Populated	If selected, the system always sets the invoice type to "PO" if any value is present in the purchase order number field. This applies in RTS and in Verifier.

Invoice Number Settings

These settings enable you to configure the validation options for the invoice number field.

Parameter	Description
Extract Delivery Notes Into Table	If selected, the delivery note number field is deactivated and the table field DeliveryNotes is used to collect delivery note numbers instead.
Remove Korean Invoice Number	If selected, the system blanks out any extracted invoice numbers if the vendor country is Korea.
Skip For Utility Vendor	If selected and the vendor is identified as a utility vendor, then the invoice number is set to valid and an account number is required instead.
Utility Alias	This is a comma-separated list of values that identify a vendor as a utility vendor. This is compared against values found in the "Utility Flag" column in the vendor master data. This option is available only when "Skip For Utility Vendor" is selected above.
Accept Two Characters	If selected, the system does not automatically set a two-character invoice number to invalid on the server side. If cleared, an extracted invoice number that is two characters or less is automatically marked as invalid, and the document is sent to Brainware Verifier for confirmation.
Validate From DB	This activates invoice number validation where an extracted value is compared against previous invoices numbers supplied by the same vendor.
SQL Connection Group	The SQL connection group that specifies the invoice number history database connection string that is set in Global Settings > Database Connection Settings . If no connection group is specified, the system uses group 1. This option is available only when "Validate From DB" is selected above.
DB Table Name	The name of the invoice number history database table.

Parameter	Description
	This option is available only when "Validate From DB" is selected above.
Use Vendor Partition	If selected, a partition is used for the invoice number history check. This functionality mirrors the vendor partition functionality. It is possible to hold all invoice number history data within a single database table, then use partitions to ensure segregation of client data. For example, in a Brainware for Invoices project, there are three clients; Client A, Client B, and Client C. Vendor partitions are used. Clients A & B use vendor partition 1, and Client C uses vendor partition 2. A single invoice number history pooled between all clients may be used. As a result, if this option is selected, the system uses the vendor partition ID specified in the Client Settings > Client Configuration. Also, if the invoice number history table is updated during export, the system updates the table that inserts the relevant vendor partition ID into the column that represents the partition. This is specified using the "Partition Column" setting below. If this option is selected and no vendor partition is set in the Client Settings > Client Configuration, the system raises an error. **Note**: If an invoice number table with partitions is used, then all clients pointing to that table must use the partition. If this is not the case, then during the invoice number history update, the system can erase history data that belongs to another client if the vendor number is the same. This option is available only when "Validate From DB" is selected above.
Partition Column	The name of the column that contains the partition ID in the invoice number history lookup table. This setting is not mandatory if "Use Vendor Partition" is cleared. If vendor partitions are used and this column is blank, the system raises an error message and sends the document to Verifier.

Parameter	Description
	This option is available only when "Validate From DB" and "Use Vendor Partition" is selected above.
Vendor ID	The column in the database table that contains the vendor number. This setting is mandatory. This option is available only when "Validate From DB" is selected above.
Rec ID	The column in the database table that contains the record ID. This setting is mandatory if the invoice number history table is updated on export. This option is available only when "Validate From DB" is selected above.
Invoice Number	The column in the database table that holds the invoice number. This setting is mandatory. This option is available only when "Validate From DB" is selected above.
Document Type	The column in the database table that represents a document type of either invoice or credit. This setting is mandatory. This option is available only when "Validate From DB" is selected above.
Invoice Alias	The value in the document column of the invoice number history database table that indicates an invoice. This setting is mandatory. This option is available only when "Validate From DB" is selected above.
Credit Alias	The value in the document column of the invoice number history table that indicates a credit memo. This setting is mandatory. This option is available only when "Validate From DB" is selected above.
Max Records	The maximum number of records that are considered when comparing an extracted invoice number to historic invoice numbers from the same vendor in the database. By default, this is set to "20" records per document type. Such as, an INVOICE

Parameter	Description
	or CREDIT. A vendor billing system can use different number ranges for invoices and credit notes. This means that if the Max Records is set to 20 and the vendor submits invoice and credit memos, the maximum number of records that the system maintains in the invoice number history table is actually 40 records. This option is available only when "Validate From DB" is selected above.
No Of Hits	The number of hits required to validate the extracted invoice number format with the invoice number history database table. By default, this is set for two records. This option is available only when "Validate From DB" is selected above.
Correct OCR Misreads	If selected, the system tries to repair specific OCR issues if found in the extracted invoice number. For example, if the number "1" has been read in the extracted value, but the invoice history shows that this should be the letter "I" in as many records as set in the No Of Hits parameter, then the extracted value will be changed to an 'I' automatically on server side only. This also applies to instances where a zero has been extracted, but the history shows that a letter 'O' is expected, and also where the letter "Q" has been extracted, but the history shows that this should be the letter "O". No other OCR issues are handled. This option is available only when Validate From DB is selected above.
Check Sequencing	If selected, and if the vendor supplies invoice numbers that are entirely numeric, then, when carrying out the invoice number format comparison against the vendor's prior history, the system does not consider prior invoice numbers towards the hit count if they are x ahead or more, where x is a number defined using the Sequencing Limit parameter. This feature is available to add an additional

Parameter	Description
	validation layer to ensure that no old invoices are processed with an older Invoice Number than what is in the Invoice Number History. For example, the Sequencing Limit is set to 100 and invoice number 1500 is read from an invoice. In the history table, invoice numbers 1598, 1599, 1600 and 1601 are present. '1600' and '1601' will not be considered valid matches as, although they match the 4 numeric format, they are too far ahead in terms of the sequence. Now, only 1598 and 1599 remain to compare against, so if the value of No Of Hits is set to more than 2, the invoice number would be marked as invalid. This logic does not apply to processing documents that have an Invoice Number that is more than the sequencing limit. This features focuses only on older invoices. This option is available only when Validate From DB is selected above.
Sequencing Limit	If no sequence limit is specified and the sequencing limit is set to zero, then the system uses the default sequencing limit of 100. This option is available only when Validate From DB and Check Sequencing are selected above.
Activate Extended Check	If selected, the system activates an additional check if the extracted invoice number is numeric. This additional check compares the first x number of characters in the extracted value with the values in the invoice number history database where x is configurable using the Extended Check Percentage parameter. If the system is unable to find a number of matches that is greater or equal to the value defined in No Of Hits, the invoice number is marked invalid and the document is sent to Verifier for a user to check.
Extended Check Percentage	This parameter defaults to 25, indicating that the first 25% of a numeric invoice number is used as a basis for the comparison. The system always rounds up the number of characters to compare using this

Parameter	Description
	percentage. For example, if the parameter is set to 20%, and the invoice number is 1234567890, then the system checks the first two characters as 20% of a length of 10 is 2. If, however, the parameter is set to 20% and the invoice number is 1234567, the system also checks the first two characters as 20% of a length of 7 is 1.4, which is then rounded up to 2. If a number that is less than or equal to zero or greater than 100 is entered, the system uses 25.
Update DB At Export	If selected, the system updates the invoice number history table with a record for the current document during document export. This option is available only when Validate From DB is selected above.
Invoice Number Confidence	The minimum confidence for an extracted invoice number. If the invoice number does not meet this confidence, it is marked invalid and sent to Verifier for a user to review. The number represents a percentage. For example, a value of 20 means the invoice number confidence must be 20% or greater. This check is carried out by the system only if the invoice number history check is not in use.

Line Item Table Settings

These settings control invoice line item validation.

Parameter	Description
Extract Line Items	If selected, line item extraction is enabled. If cleared, line items are not required for any document.
Skip For Service	If selected, line items are not mandatory for invoices relating to a service purchase order. **Note** For the best results, select this option. This is

Parameter	Description
	because line items are not usually required for service purchase orders. If cleared, data may be extracted that has no purpose. This setting is available only when "Extract Line Items" is selected above.
Line Total Only For Service	If selected, only the line item total value is required for the invoices relating to a service purchase order. The "Skip For Service" check box must be cleared for this setting to take effect. This setting is available only when "Extract Line Items" is selected above .
Skip For Multi Line Limits	If selected, the system does not require line items for invoices related to a multiline limits purchase order. A multiline limits purchase order is one where all purchase order line items fall into one of the following categories: • The line item category is 1. • The line item category is 9 and the line is not relevant for goods-receipt based invoice verification. • The quantity ordered is equal to the order line total amount with a unit price of 1 and the CheckServiceUnitPrice parameter is set to true in **Processing Profile > PO Number Settings > PO Number Validation**. If cleared, the system requires the user to enter line items for the above mentioned purchase order types. The user is required to enter a description and total only. This setting is available only when Extract Line Items and Skip For Service are selected above.
Skip For NO PO	If selected, line items are not mandatory for non-purchase order invoices. **Note** For the best results, select this option. This is because line items are not usually required for non-purchase orders. If cleared, data may be extracted that has no purpose. This setting is available only when "Extract Line Items" is selected above.

Parameter	Description
Skip For Credit	If selected, line items are not mandatory for credit memos. This setting is available only when "Extract Line Items" is selected above.
Skip For MIRA	If selected, line items are not mandatory for invoices that have a 1-1 match with the total purchase order value, or the value of all goods receipts not yet invoiced for the entire purchase order. This setting is available only when "Extract Line Items" is selected above.
Skip For Unreleased PO	If selected, line items are not mandatory for invoices relating to a purchase order that has not yet been released. This setting is available only when "Extract Line Items" is selected above.
Skip For Invalid PO	If selected, the system does not require line items if a missing or invalid purchase order invalid reason is selected by the user. This setting is available only when "Extract Line Items" is selected above.
Skip For Invalid Vendor	If selected, the system does not require line items if the vendor-not-found invalid reason is selected by the user. This setting is available only when "Extract Line Items" is selected above.
Skip For Utility Vendor	If selected, the system does not require line items for a utility vendor. This saves considerable processing time if utility invoices are large documents with multiple backing sheets. This is because the system does not need to evaluate as potential line items that require extraction. This setting is available only when "Extract Line Items" is selected above.
Never Validate Line Items	If selected, line items may be extracted, but no validation is carried out. This setting is available only when "Extract Line Items" is selected above.

Line Pairing Settings

These options configure how line pairing is carried out.

Parameter	Description
Do Line Pairing	If selected, line pairing is carried out during document export for PO invoices.
Do Line Pairing For Service	If selected, line pairing is carried out for invoices that relate to a service purchase order. This option is available only when "Do Line Pairing" is selected above.
Multi Pairing To Single PO Line	If selected, the system is allowed to pair multiple lines on an invoice for the same material to a single line on the purchase order. This option is available only when "Do Line Pairing" is selected above.
Check For Multiple POs	When selected, the system checks for multiple purchase order numbers on the document. This option is available only when "Do Line Pairing" is selected above.
Get PO Lines From SAP	If selected, the purchase order line item information is read from SAP.
Convert Quantity From SAP	If selected, and a difference between the invoice unit of measure and the purchase order unit of measure cannot be resolved via mathematical or order history information on the purchase order, the system performs a lookup to the SAP material master. This looks for the purchase order material in question and obtains the conversion ratio between the deviating units of measure if available. If a ratio is found, the invoice quantity is converted to reflect the PO unit of measure. If a ratio is not found, the line is not paired. This option is available only when "GetPO Lines from SAP" is selected above.
Get PO Lines From Workday	If selected, the purchase order line item information is read from Workday.

Parameter	Description
Get PO Lines From DB	If selected, the purchase order line items are read from a database.
SQL Connection Group	The SQL connection group that specifies the purchase order database connection string as set in Global Settings > Database Connection Settings . If no connection group is specified, the system uses group 1. This option is available only when "Get PO Lines from DB" is selected above.
DB Table Name	The name of the database table that contains purchase order line item information. This option is available only when "Get PO Lines from DB" is selected above.
Use Stored Procedure	If selected, the system calls a stored procedure to retrieve the purchase order line item information from the database. This option is available only when "Get PO Lines from DB" is selected above. If you are using an Oracle database, specific configurations are required.
Stored Procedure Name	The comma-separated list of stored procedure parameter indexes that are used when calling the above stored procedure. These parameters must be defined in Global Settings > Stored Procedure Settings . This option is available only when "Get PO Lines from DB" and "Use Stored Procedure" are selected above.
Stored Procedure Parameters	The comma-separated list of stored procedure parameter indexes from defined stored procedure settings that are used when calling the above stored procedure. These parameters relate to the Global Settings > Stored Procedure Settings . This option is available only when "Get PO Lines from DB" and "Use Stored Procedure" are selected above.
DB PARTITION ID	The technical name of the purchase order line item

Parameter	Description
	database table column that holds the record partition ID. This column is mandatory if the "Use PO Partition" check box is selected in Processing Profile > PO Number Settings > PO Number Validation. This option is available only when "Get PO Lines from DB" is selected above.
DB PO	The name of the column in the purchase order line database table that holds the purchase order number. This option is available only when "Get PO Lines from DB" is selected above.
DB Line	The name of the column in the purchase order line database table that holds the purchase order line number. This option is available only when "Get PO Lines from DB" is selected above.
DB MATERIAL NO	The name of the column in the purchase order line database table that holds the purchase order line item material number. This option is available only when "Get PO Lines from DB" is selected above.
DB MATERIAL GROUP	The name of the column in the purchase order line database table that holds the purchase order line item material group. This option is available only when "Get PO Lines from DB" is selected above.
DB DESCRIPTION	The name of the column in the purchase order line database table that holds the purchase order line item description. This option is available only when "Get PO Lines from DB" is selected above.
DB PO QUANTITY	The name of the column in the purchase order line database table that holds the order quantity for the purchase order line item. This option is available only when "Get PO Lines

Parameter	Description
	from DB" is selected above.
DB UNIT PRICE	The name of the column in the purchase order line database table that holds the unit price for the purchase order line item. This option is available only when "Get PO Lines from DB" is selected above.
DB PO TOTAL	The name of the column in the purchase order line database table that holds the overall total for the purchase order line item. This option is available only when "Get PO Lines from DB" is selected above.
DB TAX CODE	The name of the column in the purchase order line database table that holds the tax code for the purchase order line item. This option is available only when "Get PO Lines from DB" is selected above.
DB TAX JUR CODE	The name of the column in the purchase order line database table that holds the tax jurisdiction code for the purchase order line item. This option is available only when "Get PO Lines from DB" is selected above.
DB UOM	The name of the column in the purchase order line database table that holds the order unit of measure for the purchase order line item. This option is available only when "Get PO Lines from DB" is selected above.
DB PRICE UNIT	The name of the column in the purchase order line database table that holds the purchase order line item price unit. This option is available only when "Get PO Lines from DB" is selected above.
DB PUOM	The name of the column in the purchase order line database table that holds the order price unit of measure for the purchase order line item. This option is available only when "Get PO Lines from DB" is selected above.

Parameter	Description
DB TOTAL QUANTITY DELIVERED	The name of the column in the purchase order line database table that holds the total quantity delivered to date for the purchase order line item. This option is available only when "Get PO Lines from DB" is selected above.
DB TOTAL VALUE DELIVERED	The name of the column in the purchase order line database table that holds the total value delivered to date for the purchase order line item. This option is available only when "Get PO Lines from DB" is selected above.
DB TOTAL QUANTITY INVOICED	The name of the column in the purchase order line database table that holds the total quantity invoiced to date for the purchase order line item. This option is available only when "Get PO Lines from DB" is selected above.
DB TOTAL VALUE INVOICED	The name of the column in the purchase order line database table that holds the total value invoices to date for the purchase order line item. This option is available only when "Get PO Lines from DB" is selected above.
DB ITEM CATEGORY	The name of the column in the purchase order line database table that holds the item category or line item type for the purchase order line item. This option is available only when "Get PO Lines from DB" is selected above.
DB PLANT	The location code for the ship-to address where the goods were delivered, or where a service was performed. This option is available only when "Get PO Lines from DB" is selected above.
DB CHARGE CODE	The name of the column in the purchase order line database table that holds the charge code for the purchase order line item. This option is available only when "Get PO Lines from DB" is selected above.

Parameter	Description
DB CHARGE CODE ID	The name of the column in the purchase order line database table that holds the charge code ID for the purchase order line item. This option is available only when "Get PO Lines from DB" is selected above.
DB COMPANY CODE	The name of the column in the purchase order line database table that holds the company code for the purchase order line item. This option is available only when "Get PO Lines from DB" is selected above.
DB ERP PO TYPE	The name of the column in the purchase order line database table that holds the JD Edwards purchase order type for the purchase order line item. This option is available only when "Get PO Lines from DB" is selected above.
DB BUSINESS UNIT	The name of the column in the purchase order line database table that holds the PeopleSoft purchasing business unit for the purchase order line item. This option is available only when "Get PO Lines from DB" is selected above.
DB ERS	The name of the column in the purchase order line database table that holds a flag that indicates if this purchase order is intended for the Evaluated Receipt Settlement (ERS) process. This option is available only when "Get PO Lines from DB" is selected above.
Convert Quantity From DB	If selected, and a difference between the invoice unit of measure and the purchase order unit of measure cannot be resolved via mathematical or order history information on the purchase order, the system performs a database look-up using the line item material to look for the conversion ratio between the deviating units of measure if available. The unit of measure look-up table is configured in Processing Settings > Unit Of Measure Configuration > Unit Of Measure Settings. If a ratio is found, the invoice quantity is converted to

Parameter	Description
	reflect the PO unit of measure. If a ratio is not found, the line is not paired . If the database lookup is not configured correctly, or the relevant entry is missing, the line item is not paired. This option is available only when "Get PO Lines from DB" is selected above.
Get PO Lines via User Exit	If selected, purchase order line item details are retrieved via a custom lookup in `UserExitReadPODetails`.
Description Threshold	This value indicates the minimum confidence needed to pair a line item based on the fuzzy match on description. A value of "100" requires an exact match between the invoice line and purchase order line descriptions. For example, if the PO line item description is "BROWN HATS," then a 100% match is achieved only if the invoice line item description is one of the following. BROWN HATS, brown hats, BROWN or HAT. • BROWN HATS • brown hats • BROWN or HAT For information purposes, "BROWN HAT" is only a 99.99% match and "HATS BROWN" is only an 85% match. A setting of zero means that the closest match to the invoice line is taken as long as there is some degree of similarity. If no valid value is specified, the default value is "0." It is recommended to set a threshold value of "30". **Note** The invoice line item description must be at least 5 characters long and contain either a single word greater than three characters in length or two words of three characters in length for the system to consider it when selecting a purchase order line

Parameter	Description
	item. This option is available only when "Do Line Pairing" is selected above.
Description Distance	This value indicates the minimum confidence distance between the best and second best possibility for the fuzzy match on the description. For example, if this value is set to 10% and the system is 51% sure that line 1 is the right result, but 45% sure that line 2 is the right result, then the line will not pair as the 6% distance between them is less than the minimum confidence distance. It is recommended to use a value of "10 "for this setting. This option is available only when "Do Line Pairing" is selected above.
Description Tolerance	The line pairing tolerance that the invoice unit price is allowed to deviate from the purchase order unit price. If left blank, this additional check is not carried out. This option is available only when "Do Line Pairing" is selected above.
Limits Description Threshold	This indicates how confident a fuzzy match on the system is in order to pair a service line item. A setting of "100" requires an exact match between the invoice line and purchase order line descriptions. A setting of "0" means that the closest match to the invoice line is taken as long as there is some degree of similarity. If no value or an invalid value is provided, the system defaults to "0. It is recommended to set this value to "50." **Note** The invoice line item description must be at least 5 characters long and contain either a single word greater than three characters in length or two words of three characters in length for the system to consider it when selecting a purchase order line item.

Parameter	Description
	This option is available only when "Do Line Pairing" is selected above.
Limits Description Distance	The minimum confidence distance between the best and second best service line item description candidates. For example, if this value is set to 10% and the system is 51% sure that line 1 is the right result, but 45% sure that line 2 is the right result, then the line will not pair as the 6% distance between them is less than the minimum confidence distance. The default value is for this setting is 0%. It is recommended to use a value of "10 "for this setting. This option is available only when "Do Line Pairing" is selected above.
Limits Description Tolerance	The percent tolerance that the assigned invoice lines and their total value may exceed the original purchase order line item order total. For example, if the original purchase order line has a total of "10,000" and the tolerance is set to 10, then the system stops pairing invoice lines to this purchase order line as soon as the total value booked to date exceeds "11,000." If left blank, this check is not carried out. This option is available only when "Do Line Pairing" is selected above.
Unit Price Tolerance	This activates an extra check for invoice lines that pair to purchase order lines primarily based upon the unit price. If set to 10, the system will not pair an invoice line to a purchase order line if the purchase order has another line item that has pricing within 10% of the purchase order line originally chosen. If set to zero, no extra check is carried out. This option is available only when "Do Line Pairing" is selected above.

Parameter	Description
UOM Check	If selected, this activates the unit of measure conversion check. It is recommended that this check box is selected. This option is available only when "Do Line Pairing" is selected above.
PUOM Tolerance	The percentage that the PO unit price may differ from the invoice unit price, in order for the same order price unit of measure. If left blank, the system looks for an exact match. This is only considered if "UOM Check" is also selected. The recommended setting is "10." This option is available only when "Do Line Pairing" and "UOM Check" are selected above.
PUOM Check	If selected, the system applies conversions to the extracted invoice quantity, based on ratios read from the purchase order if the PO line item order quantity unit of measure differs from the order price unit of measure. It is recommended that you select this setting for implementations involving SAP. This option is available only when "Do Line Pairing" is selected above.
Pair To Single GR	If selected, the system only pairs the invoice line to a single goods receipt line if the corresponding purchase order line is set for goods receipt-based invoice verification. This option is available only when "Do Line Pairing" is selected above.
Find GR With Delivery Number	If selected, the system looks for the goods receipt external delivery note in the OCR text of the document to help select the correct goods receipt. This check applies if the purchase order line item is set for goods receipt invoice verification. This option is available only when "Do Line Pairing" is selected above.
Only Use Delivery Number To Find GR	In order for this setting to work, also select the "Find GR With Delivery Number" check box. If selected, the external delivery note must be

Parameter	Description
	present in the OCR text of the document for the system to select the corresponding goods receipt. This option is available only when "Do Line Pairing" is selected above.
Require PO Details For Multiple Materials	If selected, and the purchase order has multiple line items for the same material, the system requires the purchase order details to be present on the invoice at line item level in order to select the correct line item. This option is available only when "Do Line Pairing" is selected above.
Ignore Completed PO Lines	If selected, the system does not consider any purchase order lines as relevant for pairing where the quantity invoiced to date is either equal or greater than the quantity originally ordered. This option is available only when "Do Line Pairing" is selected above.
Activate Sub Deb Check	If selected, the system sets the subsequent debit flag to "X" during line pairing. This occurs when all of the following criteria are met. • An invoice line is paired to a purchase order line. • The quantity invoiced to date is equal to the delivered to date quantity. • The delivered to quantity is greater than zero. • The invoice unit price adjustment is less than half of the original unit price on the purchase order. This option is available only when "Do Line Pairing" is selected above.
Enable Integrity Check	If selected, the system does not book an invoice line to the first open PO line/good receipt in the following circumstances. • When line pairing against purchase orders that have multiple open lines for the same material. • Lines are set for goods receipt based

Parameter	Description
	invoice verification when there are multiple open goods receipts. This does not apply when: • A reference purchase order or line has been specified at the invoice line item level. • A delivery note number or values and quantities can distinguish the correct purchase order line or goods receipt for booking. This check box should always be selected in the following implementations. • A workflow component sits between Brainware for Invoices and the downstream ERP system. • Brainware for Invoices books directly to the ERP system, but is not creating fully posted invoices. Because the system dynamically reads the live ERP purchase order history during line pairing, if two successive invoices reference the same purchase order, both can be paired to the same PO line/goods receipt. This is because the ERP purchase order history does not yet have the data from the first matched invoice. This option is available only when "Do Line Pairing" is selected above.
Exclude Freight From MIRA Process	If selected, the value of any miscellaneous charges on the invoice are excluded from the calculation to determine if there is a one-to-one relationship between the invoice and purchase order. This option is available only when "Do Line Pairing" is selected above.
Activate Log	If selected, the system writes a log file that contains trace entries for the line pairing operations. This content is written to the standard Brainware Intelligent Capture log file. This option is available only when "Do Line Pairing" is selected above.
Find SES with Invoice Number	If selected, the system uses the invoice number to

Parameter	Description
	help identify the correct service entry sheet or sheets by comparing it to the entry sheet acceptance reference number. This option is available only when "Do Line Pairing" is selected above.
Only Use Invoice Number To Find SES	If selected, the system only selects a service entry sheet or sheets if the invoice number matches the entry sheet acceptance reference number. This option is available only when "Do Line Pairing" is selected above.
Park If SES Value Less Than Invoice Value	If selected and data export involves creating documents in SAP, this setting forces the document to park rather than post if the value of an invoice line exceeds the service entry sheet to which it is paired. This option is available only when "Do Line Pairing" is selected above.

Material Number Settings

This table can be used to define format strings for the extraction of a material number at line item level.

Parameter	Description
Index	The index ID that is given to each format string used to generate material number candidates. The value must be unique for each entry.
Format	The format string that is used to generate candidates for the field. This must be entered as a simple expression. For example, "33########## " matches a material number that starts with 33 and is then followed by ten digits.
Ignore Characters	The list of characters that may appear in a material number candidate that the system ignores when generating candidates. This list is not comma-separated. For example, " [ ]".

Misc Charge Settings Group

The miscellaneous charge settings are separated into two distinct configuration sets, Misc Charge Categories and the Misc Charge Settings.

Misc Charge Categories

This table can be used to configure the identification and processing of invoice miscellaneous charges.

Parameter	Description
Index	The unique index of the miscellaneous charge category.
Type	A short description of the miscellaneous charge, such as FREIGHT or CUSTOMS.
Code	The single character miscellaneous charge category code.
Header Field	This is a comma-separated list of field names assigned to the miscellaneous charge category. A field may not be assigned to more than one category.
Alias	The comma-separated list of identifying phrases that the system uses to recognize miscellaneous charges at line item level via the item description.
Negative Alias	The comma-separated list of forbidden phrases that prevent assignment to the miscellaneous charge category if they appear in the line item description.
Line Type	If populated, the system creates a line item for the aggregate value of all charges found on the document belonging to this category. The line item is assigned the line type configured using this setting.
Always Book To Unplanned	If selected, the system handles all charges found on the document that belong to this miscellaneous charge category as unplanned freight.
Always Book To Planned	If selected and line pairing is successful for all lines on the invoice, the system attempts to book all miscellaneous charges that belong to this category

Parameter	Description
	to a relevant planned condition on the purchase order line items used during line pairing.
Valid Conditions	A comma-separated list of relevant planned condition types that correspond to the miscellaneous charge category.
Always Book To GL Account	If selected, the system creates a general ledger account entry for the aggregate value of all miscellaneous charges that belong to this category.
Book To Unplanned If No Planned	If selected, the system will process all miscellaneous charges belonging to this category as unplanned freight if no relevant planned conditions are available on the purchase order line items matched to during line pairing.
Book To GL Account If No Planned	If selected, the system creates a general ledger account entry for the aggregate value of all miscellaneous charges that belong to this category if no relevant planned conditions are available on the purchase order line items matched to during line pairing.
GL Account	The default general ledger account code that is used for miscellaneous charge general ledger entries, for that category.
Get Cost Object From PO Line	If selected, the cost object information for a general ledger account entry is taken from the purchase order line item to which the first invoice line item is paired.
Default Cost Center	The default cost center used for miscellaneous charge general ledger entries.
Default Profit Center	The default profit center that is used for miscellaneous charge general ledger entries.
Default Tax Code	The default tax code that is used for miscellaneous charge general ledger entries. For countries and ERP systems that use tax jurisdictions, the corresponding tax jurisdiction code is read from the first paired invoice line, and indicates the ship-to address for the goods.

Misc Charge Settings

These settings allow you to configure the rules and look-ups used in miscellaneous charge processing.

Parameter	Description
Unplanned Threshold	The maximum permitted value of unplanned freight. This setting is used in conjunction with "Block If Over Threshold".
Block If Over Threshold	If selected and the total of unplanned freight exceeds the set threshold, the system sets a payment block on a created invoice document.
Block Code	The block code that is applied to an invoice for reasons of excessive unplanned freight. This setting is displayed only if "Block If Over Threshold" is selected above.
Third Party Freight Code	This specifies the miscellaneous charge category code to be used for third party freight invoices.
Read SAP PO Conditions	If selected, the system reads the planned condition records on the purchase order in SAP.
Handle Misc Charges For Services	If selected, the miscellaneous charge processing logic is also applied to invoices that relate to service purchase orders.
Validate From DB	If selected, the system looks in a database to determine the correct general ledger coding for a miscellaneous charge.
SQL Connection Group	The SQL connection group that specifies the miscellaneous charge database connection string as set in Global Settings > Database Settings. If no connection group is specified, the system uses group 1. This setting is displayed only if "Validate From DB" is selected above.
DB Table Name	The name of the database table that contains the GL coding strings that are used for miscellaneous charges. This setting is displayed only if "Validate From DB" is selected above.

Payment Method Settings

These settings relate to the payment method and its relationship to bank account requirements.

Parameter	Description
Bank Methods	The comma-separated list of payment methods that indicate a bank transfer. This corresponds to the "PaymentMethods" field in BRWVendorMaster.
Account Currency Not Required	If selected, the system does not require the bank account currency to match the invoice currency in order to select a bank account number. However, bank accounts in the vendor master that do contain a currency and match the currency of the invoice, take priority in the bank account selection.
Convert Terms To Code	If selected, the system converts any extracted payment terms to its corresponding payment terms code.
Terms Relevant For NO-PO	If selected, the system performs the dynamic payment terms selection at time of document export for NO-PO invoices if Enable Dynamic Payment Terms Selection is also selected. IF Stop In Verifier If Cannot Convert Terms is also selected, a NO-PO document will stop in Verifier if payment terms have been extracted, but they cannot be converted to a code.
Terms Relevant To PO	If selected, the system performs the dynamic payment terms selection at time of document export for PO invoices if Enable Dynamic Payment Terms Selection is also selected. If Stop In Verifier If Cannot Convert Terms is also selected, a PO document will stop in Verifier if payment terms have been extracted, but they cannot be converted to a code.
Stop In Verifier If Cannot Convert Terms	If selected, the document stops in Verifier if payment terms have been extracted, but cannot be converted to a payment terms code.
Enable Dynamic Payment Terms Selection	If selected, the system performs the dynamic payment terms selection at time of document export.

PO Number Settings

The PO number settings are separated into two distinct configuration sets, PO Number Formats and PO Number Validation.

PO Number Formats

This table allows you to configure the format strings used to identify a purchase order number.

Parameter	Description
Index	The index ID that is given to each format string used to generate purchase order number candidates. The value must be unique for each entry.
Format	The format string for a possible purchase order number. Multiple formats can be entered per profile ID, with one per index. The format must be entered as a regular expression. The "#" character is a wildcard that represents any number. The "@" character represents any alpha character. For example, "45#########" indicates a purchase order number as a ten-digit number beginning with 45. "@@######" finds a purchase order number that has two alphabetic characters followed by 5 digits. It is recommended to define these strings as precisely as possible to ensure that the correct value is located.
Ignore Characters	A list of allowed characters that may appear in a purchase order number. For example, a hyphen, forward slash, or a period. This list does not need comma separation.

PO Number Validation

These settings allow you to configure purchase order validation.

Parameter	Description
Max Word Count	The maximum number of OCR words that are permitted for the purchase order number. It is recommended to set this value to 3.

Parameter	Description
	This allows for the following. For example, "45 0000 0020" and "12345 - OP" are both purchase order number candidates, where each value separated by a space is also recognized as an individual OCR word. A hyphen is considered a separate OCR word, regardless of the geometric distance to neighboring values on either side.
Restrict to First Page Only	If selected, the system only extracts a purchase order number if it appears on the first page of the document.
Set Company Code From PO	If selected, the system overwrites any existing content in the company code field with the company code that is derived from the purchase order.
Keep Case Sensitive	If selected, the system retains lower case characters in extracted purchase order numbers.
Validate From SAP	If selected, the purchase order number field is validated against SAP.
Validate From Workday	If selected, the purchase order number field is validated against Workday.
Is Workday PO	If selected, the system does not clean up a prefix of "PO" from an extracted purchase order number, as this prefix is commonly used in Workday.
Validate From DB	If selected, the extracted purchase order number is validated against a database table.
Read PO Header via User Exit	If selected, the purchase order header details are read using a custom lookup in `UserExitReadPODetails`.
Use Stored Procedure	If selected, the PO header details are retrieved from a database using a stored procedure. This option is available only when "Validate From DB" is selected above.
Stored Procedure Name	The technical name of the stored procedure used to retrieve the PO header details.

Parameter	Description
	This option is available only when "Validate From DB" and "Use Stored Procedure" are selected above.
Stored Procedure Parameters	A comma-separated list of stored procedure parameter indexes from defined stored procedure settings relevant to calling the above stored procedure. This option is available only when "Validate From DB" and "Use Stored Procedure" are selected above.
SQL Connection Group	The SQL connection group that specifies the purchase order database connection string as set in Global Settings > Database Settings. If no connection group is specified, the system uses group 1. This option is available only when "Validate From DB" is selected above.
DB Table Name	The name of the database table that contains the purchase order header information. This setting is mandatory for database validation where no stored procedure is used. This option is available only when "Validate From DB" is selected above.
Use PO Partition	If selected, the purchase order database lookup uses a purchase order partition. Purchase order partitions are set against the client in the Client Settings > Client Configuration. This option is available only when "Validate From DB" is selected above.
PO Partition Column	The PO Partition ID as specified in Global Settings > Partition Settings > PO Number Partition Settings. This option is available only when "Validate From DB" and "Use PO Partition" are selected above.
DB PO	The name of the database table field that holds the purchase order number. This option is available only when "Validate From DB" is selected above.

Parameter	Description
DB Vendor ID	The name of the database table field that holds the vendor ID for a given purchase order. This setting is mandatory for database validation. This must be set to the column for the internal vendor ID that the ERP system uses. This option is available only when "Validate From DB" is selected above.
DB Site ID	The name of the database table column that holds the order from vendor site ID. This column is mandatory if site IDs are used. This option is available only when "Validate From DB" is selected above.
DB Currency	The name of the database table column that holds the purchase order document currency. This setting is optional. This option is available only when "Validate From DB" is selected above.
DB Company Code	The name of the database table column that holds the company code of the purchase order. **Note:** This is mandatory for JD Edwards purchase orders. This option is available only when Validate From DB is selected above.
DB Payment Terms	The name of the database table column that holds the payment terms set on the purchase order.
DB Status	The name of the database table column that holds the status of the purchase order. For example, released, suspended, closed and so on. This option is available only when "Validate From DB" is selected above.
DB Doc Type	The name of the database table column that holds the purchase order document type. **Note:** This is mandatory for JD Edwards

Parameter	Description
	purchase orders. This option is available only when "Validate From DB" is selected above.
DB Business Unit	The name of the database table column that holds the business unit. **Note:** This is mandatory for Peoplesoft purchase orders. This option is available only when "Validate From DB" is selected above.
PO Key Includes Company Code	If selected, the single purchase order unique key in the PO header database lookup table consists of both the purchase order number and the company code. **Note:** This option should not be selected for JD Edwards purchase orders. This option is available only when "Validate From DB" is selected above.
JDE PO	This must be selected if you use JD Edwards purchase orders.
JDE PO Types	The comma-separated list of purchase order document types that indicate a JD Edwards purchase order. This option is available only when "Validate From DB" and "JDE PO" are selected above.
PeopleSoft PO	This must be selected if you use Peoplesoft purchase orders.
PeopleSoft Business Units	The comma-separated list of purchasing business units for Peoplesoft purchase orders. This option is available only when "Validate From DB" and "PeopleSoft PO" are selected above.
Service PO Types	The comma-separated list of purchase order

Parameter	Description
	document types that indicate a service purchase order.
Service PO Item Categories	The comma-separated list of item categories and line types at the purchase order line item level that indicate a service.
Service PO Prefixes	The comma-separated list of purchase order prefixes that exclusively identify a service purchase order.
Service PO UOMs	The comma-separated list of units of measure at the purchase order line item level that identify a service purchase order.
Check Service Unit Price	If selected, the system considers a purchase order line to be for a service if all of the following are true. • The unit price is 1 • The quantity ordered is equal to the line item total • The line item does not have an item category of '9', which indicates a SAP service entry sheet PO line
Stop ERS PO	If selected, the system sends a purchase order to Verifier for all ERS/self-billing purchase orders.
Stop ERS PO in Verifier	If selected, the system does not allow a purchase order to pass Verifier if it is marked as an ERS/self-billing purchase order.
Skip Duplicate PO Check	If a database lookup is activated and the purchase order number exists more than once in the purchase order header table, the document is sent to Verifier. The user may choose to accept the PO in Verifier, but line pairing is not carried out. If selected, the system does not reject a purchase order if a duplicate record is found in the purchase order number header table. Instead, the system uses the first purchase order found, and line pairing is carried out as usual.

Profile Settings

These settings show details for the current processing profile.

Parameter	Description
Profile Name	The name of the current processing profile. Update as necessary.
Profile Description	The description of the current processing profile. Update as necessary.

SAP Configuration

These settings control the way in which the solution integrates with SAP.

Parameter	Description
Connect To SAP	If selected, Brainware for Invoices connects to SAP using the SAP .NET Connector.
Application Server	The name or IP address of the SAP application server. Use this only when load balancing is not required. This option is available only when the **Connect To SAP** option is selected above.
System Number	The two digit SAP system number for connections. Use this only when load balancing is not required. This option is available only when the **Connect To SAP** option is selected above.
Language	The two character language code for the SAP logon language. This option is available only when the **Connect To SAP** option is selected above.
Client	The three-digit SAP client number. This option is available only when the **Connect To SAP** option is selected above.
Message Server	The SAP message server. Use this only when load balancing is not required. This option is available only when the **Connect To SAP** option is selected above.

Parameter	Description
Group Name	The SAP group name. Use this only when load balancing is not required. This option is available only when the **Connect To SAP** option is selected above.
System Name	The three-character SAP system name. Use this only when load balancing is not required. This option is available only when the **Connect To SAP** option is selected above.
SAP Router	The SAP router web path. This option is available only when the **Connect To SAP** option is selected above.
User	The SAP logon user name. This can be set within the project file for additional security. This option is available only when the **Connect To SAP** option is selected above.
Password	The SAP logon user password. You can set this via the `SetSAPPassword` user exit. Alternatively, leave this field blank and supply an encrypted password in the "Encrypted SAP Password" setting below. For more information, refer to the Brainware for Invoices Password Encryption section. This option is available only when the **Connect To SAP** option is selected above.
Encrypted SAP Password	The encrypted password for the SAP login. As you type in this password, the individual characters are displayed as expected. However, when you click **Save**, the password is encrypted and the encrypted password is displayed. For more information, refer to the Brainware for Invoices Password Encryption section. This option is available only when the **Connect To SAP** option is selected above.
PO Lookup	The name of the `SAP BAPI/RFC`-enabled function module used to lookup the purchase order. The interface of the function should match `BAPI_PO_`

Parameter	Description
	GETDETAIL. This option is available only when the **Connect To SAP** option is selected above.
Invoice Post	The name of the SAP BAPI/RFC-enabled function module used to post an invoice. The interface of the function should match BAPI_INCOMINGINVOICE_CREATE. This option is available only when the **Connect To SAP** option is selected above.
FB60 Invoice Post	The name of the SAP BAPI/RFC-enabled function module used to post an FI invoice via FP60. The interface of the function should match BAPI_ACC_INVOICE_RECEIPT_POST. This option is available only when the **Connect To SAP** option is selected above.
FB60 Invoice Park	The name of the SAP BAPI/RFC-enabled function module used to park an FI invoice via FB60/FV60. The interface of the function should match BAPI_INCOMINGINVOICE_PARK. This option is available only when the **Connect To SAP** option is selected above.
Invoice Park	The name of the SAP BAPI/RCF-enabled function module used to park an invoice. The interface of the function should match BAPI_INCOMINGINVOICE_PARK. This option is available only when the **Connect To SAP** option is selected above.
Company Lookup	The name of the SAP BAPI/RFC-enabled function module used to lookup the purchase order. The interface of the function should match BAPI_COMPANYCODE_GETDETAIL. This option is available only when the **Connect To SAP** option is selected above.
Entry Sheet Lookup	The name of the SAP BAPI/RFC-enabled function module used to lookup the service entry sheet for

Parameter	Description
	SR-IV purchase orders. The interface of the function should match `BAPI_ENTRYSHEET_GETDETAIL`. This option is available only when the **Connect To SAP** option is selected above.
RFC Read Table Function	The name of the `SAP RFC`-enabled function that is used to perform SAP lookups. This should have the same interface as `RFC_READ_TABLE`. If no function is specified, `RFC_READ_TABLE` is used by default. This option is available only when the **Connect To SAP** option is selected above.
Connect to SAP using Web Service	If selected, the system connects to SAP using web services. You must not select the **Connect To SAP** option in order to enable this.
Web Service User Name	This is the SAP user name to be used for SAP web services. This option is available only when the **Connect To SAP using Web Service** option is selected above.
Web Service Password	This is the password to be used for SAP web services. This option is available only when the **Connect To SAP using Web Service** option is selected above.
Web Service EncryptedPassword	This is the encrypted password to be used for SAP web services. This option is available only when the **Connect To SAP using Web Service** option is selected above.
Web Service PO LookupURL	This is the URL for the SAP web services purchase order look-up. This option is available only when the **Connect To SAP using Web Service** option is selected above.
Web Service Company Lookup URL	This is the URL for the SAP web services purchase order look-up. This option is available only when the **Connect To SAP using Web Service** option is selected above.

Parameter	Description
Web Service Entry Sheet URL	This is the URL for the SAP web services service entry sheet look-up. This option is available only when the **Connect To SAP using Web Service** option is selected above.
Web Service RFC Read Table Function URL	This is the URL for the SAP web services RFC read table look-up. It is used for general data look-ups. This option is available only when the **Connect To SAP using Web Service** option is selected above.
Web Service Invoice Post Park URL	This is the URL for the package-level web service for SAP package MRM that includes methods to post and park invoice through transaction MIRO, as well as to commit and rollback work. This option is available only when the **Connect To SAP using Web Service** option is selected above.
Web Service FB60 Invoice Park URL	This is the URL for the custom FB60 / FV60 document parking function. This option is available only when the **Connect To SAP using Web Service** option is selected above.
Web Service SAP Archiving Function URL	This is the URL for the SAP archiving function **Z_BW_LATE_ARCHIVE**. This option is available only when the **Connect To SAP using Web Service** option is selected above.
Web Service Archive Connection Insert URL	This is the URL for the **ARCHIVE_CONNECTION_INSERT** function that is used to link an stored image to a posted or parked invoice in SAP using SAP ArchiveLink. This option is available only when the **Connect To SAP using Web Service** option is selected above.
Web Service SO Folder Root ID Get URL	This is the URL for the **SO_FOLDER_ROOT_ID_GET** function that is used to establish the folder where a SAP Office Document containing the URL to a document image should be created in SAP. This option is available only when the **Connect To SAP using Web Service** option is selected above.
Web Service SO Object Insert URL	

Parameter	Description
	This is the URL for the **SO_OBJECT_ INSERT**function that is used to create a SAP Office Document containing the URL to a document image. This option is available only when the **Connect To SAP using Web Service** option is selected above.
Web Service Binary Relation Create URL	This is the URL for the **BINARY_RELATION_ CREATE** function that is used to link the SAP Office Document created by **SO_OBJECT_ INSERT** to a posted or parked invoice in SAP. This option is available only when the **Connect To SAP using Web Service** option is selected above.
Create SAP Documents	If selected, an SAP document is created during export. The system default is to try and post the invoice in SAP. This option is available only when the **Connect To SAP** option is selected above.
Log SAP Export	If selected, tracking statements are added to the log file. These entries show data that passes to and from calls to the SAP document posting and parking BAPIs. This option is available only when the **Connect To SAP** option is selected above.
Always Park Invoice	If selected, the system will always park the invoice in SAP and never attempt a post. This option is available only when the **Connect To SAP** option is selected above.
Park Invoice	If selected, the system is permitted to create parked documents in SAP. This option is available only when the **Connect To SAP** option is selected above.
Park With Lines	If selected, parked invoices are created with line item information found during the line pairing operation. This option is available only when the **Connect To SAP** option is selected above.

Parameter	Description
Always Park FI	If selected, non-purchase order invoices (FI) are always parked. This option is available only when the **Connect To SAP** option is selected above.
Post FI to FB60	If selected, FI documents are posted to FB60 via BAPI_ACC_INVOICE_RECEIPT_POST. If cleared, the system creates an FI document through MIRO. This setting is available only for demonstration purposes.
Park FI To FB60	If selected, NO-PO documents are parked to FB60 using the custom `Z_BW_FI_INVOICE_PARK` SAP function. This option is available only when the **Connect To SAP** option is selected above.
Park MM If Downpayment	If selected, the system parks an MM invoice if the vendor has a down payment against it. This option is available only when the **Connect To SAP** option is selected above.
MM Invoice Doc Type	The SAP document type for MM invoices, such as "RE" or "RN." This option is available only when the **Connect To SAP** option is selected above.
FI Invoice Doc Type	The SAP document type for FI invoices, such as "KR." This option is available only when the **Connect To SAP** option is selected above.
MM Credit Doc Type	The SAP document type for MM credit memos, such as "RE" or "RN." This option is available only when the **Connect To SAP** option is selected above.
FI Credit Doc Type	The SAP document type for FI credit memos, such as "KG." This option is available only when the **Connect To**

Parameter	Description
	SAP option is selected above.
Activate SAP Failure User Exit	If selected, the `SAPPostingFailure` user exit is activated for a developer to create their own alternative export if the SAP posting/parking fails without sending the document to a failed export status. This option is available only when the **Connect To SAP** option is selected above.
Break Out MM And FI For Reporting	If the Visibility reporting database is used, the standard values written out to the CURRENT_ STATUS field in BRWDocument are as follows. 900 = SAP document parked 1000 = SAP document posted. If selected, the column is updated as follows. 910 = MM-LIV document parked 920 = FI document parked 1010 = MM-LIV document posted 1020 = FI document posted. This allows a more detailed breakdown of document statuses for the Visibility reports.
Read Entry Sheet	If selected, the system reads the service entry sheet details from SAP. **Important** This option must be selected if the implementation involves SR-IV purchase orders, or there are multiple account assignments on non SR-IV purchase orders. This option is available only when the **Connect To SAP** option is selected above.
Valid Fiscal Markup Conditions	A comma-separated list of valid SAP condition types that indicate a fiscal markup. If the system books an invoice line to a purchase order line that has a condition in this list behind it, the system creates two invoice lines. For these lines, the amount is pro-rated based on the condition value, in relation to the total order value of the purchase order line. This option is available only when the **Connect To SAP** option is selected above.

Parameter	Description
Archive To URL	If selected, the URL path to the image in the storage directory or in the Visibility database is added to the posted or parked document in SAP as an attachment.
Create Link To External Archive	If selected, the link to the image in an external third-party archive connected to SAP using SAP ArchiveLink is added as an attachment to a posted or parked invoice. This option is available only when the **Connect To SAP** option is selected above.
Destination Archive	The SAP archive or content repository ID as displayed in SAP transaction OAC0. This represents the archive where the image resides in an early archiving scenario, or the image that needs archived in a late archiving scenario. If the archive ID varies dramatically depending on the document, rather than processing that document, the destination archive ID is mapped from the image filename via the Global Settings > Import Settings. If a destination archive retrieved from the filename can be obtained through the mapping in the Global Settings > Import Settings, it overrides this setting. This option is available only when the **Connect To SAP** option is selected above.
Archive Via SAP	If selected, the system archives the document image to an external document management system connected to SAP using SAP ArchiveLink. This option is available only when the **Connect To SAP** option is selected above.
Archive As PDF	If selected, the system archives a document as a PDF, regardless of the original document file type. This option is available only when the **Connect To SAP** and **Archive Via SAP** options are selected above.
SAP Archiving Function	The name of the SAP RFC enabled function module used to archive a document image to an external

Parameter	Description
	document management system connected to SAP using SAP ArchiveLink. Hyland provides custom function **Z_BW_LATE_ARCHIVE** for this purpose. This option is available only when the **Connect To SAP** and **Archive Via SAP** options are selected above
Activate SAP Archiving User Exit	If selected, the system runs the code in the `SAPArchiving` user exit in order to archive the image via SAP, instead of the standard system function. A destination archive is needed for this to occur, either derived from the filename mapping in the Global Settings > Import Settings, or the value in the "Destination Archive" setting above. The "Archive As PDF" and "SAP Archiving Function" settings above do not apply if the user exit is being used. This option is available only when the **Connect To SAP** and **Archive Via SAP** options are selected above.
MM Invoice Object	The SAP workflow document type that is used for MM invoices when creating an invoice attachment, such as "MMILOGINV." This option is available only when the **Connect To SAP** option is selected above.
MM Credit Object	The SAP workflow document type used for MM invoices when creating an invoice attachment, such as "MMILOGCRD." This option is available only when the **Connect To SAP** option is selected above.
FI Invoice Object	The SAP workflow document type used for FI invoices when creating an invoice attachment, such as "FIINVOICE." This option is available only when the **Connect To SAP** option is selected above.
FI Credit Object	The SAP workflow document type used for FI invoices when creating an invoice attachment, such as "FICREDIT."

Parameter	Description
	This option is available only when the **Connect To SAP** option is selected above.
Always Send Withholding Tax	If selected, withholding tax information is always be sent to SAP via the BAPI call at the time or export, regardless if a withholding tax amount has been captured from the document. If more than one active withholding tax code exists on the vendor master, the document is parked. This option is available only when the **Connect To SAP** option is selected above.
Convert WBS Elements	If selected, the system converts the external WBS element retrieved from the purchase order lookup to the internal WBS element required for invoice posting. The call to SAP uses `RFC_READ_TABLE`, although this can be changed using the "RFC Read Table Function" setting above. This parameter is called once per WBS element that needs converted. This option is available only when the **Connect To SAP** option is selected above.
Downpayment SGL Codes	This is a list of the single character SAP special general ledger indicators that are used to denote a down payment. The list does not need to be separated by any special characters. This field displays a common value 'A' by default. This option is available only when the **Connect To SAP** option is selected above.

Tax Settings

The tax settings are divided into two separate categories, Tax Configuration and Tax Jurisdiction Codes.

Tax Configuration

These settings allow you to activate and configure the VAT Compliance Checking and Automatic Tax Code Determination features.

Parameter	Description
Primary Rates	A comma-separated list of expected tax rates. Populating this list is optional, but it does assist Brainware for Invoices in finding the correct tax value on the document. Values matching the primary rate are prioritized over values entered as secondary rates.
Secondary Rates	A comma-separated list of expected tax rates. Populating this list is optional, but it does assist Brainware for Invoices in finding the correct tax amount on the document.
Activate VAT Compliance Check	If selected, the system activates the VAT compliance check.
VAT Check Company Code Exceptions	A comma-separated list of company codes that are excepted from the VAT registration number compliance rule. If the "Activate VAT Compliance Check" check box is not selected, then the check will only be carried out for company codes in this list.
Vendor VAT Check Only	If selected, the system only requires the VAT registration number of the vendor if VAT is being charged on the invoice.
Vendor VAT Check Company Code Exceptions	A comma-separated list of company codes excepted from the "Vendor VAT Check Only" option. If the "Vendor VAT Check Only" check box is not selected, then the check will only be carried out for company codes in this list.
Check VAT Cross Border	If selected, the system requires a vendor VAT registration number and bill-to VAT registration number for EU cross-border transactions where no VAT is charged.
Cross Border Company Code Exceptions	A comma-separated list of company codes excepted from the EU cross border VAT registration number check. If the "Check VAT Cross Border" check box is not selected, then the check will only be carried out for company codes in this list.

Parameter	Description
Activate Tax Code Determination	If selected, the system performs automatic tax code determination at time of line pairing.
Validate Tax Amount	This applies to SAP implementations only at time of data export. If selected, the system validates the calculated tax amount using the invoice line item tax codes determined against the total tax amount from the invoice. If this amount is outside the "Tax Tolerance" set in the Global Settings > Tolerance Settings, the document will be parked in SAP. This option is available only when "Activate Tax Code Determination" is selected above.
Always Use PO Tax Code	If selected, the system assigns the purchase order tax code to the invoice line item. This option is available only when "Activate Tax Code Determination" is selected above.
Always Use Calculate Tax Flag	If selected, the system requires the ERP system to calculate the tax amount rather than using the tax amount extracted from the invoice. This option is available only when "Activate Tax Code Determination" is selected above.
Tax Flag Exception Company Codes	A comma-separated list of company codes that are excepted from the calculate tax flag rule. If the "Always Use Calculate Tax Flag" check box is not selected, the calculate tax flag is only used for the company codes in this list. This option is available only when "Activate Tax Code Determination" is selected above.
Validate From DB	If selected, the system performs a look-up to the tax table to determine the invoice line item tax code for countries that do not use tax jurisdictions. This option is available only when "Activate Tax Code Determination" is selected above.
SQL Connection Group	The SQL connection group specifying the tax code database connection string as set in the Global Settings > Database Connection Settings. If no connection group is specified, the system uses group

Parameter	Description
	1. This option is available only when "Activate Tax Code Determination" and "Validate From DB" are selected above.
DB Table Name	The name of the tax code look-up database table for countries that do not use tax jurisdictions. This option is available only when "Activate Tax Code Determination" and "Validate From DB" are selected above.
Use Tax Partition	If selected, the tax partition ID is used when searching for the tax code in the database table. This value is specified in the "DB Table Name" option above. Tax partitions allow tax code data relating to all clients to co-exist in the same database table. This alleviates administrative burden of maintaining multiple tax code tables if multiple clients are used. The tax partition ID is set in the "Tax Partition" option in the Client Settings > Client Configuration for the relevant client. Therefore, when the system reads the tax table to retrieve the tax codes for the invoice company code country, the client tax partition ID is also used to ensure that the correct set of records for the client is selected. Export fails if no "Tax Partition" value is specified. Also, the system fails to retrieve any tax codes, and invoice line tax coding is not successful. This option is available only when "Activate Tax Code Determination" and "Validate From DB" are selected above.
Check For ICMS Tax	ICMS is a form of sales tax used on Brazilian Nota fiscal documents. If selected, the system attempts to identify this tax amount on incoming documents and applies validations to this field. If cleared, it is assumed that the client is not processing Brazilian Nota fiscal documents. This option is available only when "Activate Tax

Parameter	Description
	Code Determination" is selected above.
Derive Ship To From Company Code	If selected, the system will use the company code location as the ship-to location. This option can be used instead of a plant look-up for countries without tax jurisdictions. This option must not be used if the same processing profile is also used to process invoices relating to countries with tax jurisdictions. This option is available only when "Activate Tax Code Determination" is selected above.
Read Plant From SAP	If selected, the system performs a look-up to SAP to retrieve information about the plant. The plant country and plant state are This option is available only when "Activate Tax Code Determination" is selected above.
Read Plant From DB	If selected, the system performs a look-up to a database to retrieve information about the plant. This option is available only when "Activate Tax Code Determination" is selected above.
Plant SQL Connection Group	The SQL connection group that specifies the plant database connection string, as set in the Global Settings > Database Connection Settings. If no connection group is specified, the system uses group 1. This option is available only when "Activate Tax Code Determination" and "Read Plant From DB" are selected above.
DB Plant Table	The name of the database table that contains plant information. This option is available only when "Activate Tax Code Determination" and "Read Plant From DB" are selected above.
DB Plant	The name of the column in the plant database table that contains the plant ID. This option is available only when "Activate Tax Code Determination" and "Read Plant From DB" are selected above.

Parameter	Description
DB Plant Country	The column name in the plant database table that contains the plant country. This option is available only when "Activate Tax Code Determination" and "Read Plant From DB" are selected above.
DB Plant State	The column name in the plant database table that contains the plant state location. This option is available only when "Activate Tax Code Determination" and "Read Plant From DB" are selected above.
DB Plant Tax Jur Code	The column name in the plant database table that contains the tax jurisdiction code associated with the plant location. This option is available only when "Activate Tax Code Determination" and "Read Plant From DB" are selected above.
Extract Tax Into VAT Table	If selected, the VAT table is used for the extraction and validation of tax. The AmountTax, PST, HST, CGST, SGST, ICMS, and AmountSubtotal fields are deactivated.
Check VAT Rates	If selected, the system checks that the content of the 'VAT Rate' column in the VAT table exists for the country where VAT is applied. The system sets the VAT rate column to invalid if the rate cannot be found. The check is only carried out if all of the following hold true. • The VAT compliance check is activated. • The VAT table is used to capture the document tax information. • A vendor VAT registration number is read from the document. • The vendor is marked as belonging to an EU member country. The country where VAT is applied is derived from the first two characters of the vendor VAT registration number, which represent the VAT country. If this is not available, the vendor's country

Parameter	Description
	of origin is used. The valid VAT rates are read from the VAT rates column in the country table configured in Country Settings and are presented as a comma separated list. The comma-separated list need not include a VAT rate of zero as this is always accepted.
Extract HST Separately	If selected, "Harmonized Sales Tax" will be captured in the HST tax field as opposed to the AmountTax field.
CN Password Specials	A list of special characters that are permitted in the password block for domestic VAT invoices used in mainland China. The password should only consist of the digits 0-9, and the six special characters listed within this field. By default, the "+<>-*/" characters are specified. This field is configurable so additional special characters can be added if the government standards change in the future. The system rejects the password field if it contains characters that are not included here.
CN Password Valid Lengths	A comma-separated list of the valid lengths for a password block that appears on a domestic VAT invoice used in mainland China. By default, the values are "84,108." This means that a captured password must be either 84 or 108 characters in length. This reflects the current government standard, but the field is configurable in case this changes in the future.
Enable India Compliance Check	If selected, the system activates the seven India-specific tax compliance fields on the dynamic Verifier form. These fields are IndiaPANNumber, IndiaHSN, IndiaStateCode, IndiaPlaceOfSupply, IndiaTaxInvoice, IndiaOFR and IndiaAmountInWords.When processing an invoice where tax is charged, and the company code and vendor countries are set to IN for India, the system marks any of the seven fields as invalid if they are not extracted, or have not been populated by the Verifier user.

Tax Jurisdiction Codes

This table allows you to configure tax codes assigned to paired lines during line pairing for countries that use tax jurisdictions.

Parameter	Description
Index	The numeric tax code index.
Tax Code	The tax code.
Country	The tax code country.
If Tax	The tax code that is assigned to the invoice line item if tax is charged on the invoice and the purchase order line item tax code matches "Tax Code".
If No Tax	The tax code that is assigned to the invoice line item if no tax is charged on the invoice and the purchase order line item tax code matches "Tax Code".
Vendor State	A comma-separated list of relevant order-from vendor states where a state-specific tax code must be selected. If left blank, the state specific exception extends to all vendor states as long as "Ship To State" is populated.
Ship To State	A comma-separated list of relevant ship-to states where a state-specific tax code must be selected. If left blank, the state specific exception extends to all ship-to states as long as "Vendor State" is populated.
If Tax State	The tax code that is assigned to the invoice line item if tax is charged on the invoice, the purchase order line item tax code matches "Tax Code" and the combination of order-from vendor and ship-to states constitutes a state-specific exception.
If No Tax State	The tax code that is assigned to the invoice line item if no tax is charged on the invoice, the purchase order line item tax code matches "Tax Code" and the combination of order-from vendor and ship-to states constitutes a state-specific exception.

Parameter	Description
Pay Tax As Billed	Indicator for a pay-as-billed tax code. If any invoice line item is assigned this type of tax code, the system will book the invoice using the tax amount specified on the vendor invoice.
Short Pay If Tax	Indicator for a short-pay tax code. If all invoice lines are assigned a short-pay tax code, the system will deduct the tax from the invoice total.
Account Assignment Categories	A comma-separated list of purchase order line account assignment categories that require "Tax Code" to be set as a default if the purchase order line item does not have a tax code.

Unit Of Measure Settings Group

This group separates the unit of measure options into two distinct groups, Unit of Measure Settings and Unit of Measure Types.

Unit Of Measure Settings

These settings are used to configure the database lookup for unit of measure conversion that may occur during line pairing.

Parameter	Description
SQL Connection Group	The SQL connection group that specifies the database connection string for the unit of measure conversion table database. If no connection group is specified, the system uses group 1.
DB Table Name	The name of the unit of measure conversion database table. This setting is mandatory for unit of measure conversion database lookups.
DB Material No	The technical name of the column in the unit of measure conversion table that represents the item material number.
DB Base UOM	The technical name of the column in the unit of measure conversion table that represents the material base unit of measure.
DB Numerator	The technical name of the column in the unit of measure conversion table that represents the numerator component of the unit of measure conversion ratio.
DB	The technical name of the column in the unit of measure conversion table that

Parameter	Description
Denominator	represents the numerator component of the unit of measure conversion ratio.
DB External UOM	The technical name of the column in the unit of measure conversion table that represents the external unit of measure read from the invoice.

Unit Of Measure Types

This table contains the mappings between the naming conventions that the ERP system and the invoice vendor use for units of measure.

Parameter	Description
Index	The unit of measure index.
ISO Code	The unit of measure ISO-Code or the internal ERP system format for the UOM.
Alias	The comma-separated list of aliases that may be used on an invoice to represent this unit of measure.

Vendor Settings

These settings control the validation of the vendor ID field.

Parameter	Description
Validate From ASSA	If selected, the vendor ID is validated against the Associative Search Engine vendor pool.
Check Condition Vendors	If selected, an alternate vendor ID is allowed for a purchase order-based invoice if it matches a vendor held within a condition record. For example, planned freight behind a purchase order line. This setting is relevant for installations involving SAP.
Alpha Num Site Separator	The special character used to separate a vendor ID and site ID in the unique ID column in the vendor master data source.
Ignore PO Vendor	If selected, the system always uses the vendor determined by the Associative Search Engine,

Parameter	Description
	rather than defaulting to the remit-to vendor set on the purchase order. This means that it is no longer a requirement for the PO and invoice vendor to match and you do not need to select an invalid reason.
Use ASSA If PO Vendor Invalid	If selected, the system uses the vendor determined by the Associative Search Engine if none of the vendors on the purchase order can be validated against the document. If the system extracted vendor can be validated, it will be displayed in the vendor ID field, and the invalid reason will automatically be set to "PO VENDOR <> INVOICE VENDOR." If the system determined vendor cannot be validated, it will still be displayed in the field, but will be set to invalid. The invalid reason will not be changed. This parameter only takes effect if "Ignore PO Vendor" is cleared.
Always Use PO Vendor SiteID	If selected, the system sets the site ID during automatic extraction based on the site ID on the purchase order header.
Default Country	This setting is used to specify a default country for the vendor if one cannot be determined from the vendor master data. This should be a two-character ISO-code, such as United States = US, United Kingdom = GB, or Germany = DE.
Use Bill To Based Vendor Extraction	If selected and a bill-to name field is found on the invoice, the system dynamically modifies the search area for the invoice vendor to include the following areas. • The area of the first page of the document above where the bill-to name is detected. • The bottom ten percent of the first page of the document.
Refine Vendor Extraction	If selected, the system manipulates the weights of the vendor candidates. It adds additional confidence if the vendor name, the vendor street address, the vendor zip code, the vendor VAT registration

Parameter	Description
	number and the vendor SIRET ID can be found on the document. The weighting adjustments are as follows. • For Zip only = +10% • For Zip + Vendor Name = +20% • For Zip + VAT Reg = +20% • For Zip + Street Name = +20% • For Zip + Street Name + Vendor Name = +30% • For Zip + Street Name + VAT Reg = +30% • For Zip + Street Name + VAT Reg = +30% • For Zip + Street Name + VAT Reg + Vendor Name = +40% An additional 20% is added to any of the above if the value in the Vendor Identifer column can be found on the document or, for French invoices, if the SIRET ID is found.
Check for Alternate Payees	If selected, this activates the alternate payee functionality.
Check Vendor Name for NO-PO	If selected, the system will not validate the vendor ID field automatically for a NO-PO document unless either the vendor name or the vendor VAT registration number can be found.
Set to invalid if NO-PO change	If selected, the vendor ID field is set to invalid automatically if a Verifier user sets the invoice type field to NO-PO and presses Enter.
Use PO Order Vendor	If selected, the system uses the order-from vendor read from the purchase order as opposed to the PI partner function vendor. This is specific to SAP only.

Global Settings

Global settings are configurable using the Solution Configuration Manager and apply to all clients and profiles.

ASE Settings

This table allows you to configure the Associative Search Engine for use with the vendor, employee, and company code fields.

The following column settings are available.

Parameter	Description
Index ID	The unique index ID for each Associative Search Engine field.
Class Name	The name of the class. The only valid value for this option is "Invoices." This is because configuring Associative Search Engine fields for other classes is not supported through the Solution Configuration Manager.
Field Name	The technical name of the Associative Search Engine field. For example, `CompanyCode`.
Alpha Numeric	If selected, the key field for the pool record is alpha-numeric. If cleared, the field is assumed to be numeric. This must be set correctly in order to generate the pool correctly.
Pool Relative	If selected, the system looks for the pool folder in the same directory as the project file.
Pool Path	The UNC path to the pool directory if it is not in the same directory as the project file.
Pool Directory	The name of the pool directory.
Pool Name	The name of the pool.
File Relative	If selected, the system looks for the pool import CSV file in the same directory as the project file.
Import Path	The UNC path to the pool import CSV file if it is not in the same directory as the project file.
Import File Name	The name of the CSV file that is used to build the pool.
Import ODBC DSN	The user DSN that represents a connection to the

Parameter	Description
	database that holds the data that is used to create the pool.
Import ODBC Select	The select statement that returns all rows from the database table.
Import ODBC User	The user name to access the database.
Import ODBC Password	The user password to access the database. This can be left blank if you want to use an encrypted password.
Import ODBC Encrypted Password	The encrypted user password to access the database.
Auto Import Option	The source from which the pool is created via the Brainware Intelligent Capture Runtime Server (RTS). This can be set to ODBC or FILE. If set to NONE, the pool is not updated automatically by RTS.
First Page Only	If selected, search is limited to the first page of a document. This means that if the field is not on the first page, it is not found during extraction.
Zone A Left	Searches a percentage of page A starting from the left margin.
Zone A Width	Searches a specified width of page A.
Zone A Top	Searches a percentage of page A starting from the top margin.
Zone A Height	Searches a specified height of page A.
Zone B Left	Searches a percentage of page B starting from the left margin.
Zone B Width	Searches a specified width of page B.
Zone B Top	Searches a percentage of page B starting from the top margin.

Parameter	Description
Zone B Height	Searches a specified height of page B.
Use RMS	If selected, the Remote Matching Service is activated.
RMS URL	The URL where the Remote Matching Service is hosted.
RMS Connection String	The Connection String for accessing the Remote Matching Service.

Country Settings

These settings allow you to configure the countries used by the solution.

The following settings are available.

Parameter	Description
Country	This is the two character ISO-code that represents the country.
EU Tax Member	This flag indicates whether the country participates in the European Union VAT directive.
Currency	This is the three character ISO-code for the primary currency of the country.
Country Name	This is the name of the country.
VAT Rates	This is a comma separated list of tax rates used nationwide within the country.
Non EU Tax Group	This is the name of the non-EU tax group that the country belongs to.The value entered here is ignored if the EU member check box is selected.
Relevant For Dynamic Terms	This flag indicates whether the country is relevant for dynamic payment terms selection.

Currency Settings

This table allows you to configure the recognition and properties of the currencies used within the solution. The system can only extract a currency that is registered in this table.

The following column settings are available.

Parameter	Description
Index	The currency index.
ISO Code	The currency ISO code for the currency settings group.
Alias	A comma-separated list of aliases for the currency. For example, Pounds Sterling for GBP, U.S. Dollars or U.S. funds for USD, and Swiss Francs for CHF. If any items on this list are found on the document then the extracted invoice currency is set to the "ISO Code" value above for the currency listed.
Amount Prefix	The comma-separated list of values that may precede or follow an amount on the invoice that represents the currency. For example, US$ would be the prefix for US$1000.00.
Symbol	The symbol associated with the corresponding currency. **Important** This value must be a special character and not a single letter.
Country	The country associated with the currency symbol above. It can be left blank if the currency is used by multiple countries, such as the Euro. If the symbol for the currency settings group is found on the document, and that symbol is unique across all currency settings groups, and the vendor country matches the country held in this option, then the value held in "ISO Code" above is extracted as the invoice currency.
Tolerance Group	The tolerance group for the currency. The values for this option are defined in the Global Settings > Tolerance Settings.

Custom Extraction Profiles

Extraction profiles are used to define the extraction behavior for any Custom Fields (1-5) in your project. They control how field candidates are extracted, analyzed and evaluated. The following settings are available.

- Analysis Profiles
- Evaluation Profiles
- Extraction Profiles

Analysis Profiles

This table allows you to define one or more format strings for the value you want to extract.

The following column settings are available.

Parameter	Description
Analysis Profile ID	The unique ID given to the analysis profile.
Index ID	The index ID given to each format string that is used to generate candidates for the field. The "Index ID" is unique per "Analysis Profile ID."
Compare Type	The compare type used to generate candidates based on the format string. The following options are available for this setting. • `SIMPLE`. Indicates that the format is a simple expression. • `REGULAR`. Indicates that the format is a regular expression. • `TRIGRAM`. Indicates that the trigram method is used to find candidate based upon the format string. • `LEVEN`. Indicates that the Levenshtein method is used to find candidates based upon the format string. • `STRINGCOMPARE`. Indicates that the String Compare method is used to find candidate based upon the format string.
Format	The format string used to generate candidates for the field.
Ignore Characters	A list of characters that are allowed to appear in a candidate at any position. The system should be tolerant of these characters when generating candidates. For example, hyphens or periods. This list does not need to be comma-separated.

Evaluation Profiles

This table allows you to configure candidate field labels used to drive the extraction of custom fields.

The following column settings are available.

Parameter	Description
Evaluation Profile ID	The unique ID given to the evaluation profile.
Index ID	The index ID given to each field label that is used to evaluate candidates for the field.

Parameter	Description
	The "Index ID" is unique per "Evaluation Profile ID."
Context	A word or phrase that is used to help identify the correct candidate for the field result.
Ignore Characters	A list of characters that are allowed to appear in a candidate at any position. The system should be tolerant of these characters when generating candidates. For example, hyphens or periods. This list does not need to be comma-separated.
Strong	If selected, the specified keyword or phrase is considered a strong indicator of the correct candidate.

Extraction Profiles

This table allows you to configure the extraction profiles used for custom fields 1 to 5.

The following column settings are available.

Parameter	Description
Extraction Profile ID	The unique ID for this extraction profile.
Description	The profile description.
Analysis Profile ID	The analysis profile ID that is used to generate candidates for the field. Entries here correspond to the "Analysis Profile ID" setting within Global Settings > Custom Extraction Profiles > Analysis Profiles.
Evaluation Profile ID	The evaluation profile ID that is used to evaluate candidates for the field. Entries here correspond to the "Evaluation Profile ID" setting in the Global Settings > Custom Extraction Profiles > Evaluation Profiles.
Evaluation Distance	This represents the fuzzy factor that the system uses when searching for keywords or phrases in the evaluation profile. This value ranges between zero and one, where zero requires an exact match, and one accepts values that do not match at all.
Base Weighting	The base weight that is given to all candidates generated for the field, and is expressed as a percentage. Use this setting when only a few candidates are generated for a field (for example, where you are looking for a fixed phrase), and these generated candidates are considered valid extraction results.

Parameter	Description
Overwrite With Search String	When selected, the field result is overwritten with the string compare or Levenshtein search string that is used to generate the candidate.
Remove No Number candidates	When selected, any candidates that do not contain at least one numeric character are removed from the list of available candidates.
Distance	The fuzzy factor that the system uses when generating candidates. This value ranges between zero and one, where zero requires an exact match, and one accepts values that do not match at all.
Max Word Count	This specifies the maximum number of OCR words that are permitted to form a candidate for the field.
Max Word Gap	This specifies the maximum gap in millimeters that is allowed to exist between OCR words, so that they are included as part of a generated candidate.
Max Candidate Len	This value expresses the maximum length of a candidate in millimeters. Any candidates that exceed this length are ignored.
Case Sensitive	If selected, the system generates candidates in a case sensitive manner based on the format strings entered in the field analysis profile.
Keep Spaces	If selected, any spaces between OCR words are preserved in the generated candidate text.
Use Regions	If selected, candidate generation is restricted to specific regions on a document.
Use First Page	If selected, the system generates candidates on the first page of a document only.
First Top	Expressed as a percentage, this setting defines the top-most area on the first page of a document where candidates may be generated. A value of zero would start at the top of the page. A value of 20 would start 20% of the way down the length of the page. A value that exceeds 100 is automatically set to 100. A value of less than zero is automatically set to zero. In order for this setting to work, "Use First Page" must also be selected.
First Bottom	Expressed as a percentage, this setting defines the bottom-most area on the first page of a document where candidates may be generated. A value of zero would start at the bottom of the page. A value of 80 would stop 80% of the way down the length of the page. A value that exceeds 100 is automatically set to 100. A value of less than zero is automatically set to zero.

Parameter	Description
	In order for this setting to work, "Use First Page" must also be selected.
First Left	Expressed as a percentage, this setting defines the left-most area on the first page of a document where candidates may be generated. A value of zero would start at the left of the page. A value of 20 would start 20% of the way across the left of the page. A value that exceeds 100 is automatically set to 100. A value of less than zero is automatically set to zero. In order for this setting to work, "Use First Page" must also be selected.
First Right	Expressed as a percentage, this setting defines the right-most area on the first page of a document where candidates may be generated. A value of zero would start at the left of the page. A value of 80 would start 80% of the way across the left of the page. A value that exceeds 100 is automatically set to 100. A value of less than zero is automatically set to zero. In order for this setting to work, "Use First Page" must also be selected.
Use Subsequent Page	If selected, the system generates candidates for all pages between the first and last page of the document. In order for this setting to work, "Use Regions" must also be selected.
Subsequent Top	Expressed as a percentage, this setting defines the top-most area on the subsequent page of a document where candidates may be generated. A value of zero would start at the top of the page. A value of 20 would start 20% of the way down the length of the page. A value that exceeds 100 is automatically set to 100. A value of less than zero is automatically set to zero.
Subsequent Bottom	Expressed as a percentage, this setting defines the bottom-most area on the subsequent page of a document where candidates may be generated. A value of zero would start at the bottom of the page. A value of 80 would stop 80% of the way down the length of the page. A value that exceeds 100 is automatically set to 100. A value of less than zero is automatically set to zero.
Subsequent Left	Expressed as a percentage, this setting defines the left-most area on the subsequent page of a document where candidates may be generated. A value of zero would start at the left of the page. A value of 20 would start 20% of the way across the left of the page. A value that exceeds 100 is automatically set to 100. A value of less than zero is automatically set to zero.
Subsequent Right	Expressed as a percentage, this setting defines the right-most area on the subsequent page of a document where candidates may be generated. A value of zero would start at the left of the page. A value of 80 would start 80% of the

Parameter	Description
	way across the left of the page. A value that exceeds 100 is automatically set to 100. A value of less than zero is automatically set to zero.
Use Last Page	If selected, the system generates candidates on the last page of a document. In order for this setting to work, "Use Regions" must also be selected.
Last Top	Expressed as a percentage, this setting defines the top-most area on the last page of a document where candidates may be generated. A value of zero would start at the top of the page. A value of 20 would start 20% of the way down the length of the page. A value that exceeds 100 is automatically set to 100. A value of less than zero is automatically set to zero.
Last Bottom	Expressed as a percentage, this setting defines the bottom-most area on the last page of a document where candidates may be generated. A value of zero would start at the bottom of the page. A value of 80 would stop 80% of the way down the length of the page. A value that exceeds 100 is automatically set to 100. A value of less than zero is automatically set to zero.
Last Left	Expressed as a percentage, this setting defines the left-most area on the last page of a document where candidates may be generated. A value of zero would start at the left of the page. A value of 20 would start 20% of the way across the left of the page. A value that exceeds 100 is automatically set to 100. A value of less than zero is automatically set to zero.
Last Right	Expressed as a percentage, this setting defines the right-most area on the last page of a document where candidates may be generated. A value of zero would start at the left of the page. A value of 80 would start 80% of the way across the left of the page. A value that exceeds 100 is automatically set to 100. A value of less than zero is automatically set to zero.

Custom Settings

This table allows you to create custom settings for use within the solution user exits.

The following types of settings available.

- Single settings
- Indexed settings

Single settings

The following columns are available.

Parameter	Description
Group Name	The name of the parameter group.
Parameter Name	The name of the parameter.
Parameter Type	The parameter type. This can be one of the following types. • "BOOL - a boolean value of either "True" or "False" • "INT - an integer value • "VL - any other string value
Value	The value of the parameter.

Indexed settings

The following columns are available.

Parameter	Description
Group Name	The name of the parameter group.
Parameter Name	The name of the parameter.
Index ID	The index ID of the parameter.
Parameter Type	The parameter type. This can be one of the following types. • "BOOL - a boolean value of either "True" or "False" • "INT - an integer value • "VL - any other string value
Value	The value of the parameter.

Database Settings

This table is used to configure database connections used within the solution.

The following column settings are available.

Parameter	Description
Index ID	The index ID.
Connection String	The connection string for the SQL connection group ID.
Encrypted Password	The encrypted password for the SQL connection group ID to be used if no password is included within the connection string. For more information, refer to the Brainware for Invoices Password Encryption section.

Display Text Settings

These settings define the display texts for field labels, invalid reasons, field drop-downs and dialog boxes.

Document Type Text Settings

This table allows you to configure the drop-down options presented to a user within the Verifier application for the Document Type field. Do not change the existing content of this table. However, you can add new rows that reference an existing Text Element ID to support translations for additional languages.

Parameter	Description
Text Element ID	The ID for the text element. This must be set to either '1' for 'INVOICE' or '2' for 'CREDIT'.
Language ID	The two character language ISO-code for the document type text, for example, 'EN' is English, 'DE' is German, 'and CN' is Chinese.
Display Text	The display text for the language specified in the LanguageID column.

Field Text Settings

This table allows you to configure the field and column labels for different languages that are presented to a user within the Verifier application. You can add new rows to reference an existing Text Element ID to support translations for additional languages. For text elements relating to custom fields, these must be created with a TextID from 900 upwards.

Parameter	Description
Text Element	The unique ID for the text element.

Parameter	Description
ID	
Language ID	The two character language ISO-code for the field text. For example, 'EN' is English, 'DE' is German, 'and CN' is Chinese. Brainware for Invoices ships with English and Chinese languages pre-configured.
Display Text	The display text for the language specified in the LanguageID column.

General Text Settings

This table allows you to configure the text displays used in dialog boxes.

Parameter	Description
Text Element ID	The unique ID for the text element.
Language ID	The two character language ISO-code for the text. For example, 'EN' is English, 'DE' is German, 'and CN' is Chinese. Brainware for Invoices ships with English and Chinese languages pre-configured.
Display Text	The display text for the language specified in the Language ID column.

Invalid Reason Text Settings

This table allows you to configure the invalid reason texts that are presented to a user within the Verifier application for the Invalid Reason field. You can add new rows that correspond to an existing or custom Text Element ID to support translations for additional languages.

Parameter	Description
Text Element ID	The unique ID for the text element.
Language ID	The two character language ISO-code for the invalid reason text. For example, 'EN' is English, 'DE' is German, 'and CN' is Chinese. Brainware for Invoices ships with English and Chinese languages pre-configured.
Display Text	The display text for the language specified in the LanguageID column.

Invoice Type Text Settings

This table allows you to configure the drop-down options presented to a user within the Verifier application for the Invoice Type field. Do not change the existing content of this table. However, you can add new rows that reference an existing Text Element ID to support translations for additional languages.

Parameter	Description
Text Element ID	The unique ID for the text element.
Language ID	The two character language ISO-code for the invoice type text. For example, 'EN' is English, 'DE' is German, 'and CN' is Chinese. Brainware for Invoices ships with English and Chinese languages pre-configured.
Display Text	The display text for the language specified in the Language ID column.

PO Type Text Settings

This table allows you to configure the drop-down options presented to a user within the Verifier application for the PO Type field. Do not change the existing content of this table. However, you can add new rows that reference an existing Text Element ID to support translations for additional languages.

Parameter	Description
Text Element ID	The unique ID for the text element.
Language ID	The two character language ISO-code for the PO type text. For example, 'EN' is English, 'DE' is German, 'and CN' is Chinese. Brainware for Invoices ships with English and Chinese languages pre-configured.
Display Text	The display text for the language specified in the Language ID column.

Document Type Formats

This table allows you to specify words and phrases that may appear on an incoming document that help identify a document as a Credit Memo.

For example, CREDIT NOTE, CREDIT MEMO, AVOIR, or GUTSCHRIFT.

The following column settings are available.

Parameter	Description
Index	The unique index for the document type format.
Format	The format string for words that identify a document as a credit note. The Levenshtein compare method is used here.
Ignore Characters	The list of characters that the system ignores in the corresponding format string. For example, a hyphen, comma, or period.

Error Message Settings

This table allows you to configure the system error messages that are displayed in Verifier , or written to the Brainware for Invoices log file.

The following column settings are available.

Parameter	Description
Error Number	The error message number. You can add new error messages using error number 900 onward.
Language ID	The two character language ISO-code for the error message text. For example, 'EN' is English, 'DE' is German, 'and CN' is Chinese. Brainware for Invoices ships with English and Chinese languages pre-configured.
Message	The error message text.

General Settings

These settings are used to give a name to your project and to control general solution behavior.

The following settings are available.

Parameter	Description
Project Name	The name of the project.
Version	The project version number.
Client Name	The default client name.
Verifier Form Style	The name of the color scheme applied to the Verifier form. The option is BW. This is the Brainware

Parameter	Description
	Intelligent Capture logo color Scheme. If any other setting is applied (including blank), then the system displays the default Verifier color scheme, such as gray form with valid fields marked in green and invalid fields marked in red.
Verifier Text	The default two character language ISO-code of the Verifier form labels for the application being configured. For example, 'EN' is English, 'DE' is German, 'and CN' is Chinese. Brainware for Invoices ships with English and Chinese languages pre-configured.
Use Dynamic Verifier Form	If selected, the system will use the Dynamic Verifier form.
Review State	The RTS state used for documents sent for supervisor review.
Read Settings From DB	If selected, the Brainware for Invoices settings are read from the database. This check box is selected by default.
SQL Connection Group	The numeric reference to the SQL connection group which represents the database in which the Brainware for Invoices configuration tables are created.
Dynamic Debug	If selected, advanced system logging and tracing is activated for the solution.
Batch in Database	This must be selected if batches are stored within the Brainware Intelligent Capture platform database. This check box is selected by default.
Batch SQL Connection Group	The numeric reference to the SQL connection group which represents the Brainware Intelligent Capture platform database. This must be set to '01', '02', and so on.
Activate Vendor Filtering	If selected, this activates use of vendor partitions.

Parameter	Description
Vendor Filter Column	The case-sensitive name of the database column in the vendor master table that contains the partition ID.
Activate Employee Filtering	If selected, this activates use of employee partitions.
Employee Filter Column	The case-sensitive name of the database column in the employee master table that contains the partition ID.
Buffer Client Settings	Select this option to enable client buffering. This means that configuration settings are not reloaded for a document if the previous document belonged to the same client. It is not recommended to use this option in a production system.
Set Batch Priority From RTS	If selected, the batch priority is determined by the import priority setting of the RTS instance that performs document import. The priority setting against the client is not used.
ActivateEfficientMemoryStorage	Select this option to activate efficient memory storage for the document settings. This stores the document settings against named property UserStrings_0 in the workdoc, rather than in the tmpSettings table.

Import Settings

These settings are used to map values contained within the image filename to corresponding fields within Brainware for Invoices.

The following settings are available.

Parameter	Description
URN	The document unique reference number.
Batch Name	The name of the batch assigned by a third-party system.
Scan Date	The document scan date. No validation is carried out for this field.

Parameter	Description
Priority Flag	The document priority flag.
Invoice Type	The document invoice type, such as PO or NO-PO.
Destination Archive	The document destination archive.
Company Code	The invoice company code.
Input Source	The document input source, such as SCAN, EDI, or EMAIL
Client ID	The document client ID. This value must be mapped in a multi-client project. If the value is not mapped, the configuration set associated with client zero is used.
Location ID	The document location ID. Use this field to hold the BPO operation location ID that is relevant for the document. For example, the ID of a shared service center.
External Batch ID	The external batch ID.
Transaction ID	The transaction ID.
Transaction Type	The transaction type.
Separator	The separator used to separate data elements within the image filename. If this value is left blank, the separator defaults to an underscore.
Priority Flag Yes	The value that denotes a positive setting for the priority flag.
Date Format	The format for dates contained within the document filename. The options for this value are DDMMYYY, MMDDYYY, or YYYMMDD.
Import Client From DB	If selected , the system performs a look-up to a client ID table using the document filename/URN.
SQL Connection Group	The SQL connection group specifying the client ID look-up database. If no connection group is specified, the system uses group 01.
Client Key	The value used by the system as the key to look up a client ID from the client ID look-up

Parameter	Description
	table. If set to FILENAME, key will be set to the original image filename without the file path and file extension. If set to URN, the key will be set to the document URN mapped to the "URN" field.
DB Table Name	The name of the database table holding the relationship between the document filename/URN and the client ID.
DB URN	The technical name of the column in the database table above that holds the document filename/URN.
DB Client ID	The technical name of the column in the database table above that holds the corresponding client ID.

Information Messages

Information messages appear in Verifier during document correction. The settings are divided into two sections.

- Information Settings
- Information Message Settings

Information Settings

These are general settings associated with the Verifier information message box configuration.

The following settings are available.

Parameter	Description
Dialog Header	This is the text displayed at the information box title bar.
Disable MIRA Popup	If selected, this disables the dialog box that informs the user that line items are not required because there is a one-to-one match between the invoice and the purchase order.
Disable Currency Popup	If selected, this disables the dialog box that allows the user to choose whether the invoice currency should be overwritten with a currency derived from the vendor master data or the purchase order. This dialog box only appears when the vendor or the purchase order is changed.

Information Message Settings

This table allows you to configure the information messages that appear in Verifier.

Important You should only change the text associated with each message, not the IDs.

The following column settings are available.

Parameter	Description
Information Message ID	The information message ID.
Language ID	The two character language ISO-code for the information message text. For example, 'EN' is English, 'DE' is German, 'and CN' is Chinese. Brainware for Invoices ships with English and Chinese languages pre-configured.
Message	The information message. Within the information message, text symbols [PON], [VEN] and [CUR] are used to represent the current purchase order number, vendor ID and currency respectively.

Invalid Reasons

The configuration of invalid reasons is divided into two areas.

- Invalid Reason Settings
- Invalid Reason Display Text

Invalid Reason Settings

These are the default settings associated with the invalid reason field.

The following settings are available.

Parameter	Description
Default Text	The default invalid reason. For example, NONE.
Default Export Code	The export code associated with the default invalid reason. For example, 0.

Invalid Reason Display Text

This table allows you to configure the invalid reasons that may be selected by a Verifier user during document processing.

The following column settings are available.

Parameter	Description
Index	This is a read-only ID that represents the invalid reason.
Rule	The rule ID for the invalid reason. The rule governs how Verifier behaves when a particular invalid reason is selected. The following rules are available: • SETVENDORTOVALID. Sets the vendor field to valid. • SETPOTOVALID. Sets the purchase order number field to valid. No line pairing is carried out. • ALLOWNONPOVENDOR. Allows a vendor ID to pass even if it is unconnected to the purchase order, but only as long as the vendor ID exists in the master table. • SETAMOUNTSTOVALID. Sets the amount fields and the table to valid. No line pairing is carried out. • THIRDPARTYFREIGHT. Sets the vendor number field to valid as long as the vendor exists, and processes the document according to the third-party freight rules during line pairing. • SETVENDORANDPOTOVALID. Sets the purchase order and vendor number fields to valid. No line pairing is carried out. • NONVATCOMPLIANT. Sets the local VAT amount, exchange rate, VAT table, vendor VAT registration number, and bill-to VAT registration number fields to valid. • STOCKINVOICE. Sets the purchase order number field to valid. Line pairing is still carried out based on purchase orders added programmatically in UserExitLinePairingPOs. • ZEROVALUEINVOICE. Permits a zero total to pass in Verifier. • SETLINEITEMSTOVALID. Sets the line items to valid. No line pairing is carried out.

Parameter	Description
Verifier Display	The invalid reason text displayed in Verifier.
Export Code	The invalid reason code exported by Brainware for Invoices if the "Invalid Reason" field is set.

Partition Settings

For some types of look-ups, Brainware for Invoices supports a scenario where multiple sets of data are held within the same database table or data source. For example, use of a PO number partition allows the system to work with a master purchase order table that contains purchase order data provided from multiple ERP systems.

These multiple data sets are distinguished using partitions, and the types of partitions supported are as follows.

- Vendor Partitions
- Employee Partitions
- PO Number Partitions
- Tax Partitions

Employee Partition Settings

This table contains the employee partitions active within the solution. An employee partition must be registered in this table before it can be assigned to a client.

The following column settings are available.

Parameter	Description
Employee Partition	The unique employee partition ID.
Description	The partition details.

PO Number Partition Settings

This table contains the purchase order data partitions that are active in the solution. You must register a purchase order partition in this table before you can assign it to a client.

The following column settings are available.

Parameter	Description
PO Partition ID	The unique ID of the purchase order data partition.
Description	The partition description.

Tax Partition Settings

This table contains the tax partitions active within the solution. A tax partition must be registered in this table before it can be assigned to a client.

The following column settings are available.

Parameter	Description
Tax Partition ID	The unique ID of the tax data partition.
Description	The partition description.

Vendor Partitions

This table contains the vendor partitions active within the solution. A vendor partition must be registered in this table before it is assigned to a client.

The following column settings are available.

Parameter	Description
Vendor Partition	The unique ID for the vendor partition.
Description	The partition description.

Profile Group Settings

Profile groups are used to group multiple processing profiles together for ease of assigning to areas of applicable solution functionality.

The configuration of profile groups is divided into two areas.

- Profile group definition
- Assigning processing profiles to profile groups

Profile Group Definition

This table contains the profile groups that exist within the system. A profile group must be registered in this table before it can be used.

The following column settings are available.

Parameter	Description
Profile Group ID	The unique profile group ID.
Description	A short description of the profile group.

Assign Processing Profiles to Profile Groups

This table is used to assign individual processing profiles to a profile group. Each row represents one assignment.

The following column settings are available.

Parameter	Description
Profile Group ID	The profile group ID.
Profile ID	The ID of the processing profile assigned to the profile group.

Payment Terms Settings

These settings allow you to configure payment terms.

Payment Terms Profile Settings

These settings allow you to configure a payment terms profile.

Parameter	Description
Payment Terms Profile ID	This is the payment terms profile ID.
Description	This is the description of the payment terms profile.

Payment Terms Configuration

These settings allow you to configure a set of payment terms codes for each payment terms profile.

Parameter	Description
Payment Terms Profile ID	This is the payment terms profile ID.
Payment Terms Code	This is the payment terms code.
Description	This is the payment terms code description.
Priority	This is the payment terms code priority where 1 represents the highest priority. A priority of 0 means that the terms are not considered during the dynamic payment terms selection process at time of document export.
Days 1	This is the first discount period in days
Percentage 1	This is the first discount percentage.
Days 2	This is the second discount period in days.
Percentage 2	This is the second discount percentage.
Days 3	This is the third discount period in days.

Reporting Settings

These settings allow you to activate and configure reporting with Brainware Visibility.

Parameter	Description
Connect To Reporting DB	If selected, solution reporting is activated.
SQL Connection Group	The SQL connection group representing the connection to the Visibility reporting database.
Reporting In Designer	If selected, the system will write data into the reporting database for documents processed or analyzed in the Brainware Intelligent Capture Designer Module. This options is provided for testing purposes and must not be used in a production system.
Reporting DB Document Table	The name of the document header table in the Visibility reporting database.

Parameter	Description
Reporting DB Field Table	The name of the document field table in the Visibility reporting database.
Reporting DB History Table	The name of the document history table in the Visibility reporting database.
Reporting DB Image Table	The name of the document image table in the Visibility reporting database.
Store Image In Reporting Tables	If selected, the document image will be written into the Visibility reporting database image table at time of document export.
Activate Line Item Reporting	If selected, line item reporting is activated.
Reporting Key	This setting defines the type of unique reference assigned to each document record in the reporting database. If set to FILENAME, the unique reference is set to the original image filename without the file path and file extension. If set to URN, the unique reference is set to the document URN mapped in Global Settings > Import Settings.
Archive URL	The mask for the URL associated with a document link. XXXXX denotes the part of the URL that the system substitutes with the unique archive document ID to form a valid URL for document retrieval.
Storage Directory	The path to the directory which is used as a repository to store images subsequent to document export.

Search Field Mapping

These settings allow you to map columns in the vendor and employee master data sources to the corresponding column names used internally within Brainware for Invoices. If you are using the Associative Search Engine for both the vendor and employee, the technical column names in the vendor and employee master data must be the same for the same item of data.

Parameter	Description
ID	The Brainware for Invoices ASE column name that represents the unique identifier for a row in the data extract. If you are using table BRWVendorMaster, this value is held in the IndexID column. For ERP systems where a vendor at a unique address is represented simply by a vendor ID, the unique identifier for a row in the vendor master can be set to the vendor ID. For ERP systems where a vendor at a unique address is represented by a combination of the vendor ID and the site ID, the unique identifier must be set to the following. VendorID~SiteID The delimiter (~ in the previous example) is configurable using **Alph Num Site Separator** in Processing Profile > Vendor Settings. If your unique identifier contains a site ID, you must also map the column names used for the site ID and external vendor ID. If you are using a vendor partition, the unique identifier must be prefixed by the partition ID number and a hyphen as shown below. PartitionID-VendorID~SiteID You must also map the column name used for the partition ID.
Site ID	The Brainware for Invoices ASE column name denoting the vendor site ID. This must only be mapped if the site ID is used within the unique identifier for the row.
Name	The Brainware for Invoices ASE column name denoting the vendor name.
Address 1	The Brainware for Invoices ASE column name denoting the first line of the vendor's address.
Address 2	The Brainware for Invoices ASE column name denoting the second line of the vendor's address.
City	The Brainware for Invoices ASE column name denoting the vendor's city of origin.
Zip	The Brainware for Invoices ASE column name denoting the

Parameter	Description
	vendor zip/postal code.
State	The Brainware for Invoices ASE column name denoting the vendor's state/region.
Country	The Brainware for Invoices ASE column name denoting the vendor's country of origin.
PO Box	The Brainware for Invoices ASE column name denoting the vendor's PO Box.
PO Box Zip	The Brainware for Invoices ASE column name denoting the postal/zip code that relates to the vendor's PO box.
EU Member	The Brainware for Invoices ASE column name denoting whether the vendor's country of origin is a member of the European Common VAT Framework.
Currency	The Brainware for Invoices ASE column name denoting the currency for the vendor's country of origin.
Tax ID 1	The Brainware for Invoices ASE column name denoting the vendor primary tax ID.
Tax ID 2	The Brainware for Invoices ASE column name denoting the vendor secondary tax ID.
Vat Reg No	The Brainware for Invoices ASE column name denoting the vendor VAT registration number. Multiple VAT registration numbers must be presented as a comma-separated list if the vendor is VAT registered in more than one country. VAT registration numbers should contain the two-character country prefix, but this is not mandatory.
Tax Jur Code	The Brainware for Invoices ASE column name denoting the vendor's tax jurisdiction code (US).
Tel No	The Brainware for Invoices ASE column name denoting the vendor's telephone number.
Invoice Type	The Brainware for Invoices ASE column name denoting whether the vendor is permitted to submit a NO-PO invoice.
Payment Methods	The Brainware for Invoices ASE column name denoting the

Parameter	Description
	vendor's payment methods.
Payment Terms	The Brainware for Invoices ASE column name denoting the vendor's payment terms.
Bank Details	The Brainware for Invoices ASE column name denoting the vendor's bank account details. This is a colon-separated list that uses the following format. `BankAccount,SortCode,ERPBankAccountCode` A sortcode is the equivalent of a routing number in the US.
Withholding Tax Details	The Brainware for Invoices ASE column name denoting the vendor's withholding tax details. This must be a colon-separated list in the following format. CompanyCode,WithholdingTaxType,WithholdingTaxCode This is required if you want the system to handle withholding tax when creating documents in SAP.
Company Codes	The Brainware for Invoices ASE column name denoting a comma-separated list of company codes for which the vendor is valid.
Utility Flag	The Brainware for Invoices ASE column name denoting whether the vendor is a utility vendor.
POR Subscriber No	The Brainware for Invoices ASE column name denoting the vendor's Post Office Reference number as used in Switzerland.
External Vendor ID	The Brainware for Invoices ASE column name denoting the vendor's external ID, such as the supplier number as used in Oracle Financials. This must be mapped if a site ID is used within the unique identifier for the row.
External Site ID	The Brainware for Invoices ASE column name that represent the vendor's external site ID.
Siret ID	The Brainware for Invoices ASE column name that represents the vendor SIRET ID number, as assigned to French vendors.

Parameter	Description
Vendor Identifier	The Brainware for Invoices ASE column name that represents a unique vendor identifier, such as a Chinese tax registration number.
Partition ID	The Brainware for Invoices ASE column name that represents the vendor partition ID. This must be mapped if vendor partitions are used within the solution.
EU Member Alias	The value that denotes a positive identification of the vendor as a member of the European Common VAT Framework.
Custom1	The Brainware for Invoices ASE column name that represents an item of custom vendor information.
Custom 2	The Brainware for Invoices ASE column name that represents an item of custom vendor information.
Custom 3	The Brainware for Invoices ASE column name that represents an item of custom vendor information.
Custom 4	The Brainware for Invoices ASE column name that represents an item of custom vendor information.
Custom 5	The Brainware for Invoices ASE column name that represents an item of custom vendor information.

Stored Procedure Settings

This table allows you to define and configure stored procedure parameters that can be used for the look-ups to the purchase order header and line item database tables.

The following column settings are available.

Parameter	Description
Index	The stored procedure parameter index.
Parameter Name	The name of the stored procedure parameter. This value is mandatory for each stored procedure parameter.
Parameter	The stored procedure parameter type.

Parameter	Description
Type	Possible options are BOOLEAN, INT, DATE, DOUBLE, VARCHAR and UNKNOWN.
Parameter Size	This setting specifies the maximum length allowed for a parameter type of VARCHAR. If no value is entered, the system will use a default length of 50.
Parameter Value	This setting is used to assign a value to the parameter. You can either enter a fixed value or the technical name of a Brainware for Invoices field such as PONumber or CompanyCode. Field names are case sensitive.
Parameter Direction	Select "I" if it is an input parameter or "O" for an output parameter.

Substitution Rules

This table allows you to configure substitution rules applied to relevant text fields at time of data export.

The following column settings are available.

Parameter	Description
Substitution Rule	The read-only substitution rule ID.
Original	The segment or string of text that is replaced.
Replace	The segment or string that replaces the "Original" text if found in the string.

Tolerance Settings

This table allows you to configure the tolerances that are applied during the mathematical validation of the invoice amount fields. Each row in the table represents a tolerance group.

A tolerance group can be assigned to a currency in Global Settings > Currency Settings. Each group has a group code and a set of three tolerances that control the permitted deviations at header level, line item level, and for tax validations. You can also use the tolerance group to flag currencies that do not use a currency sub-unit.

The following column settings are available.

Parameter	Description
Index	The tolerance group index.

Parameter	Description
Header Tolerance	The tolerance value used for the invoice header amounts.
Table Row Tolerance	The tolerance value used for each individual line item.
Tax Tolerance	The tolerance value used for each row in the VAT table and also for comparing the invoice tax amount with the system calculated tax amount, based on the line item tax codes.
No Decimal Places	It is recommended to select this check box for tolerance groups that are assigned to currencies that do not have a sub-unit such as a cent or a penny. Two examples of such currencies are the Hungarian Forint and the Japanese Yen. The check box controls the automatic formatting of the amount extracted. If selected and an amount of 10.400 is extracted, then the amount will be formatted to 10400. If not selected, the amount remains as 10.400. An amount of 10.40 remains the same irrespective of whether the check box is selected or not.

User Management

This table allows you to set up and configure active system users, their authorization level and preferences.

The following settings are available.

Parameter	Description
User ID	The user ID. This can be a Windows domain user name, a Windows short name, or a Brainware for Invoices user name.
Client Group	The client group that the user is assigned to.
Authority Level	The standard Brainware for Invoices role assigned to the user. • VER. The standard Verifier user. • SET. The standard Verifier user with permission to change verifier settings • SLV. The SET + ability to use the supervised learning function.

Parameter	Description
	• SLM. The SLV + ability to review and promote vendor learnsets to the global project. • ADM = Administrator • AEB. Server user that performs automatic import using the import API. All users have the standard filter role.
Requires Review	If selected, all documents verified by the user move to a review state for quality control.
Relevant For ALM	If selected, documents verified by this user are relevant for addition to the ALM learnset.
Domain	The Windows domain for Windows-based authentication.
Password	This is the user password if Windows authentication is not used.
Encrypted Password	The encrypted password for the user. If you use an encrypted password, leave the Password column blank as this column always takes priority. For more information, refer to the Brainware for Invoices Password Encryption section.
Primary Group Name	The Verifier user primary group name (for example, Admin). Use this name to associate a user to a predefined group of Verifier settings. If the primary group name does not exist, the system will create it automatically.
Language Code	The Verifier language preference for the Dynamic Verifier form. Use the two character ISO-code for the language, for example, 'EN' for English or 'CN' for Chinese.

Vendor Force Verify Settings

This table contains a list of vendors whose invoices are required to stop in Verifier. This functionality can be an activated globally, or just for a specified processing profile group.

The following column settings are available.

Parameter	text
Vendor Partition ID	The unique ID for the vendor partition.
Vendor ID	The vendor ID.
Vendor Name	The name of the vendor.
Set As Profile Specific	If selected, the force verify applies only to a vendor invoice if the current processing profile is a member of the specified profile group. If cleared, the force verify applies globally to all invoices receives from the vendor specified.
Profile Group ID	The profile group ID.

Export Settings

These settings effect how documents and batches are exported.

The following export setting categories are available per export profile.

- Export Mapping
  - CSV Export Configuration
  - GL Export Mapping
  - Header Field Export Mapping
  - Line Item Export Mapping
  - Tax Export Mapping
- Export Options

Export Mapping

The following export mapping settings are available:

- CSV Export Configuration
- GL Export Mapping
- Header Field Export Mapping
- Line Item Export Mapping
- Tax Export Mapping

CSV Export Configuration

This table controls the CSV file output format. You can configure the system to output multiple CSV files per document. Each row in the table represents the configuration for a single CSV file.

Parameter	Description
Index	The CSV file index.
Output File	If selected, the system outputs a CSV file according to the specified configuration settings.
Combined File Per Batch	If selected, the system will output one CSV file per batch. If output is required on a per batch basis, the output file is created with a .TMP extension until the last document in the batch is exported successfully. It is not possible to output a combined file per batch unless the RTS instance carrying out the document import has a document grouping setting of either 1 folder-per-batch or 1 batch-per-subdirectory.
Filepath	Specifies the location of an alternate export directory for the CSV file group. If left blank, the main export directory set against the RTS instance that carries out document export is used. If no export directory is configured against the RTS instance, the default export directory configured in the Export Settings > Export Options. If an override export path has been configured in the export settings, this path takes priority over all other paths. If this value is blank, or a specified directory does not exist, the CSV file export fails.
Filename	The naming convention for the CSV file if it is output on a document-by-document basis. If set to FILENAME, the CSV filename is set to the original image filename without the file path and file extension. If set to URN, the CSV filename is set to the document URN mapped in Global Settings > Import Settings. This setting does not apply if you have selected the **Combined File Per Batch** check box as the name of the file will be derived from the Brainware Intelligent Capture batch number.
File Type	The file extension for the output file. If left blank, .CSV is

Parameter	Description
	used by default.
File Prefix	The file prefix for the output file.
Separator	The separator that is used in the CSV file line. Based on user input, the system automatically cleanses any extracted data using this separator. It does this in order to maintain a consistent number of columns in the output. Illegal separators include the period, forward slash, and a backslash. The chosen separator must be entered manually in the format configuration for each format line and line item configuration parameter.
Date Format	The desired date output format. If no entry is made, the system defaults to the output date format configured in the Processing Profile Configuration Settings > Date Settings. If no entry is available in either locations, the default value of "DDMMYYYY" is used.
Date Separator	The separator that is used in conjunction with the date format setting above. For example, if the date format above is "MMDDYYYY" and a hyphen is entered as the separator in this parameter. If the extracted date is "2nd November 2009," then the output is "11-02-2009."
Invoice Type	The filter applied to the CSV file so that output is controlled by the "Value Invoice Type" field. If this value is set to PO, the CSV file is only written if the invoice type is PO. If this value is set to NPO, the CSV file is only written if the invoice type is NO-PO.
Output Image	If selected, the original document image is output to the same directory as the CSV file. The document image relates to the original image "Filename" and "Filetype."
Format Line 1 - 5	This parameter controls the format of each row that is output to the CSV file. Up to five rows can be output per CSV file. For example, to output the TIFF name, the invoice number (1234) and the vendor number (ABC) are separated by a colon. The setting should contain the following.

Parameter	Description

	`<%TNM>:<%INO>:<%VID>`
	
	This value produces the following:
	
	`myFile.tif:1234:ABC`
	
	Additional text can also be included in the format. For example,
	
	`File=<%TNM>|InvoiceNumber=<%INO>|Vendor ID=<%VID>`
	
	would produce the following:
	
	`File=myFile.tif|Invoice Number=1234|VendorID=ABC`
	
	The structure of output in the CSV file is presented by the following symbols:
	
	• <%TNM>. The name of the original imported file without a file path.
	• <%TNF>. The name of the original imported file without the file path or a file extension.
	• <%TND>. The name of the original imported file with the export directory file path.
	• <%SDT>. The scan date in the format configured in the Processing Profile Configuration Settings > Date Settings.
	• <%BNM>. The Batch Name.
	• <%EID>. The employee ID.
	• <%EFN>. The employee first name.
	• <%ELN>. The employee last name.
	• <%DTP>. The document type, such as INVOICE or CREDIT.
	• <%ITP>. The invoice type, such as PO or NO-PO.
	• <%IDT>. The invoice date.
	• <%INO>. The invoice number.
	• <%TAX>. The invoice tax amount.
	• <%WTX>. The invoice withholding tax amount.
	• <%DCT>. The invoice discount amount.
	• <%MSC>. The invoice miscellaneous charge amount.

Parameter	Description
	• <%CUR>. The invoice currency. • <%TOT>. The invoice total. • <%PST>. The Provincial Sales Tax/QST amount. • <%HST>. The Harmonized Sales Tax amount. • <%ICM>. The ICMS tax amount. • <%PON>. The PO Number. • <%URN>. The Unique Reference Number. • <%VID>. The vendor ID. • <%IVD>. The internal Vendor ID. • <%SID>. The site ID. • <%VNM>. The vendor name. • <%BTO>. The bill-to name. • <%CCO>. The company code. • <%POR>. The Payment Order Reference Number (POR). • <%PSN>. The Payment Order Subscriber Number. • <%KID>. The Payment Reference. • <%ACC>. The Account Number. • <%BAC>. The Bank Account Number. • <%BCD>. The Bank Account Code. • <%PRI>. The Priority Flag. • <%EXC>. The Exchange Rate. • <%IVR>. The Invalid Reason. • <%ICD>. The Invalid Reason Code. • <%LNK>. The Document Link. • <%ERP>. The ERP document key. • <%EPT>. The ERP system PO type. • <%BSU>. The business unit. • <%DEL>. The delivery note. • <%DLD>. The delivery date. • <%DUE>. The due date. • <%ISR>. The ISR retention amount. • <%IBN>. The IBAN Number. • <%BIC>. The BIC / Swift code. • <%REF>. Your ref.

Parameter	Description
	• <%CNC>. Mainland China VAT invoice code. • <%CNP>. Mainland China VAT invoice password. • <%VVT>. Vendor VAT registration number. • <%BVT>. Bill-to VAT registration number. • <%MXU> . Mexican UUID number. • <%CDA>. Brazilian Chave De Acesso number • <%CGT>. CGST amount (India) • <%SGT>. SGST amount (India) • <%PMT>. Payment terms • <%PTC>. Payment terms code • <%TFC>. Workday total freight charges • <%TOC>. Workday total other charges
Line Item	This parameter controls the format of line item entries that are output to the CSV file. If left blank, no line item detail is output. One row is added to the CSV file for each line item. To output the PO number, the PO line item number, and the total, this parameter should be set as follows. <%LPO>_<%LPL>_<%LTO> The available literals are as follows. • <%LNO>. The invoice line item number. • <%LPO>. The PO number. • <%LPL>. The PO line item. • <%LDS>. The PO line description. • <%LMN>. The material number. • <%LMG>. The material group. • <%LQT>. The quantity. • <%LUM>. The order unit of measure. • <%LUP>. The unit price. • <%LPU>. The order price unit of measure. • <%LQU>. The quantity in order price unit of measure. • <%LTO>. The line item total. • <%LTC>. The tax code. • <%LTJ>. The tax jurisdiction code. • <%LST>. The SAP condition type. • <%LSS>. The SAP condition step number.

Parameter	Description
	• <%LSC>. The SAP condition count. • <%LFV>. The freight vendor ID. • <%LGN>. The goods receipt document number. • <%LGY>. The goods receipt document year. • <%LGI>. The goods receipt document item number. • <%LSN>. The service entry sheet number. • <%LSI>. The service entry sheet item number. • <%LSD>. The subsequent debit/credit indicator. • <%LLT>. The line type. • <%LCD>. The charge code. • <%LCI>. The charge code ID. • <%LDL>. The Brainware for Invoices line item. • <%LPT>. The plant. • <%LTY>. The ERP purchase order type. • <%LBU>. The ERP purchasing business unit. • <%LCC>. The company Code. • <%LTR>. The VAT/tax rate. • <%LSP>. The Workday spend category. • <%LDN>. The delivery note number. • <%LTA>. The Workday tax applicability reference

GL Export Mapping

You can use these settings to select and configure general ledger line item fields for XML and database export.

Parameter	Description
Field Name	The name of the field.
XML Tag	The tag that represents the field when added to the exported XML file. If this setting is left blank, the field is not exported.
DB Column Name	The technical name of the target field in the export database table as configured in the "DB GL Items Table" option in Export Settings > Export Options.

Header Field Export Mapping

You can use these settings to select and configure document header fields for XML and database export.

Parameter	Description
Field Name	The name of the field.
XML Tag	The tag that represents the field when added to the exported XML file. If this setting is left blank, the field is not exported.
DB Column Name	The technical name of the target field in the export database table as configured in the DB Header Table option in Export Settings > Export Options.
Max DB Column Length	The maximum field length to be written to the database.For example, if an invoice number is extracted as '1234567890' and this parameter is set to 5, the system will write '12345' to the target database field. A value of 0 means that the output is not truncated. This setting does not apply to standard export fields that are either dates amounts, quantities or rates. It does apply to all custom fields irrespective of the type.

Line Item Export Mapping

You can use these settings to select and configure line item fields for XML and database export.

Parameter	Description
Field Name	The name of the field.
XML Tag	The tag that represents the field when added to the exported XML file. If this setting is left blank, the field is not exported.
DB Column Name	The technical name of the target field in the export database table as configured in the Line Items Table option in Export Settings > Export Options.
Max DB Column Length	The maximum field length to be written to the

Parameter	Description
	database.For example, if an item description is extracted as 'Widget Class A' and this parameter is set to 8, the system will write 'Widget C' to the target database field. A value of 0 means that the output is not truncated. This setting does not apply to standard export fields that are either dates amounts, quantities or rates. It does apply to all custom fields irrespective of the type.

Tax Export Mapping

You can use these settings to select and configure tax line item fields for XML and database export.

Parameter	Description
Field Name	The name of the field.
XML Tag	The tag that represents the field when added to the exported XML file. If this setting is left blank, the field is not exported.
DB Column Name	The technical name of the target field in the export database table as configured in the "DB Tax Table" field in Export Settings > Export Options.

Export Options

These settings allow you to activate and configure the solution export options.

Parameter	Description
Export Profile Name	The export profile name.
Description	The export profile description.
Redo All Exports	If selected, the system carries out all export options that are activated, even if that export has been carried out before. For example, four export options are activated. Of these four, three are completed and the last one

Parameter	Description
	fails. If the document is re-exported, all four export options will be carried out again. If cleared, only those export options that failed are carried out.
Output Standard Results File	If selected, the system outputs a standard results file into the export directory. The file extension is set to .txt.
Filename	The name of the standard results file. If set to FILENAME, the name of the standard results file will be set to the original image filename without the file path and file extension. If set to URN, the name of the standard results file will be set to the document URN mapped in Global Settings > Import Settings. The file extension used is TXT.
Default Export Path	The UNC path to the export directory that is used for testing purposes in the Designer module.
Override Export Path	The UNC path to the export directory that takes priority over any path configured on the export RTS instance.
Output Tiff File	If selected, the system outputs a TIFF file of the document image to the export directory.
Tiff Name	This setting controls the name of the output TIFF file. If set to FILENAME, the name of the TIFF file will be set to the original image filename without the file path and file extension. If set to URN, the name of the TIFF file will be set to the document URN mapped in Global Settings > Import Settings. This setting is available only when "Output Tiff File" is selected.

Parameter	Description
Tiff DPI	This specifies the DPI of the output tiff image, such as 300. The default TIFF resolution is 300 DPI. This setting is available only when "Output Tiff File" is selected.
Tiff Format	The compression format for the output TIFF file. The following compression options are available. • G4FAX = Grade 4 compression - CCITT Group 4 fax encoding • G3FAX = Grade 3 compression - CCIT Group 3 fax encoding • LZWFAX = LZW Compression - Lempel-Ziv-Welch compression • HUFFAX = HUF Compression - CCITT Group 3 1-Dimensional Modified Huffman run length encoding By default, the compression is set to "G4FAX." This setting is available only when "Output Tiff File" is selected.
Redact Invoice Number	If selected, the system redacts the invoice number on an outputted TIFF image.
Output PDF	If selected, the system outputs a searchable PDF file for each document.
PDF Name	This setting controls the name of the output PDF file. If set to FILENAME, the name of the PDF file will be set to the original image filename without the file path and file extension. If set to URN, the name of the PDF file will be set to the document URN mapped in Global Settings > Import Settings. This setting is available only when "Output PDF" is selected.
Send To Dolphin workflow	If selected, the document data is exported to the Dolphin workflow.

Parameter	Description
Dolphin workflow Function	The name of the SAP RFC-enabled function that the systems calls called to trigger the Dolphin workflow.
Custom Export	If selected, user exit UserExitCustomExport becomes active.
Export To DB	If selected, the document data is exported to a database.
SQL Connection Group	The SQL connection group that represents the database connection string to the target export database as configured in Global Settings > Database Connection Settings. If no connection group is specified, the system uses group 1. The target header and line item tables must exist in the same database. This setting is available only when "Export To DB" is selected.
DB Key	The key that is used for each new database record inserted into the header table. If set to FILENAME, the key will be set to the original image filename without the file path and file extension. If set to URN, the key will be set to the document URN mapped in Global Settings > Import Settings. Before inserting a new record, the system deletes any existing records with the same key. This setting is available only when "Export To DB" is selected.
DB Header Table	The name of the table in the database where the header fields are inserted. This setting is available only when "Export To DB" is selected.
DB Header Key	The name of the column in the header export database table that represents the key field for the header record. This setting is available only when "Export To DB" is selected.

Parameter	Description
DB Header Operation	The operation that is performed on the database record. If set to INSERT, the system inserts a new record. If set to UPDATE, the system updates an existing record with the same database key. There is no default setting. This setting is available only when "Export To DB" is selected.
DB Line Items Table	The name of the database table into that the invoice line item information is written. The line item database export always occurs as an INSERT, and any existing lines for the same document record are deleted first. This setting is available only when "Export To DB" is selected.
DB Line Items Key	The name of the column in the line item export database table that, along with the header level key, represents the key field for each invoice line item record. This is typically set to the invoice line item number, such as 1,2,3, and so on. This setting is available only when "Export To DB" is selected.
DB GL Items Table	The name of the database table where general ledger account line entries are written. This setting is available only when "Export To DB" is selected.
DB GL Items Key	The name of the column in the general ledger export database table that, along with the header level key, represents the key field for each general ledger record. This is typically set to the general ledger item number, such as 1,2,3 and so on. This setting is available only when "Export To DB" is selected.
DB Tax Table	The name of the database table where tax table line entries are written. This setting is available only when "Export To DB" is selected. If this value is empty, the Tax item export is not triggered.

Parameter	Description
DB Tax Key	The name of the column in the tax export database table where, along with the header level key, represents the key field for each tax line item record. This is typically set to tax item number, such as 1,2,3 and so on. This setting is available only when "Export To DB" is selected.
DB Status Exported	The value or code that indicates that a document is successfully exported from Brainware for Invoices. This setting is available only when "Export To DB" is selected.
Output XML File	If selected, the system outputs an XML file to the export directory configured on the RTS export instance. If this is not configured then the XML export will fail and the document will be sent to Verifier.
XML Filename	This setting controls the name of the XML output file. If set to FILENAME, the name of the XML file will be set to the original image filename without the file path and file extension. If set to URN, the name of the XML file will be set to the document URN mapped in Global Settings > Import Settings. This setting is available only when Output XML File is selected.
XML File Type	The file extension that is applied to the XML file. For example, XML for ".xml" and TXT for ".txt" file extensions. This setting is not mandatory. However, if left blank, the file extension defaults to XML. This setting is available only when Output XML File is selected.
XML Encoding Header	The XML file coding header that forms the first line in the XML file. For example, setting the value to `<xml version="1.0" encoding="UTF-16"?>` produces an XML file that supports non-Western characters, such as those from the Russian, Greek and Chinese alphabets.

Parameter	Description
	This setting is available only when Output XML File is selected.
XML File Header	The value of the file header tag in the XML file, such as " <MyFileHeader>". This setting is available only when Output XML File is selected.
XML Invoice Header	The value of the tag that marks the invoice header section in the XML file. For example, " <InvoiceHeader>". This value defaults to InvHeader if no value is specified. This setting is available only when Output XML File is selected.
XML Line Items Header	The value of the tag that marks the line items section in the XML file. For example, " <LineItems>" . This value defaults to InvLines if no value is specified. This setting is available only when Output XML File is selected.
XML Line Items Tag	The value of the tag that marks each individual line item in the XML file. For example, " <LineItem>". This value defaults to LINE if no value is specified. This setting is available only when Output XML File is selected.
XML GL Lines Header	The value of the tag that marks the general ledger account line items section in the XML file. For example, " <GLLines>". This value defaults to GLLines if no value is specified. This setting is available only when Output XML File is selected.
XML GL Lines Tag	The value of the tag that marks each individual general ledger account line item in the XML file. For

Parameter	Description
	example, " <GLLine>". This value defaults to GLLine if no value is specified. This setting is available only when Output XML File is selected.
XML Tax Header	The value of the tag that marks the tax line items section in the XML file. For example, "<VATLines>". This value defaults to TaxLines if no value is specified. This setting is available only when Output XML File is selected.
XML Tax Tag	The value of the tag that marks each individual tax line in the XML file. For example, " <VATLine>". This value defaults to TAXLINE if no value is specified. This setting is available only when Output XML File is selected.
XML Status Exported	Value or code that indicates that a document is successfully exported from Brainware for Invoices. This setting is available only when Output XML File is selected.
Output CSV File	The master switch for all CSV file output. If cleared, the system does not output any configured CSV files referenced in the Export Settings > Export Mapping > CSV Export Configuration. This is true even if the local switch for a CSV file group is selected.
Delivery Note Separator	The single character separator for the output of multiple delivery note numbers if the delivery notes table is activated and the "Extract Delivery Notes Into Table" check box is selected in Processing Profile > Invoice Number Settings. This applies to database, XML and CSV file output.
Export to PROCESS DIRECTOR	If selected, the document is sent to the

Parameter	Description
	"ProcessDirector" workflow in SAP. The SAP connection is configured in Processing Profile > SAP Configuration.
PD Function Name	The name of the RTS function module that the system calls during document export to send the invoice data to `ProcessDirector`. This setting is available only when "Export to PROCESS DIRECTOR" is selected.
Use Generic ProcessDirector Function	If selected, the integration to `ProcessDirector` occurs using the ProcessDirector generic function module. This setting is available only when "Export to PROCESS DIRECTOR" is selected.
Generic ProcessDirector Function Name	The name of the `ProcessDirector` generic function module that is called. This setting is available only when "Export to PROCESS DIRECTOR" and "Use Generic ProcessDirector Function" are selected.
Generic Mapping ID	The mapping schema that is used by the `ProcessDirector` generic function module. This setting is available only when "Export to PROCESS DIRECTOR" and "Use Generic ProcessDirector Function" are selected.
Late Archive Via ProcessDirector	If selected, late archiving occurs using the generic `ProcessDirector` function module. This setting is available only when "Export to PROCESS DIRECTOR" and "Use Generic ProcessDirector Function" are selected.
Late Archive As PDF	If selected, a document is converted to a PDF for late archiving. This setting is available only when "Export to PROCESS DIRECTOR" and "Late Archive Via ProcessDirector" are selected.
PDF Temp Directory	The temporary export directory that is used by the system to convert a document to a PDF for late

Parameter	Description
	archiving via `ProcessDirector`. This setting is available only when "Export to PROCESS DIRECTOR," "Late Archive Via ProcessDirector," and "Late Archive As PDF" are selected.
Output OCR XML File	If selected, the system will export an OCR XML file for each document.
OCR XML File Key	This controls how the OCR XML output file is named. If set to FILENAME, the name of the OCR XML file will be set to the original image filename without the file path and file extension. If set to URN, the name of the OCR XML file will be set to the document URN mapped in Global Settings > Import Settings. This setting is available only when "Output OCR XML File" is selected.
OCR XML File Type	The file extension that is added to the OCR XML file. If no file type is specified, XML is used. This setting is available only when "Output OCR XML File" is selected.
OCR XML Header	This is the XML file encoding header value that is used as the header line in the OCR XML file. This setting is available only when "Output OCR XML File" is selected.
Include Candidate Information	If selected, candidate information is written to the OCR XML file for each of the extraction fields. This setting is available only when "Output OCR XML File" is selected.

Client Settings

A client is the highest level of organizational unit within Brainware for Invoices. Clients are assigned processing profiles, export profiles, instructions profiles, partitions and individual documents.

All documents that do not have a client explicitly assigned are assigned to client 0. Client 0 is the solution base client and it cannot be deleted within Solution Configuration Manager.

The following settings are available.

Parameter	Description
Client ID	The unique ID of the client expressed as an integer.
Processing Profile ID	The ID of the processing profile that is assigned to the client. The profile controls what fields are extracted and how they are validated. More than one client may share the same processing profile ID if the extraction and validation requirements are identical.
Export Profile ID	The ID of the export profile that is assigned to the client. The export profile ID controls how data is exported for that client. More than one client may share the same export profile ID if the export requirements are identical.
Client Name	The name of the client. This data is written into the reporting database for each document assigned to the client.
Instructions Profile ID	The ID of the instructions profile that is available for a user to view in Verifier.
Force Verify	If selected, all documents for this client are routed to Verifier irrespective of validity status.
Client Group	The ID of the client group. This is an integer value that can be set by the system administrator. The client group controls how users are assigned access to documents for a specific client.
Requires Review	If selected, documents assigned to the client are subject to supervisor review.
Vendor Partition	The ID of the vendor master data partition that is used by a client. Entries here must correspond to an entry in Global Settings > Partition Settings > Vendor Partitions.
Employee Partition	The ID of the employee master data partition that is used by a client. Entries here must correspond to an entry in Global

Parameter	Description
	Settings > Partition Settings > Employee Partition Settings.
PO Partition	The ID of the purchase order data partition that is used by a client. Entries here must correspond to an entry in Global Settings > Partition Settings > PO Number Partition Settings.
Tax Partition	The ID of the tax partition in the tax look-up table that is used by a client during automatic tax code determination for countries with tax jurisdictions. Entries here must correspond to an entry in Global Settings > Partition Settings > Tax Partition Settings.
Priority	When documents are imported into Brainware for Invoices, they are placed into batches and each batch is assigned a priority. This priority controls the order by which the runtime server component of Brainware for Invoices processes the batches, and also the order in which the documents appear in the Verifier application. The priority scale runs from 1 to 9, with 1 having the highest level of priority. If this field is populated with 1, it means that all batches containing documents from this client are accorded a priority of 1.
PaymentTermsProfileID	The ID of the payment terms profile that is assigned to the client. More than one client may share the same payment terms profile ID if the payment terms codes used are identical.

Instruction Settings

These instruction settings enable you to provide additional information to a Verifier user that can help them process documents for effectively.

Instructions Profile Settings

These settings are instructions that can be added to Verifier as a button. When the button is pressed, instructional text is displayed to the user. This text helps them process documents for a specific client.

Parameter	Description
Profile Name	The instructions profile name.
Instructions	The instruction text.

Project Configuration Packets

As you configure your project, almost every change you make in the Solution Configuration Manager is written to a packet. If you have one or more Brainware for Invoices installations where you want exact or similar behavior, you can use these packets to reduce configuration effort for those installations.

Within the Solution Configuration Manager, you can manage packets in the following ways.

- Export a project configuration packet to an external file
- Import a project configuration packet from an external file

Export a Project Configuration Packet

If you have multiple Brainware for Invoices installations that require similar configurations, it is possible to use the same project configuration packet for multiple installations. Once you have exported a project configuration packet, it is possible to importit into another Brainware for Invoices installation.

To export a project configuration packet, complete the following steps.

1. From the Solution Configuration Manager menu, select **Export Project Configuration**.
   The **Export Project Configuration** page is displayed.
2. In the **Location** group, the **Package Migrate Location** specifies where the export is saved.
   This is a read-only option. This is set during installation.
3. From the **Package Selection** group, select your **Package**, **Version**, and then **Project**.
   A list of packets is displayed.
4. Select one or more packets from the list and then click **Migrate selected packets**.
   The packets are saved in the location listed above.

Import a Project Configuration Packet

If a new Brainware for Invoices installation has similar requirements to an existing installation, it is possible to import its project configuration packet to minimize the effort required to get the new installation up and running. Before you can import a project configuration packet, it must first be exported.

To import a project configuration packet, complete the following steps.

1. From the Solution Configuration Manager menu, select **Import Project Configuration**.
   The **Import Project Configuration** page is displayed along with the **Import Location**.
2. In the **Packet Selection** group, select the **Package**, **Version**, **Source Project**, and **Target Project**.
   A list of packets is displayed.
3. Select one or more packets and then click **Import Selected Packets**.
   The selected packets are imported into the selected **Target Project**.

Settings Excluded from Standard Migration Packets

You can choose to exclude certain settings in the Brainware for Invoices migration packet if they contain user settings or passwords that vary from one environment to another. If these settings are not relevant in every environment, you can choose not to migrate them.

The following settings are not included in the standard Solution Configuration Manager migration packets.

Global Settings > **Database Settings**

These settings contain information about the database connections per environment.

Global Settings > **User Management**

These settings contain information about the configured users and their passwords.

Global Settings > **ASE Settings**

These settings contain the CSV file locations that are used for the various database lookups.

Processing Settings > **Content Configuration** > **Content Settings**

These settings contain the necessary information to connect to the Perceptive Content server, if you are using one.

Processing Settings > **SAP Configuration**

These settings contain information about the SAP server, username, and password. These settings are necessary only if you are using SAP.

Export Settings > **Export Options**

These settings contain information about the various export settings.

Export Settings > **Export Mapping** > **CSV Export Configuration**

These settings contain the file path for CSV export.

When a user clicks **Save** after modifying on of the above settings, the Solution Configuration Manager displays a message confirming that the data is saved, but not added to the migration packet.

Appendix C: Deactivating ASE fields

This section describes the steps required to deactivate Associative Search Engine fields within the project file.

Delete the Associative Search Engine field settings

To delete the Associative Search Engine setting for a specific field, complete the following steps in Solution Configuration Manager.

1. Select the project you want to use.
2. Select **Global Settings** from the **Settings** drop-down.
3. Within the **Global Settings** hierarchy tree, navigate to the **ASE Settings** node. The Associative Search Engine configuration table is then displayed.
4. Locate the row for the field you wish to deactivate.
5. Highlight the row using the check box on the left-hand side.
6. Click the **Delete** button.
7. Save the changes.

Switch off the Associative Search Engine field

To switch of the ASE field, complete the following steps.

1. Using the Brainware Intelligent Capture Designer module, open the **<project>.sdp** file.
2. Navigate to the class that holds the definition of the field, and then to the field.
3. Display the field properties.
4. In the Available analysis engine list, select **No Analysis Engine**.
5. Save the changes and close the file.

Appendix D: Intercompany Vendors

Intercompany invoices arise in instances where different subsidiaries of the same group of companies are invoicing one another. This is prevalent in large multinational corporations where a substantial proportion of the daily invoice volume can represent this type of transaction.

Intercompany invoices need to be handled separately from regular third-party invoices. The reason is that the presence of bill-to address information on a third-party invoice, coupled with the presence of intercompany vendor addresses in the vendor extract, can skew the recognition rates of third-party vendors. Therefore, the system could potentially propose an intercompany vendor as the best vendor for a third-party invoice because the intercompany vendor details represent a good fit to the bill-to address details provided on the invoice.

To avoid this issue, the solution provides a dedicated Intercompany class.

Vendor extracts

If intercompany invoices are processed, then two vendor extract files need to be provided; one that contains only third-party vendors, and another that contains only intercompany vendors.

The third-party vendor extract file is set up in the normal manner. The intercompany vendor extract file is set up in the same way, except that it is mapped to the VendorASSA field on the intercompany class level.

Configure the intercompany classification

The instructions in this section are optional. If they are not completed, all intercompany invoices are classified to the Invoices class, and stop in Verifier because the system is unable to find the correct vendor. If this occurs, you must reclassify each intercompany invoice manually.

The following examples provide guidelines for classification depending on your client circumstances. Select the appropriate classification strategy based on the following information.

- The volume of intercompany invoices.
- The variety of intercompany invoice formats.
- The extraction success on intercompany invoices through the generic learnset.
- The degree of document separation at time of scanning.

Example 1

In this example, intercompany invoices are separated from third-party vendor invoices at the point of scan. If intercompany invoices are separated from third-party vendor invoices, and are scanned using a different scan job, use this method to classify them using the correct class.

If this applies to your business environment, you can use a script in the UserExitPostClassify user exit script to force the document to the intercompany node, thus guaranteeing 100 percent correct classification to the extent that the document was scanned correctly. In the event of a mis-scan, the document is classified to the Invoices class and a user has to reclassify it to the intercompany class manually.

The fnGetFileName function provides a simple method for extracting the filename without the file path and file extension. The name of the intercompany class is case sensitive and is always referred to as Intercompany.

Example 2

You process a significant volume of intercompany invoices but there are only a handful of different formats.

If the number of intercompany invoice formats total five or less, then an example of each format can be added directly to the classification learnset for the Intercompany class using the layout classification engine. It is recommended that you add at least three examples of each format.

It is not necessary to train a corresponding extraction learnset for the intercompany class as the class automatically inherits the extraction training from the prepackaged learnset held at the invoices class level.

However, if the generic extraction is not delivering acceptable extraction results, you can create an extraction learnset exclusively for the intercompany invoices at the intercompany level using the Normal Train Mode in the solution Designer module.

It is not possible to use the supervised learning workflow feature in conjunction with the intercompany classes. You can create and amend the intercompany classes only through the Designer module.

Example 3

You process a significant volume of intercompany invoices and there are a wide variety of different formats.

Large, multinational organizations with different subsidiaries or suborganizations located around the globe may experience high volumes of intercompany invoices in a multitude of different invoice formats.

If this is the case, then you must create new intercompany subclasses under the existing intercompany class to accommodate the different format examples required to build a classification learnset.

Depending on volumes and the success of extraction using the generic learnset, it may be advantageous to create a dedicated extraction learnset for each format. There is no restriction on the number of subclasses you can create though it is recommended that each has a title indicative of the formats of documents it is designed to handle.

Appendix: Perceptive Content integration

This version of Brainware for Invoices uses standard functionality to enable the automatic update of the Perceptive Content messaging tables.

With Perceptive Content integration, information captured such as the invoice number, purchase order number, dates, the vendor, and so on can be stored in Perceptive Content as an invoice document. The document is then available to use with your business’s information system and can be shared among different departments.