DRAFT

Perceptive DataTransfer

Administrator Guide

Version: 6.2.x

perceptivesoftware

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DRAFT

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Introduction

Perceptive DataTransfer is a data matching, review and upload solution that allows you to automatically verify, clean up, and enter data extracted from hand-printed paper forms, downloadable web forms, and almost any other electronic source.

You can quickly and accurately upload information into your database, such as online and paper applications, recruit cards, SAT scores, ACT scores, GRE scores, and AP scores without the risk of creating duplicate student records.

With Perceptive DataTransfer, you can:

- Import a nearly unlimited range of data files.
- Match input data to records in your database.
- Review potentially matching records side-by-side.
- Upload new or modified information in real-time into your database.

You can customize Perceptive DataTransfer to upload any type of data from any information source in the Perceptive DataTransfer source code.

See the following topics for more information.

- Starting and Logging in to Perceptive DataTransfer on page 6.
- Understanding the Interface on page 7.
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- Specifying Preferences on page 12.
- Understanding User Roles and Privileges on page 12.
- Overview of Perceptive DataTransfer Administrative Tasks on page 14.
- Viewing Server Logs on page 15.

Starting and Logging in to Perceptive DataTransfer

To start and log in to Perceptive DataTransfer, do the following:

1. Start the application by doing one of the following:
   - Open a web browser and type the Perceptive DataTransfer location. You can type the location in your browser address bar, or you can open it from the browser by selecting **File > Open** from the browser menu. For example, type an address such as http://*servername*:8080/DataTransfer.
   - Double-click the Perceptive DataTransfer shortcut icon, or (in Microsoft Windows) right-click it and click **Open**, or (in Apple Macintosh and Linux) control-click it and click **Open**.

     By default, there is no shortcut icon. You can create a desktop shortcut, or you can bookmark the startup page, to quickly access it when you subsequently log in to the application.

To add a shortcut on your desktop, do one of the following:

- In the browser toolbar, click the browser icon that appears to the left of the Perceptive DataTransfer URL; then, drag and drop it to the desktop.
- In Microsoft Internet Explorer, select, from the menu bar, **File > Send > Link to Desktop**.
- In Google Chrome, click  and select **Create application shortcuts...**.
- To bookmark the page, do one of the following:
- In Microsoft Internet Explorer, select **Favorites > Add to Favorites...** from the menu bar. Then, set the bookmark name and location.
- In Mozilla Firefox, either select **Bookmarks > Bookmark This Page** from the menu bar or click  in the address bar. Then, set the bookmark name and location.
- In Apple Safari, click + in the address bar. Then, set the bookmark name and location.
- In Google Chrome, click  in the address bar. Then, set the bookmark name and location.

The log in screen appears.

2. Type your username and password in the Username and Password fields. Your username and password are usually the same as those you use to log in to your administrative system.

   Note If there are issues starting Perceptive DataTransfer or entering data in the login screen, contact your Perceptive DataTransfer system administrator for assistance in establishing the necessary connection rights and privileges.

3. Click **Log in**.

   You are logged in to Perceptive DataTransfer, and the application starts.

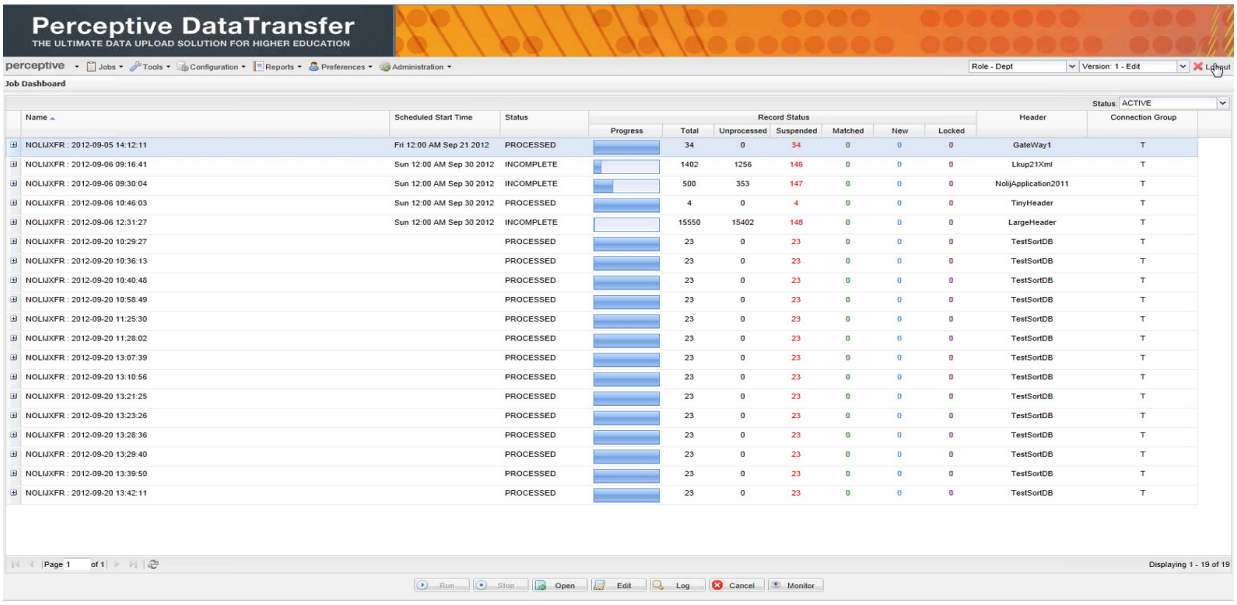
   You are logged in to Perceptive DataTransfer with your default user role and workspace version in which you are working. Specific product functions and features are available depending on the role you use and on the workspace version in which you are working.

   Note After 25 minutes of inactivity, you are prompted that you will be logged out within five minutes of further inactivity.

Understanding the Interface

When you log into Perceptive DataTransfer, the main application window displays the Job Dashboard. The Job Dashboard displays all jobs that are configured for Perceptive DataTransfer and allows users to run jobs in batch mode.

Figure 1: Perceptive DataTransfer Interface



The Perceptive DataTransfer toolbar provides access to Perceptive DataTransfer features. See the following table for a description of the toolbar menu options.

Table 1: Perceptive DataTransfer Toolbar Elements and Descriptions

Element	Description
Perceptive button	Contains the following options. • Administrator Guide: Provides access to the online PDF version of the administrator guide. • User Guide: Provides access to the online PDF version of the user guide. • About Perceptive DataTransfer: Provides information about Perceptive DataTransfer. • Licensing: Displays licensing information, including license status, license key, and last license check. If you are using a limited license, you can unlock or lock the limited license.
Jobs button	Contains the following options. • Add Job: Allows you to add jobs. • Recurring Jobs: Allows you to add recurring jobs. • See Chapter 5,"Configuring Jobs and Processing Records."
Tools	Contains the following options. • Lookup: Allows you to configure the lookup tool. • Check Names: Allows you to configure the check names tool • Data Exports: Allows you to configure data exports. • Logs: Allows you to view log messages about jobs. • Import History: Allows you to view details about workspace imports. • See Chapter 2,"Using Perceptive DataTransfer Tools."

Table 1: Perceptive DataTransfer Toolbar Elements and Descriptions (Continued)

Element	Description
Configuration	Contains the following options: • Connections: Allows you to configure database connections. See Chapter 6,"Configuring Connection Groups and Database Connections." • File sources: Allows you to configure servers or SFTP sites that contain the input file used for recurring jobs. See Chapter 7,"Configuring File Sources." • Procedures: Allows you to configure procedures. See Chapter 9,"Configuring Procedures." • Headers: Allows you to configure headers. See Chapter 8,"Configuring Headers." • Forms: Allows you to configure forms. See Chapter 10,"Configuring Forms." • Notifications: Allows you to configure notifications to be sent when various activities occur. For more information, see Chapter 4,"Configuring Notifications." • ImageNow: Allows you to configure ImageNow index maps. For more information, see Chapter 11,"Configuring ImageNow Index Maps."
Reports	Contains the following options. • Configure: Allows you to configure reports. • Schedule: Allows you to configure scheduled reports. • View: Allows you to view reports. • For more information, see Chapter 3,"Configuring Reports."
Preferences	Allows you to configure Perceptive DataTransfer preferences; it contains the following options. • Set Default Role: Sets the role for which the user is currently logged in as the default role. • Set Default Version: Sets the workspace version that the user who is currently logged in is using as the default version. • Filename in Job Name: Appends the filename of the input file to the name of a job when you add jobs. • See Specifying Preferences on page 12.

Table 1: Perceptive DataTransfer Toolbar Elements and Descriptions (Continued)

Element	Description
Administration	Contains the following options. • Workspace: Allows you to configure workspaces. See Chapter 12,"Configuring Workspaces." • User: Allows you to configure user and administrator privileges. See Chapter 5,"Configuring Users And Privileges." • Share Groups: Allows you to configure share groups, which you use to share workspaces and workspace objects. See Chapter 12,"Configuring Workspaces." • Server Logs: Allows you to view server logs. See Viewing Server Logs on page 15. • Archive: Allows you to configure rules for archiving jobs. See Chapter 5,"Configuring Jobs and Processing Records." • System E-Mail: Allows you to configure the SMTP server from which email notifications are sent. For more information, see Chapter 4,"Configuring Notifications."
Role drop-down box	Allows you to change the role into which you are logged into Perceptive DataTransfer. See Changing Roles on page 12.
Workspace drop-down box	Allows you to change the workspace version that you are using. See Changing Workspace Versions on page 12.
Logout button	Logs you out of the application.

Sorting Columns

For Perceptive DataTransfer dialog boxes or windows that contain tables of information, you can choose the columns of information you want to view or hide, sort information alphabetically, and resize the width of columns.

To select the columns that are displayed and to sort columns:

1. In the dialog box, point your mouse to the edge of a column and click .
2. Click **Sort Ascending** to sort information alphabetically in a high to low sequence (A to Z).
3. Click **Sort Descending** to sort information alphabetically in a low to high sequence (Z to A).
4. Click **Columns**.
5. Check the checkbox for the column you want to display.

Resizing Columns

To resize the width of a column, point your mouse over the edge of a column until the mouse pointer changes to ; then, drag and drop your mouse to the desired location to resize the column.

Expanding Panes

You can collapse and expand some panes; click to collapse the pane and click to expand a collapsed pane.

Refreshing Information

To refresh information in dialog boxes and application windows, click .

Changing Roles

From the role drop-down box, select the Perceptive DataTransfer role into which you are logged.

Changing Workspace Versions

From the workspace drop-down box, select the version you want to use.

Specifying Preferences

Do the following.

- Click **Preferences > Set Default Role** to set the current user's role as the default role. When you log in to Perceptive DataTransfer, you are logged in using this user role.
- Click **Preferences > Set Default Version** to set the workspace version of the current user as the default version. When you log in to Perceptive DataTransfer, you are logged in using this workspace version.
- Click **Preferences > Filename in Job Name** to append the filename of the input file to the name of a job when you add jobs. For more information about jobs, see Chapter 5,"Configuring Jobs and Processing Records."

Understanding User Roles and Privileges

Your user role and privileges determine what you can do with Perceptive DataTransfer.

The workspace version in which you are working and whether workspaces are shared also determine what you can do. For example, you cannot configure objects, such as data exports, if you are working in a workspace version in staged or active mode.

For more information about configuring roles and privileges, see Chapter 5,"Configuring Users And Privileges."

Administrator privileges determine if you can do the following.

- Add, configure, and delete users.
- Add, configure, and delete share groups.
- View server logs.
- View workspace details.
- Modify workspace details.
- Use workspace version control.
    - Create new versions in edit mode.
    - Move versions to test mode.
    - Move versions to staged mode.
    - Move versions to active mode.
- Work with objects within the workspace.
- Add shared objects.
- Modify shared objects.
- Add, modify, and delete file sources.
- Add, modify, and delete connection groups.
- Add, modify, and delete connections.
- Add, modify, and delete headers.
- Add, modify, and delete verification forms.
- Add, modify, and delete procedures.
    - Configure Match logic.
    - Configure Review logic.
    - Configure Upload logic.
    - Configure Match Display logic.
    - Configure Population Selection logic.
- Add, modify, and delete archive rules.

User privileges determine if you can do the following.

- Configure the lookup tool.
- Configure the check name tool.
- View data exports.

- Modify data exports.
- Run data exports.
- Export lookups, check names, data exports, log messages, and reports.
- Import workspace versions.
- Work within a workspace version.
  - Work within a version in edit mode.
  - Work within a version in test mode.
  - Work within a version in staged mode.
  - Work within a version in active mode.
  - Work within a version in inactive mode.
- Configure jobs.
  - Create new and recurring jobs.
  - Modify recurring jobs.
  - Enable logging of job messages.
  - View archive rules for jobs.
  - Create new records.
  - Create matched records.
  - Suspend records.
- Work within a specific workspace and with specific workspace objects.

Overview of Perceptive DataTransfer Administrative Tasks

When you configure and administer Perceptive DataTransfer, you generally perform the following steps in this order.

1. Define and create the structure of your institution and give privileges for administrators and users to access the appropriate Perceptive DataTransfer features.
2. Configure a workspace in which to work. Workspaces can be private or can be used to share objects, such as headers and procedures, to reuse them across multiple configurations.
3. Configure the logic that Perceptive DataTransfer uses to determine if there is a potential match between a database record and the input data and to determine how information is added or uploaded.
4. Determine the type of input data that you will be loading. For example, if you are loading SAT scores contained in a CSV file, you are importing a delimited file.
5. Create the header. The header defines the input source. For example, if you are importing a delimited file, you configure the header to use the delimited file format for the input file.

6. Configure header variables. These variables define the fields to be loaded from the input file; you determine the names and positions of the fields and associate them with a header variable.
7. Create the verification form, which is used to compare an existing record of information with potentially matching information from the input file, side-by-side.
8. Configure jobs, which consist of all information required to process records.

Viewing Server Logs

You can view a list of server log messages, view the contents of each message, and download messages in either.zip or native format.

1. Select **Administration > Server Logs**.

   A dialog box appears and displays the following columns of information.

   - File Name: Name of the server log file.
   - Size: Size, in Kb, of the log file.
   - Last Modified: Date and time on which the file was last modified.

2. To view the contents of a file, right-click the file and select **View**.

   The contents of the file are displayed in a separate tab.

3. To download the file in .zip format, right-click the file and select **Download as Zip**; then, select the location where you want to save the file.
4. To download the file in the application format in which it was authored, right-click the file and select **Download Native**; then, select the location where you want to save the file.

Using Perceptive DataTransfer Tools

See the following topics for more information.

- Configuring Lookup Values on page 13.
- Configuring Names to Check on page 17.
- Viewing Log Messages on page 22.
- Configuring Data Exports on page 22.
- Viewing the Import History on page 30.

Configuring Lookup Values

Use the lookup tool to specify the data you want to map from the input file to the database.

You configure the Perceptive DataTransfer logic to substitute the output value for the input value and store the output value in your database.

For example, an input file may have a value of *Humanities* for a department; its corresponding database (output) value is *HUM*. You can use the lookup tool to map *Humanities* as *HUM* and then configure code to store *Humanities* as *HUM* in your database.

Example syntax for configuring the code is:

```
let $some_var = lookup("MAJOR", $MAJR)
```

When a job is run, lookup mapping for *MAJOR* determines that the correct output value for *Humanities* is *HUM*. The variable *$some_var* contains the value *HUM*. *$MAJR* contains *Humanities*.

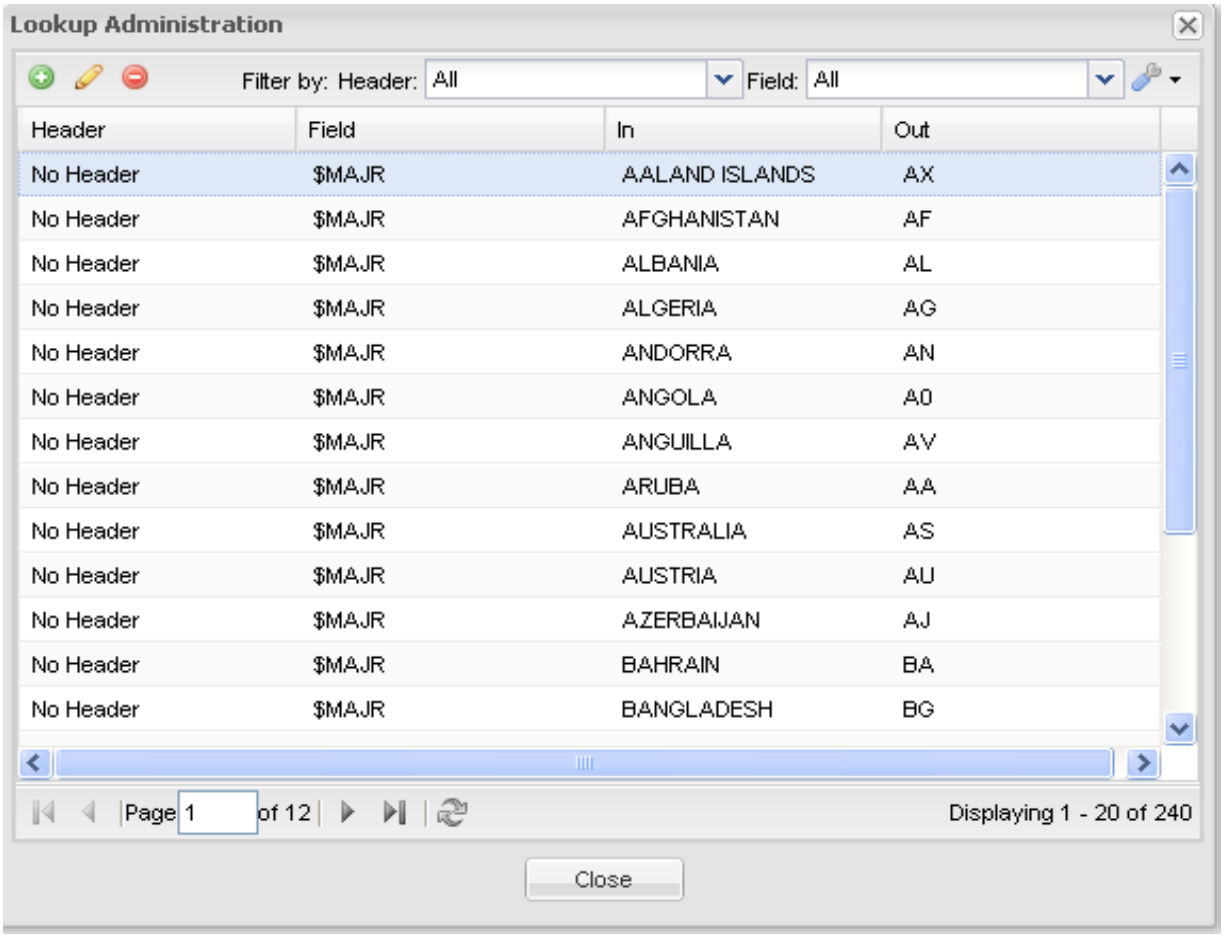
For more information about configuring procedures, see Chapter 9,"Configuring Procedures." For detailed information about configuring logic, see Appendix 14,"Programming Concepts."

You can export lookups to an XML file, and you can import lookups from either a Perceptive DataTransfer XML file or a delimited file.

To open the Lookup Administration dialog box, select **Tools > Lookup**.

You can filter the entries in the Lookup Administration dialog box by header, by field, or by both. Select the appropriate header from the Header drop-down box to view entries for that header. Select the appropriate field from the Field drop-down box to view entries for that field.

Figure 2: Lookup Administration Dialog Box



Adding Lookup Entries

To add a lookup entry, do the following.

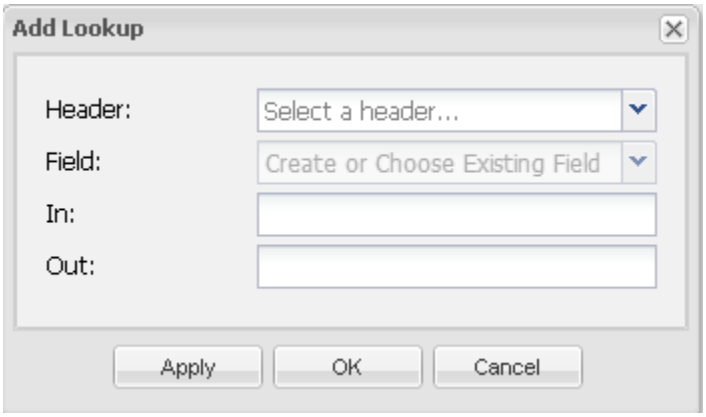
1. Select **Tools > Lookup**.

   The Lookup Administration dialog box appears.

2. Click .

   The Add Lookup dialog box appears.

Figure 3: Add Lookup Dialog Box



3. From the Header drop-down box, optionally select the header for which to configure the lookup entry. Select **No Header** if you want to use this entry for all headers.
4. From the Field drop-down box, select the header input variable to use or type the input variable in the Field field. This variable corresponds to the field in the input file that you want to map to a database valid code (output).
5. In the In field, type the value of the input variable to map to the output value in the Out field.
6. In the Out field, type the output value to map to the input value (specified in the In field).
7. Click **Apply**.
8. Click **OK**.

Modifying Lookup Entries

To modify a lookup entry, do the following.

1. Select **Tools > Lookup**.

   The Lookup Administration dialog box appears.

2. Select a lookup entry to modify and either right-click it and select **Edit** or click .

   The Edit Lookup dialog box appears.

3. In the In field, type the input value, which is the value of the input variable to map to the database valid code in the Out field.
4. In the Out field, type the database valid code to map to input value (specified in the In field).
5. Click **OK**.

Deleting Lookup Entries

To delete a lookup entry, do the following.

1. Select **Tools > Lookup**.

   The Lookup Administration dialog box appears.

2. Select a lookup entry to modify and either right-click it and select **Delete** or click .

   The entry is deleted and is removed from the Lookup Administration dialog box.

Importing Lookup Files

To import lookup entries from a either a Perceptive DataTransfer file or a delimited file, do the following.

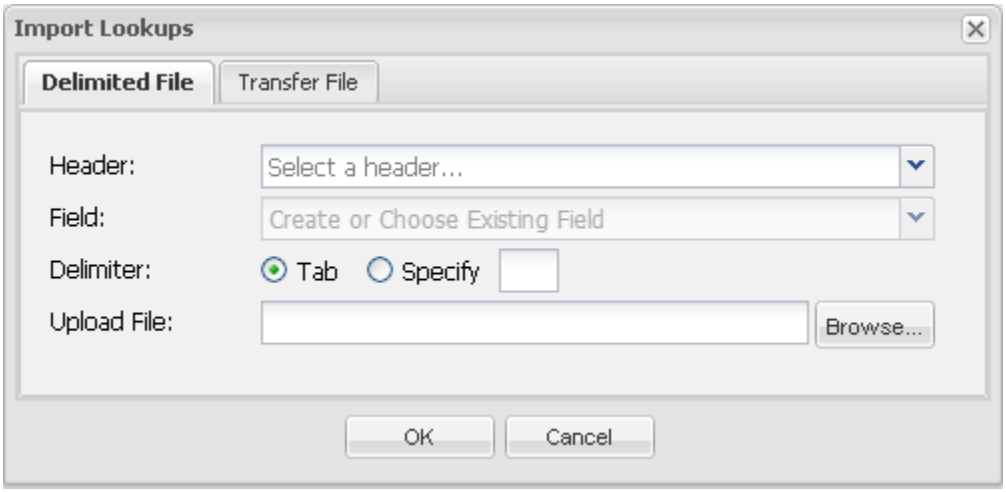
1. Select **Tools > Lookup**.

   The Lookup Administration dialog box appears.

2. Click .

   The Import Lookups dialog box appears.

Figure 4: Import Lookups Dialog Box



3. Do one of the following.
   - To import a delimited file, do the following.
     1. click the **Delimited** tab.
     2. From the Header drop-down box, select the header file to use.
     3. From the Field drop-down box, select the header input field or type a new field to create it. This variable corresponds to the field in the input file that you want to map to a database valid code (output).
     4. Specify how the imported file is delimited; either click the **Tab** radio button or click the **Specify** radio button and then provide a value in the Specify field.
     5. In the Upload File field, click **Browse...** and navigate to the file you want to import.
     6. Click **Upload**.
   - To import a Perceptive DataTransfer file, click the **Transfer File** tab. Then, in the File field, click **Browse...**, navigate to the file you want to import, and select it.
4. Click **OK**.

   The file is imported, and imported lookup values are displayed in the Lookup Administration dialog box.

Exporting Lookup Files

To export lookups as an XML file, do the following.

1. Select **Tools > Lookup**.

   The Lookup Administration dialog box appears.

2. Click  .
3. Save the file in the appropriate location.

Configuring Names to Check

You can use the Check Name tool to configure different output values that an input name may have.

You can substitute this output value for the input name within the Perceptive DataTransfer logic.

For example, for an input name *Alexandria*, you could use *Alex* or *Lexie* as substitutions.

Code syntax is:

```
CHECKNAME inCNamevar, inFNamevar, outCntvar, outNamevar1, outNamevar2,... outNamevarN
```

- The first two variables (*inCNamevar* and *inFNamevar*) are input variables for which you are substituting values. inFNamevar is an optional parameter.
- The third variable (*outCntvar*) specifies the number (count) of output variables.
- Variables that appear after the third variable (*outCntvar)* are the output variables.

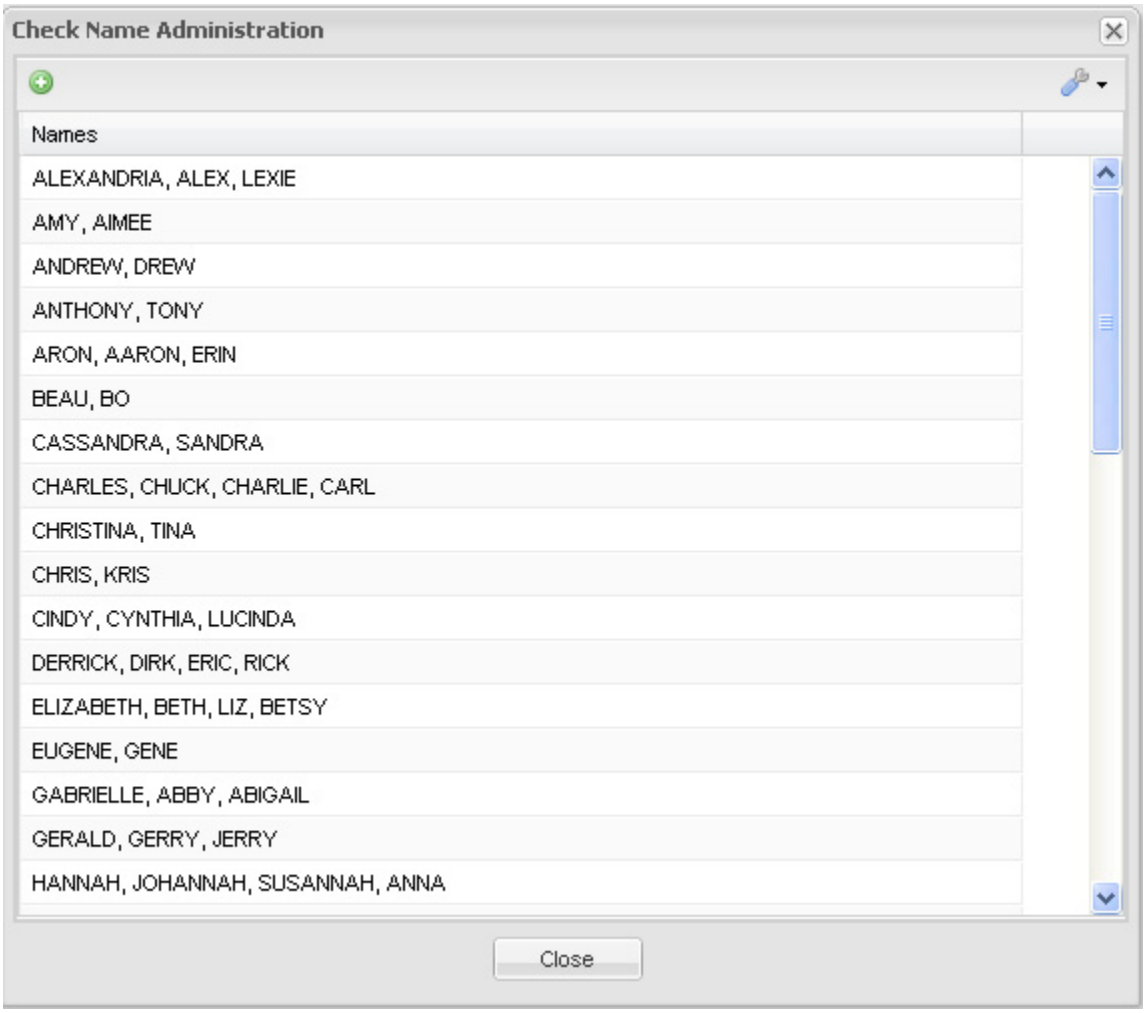
When the Perceptive DataTransfer logic is run, it searches for matches between the input and output variables. If values for output variables are found, the output variables are populated with all variations of the input name. If no matches are found, the input name is assigned to the output variables.

For more information about configuring procedures, see Chapter 9,“Configuring Procedures.” For detailed information about logic, see Appendix 14,“Programming Concepts.”

You can import check name values from and export values to an XML file.

To open the Check Name Administration dialog box, select **Tools > Check Names**.

Figure 5: Check Name Administration Dialog Box



See the following topics for more information.

- Adding and Modifying Names on page 20.
- Deleting Names on page 21.
- Importing Names on page 21.
- Exporting Names on page 22.

Adding and Modifying Names

To add or modify a name, do the following.

1. Select **Tools > Check Names**.

   The Check Name Administration dialog box appears.

2. Do one of the following:

   - To add a new name, click  .

     The Add New Check Name dialog box appears.

   - To modify a name, select the name and click  .

     The Edit Check Name dialog box appears.

3. To add a new value to the name, do the following:

   1. Click  .

      The New Check Name Value dialog box appears.

   2. In the Value field, type the value that the name can have.

      Note You cannot add a value that is already configured for another entry. You can only use a value once.

   3. Click **Apply** to add the value to the check name entry.

   4. Continue adding values for the name, and then click **OK**.

4. To modify a value, do the following:

   1. Select the value you want to modify and either right-click it and select **Edit** or click  .

      The Edit dialog box appears.

   2. Type the value in the dialog box and click **OK**.

5. To delete a value, select the value you want to delete and either right-click it and select **Delete** or click  .

   The value is deleted and is removed from the dialog box.

Deleting Names

To delete a name, do the following.

1. Select **Tools > Check Names**.

   The Check Name Administration dialog box appears.

2. Select the value you want to delete and either right-click it and select **Delete** or click .

   A dialog box appears and prompts you to confirm that you want to delete the name.

3. Click **Yes** to confirm that you want to delete the name.

   The name is deleted, and all its associated values are deleted; the name is removed from the Check Name Administration dialog box.

Importing Names

To import names from an XML file, do the following.

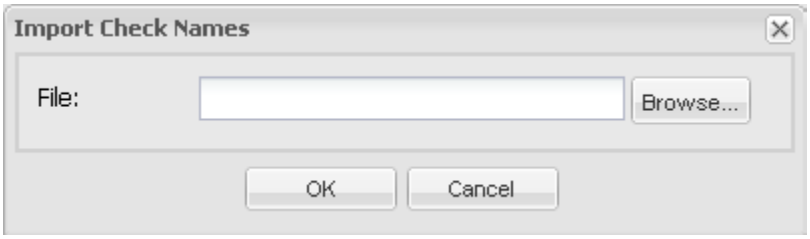
1. Select **Tools > Check Names**.

   The Check Name Administration dialog box appears.

2. Click and select **Import**.

   The Import Check Names dialog box appears.

Figure 6: Import Check Names Dialog Box



3. Click **Browse...** and navigate to the file that you want to import.
4. Click **OK**.

Exporting Names

To export names to an XML file, do the following.

1. Select **Tools > Check Names**.

   The Check Name Administration dialog box appears.

2. Click  and select **Export**.
3. Save the XML file in the appropriate location.

Viewing Log Messages

You can view log messages that provide information about Perceptive DataTransfer jobs.

1. Do one of the following:
   - In the Job dashboard, select a job and click the **Log** button.
   - In the Job dashboard, right-click a job and select **Log**.
   - In the Job Dashboard, select a job in the table and either right-click it and select **Open** or click the **Open** button; then, in the window that appears, click **Log**.
   - Select **Tools > Logs**.

     The Log View dialog box appears and displays the following columns of information.

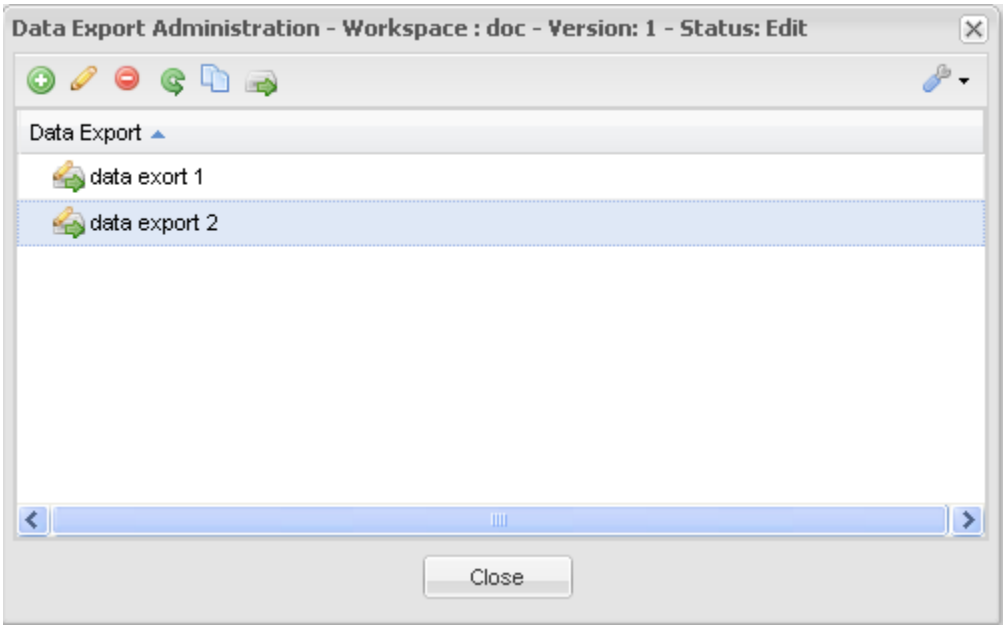
     - Job Name: Name of the job.
     - Type: Type of log message (error, SQL). To log SQL messages, check the Log SQL checkbox in the Add Job dialog box for the appropriate job; see Adding New Jobs on page 45.
     - Message: Body of the log message.
     - User: Username of the user who was logged in.
     - Date/Time: Date and time on which the message was logged.
2. To filter messages by job, select the job from the Job drop-down box.
3. To filter messages by type, select the type of log message from the Type drop-down box.
4. To export messages in XML format, click  and then save the file in the appropriate location.

Configuring Data Exports

You can use data exports to create SQL queries to obtain content from any database configured for Perceptive DataTransfer. You can save the results and export them to a delimited file.

You can share data exports with other workspaces, and you can import data exports from and export data exports to an XML file.

Figure 7: Data Exports Administrator Dialog Box



See the following topics for more information.

- Adding Data Exports on page 24.
- Configuring and Modifying Data Exports on page 25.
- Copying Data Exports on page 27.
- Deleting Data Exports on page 27.
- Running Data Exports on page 27.
- Extracting Data Exports on page 28.
- Removing Sharing on Shared Data Exports on page 28.
- Rolling Back Data Exports on page 29.
- Importing Data Exports on page 29.
- Exporting Data Exports on page 29.

Understanding Data Export Icons

The following table describes data export icons and their descriptions.

Table 2: Data Export Icons and Descriptions

Icon	Description
	Data export is shared.
	Data export is shared and has been modified.
	Data export is not shared and has been modified.
	Data export has not been modified. If you are working in a workspace version in edit mode, the data export is not shared. If you are working in a workspace version in a mode other than edit mode, this icon is displayed for all data exports. The sharing status is unknown.

Adding Data Exports

To add and configure a data export, do the following.

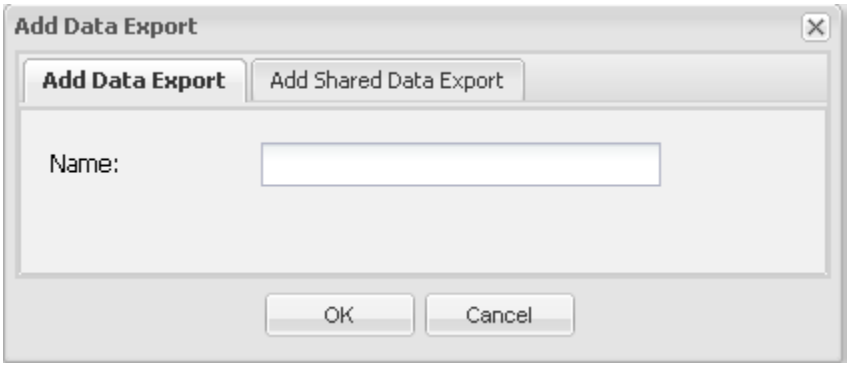
1. Select **Tools > Data Exports**.

   The Data Exports Administrator dialog box appears.

2. Click  .

   The Add Data Export dialog box appears.

Figure 8: Add Data Export Dialog Box



3. Do one of the following.
   - To add a new data export, do the following.
     1. Click the **Add Data Export** tab.
     2. Type a name in the Name field and click **OK**.
   - To add a data export that is shared by another workspace, do the following.
     1. Click the **Add Shared Data Export** tab.
     2. From the Workspace drop-down box, select the workspace that shares the data export you want to add.
     3. From the Data Export drop-down box, select the shared data export that you want to add.
     4. Click **OK**.

   The data export is added and appears in the Data Export Administration dialog box.

Configuring and Modifying Data Exports

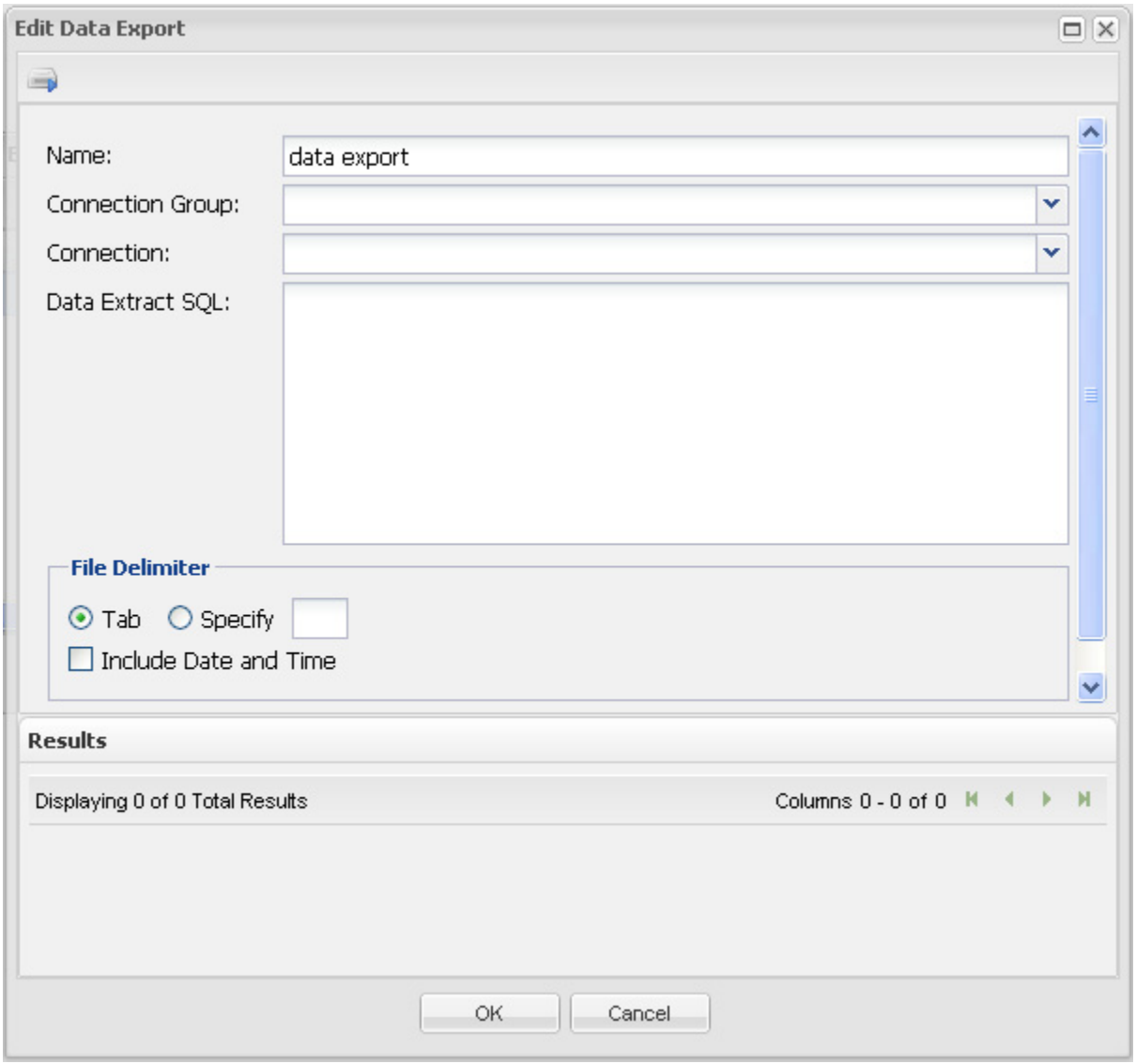
1. Select **Tools > Data Exports**.

   The Data Exports Administrator dialog box appears.

2. Either right-click the data export you want to configure and select Edit or click .

   The Edit Data Export dialog box appears.

Figure 9: Edit Data Export Dialog Box



3. To rename the data export, type the name in the Name field.
4. From the Connection Group drop-down box, select the connection group to use.
5. From the Connection drop-down box, select the database connection to use.
6. In the Data Extract SQL field, type the appropriate SQL code for data extract.

7. Define the format of the delimited file that contains the data returned by the query. Click the **Tab** radio button to specify that the file is tab-delimited, or click the **Specify** tab to provide your own value and then type the value in the corresponding field.
8. Check the **Include Date and Time** checkbox to include the date and time in the name of the data export file.
9. Click **OK**.

Copying Data Exports

To create a duplicate of a data export, do the following.

1. Select **Tools > Data Exports**.

   The Data Exports Administrator dialog box appears.

2. Select the data export you want to copy and click  .

   The data export is duplicated, and its copy appears in the Data Export Administration dialog box.

Deleting Data Exports

To delete a data export, do the following.

1. Select **Tools > Data Exports**.

   The Data Exports Administrator dialog box appears.

2. Select the data export you want to delete and either right-click it and select **Delete** or click  .

   The data export is deleted and is removed from the Data Export Administration dialog box.

Running Data Exports

To run the query and view the data returned from the database, do the following.

1. Select **Tools > Data Exports**.

   The Data Exports Administrator dialog box appears.

2. Click  .
3. From the Data Exports drop-down box, select the data export you want to run.

4. Click  .
5. One of the following occurs.
   - If there are issues with the SQL code, a dialog box appears and displays information about the problem.
   - If there are no issues with the SQL code, results of the data export are displayed in the Results pane.

Extracting Data Exports

You can run the query you created and export the data returned to a file-delimited format you specified in the Edit Data Export dialog box (see Configuring and Modifying Data Exports on page 25).

1. Select **Tools > Data Exports**.

   The Data Exports Administrator dialog box appears.

2. Select the data export you want to extract and either right-click it and select **Extract** or click  .

   The Extract Data Export dialog box appears.
3. From the Connection Group drop-down box, select the connection group you want to use.
4. From the Connection drop-down box, select the connection you want to use.
5. Click **OK**.
6. Save the file with the extracted data in the appropriate location.

Removing Sharing on Shared Data Exports

To remove sharing on data exports that are shared with another workspace, do the following.

1. Select **Tools > Data Exports**.

   The Data Exports Administrator dialog box appears.

2. Select the data export for which you want to remove sharing and click  .

   Sharing is removed on the data export.

Rolling Back Data Exports

If changes have been made and committed to a data export, you can use a previous version (*roll back*) of it.

1. Select **Tools > Data Exports**.

   The Data Exports Administrator dialog box appears.

2. Select the data export you want to roll back and either right-click it and select **Rollback** or click  .

   The Rollback Manager dialog box appears and provides the following information.

   - Name: Name of the data export.
   - Status: Status of the data export (*current* or *dated*).
   - Version Date: Date and time on which the version was created.
   - Created By: Username of the user who created the version.
   - Comments: Comments, if any, added by the user for the version.

3. Select the version that you want to use and click **OK**.

   The previous version is loaded.

Importing Data Exports

To import a data export, do the following.

1. Select **Tools > Data Exports**.

   The Data Exports Administrator dialog box appears.

2. Select  and select **Import**.

   The Import Data Export dialog box appears.

3. Click **Browse...** to navigate to the location of the file you want to import, and then select it.
4. Click **OK**.

   The data export is imported and is displayed in the Data Export Administration dialog box.

Exporting Data Exports

To export a data export as an XML file, do the following.

1. Select **Tools > Data Exports**.

   The Data Exports Administrator dialog box appears.

2. Click  and select **Export**.
3. Save the file in the appropriate location.

Viewing the Import History

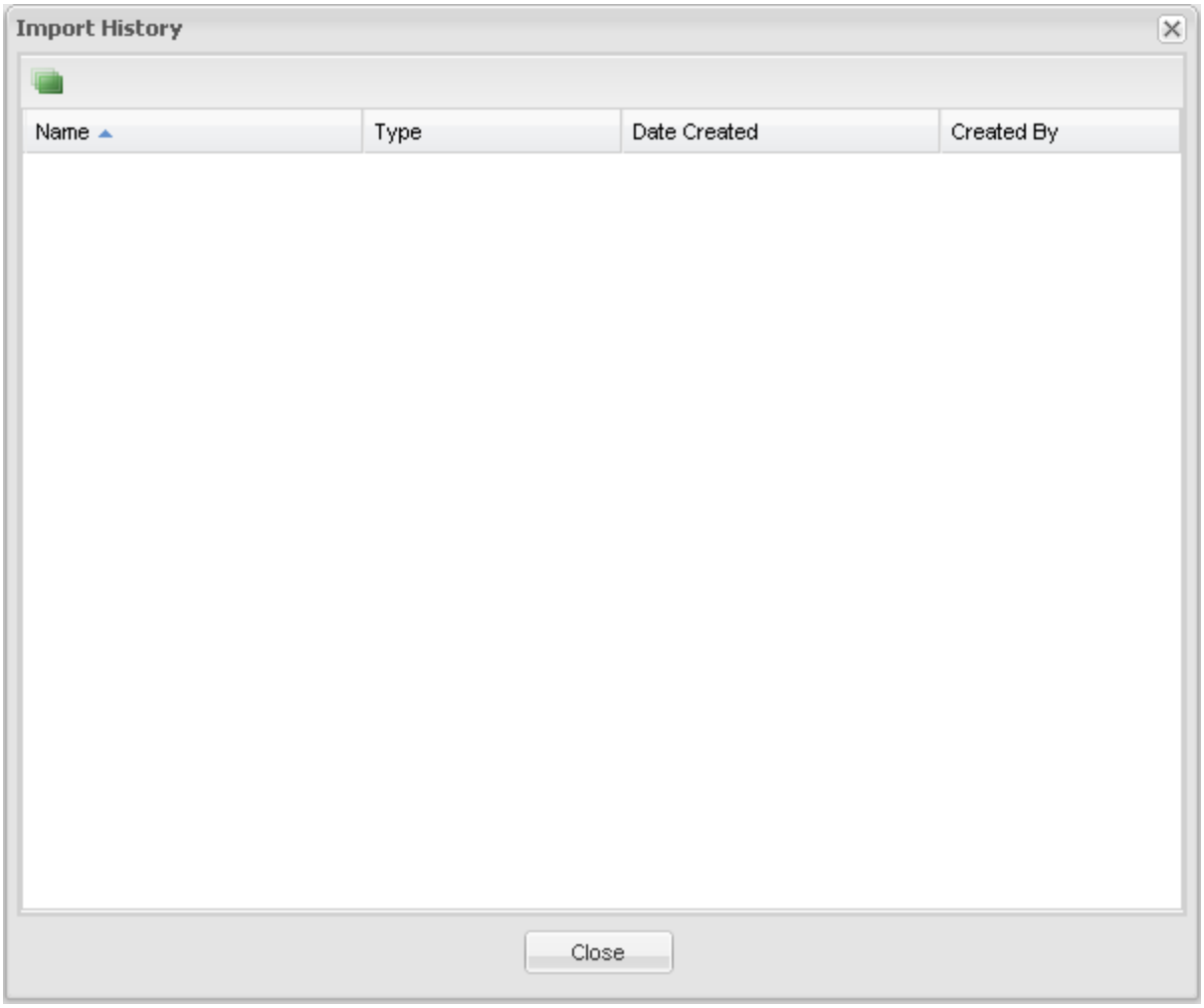
To view the import history, do the following.

1. Select **Tools > Import History**.

   The Import History dialog box appears and displays the following columns of information.

   - Name: Name of the object imported into Perceptive DataTransfer (for example, *Workspace* or *Data Export*).
   - Type: Type of import (*Full Import* or *Partial Import*).
   - Date Created: Date and time on which the object was imported.
   - Created By: Username of the user who imported the object.

Figure 10: Import History Dialog Box



2. To view details about the Perceptive DataTransfer objects that were imported, select the entry in the table and either right-click it and select **Import Details** or click .

   The Import Report dialog box appears and displays information about the objects imported into Perceptive DataTransfer.

Configuring Reports

You can write custom XML reports, which are based on JasperReports and are presented in PDF format. For more information about JasperReports, see http://en.wikipedia.org/wiki/JasperReports.

Note Reports only run against the Perceptive DataTransfer database.

See the following topics for more information.

- Configuring Reports on page 31.
- Configuring Scheduled Reports on page 33.
- Viewing Reports on page 35.

Configuring Reports

In Reports > Configure, you can add, modify, and delete reports; you can also import and export reports. See the following topics for more information.

- Adding and Modifying Reports on page 31.
- Deleting Reports on page 32.
- Importing Reports on page 33.
- Exporting Reports on page 33.

Adding and Modifying Reports

You can create reports in JasperReports format.

1. Select **Reports > Configure**.

   The Configure Reports dialog box appears.

2. Do one of the following.

   - To add a new report, click  .

     The Add Report dialog box appears.

   - To modify a report, select the report and either right-click it and select **Edit Report** or click  .

     The Edit Report dialog box appears.

3. In the Report Name field, type the name of the report.
4. In the XML field, type the XML code that generates the report.

5. To add report parameters, do the following.

    1. In the Report Parameters pane, click  .

        The New Report Parameter dialog box appears.
    2. From the Parameter drop-down box, select the type of parameter you want to add. Options are:

        - Header
        - Job
        - Start Date
        - End Date
        - User
    3. Click **Apply**.
    4. Continue adding parameters, as appropriate, and click **OK** when you are finished.
    5. To delete a parameter, select the parameter in the Report Parameters pane and click  .
6. Click **OK** to save your changes and close the dialog box.

Deleting Reports

To delete a report, do the following.

1. Select **Reports > Configure**.

    The Configure Reports dialog box appears.
2. Select the report you want to delete and either right-click it and select Delete Report or click  .

    A dialog box appears, prompting you to confirm that you want to delete the report.
3. Click **Yes**.

    The report is deleted and is removed from the Configure Reports dialog box.

Importing Reports

To import reports from an XML file, do the following.

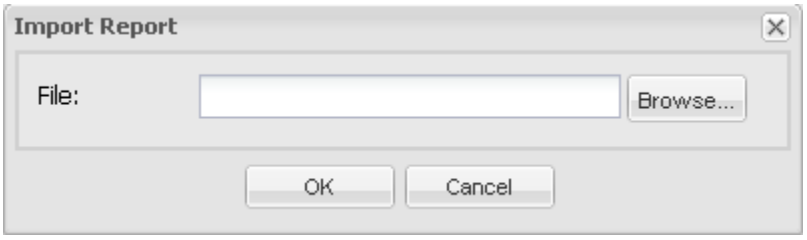
1. Select **Reports > Configure**.

   The Configure Reports dialog box appears.

2. Click  and select **Import**.

   The Import Report dialog box appears.

Figure 11: Import Report Dialog Box



3. Click **Browse....**, navigate to the location of the file, and select it.
4. Click **OK**.

   The file is imported, and reports that are imported are displayed in the Configure Reports dialog box.

Exporting Reports

To export reports to an XML file, do the following.

1. Select **Reports > Configure**.

   The Configure Reports dialog box appears.

2. Select the report you want to export.

3. Click  and select **Export**.

   Save the XML file in the appropriate location.

Configuring Scheduled Reports

In Reports > Schedule, you can add and delete reports that are scheduled to be run at specified times, and you can modify the schedule for these reports. You can also view reports by clicking  (see Configuring Scheduled Reports on page 33 for more information).

See the following topics for more information.

- Adding and Modifying Scheduled Reports on page 34.
- Deleting Scheduled Reports on page 35.

Adding and Modifying Scheduled Reports

To add or modify a scheduled report, do the following.

1. Select **Reports > Schedule**.

   The Schedule Reports dialog box appears.

2. Do one of the following.

   - To add a new report, click  .

     The Add Scheduled Report dialog box appears.

   - To modify a report, select the report and either right-click it and select **Edit Report** or click  .

     The Edit Scheduled Report dialog box appears.

3. Click the **Details** tab.

   The Parameters pane displays the parameters, which you can specify, that are available for the selected report;.

4. In the Parameters pane, provide the appropriate parameters. Options depend on the parameters available for the report. Possible options are:

   - Start Date field: Click  to open a calender from which you select the start date of the report.
   - End Date field: Click  to open a calender from which you select the end date of the report.
   - Job field: Type the name of the job for the report.
   - Header drop-down box: Select the header used for the job.
   - User drop-down box: Select the user running the job.

5. From the Start Time drop-down box, select the time on which the report is run.
6. In the Recurrence Pattern pane, specify when the report recurs.
   - Click the **Once** radio button to run the report once. After the report is run, rules for running the job are disabled.
   - Click the **Daily** radio button to specify that the report is run daily, and then specify the recurrence frequency.

- Click the **Weekly** radio button to specify that the report is run weekly, and then specify the recurrence frequency.
- Click the **Monthly** radio button to specify that the report is run monthly, and then specify the recurrence frequency.

7. Click the **Notifications** tab to configure notifications to be sent to recipients when certain reports actions occur. See Chapter 4,"Configuring Notifications."
8. Click **OK**.

Deleting Scheduled Reports

To delete a scheduled report, do the following.

1. Select **Reports > Schedule**.

   The Schedule Report dialog box appears.

2. Select the scheduled report you want to delete and click  .

   The scheduled report is deleted and is removed from the Schedule Report dialog box.

Viewing Reports

You can view reports in the View Reports dialog box.

If you open the dialog box from **Reports > View**, the search filters display the current date for all report rules and reports. If you open it from the Schedule Reports dialog box, the filters display the selected report rule.

These reports, in PDF format, are stored physically on the Perceptive DataTransfer server. You must specify the root directory of the location where the reports are stored. To do so, in the datatransfer.properties file, you must supply a *report_root* parameter. For example:

```
report_root=c:/reports
```

The PDF files are then stored in appropriate subdirectories within that root directory.

To view a report, do the following.

1. Do one of the following.
   - Select **Reports > View**.
   - Select **Reports > Schedule** and click  .

The dialog box displays a table with the following information.

- Date: Date on which the report was created.
- Name: Name of the report.

- Report Rule Name: Name of the rule that caused the scheduled report to be run.
- Created By: Username of the administrator who configured the report.

You can filter the information in the View Reports dialog box by selecting the appropriate information in one or more of the following fields.

- Report Rule: Select the report rule for which to filter results.
- Reports: Select the report for which to filter results. Select *All* to specify all reports.
- Date Range fields: Click the  icon to open a calender from which you can specify the start and end dates of a date range. You can choose both start and end dates or only a start or end date.

After specifying the filter information, click the **Filter** button to update the table with the selected criteria.

To view a report, click  . The report opens in a new tab or browser window in PDF format.

To permanently delete the report PDF file and the record of the report instance, click  . Reports are removed from the location specified in the *report_root* parameter in the datatransfer.properties file.

Configuring Notifications

You can configure Perceptive DataTransfer to send notifications to users when various activities occur in Perceptive DataTransfer. You can configure notifications for jobs, scheduled reports, and version milestones.

See the following topics for more information.

- Configuring Email Addresses on page 49.
- Configuring Notification Groups on page 37.
- Configuring Job Notifications on page 38.
- Configuring Report Notifications on page 40.
- Configuring Workspace Version Notifications on page 54.

Configuring Email Addresses

You must have the appropriate permissions to configure the SMTP server from which notifications can be sent, and you must also have the appropriate permissions to configure email addresses for users to which these notifications are sent.

See Chapter 5,"Configuring Users And Privileges."

To configure system email addresses, do the following.

1. Select **Administration > System E-Mail**.

   The Configure System Email dialog box appears.
2. In the Email address field, type the email address used that sends the system notifications.
3. In the Host field, type the hostname of the SMTP server that sends the emails.
4. In the Port field, type the port number of the SMTP server.
5. In the Username field, type the username of the SMTP server.
6. In the Password field, type the password of the SMTP server.
7. Click **OK**.
8. You can assign email addresses to Perceptive DataTransfer users; these are the emails addresses at which users receive emails sent from the SMTP server. To do so, do the following.

Note The name and email address is updated for all users in the system with this username. For example, if user *GUEST* has multiple roles and therefore multiple instances in the system, the name and email address you configure for one instance of *GUEST* is used for all instances of that user.

1. Select **Administration > User**.

   The User Administration dialog box appears.
2. In the Navigation pane, click the user for which you want to configure email settings

3. In the Name field, type the name of the user for the email address.
4. In the Email field, type the name of the email address for the user.
5. Click **Save**.

Configuring Notification Groups

After you have configured the system email address from which notifications are sent and the email addresses to which users receive those notifications, you can configure notifications for a variety of functions.

You can configure notification groups, which contain lists of email recipients (similar to an email distribution list), to which to send these notifications.

You must have the appropriate permissions to add and modify notification groups.

See Chapter 5,"Configuring Users And Privileges."

See the following topics for more information.

- Adding and Modifying Notification Groups on page 37.
- Deleting Notification Groups on page 38.
- Deleting Notification Groups on page 38.

Adding and Modifying Notification Groups

To add a notification group, do the following.

1. Select **Configuration > Notifications**.

   The Notification Group Configuration dialog box appears.
2. Do one of the following.

   - To add a new notification group, click  .

     The Add Notification Group dialog box appears.
   - To modify a group, select it and click  .

     The Edit Notification Group dialog box appears.
3. In the Name field, type the name of the notification group.

4. In the To field, provide the email addresses of the recipients of the notifications. Do one of the following.
   - Manually type the email addresses in the field, separating recipients by commas.
   - Click the **To** button to open the Select Users dialog box. Select one or more recipients and click **OK**.
5. In the CC field, provide the email addresses of the recipients to which to send copies of the notifications. Do one of the following.
   - Manually type the email addresses in the field, separating recipients by commas.
   - Click the **CC** button to open the Select Users dialog box. Select one or more recipients and click **OK**.

Deleting Notification Groups

To delete a notification group, do the following.

1. Select **Configuration > Notifications**.

   The Notification Group Configuration dialog box appears.

2. Select the group you want to delete and click  .

Configuring Job Notifications

You can configure notifications to be sent when a job activity occurs.

See the following topics for more information.

- Adding and Modifying Job Notifications on page 38.
- Deleting Job Notifications on page 39.

Adding and Modifying Job Notifications

To add a job notification, do the following.

1. In the Job Dashboard, do one of the following.
   - Select **Jobs > Add Jobs**.

     The Add Job dialog box appears.
   - Select **Jobs > Recurring Jobs**.

     The Recurring Job Administration dialog box appears.
2. Click the **Notifications** tab.

3. Do one of the following.

   - To add a new notification, click  .

     The Add Job Notification dialog box appears.

   - To modify a notification, select it and click  .

     The Edit Job Notification dialog box appears.

4. From the Action drop-down box, select the job action that occurs for which a notification is sent. Options are *Complete* or *Processed*.

   When a job attains *Processed* or *Complete* status, the appropriate notifications are sent to the provided email addresses.

5. Select the recipients to which to send the notifications. You can either select a configured notification group (see Configuring Notification Groups on page 37), or you can specify recipients not in a group.

   - To select a notification group, select the appropriate group from the drop-down box. The To and CC fields automatically display the recipients configured for the notification group, and you cannot modify these fields.
   - To specify recipients not in a group, do the following.

     1. In the To field, provide the email addresses of the recipients of the notifications. Do one of the following.

        - Manually type the email addresses in the field, separating recipients by commas.
        - Click the **To** button to open the Select Users dialog box. Select one or more recipients and click **OK**.

     2. In the CC field, provide the email addresses of the recipients to which to send copies of the notifications. Do one of the following.

        - Manually type the email addresses in the field, separating recipients by commas.
        - Click the **CC** button to open the Select Users dialog box. Select one or more recipients and click **OK**.

6. Click **OK**.

Deleting Job Notifications

To delete a job notification, do the following.

1. Select **Jobs > Add Jobs**.

   The Add Job dialog box appears.

2. Click the **Notifications** tab.

3. Select the notification you want to delete and click  .

Configuring Report Notifications

You can configure report notifications when certain report activities occur.

See the following topics for more information.

- Adding and Modifying Report Notifications on page 40.
- Deleting Report Notifications on page 41.

Adding and Modifying Report Notifications

1. Select **Reports > Schedule**.

   The Schedule Reports dialog box appears.

2. Do one of the following.

   - To add a new report, click  .

     The Add Scheduled Report dialog box appears.

   - To modify a report, select the report and either right-click it and select **Edit Report** or click  .

     The Edit Scheduled Report dialog box appears.

3. Click the **Notifications** tab.
4. Do one of the following.

   - To add a new notification, click  .

     The Add Report Notification dialog box appears.

   - To modify a notification, select it and click  .

     The Edit Report Notification dialog box appears.

5. From the Action drop-down box, select the report action that occurs for which a notification is sent. Option is *Complete*.

   When a report is *Complete*, a notification is sent to the specified recipients, and a PDF version of the report is included as an attachment in the email.

6. Select the recipients to which to send the notifications. You can either select a configured notification group (see Configuring Notification Groups on page 37), or you can specify recipients not in a group.
   - To select a notification group, select the appropriate group from the drop-down box. The To and CC fields automatically display the recipients configured for the notification group, and you cannot modify these fields.
   - To specify recipients not in a group, do the following.
     1. In the To field, provide the email addresses of the recipients of the notifications. Do one of the following.
        - Manually type the email addresses in the field, separating recipients by commas.
        - Click the **To** button to open the Select Users dialog box. Select one or more recipients and click **OK**.
     2. In the CC field, provide the email addresses of the recipients to which to send copies of the notifications. Do one of the following.
        - Manually type the email addresses in the field, separating recipients by commas.
        - Click the **CC** button to open the Select Users dialog box. Select one or more recipients and click **OK**.
7. Click **OK**.

Deleting Report Notifications

To delete a report notification, do the following.

1. Select **Reports > Schedule**.

   The Schedule Report dialog box appears.
2. Click the **Notifications** tab.
3. Select the notification you want to delete and click  .

Configuring Workspace Version Notifications

You can configure notifications to be sent when certain version activities occur.

See the following topics for more information.

- Adding and Modifying Workspace Version Notifications on page 55.
- Deleting Workspace Version Notifications on page 56.

Adding and Modifying Workspace Version Notifications

To add or modify a version notification, do the following.

1. Select **Administration > Workspace**.

   The Workspace Administration dialog box appears.

2. Select the workspace for which you want to configure notifications and click .

   The Version Notification Configuration dialog box appears.

3. Do one of the following.

   - To add a new notification, click .

     The Add Version Notification dialog box appears.

   - To modify a notification, select it and click .

     The Edit Version Notification dialog box appears.

4. From the Action drop-down box, select the version action that occurs for which a notification is sent. Options are Active, Edit, Stage, and Test.

   When a report moves into one of these statuses, a notification is sent to the specified recipient.

5. Select the recipients to which to send the notifications.You can either select a configured notification group (see Configuring Notification Groups on page 50), or you can specify recipients not in a group.

   - To select a notification group, select the appropriate group from the drop-down box. The To and CC fields automatically display the recipients configured for the notification group, and you cannot modify these fields.
   - To specify recipients not in a group, do the following.

     1. In the To field, provide the email addresses of the recipients of the notifications. Do one of the following.

        - Manually type the email addresses in the field, separating recipients by commas.
        - Click the **To** button to open the Select Users dialog box. Select one or more recipients and click **OK**.

     2. In the CC field, provide the email addresses of the recipients to which to send copies of the notifications. Do one of the following.

        - Manually type the email addresses in the field, separating recipients by commas.
        - Click the **CC** button to open the Select Users dialog box. Select one or more recipients and click **OK**.

6. Click **OK**.

Deleting Workspace Version Notifications

To delete a version notification, do the following.

1. Select **Administration > Workspace**.

   The Workspace Administration dialog box appears.

2. Click  .

   The Version Notification Configuration dialog box appears.

3. Select the notification you want to delete and click  .

Configuring Users And Privileges

When you configure Perceptive DataTransfer users, you define the structure of the institution and configure privileges for users to enable or disable the features they can use.

Configuring Institutions

See the following topics for more information:

- Configuring Organizations on page 57.
- Configuring Divisions on page 58.
- Configuring Departments on page 60.
- Configuring Roles on page 61.
- Configuring Users on page 63.

Configuring Organizations

See these topics for more information:

- Adding Organizations on page 57.
- Renaming Organizations on page 58.
- Deleting Organizations on page 58.

Adding Organizations

To add an organization, do the following.

1. Select **Administration > User**.

   The User Administration dialog box appears.
2. In the Navigation pane, right-click **Enterprise Hierarchy**.
3. From the popup menu, select **Add Organization**.

   The Add Organization dialog box appears.
4. Type the name of the organization.
5. Click **OK**.

   The organization is created and appears in Navigation > Enterprise Hierarchy.
6. Add a division under the organization. See Adding Divisions on page 59 for more information.

Renaming Organizations

To rename an organization, do the following.

1. Select **Administration > User**.

   The User Administration dialog box appears.
2. In the Navigation pane, right-click the organization you want to rename.
3. From the popup menu, click **Rename *Organization_Name***.

   The Rename Node dialog box appears.
4. Type the name of the organization.
5. Click **OK**.

   The organization is renamed.

Deleting Organizations

Note You can delete only the lowest-level node in the hierarchy tree. For example, if you want to delete a department that has roles and users configured for it, you must first delete all users, and next all roles, before you can delete the department.

To delete an organization, do the following.

1. Select **Administration > User**.

   The User Administration dialog box appears.
2. In the Navigation pane, right-click the organization you want to delete.
3. From the popup menu, click **Delete *Organization_Name***.

   A dialog box appears, prompting you to confirm that you want to delete the organization.
4. Click **Yes** to delete the organization.

   The organization is deleted, and it is removed from the Navigation pane.

Configuring Divisions

See these topics for more information:

- Adding Divisions on page 59.
- Configuring Divisions on page 58.
- Renaming Divisions on page 59.
- Deleting Divisions on page 59.

Adding Divisions

To add a division, do the following.

1. Select **Administration > User**.

   The User Administration dialog box appears.
2. In the Navigation pane, right-click the organization under which you want to add a division.
3. From the popup menu, click **Add Division**.

   The Add Division dialog box appears.
4. Type the name of the division (for example, *Finance*).
5. Click **OK**.

   The division is created and appears in Navigation > Enterprise Hierarchy.
6. Add a department under the division. See Adding Divisions on page 59 for more information.

Renaming Divisions

To rename a division, do the following.

1. Select **Administration > User**.

   The User Administration dialog box appears.
2. In the Navigation pane, right-click the division you want to rename.
3. From the popup menu, click **Rename *Division_Name***.

   The Rename Node dialog box appears.
4. Type the name of the division.
5. Click **OK**.

   The division is renamed.

Deleting Divisions

Note You can delete only the lowest-level node in the hierarchy tree. For example, if you want to delete a department that has roles and users configured for it, you must first delete all users, and next all roles, before you can delete the department.

To delete a division, do the following.

1. Select **Administration > User**.

   The User Administration dialog box appears.
2. In the Navigation pane, right-click the division you want to delete.

3. From the popup menu, click **Delete *Division_Name***.

   A dialog box appears, prompting you to confirm that you want to delete the division.

4. Click **Yes** to delete the division.

   The division is deleted, and it is removed from the Navigation pane.

Configuring Departments

See these topics for more information:

- Adding Departments on page 60.
- Renaming Departments on page 60.
- Deleting Departments on page 61.

Adding Departments

To add a department, do the following.

1. Select **Administration > User**.

   The User Administration dialog box appears.

2. In the Navigation pane, right-click the division under which you want to add a department.
3. From the popup menu, click **Add Department**.

   The Add Department dialog box appears.

4. Type the name of the department (for example, *Accounts Payable*).
5. Click **OK**.

   The department is created and appears in the Navigation pane.

6. You can configure department privileges, which specify the tasks that the department can perform. When you configure privileges at the department level, these privileges are also applied to the users and roles that belong to the department. For more information, see Configuring Privileges on page 63.
7. Add a role under the department. See Adding Departments on page 60 for more information.

Renaming Departments

To rename a department, do the following.

1. Select **Administration > User**.

   The User Administration dialog box appears.

2. In the Navigation pane, right-click the department you want to rename.

3. From the popup menu, click **Rename *Department_Name***.

   The Rename Node dialog box appears.

4. Type the name of the department.
5. Click **OK**.

   The department is renamed.

Deleting Departments

Note You can delete only the lowest-level node in the hierarchy tree. For example, if you want to delete a department that has roles and users configured for it, you must first delete all users, and next all roles, before you can delete the department.

To delete a department, do the following.

1. Select **Administration > User**.

   The User Administration dialog box appears.

2. In the Navigation pane, right-click the department you want to delete.
3. From the popup menu, click **Delete *Department_Name***

   A dialog box appears, prompting you to confirm that you want to delete the department.

4. Click **Yes** to delete the department.

   The department is deleted, and it is removed from the Navigation pane.

Configuring Roles

See these topics for more information:

- Adding Roles on page 61.
- Renaming Roles on page 62.
- Deleting Roles on page 62.

Adding Roles

To add a role, do the following.

1. Select **Administration > User**.

   The User Administration dialog box appears.

2. In the Navigation pane, right-click the department to which you want to add a role.
3. From the popup menu, click **Add Department Role**.

   The Add Department Roles dialog box appears.

4. Type the name of the role (for example, *Clerk*).

5. Click **OK**.

   The role is created and appears in Navigation > Enterprise Hierarchy.

6. You can configure role privileges, which specify the tasks that the role can perform. When you configure privileges at the role level, these privileges are also applied to the users that belong to the role. For more information, see Configuring Privileges on page 63.

   Note You can assign permissions for a workspace and workspace permissions at the role level only.

7. Add a user under the role. See Adding Users on page 63 for more information.

Renaming Roles

To rename a role, do the following.

1. Select **Administration > User**.

   The User Administration dialog box appears.

2. In the Navigation pane, right-click the role you want to rename.
3. From the popup menu, click **Rename *Role_Name***.

   The Rename Node dialog box appears.

4. Type the name of the role.
5. Click **OK**.

   The role is renamed.

Deleting Roles

Note You can delete only the lowest-level node in the hierarchy tree. For example, if you want to delete a department that has roles and users configured for it, you must first delete all users, and next all roles, before you can delete the department.

To delete a role, do the following.

1. Select **Administration > User**.

   The User Administration dialog box appears.

2. In Navigation > Enterprise Hierarchy, right-click the role you want to delete.
3. From the popup menu, click **Delete *Role_Name***.

   A dialog box appears, prompting you to confirm that you want to delete the role.

4. To delete the role, click **Yes**.

   The role is deleted and removed from Navigation > Enterprise Hierarchy.

Configuring Users

See these topics for more information:

- Adding Users on page 63.
- Deleting Users on page 63.

Adding Users

To add a user, do the following.

1. Select **Administration > User**.

   The User Administration dialog box appears.
2. In Navigation > Enterprise Hierarchy, right-click the role under which you want to add a user.
3. From the popup menu, click **Add User**.

   The Add User dialog box appears.
4. Type the name of the user.
5. Click **OK**.

   The user is added and appears in Navigation > Enterprise Hierarchy.
6. You can configure user privileges, which specify the tasks that the user can perform. For more information, see Configuring Privileges on page 63.

Deleting Users

To delete a user, do the following.

1. Select **Administration > User**.

   The User Administration dialog box appears.
2. In Navigation > Enterprise Hierarchy, right-click the user you want to delete.
3. From the popup menu, click **Delete *User_Name***.

   A dialog box appears, prompting you to confirm that you want to delete the user.
4. To delete the user, click **Yes**.

   The user is deleted and removed from Navigation > Enterprise Hierarchy.

Configuring Privileges

You can configure privileges for a department, role, or user. When you configure privileges for a department, those privileges apply to the department and all the roles and users in the department. When you configure privileges for a role, those privileges apply to the role and to all users who belong to the role.

Note Privileges to use a workspace are configured at the role level.

1. Select **Administration > User**.

   The User Administration dialog box appears.

2. In the Navigation pane, click the department, role, or user for which you want to configure privileges.

3. In the Department Editor, Role Editor, or User Editor pane, configure the department privileges (if you selected a user, in the User Editor pane, click the **Permissions** tab). The following table provides descriptions of the privileges.

   Note Click the arrow icon next to each privilege type to expand it and view the privileges. You can check the privilege type checkbox to select all privileges, or you can check the checkbox for each individual privilege to select it.

Table 3: Department Privilege Types and Privilege

Privilege	Description
Administrative Privileges	
User Administration	Administrator can modify user privileges and can configure email addresses for users to which to send notifications; administrators can modify users and roles within that administrator's department only.
Manage Share Groups	Administrator can add, modify, and delete share groups.
Access Server Logs	Administrator can view server logs.
Archive Administration	Administrator can create archive rules for jobs.
Workspace	Contains the following options. • View Details: Administrator can view details about workspace versions and can configure notifications for versions. • Edit Details: Administrator can modify workspace details and can configure notifications for versions.
Version Control	Contains the following options. • Create/Move to Edit: Administrator can create new workspace versions and move workspace versions to edit mode. • Move to Test: Administrator can move workspace versions to test mode. • Move to Staged: Administrator can move workspace versions to staged mode. • Move to Active: Administrator can move workspace versions to active mode.

Table 3: Department Privilege Types and Privilege (Continued)

Privilege	Description
Workspace Configuration	Contains the following options. • Add Shared Objects: Administrator can add shared objects to the workspace. • Edit Shared Objects: Administrator can modify workspace shared objects. • Edit File Sources: Administrators can modify file sources. • Edit Connection Groups: Administrator can modify connection groups. • Edit Connections: Administrator can modify connections. • Edit Headers: Administrator can modify header files. • Edit Verification Forms: Administrator can modify verification forms. • Edit ImageNow Index Map: Administrator can modify ImageNow index maps. • Procedures ◦ Edit Match: Administrator can configure match logic. ◦ Edit Review: Administrator can configure review logic. ◦ Edit Upload: Administrator can configure upload logic. ◦ Edit Match Display: Administrator can configure match display logic. ◦ Edit Population Selection: Administrator can configure population selection logic.
Configure Email Server	Administrator can configure the SMTP server from which email notifications are sent.

Table 3: Department Privilege Types and Privilege (Continued)

Privilege	Description
User Privileges	

Tools	Contains the following options.
	• Lookup: User can configure the lookup tool.
	• Check Name: User can configure the check name tool.
	• Export: User can export Perceptive DataTransfer tools (lookup values, check name values, data exports, and logs).
	• Data Exports
	  ◦ Edit Export: User can modify data exports.
	  ◦ Run Export: User can run data exports.
	• Reports
	  ◦ Run Reports: Users can run reports.
	  ◦ Edit Reports: Users can modify reports and can configure notifications for reports.
	  ◦ Edit Scheduled Reports: Users can create, modify, and delete scheduled report rules.
	  ◦ View Report Output: Users can view output files for reports that have been run.
	  ◦ Delete Report Output: Users can delete output files for reports that have been run.

Version	Contains the following options. • Import: User can import workspace versions. • Edit: User can work in workspace versions in edit mode. • Inactive: User can work in workspace versions in inactive mode. • Staged: User can work in workspace versions in staged mode. • Test: User can work in workspace versions in test mode.
Job	Contains the following options. • Create Jobs: User can create jobs and can configure notifications for jobs. • Edit Recurring Jobs: User can modify recurring jobs. • Enable Auditing: User can enable auditing. • View Archived Jobs: User can view archived jobs.

Table 3: Department Privilege Types and Privilege (Continued)

Privilege	Description
Record	Contains the following options. • Create New Record: User can create new records. • Create Match Record: User can set records as matched records. • Create Suspend Record: User can suspend records.
Notifications	Contains the following options. • Create Notification Groups: User can create new notification groups. • Edit Notification Groups: User can modify notification groups.
Workspaces	Workspace privileges are configured at the role level and are applied to all users in the role. A user can use only one workspace at a time. Check the workspace that the user can use, then set these options. • Headers: Headers contained in the workspace that the user can use. Check the Headers checkbox to select all headers or check individual headers to select them. • Connection groups: Connection groups contained in the workspace that the user can use. Check the Connection Groups checkbox to select all connection groups or check individual connection groups to select them. • File Sources: File sources contained in the workspace that the user can use. Check the File Sources checkbox to select all file sources or check individual file sources to select them.

4. Click the **Settings** tab to configure email addresses for users to which system notifications are sent. For more information, see Chapter 4,"Configuring Notifications."
5. Click **Save** to save your changes.

Configuring Connection Groups and Database Connections

Connection groups consist of a group of database connections and are associated with a workspace; connection groups (and their connections) can be shared among workspaces.

You can share connection groups with other workspaces, and you can import connection groups from and export connection groups to an XML file.

See the following topics for more information.

- Configuring Connection Groups on page 68.
- Configuring Connections on page 73.

Configuring Connection Groups

See the following topics for more information.

- Adding Connection Groups on page 68.
- Modifying Connection Groups on page 70.
- Deleting Connection Groups on page 70.
- Copying Connection Groups on page 71.
- Removing Sharing on Shared Connection Groups on page 71,
- Rolling Back Connection Groups on page 72.
- Exporting Connection Groups on page 72.
- Importing Connection Groups on page 73.

Adding Connection Groups

You can add a new connection group or add a connection group that another workspace is sharing.

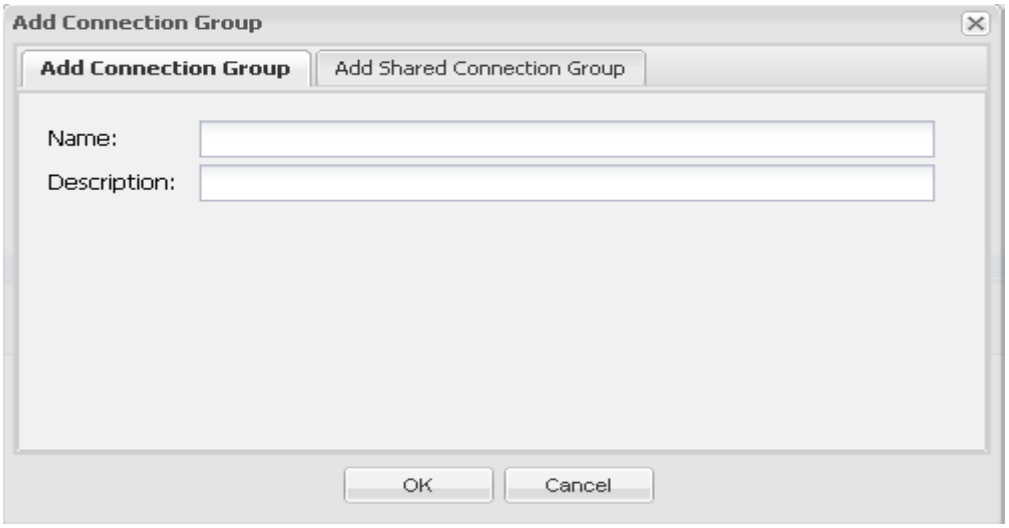
1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.

2. Click  .

   The Add Connection Group dialog box appears.

Figure 12: Add Connection Group Dialog Box



3. Do one of the following.
   - To add a new connection group, do the following.
     1. Click the **Add Connection Group** tab.
     2. In the Connection Group Name field, type the name of the connection group.
     3. In the Description field, type descriptive text about the connection group.
   - To add a connection group that is shared by another workspace, do the following.
     1. Click the **Add Shared Connection Group** tab.
     2. From the Workspace drop-down box, select the workspace that is sharing the connection group you want to use.
     3. Click the connection group that you want to use to select it.
     4. Click **OK**.

   The connection group is added and appears in the Connection Group Administration dialog box.

   A database connection with the name *Primary* is automatically added to the connection group. A connection group must always have a primary database connection. You can add additional database connections to the group; see Adding Database Connections on page 74.

Modifying Connection Groups

To modify a connection group, do the following.

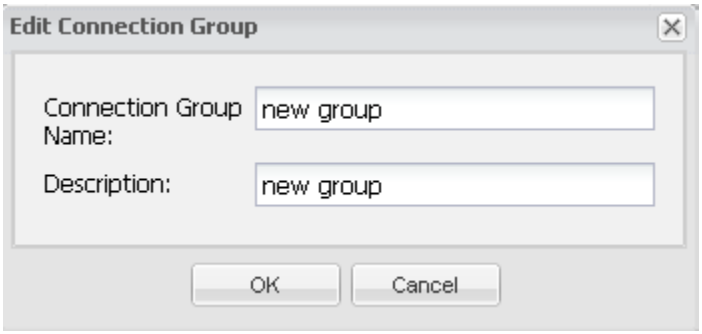
1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.

2. Click the connection group you want to modify and either click  or right-click the connection group and select **Edit Connection Group**.

   The Edit Connection Group dialog box appears.

Figure 13: Edit Connection Group Dialog Box



3. In the Connection Group Name field, type the name of the connection group.
4. In the Description field, type a brief description for the connection group.
5. Click **OK**.

   The connection group is modified, and its updated information appears in the Connection Group Manager dialog box.

Deleting Connection Groups

To delete a connection group, do the following.

1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.

2. Click the connection group you want to delete and either right-click it and select **Remove Connection Group** or click  .

Copying Connection Groups

To copy a connection group, do the following.

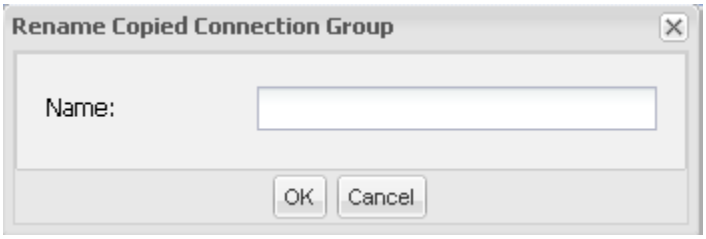
1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.

2. Click the connection group you want to delete and either right-click it and select **Copy Connection Group** or click  .

   The Rename Copied Connection Group dialog box appears.

Figure 14: Rename Copied Connection Group Dialog Box



3. In the Name field, type the name of the connection group.
4. Click **OK**.

   The connection group is copied, and the new connection group you created is added to the Connection Group Administration dialog box.

Removing Sharing on Shared Connection Groups

To remove sharing on a connection group that is shared with another workspace, do the following.

1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.

2. Select the connection group for which you want to remove sharing and either right-click it and select **Remove Sharing** or click  .

   Sharing is removed on the connection group.

Rolling Back Connection Groups

If changes have been made and committed to a connection group, you can use a previous version (*roll back*) of it.

1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.

2. Click the connection group you want to roll back and either right-click it and select **Rollback** or click  .

   The Rollback Manager dialog box appears and displays the following information.

   - Name: Name of the connection group.
   - Status: Status of the connection group (*current*, or *dated*).
   - Version Date: Date and time on which the version was created.
   - Created By: Username of the user who created the connection group.
   - Comments: Comments that were added by the user.

3. Select the previous version to which you want to revert and click **Rollback**.

   The previous version is loaded.

Obtaining the Latest Versions of Connection Groups

If changes have been made to and committed to a connection group, you can obtain the latest version of it.

1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.

2. Click the connection group for which you want to obtain the latest version and either right-click it and select **Get Latest** or click  .

Exporting Connection Groups

You can export connection groups to an XML file by doing the following.

1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.

2. Select the connection group you want to export.

3. Click  and select **Export**.

4. Save the file to the appropriate location.

Importing Connection Groups

You can import connection groups from an XML file by doing the following.

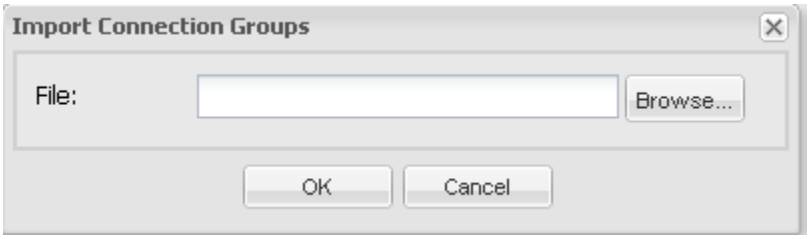
1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.

2. Click  and select **Import**.

   The Import Connection Groups dialog box appears.

Figure 15: Import Connection Groups Dialog Box



3. Click the **Browse...** button and navigate to the file that you want to import or type the location of the file in the File field.
4. Click **OK**.

Configuring Connections

See the following topics for more information.

- Adding Database Connections on page 74.
- Modifying Database Connections on page 74.
- Adding Nolij Web Connections on page 75.
- Modifying Nolij Web Connections on page 76.
- Adding Hobsons Connect CRM Connections on page 76.
- Modifying Hobsons Connect CRM Connections on page 78.
- Adding QAS Connections on page 78.
- Modifying QAS Connections on page 80.
- Adding Integration Server Connections on page 80.
- Modifying Integration Server Connections on page 81.

- Deleting Connections on page 82
- Testing Connections on page 82.

Adding Database Connections

To add a database connection, do the following.

1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.

2. Select the connection group to which you want to add a new connection and either right-click it and select **Add Connection** or click  .

   The Add Connection dialog box appears.

3. From the drop Type drop-down box, select **Standard**.

   The Add Database Connection dialog box appears.

4. In the Name field, type the name of the connection.

   Note A primary database connection with the name *Primary* is automatically created when you create a connection group. You can only have one primary database per group. You cannot name another database connection *Primary*.

5. In the Description field, type a brief description of the connection.
6. In the URL field, type the URL of the database.
7. In the Username field, type the username.
8. In the Password field, type the password.
9. In the DB Driver field, type the name of the driver used to connect to the database.
10. In the DB Name field, type the name of the database.
11. Click **OK**.

    The connection is added to the connection group and appears in the Connection Group Manager dialog box.

Modifying Database Connections

To modify a database connection, do the following.

1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.

2. Select the connection you want to modify and either right-click it and select **Edit Connection** or click  .

   The Edit Connection dialog box appears.

3. In the Name field, type the name of the connection.

   Note You cannot rename a database connection with the name *Primary*.

4. In the Description field, type a brief description of the connection.
5. In the URL field, type the URL of the database.
6. In the Username field, type the username.
7. In the Password field, type the password.
8. In the DB Driver field, type the name of the driver used to connect to the database.
9. In the DB Name field, type the name of the database.
10. Click **OK**.

    The connection is added to the connection group and appears in the Connection Group Administration dialog box.

Adding Nolij Web Connections

Note You can configure only one Nolij Web connection per connection group.

To add a Nolij Web database connection, do the following.

1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.

2. Select the connection group to which you want to add a new connection and either right-click it and select **Add Connection** or click  .

   The Add Connection dialog box appears.

3. From the Type drop-down box, select **Nolij Web**.

   The Add Nolij Web Connection dialog box appears.

4. In the Name field, type the name of the connection.
5. In the Description field, type a brief description of the connection.
6. In the URL field, type the URL of the database.
7. In the Username field, type the username.
8. In the Password field, type the password.
9. In the CAS URL field, type the url of the CAS server.
10. Check the **Is CAS** checkbox to indicate that this connection uses CAS authentication.
11. Click **OK**.

    The Nolij Web connection is added to the connection group and appears in the Connection Group Manager dialog box.

Modifying Nolij Web Connections

To modify a Nolij Web database connection, do the following.

1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.

2. Select the connection you want to modify and either right-click it and select **Edit Connection** or click  .

   The Edit Nolij Web Connection dialog box appears.

3. In the Name field, type the name of the connection.
4. In the Description field, type a brief description of the connection.
5. In the URL field, type the URL of the database.
6. In the Username field, type the username.
7. In the Password field, type the password.
8. In the CAS URL field, type the CAS URL of the database if you are using CAS authentication.
9. Check the **Is CAS** checkbox if you are using CAS authentication.
10. Click **OK**.

    The Nolij connection is modified and its updated information appears in the Connection Group Manager dialog box.

Adding Hobsons Connect CRM Connections

You can update Hobsons data using Hobsons Connect CRM web services. To do so, you create a connection group that contains a Hobsons Connect CRM connection. You can also create a Hobsons Connect CRM header and add and run a job using the Hobsons CRM Connect connection and header. You can also use the appropriate NQL syntax in the Perceptive DataTransfer logic to execute the Hobsons web service.

Note You can configure only one Hobsons CRM connection per connection group.

To add a Hobsons Connect CRM connection, do the following.

1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.

2. Select the connection group to which you want to add a new connection and either right-click it and select **Add Connection** or click  .

   The Add Connection dialog box appears.

3. From the Type drop-down box, select **Hobsons Connect CRM**.

   The Add Hobsons Connect CRM Connection dialog box appears.

4. In the Name field, type the name of the connection.
5. In the Description field, type descriptive text about the connection.
6. In the Client URL field, type the URL used by clients to access web services.
7. In the Action URL field, type the URL used for SOAP (Simple Object Access Protocol) web services.
8. In the Client Name field, type the client name used for the connection.
9. In the Pass Key field, type the pass key used for the connection.
10. Click **OK**.

    The connection is added and appears in the Connection Group Administration dialog box.

You configure jobs to use connection groups; see Chapter 5,"Configuring Jobs and Processing Records." When you configure a job to use a connection group with a Hobsons connection and a Hobsons Connect CRM header, and you can also configure the logic, used by the job configured to use the Hobsons Connect CRM header and connection, to use the appropriate NQL syntax:

```
HobsonsUpdate(<web service name>, <contact id>, <attribute name 1>, <attribute value 1>, <attribute name 2>, <attribute value 2>, ... , <attribute name n>, <attribute value n>)
```

The required parameters are:

- *<web service name>*: the name of the Hobsons Connect CRM web server (for example, *UpdateContact*)
- *<contact id>*: the ID value of the contact record to update.

The additional parameters are any number of attribute name or value pairs. Both components of the pair are strings; the first string identifies the name of the Hobsons Connect CRM attribute to update, and the second string is the new value for the specified attribute.

The HobsonsUpdate function returns a string. If the update is successful, an empty string is returned. If it is not successful, a corresponding error message is returned.

An example of the syntax is:

```
let $err = HobsonsUpdate('UpdateContact', $id, 'first_name', $fname, 'last_name', $lname, 'dob', $dob')
```

This syntax runs the *UpdateContact* web service on the contact with id *$id* and updates the *first_name* attribute to the value in *$fname*, the *last_name* attribute to the value in *$lname*, and so on.

For more information about procedures, see Chapter 9,"Configuring Procedures." For detailed information about configuring logic, see Appendix 14,"Programming Concepts."

Modifying Hobsons Connect CRM Connections

To modify a Hobsons Connect CRM connection, do the following.

1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.
2. Select the connection you want to modify and either right-click it and select **Edit Connection** or click  .

   The Edit Hobsons Connect CRM Connection dialog box appears.
3. In the Name field, type the name of the connection.
4. In the Client URL field, type the URL used by clients to access web services.
5. In the Action URL field, type the URL used for SOAP web services.
6. In the Client Name field, type the client name used for the connection.
7. In the Pass Key field, type the pass key used for the connection.
8. Click **OK**.

Adding QAS Connections

Note You can configure only one QAS connection per connection group.

Note By default, headers are configured to use QAS.

To add a QAS connection, do the following.

1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.
2. Select the connection group to which you want to add a new connection and either right-click it and select **Add Connection** or click  .

   The Add Connection dialog box appears.
3. From the Type drop-down box, select **QAS**.

   The Add QAS Connection dialog box appears.
4. In the Name field, type the name of the connection.
5. In the Description field, type descriptive text about the connection.
6. In the Client URL field, type the URL used by clients to access QAS web services.
7. In the Action URL field, type the URL used by QAS for SOAP (Simple Object Access Protocol) web services.
8. In the Username field, type the username used for the connection.

9. In the Password field, type the password used for the connection.
10. Click **OK**.

    The connection is added and appears in the Connection Group Administration dialog box.

You configure jobs to use connection groups; see Chapter 5,“Configuring Jobs and Processing Records.”

Note By default, headers are configured to use QAS. You can disable this option. For more information about configuring headers, see Configuring and Modifying Fixed-Width Headers and Header Variables on page 93, Configuring and Modifying Delimited Headers and Header Variables on page 98, Configuring and Modifying Database Headers on page 101, and Configuring and Modifying XML Headers and Header Variables on page 104.

When you configure a job to use a connection group with a QAS connection and a QAS header, and you can also configure the logic, used by the job configured to use the QAS header and connection, to use the appropriate NQL syntax:

```
let $result = QASAddressCheck('country_code', $qas_f1, $qas_f2, $qas_f3, $qas_f4,
$qas_f5, 'address_1', 'address_2', 'state', 'zip' 'string6', ...'stringN')
```

Use this syntax to verify addresses through a web service call. The function takes the following parameters,.

- Country code: This parameter can be passed in as either a string literal or a program variable. Supported codes are *USA* and *CAN*.
- Parameters two through six: These parameters are program variables that are populated with the refined fields of the address. These parameters are output variables; the QASAddressCheck function accepts any number of input variables; however, the function always returns five outputs. For example:
  - The corrected street address is obtained for $qas_f1.
  - The corrected second street address (for example, an apartment number) is obtained for $qas_f2.
  - The corrected city is obtained for $qas_f3.
  - The corrected state code is obtained for $qas_f4.
  - The corrected nine-digit zip code is obtained for $qas_f5.
- Parameters 7 and on: These parameters are any number of address fields represented by any string expression (for example, string literals, string variables, concatenated strings, and so on.) The QASAddressCheck function will accept as few or as many address fields as needed. The QAS web service will accept any number of inputs and find and refine the matching address.

The QASAddressCheck function returns a string match code generated by QAS. This match code must be parsed so that you can determine the success or failure of the search and the accuracy of the returned address.

For example:

```
let $result = QASAddressCheck('USA', $qas_f1, $qas_f2, $qas_f3, $qas_f4, $qas_f5, '1600
Pennsylvania Ave', 'Washington', 'DC', '20500')
```

This example returns the following results.

- $qas_f1: 1600 Pennsylvania Ave NW
- $qas_f2
- $qas_f3: Washington
- $qas_f4: DC
- $qas_f5: 20500-0003
- $result: R533000200000f00080000

For more information about procedures, see Chapter 9,"Configuring Procedures." For detailed information about configuring logic, see Appendix 14,"Programming Concepts."

Modifying QAS Connections

To modify a QAS connection, do the following.

1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.

2. Select the connection you want to modify and either right-click it and select **Edit Connection** or click  .

   The Edit QAS Connection dialog box appears.

3. In the Name field, type the name of the connection.
4. In the Description field, type descriptive text about the connection.
5. In the Client URL field, type the URL used by clients to access QAS web services.
6. In the Action URL field, type the URL used by QAS for SOAP (Simple Object Access Protocol) web services.
7. In the Username field, type the username used for the connection.
8. In the Password field, type the password used for the connection.
9. Click **OK**.

Adding Integration Server Connections

Configure an integration server connection when you want to upload ImageNow documents to ImageNow, using Perceptive DataTransfer.

You use integration server connections to obtain document information about the ImageNow documents you want to upload. When you configure index maps, you use the connection to obtain the information, which are displayed as Perceptive DataTransfer program variables, and map the ImageNow document properties to the corresponding program variables. See Configuring ImageNow Index Maps on page 164.

Use the ImageNowAddDoc function in your code to specify the parameters Perceptive DataTransfer uses to upload ImageNow documents. See Understanding the ImageNowAddDoc Function on page 245.

Note You can configure only one ImageNow connection per connection group.

To add an integration server connection, do the following.

1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.
2. Select the connection group to which you want to add a new connection and either right-click it and select **Add Connection** or click  .

   The Add Connection dialog box appears.
3. From the Type drop-down box, select **Integration Server**.

   The Add Integration Server Connection dialog box appears.
4. In the Name field, type the name of the connection.
5. In the Description field, type descriptive text about the connection.
6. In the URL field, type the URL used to access ImageNow.
7. In the Username field, type the username used for the connection.
8. In the Password field, type the password used for the connection.
9. Click **OK**.

   The connection is added and appears in the Connection Group Administration dialog box.

Modifying Integration Server Connections

To modify an integration server connection, do the following.

1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.
2. Select the connection you want to modify and either right-click it and select **Edit Connection** or click  .

   The Edit Integration Server Connection dialog box appears.
3. In the Name field, type the name of the connection.
4. In the Description field, type descriptive text about the connection.
5. In the URL field, type the URL used to access ImageNow.
6. In the Username field, type the username used for the connection.
7. In the Password field, type the password used for the connection.
8. Click **OK**.

Deleting Connections

To delete a connection, do the following.

1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.

2. Select the connection you want to delete and either right-click it and select **Remove Connection** or click  .

Testing Connections

To test a connection, do the following.

1. Select **Configuration > Connections**.

   The Connection Group Administration dialog box appears.

2. Select the connection you want to test and either right-click it and select **Test Connection** or click  .

   - If the connection works properly, a dialog box appears and states that the test was successful.
   - If the connection does not work properly, a dialog box appears and indicates the reason that the test failed.

Configuring File Sources

You can configure file sources—servers or SFTP connections—for recurring jobs. The file source is the location that contains the input file that the recurring job uses. Recurring jobs run at a specified interval, using the input file from the server or SFTP site to which it can connect.

You can also configure file sources to download additional, non-input files from a specified location. For example, you can create a recurring job that automatically downloads the input file, creates a job for the file, downloads non-input files to be processed by the job, and places the non-input files in a location that Perceptive DataTransfer can access.

See the following topics for more information.

- Adding File Sources on page 83.
- Modifying File Sources on page 86.
- Deleting File Sources on page 88.
- Copying File Sources on page 88.
- Testing File Sources on page 89.
- Removing Sharing on Shared File Sources on page 89.
- Rolling Back File Sources on page 89.
- Obtaining the Latest Versions of File Sources on page 90.
- Exporting File Sources on page 90.
- Importing File Sources on page 90.

Adding File Sources

You can add a new file source or add a file source that another workspace is sharing.

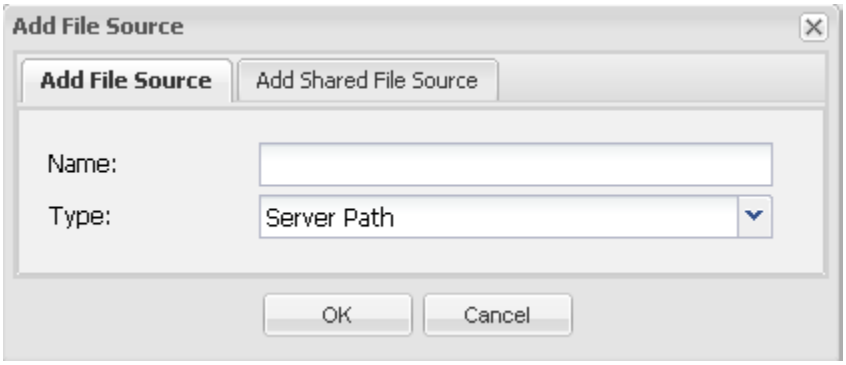
1. Select **Configuration > File Sources**.

   The File Source Administration dialog box appears.

2. Click  .

   The Add File Source dialog box appears.

Figure 16: Add File Source Dialog Box



3. Do one of the following.
   - To add a new file source, do the following.
     1. Click the **Add File Source** tab.
     2. In the Name field, type the name of the file source.
     3. From the Type drop-down box, select the type of file source (*Server* or *SFTP*).
   - To add a file source that another workspace is sharing, do the following.
     1. Click the **Add Shared File Source** tab.
     2. From the Workspace drop-down box, select the workspace that is sharing the file source.
     3. From the File Source drop-down box, select the file source you want to add.
4. Click **OK**.

   The Edit File Source dialog box appears.
5. Do one of the following.
   - To modify a server path file source, do the following.
     1. In the Name field, type the name of the file source.
     2. In the Description field, type descriptive text about the file source.
     3. In the Path field, type the path.
     4. In the File Pattern Field, type the file pattern information used to identify the input file located in the specified file source. Perceptive DataTransfer searches the file source for the input file based on the file pattern information specified.

Use * to search for any number of characters; use ? to search for one character. For example:

- **.xml* returns all xml files.
- *.?ml* returns any files with an extension that has one character followed by *ml*.
- *Application?.txt* returns all files that start with *Application*, that have a single character, and that have a *.txt* extension.

Note Perceptive DataTransfer does not verify if the file pattern information is correct.

- To modify an SFTP file source, do the following.

1. In the Name field, type the name of the file source.
2. In the Description field, type descriptive text about the file source.
3. In the URL field, type the URL of the SFTP connection.
4. In the Port field, type the port number.
5. In the Path field, type the SFTP connection path.
6. In the File Pattern Field, type the file pattern information used to identify the input file located in the specified file source. Perceptive DataTransfer searches the file source for the input file based on the file pattern information specified.

   Use * to search for any number of characters; use ? to search for one character. For example:

   - **.xml* returns all xml files.
   - *.?ml* returns any files with an extension that has one character followed by *ml*.
   - *Application?.txt* returns all files that start with *Application*, that have a single character, and that have a *.txt* extension.
7. In the Username field, type the username used to connect to the SFTP connection.
8. In the Password field, type the password used to connect to the SFTP connection.

6. In the File Downloads pane, do the following.
    1. Check the **Additional Files** checkbox to specify that the file source has other, non-input files to download. When you create a recurring job that uses this file source, the input file is downloaded from the specified path or connection, and then additional files are downloaded from the same path or connection, given the parameters you specify in the File Downloads pane.
    2. In the File Pattern field, type the file pattern information used to identify the non-input file located in the file source.
    3. In the Destination Path field, type the location where the non-input files are placed when they are downloaded. The path must be on a Perceptive DataTransfer server or reachable from the Perceptive DataTransfer server.
7. In the Source File Options pane, specify how to manage the additional, non-input files in the file source location. Click one of the following radio buttons.
    - **Leave**: Performs no action on the files.
    - **Archive**: Archives the files and moves them to a location that you specify in the Archive Path field.
    - **Delete**: Permanently deletes the files from the file source.
8. Click **OK**.

    The file source is added and appears in the File Source Administration dialog box.

Modifying File Sources

To modify a file source, do the following.

1. Select **Configuration > File Sources**.

    The File Source Administration dialog box appears.
2. Click the file source you want to modify and either click  or right-click the file source and select **Edit**.

    The Edit File Source dialog box appears.
3. Do one of the following.
    - To modify a server path file source, do the following.
        1. In the Name field, type the name of the file source.
        2. In the Description field, type descriptive text about the file source.
        3. In the Path field, type the path.

4. In the File Pattern Field, type the file pattern information used to identify the input file located in the specified file source. Perceptive DataTransfer searches the file source for the input file based on the file pattern information specified.

Use * to search for any number of characters; use ? to search for one character. For example:

- **.xml* returns all xml files.
- *.?ml* returns any files with an extension that has one character followed by *ml*.
- *Application?.txt* returns all files that start with *Application*, that have a single character, and that have a *.txt* extension.

Note Perceptive DataTransfer does not verify if the file pattern information is correct.

- To modify an SFTP file source, do the following.

1. In the Name field, type the name of the file source.
2. In the Description field, type descriptive text about the file source.
3. In the URL field, type the URL of the SFTP connection.
4. In the Port field, type the port number.
5. In the Path field, type the SFTP connection path.
6. In the File Pattern Field, type the file pattern information used to identify the input file located in the specified file source. Perceptive DataTransfer searches the file source for the input file based on the file pattern information specified.

Use * to search for any number of characters; use ? to search for one character. For example:

- **.xml* returns all xml files.
- *.?ml* returns any files with an extension that has one character followed by *ml*.
- *Application?.txt* returns all files that start with *Application*, that have a single character, and that have a *.txt* extension.

7. In the Username field, type the username used to connect to the SFTP connection.
8. In the Password field, type the password used to connect to the SFTP connection.

4. In the File Downloads pane, do the following.
    1. Check the **Additional Files** checkbox to specify that the file source has other, non-input files to download. When you create a recurring job that uses this file source, the input file is downloaded from the specified path or connection, and then additional files are downloaded from the same path or connection, given the parameters you specify in the File Downloads pane.
    2. In the File Pattern field, type the file pattern information used to identify the non-input file located in the file source.
    3. In the Destination Path field, type the location where the non-input files are placed when they are downloaded. The path must be on a Perceptive DataTransfer server or reachable from the Perceptive DataTransfer server.
5. In the Source File Options pane, specify how to manage the additional, non-input files in the file source location. Click one of the following radio buttons.
    - **Leave**: Performs no action on the files.
    - **Archive**: Archives the files and moves them to a location that you specify in the Archive Path field.
    - **Delete**: Permanently deletes the files from the file source.
6. Click **OK**.

Deleting File Sources

To delete a file source, do the following.

1. Select **Configuration > File Sources**.

    The File Source Administration dialog box appears.

2. Select the file source you want to delete and either right-click it and select **Delete** or click  .

    The file source is deleted and is removed from the File Source Administration dialog box.

Copying File Sources

To create a duplicate of a file source, do the following.

1. Select **Configuration > File Sources**.

    The File Source Administration dialog box appears.

2. Select the file source you want to copy and either right-click it and select **Copy** or click  .

    A copy of the file source is created and appears in the File Source Administration dialog box.

Testing File Sources

To test a file source connection, do the following.

1. Select **Configuration > File Sources**.

   The File Source Administration dialog box appears.

2. Select the file source you want to test and either right-click it and select **Test File Source** or click  .
   - If the file source works properly, a dialog box appears and states that the test was successful.
   - If the file source does not work properly, a dialog box appears and indicates the reason that the test failed.

Removing Sharing on Shared File Sources

To remove sharing on a file source that is shared with another workspace, do the following.

1. Select **Configuration > File Sources**.

   The File Source Administration dialog box appears.

2. Select the file source for which you want to remove sharing and either right-click it and select **Remove Sharing** or click  .

   Sharing is removed on the file source.

Rolling Back File Sources

If changes have been made and committed to a file source, you can use a previous version (*roll back*) of it.

1. Select **Configuration > File Sources**.

   The File Source Administration dialog box appears.

2. Click the file source you want to roll back and either right-click it and select **Rollback** or click  .

   The Rollback Manager dialog box appears and displays the following information.
   - Name: Name of the file source.
   - Status: Status of the file source (*current* or *dated*).
   - Version Date: Date and time on which the version was created.
   - Created By: Username of the user who created the file source.
   - Comments: Comments that were added by the user.

3. Select the previous version to which you want to revert and click **Rollback**.

   The previous version is loaded.

Obtaining the Latest Versions of File Sources

If changes have been made to and committed to a file source, you can obtain the latest version of it.

1. Select **Configuration > File Sources**.

   The File Source Administration dialog box appears.

2. Click the file source for which you want to obtain the latest version and either right-click it and select **Get Latest** or click .

Exporting File Sources

You can export file sources to an XML file by doing the following.

1. Select **Configuration > File Sources**.

   The File Source Administration dialog box appears.

2. Select the file source you want to export.

3. Click and select **Export**.

4. Save the file to the appropriate location.

Importing File Sources

You can import file sources from an XML file by doing the following.

1. Select **Configuration > File Sources**.

   The File Source Administration dialog box appears.

2. Click and select **Import**.

   The Import File Source dialog box appears.

3. Click the **Browse...** button and navigate to the file that you want to import or type the location of the file in the File field.

4. Click **OK**.

Configuring Headers

See the following topics for more information.

Understanding Headers

Headers define the import source, which is the input file with the data you will be loading. For example, you may want to import student SAT scores and load them into your database, either linking the test scores to existing records or creating new records of information. If that data is contained in a spreadsheet of information in CSV format, you are using a delimited input file.

With Perceptive DataTransfer, you map a data input source to a destination, usually mapping a column from an input file to a database table column. Header variables comprise headers, which are input variables that identify the field element and field order within the import file.

You can share headers with other workspaces, and you can import headers from and export headers to an XML file.

Understanding Header Icons

The following table describes the header icons that appear in the Header Administration dialog box.

Table 4: Data Export Icons and Descriptions

Icon	Description
	Header is shared.
	Header is shared and has been modified since it was added from the workspace sharing it.
	Header is not shared has been modified.
	Header has not been modified. If you are working in a workspace version in edit mode, the header is not shared. If you are working in a workspace version in a mode other than edit mode, this icon is displayed for all headers. The sharing status is unknown.

Adding Headers

To add a new header, do the following.

1. Select **Configuration > Headers**.

   The Header Administration dialog box appears.

2. Click  .

   The Add Header dialog box appears.

3. Do one of the following.
   - To add a new header, click the **Add Header** tab.
     1. In the Header Name field, type the name of the header.
     2. From the Type drop-down box, select the type of header.
        - Delimited
        - Database
        - Fixed Width
        - XML
        - Hobsons Connect CRM

- To add a header that is shared by another workspace, click the **Add Shared Header** tab.
  1. From the Workspace drop-down box, select the workspace that shares the header you want to use.
  2. From the Header drop-down box, select the header to use.

4. Click **OK**.
5. Configure the header and add header variables; see Configuring and Modifying Headers and Header Variables on page 93.

Configuring and Modifying Headers and Header Variables

See the following topics for more information.

- Configuring and Modifying Fixed-Width Headers and Header Variables on page 93.
- Configuring and Modifying Delimited Headers and Header Variables on page 98.
- Configuring and Modifying Database Headers on page 101.
- Configuring and Modifying XML Headers and Header Variables on page 104.
- Configuring Hobsons Connect CRM Headers and Header Variables on page 108.

Configuring and Modifying Fixed-Width Headers and Header Variables

To configure a fixed-width header, do the following.

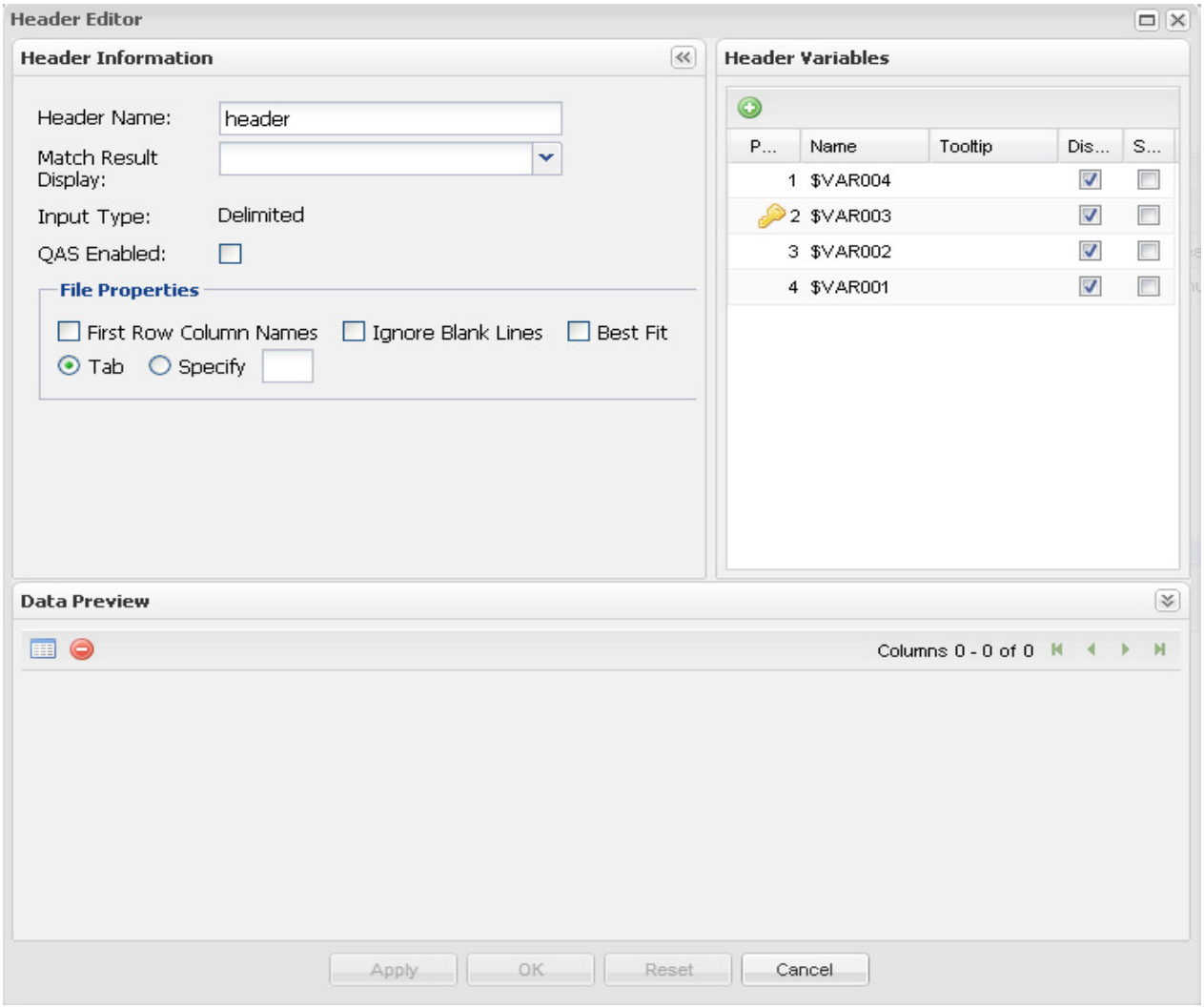
1. Select **Configuration > Headers**.

   The Header Administration dialog box appears.

2. Click the fixed-width header you want to modify and either right-click it and select **Edit** or click  .

   The Header Editor dialog box appears.

Figure 17: Header Editor Dialog Box



3. In the Header Information pane, do the following.
    1. Type the name of the header in the Header Name field.
    2. From the Match Result Display drop-down box, select the procedure that defines the information that is displayed in the Results pane in the Job window when a match occurs. See Chapter 9,“Configuring Procedures.” for more information about procedures.

       For an overview of the steps required to configure jobs that use this query to populate the Results pane in the Job window, see Specifying Data Displayed in the Results Pane on page 52 in Chapter 5,“Configuring Jobs and Processing Records.”
    3. Check the **QAS Enabled** checkbox to enable QAS on the header. By default, this option is enabled.

       When a job is created using this header, Perceptive DataTransfer checks the associated connection group for a QAS connection. If there is no connection, it is assumed that you are not using QAS in the procedures associated with the job. If a QAS connection is found, the QAS connection is tested; if the test is unsuccessful, the job status is set to Connection_Error, and you must correct the connection before you can run the job. This verification is performed each time you attempt to run the job.

       For more information about adding QAS connections, see Adding QAS Connections on page 78.
    4. In the File Properties pane, check the appropriate checkbox.

        - Ignore Blank Lines: Check to ignore empty lines in the data file.
        - Best Fit: Check so that the width of the column is automatically adjusted to display all content in a column.

    - In the Header Variables pane, configure the header variables.

4. To add a new variable, click  in the Header Variables pane.
    - If you do not click a variable in the table, the new variable appears as the first entry in the table.
    - If you click a variable, the new variable is added below the selected variable.
5. To modify a header, do the following.
    1. In the Header Variables pane, select the variable you want to modify and either right-click it and select **Edit** or  .

       The Edit Input Variable dialog box appears.
    2. In the Position field, type the number of the position of the column. You may need to adjust the column position if a data file changes.

       Use this field to move the column to a new position and to adjust all other columns to the left or to the right, accordingly.
    3. In the Name field, type the name of the variable.

4. From the Data Type drop-down box, select the data type of the variable (*Character*, *Number*, or *Date*).

   In the Name field, the appropriate symbol used to specify the data type of the variable is appended to the first character of the name.

   $ (dollar sign) denotes a character variable, # (number sign) denotes a numeric variable, and & (ampersand) denotes a date variable.

5. Check the **Display** checkbox to display the column in the pane that displays records in the window that appears when you open a job.

6. Check the **Sort** checkbox to allow this column to be sorted in the Record panes grid in the Edit Job window (which appears when you click a job in the Job dashboard and either click **Edit** or right-click it and select **Edit**) or in the window that appears when a job is opened in the Job Dashboard (which appears when you select a record and either click **Open** or right-click it and select **Open**) You can select up to ten columns to be sorted.

   Note A column that is set as the record key is also a sortable column and counts toward the ten elements that can be sortable.

   Sorting is based on the prefix of the input variable. If the prefix is &, sorting is based on timestamp (which in the end is a numeric sort); if the prefix is $, sorting is alphanumeric; and if the prefix is #, sorting is numeric.

   These values are all stored as strings regardless of the prefix the values are converted to when the user opens or edits a job to prepare a job. If, for example, the prefix is # and the value does not convert to a numeric value, the value is managed as *null*; for #ZIP and value SEVEN, seven is *null* when sorted.

7. In the Tooltip field, type the text that you want to appear when you hover your mouse over the column in the pane that displays records that appears when you open a job.

8. In the Start field, type the start position of the column. Note the following:

   - The end position is adjusted accordingly.
   - The width is not changed.
   - The size of the columns next to the column (previous or next) are adjusted accordingly.
   - You cannot change the start position to be larger than the end position.
   - You cannot change the start position of a column that has a position of *1*.
   - When you move the start position to the left:
     - If you move the start position to at or before the start of any other column, the start position of the other columns are moved to the right accordingly.
     - If you move the start position to between the start and end range of another column, the width and end position of the other column are changed (making the column smaller in size).

- When you move the start position to the right:
- The column width is unchanged.
- The end position is adjusted accordingly.
- The width and end positions of the previous column are changed (making the column larger in size).

9. In the End field, type the end position of the column. Note the following:

- The end position cannot be before the start position.
- When you move the end to the left:
  - The width of the column becomes smaller in size.
  - The start position of the next column is adjusted.
- When you move the end to the right:
  - The width of the column becomes larger in size.
  - The start position of the next column is adjusted.

10. In the Width field, type the width of the column. Note the following:

- The end position is adjusted accordingly.
- The start position of the next column is adjusted.

11. Click **OK**.

6. To prevent duplicate records when this header is used to run jobs, you can set a column as the record key. Jobs run more quickly when a column is set as a record key.

   Selecting a header key allows Perceptive DataTransfer to process any records with different values in the selected column at the same time. You do not need to select a column that guarantees unique values, but the column should capture duplicate records. For example, if you select *Last Name* as the key to a header and process a file that has many records with the last name *Smith*, which represent different students, you prevent any two records with the same last name from being processed at the same time.

   To mark a column as the record key, select the column and click  .

   The  icon appears next to the column to denote that it is the record key.

   You can mark one column only as the record key; you cannot configure composite keys.

   Note A column that is set as the record key is also a sortable column and counts toward the ten elements that can be sortable.

7. To delete a variable, select it and either right-click it and select **Delete** or click  .

   In the Data Preview pane, you can preview data by clicking the preview data button; click the clear preview data button to clear the information displayed in the pane.

8. Click  .

   The Upload Preview File dialog box appears.

9. Click **Browse...** and navigate to the file that you want to preview, and then select it.
10. Click **Preview**.

    The data is displayed in the Data Preview pane.

11. To clear data from the pane, click  .

Configuring and Modifying Delimited Headers and Header Variables

To configure a delimited header, do the following.

1. Select **Configuration > Headers**.

   The Header Administration dialog box appears.

2. Click the delimited header you want to modify and either right-click it and select **Edit** or click  .

   The Header Editor dialog box appears.

3. In the Header Information pane, do the following.
   1. Type the name of the header in the Header Name field.
   2. From the Match Result Display drop-down box, select the procedure that defines the information that is displayed in the Results pane in the Job window when a match occurs. See Chapter 9,“Configuring Procedures.” for more information about procedures.

      For an overview of the steps required to configure jobs that use this query to populate the Results pane in the Job window, see Specifying Data Displayed in the Results Pane on page 52 in Chapter 5,“Configuring Jobs and Processing Records.”
   3. Check the **QAS Enabled** checkbox to enable QAS on the header. By default, this option is enabled.

      When a job is created using this header, Perceptive DataTransfer checks the associated connection group for a QAS connection. If there is no connection, it is assumed that you are not using QAS in the procedures associated with the job. If a QAS connection is found, the QAS connection is tested; if the test is unsuccessful, the job status is set to Connection_Error, and you must correct the connection before you can run the job. This verification is performed each time you attempt to run the job.

      For more information about adding QAS connections, see Adding QAS Connections on page 78.

4. In the File Properties pane, check the appropriate checkbox:
    - First Row Column Names: Check to load the first row of the data file into the file header that is used for column names.
    - Ignore Blank Lines: Check to ignore empty lines in the data file.
    - Best Fit: Check so that the width of the column is automatically adjusted to display all content in a column.
    - Delimited: Check to specify that the input file is opened as a delimited file. Then click the appropriate radio button.
        - Tab: Click to specify that the file is opened as a tab-delimited file.
        - Specify: Click to set a value by which the data is delimited in the field and provide the value in the Specify field.

4. To add a new variable, click  in the Header Variables pane.
    - If you do not click a variable in the table, the new variable appears as the first entry in the table.
    - If you click a variable, the new variable is added below the selected variable.
5. To edit a header, do the following.
    1. In the Header Variables pane, select the variable you want to modify and either right-click it and select **Edit** or  .

        The Edit Input Variable dialog box appears.
    2. In the Position field, type the number of the position of the column. You may need to adjust the column position if a data file changes.
    3. In the Name field, type the name of the variable.
    4. From the Data Type drop-down box, select the data type of the variable (*Character*, *Number*, or *Date*).

        In the Name field, the appropriate symbol used to specify the data type of the variable is appended to the first character of the name.

    $ (dollar sign) denotes a character variable, # (number sign) denotes a numeric variable, and & (ampersand) denotes a date variable.

    5. Check the **Display** checkbox to display the column in the pane that displays records in the window that appears when you open a job.

6. Check the **Sort** checkbox to allow this column to be sorted in the Record panes grid in the Edit Job window (which appears when you click a job in the Job dashboard and either click **Edit** or right-click it and select **Edit**) or in the window that appears when a job is opened in the Job Dashboard (which appears when you select a record and either click **Open** or right-click it and select **Open**) You can select up to ten columns to be sorted.

   Note A column that is set as the record key is also a sortable column and count toward the ten columns that can be sortable.

   Sorting is based on the prefix of the input variable. If the prefix is &, sorting is based on timestamp (which in the end is a numeric sort); if the prefix is $, sorting is alphanumeric; and if the prefix is #, sorting is numeric.

   These values are all stored as strings regardless of the prefix the values are converted to when the user opens or edits a job to prepare a job. If, for example, the prefix is # and the value does not convert to a numeric value, the value is managed as *null*; for #ZIP and value SEVEN, seven is *null* when sorted.

7. In the Tooltip field, type the text that appears when you hover your mouse over the column in the pane that displays records that appears when you open a job.

8. Click **OK**.

6. To prevent duplicate records when this header is used to run jobs, you can set a column as the record key. Jobs run more quickly when a column is set as a record key.

   Selecting a header key allows Perceptive DataTransfer to process any records with different values in the selected column at the same time. You do not need to select a column that guarantees unique values, but the column should capture duplicate records. For example, if you select *Last Name* as the key to a header and process a file that has many records with the last name *Smith*, which represent different students, you prevent any two records with the same last name from being processed at the same time.

   To mark a column as the record key, select the column and click  .

   The  icon appears next to the column to denote that it is the record key.

   You can mark one column only as the record key; you cannot configure composite keys.

   Note A column that is set as the record key is also a sortable column and count toward the ten elements that can be sortable.

7. To delete a variable, select it and either right-click it and select **Delete** or click  .

   In the Data Preview pane, you can preview data by clicking the preview data button; click the clear preview data button to clear the information displayed in the pane.

8. Click  .

   The Upload Preview File dialog box appears.

9. Click **Browse...** and navigate to the file that you want to preview, and then select it.
10. Click **Preview**.

    The data is displayed in the Data Preview pane.

11. To clear data from the pane, click  .

Configuring and Modifying Database Headers

You can use database headers to dynamically extract input data from the database and use it when a job is run. For an overview of steps you must perform to dynamically obtain input data from the database for a job, see Obtaining Input Data from the Database on page 44 in Chapter 8,“Configuring Headers.”

To configure a database header, do the following.

1. Select **Configuration > Headers**.

   The Header Administration dialog box appears.

2. Click the database header you want to modify and either right-click it and select **Edit** or click  .

   The Header Editor dialog box appears.

3. In the Header Information pane, do the following.
   1. Type the name of the header in the Header Name field.
   2. From the Match Result Display drop-down box, select the procedure that defines the information that is displayed in the Results pane in the Job window when a match occurs. See Chapter 9,“Configuring Procedures.” for more information about procedures.

      For an overview of the steps required to configure jobs that use this query to populate the Results pane in the Job window, see Specifying Data Displayed in the Results Pane on page 52 in Chapter 5,“Configuring Jobs and Processing Records.”
   3. In the Population Selection field, select the Database Population Selection procedure that contains the query that dynamically extracts the input data. The query that captures the header input variables and displays them in the Header Variables pane. See Chapter 9,“Configuring Procedures.” for more information about procedures.

      For an overview of the steps required to configure jobs into which input data is automatically extracted, see Obtaining Input Data from the Database on page 44 in Chapter 5,“Configuring Jobs and Processing Records.”

4. Check the **QAS Enabled** checkbox to enable QAS on the header. By default, this option is enabled.

   When a job is created using this header, Perceptive DataTransfer checks the associated connection group for a QAS connection. If there is no connection, it is assumed that you are not using QAS in the procedures associated with the job. If a QAS connection is found, the QAS connection is tested; if the test is unsuccessful, the job status is set to Connection_Error, and you must correct the connection before you can run the job. This verification is performed each time you attempt to run the job.

   For more information about adding QAS connections, see Adding QAS Connections on page 78.

4. If you selected a query in the Population Selection field, to capture header variables from the query, click **Capture**. The header variables are displayed in the Header Variables pane.

Note Perceptive DataTransfer uses the aliases in the selected Database Population Selection procedure to create and store column headings (input variables). You cannot edit these input variables.

5. To add a new variable, click  in the Header Variables pane.
   - If you do not click a variable in the table, the new variable appears as the first entry in the table.
   - If you click a variable, the new variable is added below the selected variable.
6. To edit a header, do the following.
   1. In the Header Variables pane, select the variable you want to modify and either right-click it and select **Edit** or  .

      The Edit Input Variable dialog box appears.
   2. In the Position field, type the number of the position of the column. You may need to adjust the column position if a data file changes.
   3. In the Name field, type the name of the variable.
   4. From the Data Type drop-down box, select the data type of the variable (*Character*, *Number*, or *Date*).

      In the Name field, the appropriate symbol used to specify the data type of the variable is appended to the first character of the name.

   $ (dollar sign) denotes a character variable, # (number sign) denotes a numeric variable, and & (ampersand) denotes a date variable.

   5. Check the **Display** checkbox to display the column in the pane that displays records in the window that appears when you open a job.

6. Check the **Sort** checkbox to allow this column to be sorted in the Record panes grid in the Edit Job window (which appears when you click a job in the Job dashboard and either click **Edit** or right-click it and select **Edit**) or in the window that appears when a job is opened in the Job Dashboard (which appears when you select a record and either click **Open** or right-click it and select **Open**) You can select up to ten columns to be sorted.

   Note A column that is set as the record key is also a sortable column and count toward the ten columns that can be sortable.

   Sorting is based on the prefix of the input variable. If the prefix is &, sorting is based on timestamp (which in the end is a numeric sort); if the prefix is $, sorting is alphanumeric; and if the prefix is #, sorting is numeric.

   These values are all stored as strings regardless of the prefix the values are converted to when the user opens or edits a job to prepare a job. If, for example, the prefix is # and the value does not convert to a numeric value, the value is managed as *null*; for #ZIP and value SEVEN, seven is *null* when sorted.

7. In the Tooltip field, type the text that appears when you hover your mouse over the column in the pane that displays records that appears when you open a job.

8. Click **OK**.

7. To prevent duplicate records when this header is used to run jobs, you can set a column as the record key. Jobs run more quickly when a column is set as a record key.

   Selecting a header key allows Perceptive DataTransfer to process any records with different values in the selected column at the same time. You do not need to select a column that guarantees unique values, but the column should capture duplicate records. For example, if you select *Last Name* as the key to a header and process a file that has many records with the last name *Smith*, which represent different students, you prevent any two records with the same last name from being processed at the same time.

   To mark a column as the record key, select the column and click  .

   The  icon appears next to the column to denote that it is the record key.

   You can mark one column only as the record key; you cannot configure composite keys.

   Note A column that is set as the record key is also a sortable column and count toward the ten columns that can be sortable.

8. To delete a variable, select it and either right-click it and select **Delete** or click  .

Configuring and Modifying XML Headers and Header Variables

Note You do not provide input variables for XML header jobs, because XML syntax for procedures allows you to reference every node in the XML by the exact XML tag name. Other input files have an input variable for each data field in the file, but for XML input files, you must use the ***for each*** and *node* syntax to navigate to the desired part of the XML tree. For information about configuring *for each* and *node* syntax for procedures that process XML files, see Understanding the for each Statement on page 234.

To configure an XML header, do the following.

1. Select **Configuration > Headers**.

   The Header Administration dialog box appears.

2. Click the XML header you want to modify and either right-click it and select **Edit** or click  .

   The Header Editor dialog box appears.

3. In the Header Information pane, do the following.

   1. Type the name of the header in the Header Name field.

   2. From the Match Result Display drop-down box, select the procedure that defines the information that is displayed in the Results pane in the Job window when a match occurs. See Chapter 9,“Configuring Procedures.” for more information about procedures.

      For an overview of the steps required to configure jobs that use this query to populate the Results pane in the Job window, see Specifying Data Displayed in the Results Pane on page 52 in Chapter 5,“Configuring Jobs and Processing Records.”

   3. Check the **QAS Enabled** checkbox to enable QAS on the header. By default, this option is enabled.

      When a job is created using this header, Perceptive DataTransfer checks the associated connection group for a QAS connection. If there is no connection, it is assumed that you are not using QAS in the procedures associated with the job. If a QAS connection is found, the QAS connection is tested; if the test is unsuccessful, the job status is set to Connection_Error, and you must correct the connection before you can run the job. This verification is performed each time you attempt to run the job.

      For more information about adding QAS connections, see Adding QAS Connections on page 78.

4. To upload an XML file to preview its data, do the following.

   1. In the XML Preview pane, click  .

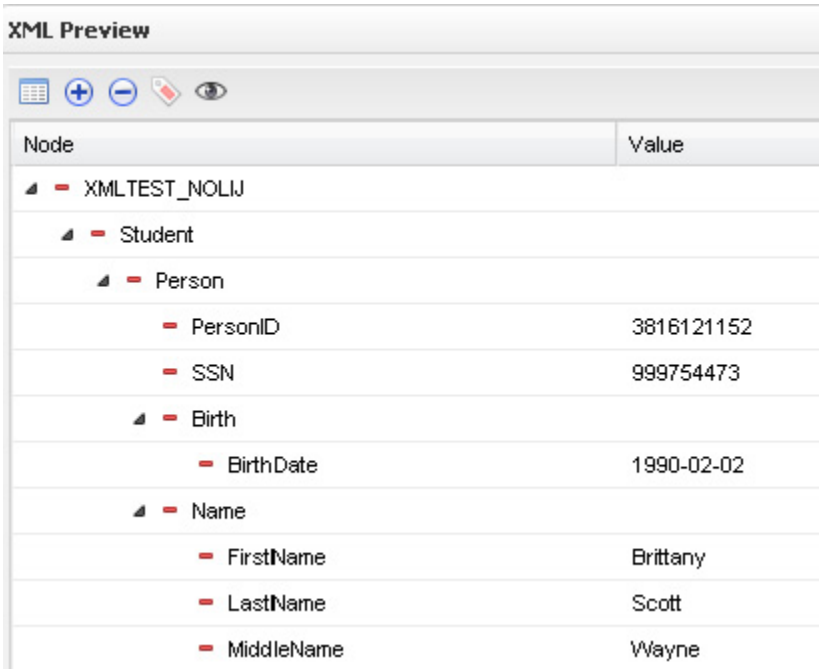
      The Upload XML Preview File dialog box appears.

   2. Click **Browse...**, navigate to the location of the XML file you want to preview, and select it.

   3. Click Preview.

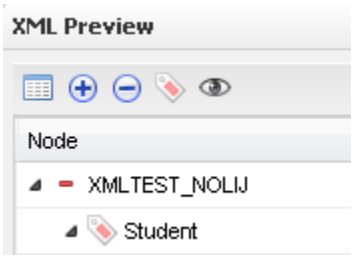
      The XML file is uploaded, and its contents are displayed in the XML Preview pane.

Figure 18: XML Preview Pane Displaying XML File Data



5. To expand all nodes in the XML tree, either click  or right-click a node and select **Expand All**; to collapse them, either click  or right-click a node and select **Collapse All**.
6. Set a record identifier by selecting the appropriate XML node and either right-clicking it and selecting **Set Record Identifier** or clicking  . The node set as the record identifier is the node that denotes the start of each record.

Figure 19: XML Identifier Student



The XML tree refreshes and marks the corresponding nodes as record identifiers. The Identifier field in the Header Information pane displays the name of the identifier.

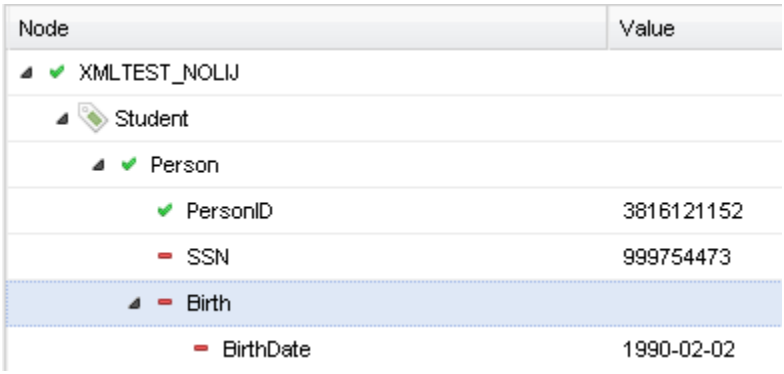
Note If you change the record identifier after you create a job using the XML header, the job will not run properly.

7. If you select an end node in the XML tree, the  appears. If you click the icon, the XML tag will be displayed in the Records pane (the topmost, leftmost pane in either the Edit Job or Open Job windows). You can also right-click a node and select Set to Display.

   A  icon appears next to XML tags that will appear in the Records pane.

   Nodes that are selected to appear in the Records pane are displayed in the Element Order pane.

Figure 20: XML Node Set to be Displayed in the Records Pane



If you select a node that is marked to appear in the Records pane, the  appears. If you click this icon, the XML node will not be displayed in the Records pane. You can also right-click a node and select **Set to Hide**.

A icon appears next to XML tags that will not appear in the Records pane.

8. Configure the order of XML elements specified to be displayed in the Records pane. The Element Order pane displays the nodes you selected to be displayed.

   To configure the element order, select the appropriate node in the Element Order pane and do one of the following.

   - Click  to move the node to be the first node to be displayed.
   - Click  to move the node up one position.

- Click  to move the node down one position.

- Click  to move the node to the last position.

9. To allow an element to be sortable in the Record panes grid in the Edit Job window (which appears when you click a job in the Job dashboard and either click **Edit** or right-click it and select **Edit**) or in the window that appears when a job is opened in the Job Dashboard (which appears when you select a record and either click **Open** or right-click it and select **Open**), click the element and click the  . You can select up to ten elements to be sortable.

   To remove sorting from the element, select an element on which sorting is enabled and click  .

   Note Neither icon appears if you have selected the maximum of ten elements to be sortable and you select a element that is not sortable.

   Note An element that is set as the record key is also a sortable column and counts toward the ten columns that can be sortable.

10. To prevent duplicate records when this header is used to run jobs, you can set a column as the record key. Jobs run more quickly when a column is set as a record key.

    Selecting a header key allows Perceptive DataTransfer to process any records with different values in the selected column at the same time. You do not need to select a column that guarantees unique values, but the column should capture duplicate records. For example, if you select *Last Name* as the key to a header and process a file that has many records with the last name *Smith*, which represent different students, you prevent any two records with the same last name from being processed at the same time.

    To mark a column as the record key, select the column and click  .

    The  icon appears next to the column to denote that it is the record key.

    You can mark one column only as the record key; you cannot configure composite keys.

    Note A column that is set as the record key is also a sortable column and counts toward the ten columns that can be sortable.

11. To hide a displayed node that appears in the Element Order pane, select the node and click  . The node is hidden and is removed from the Element Order pane.

12. To change the name of an XML node to be displayed in the Records pane, do the following.

    1. Click the node you want to rename in the Element Order pane and click  .

       The Edit Display Name dialog box appears.

    2. In the Display Name field, type the name to be displayed in the Records pane. The heading of the column is changed to this name when the XML node is displayed in the Records pane.

    3. Click **OK**.

    Note Changing the XML node name does not change the XML tag; it only changes the display name used in the Record pane when jobs are opened or edited.

    When you open or edit a job that uses an XML header, the columns in the Record pane are populated and ordered based on the tags you specified to be displayed and the order in which you displayed.

    You can view the full XML record in the Record pane; see Viewing XML Records on page 58.

Configuring Hobsons Connect CRM Headers and Header Variables

To configure a Hobsons Connect CRM header, do the following.

1. Select **Configuration > Headers**.

   The Header Administration dialog box appears.

2. Click the Hobsons Connect CRM header you want to modify and either right-click it and select **Edit** or click  .

   The Header Editor dialog box appears.

3. In the Header Information pane, do the following.

   1. In the Header Name field, type the name of the header.

2. From the Match Result Display drop-down box, select the procedure that defines the information that is displayed in the Results pane in the Job window when a match occurs. See Chapter 9,“Configuring Procedures.” for more information about procedures.

   For an overview of the steps required to configure jobs that use this query to populate the Results pane in the Job window, see Specifying Data Displayed in the Results Pane on page 52 in Chapter 5,“Configuring Jobs and Processing Records.”

3. From the Connection Group drop-down box, select the connection group to use for the header. The connection group must have a Hobsons connection configured; the header uses the Hobsons connection, from the selected connection group.

   Note The connection is not saved on the header; you must select the connection each time you modify the header.

   The Header Filters pane appears after you select a connection group.

4. To add a Hobsons filter, in the Header Filters pane, do the following.

   1. Click  .

      The Select Filters dialog box appears and displays filters obtained from the Hobsons connection. The dialog box displays only those filters you have not already selected.

   2. Select one filter to add or select multiple filters by doing one of the following.

      - Click a filter and press and hold the **Ctrl** key as you click each filter with your mouse.
      - Click a filter and press and hold the **Shift** key as you click another filter to select contiguous filters.

   3. Click **OK**.

5. To delete a filter, in the Header Filters pane, select the filter you want to delete and click  .
6. To add a new variable, do the following.

   1. Click  in the Header Variables pane. The variables are retrieved from the Hobsons connection and are a displayed in a new dialog box.

      - If you do not click a variable in the table, the new variable appears as the first entry in the table.
      - If you click a variable, the new variable is added below the selected variable.

2. Select one variable to add or select multiple variables by doing one of the following.

   - Click a variable and press and hold the **Ctrl** key as you click each variable with your mouse.
   - Click a variable and press and hold the **Shift** key as you click another variable to select contiguous variables.

3. Click **OK**.

7. To modify a header, in the Header Variables pane, do the following.

   1. Select the variable you want to modify and either right-click it and select **Edit** or  .

      The Edit Input Variable dialog box appears.

   2. In the Position field, type the number of the position of the column. You may need to adjust the column position if a data file changes.

   3. In the Name field, type the name of the variable.

   4. From the Data Type drop-down box, select the data type of the variable (*Character*, *Number*, or *Date*).

      In the Name field, the appropriate symbol used to specify the data type of the variable is appended to the first character of the name.

      $ (dollar sign) denotes a character variable, # (number sign) denotes a numeric variable, and & (ampersand) denotes a date variable.

   5. Check the **Display** checkbox to display the column in the pane that displays records in the window that appears when you open a job.

   6. Check the **Sort** checkbox to allow this column to be sorted in the Record panes grid in the Edit Job window (which appears when you click a job in the Job dashboard and either click **Edit** or right-click it and select **Edit**) or in the window that appears when a job is opened in the Job Dashboard (which appears when you select a record and either click **Open** or right-click it and select **Open**) You can select up to ten columns to be sorted.

      Note A column that is set as the record key is also a sortable column and count toward the ten columns that can be sortable.

      Sorting is based on the prefix of the input variable. If the prefix is &, sorting is based on timestamp (which in the end is a numeric sort); if the prefix is $, sorting is alphanumeric; and if the prefix is #, sorting is numeric.

      These values are all stored as strings regardless of the prefix the values are converted to when the user opens or edits a job to prepare a job. If, for example, the prefix is # and the value does not convert to a numeric value, the value is managed as *null*; for #ZIP and value SEVEN, seven is *null* when sorted.

   7. Click **OK**.

8. To prevent duplicate records when this header is used to run jobs, you can set a column as the record key. Jobs typically run more quickly when a column is set as a record key.

   Selecting a header key allows Perceptive DataTransfer to process any records with different values in the selected column at the same time. You do not need to select a column that guarantees unique values, but the column should capture duplicate records. For example, if you select *Last Name* as the key to a header and process a file that has many records with the last name *Smith*, which represent different students, you prevent any two records with the same last name from being processed at the same time.

   To mark a column as the record key, select the column and click  .

   The  icon appears next to the column to denote that it is the record key.

   You can mark one column only as the record key; you cannot configure composite keys.

   Note A column that is set as the record key is also a sortable column and count toward the ten columns that can be sortable.

9. To delete a variable, in the Header Variables pane, select the filter you wan to delete and click  .

   In the Data Preview pane, you can preview data by clicking the preview data button; click the clear preview data button to clear the information displayed in the pane.

10. Click **Preview**.

    Perceptive DataTransfer runs the Hobsons Connect CRM web service for the selected filter and input variables; the data returned from the web service is displayed in Data Preview pane.

11. To clear data from the pane, click  .

Removing Sharing on Headers

To remove sharing on a header that is shared with another workspace, do the following.

1. Select **Configuration > Headers**.

   The Header Administration dialog box appears.

2. Select the header and either right-click it and select **Remove Sharing** or click  .

   Sharing on the header is removed.

Rolling Back Headers

If changes have been made and committed to a header, you can use a previous version (*roll back*) of it.

1. Select **Configuration > Headers**.

   The Header Administration dialog box appears.

2. Select the header you want to roll back and either right-click it and select **Rollback Header** or click  .

   The Rollback Manager dialog box appears and displays the following information about previous versions of the procedure.

   - Name: Name of the header.
   - Status: Status of the header (*current* or *dated*).
   - Version Date: Date on which the version was created.
   - Created By: Username of the user who created the version.
   - Comments: Comments that were added about the version.

3. Select the version to which you want to revert and click **Rollback**.

   The header is updated to use the selected previous version of the header.

Obtaining the Latest Versions of Headers

If changes have been made to and committed to a header, you can obtain the latest version of it.

1. Select **Configuration > Headers**.

   The Header Administration dialog box appears.

2. Select the header for which you want to obtain the latest version and either right-click it and select **Get Latest** or click  .

   The header is updated to the latest version.

Deleting Headers

To delete a header, do the following.

1. Select **Configuration > Headers**.

   The Header Administration dialog box appears.

2. Select the header that you want to delete and either right-click it and select **Delete** or click  .

   A message appears, prompting you to confirm that you want to delete the header.

3. Click **Yes**.

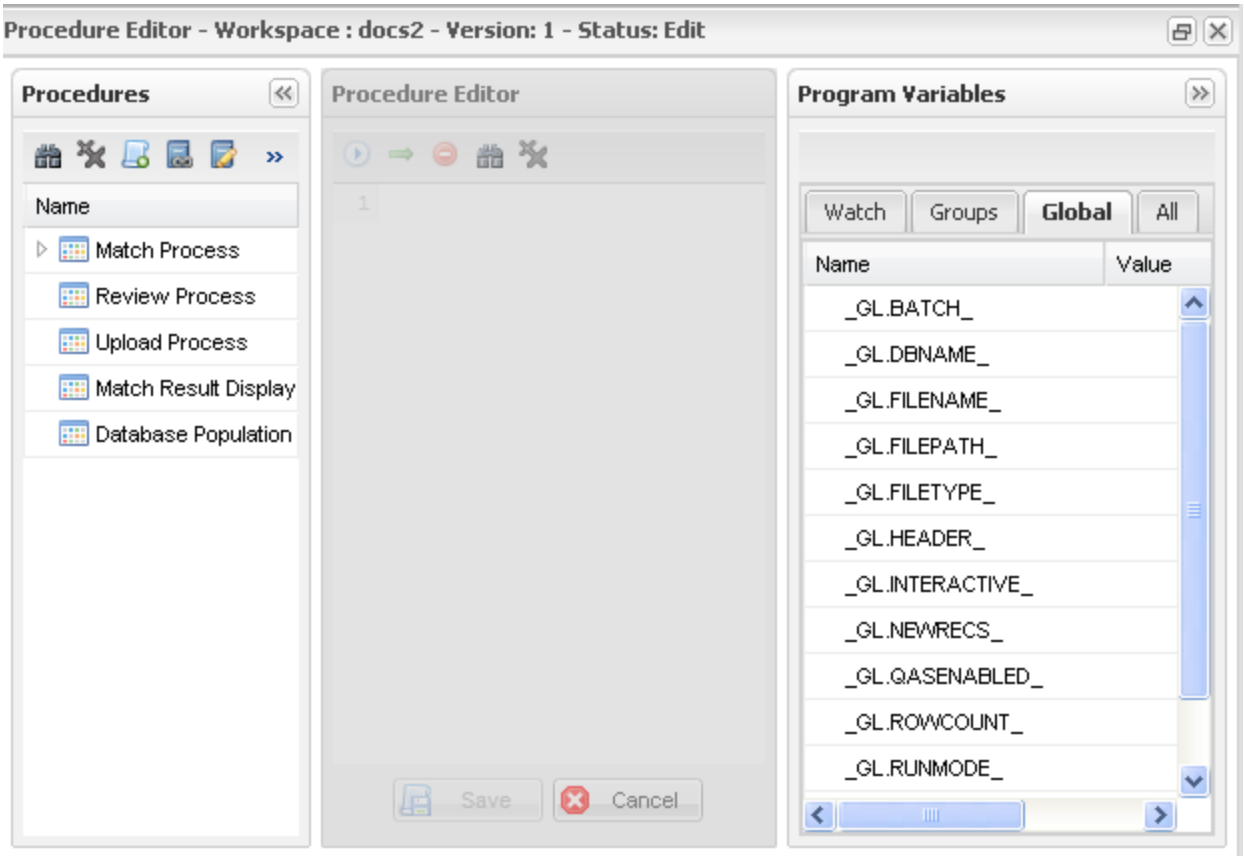
   The header is deleted and is removed from the Header Administration dialog box.

Configuring Procedures

See the following topics for more information:

- Understanding Perceptive DataTransfer Logic on page 115.
- Understanding Variables on page 116.
- Configuring Variables on page 117.
- Configuring Libraries on page 123.
- Configuring Procedures on page 125.
- Importing and Exporting Libraries and Procedures on page 134.

Figure 21: Procedure Editor



Understanding Perceptive DataTransfer Logic

Perceptive DataTransfer logic is divided into the following sections, which collect procedures related to the process.

- *Match Process* comprises all procedures and flow control related to matching input records to existing records in your database.
- *Review Process* comprises all procedures and flow control related to selecting data from your database for potential matches.
- *Upload Process* comprises all procedures and flow control related to adding or updating information in your database.
- *Match Result Display* logic defines the query that retrieves the information displayed in the Results panel of the Job window when a match occurs. This query retrieves data based on a specified ID value; data columns returned by the query correspond to the columns of the Results pane.

  You use this logic in a procedure and associate it with a header; when a job associated with the header is run, the query returns the information in the Results pane.

  For an overview of the steps required to configure jobs that use this query to populate the Results pane in the Job window, see on page 47 in Chapter 5,"Configuring Jobs and Processing Records."
- *Database Population Selection* logic contains the query for dynamically extracting input data for a job. You use this logic in a procedure and associate the procedures with a database header; when a job associated with this header is run, the query extracts data from the database source.

  For example:

```
begin-procedure test-query
!
   begin-select
       SSN        "$SSN",
       FIRST              "$FIRST",
       LAST               "$LAST",
       MI                 "$MI",
       DOB           "+DOB",
       SEX                "$SEX",
       FROM table_name
   end-select
!
end-procedure
```

  For an overview of steps for dynamically extracting input data for a job from a database, see Obtaining Input Data from the Database on page 193 in Chapter 5,"Configuring Jobs and Processing Records."

For information about configuring logic, see Appendix 14,"Programming Concepts."

Procedures and libraries are used to organize logic within each option.

Understanding Procedures

Procedures contain the logic that defines how Perceptive DataTransfer determines if there are potential matches between the input data and existing records in the database and how information in the database is added or updated.

Procedures can also be shared and reused through workspaces. To add a procedure shared by another workflow, the workflow version in which you are working must be in edit mode, and the workflow version that contains the procedure you are importing must be in staged or active mode. For more information about workflows, see Chapter 12,“Configuring Workspaces.”

For more information about configuring logic, such as procedure syntax, see Appendix 14,“Programming Concepts.”

Understanding Libraries

Libraries are used to group similar types of procedures within a category. For example, for Match Process procedures, you can have the libraries *Match Control* and *Match Display*, and you can group related procedures within these libraries.

Understanding Variables

See the following topics for more information.

- Understanding Data Types on page 116.
- Understanding Variable Categories on page 117.
- Understanding Naming Conventions on page 117.

Understanding Data Types

Perceptive DataTransfer has with three predefined data types for variables and constants.

- Character: Stores string values.
- Date: Stores date values.
- Number: Stores numeric values.

Understanding Variable Categories

Perceptive DataTransfer uses two types of variables:

- Input: Represents each column of an input file.
- Program: User-defined or custom variables.

You should use lowercase text to name program variables to more easily distinguish them from input variables.

Understanding Naming Conventions

Perceptive DataTransfer examines the first character in a variable name to determine the data type of the variable. The data type designators are:

- $: Designates a character variable
- &: Designates a date variable
- #: Designates a numeric variable

Configuring Variables

For definitions of global variables, see Understanding Global Variables on page 236 in Appendix 14,"Programming Concepts."

See the following topics for more information.

- Adding Variables on page 118.
- Modifying Variables on page 118.
- Deleting Variables on page 119.
- Watching Variables on page 120.
- Moving Variables to Groups on page 121.
- Moving Variables to Groups on page 121.
- Configuring Groups on page 121.

Adding Variables

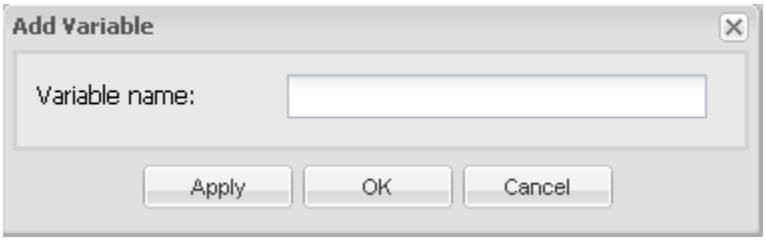
Note All input variables, including header variables, must have unique names.

To add a variable, do the following.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to add a variable and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. In the Program Variables pane, click the **All** tab.
3. Click  .

   The Add Variable dialog box appears.

Figure 22: Add Variable Dialog Box



4. In the Variable name field, type the name of the variable.
5. Click **Apply**.
6. Continue to add variables, as appropriate; when you are finished, click **OK**.

   The variable is added and is displayed in the Program Variables pane.

Modifying Variables

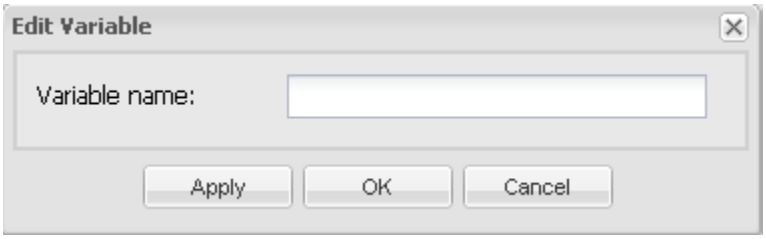
To modify a variable, do the following.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to edit a variable and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. In the Program Variables pane, click the **All** tab.

3. Select the variable you want to modify and either right-click it and select **Modify** or click .

   The Edit Variable dialog box appears.

Figure 23: Edit Variable Dialog Box



4. In the Variable name field, type the name of the variable.
5. Click **Apply**.
6. Click **OK**.

   The name of the variable is modified, and its information appears in the Program Variables pane.

Deleting Variables

To delete a variable, do the following.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to delete a variable and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. In the Program Variables pane, click the **All** tab.
3. Select the variable you want to delete and either right-click it and select **Delete** or click .

   The variable is deleted and is removed from the Program Variables pane.

Searching Variables

You can search for whole variables or partial text of variables.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to search a variable and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. In the Program Variables pane, do one of the following.
   - To search for watched variables, click the **Watch** tab.
   - To search through all variables, click the **All** tab.
3. In the text field in the Program Variables pane, type the text for which you want to search. You can use whole words or partial text; if you use partial text, all items starting with the beginning character are returned in the search. Use % as the wildcard character for partial text searches.

   For example, if you search for #c%, all variables that start with #c (including the whole variable #c) are returned in the search.
4. Press **Enter** on your keyboard.

   Matches that are found are displayed in the Program Variables pane. If no matching text is found in the search, the pane does not display any entries.

Watching Variables

When you run a job in interactive mode and view it in the window that appears when you edit a job, the Program Variables pane displays the values returned for all program variables. If you have many program variables, to more easily view results for specific variables, you can place such variables in the Watch tab.

To watch a variable, do the following.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to watch a variable and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. In the Program Variables pane, click the **All** tab.
3. Select the variable you want to watch and either right-click it and select **Watch** or click  .

   The variable is moved to the Watch tab.
4. To stop watching a variable, click the Watch tab; then, select it and either right-click it and select **Stop watching** or click  .

   The variable is moved to the All tab.

Moving Variables to Groups

To move a variable to a group, do the following.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to move a variable to a group and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. In the Program Variables pane, click the **All** tab.
3. Select the variable that you want to move and either right-click it and select the **Move to Group** or click  .

   The Move Variable to Group dialog box appears.
4. From the Group drop-down box, select the group to which you want to move the variable.
5. Click **OK**.

   The variable is moved to the specified group.

Configuring Groups

You can use groups to manage variables for similar types. For example, you can create a *Form Variables* group in which to place form variables.

See the following topics for more information.

- Adding Groups on page 121.
- Renaming Groups on page 122.
- Deleting Groups on page 122.

Adding Groups

To add a group, do the following.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to add a group and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. In the Program Variables pane, click the **Groups** tab.
3. Click  .

   The group is added and appears in the Groups tab.

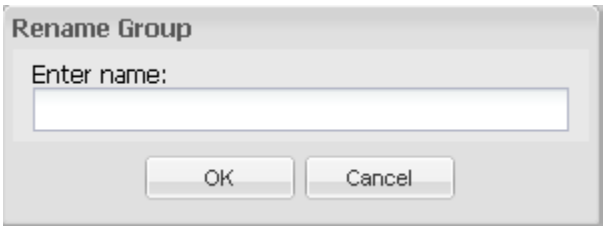
Renaming Groups

To rename a group, do the following.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to rename a group and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. In the Program Variables pane, click the **Groups** tab.
3. Select the group you want to rename and either right-click it and select **Rename** or click .

   The Rename dialog box appears.

Figure 24: Rename Group Dialog Box



4. In the Enter name field, type the name of the group and click **OK**.

   The name of the group is updated, and its information appears in the Program Variables pane.

Deleting Groups

To delete a group, do the following.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to delete a group and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. In the Program Variables pane, click the **Groups** tab.
3. Select the group you want to delete and either right-click it and select **Delete** or click .

The group is deleted and is removed from the Program Variables pane.

Configuring Libraries

See the following topics for more information.

- Adding Libraries on page 123.
- Renaming Libraries on page 124.
- Specifying Control Libraries on page 124.
- Deleting Libraries on page 125.
- Importing and Exporting Libraries and Procedures on page 134.

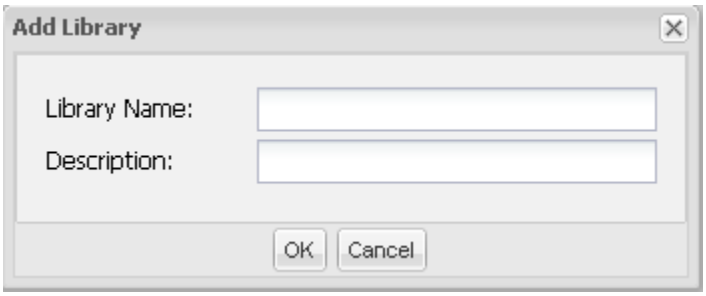
Adding Libraries

To add a library, do the following.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to add a library and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. Select the type of procedure to which you want to add a library and either right-click it and select **Add Library** or click  .

   The New Library dialog box appears.

Figure 25: Add Library Dialog Box



3. In the Library Name field, type the name of the library.
4. In the Description field, type descriptive text about the library.
5. Click **OK**.

   The library is added and appears in the Procedures pane.

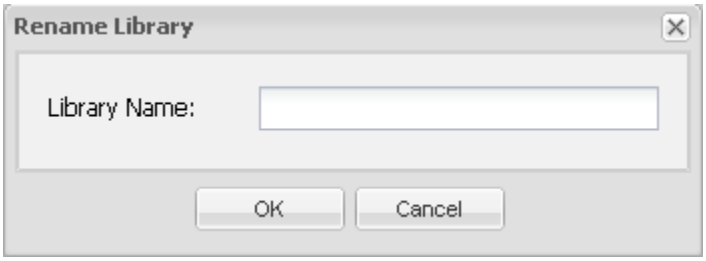
Renaming Libraries

To rename a library, do the following.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to rename a library and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. Select the library you want to rename and either right-click it and select **Rename Library** or click  .

   The Rename Library dialog box appears.

Figure 26: Rename Library Dialog Box



3. In the Library Name field, type the name of the library.
4. Click **OK**.

   The library is renamed, and its information is refreshed in the Procedures pane.

Specifying Control Libraries

You set a library as the control library when you want the library to control the flow of the process. A control library is the library from which the first code is run for each of the Match, Review, and Upload processes.

Do the following.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to specify a control library and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. Select the library you want to set as the control library and either right-click it and select **Control Library** or click  .

   The library is configured as the control library, and the  icon appears next to the library.

Deleting Libraries

Note You cannot delete a library that contains procedures. You must first delete all procedures from the library before deleting the library.

To delete a library, do the following.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to delete a library and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. Select the library you want to delete and either right-click it and select **Delete Library** or click  .

   The library is deleted and is removed from the Procedures pane.

Configuring Procedures

You can share procedures with other workspaces, and you can import procedures from and export procedures to an XML file.

To open the Procedure Editor, do one of the following.

- Select **Configuration > Procedures** from the main application toolbar.
- In the Job Dashboard, select the job for which you want to configure procedures and then either right-click it and select **Edit** or click the **Edit** button; then, in the window that appears, click the **Procedures** tab.

See the following topics for more information.

- Adding Procedures on page 126.
- Understanding Procedure Icons on page 127.
- Configuring Procedure Code on page 128.

- Copying Procedures on page 130.
- Renaming Procedures on page 130.
- Activating Procedures on page 131.
- Deactivating Procedures on page 131.
- Removing Sharing on Procedures on page 131.
- Rolling Back Procedures on page 132.
- Searching Procedures on page 133.
- Importing and Exporting Libraries and Procedures on page 134.

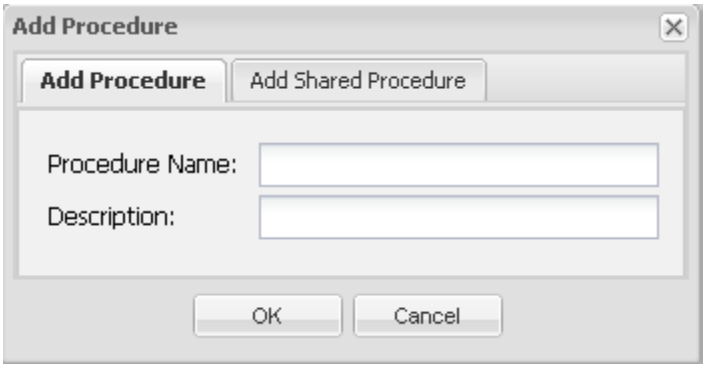
Adding Procedures

To add a procedure, do the following.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to add a procedure and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. Select the library to which you want to add a procedure and either right-click it and select **Add Procedure** or click  .

   The Add Procedure dialog box appears.

Figure 27: Add Procedure Dialog Box



3. Do one of the following.
   - To add a new procedure, do the following.
     1. Click the **Add Procedure** tab.
     2. In the Procedure Name field, type the name of the procedure.
     3. In the Description field, type descriptive text about the procedure.
   - To add a procedure that is shared by another workgroup, do the following.
     1. Click the **Add Shared Procedure** tab.
     2. From the Workspace drop-down box, select the workspace that contains the shared procedure.
     3. In the Procedure Name drop-down, select the procedure.

     Note Only procedures that belong to workspaces in staged or active mode are available for sharing.
4. Click **OK**.

   The procedure is added and is displayed in the Procedures pane.

Understanding Procedure Icons

See the following table for a description of the icons that appear next to procedures in the Procedures pane.

Table 5: Procedure Icons and Descriptions

Icon	Description
	Procedure is deactivated, has been modified, and is not shared.
	Procedure is shared, has been modified since it was added from the workspace sharing it, and is deactivated.
	Procedure is not shared and has been modified.
	Procedure is not shared, contains errors, and has been modified.
	Procedure is shared and has been modified since it was added from the workspace sharing it.
	Procedure is not shared, contains errors, and has not been modified.

Table 5: Procedure Icons and Descriptions (Continued)

Icon	Description
	This procedure has not been modified. If you are working in a workspace version in edit mode, the procedure is not shared. If you are working in a workspace version in a mode other than edit mode, this icon is displayed for all procedures. The sharing status is unknown.
	Procedure is not shared, contains errors, and is deactivated.
	Procedure is not shared and is deactivated.
	Procedure is not shared, has been modified, and is deactivated.
	Procedure is shared.
	Procedure is shared and has since been updated in the workspace sharing it.

Configuring Procedure Code

You configure procedure code in the Procedure Editor, which you can open by doing the following.

- In the Job Dashboard, select the job for which you want to add a procedure and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
- Select **Configuration > Procedures**.

For information about configuring logic for procedures, see Appendix 14,“Programming Concepts.”

Perceptive DataTransfer highlights code syntax as follows.

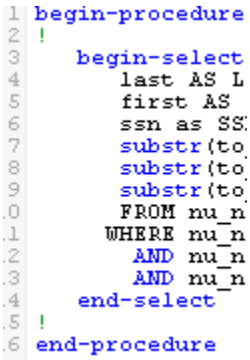
- Comments, beginning with ! or from ! to the end of the line, appear in green.

Figure 28: Comment Text

```
25      !
26      ! search for a match
27      !
```

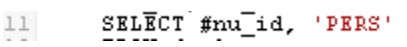
- Keywords, which are reserved words such as begin-procedure, begin-select, let, do, and so on, appear blue.

Figure 29: Keyword Text



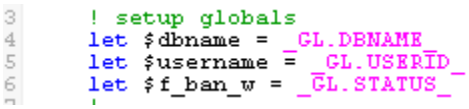
- Text strings appear in maroon.

Figure 30: Text String Text



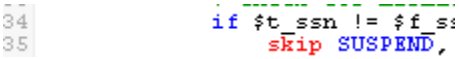
- Global variables appear in pink.

Figure 31: Global Variable Text



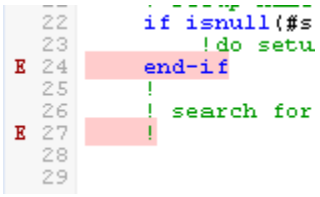
- SKIP, STOP and the on-error=display-error (which appears in the begin-sql line) appear in red.

Figure 32: SKIP, STOP, on-error=display-error Text



- Errors are highlighted in red. Hover your mouse over the number to display a tooltip with information about the issue.

Figure 33: Highlighted Lines of Code with Errors



Copying Procedures

To create a duplicate of a procedure, do the following.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to copy a procedure and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. Select the procedure you want to copy and either right-click it and select **Copy Procedure** or click  .

   The procedure is copied, and the new procedure is added under the original procedure in the Procedures pane.

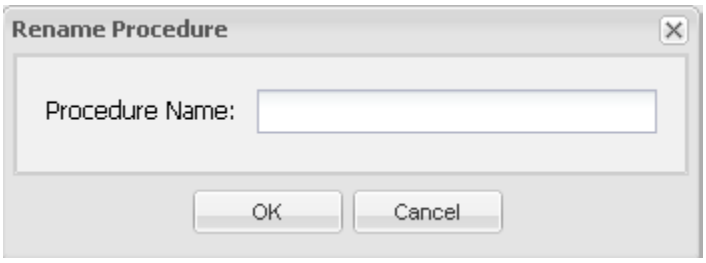
Renaming Procedures

To rename a procedure, do the following.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to add a procedure and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. Select the procedure you want to rename and either right-click it and select **Rename** or click  .

   The Rename Procedure dialog box appears.

Figure 34: Rename Procedure Dialog Box



3. In the Procedure Name field, type the name of the procedure.
4. Click **OK**.

   The procedure is renamed and is updated in the Procedures pane.

Deactivating Procedures

When you deactivate a procedure, the procedure is not used when logic is run; it is skipped. You can reactivate procedures that have been deactivated.

To deactivate a procedure, do the following.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to deactivate a procedure and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. Right-click the procedure you want to deactivate and select **Deactivate**.

   The procedure is deactivated.

Activating Procedures

To activate a procedure that is deactivated, do the following.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to activate a procedure and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. Right-click the procedure you want to activate and select **Activate**.

   The procedure is activated.

Removing Sharing on Procedures

To remove sharing on a procedure that is shared with another workspace, do the following.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to export a procedure and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. Select the procedure and either right-click it and select Remove Sharing or click  .

   Sharing is removed on the procedure.

Rolling Back Procedures

If changes have been made and committed to a procedure, you can use a previous version (*roll back*) of it.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to roll back a procedure and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. Select the procedure you want to roll back and either right-click it and select **Rollback Procedure** or click  .

   The Rollback Manager dialog box appears and displays the following information about previous versions of the procedure.
   - Name: Name of the procedure.
   - Status: Status of the procedure (pending, current, or dated).
   - Version Date: Date on which the version was created.
   - Created By: Username of the user who created the version.
   - Comments: Comments that were added about the version.
3. Select the version to which you want to revert and click **Rollback**.

   A dialog box appears and prompts you to confirm that you want to use the selected version of the procedure.
4. To use the selected version, click **Yes**.

   The procedure is updated to use the selected previous version of the procedure.

Obtaining the Latest Version of Procedures

If changes have been made to and committed to a procedure, you can obtain the latest version of it.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to obtain the latest version of a procedure and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. Select the procedure for which you want to obtain the latest version and either right-click it and select **Get Latest** or click .

   The procedure is updated to the latest version.

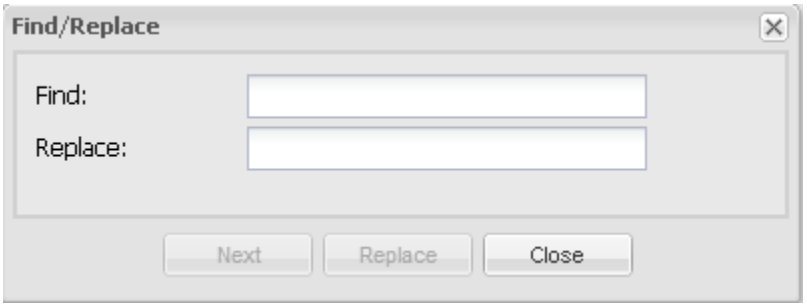
Searching Procedures

You can search for information in all procedures or in a specific procedure. Searches use case-sensitive text.

1. Do one of the following.
   - In the Job Dashboard, select the job for which you want to search a procedure and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. Do one of the following:
   - To search for information in all procedures, click in the Procedures toolbar.
   - To search for text within a specific procedure, select the procedure and click in the toolbar of the Procedure Editor.

     The Find/Replace dialog box appears.

Figure 35: Find/Replace Dialog Box



3. In the Find field, type the text for which you want to search.
4. In the Replace field, type the text with which you want to replace the text in the Find field.
5. Perceptive DataTransfer searches all procedures for the text that you entered. If a match is found, the matched text is highlighted in yellow in the Procedure Editor. If no matches are found, a dialog box appears and indicates that there are no matches.
6. To find the next occurrence of the text, click **Next**. When no more matches are found, a dialog box appears and indicates that there are no more matches.
7. To replace the found text with the text you specified in the Replace field, click **Replace**.

Importing and Exporting Libraries and Procedures

You can import procedures and libraries from XML documents, and you can export them to XML documents. You can:

- Export all procedures.
- Export a single procedure.
- Export a single library, which includes all its procedures.
- Import one or more libraries, including their procedures.
- Import a single procedure into a library.

See the following topics for more information.

- Importing One or More Libraries on page 134.
- Exporting Single Libraries on page 135.
- Exporting Single Procedures on page 136.
- Importing Single Procedures on page 136.
- Exporting All Procedures and Libraries on page 137.

Importing One or More Libraries

You can import one or more libraries. You can import files that contain either the entire procedure tree or a single library and its corresponding procedures.

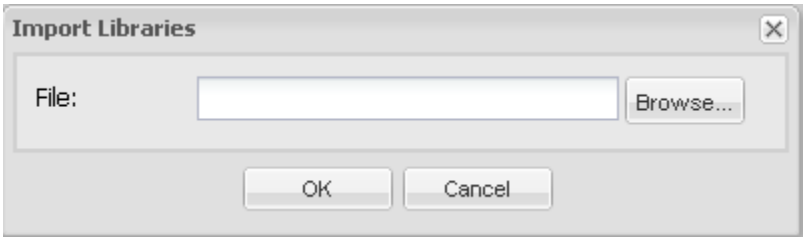
Note XML files that contain a single exported library are named beginning with *LIB* (for example, *LIB55.xml*). XML files that contain all libraries and procedures (the entire procedure tree) are named beginning with *PRCS* (for example, *PRCS987.xml*.) You can import XML files of these types. If you try to import a file type other than a library, a popup message appears that indicates import did not complete because the file type was not appropriate.

Note If you try to import one or more libraries, and their names already exist, existing libraries are updated with the imported libraries. If the names do not exist, new libraries are created.

1. Do one of the following.
   - In the Job Dashboard, select a job and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. Click  and select **Import Libraries**.

   The Import Libraries dialog box appears.

Figure 36: Import Libraries Dialog Box



3. Click the **Browse...** button and navigate to the XML file that contains the libraries you want to import, or type the location of the file in the File field.
4. Click **OK**.

   The Import Report appears and displays information about the import.

Exporting Single Libraries

To export a single library, do the following.

1. Do one of the following.
   - In the Job Dashboard, select a job and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. Select the appropriate library.
3. Click  and select **Export**.
4. Save the file in the appropriate location.

   XML files that contain libraries are named starting with *LIB* (for example, *LIB55.xml*). You can import files of this type when you are importing libraries (when you import a single library and all its procedures).

Exporting Single Procedures

To export a single procedure, do the following.

1. Do one of the following.
   - In the Job Dashboard, select the job a job and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. Select the procedure you want to export.
3. Click  and select **Export**.
4. Save the file in the appropriate location.

   XML files that contain a single exported procedure are named beginning with *PROC* (for example, *PROC123.xml*). You can import files of this type when you import a single procedure.

Importing Single Procedures

Note Procedure names must be unique. If you try to import a single procedure into a library, and that procedure exists in either that library or another library, the procedure is imported as a new procedure, named *DUPLICATE-<process type>-<procedure name>*.

For example, if you to import the procedure *initialize_vars* into the MATCH logic, but that procedure name already exists somewhere, the import process creates a new procedure named *DUPLICATE-MATCH-initialize-vars*.

If the library into which you are importing the procedure, or any other library, does not have a procedure with the name of the procedure you are importing, the procedure is imported.

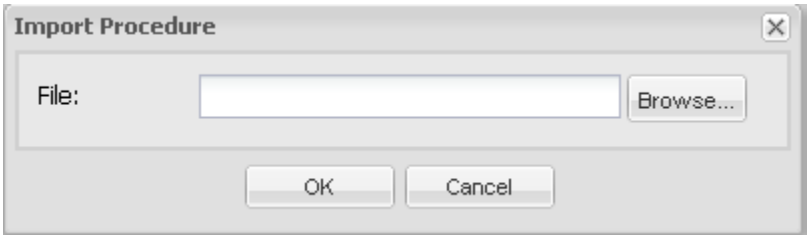
Note XML files that contain a single exported procedure are named beginning with *PROC* (for example, *PROC123.xml*). You can import XML files of this type. If you try to import a file type other than a single procedure, a popup message appears that indicates import did not complete because the file type was not appropriate.

To import a single procedure, do the following.

1. Do one of the following.
   - In the Job Dashboard, select a job and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. Select the library into which you want to import the procedure.
3. Click  and select **Import**.

   The Import Procedure dialog box appears.

Figure 37: Import Procedure Dialog Box



4. Click the **Browse...** button and navigate to the file that contains the procedure you want to import, or type the location of the file in the File field.
5. Click **OK**.

   The Import Report appears and displays information about the import.

Exporting All Procedures and Libraries

You can export all procedures and libraries (the entire procedure tree) as an XML file by doing the following.

1. Do one of the following.
   - In the Job Dashboard, select a job and either right-click it and select **Edit** or click the **Edit** button. In the window that appears, click the **Procedures** tab.
   - Select **Configuration > Procedures**.
2. Do one of the following.
   - Without clicking any selection in the Procedures pane, click  and select **Export**.
   - Select a procedure type node (such as Match Process), library, or procedure; then, click  and select Export All.
3. Save the file in the appropriate location.

   XML files that contain a all exported procedures are named beginning with *PRCS* (for example, *PRCS987.xml*). You can import files of this type when you import libraries (when you import the entire procedure tree).

Configuring Forms

You can configure forms to use to compare the current input record side-by-side with the possible existing record. You can link fields in the form to fields in the record and compare the values to view whether they match.

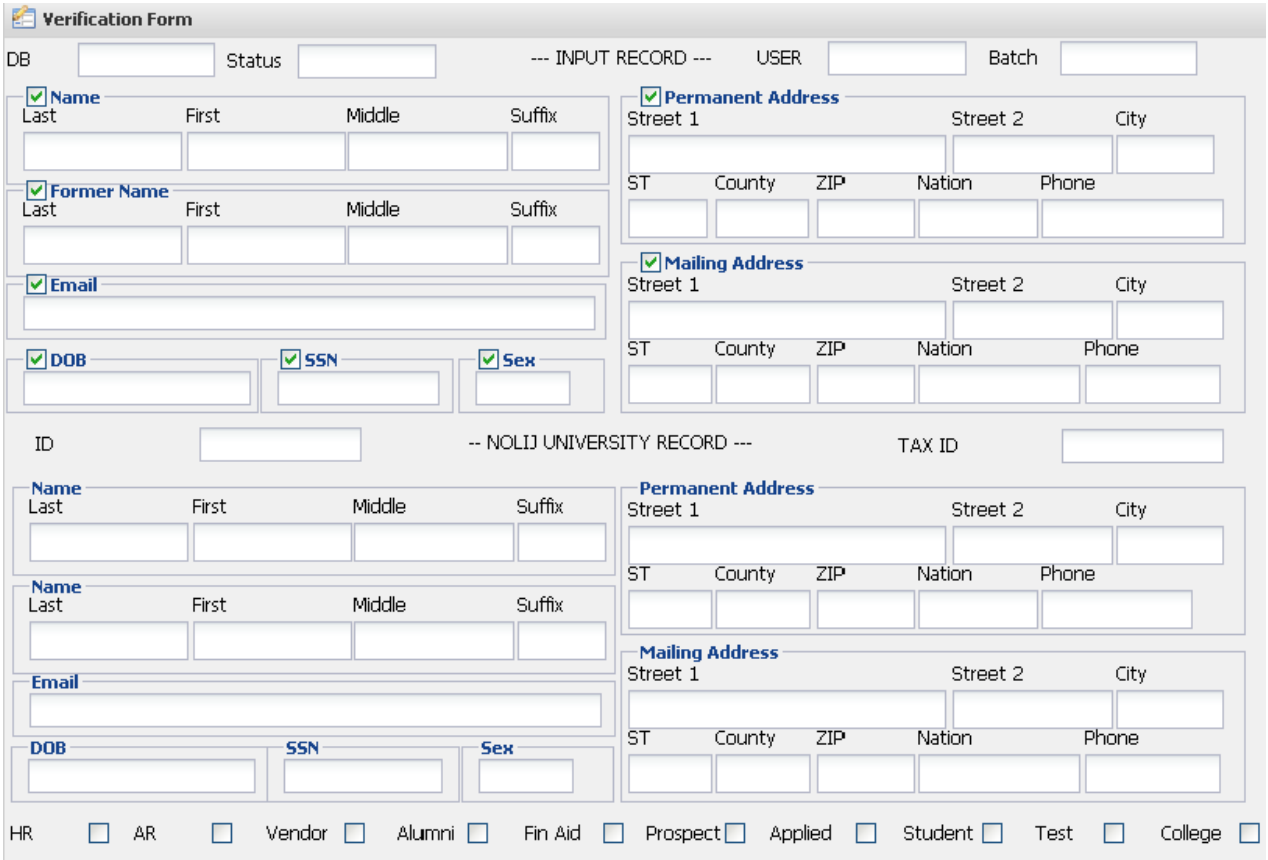
One form is contained in a workspace and is used for all jobs run within that workspace.

You can share a form with other workspaces, and you can import a form from and export a form to an XML file.

Note The form is displayed for users in the Job window only when a job is running in interactive mode.

To open the form editor, select **Configuration > Forms**. You can also configure forms by selecting the appropriate job in the Job Dashboard, right-clicking it, and then selecting **Edit**.

Figure 38: Example Verification Form



When users run records, they can use the form to verify that information in these linked fields matches.

See the following topics for more information.

- Understanding Form Objects on page 139.
- Adding Forms on page 140.
- Adding Form Objects on page 140.
- Configuring Form and Form Object Properties on page 141.
- Linking Form Fields and Assigning Variables to Form Fields on page 150.
- Using Form Toggles on page 154.
- Moving Form Objects on page 156.
- Aligning Form Objects on page 157.
- Copying and Pasting Form Objects on page 157.
- Configuring Form Colors on page 158.
- Deleting Form Objects on page 162.
- Removing Sharing on Shared Forms on page 162.
- Rolling Back Forms on page 163.
- Obtaining the Latest Versions of Forms on page 163.

Understanding Form Objects

The following table provides a description of the form objects you can add to a form.

Table 6: Form Objects and Descriptions

Object	Description
Field Set	Area that contains a group of related information.
Label	Text that describes an area on the form.
TextField	Field in which data can be displayed.
Checkbox	Element that users can check to select an option.

Adding Forms

You can create a new form from a blank template, or you can add a form that is shared by another workspace. You can also create a new form from a copy of an existing form.

1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.
2. Select **Tools > Add Form**.

   The Add Verification Form dialog box appears.
3. Do one of the following.
   - To add a new form, click the **Add Verification Form** tab. Next, do one of the following:
     - Click the **From Blank** radio button to create a new form based on a blank template.
     - Click the **From Copy** radio button if you have a form configured; you create new form based on a copy of this existing form.
   - To add a form that is shared by another workspace, click the **New Shared Verification Form** tab; then, from the Workspace drop-down box, select the workspace that shares the form you want to add.
4. Click **OK**.

   The following occurs.
   - If you added a blank form, the Form Editor is empty, and you can begin creating the form.
   - If you added a form as a copy from a selected form, a copy of the form appears in the Form Editor.
   - If you added a shared form, the shared form appears in the Form Editor.

Adding Form Objects

You can add labels, text fields, checkboxes, and field sets to the background of the form. You can add labels, text fields, and checkboxes to field sets.

To add a new form object, do the following.

1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.
2. To add a field set, either right-click the background of the form and select **Add > Field Set** or select **Add > Field Set** from the menu at the bottom of the window.

   The field set appears in the form.
3. To add an object, do the following.
   - To add an object to a field set, right-click the field set, select **Add**, and then select the appropriate object (*Label*, *TextField*, or *Checkbox*); or, **Add** in the menu at the bottom of the window and select the appropriate object.

     The object appears in the field set.
   - To add an object to the background of the form, right-click the form, select **Add**, and then select the appropriate object (*Label*, *TextField*, or *Checkbox*); or, click **Add** in the menu at the bottom of the window and select the appropriate object.

     The object appears in the form.
4. Click **Save** to save your changes.

Configuring Form and Form Object Properties

See the following topics for more information.

- Configuring Default Form Properties on page 142.
- Configuring Field Set Properties on page 143.
- Configuring Text Field Properties on page 145.
- Configuring Checkbox Properties on page 148.

Configuring Default Form Properties

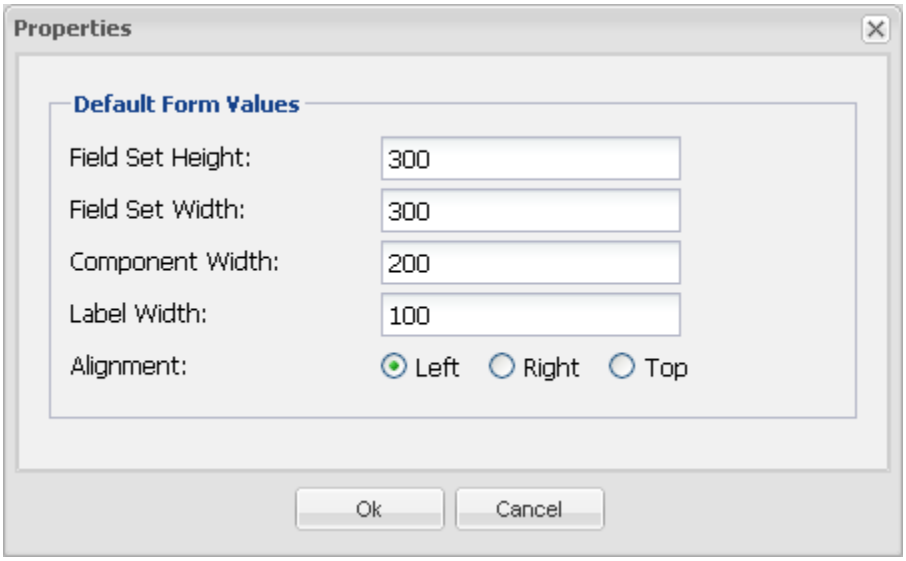
To configure default form properties, do the following.

1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.
2. Right-click the form background and select **Properties** from the popup menu.

   The Properties dialog box appears.

Figure 39: Properties Dialog Box



3. In the Field Set Height field, type the height, in pixels, of the field sets.
4. In the Field Set Width field, type the width, in pixels, of the field sets.
5. In the Component Width field, type the width, in pixels, of the form components.
6. In the Label Width field, type the width, in pixels, of the form labels.

7. In the Alignment field, click the appropriate radio button to configure the alignment of form objects.
   - Left: Aligns all objects to the left, aligning the left edges of all objects to the left edge of the form.
   - Right: Aligns all objects to the right, aligning the right edges of all objects to the right edge of the form.
   - Top: Aligns all objects to the top, aligning the top edges of all objects to the top edge of the form.
8. Click **OK**.

   These properties are applied, by default, to all objects you add to the form.

Configuring Field Set Properties

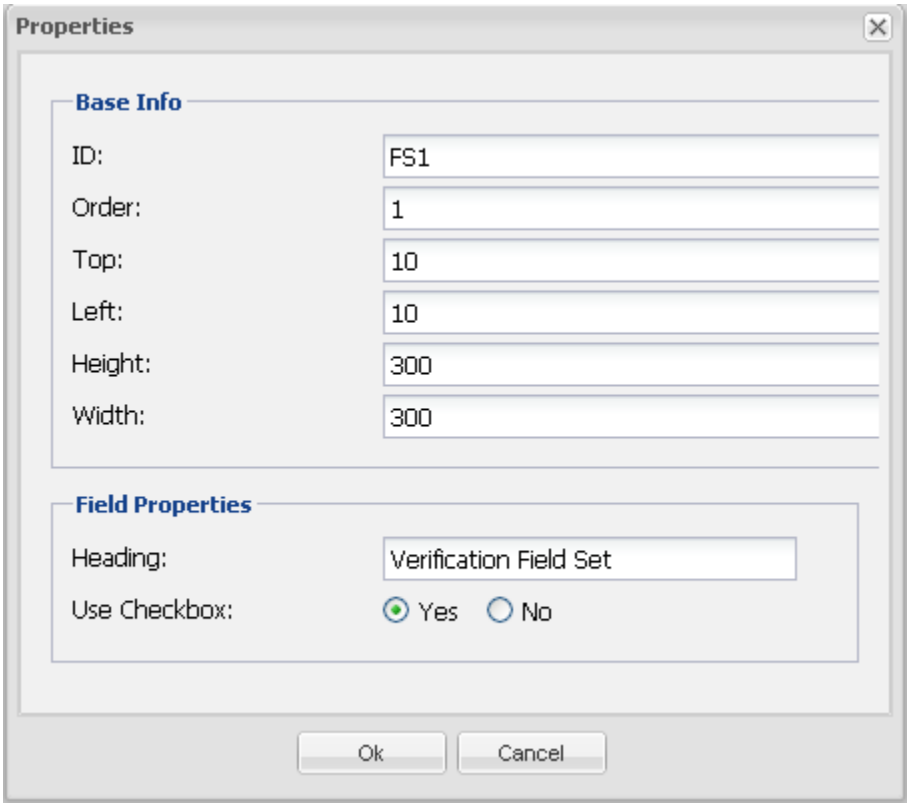
To configure field set properties, do the following.

1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.
2. Right-click the field set and select **Properties** from the popup menu.

   The Properties dialog box appears.

Figure 40: Field Set Properties Dialog Box



3. In the Base Info pane, provide the appropriate information in the following fields.
   - ID: Type the ID that uniquely identifies the field set.

     You can also type this value in the ID field in the bottom of the Form Editor.
   - Order: Type the order value of the field set, which is either *zero* (*0*), the higher value, or *1*.

     The order determines which object appears on top of another object if they overlap. An object with a 0 Z value appears above an object with a 1 Z value.

     Top: Type the value, in pixels, of the top margin. This value specifies boundary length between the top of the verification form and the field set.

     You can also type this value in the Top field in the bottom of the Form Editor.

- Left: Type the value, in pixels, of the left margin. This value specifies the boundary length between the left side of the verification form and the field set.

  You can also type this value in the Left field in the bottom of the Form Editor.

- Height: Type the field set height, in pixels.

  You can also type this value in the Height field in the bottom of the Form Editor.

- Width: Type the field set width, in pixels.

  You can also type this value in the Width field in the bottom of the Form Editor.

4. In the Field Properties pane, specify the appropriate information:
   - Heading: Type the name of the heading, which is the text that appears in the top of the field set to identify it.

     You can also type this name in the Heading field in the bottom of the Form Editor.

   - User Checkbox: Click the appropriate radio button to enable or disable field toggles for users. Field set toggles are used to determine what information, if any, can be uploaded to the database when differences in linked form fields are detected. See Using Form Toggles on page 154 for more information.
5. Click **OK** to apply your changes and close the dialog box.
6. Click **Save** to save your changes.

Configuring Text Field Properties

To configure text field properties, do the following.

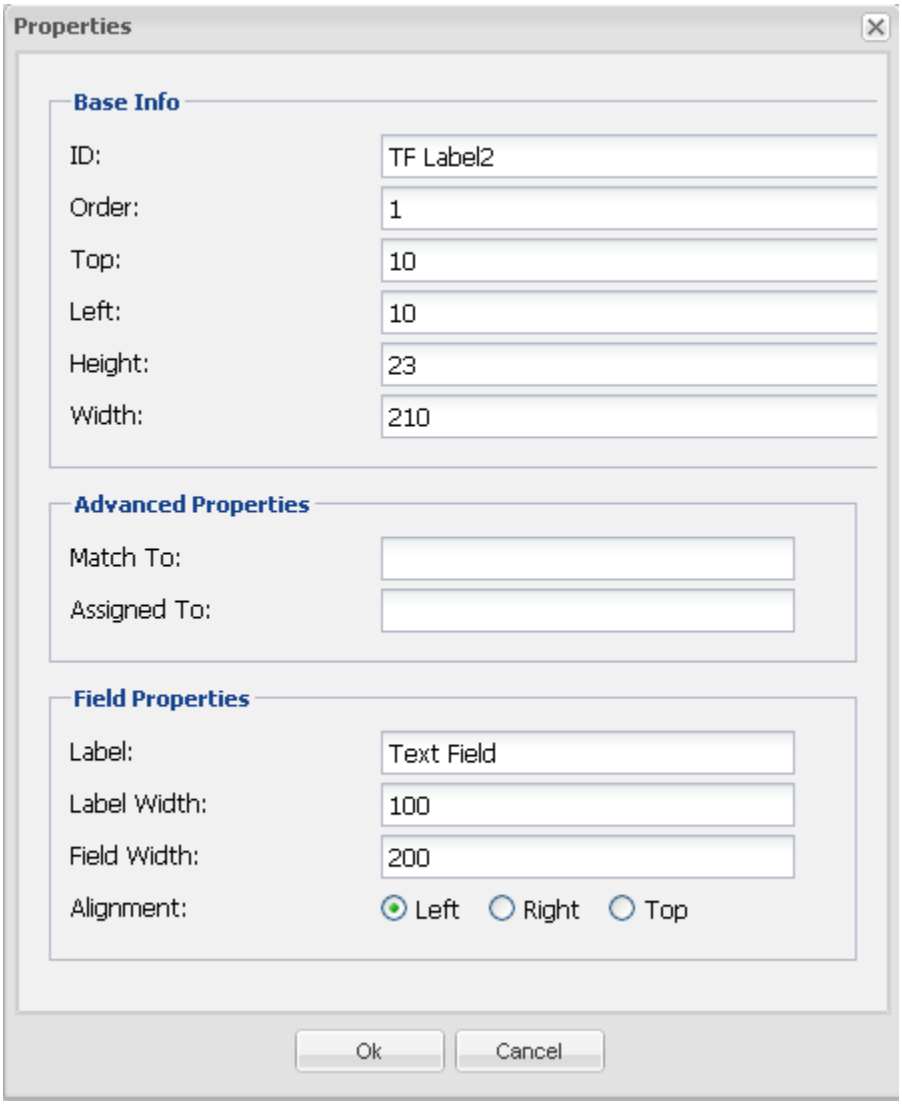
1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.

   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.
2. Right-click the text field and select **Properties** from the popup menu.

   The Properties dialog box appears.

Figure 41: Text Field Properties Dialog Box



3. In the Base Info pane, provide the appropriate information in the following fields.
   - ID: Type the unique ID that identifies the text field.

     You can also type this value in the ID field in the bottom of the Form Editor.
   - Order: Type the order value of the text field, which is either *zero* (*0*), the higher value, or *1*.

     The order determines which object appears on top of another object if they overlap. An object with a 0 Z value appears above an object with a 1 Z value.
   - Top: Type the value, in pixels, of the top margin. This value specifies boundary length between the top of the text field and the field set.

     You can also type this value in the Top field in the bottom of the Form Editor.
   - Left: Type the value, in pixels, of the left margin. This value specifies the boundary length between the left side of the text field and the field set.

     You can also type this value in the Left field in the bottom of the Form Editor.
   - Height: Type the text field height, in pixels.

     You can also type this value in the Height field in the bottom of the Form Editor.
   - Width: Type the text field width, in pixels.

     You can also type this value in the Width field in the bottom of the Form Editor.
4. The Advanced Properties displays information that appears in the form field and information linking form fields together. See Linking Form Fields and Assigning Variables to Form Fields on page 150 for more information.
5. In the Field Properties pane, specify the appropriate information:
   - Label: Type the text that appears in the form to identify the text field.
   - Label Width: Type the width, in pixels, of the text field.
   - Field Width: Type the width, in pixels, of the text field.
   - Alignment: Click the appropriate radio button.
     - Left: Specifies that the label appears to the left of the text field.
     - Top: Specifies that the label appears above the text field.
     - Right: Specifies that the label appears to the right of the text field.
6. Click **OK** to apply your changes and close the dialog box.
7. To make the text field read-only so that users cannot modify information in the field when they view the verification form, check the **Read Only** checkbox at the bottom of the Form Editor.
8. Click **Save** to save your changes.

Configuring Checkbox Properties

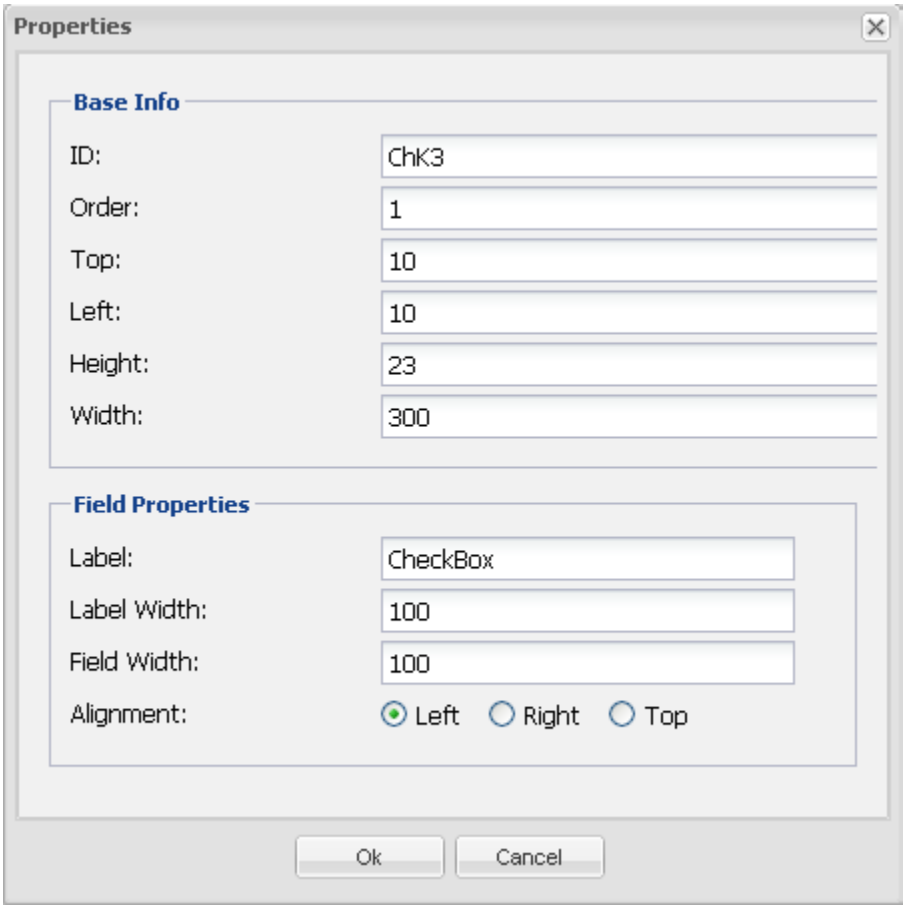
To configure checkbox properties, do the following.

1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.
2. Right-click the checkbox and select **Properties** from the popup menu.

   The Properties dialog box appears.

Figure 42: Checkbox Properties Dialog Box



3. In the Base Info pane, provide the appropriate information in the following fields.
   - ID: Type the ID that uniquely identifies the checkbox.

     You can also type this value in the ID field in the bottom of the Form Editor.
   - Order: Type the order value of the checkbox, which is either *zero* (*0*), the higher value, or *1*.

     The order determines which object appears on top of another object if they overlap. An object with a 0 Z value appears above an object with a 1 Z value.
   - Top: Type the value, in pixels, of the top margin. This value specifies boundary length between the top of the checkbox and the field set.

     You can also type this value in the Top field in the bottom of the Form Editor.
   - Left: Type the value, in pixels, of the left margin. This value specifies the boundary length between the left side of the checkbox and the field set.

     You can also type this value in the Left field in the bottom of the Form Editor.
   - Height: Type the checkbox height, in pixels.

     You can also type this value in the Height field in the bottom of the Form Editor.
   - Width: Type the checkbox width, in pixels.

     You can also type this value in the Width field in the bottom of the Form Editor.
4. In the Field Properties pane, specify the appropriate information:
   - Label: Type the text that appears in the form to identify the checkbox.
   - Label Width: Type the width, in pixels, of the label.
   - Field Width: Type the width, in pixels, of the checkbox.
   - Alignment: Click the appropriate radio button.
     - Left: Specifies that the label appears to the left of the checkbox.
     - Top: Specifies that the label appears above the checkbox.
     - Right: Specifies that the label appears to the right of the checkbox.
5. Click **OK** to apply your changes and close the dialog box.
6. Click **Save** to save your changes.

Configuring Label Properties

To configure label properties, do the following.

1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.
2. Click the label for which you want to configure properties.
3. In the ID field at the bottom of the form editor, type the ID that uniquely identifies the label.
4. In the Top field, type the value, in pixels, of the top margin. This value specifies boundary length between the top of the label and the field set.
5. In the Left field, type the value, in pixels, of the left margin. This value specifies the boundary length between the left side of the label and the field set.
6. In the Width field, type the label width, in pixels.
7. In the Height field, type the label width, in pixels.
8. Click **Save** to save your changes.

Linking Form Fields and Assigning Variables to Form Fields

You can configure text boxes to display information from the database by assigning it a program variable, which contains the appropriate information.

You can also link form fields to each other so that users can compare the input record to a potential match in the database. You link each field to a program variable, which returns the appropriate information from the database. Users can view whether the fields match in the verification form that is shown when they run interactive jobs.

To link form fields and to assign program variables to fields, do the following.

1. Do one of the following.
   - Select **Configuration > Forms**.

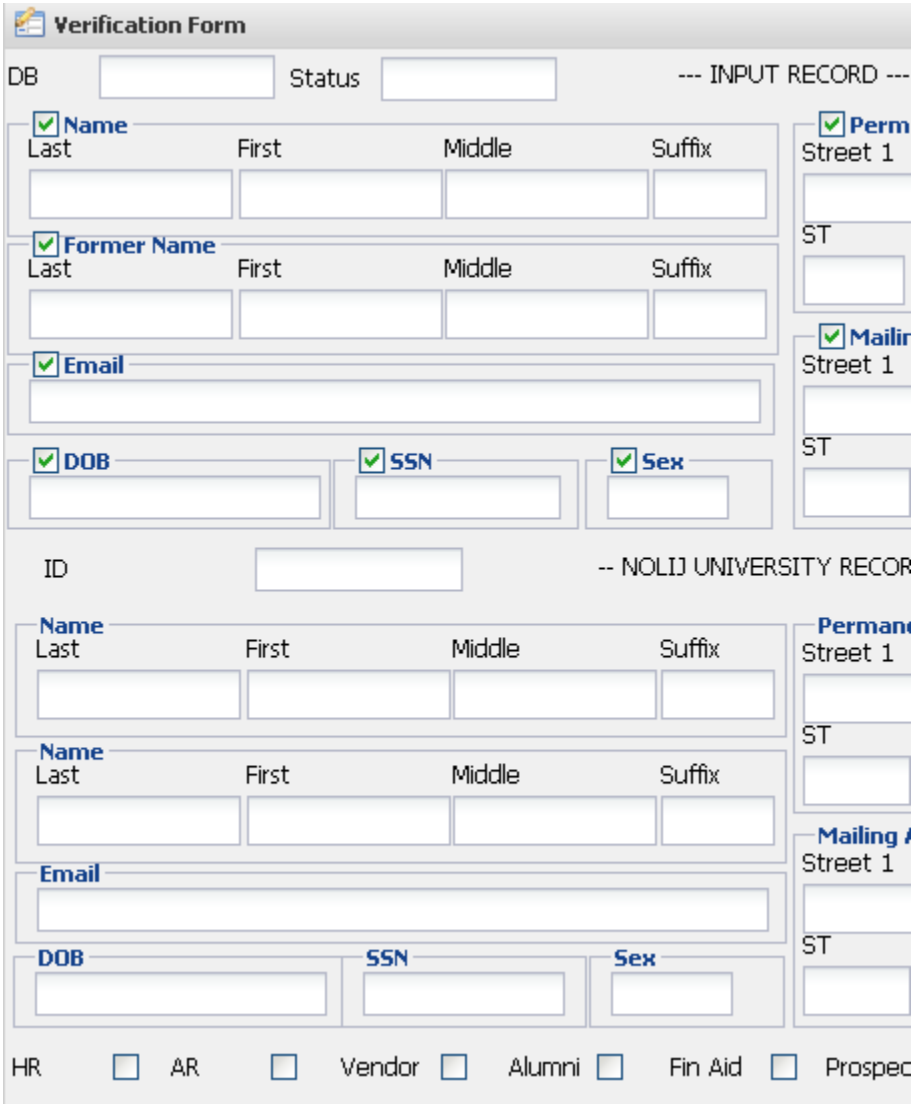
     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.
2. To link form fields that have matching values, select the form fields by clicking on one form field and then pressing and holding the **Shift** key while clicking the matching field.

   When you view the Properties dialog box for a field, the Match To field in the Advanced Properties pane displays the ID of the other form field that is linked to the field.

3. Specify the variable to which the text field is assigned by selecting the variable from the Program Variables pane and dragging and dropping it onto the text field. For more information about program variables, see Chapter 9,“Configuring Procedures.”

   When you view the Properties dialog box for the field, the Assigned To field in the Advanced Properties pane displays the program variable assigned to the field..

Figure 43: Example DOB Fields



For example, in the preceding figure, the DOB fields for the input record (Input Record) and the database record (University Record) are linked.

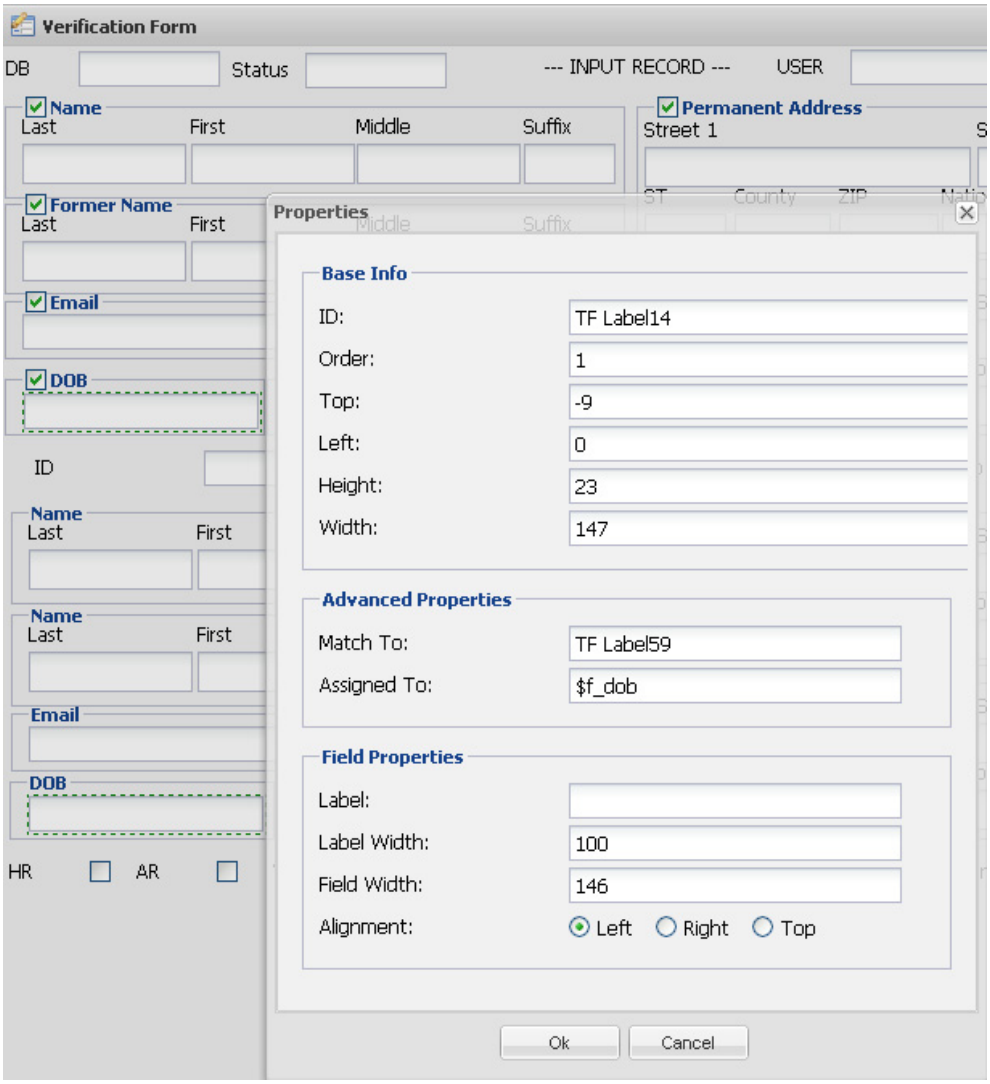
- The Input Record DOB field has an ID of *TF Label 14*.
- The University DOB field has an ID of *TF Label 59*.
- The Input Record DOB field is assigned to the *$f_dob* variable.
- The University Record DOB field is assigned to the *$d_dob* variable.

To link the fields, you would select the **Input Record DOB** field and then press and hold the **Shift** key on your keyboard while clicking the **University Record DOB** field.

To assign the $f_dob variable to the Input Record DOB field, you would click the **$f_dob** variable in the Program Variables pane and then drag and drop it onto the text field to which it is assigned.

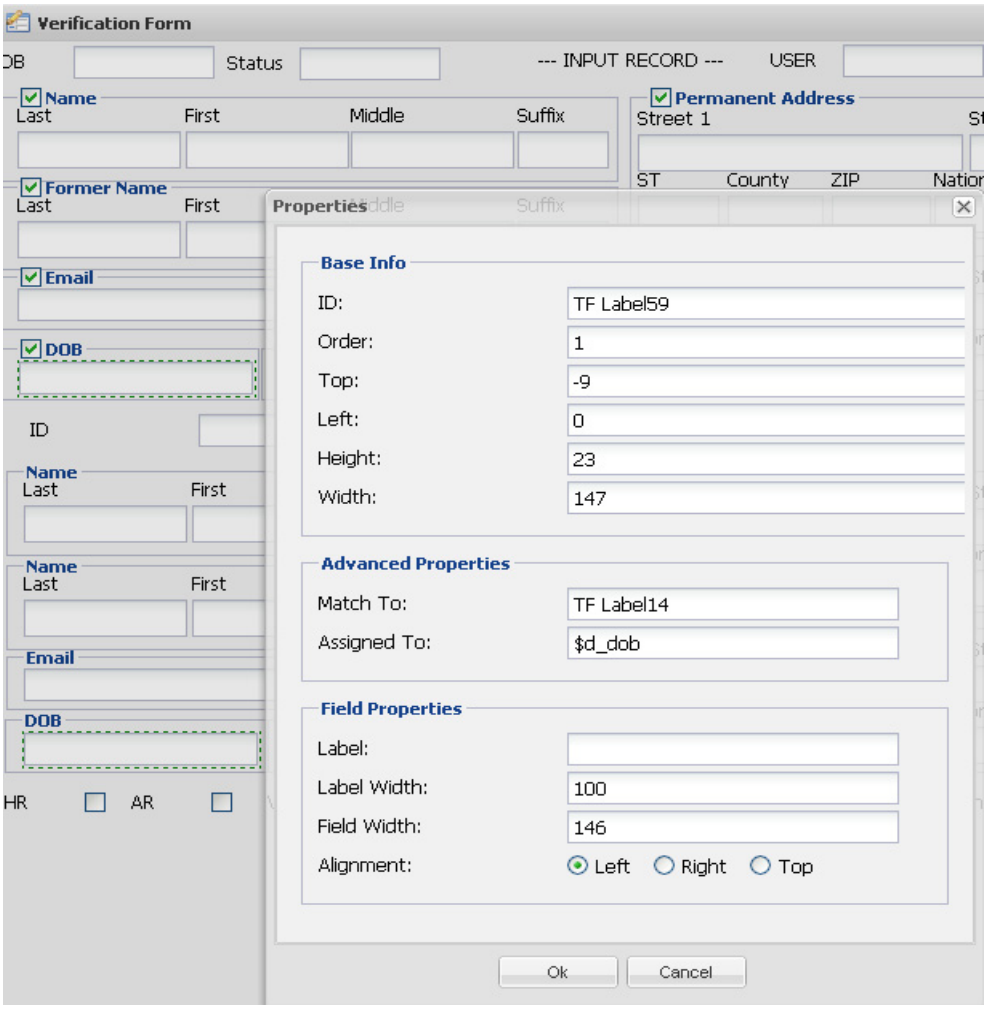
When you open the Properties dialog box for the Input Record DOB field, it displays the label (*TF Label 59*) to which it is linked and the variable (*$f_dob*) to which it is assigned.

Figure 44: Example Input Record DOB Field Properties



When you selected the Input Record DOB and University Record DOB fields, you linked them both. To assign the $d_dob variable to the field , you would select the variable in the Program Variables pane and then drag and drop the variable onto the University Record field. When you open the Properties dialog box for the field, it displays the appropriate information for the field to which it is linked and the variable for which it is assigned.

Figure 45: Example University Record DOB Field Properties



4. Click **OK**.

   You can also select a color to highlight linked fields when their values differ from each other. By default, this color is a shade of blue; however, you can specify a color from a color pallette. See Confguring Form Match Colors on page 160.

Using Form Toggles

See the following topics for more information.

- Understanding Form Toggles on page 155.
- Configuring Form Toggles on page 156.

Understanding Form Toggles

If a field set contains a field that is linked to another field, this checkbox is automatically enabled. If data between two field sets are the same (linked fields return the same values); the checkbox is unchecked; if the data is different, the toggle is checked.

Users can check or uncheck the toggle checkboxes to specify which field sets of information are included when upload logic is processed.

Use toggles if you may need to provide the value of each field set to the associated upload logic; when the upload logic is run, this value is included when the data file is uploaded. The form can return the value of a toggle given a specified program variable name.

For more information about configuring procedures, see Chapter 9,“Configuring Procedures.”

Syntax for the toggle function is:

```
toggle(variable)
```

For example:

```
if toggle($suffix)
```

Syntax for the toggle_off function is:

```
toggle_off(variable)
```

For example:

```
toggle_off($last)
```

Syntax for the toggle_on function is:

```
toggle_on(variable)
```

For example:

```
toggle_on($last)
```

Configuring Form Toggles

To configure toggles for field sets, do the following.

1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.
2. Right-click the field set and select **Properties** from the popup menu.

   The Properties dialog box appears.
3. In the Field Properties pane, select the appropriate option for the Use Checkbox option. Click the **Yes** radio button to use a checkbox (toggle) for the field set; click the **No** radio button if you do not want to use a checkbox.
4. Click **OK** to save your changes.

Moving Form Objects

You can move field sets and objects by dragging and dropping them with your mouse; do the following.

1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.
2. Click the object that you want to move. To select multiple objects, click an object and press and hold the **Ctrl** key as you click each object with your mouse. You can deselect an object by clicking it and pressing and holding the **Ctrl** key; you can deselect all objects by clicking in an empty background area of the form.
3. With your mouse, drag and drop the object to the desired location.

   The object is moved to the specified location. If you selected multiple objects, they are moved the same relative distance.

Aligning Form Objects

You can align form objects in a field set with each other, or you can align field sets on the form background with each other.

1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.
2. Select the objects you want to align. To select multiple objects, click an object and press and hold the **Ctrl** key as you click each object with your mouse. You can deselect an object by clicking it and pressing and holding the **Ctrl** key; you can deselect all objects by clicking in an empty background area of the form.
3. Right-click the objects and select **Align**.
4. Select one of the following.
   - Left: Aligns all objects to the left, aligning the left edges of all objects to the left edge of the first object you selected.
   - Right: Aligns all objects to the right, aligning the right edges of all objects to the right edge of the first object you selected.
   - Top: Aligns all objects to the top, aligning the top edges of all objects to the top edge of the first object you selected.
   - Bottom: Aligns all objects to the bottom, aligning the bottom edges of all objects to the bottom edge of the first object you selected.

Copying and Pasting Form Objects

You can copy and paste form objects located within a field set onto the same field set and copy and paste field sets onto the background form.

1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.
2. Select the objects you want to copy. To select multiple objects, click an object and press and hold the **Ctrl** key as you click each object with your mouse. You can deselect an object by clicking it and pressing and holding the **Ctrl** key; you can deselect all objects by clicking in an empty background area of the form.

3. Right-click the object and select **Copy**.
4. Do one of the following.
   - To paste field sets onto the form background, right-click the background and select **Paste**.
   - To paste objects on a field set within the same field set, right-click the field set and click **Paste**.

Configuring Form Colors

See the following topics for more information.

- Configuring Form Background and Foreground Colors on page 158.
- Configuring Field Set Foreground and Background Colors on page 158.
- Configuring Label Foreground and Background Colors on page 159.
- Configuring Checkbox Foreground and Background Colors on page 159.
- Configuring Text Field Foreground and Background Colors on page 160.
- Confguring Form Match Colors on page 160.

Configuring Form Background and Foreground Colors

To configure background and foreground colors for the form, do the following.

1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.
2. Right-click the background and select **Color**.
3. To set the form background color, select **Background**, and then select the color from the palette.

   The background of the form is set to this color.

Configuring Field Set Foreground and Background Colors

To configure background and foreground colors for a field set, do the following.

1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.
2. Right-click the field and select **Color**.

3. To set the field set background color, select **Background**, and then select the color from the palette.

   The background of the field set is set to this color.

4. To set the field set foreground color, select **Foreground**, and then select the color from the palette.

   If you have not configured colors for other form objects, any form objects that appear on the field set are set to this color. For example, if you have a label on the field set, the label is set to this color. Any additional form objects you add to the field set are also set to this color.

   If you configure colors for form objects themselves, however, those colors, *not* the ones configured for the field set foreground or background, are used.

Configuring Label Foreground and Background Colors

To configure background and foreground colors for a label, do the following.

1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.
2. Right-click the label and select **Color**.
3. To set the label background color, select **Background**, and then select the color from the palette.

   The background of the label is set to this color.
4. To set the label foreground color, select **Foreground**, and then select the color from the palette.

   The color is applied to the label text of the label.

Configuring Checkbox Foreground and Background Colors

To configure background and foreground colors for a checkbox, do the following.

1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.
2. Right-click the checkbox and select **Color**.

3. To set the checkbox background color, select **Background**, and then select the color from the palette.

   The background of the checkbox is set to this color.

4. To set the checkbox foreground color, select **Foreground**, and then select the color from the palette.

   The color is applied to the label text of the checkbox.

Configuring Text Field Foreground and Background Colors

To configure background and foreground colors for a text field, do the following.

1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.
2. Right-click the text field and select **Color**.
3. To set the text field background color, select **Background**, and then select the color from the palette.

   The background of the text field is set to this color.

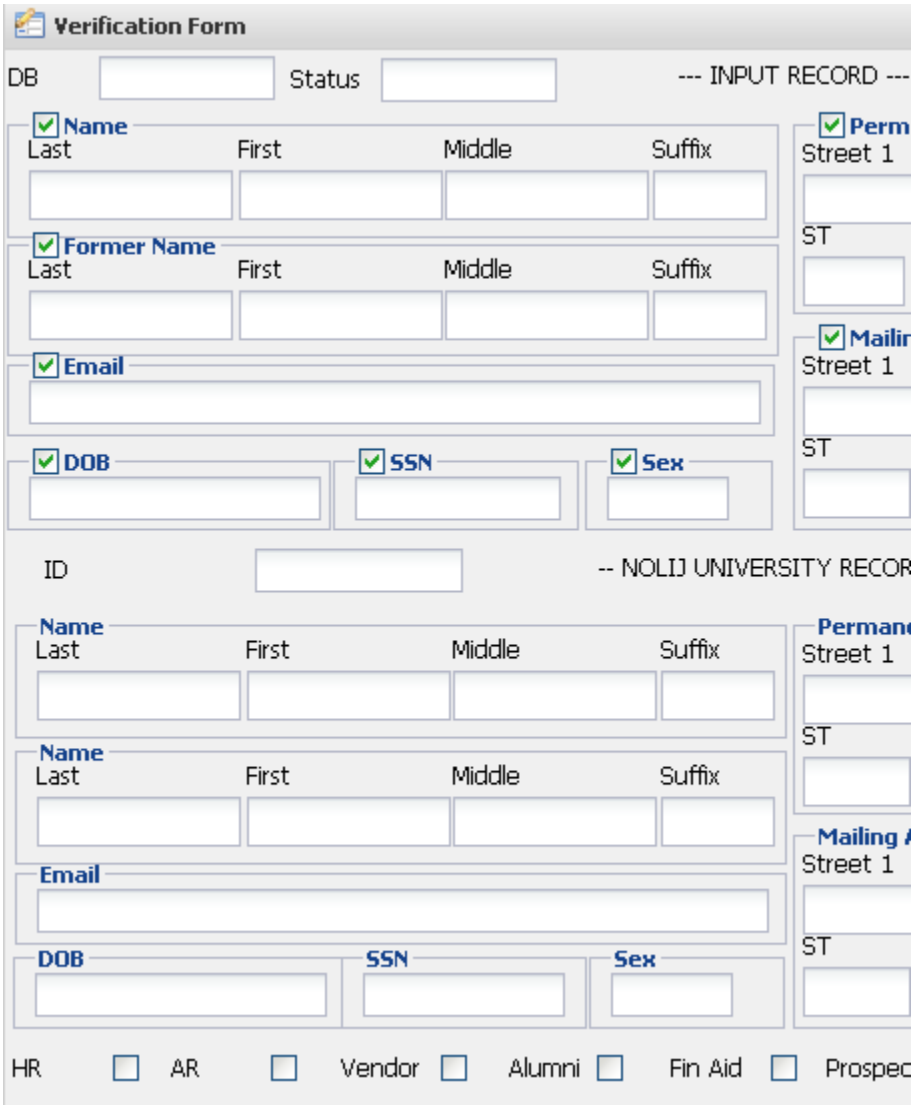
4. To set the text field foreground color, select **Foreground**, and then select the color from the palette.

   The color is applied to the label text of the text field.

Confguring Form Match Colors

You can set the form match color, which is the color that highlights all linked form objects when they contain different values. For example, if the input record DOB and data record DOB fields are linked, and their values do not match, the text fields are displayed in the match color you specify. By default, the color is a shade of blue.

Figure 46: Example DOB Fields



1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.

2. Right-click the background and select **Color**.
3. Select **Match**, then select a color from the color pallette.

Deleting Form Objects

To delete a form object, do the following.

1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.
2. Select the object you want to delete and either right-click it and select Delete or click the **Delete** button.

   Note If you delete a field set, the field set and all of its objects are deleted.

   The object is deleted and is removed from the Form Editor.
3. Click **Save** to save your changes.

Removing Sharing on Shared Forms

To remove sharing on a form that is shared with another workspace, do the following.

1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to configure, then either right-click it and select **Edit** or click the **Edit** button.
2. Click **Tools** and select **Remove Sharing**.

   Sharing is removed on the form.

Rolling Back Forms

If changes have been made to and committed to a form, you can use a previous version *(roll back*) of it.

1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form you want to roll back, then either right-click it and select **Edit** or click the **Edit** button.
2. Click **Tools** and select **Rollback**.

   The Rollback Manager dialog box appears and displays the following information.
   - Name: Name of the form.
   - Status: Status of the form (*pending*, *current*, or *dated*).
   - Version Date: Date and time on which the version of the form was created.
   - Created By: Username of the user who created the form.
   - Comments: Comments added by the user.
3. Select the version you want to use and click **Rollback**.

   The previous version is loaded into the Form Editor.

Obtaining the Latest Versions of Forms

If changes have been made to and committed to a form, you can obtain the latest version of it.

1. Do one of the following.
   - Select **Configuration > Forms**.

     The Form Editor appears.
   - In the Job Dashboard, select the job with the form for which you want to obtain the latest version, and then either right-click it and select **Edit** or click the **Edit** button.
2. Click **Configuration** and select **Get Latest**.

   The latest version of the form is obtained and is loaded into the Form Editor.

Configuring ImageNow Index Maps

You can define ImageNow index maps, which are used when uploading ImageNow documents to ImageNow, using Perceptive DataTransfer. Index maps obtain document information from the specified integration server connection and link ImageNow document properties to program variables in the code. Use the ImageNowAddDoc syntax in the code to configure parameters used by Perceptive DataTransfer to upload ImageNow documents.

For more information about integration server connections, see Adding Integration Server Connections on page 80. For more information about the ImageNowAddDoc syntax, see Understanding the ImageNowAddDoc Function on page 245.

See the following topics for more information.

Adding and Modifying ImageNow Index Maps

To add an ImageNow index map, do the following.

1. Select **Configuration > ImageNow**.

   The ImageNow Index Map Administration dialog box appears.

2. Do one of the following.

   - To add a new index map, click  .

     The Add ImageNow dialog box appears. Do one of the following.

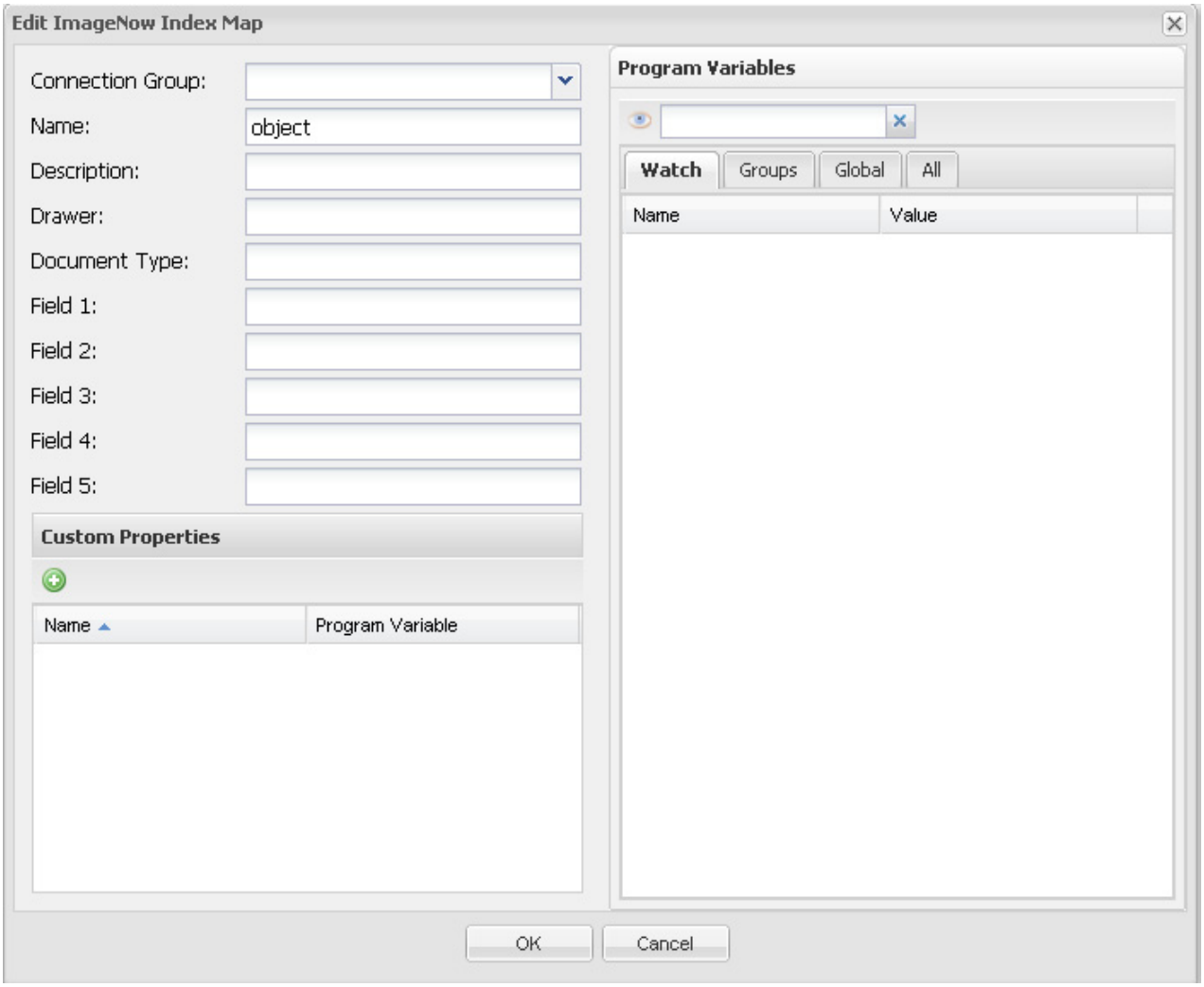
     - To add a new index map, click the **Add ImageNow** tab. Then, in the Name field, type the name of the index map.
     - To add an index map that another workspace is sharing, click the **Add Shared ImageNow** tab. Then, from the Workspace drop-down box, select the workspace that is sharing the index map, and select the index map from the ImageNow Entity drop-down box.

     Click **OK**.

- To modify an index map, select the index map and either right-click it and select **Edit** or click .

The Edit ImageNow Index Map dialog box appears.

Figure 47: Edit ImageNow Index Map dialog box



3. From the Connection Group drop-down box, select the connection group that contains the integration server connection to use. This connection group is not saved with an association to the index map; it is used to obtain custom ImageNow document properties as program variables for the index map.

   For more information about adding integration server connections, see Adding Integration Server Connections on page 80.

4. In the Name field, type the name of the index map. The name must be unique.
5. In the Description field, type descriptive text about the index map.
6. In the Drawer field, specify the ImageNow drawer that contains the ImageNow documents by dragging and dropping the appropriate program variable from the Program Variables pane. This field is required.

   To remove an entry, right-click the field and select **Clear**.

7. In the Document Type field, specify the ImageNow document type, contained in the ImageNow drawer, to which to link to the ImageNow index map by dragging and dropping the appropriate program variable from the Program Variables pane. This field is required.

   To remove an entry, right-click the field and select **Clear**.

8. In the Field 1 through Field 5 fields, define the index fields for the document by dragging and dropping the appropriate program variables from the Program Variables pane to each field. You can also leave each field empty.

   When the ImageNowAddDoc function executes, the code inserts these fields with the values contained in the specified program variables.

9. In the Custom Properties pane, add or modify the ImageNow custom properties associated with the index map by doing the following.

   1. To add a new property, click  .

      The Select Custom Properties dialog box appears. It displays all available ImageNow custom properties, excluding any that you have already added to the index map.

   2. Select one or more properties to add to the index map. To select multiple properties:

      - Click a property and press and hold the **Ctrl** key as you click each property with your mouse.
      - Click a property and press and press the **Shift** key as you click another property to select contiguous properties.

   3. Click **OK**.

      The selected properties appear in the Custom Properties pane.

   4. Link program variables to the custom properties by selecting a program variable in the Program Variables pane and dragging and dropping it to the appropriate custom property.

Use the ImageNowAddDoc function in your code to configure the parameters used by Perceptive DataTransfer to upload ImageNow documents. For more information, see Understanding the ImageNowAddDoc Function on page 245.

Deleting ImageNow Index Maps

Do delete an index map, do the following.

1. Select **Configuration > ImageNow**.

   The ImageNow Index Map Administration dialog box appears.

2. Select the index map you want to delete and either right-click it and select **Delete** or click  .

   The index map is deleted and is removed from the ImageNow Index Map Administration dialog box.

Copying ImageNow Index Maps

To create a duplicate of an ImageNow index map, do the following.

1. Select **Configuration > ImageNow**.

   The ImageNow Index Map Administration dialog box appears.

2. Select the index map you want to copy and either right-click it and select **Copy** or click  .

   A copy of the index map is created and appears in the ImageNow Index Map Administration dialog box.

Removing Sharing on ImageNow Index Maps

To remove sharing on an index map that is shared with another workspace, do the following.

1. Select **Configuration > ImageNow**.

   The ImageNow Index Map Administration dialog box appears.

2. Select the index map for which you want to remove sharing and either right-click it and select **Remove Sharing** or click  .

   Sharing is removed on the index map.

Rolling Back ImageNow Index Maps

If changes have been made and committed to an ImageNow index map, you can use a previous version (*roll back*) of it.

1. Select **Configuration > ImageNow**.

   The ImageNow Index Map Administration dialog box appears.

2. Click the index map you want to roll back and either right-click it and select **Rollback** or click  .

   The Rollback Manager dialog box appears and displays the following information.

   - Name: Name of the ImageNow index map.
   - Status: Status of the index map (*current* or *dated*).
   - Version Date: Date and time on which the version was created.
   - Created By: Username of the user who created the index map.
   - Comments: Comments that were added by the user.

3. Select the previous version to which you want to revert and click **Rollback**.

   The previous version is loaded.

Obtaining the Latest Versions of ImageNow Index Maps

If changes have been made to and committed to an index map, you can obtain the latest version of it.

1. Select **Configuration > ImageNow**.

   The ImageNow Index Map Administration dialog box appears.

2. Click the index map for which you want to obtain the latest version and either right-click it and select **Get Latest** or click  .

Exporting ImageNow Index Maps

You can export ImageNow index map to an XML file by doing the following.

1. Select **Configuration > ImageNow**.

   The ImageNow Index Map Administration dialog box appears.

2. Select the index map you want to export.

3. Click  and select **Export**.

4. Save the file to the appropriate location.

Importing ImageNow Index Maps

You can import ImageNow Index Map from an XML file by doing the following.

1. Select **Configuration > ImageNow**.

   The ImageNow Index Map Administration dialog box appears.

2. Click  and select **Import**.

   The Import ImageNow Index Map dialog box appears.

3. Click the **Browse...** button and navigate to the file that you want to import or type the location of the file in the File field.

4. Click **OK**.

Configuring Workspaces

To open the Workspace Administration dialog box, select **Administration > Workspaces**. The dialog box provides the following information:

- Name: Name of the workspace.
- Description: Brief description of the workspace.
- Sharing: Indicates whether the workspace is private or with a share group.
- Active Version: Version of the workspace that is active.
- Date Created: Date on which the workspace was created.
- Created By: Name of the user who created the workspace.

See the following topics for more information.

- Understanding Workspaces on page 170.
- Understanding Workspace Sharing on page 171.
- Understanding Version Control on page 172.
- Configuring Workspaces on page 175.
- Using Version Control on page 180.
- Configuring Share Groups on page 187.

Understanding Workspaces

Workspaces consist of the objects required for a particular Perceptive DataTransfer configuration.

- Connection groups: A workspace can contain one or more connection groups; a connection group can consist of one or more connections.
- Procedures (code libraries): A workspace contains a set of code libraries, comprising the Perceptive DataTransfer match, review, and upload logic.
- Verification form: A workspace contains a single verification form to be used for all jobs that are run within that workspace.
- Headers: A workspace contains one or more headers, which are used to define input sources. When a job is run within a workspace, one of the headers within the workspace must be selected to use for the job.
- Data exports: A workspace can contain one or more data exports, if they are configured in that workspace. Workspaces do not have to contain data exports.
- File sources: A workspace can contain one or more file sources (both SFTP and server path file locations), which are SFTP sites from which jobs can be downloaded. Workspaces do not have to contain file sources.
- ImageNow index maps: A workspace can optionally contain one or more index maps.

You can load multiple configurations, represented by workspaces, into a single Perceptive DataTransfer instance; however, users can only work with one workspace at a time. When you log into Perceptive DataTransfer, you use a default workspace and workspace version but can switch to another workspace version.

You can have multiple versions of a workspace, with each version representing a changeset of the workspace.

Objects can be shared among workspaces. See Understanding Workspace Sharing on page 171.

Understanding Workspace Sharing

The following objects can be shared.

- Procedures
- Headers
- Verification forms
- Data exports
- Connection groups
- File sources
- ImageNow index maps

You can share an object if multiple workspaces need to use a common object. With sharing, you can reduce the need for duplicating common objects and code, and you can make a single edit and apply it to one object in all workspaces in which it is shared.

For example, you can create a single procedure and share it among multiple workspaces without needing to create duplicate procedures for each workspace.

A workspace can be shared or private.

- Private: The workspace is not shared; therefore, no workspace objects are shared.
- Shared: The workspace can share objects with other workspaces.

The sharing method can be changed at any time; however, you cannot change a shared workspace if shared objects are used by other workspaces and would no longer be shared.

When you share workspace objects, you configure share groups and select the group with which you want to share objects. Any workspaces using the same share group share their objects with other workspaces in this group. See Configuring Share Groups on page 187 for more information.

Workspaces consist of versions, and objects can be shared depending on the status of your workspace version. See Understanding Version Control on page 172 for more information.

Understanding Version Control

You can have multiple versions of a workspace; each version represents a changeset of the workspace. There is always at least one version of a workspace.

See Understanding Workspace Version Flow on page 172 for information on how workspace versions are created and moved.

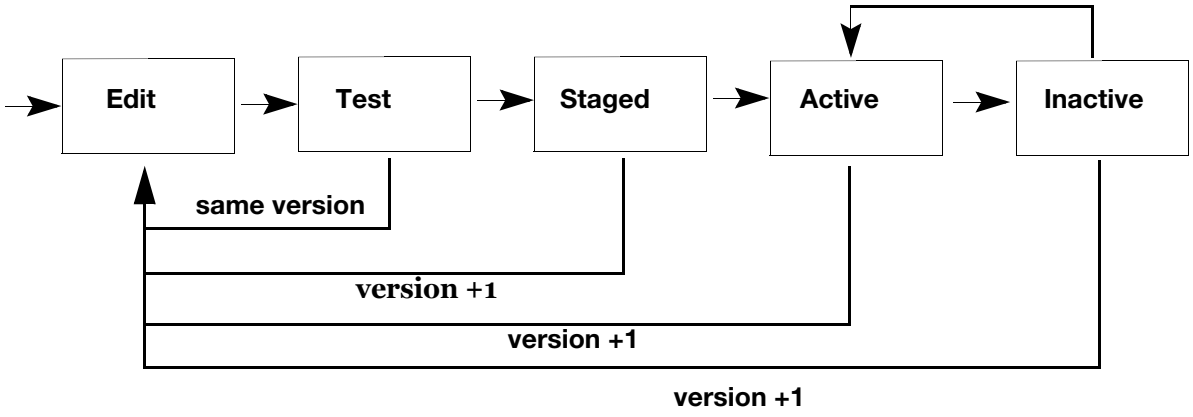
Understanding Workspace Version Flow

Each workspace version has one of the following statuses.

- Edit: This workspace version is a new version. Only one version of the workspace can be in edit status at a time, and this version can be changed by only one user at a time.
- Test: This workspace version can be tested by any number of permitted users.
- Staged: This workspace version can be used to view how the workspace will behave in a production environment.
- Active: This workspace version is the current, active version of the workspace. Only one version of the workspace can be active at a time.
- Inactive: This workspace is an older version of the workspace and is no longer in use.

Workspace objects are also versioned and have their own version flow within workspace versions. See Understanding Object Version Flow on page 174 for more information.

Figure 48: Workspace Version Status Workflow



Edit

- Objects can be added and modified in edit mode.
- A version in edit mode can be moved to test mode.
- A version in edit mode can be created from a version in staged, active, or inactive mode.
- A version can be reverted to edit mode from test mode.

Test

- A version can enter test mode from edit mode.
- A version in test mode can be moved to edit mode.
- A version in test mode can be moved to staged mode.
- A version in test mode can be deleted.
- There can be only one version of a workspace in either test or edit mode.

Staged

- A version can enter staged mode from test mode.
- A version in staged mode can move to active mode.
- A version in staged mode can be used to create a version in edit mode.
- A version in staged mode can not be deleted.

Active

- A version can enter active mode from staged mode.
- A version can enter active mode as a new version created from an inactive version.
- A version in active mode can move to inactive mode (when another version is made active).
- A version in active mode can be used to create a new version in edit mode.
- A version in active mode can not be deleted.
- Once there is an active version or a workspace, an active version always exists for the workspace.

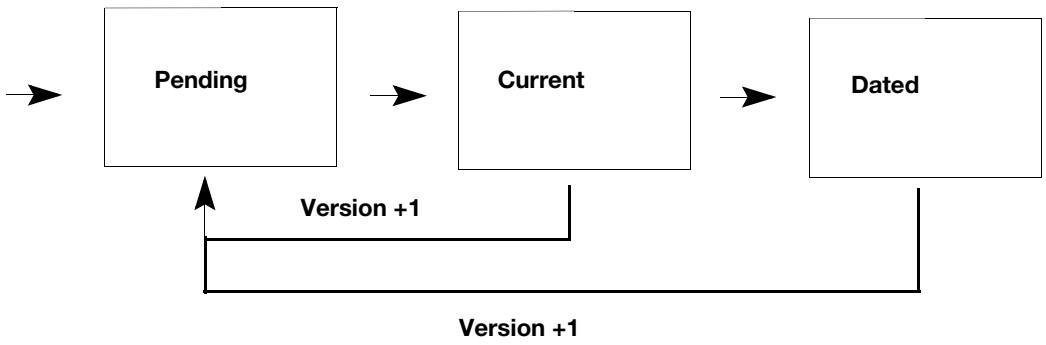
Inactive

- A version can enter inactive mode from active mode (when another version is made active).
- A version in inactive mode can be used to create a new version in active mode.
- A version in inactive mode can be used to create a new version in edit mode.
- A version in inactive mode can not be deleted

Understanding Object Version Flow

Within a workspace version, an object can have a pending, current, or dated status.

Figure 49: Object Version Status Workflow



Pending

- A new version in pending mode can be newly created (or copied from an existing object).
- A new version in pending mode can be created from a current version.
- A new version in pending mode can be created from a dated version.
- A version in pending mode can only move to current mode.
- A version in pending mode can be deleted.
- Only one version of an object can be in pending mode.
- A version is in pending mode when it was created or modified in a workspace version in edit or test mode.

Current

- A version can enter current mode from pending mode.
- A version in current mode can be used to create a version in pending mode.
- A version in current mode can move to dated mode (when another version is moved to current).
- A version in current mode can be removed from the workspace.
- A version is in current mode when it was created or modified in a workspace version in staged or active mode.

Dated

- A version can enter dated mode from current mode.
- A version in dated mode can be used to create a version in pending mode.
- A version in dated mode can be removed from the workspace.

Rolling Back Versions and Obtaining the Latest Versions of Objects

You can roll back a version of an object (use a previous version of an object) or obtain the latest version of an object if changes have been made and committed to an object.

You can also obtain the latest version of an object if the object has been modified since you added it. For example, you added an object from a workspace in active mode. A new version of the workspace was later added, the shared object was modified, and the version was moved to staged mode. If you obtain the latest object version, these object changes are applied to the object in your workspace.

Configuring Workspaces

See the following topics for more information.

- Importing Workspaces on page 175.
- Copying Workspaces on page 178.
- Adding Workspaces on page 179.
- Modifying Workspaces on page 179.
- Deleting Workspaces on page 180.

Importing Workspaces

You can import Perceptive DataTransfer 6.*x* workspaces, and you can import Perceptive DataTransfer configurations from versions earlier than 6.0.*x*.

Importing Perceptive DataTransfer 6.x Workspaces

Note Only superadministrators can import workspaces.

To import a workspace, do the following.

1. Select **Administration > Workspaces**.

   The Workspace Administration dialog box appears.

2. Click  .

   The Configuration Migration dialog box appears.

3. Click **Import Workspace**.

4. In the Workspace Name field, type a name for the workspace.
5. In the Workspace Description field, type descriptive text about the workspace.
6. In the File field, type the path of the file you want to import, or click **Browse...**, navigate to the location of the file, and then select it.
7. In the Sharing field, click the appropriate radio button.
   - Private: Sets the workspace as a private one; it is not shared, and none of its objects are shared.
   - Shared: Sets the workspace as a shared workspace, which can share its objects with either a specific group of workspaces or all workspaces.
8. If you are sharing the workspace, from the Group drop-down box, select the share group to use for the workspace.
9. Click **OK**.

Importing Legacy Configurations

You can import legacy config.dll databases from versions of Perceptive DataTransfer earlier than 6.0.*x*. A new Perceptive DataTransfer workspace is created from the migrated config.dll database. Duplicate objects are shared with existing Perceptive DataTransfer workspaces when applicable. Perceptive DataTransfer manages importing of Perceptive DataTransfer functions as follows.

- Enterprise Hierarchy

  Legacy hierarchies are merged in a single hierarchy. A node in the hierarchy is merged with an existing node if the node names match and each subsequent parent in the tree matches. If no matches are found, the node is created as new, either as the beginning of a new tree for an organization or as the child to a matching parent in other cases.

- Database connections

  For each migrated config.dll, a new connection group is created. A default connection, corresponding to the legacy ODBC connection selected at Perceptive DataTransfer log in, is created as the primary connection of the group. All other legacy secondary connections are added to the group. Names and descriptions are migrated, but legacy connection details are omitted. Current connection details are provided manually after migration.

  Before migration, the share level of a connection group can be set for the connection group to be migrated. It can be shared or not shared.

- Code libraries

  Match, Review, and Upload libraries, along with their corresponding procedures and SQL blocks, are migrated.

  Libraries can be merged or not merged depending on migration parameters. If merged, the existing repository is searched for matching libraries. A library is considered a match if its properties are identical, including all its procedure and SQL blocks. If a match is found, and that match is shared in the same share group, then the migrated collection will share a link to the matched library with any workspaces that already share the library. If there is no match, or the matches are not shared, then the library is created as new, along with all its procedures and SQL blocks.

Procedures and SQL blocks may be merged or not merged depending on migration parameters. If merged, the existing repository is searched for matching procedures. A procedure is considered a match if its properties and text are identical. If a match is found, and that match is shared in the same share group, then the migrated workspace will share a link to the matched procedure with any workspaces that already share the procedure. If there is no match, or the matches are not shared, then the procedure is created as new. The same logic applies to SQL blocks.

Before migration, the share level can be set for the libraries, procedures, and SQL blocks to be migrated. They can be shared or not shared.

Libraries, procedures, and SQL blocks are migrated as is. Legacy conditions within their properties and text are automatically resolved after the config.dll migration, but some manual corrections may need to be made if there are issues with legacy code.

- Program variables

  Program variables are migrated from the legacy database to the new Perceptive DataTransfer 6.0.*x* schema as is. Program variables contain links to verification form objects; however, links between program variables and form objects are not maintained. Data typing issues or other legacy concerns are resolved after the config.dll migration. All program variables are created as new and are not shared with other workspaces.

- Headers

  Headers can be merged with existing headers or created as new, depending on migration parameters. If merged, the existing repository is searched for matching headers. A header is considered a match if all its properties, including its type and subsequent details, are identical. If a match is found, and that match is shared with the same share group, then the migrated workspace will share a link to the matched header with any workspaces that already share the header. If there is no match, or the matches are not shared, then the header is created as new.

  Before migration, the share level can be set for the headers to be migrated. They can be shared or not shared.

- Data exports

  Data exports can be merged with existing data exports or created as new, depending on migration parameters. If merged, the existing repository is searched for matching data exports. A data export is considered a match if all its properties are identical. If a match is found, and that match is shared with the same share group, then the migrated workspace will share a link to the matched data export with any workspaces that already share the data export. If there is no match, or the matches are not shared, then the data export is created as new.

  Before migration, the share level can be set for the data exports to be shared. They can be shared or not shared.

Note Only superadministrators can import legacy configurations.

Note *BEGIN TRAN* in SQL statements are removed from code during migration.

To import a legacy configuration, do the following.

1. Select **Administration > Workspaces**.

   The Workspace Administration dialog box appears.

2. Click  .

   The Configuration Migration dialog box appears.

3. Click **Import Legacy Configuration**.
4. In the Workspace Name field, type a name for the workspace.
5. In the Workspace Description field, type descriptive text about the workspace.
6. In the Configu.dll Upload field, type the path of the file you want to import, or click **Browse...**, navigate to the location of the file, and then select it.
7. In the Sharing field, click the appropriate radio button.
   - Private: Sets the workspace as a private one; it is not shared, and none of its objects are shared.
   - Shared: Sets the workspace as a shared workspace, which can share its objects with workspaces in the same share group.
8. For a shared workspace, from the Group drop-down box, select the share group to use for the workspace. If you are sharing a workspace, you must select the appropriate share group.
9. Check the **Merge Headers** checkbox to merge legacy headers with Perceptive DataTransfer 6.0.*x* headers.
10. Check the **Merge Data Exports** checkbox to merge legacy data exports with Perceptive DataTransfer 6.0.*x* data exports.
11. Check the **Merge NQL Procedures** checkbox to merge procedures.
12. Click **Migrate**.

Copying Workspaces

Note Only superadministrators can copy workspaces.

To copy a workspace, do the following.

1. Select **Administration > Workspaces**.

   The Workspace Administration dialog box appears.

2. Select the workspace that you want to duplicate and then either right-click it and select **Duplicate Workspace** or click  .

   The workspace is duplicated, and it appears in the dialog box.

Adding Workspaces

Note Only superadministrators can add new workspaces.

To add a new workspace, do the following.

1. Select **Administration > Workspace**.

   The Workspace Administration dialog box appears.

2. Click  .

   The Add Workspace dialog box appears.

3. In the Name field, type the name of the workspace.
4. In the Description field, type the description of the workspace.
5. In the Sharing field, click the appropriate radio button:
   - Private: Sets the workspace as a private one; it is not shared, and none of its objects are shared.
   - Shared: Sets the workspace as a shared workspace, which can share its objects with workspaces in the same share group.
6. If you are sharing a workspace, from the Group drop-down box, select the share group to use.
7. Click **OK**.

   The workspace is added and appears in the Workspace Manager dialog box.

8. To use this workspace, give yourself the appropriate privileges. See Chapter 5,“Configuring Users And Privileges.”

Modifying Workspaces

To modify a workspace, do the following.

1. Select **Administration > Workspace**.

   The Workspace Administration dialog box appears.

2. Select the workspace you want to modify, and then either right-click it and select **Edit** or click  .

   The Workspace Details dialog box appears.

3. In the Name field, type the name of the workspace.
4. In the Description field, type the description of the workspace.
5. In the Sharing field, click the appropriate radio button:
   - Private: Sets the workspace as a private one; it is not shared, and none of its objects are shared.
   - Shared: Sets the workspace as a shared workspace, which can share its objects with workspaces in the same share group.

6. If you are sharing the workspace, from the Group drop-down box, select the share group to use.
7. Click **Save**.

   The workspace is modified, and its updated information appears in the Workspace Manager dialog box.

Deleting Workspaces

Note Only superadministrators can delete workspaces.

To delete a workspace, do the following.

1. Select **Administration >Workspaces**.

   The Workspace Manager dialog box appears.
2. Select the workspace you want to delete, and then either right-click it and select **Remove** or click  .

   The workspace is deleted and is removed from the Workspace Manager dialog box.

Using Version Control

See the following topics for more information.

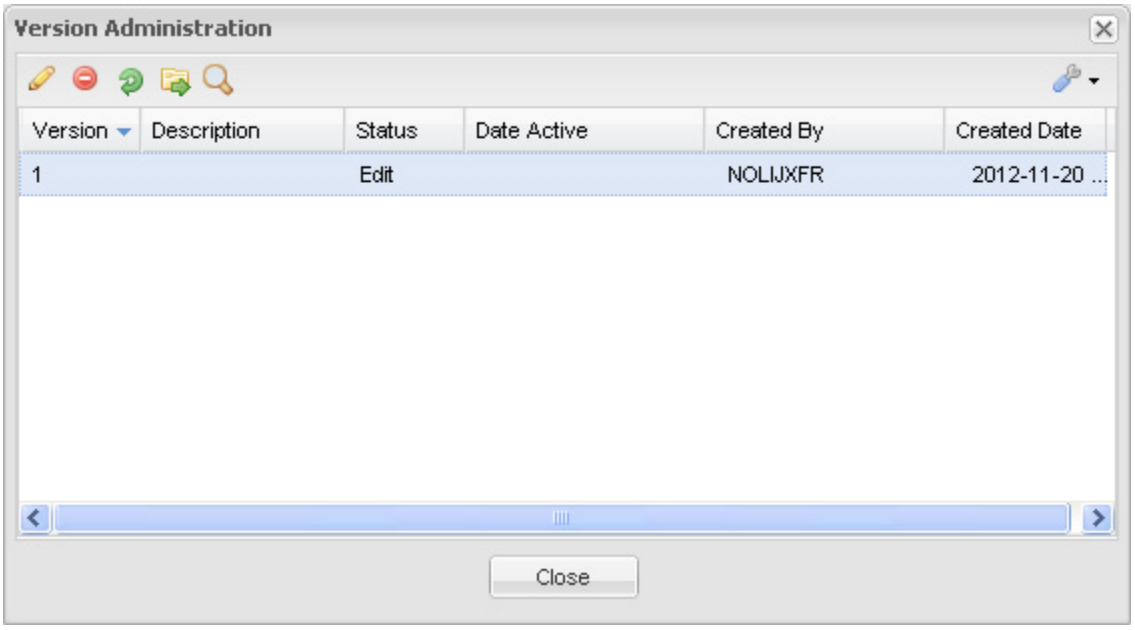
- Modifying Versions on page 181.
- Viewing Version Details on page 182.
- Moving Versions to Test Mode on page 183.
- Reverting a Version to Edit Mode on page 184.
- Moving Versions to Staged Mode on page 185.
- Adding Versions on page 183.
- Moving Versions to Active on page 185.
- Obtaining the Latest Versions of Workspace Versions on page 186.
- Importing Versions on page 186.
- Exporting Versions on page 187.
- Configuring Workspace Version Notifications on page 187.

The Version Administration dialog box appears when you select a workspace in the Workspace Manager dialog box and either right-click it and select **Versions** or click  . It displays the following information.

- Description: Description of the version.
- Version: Numerical value of the version.
- Status: Status of the version.

- Date Active: Date on which the version was activated. If the version is not active, this column displays a blank row of information.
- Created By: Name of the user who created the version.
- Create Date: Date on which the version was created.

Figure 50: Version Administration Dialog Box



Modifying Versions

Note You can modify only the version in which you are working if it is in edit or test mode.

To modify a version name, do the following.

1. Select **Administration > Workspace**.

   The Workspace Manager dialog box appears.

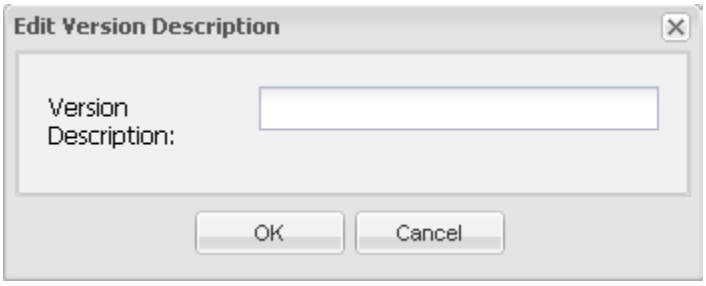
2. Select the workspace you want to modify and either right-click it and select **Versions** or click  .

   The Version Administration dialog box appears.

3. Select the version you want to modify and either right-click it and select **Edit Description** or click  .

   The Edit Version Description dialog box appears.

Figure 51: Edit Version Description Dialog Box



4. In the Versions Description field, type descriptive text about the version.
5. Click **OK**.

   The version description is updated and appears in the Version Administration dialog box.

Viewing Version Details

To view version information, do the following.

1. Select **Administration > Workspaces**.

   The Workspace Administration dialog box appears.
2. Click the workspace for which you want to view version details and then either right-click it and select **Version** or click .

   The Version Administration dialog box appears.
3. Either right-click the version and select **View** or click .

   A dialog box appears for the version and displays the following information.
   - Action: Action that was taken on an object (*Add*, *Modify*, or *Delete*).
   - Type: Type of object that was added, modified or deleted.
   - Name: Name of the object that was added, modified, or deleted.
   - Date: Date on which the action occurred.
   - User: Username of the user who added, modified, or deleted the object.
   - Comment: Comment that was added to the version entry.

Adding Versions

You can add a new version of a workspace if you do not have any other versions with edit status. The new version you add has a status of edit.

A workspace version in edit mode can be created from a version in staged, active, or inactive mode; a version in test mode can be moved to edit mode. To revert a version in test mode back to edit mode, follow the procedure in Reverting a Version to Edit Mode on page 184. Use the following procedure to create a new workspace version in edit mode from workspace versions in staged, active, or inactive mode.

1. Select **Administration > Workspaces**.

   The Workspace Administration dialog box appears.

2. Click the workspace whose to which you want to add a new version and either right-click it and select **Version** or click  .

   The Version Administration dialog box appears.

3. Select the workspace version from which you want to create a new version in edit mode.

   When you create a new version from the selected version, a copy of the selected version is created and is placed in edit mode.

4. Click  .

   A dialog box appears and prompts you to confirm that you want to create a new version.

5. Click **Yes** to create a new version.

   The Add Version dialog box appears.

6. In the Description field, type descriptive text about the version.

7. Click **OK**.

   The version is created and appears in the Version Administration dialog box.

Moving Versions to Test Mode

Note You can move a version from only edit mode to test mode.

Note You can have one version of a workspace in either test or edit mode; you cannot have a version on both modes.

To move a version to test mode, do the following.

1. Select **Administration > Workspaces**.

   The Workspace Administration dialog box appears.

2. Click the workspace whose version you want to test and either right-click it and select **Version** or click  .

   The Version Administration dialog box appears.

3. Select the version you want to advance to testing and either right-click it and select **Test** or click  .

   A dialog box appears and prompts you to confirm that you want to advance the version to testing.

4. Click **Yes** to change the status to test.

   The version is advanced to test mode, and its information is updated in the Version Administration dialog box.

Reverting a Version to Edit Mode

Note You can revert a version from only test mode to edit mode.

To revert a version back to edit mode from test, do the following.

1. Select **Administration > Workspaces**.

   The Workspace Administration dialog box appears.

2. Click the workspace whose version you want to revert to editing and either right-click it and select **Version** or click  .

   The Version Administration dialog box appears.

3. Select the version you want to revert to editing and either right-click it and select **Edit** or click  .

   A dialog box appears and prompts you to confirm that you want to revert the version to editing.

4. Click **Yes** to change the status to edit.

   The version is reverted to edit status, and its information is updated in the Version Administration dialog box.

Moving Versions to Staged Mode

Note You can move versions in test mode to staged mode only.

1. Select **Administration > Workspaces**.

   The Workspace Administration dialog box appears.

2. Click the workspace whose version you want to advance to staging and either right-click it and select **Version** or click  .

   The Version Administration dialog box appears.

3. Select the version you want to advance to staging and either right-click it and select **Stage** or click  .

   A dialog box appears and prompts you to confirm that you want to advance the version to staging.

4. Click **Yes** to change the status to staged.

   The version is changed to staged status, and its information is updated in the Version Administration dialog box.

Moving Versions to Active

Note You can move a version to active with the status of *staged* or *inactive* only.

To move a version to active, do the following.

1. Select **Administration > Workspaces**.

   The Workspace Administration dialog box appears.

2. Click the workspace whose version you want to activate and either right-click it and select **Version** or click  .

   The Version Administration dialog box appears.

3. Select the version you want to activate and either right-click it and select **Activate** or click  .

   A dialog box appears and prompts you to confirm that you want to activate the version.

4. Click **Yes** to activate the version.

   The version is activated, and its information is updated in the Version Administration dialog box.

Obtaining the Latest Versions of Workspace Versions

If changes have been made to and committed to a workspace version, you can obtain the latest version of it.

Note You can also obtain the latest versions of individual objects (procedures, forms, data exports, headers, and connection groups) in the appropriate dialog boxes or application windows for the objects.

1. Select **Administration > Workspaces**.

   The Workspace Administration dialog box appears.

2. Click the workspace whose latest version you want to obtain and either right-click it and select **Version** or click  .

   The Version Administration dialog box appears.

3. Select the version and click  .

   The latest objects are obtained and are loaded into the workspace.

Importing Versions

To import a version from an XML file, do the following.

1. Select **Administration > Workspaces**.

   The Workspace Administration dialog box appears.

2. Click the workspace for which you want to import a version and either right-click it and select **Version** or click  .

   The Version Administration dialog box appears.

3. Click  and select **Import**.

   The Import Version dialog box appears.

4. Click **Browse...** and navigate to the version you want to import, and then select it.
5. Click **OK**.

   The version is imported and appears in the Version Administration dialog box.

Exporting Versions

To export a version in an XML file, do the following.

1. Select **Administration > Workspaces**.

   The Workspace Administration dialog box appears.

2. Click the workspace for which you want to export a version and either right-click it and select **Version** or click  .

   The Version Administration dialog box appears.

3. Select the version you want to export.

4. Click  and select **Export**.

   The Workspace Export dialog box appears.

5. Click the **Full** radio button if you want to export all objects in the workspace; click **Changes** if you want to only export changes.

6. Click **OK**.

   Save the file in the appropriate location.

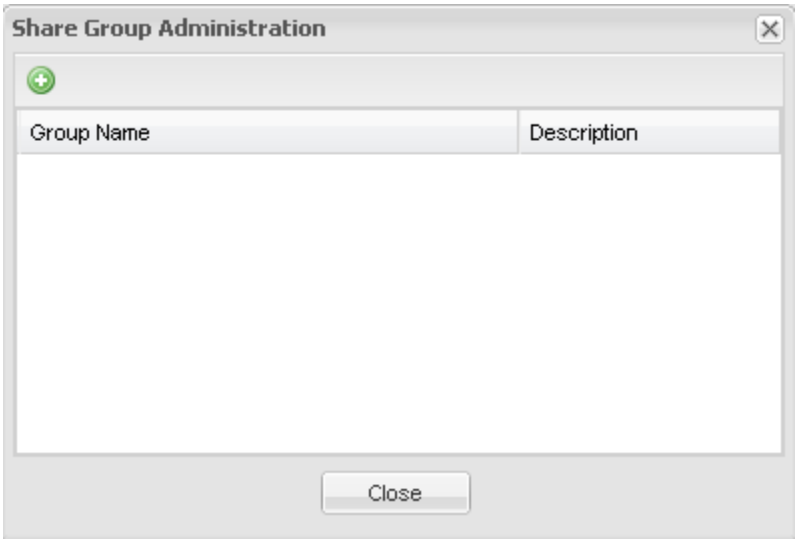
Configuring Workspace Version Notifications

You can configure Perceptive DataTransfer to send email notifications to specified users about when certain workspace version activities occur. When you select **Administration > Workspace** and click the  , the Version Notification Configuration dialog box appears, from which you can configure notifications. For more information about configuring notifications, see Chapter 4,“Configuring Notifications.”

Configuring Share Groups

Workspaces and their objects can be shared among share groups. Create a share group and configure workspaces to use that share group so that objects can be shared.

Figure 52: Share Group Administration Dialog Box



Adding Share Groups

To add a share group, do the following.

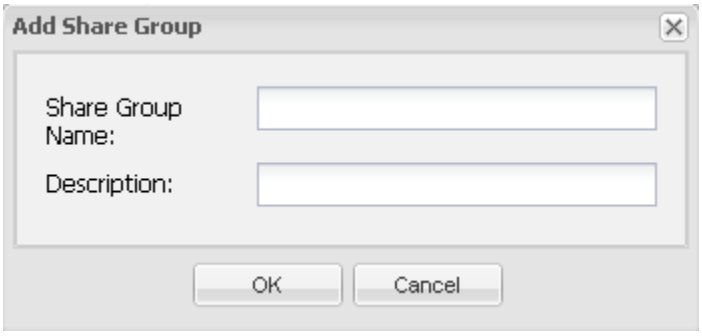
1. Select **Administration > Share Groups**.

   The Share Group Administration dialog box appears.

2. Click  .

   The Add Share Group dialog box appears.

Figure 53: Add Share Group Dialog Box



3. In the Share Group Name field, type the name of the share group.
4. In the Description field, type descriptive text for the share group.
5. Click **OK**.

   The share group is created and is displayed in the Share Group Administration dialog box.

   When you share a workspace, you select the share group to use. Workspaces that use this share group share their objects with all other workspaces using the share group.

Modifying Share Groups

To modify a share group, do the following.

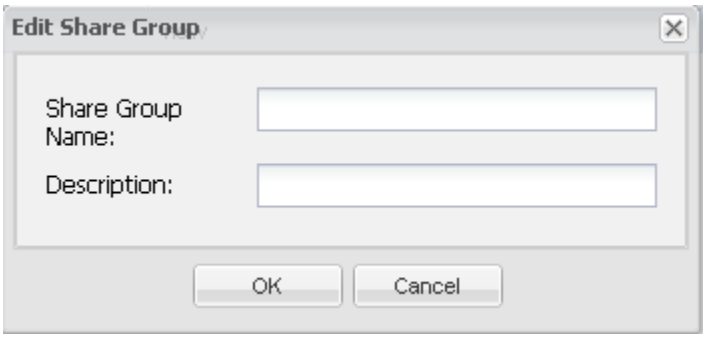
1. Select **Administration > Share Groups**.

   The Share Group Administration dialog box appears.

2. Select the share group you want to modify and either right-click it and select **Edit** or click  .

   The Edit Share Group dialog box appears.

Figure 54: Edit Share Group Dialog Box



3. In the Share Group Name field, type the name of the share group.
4. In the Description field, type descriptive text for the share group.
5. Click **OK**.

   The share group is modified and updated in the Share Group Administration dialog box.

Deleting Share Groups

Note You cannot delete a share group if a workspace is using it.

To delete a share group, do the following.

1. Select **Administration > Share Groups**.

   The Share Group Administration dialog box appears.

2. Select the share group you want to delete and either right-click it and select **Delete** or click  .

   A dialog box appears and prompts you to confirm that you want to delete the share group.

3. To delete the share group, click **Yes**.

   The group is deleted and is removed from the Share Group Administration dialog box.

Configuring Jobs and Processing Records

Jobs contain all functions required to load data into your database. A job consists of the following.

- Header: Defines the input data source, mapping values from the input file to the source destination in your database.
- Connection group: Comprises database connections to your database.
- Input file: File from which you are importing data (for example, a spreadsheet containing SAT information for students). Input files can be fixed-width, delimited, database, or XML files.
- Date and time: Date and time on which the job starts (if not specified, the job is run manually).

When you run a job, Perceptive DataTransfer processes all records from the input file for the job.

You can view jobs in the Job Dashboard of the main application window, which contains a table that provides the following information.

Table 3: Job Dashboard Elements and Descriptions

Element	Description
Status drop-down box	Filters the status of the jobs you view in the Job Dashboard table. When you select an option, the table displays jobs with the selected status. Options are: • Active: Active jobs are jobs that have not yet started (pending), jobs that have run but for which there are unprocessed records (incomplete), or jobs that have run but for which there are suspended records (processed). • Complete: Complete jobs have been run and all records have been processed as new or match; there are no suspended or unprocessed records. • Archive: Archive jobs are historical jobs that have been archived. Canceled: Canceled jobs have been canceled by a user.
Name column	Name of the job. Click + expand the job entry and view details about the job. The following fields are displayed. • File Name: Filename of the input file used by the job. • Created On: Date on which the job was created. • Created by: Username of the user who created the job. • Start Time: Date and time on which the job started to run. • End Time: Date and time on which the job ended. • In Use by: Username of the user who is running the job.
Scheduled Start Time column	Date and time on which the job was scheduled to start.

Table 3: Job Dashboard Elements and Descriptions (Continued)

Element	Description
Status column	Status of the job. • Complete: The job has finished running, and there are no unprocessed or suspended records. • Incomplete: The job is not currently running and has processed and unprocessed records. • Processed: The job has finished running, but there are suspended records. • Pending: The job has not yet started. • Processing: The job is currently running. • Canceled: The job was canceled. • Archive: The job was archived.
Records Status column: Provides the following subcolumns. • Progress: Provides a status bar indicating job progress when it is being run. • Total: Number of total records for the job. • Unprocessed: Number of records that the job did not process. • Suspended: Number of suspended records. • Matched: Number of matched records. • New: Number of new records. • Locked: Number of locked records.	
Header column	Name of the header used for the job.
Connection Group column	Name of the connection group for the job.

See the following topics for more information.

- Obtaining Input Data from the Database on page 44.
- Adding Jobs on page 45.
- Modifying Job Details on page 48.
- Modifying Jobs on page 49.
- Specifying Data Displayed in the Results Pane on page 52.
- Modifying Recurring Jobs on page 53.
- Opening Jobs on page 54.
- Running Jobs on page 58.
- Deleting Jobs on page 68.

- Canceling Jobs on page 69.
- Archiving Jobs on page 69.

Obtaining Input Data from the Database

Perceptive DataTransfer can query a database to obtain the input data for a job. To configure a job in this way, do the following.

1. Create and configure a database connection for the input data. See Chapter 6,“Configuring Connection Groups and Database Connections.”
2. Create a procedure that uses Database Population Selection logic, which contains the query for dynamically extracting input data. You use this logic in procedures and associate them with headers so that you can capture header input variables from the input file.

   For more information about configuring procedures, see Chapter 9,“Configuring Procedures.” For information about syntax for database population selection logic, see Understanding Database Population Selection Syntax on page 222 in Appendix 14,“Programming Concepts.”
3. Create a database header and select the procedure used for database population selection. See Configuring and Modifying Database Headers on page 101 in Chapter 8,“Configuring Headers.”
4. Create a new job, selecting the header and connection you created in previous steps. See Adding Jobs on page 45.

   Note If job is recurring, the data is loaded when the job starts. If this is a a job you are running a single time, the data is loaded at creation time.
5. Run the job. See Running Jobs on page 58.
   - If data from the import source has not been loaded, it is loaded when the job runs.
   - If procedure aliases do not match the input columns (input variables in the header) in the header, the job is not run properly.
   - For recurring jobs, if a previous occurrence of a job is running, you cannot create a new job.

Adding Jobs

You can add new jobs and recurring jobs. See the following topics for more information.

Note For an XML header, if you change the record identifier after you create a job using the XML header, the job will not run.

- Adding New Jobs on page 45.
- Adding Recurring Jobs on page 46.

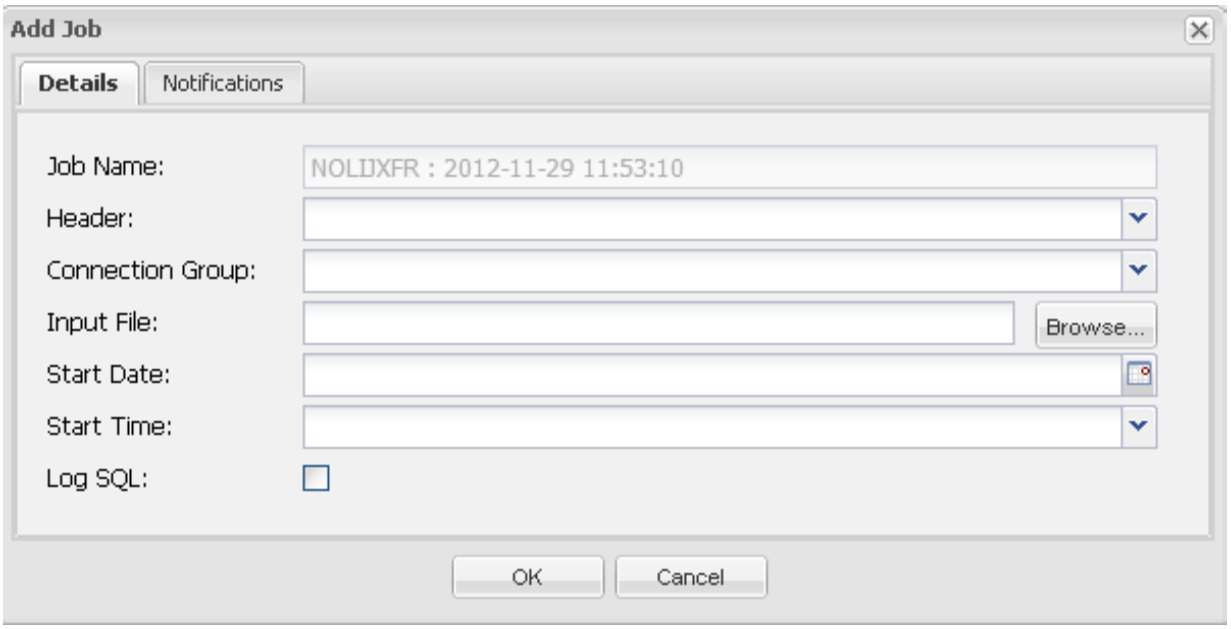
Adding New Jobs

To add a new job, do the following.

1. Select **Jobs > Add Job**.

   The Add Job dialog box appears.

Figure 12: Add Job Dialog Box



2. The Job Name field displays the name of the job. The default name of the job is *USER DATE TIME*, where *USER* is the username of the user who created the job, *DATE* is the date (month, day, and year) on which the job was created, and *TIME* is the time that the job was created.
3. From the Header drop-down box, select the header file used for the job.
4. From the Connection Group drop-down box, select the connection group.

5. In the Input File field, click **Browse...** and select the input file, which contains the data that you want to import, to use for the job.
6. From the Start time drop-down box, select the time on which the job starts. If you do not specify a start date and start time, the job is run only manually.
7. In the Start Date field, click the calendar icon to display a pop-up calendar; then, select the date on which the job starts.
8. Check the **Log SQL** checkbox to log SQL messages; these messages appear in the Log View dialog box (see Viewing Log Messages on page 21).
9. Click **OK**.

   The job is created and is added to the table.

   Note If you enabled **Preferences > Filename in Job Name**, the name of the input file is appended to the job name.

Adding Recurring Jobs

Recurring jobs run at a specified interval, using a file from a specified folder to which the Perceptive DataTransfer server can connect.

Use file sources to configure the location of the input file; see Chapter 7,“Configuring File Sources.”

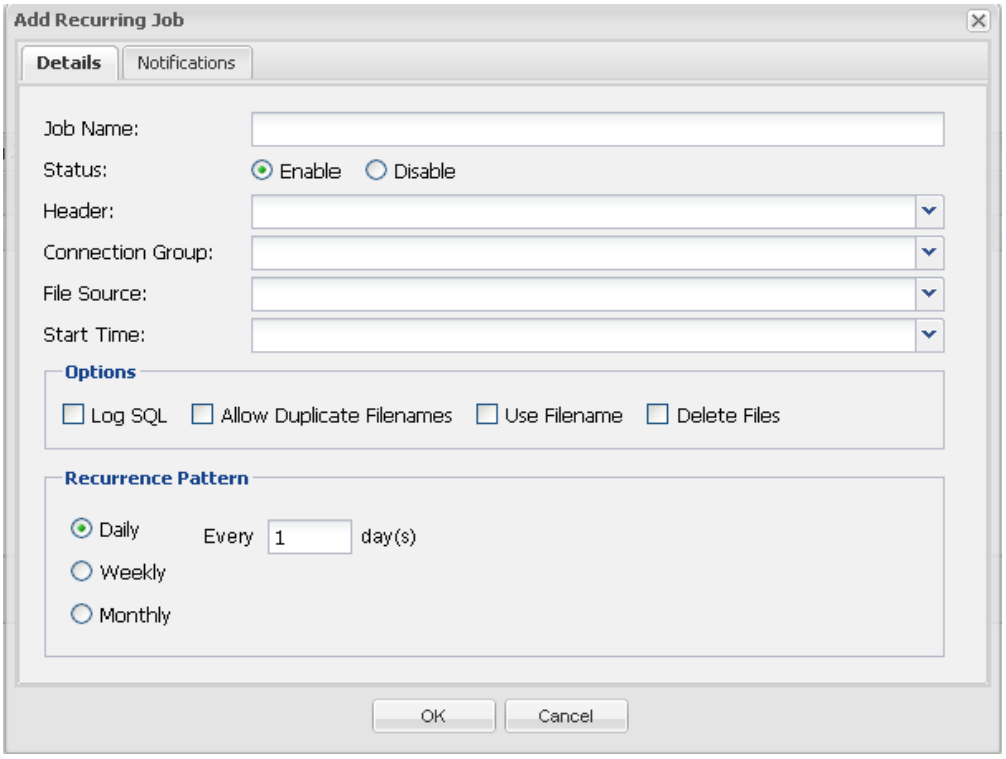
To add a recurring job, do the following.

1. Select **Jobs > Recurring Jobs**.

   The Recurring Job Administration dialog box appears.
2. Click **Details**.
3. Click  .

   The Add Recurring Job dialog box appears.

Figure 13: Add Recurring Job Dialog Box



4. In the Job Name field, type the name of the job.
5. In the Status field, click the **Enable** radio button to enable the recurring job; click **Disable** to disable it.
6. From the Header drop-down box, select the header file used for the job.
7. From the Connection Group drop-down box, select the connection group.
8. From the File Source drop-down box, select the file source (server or SFTP connection) that contains the input file.

   File Sources are configured in Perceptive DataTransfer in **Configuration > File Sources**; for more information, see Chapter 7,“Configuring File Sources.”

   This field is dimmed and unavailable if you are using a database header.
9. From the Start time drop-down box, select the time on which the job starts. If you do not specify a start date and start time, the job is run only manually.

10. In the Options pane, specify the following.
    - Check the **Log SQL** checkbox to log SQL messages; these messages appear in the Log View dialog box (see Viewing Log Messages on page 21).
    - Check the **Allow Duplicate Filenames** to allow jobs to have the same name.
    - Check the **Use Filename** checkbox to include the name of the input file in the job name. When you add a new job, the name of the input file is appended to the job name.
    - Check the **Delete Files** checkbox to delete input files from the server after they have been used for the recurring job.
11. In the Recurrence Pattern pane, specify when the job recurs.
    - Click the **Daily** radio button to specify that the job recurs daily, and then specify the recurrence frequency.
    - Click the **Weekly** radio button to specify that the job recurs weekly, and then specify the recurrence frequency.
    - Click the **Monthly** radio button to specify that the job recurs monthly, and then specify the recurrence frequency.
12. Click the **Notifications** tab to configure email notifications to be sent when certain job activities occur. See Chapter 4,“Configuring Notifications.”
13. Click **OK**.

    The recurring job is added and appears in the Recurring Job Administration dialog box. When an instance of this job is scheduled, the instance is created and appears in the Job Dashboard.

Modifying Job Details

To modify job details, do the following.

1. Select a job in the Job Dashboard and right-click it and select **Edit Details**.

   The Edit Job Details dialog box appears.
2. Click the **Details** tab.
3. In the Job Name field, type the name of the job.

   Note You cannot modify any other fields, except the Job Name field, if you are modifying a job with any status other than *Pending*.
4. From the Connection Group drop-down box, select the connection group to use for the job.
5. In the Start Date field, click the calendar icon to open a calendar, and then select the date on which the job starts.
6. From the Start Time drop-down box, select the time on which the job starts.
7. Click **OK** to save your changes and close the dialog box.

Modifying Jobs

To modify a job, select a job in the table and either right-click it and select **Edit** or click **Edit**.

A window appears and displays information about the job.

Figure 14: Edit Job Window

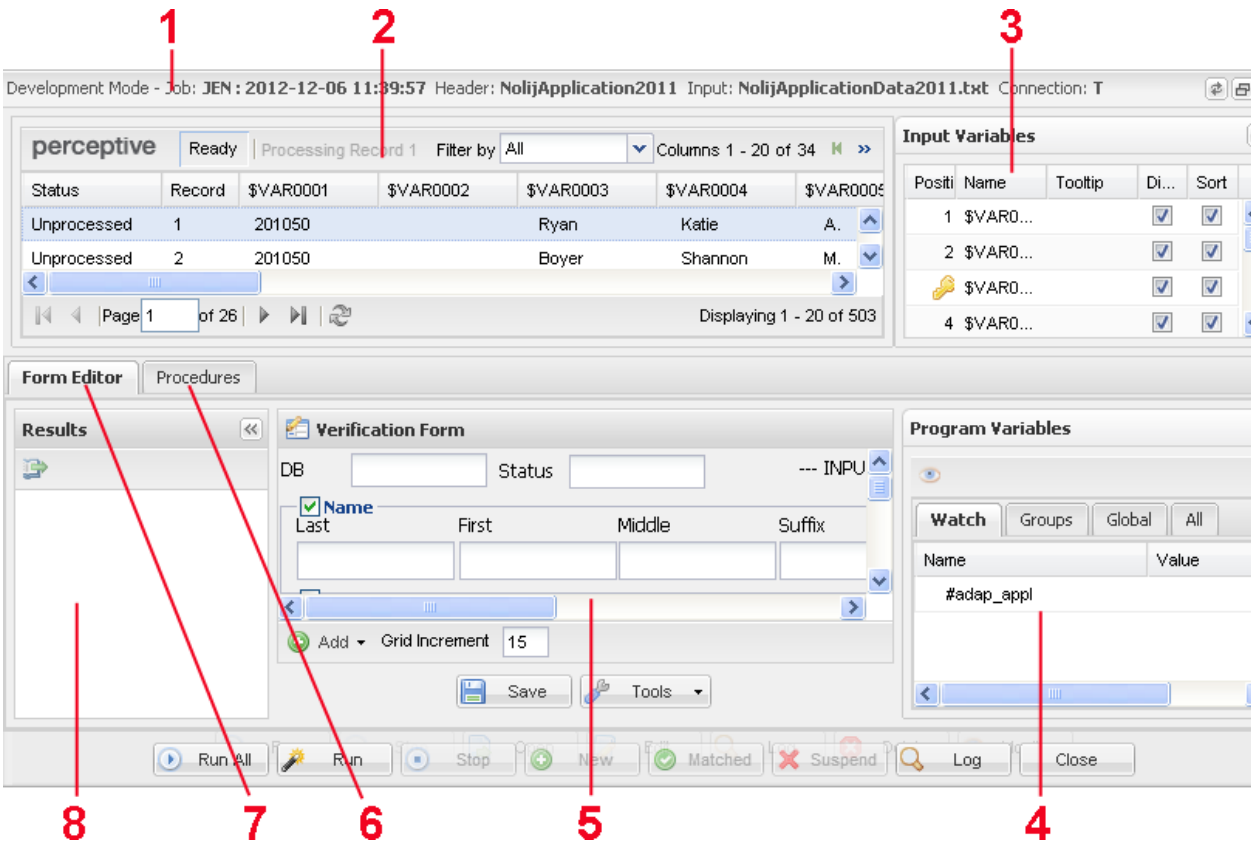


Table 4: Edit Job Window Elements and Descriptions

Callout No.	Element	Description
1	Menu bar	Displays the name of the job, name of the header used for the job, name of the input file used for the job, and the database connection for the job.
2	Records pane	Displays records contained in the job. You can filter the records displayed by right-clicking a record, selecting **Filter By**, and then selecting the appropriate option. You can also filter records by selecting the filter option from the Filter by drop-down box. Options are: • All • Unprocessed • Suspended • Match • New • Locked If sorting is enabled on a column, when you click a column heading, the field is sorted alphanumerically from A-Z; if you click the heading again, the field is sorted from Z-A. You can choose to make up to ten columns sortable when you edit the input variables corresponding to the columns in the Header Editor dialog box. See the following topics for more information. • Configuring and Modifying Fixed-Width Headers and Header Variables on page 93. • Configuring and Modifying Delimited Headers and Header Variables on page 98. • Configuring and Modifying Database Headers on page 101. • Configuring and Modifying XML Headers and Header Variables on page 104. • Configuring Hobsons Connect CRM Headers and Header Variables on page 108.
2 (cont.)	Records pane (cont.)	Sorting is based on the prefix of the input variable. If the prefix is &, sorting is based on timestamp (which in the end is a numeric sort); if the prefix is $, soring is alphanumeric; and if the prefix is #, sorting is numeric. These values are all stored as strings regardless of the prefix the values are converted to when the user opens or edits a job to prepare a job. If, for example, the prefix is # and the value does not convert to a numeric value, the value is managed as *null*; for #ZIP and value SEVEN, seven is *null* when sorted. You can suspend, lock, reset, and modify records by right-clicking a record and selecting the appropriate option. See the following topics for more information. • Viewing Logs on page 57 • Locking Records on page 55 • Modifying Records on page 55 • Suspending Records on page 57

Table 4: Edit Job Window Elements and Descriptions (Continued)

Callout No.	Element	Description
3	Input Variables pane	Displays the header input variables used in the header for the job. For more information about configuring headers and header variables, see Chapter 8,"Configuring Headers."
4	Program Variables pane	Allows you to view and configure program variables. For more information about configuring variables, see Chapter 9,"Configuring Procedures."
5	Verification form	Verification form used for the job; it is displayed when you click the Form Editor tab.
6	Procedures tab and pane	Allows you to view and configure procedures. When you click this tab, the Procedures pane displays the configured procedures, and it displays the Procedure Editor pane to the right of the tab. For more information about procedures, see Chapter 9,"Configuring Procedures."
7	Form Editor tab	Allows you to view and configure the verification form used for the job. When you click this tab, the Verification Form pane appears to the right of the tab. For more information about configuring forms, see Chapter 10,"Configuring Forms."
8	Results pane	Displays any potential records in the database for which there is a match in the input record. You must configure the appropriate Match Result Display query to retrieve the appropriate information to display it in this pane. For more information, see Specifying Data Displayed in the Results Pane on page 52

Specifying Data Displayed in the Results Pane

When a job is run in interactive mode on all records, or when records that were suspended when a job was run in batch mode and are then managed in interactive mode, match logic is run and finds possible matches for the input record.

For each possible match, an entry in the Results pane in the Job window is associated with the ID for the possible match. You configure a query for a procedure using the Match Result Display logic that uses this ID to populate the Results pane in the Job window.

To configure a job that uses the Match Result Display logic, do the following.

1. Create and configure a database connection for the input data. See Chapter 6,"Configuring Connection Groups and Database Connections."
2. Create a procedure that uses Match Result Display logic, which contains the query for that returns information to the Results pane based on the specified ID returned by the query.

   For more information about configuring procedures, see Chapter 9,"Configuring Procedures."
3. Create a header and select the procedure used for match result display. See Configuring and Modifying Database Headers on page 101 in Chapter 8,"Configuring Headers."

   When the Match logic executes on a header, a list of IDs of possible matches are generated. The Match Result Display query for that header is then executed (the query is executed) for each ID and the data returned from the query is displayed as a row of information in the Results pane.

4. Create a new job, selecting the header and connection you created in previous steps. See Adding Jobs on page 45.
5. Run the job. See Running Jobs on page 58.

   When the job is run in interactive mode, all possible matches are displayed in the Results pane.

Modifying Recurring Jobs

To modify a recurring job, do the following.

1. Select **Jobs > Recurring Jobs**.

   The Recurring Job Administration dialog box appears.

2. Select the recurring job you want to modify and either right-click it and select **Edit** or click  .

   The Edit Recurring Job dialog box appears.
3. In the Job Name field, type the name of the job.
4. In the Status field, click the **Enable** radio button to enable the recurring job; click **Disable** to disable it.
5. From the Header drop-down box, select the header file used for the job.
6. From the Connection Group drop-down box, select the connection group.
7. From the File Source drop-down box, select the file source (server or SFTP connection) that contains the input file.

   File Sources are configured in Perceptive DataTransfer in **Configuration > File Sources**; for more information, see Chapter 7,“Configuring File Sources.”

   This field is dimmed and unavailable if you are using a database header.
8. From the Start time drop-down box, select the time on which the job starts. If you do not specify a start date and start time, the job is run only manually.
9. In the Options pane, specify the following.
   - Check the **Log SQL** checkbox to log SQL messages; these messages appear in the Log View dialog box (see Viewing Log Messages on page 21).
   - Check the **Allow Duplicate Filenames** to allow jobs to have the same name.
   - Check the **Use Filename** checkbox to include the name of the input file in the job name. When you add a new job, the name of the input file is appended to the job name.
   - Check the **Delete Files** checkbox to delete input files from the server after they have been used for the recurring job.
10. In the Recurrence Pattern pane, specify when the job recurs.
    - Click the **Daily** radio button to specify that the job recurs daily, and then specify the recurrence frequency.

- Click the **Weekly** radio button to specify that the job recurs weekly, and then specify the recurrence frequency.
- Click the Monthly radio button to specify that the job recurs monthly, and then specify the recurrence frequency.

11. Click **OK**.

    The recurring job is modified.

Opening Jobs

To open a job, do the following.

1. Select a job in the table in the Job Dashboard and either right-click it and select **Open** or click the **Open** button.

   A window appears and displays information about the job.

2. You can filter records in the topmost pane (Records pane) by right-clicking a job, selecting **Filter By**, and selecting the status of the records you want to display. You can also select the filter option from the Filter by drop-down box. Options are:

   - All
   - Unprocessed
   - Suspended
   - Match
   - New
   - Locked

   Records text is colored according to status.

   - Locked: Purple
   - Match: Green.
   - New: Blue
   - Suspend: Red
   - Unprocessed: Black

3. If sorting is enabled on a column, when you click a column heading, the field is sorted, depending on the type of information contained in the column. The field can be sorted alphanumerically, numerically, or by date.

Figure 15: Record Color Codes

Status	Record	$TERM
Locked	1	201050
Unprocessed	2	201050
New	3	201050
Match	4	201050
Suspended	5	201050

4. To reset a record, select the record in the topmost pane and select **Reset Record**. See Viewing Logs on page 57.
5. To lock a record, select the record in the topmost pane and select **Lock Record**. Perceptive DataTransfer does not process locked records when you run jobs. See Locking Records on page 55.
6. To modify a record, right-click a record and select **Edit Record**. See Modifying Records on page 55.
7. To suspend a record, right-click a record and select **Suspend Record**. See Suspending Records on page 57.
8. To view XML records, right-click a record (for a job using an XML header) and select **View Full Record**. See Viewing XML Records on page 58.

Resetting Records

You can reset any *Processed* record to *Unprocessed* by doing the following.

1. Select a job in the Job Dashboard and click **Open Job**.

   A window appears and displays information about the job.
2. In the topmost pane, right-click the record you want to reset and select **Reset Record**.

   The record is reset to *Unprocessed* and its information is updated in the Records pane.

Locking Records

When you lock a record, it is not processed when you run a job. To lock a record, do the following.

1. Select a job in the Job Dashboard and click **Open Job**.

   A window appears and displays information about the job.
2. In the topmost pane, right-click the record you want to reset and select **Lock Record**.

   The record is locked. Its status is changed to *Locked* in the Records pane.

Modifying Records

You can modify the value of a field of information in a record in your database by doing the following.

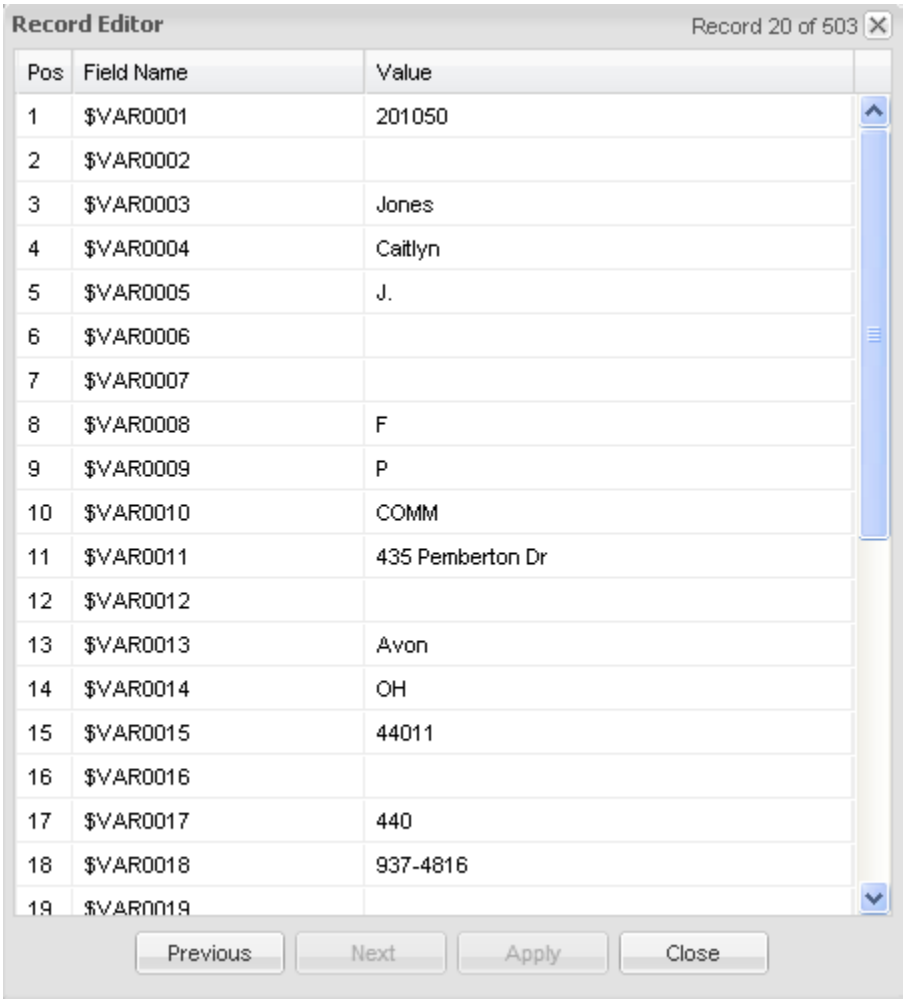
1. Select a job in the Job Dashboard and click **Open Job**.

   A window appears and displays information about the job.

2. In the top-most pane, right-click the record you want to modify and select **Edit Record**.

   The Record Editor dialog box appears and displays information about the variables for the record.

Figure 16: Record Editor Dialog Box



The dialog box contains the following columns of information:

- Pos: Numerical value of the position of the field in the input file.
- Field Name: Name of the field.
- Value: Value of the field.

3. To select the next record, click the **Next** button; to select the previous record, click the **Previous** button.
4. To modify the value of a record, double-click the entry in the Value column and then type the appropriate value.
5. To apply your changes, click **Apply**.

   The database record is updated with the changes you made, and its information is updated in the Records pane.

Viewing Logs

Click the **View Logs** button to view information about the job. See Viewing Log Messages on page 21 for more information.

Suspending Records

If Perceptive DataTransfer cannot upload a new record to the database when you run a job, the record is automatically suspended.

You can manually suspend a record if there is an issue with the record that you need to investigate further.

1. Select a job in the Job Dashboard and click **Open Job**.

   A window appears and displays information about the job.
2. Right-click the record that you want to suspend and select **Suspend**.

   The Suspend Record dialog box appears.
3. In the Enter suspend reason field, type the reason for which you are suspending the record.
4. Click **OK**.

   The record is suspended. Its status changes to Suspended, and the record text is highlighted in red in the Records pane.

Viewing XML Records

For jobs that use an XML header, you can view the XML record by doing the following.

1. Select a job in the Job Dashboard and click **Open Job**.

   A window appears and displays information about the job.

2. Right-click an XML record that you want to view and select **View Full Record**.

   The View Full XML Record dialog box appears and displays the XML nodes and records in the XML tree.

3. To expand all nodes in the XML tree, click  ; to collapse them, click  .
4. Click **Close** to close the dialog box.

Running Jobs

See the following topics for more information.

- Eliminating Duplicate Records on page 58.
- Understanding Run Modes on page 59.
- Running Jobs in Batch Mode on page 63.
- Running Jobs in Interactive Mode on page 63.
- Running Jobs Using QAS on page 67.
- Monitoring Jobs on page 67.
- Running Jobs Using QAS on page 67.

Eliminating Duplicate Records

To prevent duplicate records when a header is used to run a job, you can set a column of the header as the record key. Jobs typically run more quickly when a column is set as a record key.

Selecting a header key allows Perceptive DataTransfer to process any records with different values in the selected column at the same time. You do not need to select a column that guarantees unique values, but the column should capture duplicate records. For example, if you select *Last Name* as the key to a header and process a file that has many records with the last name *Smith*, which represent different students, you prevent any two records with the same last name from being processed at the same time.

To mark a header column as the record key, do the following.

1. Select **Configuration > Headers**.

   The Header Administration dialog box appears.

2. Click the header you want to modify and either right-click it and select **Edit** or click  .

   The Header Editor dialog box appears.

3. To mark a column as the record key, select the column and click  .

   The  icon appears next to the column to denote that it is the record key.

   You can mark one column only as the record key; you cannot configure composite keys.

   Note A column that is set as the record key is also a sortable column and count toward the ten columns that can be sortable.

4. Configure other header properties, as appropriate.

   For more information about configuring headers, see Chapter 8,“Configuring Headers.”

Understanding Run Modes

You can run jobs in interactive or batch mode, which is determined in the associated match procedures using the appropriate global program variables.

Perceptive DataTransfer sets the global variable GL_RUNMODE to BATCH when the job is run from the Job Dashboard. Note that if the associated code has interactive elements in it (for example, the STOP command does not work in batch mode), and a job is run in batch mode, error messages are received. You can configure the code to branch to specify the appropriate behavior when a job is run in either mode. For example, you can use an if...else statement in this syntax:

```
if <_GL.RUNMODE_ = _GL.INTERACTIVE_>
   <procedures for interactive mode>
 else
   <procedures for batch mode>
end-if
```

For more information about global variables, see Understanding Global Variables on page 236 in Appendix 14,“Programming Concepts.” For more information about configuring procedures, see Chapter 9,“Configuring Procedures.”

Understanding Batch Mode

In batch mode, a job is run without user intervention. For each input record, the following occurs.

1. Match logic is run until it completes. The logic searches for possible matches until a SKIP command is reached. The SKIP command sets the status of the input record and processes it appropriately.
   - If the status of the record is MATCH or NEW, upload logic is run.
   - If the status is SUSPEND, match logic is run for the next input record.

   Note Review logic is not run in batch mode.

2. Upload logic is run; the global status of the input record is used to either create a new record or to update an existing record.

Understanding Interactive Mode

In interactive mode, the job processes each input record, pausing to allow the user to intervene. For each input record, the following occurs.

1. Match logic is run.
    1. Match logic finds possible matches for the input record. For each possible match, an entry in the Results pane is associated with the ID for the possible match. The Match Result Display procedure uses that ID value to populate the Results pane in the Job window.

       For an overview of steps required to configure the logic to display matches in the Results pane, see Chapter 5,"Specifying Data Displayed in the Results Pane."
    2. Match logic organizes the results based on a ranking of how likely it is to be a match. For the first instance of the match logic, the logic searches for rank 1 matches, for the second instance it searches for rank 2 matches, and so on.
    3. At the end of each rank iteration, the match logic pauses to allow user input. The rank and logic pause are established programmatically through the STORE and STOP commands.
    4. The user can select one of the match results from the Results pane, initiating review logic.
    5. If the user does not find a match, he or she can continue to run the match logic to search for the next rank of possible matches. If the match logic does not find a possible match, the user is prompted to create a new record for the input. If accepted, the upload logic will begin. If rejected, the record is suspended, and the process starts again with the next input record.
2. Review logic is run.
    1. Review logic is run when a user clicks a match record in the Results pane. The user interface stops taking input.
    2. Each time the review logic updates a program variable, any fields on the verification form linked to that program variable is updated in real-time.
    3. When the review logic completes, the interface accepts user input. The user can do the following.
        - Click a different match result: This restarts the review logic process.
        - Update the verification form: This allows the user to override data being uploaded to the database.
        - Insert the input record as a new record: This executes the new record upload logic.
        - Update an existing record: This executes the upload logic with the selected match result specified as the record to update.
        - Suspend the input record: This flags the record as suspended and starts the iteration of the next input record.

3. Upload logic is run.
    1. The Results pane is locked to prevent user input.
    2. The upload logic creates the new record or updates the existing record with the appropriate parameters.
    3. The process completes and moves to the next input record.

When running in interactive mode, you can step through any of the match, review, or upload logic to debug the code. You can examine the program variables any time the logic is paused for user intervention. See Running Debug Modes on page 61 for more information about running debug modes.

You can also use the PROMPT function to display message text to a user and allow the user to update variables when a job is run in interactive mode. For more information, see Understanding the prompt function on page 249.

Running Debug Modes

You can run debug modes when processing records.

- Normal mode: The logic starts and executes to completion or until a STOP command is reached. When a STOP is reached, the interface pauses for user input.
- Debug mode: The logic pauses at each breakpoint and each STOP command. After the logic is stopped, you can continue to the next STOP command or breakpoint, or you can proceed to the next line of code.

You can insert breakpoints anywhere to pause on that line of code. The Procedure Editor displays the procedure being run and identifies the line on which the job has been stopped.

Note You cannot add breakpoints to *end-select* statements.

Do the following.

1. In the Job Dashboard, select the job you want to run and either right-click it and select **Edit** or click the **Edit** button.
2. In the topmost pane, select the record you want to run.
3. Click the **Procedures** tab.
4. Select the procedure that contains the line of code you first want to execute.
5. Click the line number of the line to which you want to add a breakpoint.

    A appears next to the line number, indicating that you have added a breakpoint to the line.

Figure 17: Procedure with Breakpoints

```
begin-procedure matching-process
    ! empty comment
    let $status = ''
    let $mtch_code = ''
    let #nu_id = 0
    let $id = ''
    ! check current first name
    checkname $tmp_cfname, $tmp_ffname, #name_cnt, $fname_1, $fname_2, $fname_3, $fname_4
    let #name_cnt = 4
    let $fname_1 = $tmp_fname
    let $fname_2 = $tmp_fname
    let $fname_3 = $tmp_fname
    let $fname_4 = $tmp_fname
    !  TO RUN BATCH MODE do not include header in IF statement
    if (_GL.RUNMODE_ = _GL.INTERACTIVE_)
        !procedures for interactive matching
        if not isnull($f_ssn)
            do 01-match-ssn
        end-if
        ! continue with matching steps
        do 02-match-exact-last-first-dob
        do 03-match-last-5-first-2-dob
        do 04-match-last-dob
        do 05-match-last-5-dob
        !do 06-match-last-3-dob
        do 07-match-last-first-5
        do 09-match-last-first-3-eq-mi-3
        do 10-match-last-5-first-3-city
        do 08A-match-last-first-1-city
        do 08-match-last-first-1
        !do 11-match-last-5-first-1
        do 12-match-last-eq-first
    else
        !procedures for batch mode
        if $f_ssn != ''
            do AA-match-last-4-first-2-ssn
        end-if
        if $f_dob != ''
            if $f_zip_1 != ''
                do AB-match-last-4-first-2-dob-city-6-zip-4
            end-if
            if $f_zip_1 = ''
                do AB-match-last-4-first-2-dob-city-6
            end-if
        end-if
        if $f_zip_1 != ''
            do AB-match-last-4-first-4-st1-7-city-6-zip-4
        end-if
        !commented out the next match routine since it is causing too many dups -KK
        do AC-match-last-first
        !do AD-match-last-3-dob
        !do AE-match-last-first-1-eq-mi-1
        do AE-match-last-first-5-eq-mi-5
        !commented out the next match library since it is causing too many dups -KK
        !do AF-match-end-last-first-1-dob
        do AG-match-last-5-first-3-city
        do AGA-match-last-first-1-city
        do AH-match-last-eq-first
    end-if
    !
end-procedure
```

6. To clear a breakpoint, do one of the following.
   - To clear breakpoints in all procedures, click  in the Procedures toolbar.
   - To clear breakpoints within a specific procedure, select the procedure and click  in the toolbar of the Procedure Editor.
   - Click the breakpoint to remove it.
7. Click **Run**.
8. The code runs and pauses at the breakpoint. The following buttons are enabled in the Procedure Editor.
   -  Continues running the code until it reaches the next breakpoint, the STOP command (which pauses to allow the user to create new records, set matched records, or suspend records), or the end of the code.
   -  Pauses at the next line of code after this line has been run.
   -  Stops processing the record.

Running Jobs in Batch Mode

To run a job in batch mode, in the Job Dashboard, select the job you want to run and either right-click it and select **Run** from the popup menu or click the **Run** button.

To stop a job that is running, either right-click the job and select **Stop** or click the **Stop** button.

After Perceptive DataTransfer processes the job, you can open the job to view job results, including information about any suspended or unprocessed records.

Running Jobs in Interactive Mode

To run a job in interactive mode, do the following.

1. Select a job in the table and click **Open Job**.

   A window appears and displays information about the job.
2. Do one of the following.
   - To process a single record in the job, select the record in the topmost pane and click the **Run** button.
   - To process all records in the job, click the **Run All** button.
   - To stop running the job, click **Stop** in the bottom toolbar.

   Depending on your configuration, you may receive the Prompt dialog box for a record, which displays message text and allows you to update values of information for the record.

For example, you may receive a message that the address information is not correct, and you can update address information, such as street number, city, and state.

To modify a value, click the row of in the Value column and type the appropriate text. Then, do one of the following.

- Click **OK** to apply your changes. The information is updated, and jobs processing resumes.
- Click **Reset** to reset the values in the Prompt dialog box to the original values.
- Click **Cancel** to stop processing on the record. The Error Processing dialog box appears and provides information about why the record could not be processed.

When Perceptive DataTransfer processes records in interactive mode, one of the following occurs.

- If a record cannot be processed, a dialog box appears and displays information about why the record could not be processed. The dialog box contains the following information:
    - Procedure Name: Name of the programming procedure that contains the problem.
    - Line #: Number of the line in the procedure in which the problem occurred.
    - Error Information: Description of the problem in the procedure.
- If a new record could not be uploaded, the record is suspended.
- If Perceptive DataTransfer cannot find a matching record in the database, a dialog box appears and prompts you to create a new record. Click **Yes** to create the record and add it to your database; click **No** if you do not want to create a new record.

- If there are potential matches in your database, Perceptive DataTransfer pauses and prompts you to review results, which are displayed in the Results pane. Perceptive DataTransfer organizes the results based on a ranking of how likely they are to be matches to the input data.

  Click  to continue to process records to search for more possible results.

  - If Perceptive DataTransfer does not find a match, you are prompted to create a new record. Click **Yes** to create the record; the record is updated in the topmost pane, with its status changing to New and its label color changing to blue.
  - If you find a matching result and want to create a matched record, select the result in the Results panel and click the **Matched** button. The record's status is updated as *Match*, its color changes to green, and it is updated in the topmost pane.

  You can use the verification form, if configured, to compare information from the current input record and potential matches in your database. See Running Jobs Using QAS on page 67.

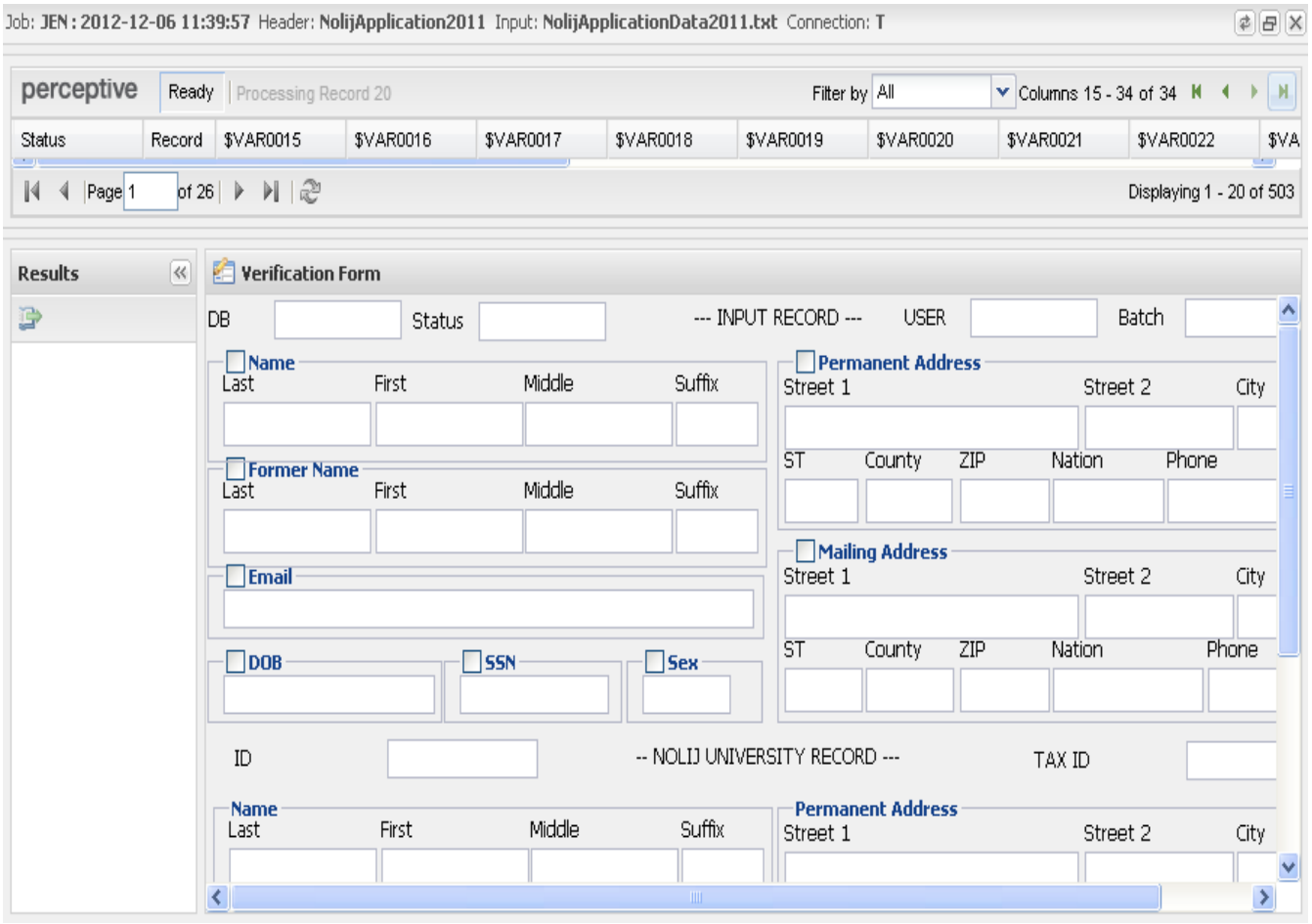
Viewing the Verification Form

With the verification form, you can compare the current input record side-by-side with the possible existing record.

Note The form is displayed only when a job is running in interactive mode.

When you run a record, the verification form displays data associated with the input record and the possible record in your database.

Figure 18: Sample Verification Form



Users can check or uncheck the toggle checkboxes in form field sets to specify which field sets of information are included when upload logic is processed.

Use toggles if you may need to provide the value of each field set to the associated upload logic; when the upload logic is run, this value is included when the data file is uploaded. The form can return the value of a toggle given a specified program variable name.

When you configure the associated Perceptive DataTransfer logic, the logic must verify the values of the toggles and upload changed information appropriately. See Using Form Toggles on page 154 for more information.

After you review the data in the verification form and compare it with the possible matched record in the database, you can create a new record, create a matched record, or suspend the record.

Monitoring Jobs

Select a job in the Job Dashboard and either right-click it and select **Monitor** or click **Monitor**.

The Job Progress dialog box appears in the foreground of your browser and remains open and in the foreground until you click **Close**.

A progress bar appears at the top of the dialog box, indicating the percentage complete of the job. The dialog box displays the following information.

- Total: Total number of records in the job.
- Unprocessed: Number of records that were not processed.
- Suspended: Number of suspended records.
- Matched: Number of matched records.
- New: Number of new records.
- Locked: Number of locked records.

When the job is running, the Stop button appears in the Job Progress dialog box; click it to stop running the job. When the job has completed, only the Close button is displayed.

Running Jobs Using QAS

You can run jobs that use headers on which QAS is configured. By default, QAS is enabled on headers; you can disable this option.

When a job is created using a header on which QAS is enabled, Perceptive DataTransfer checks the associated connection group for a QAS connection. If there is no connection, it is assumed that you are not using QAS in the procedures associated with the job. If a QAS connection is found, the QAS connection is tested; if the test is unsuccessful, the job status is set to Connection_Error, and you must correct the connection before you can run the job. This verification is performed each time you attempt to run the job.

The following steps provide an overview of the tasks you must perform to run jobs using QAS.

1. Add a QAS connection. See Adding Connection Groups on page 68.
2. Enable QAS on the header. By default, headers are configured to use QAS. You can disable this option. For more information about configuring headers, see Configuring and Modifying Fixed-Width Headers and Header Variables on page 93, Configuring and Modifying Delimited Headers and Header Variables on page 98, Configuring and Modifying Database Headers on page 101, and Configuring and Modifying XML Headers and Header Variables on page 104.
3. Provide the appropriate QAS code for the procedures associated with the job. For more information about procedures, see Chapter 9,“Configuring Procedures.” For information about the QASCheckAddress function, see Appendix 14,“Understanding the QASAddressCheck Function.”.
4. Add a job that uses the configured header and QAS connection group. See Adding Jobs on page 45.

Deleting Jobs

See the following topics for more information.

- Deleting Jobs on page 68.
- Deleting Recurring Jobs on page 69.

Deleting Jobs

You can delete a job that has never been run (the job has a status of pending, and all its records are unprocessed). You cannot delete jobs that have fully completed.

To delete a job, do the following.

1. In the Job Dashboard, select the job you want to delete and either right-click it and select **Delete** or click **Delete**.

   A dialog box appears and prompts you to confirm that you want to delete the job.

2. To delete the job, click **Yes**.

   The job is deleted and is removed from the Job Dashboard.

Deleting Recurring Jobs

To delete a recurring job, do the following.

1. Select **Jobs > Recurring Jobs**.

   The Recurring Job Administration dialog box appears.

2. Select the recurring job you want to delete and either right-click it and select **Delete** or click  .

   A dialog box appears and prompts you to confirm that you want to delete the job.

3. To delete the job, click **Yes**.

   The job is deleted and is removed from the Recurring Job Administration dialog box.

Canceling Jobs

You can cancel all jobs except those that has never been run (the job has a status of pending, and all its records are unprocessed).

You can cancel jobs that have at least one record that has been processed. However, you cannot cancel jobs that have fully completed.

When you cancel jobs, they are removed from the Job Dashboard when you select **Active** from the Status drop-down box.

To cancel a job, do the following.

1. In the Job Dashboard, select the job you want to cancel and either right-click it and select **Cancel** or click **Cancel**.

   A dialog box appears and prompts you to confirm that you want to cancel the job.

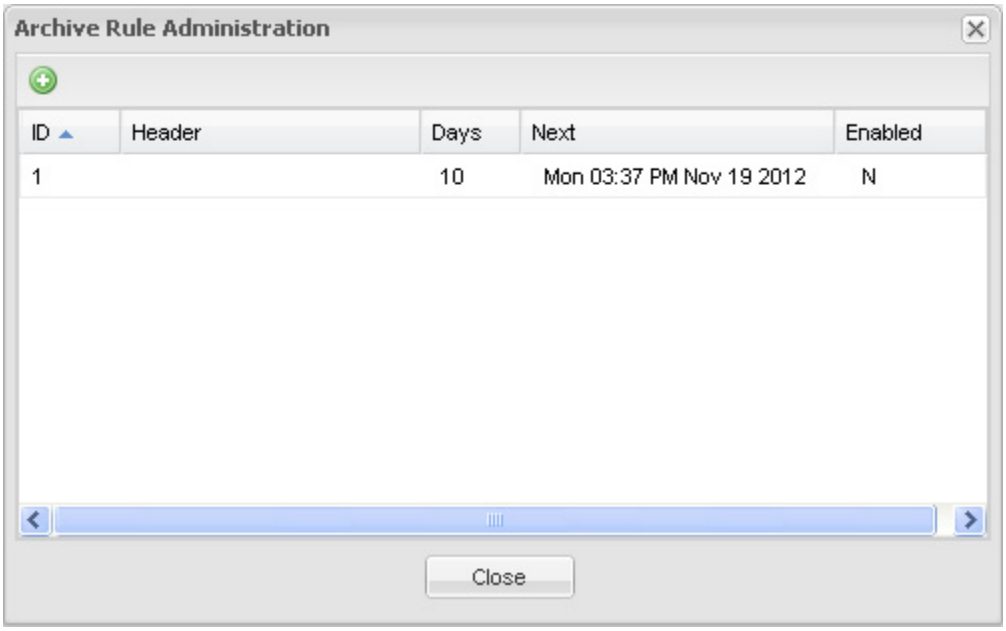
2. To cancel the job, click **Yes**.

   The job is canceled, and its status is set to *Canceled* in the Job Dashboard.

Archiving Jobs

You can configure rules to archive jobs in the Archive Administration dialog box.

Figure 19: Archive Administration Dialog Box



See the following topics for more information.

- Adding and Modifying Archive Rules on page 71.
- Deleting Archive Rules on page 71.

Adding and Modifying Archive Rules

1. Select Administration > Archive.

   The Archive Rule Administration dialog box appears.

2. Do one of the following.

   - To add a new archive rule, click  .

     The Add Archive Rule dialog box appears.

   - To modify an archive rule, select the rule and either right-click it and select **Edit** or click  .

     The Edit Archive Rule dialog box appears.

3. In the Status field, click the **Enable** radio button to enable the archive rule; click **Disable** to disable it.
4. From the Header drop-down box, select the Header to which to apply the archive rule.

   Note If you are modifying a rule, this drop-down box is dimmed and unavailable; you cannot modify this field.

5. In the Days field, type the number of days after which the job should be archived after it has completed.
6. In the Data to Maintain dialog box, specify the data that you want to archive.
   - Summary Data checkbox: Maintains summary data. This option is always enabled; it is dimmed and unavailable to be checked.
   - Record Level Details checkbox: Check to maintain details about records.
   - Logs checkbox: Check to maintain log files.
7. From the Start Time drop-down box, select the time on which you want to start the archive rule.
8. In the Recurrence Pattern pane, click the appropriate radio button to specify whether the rule recurs daily, weekly, or monthly, and then specify the recurrence frequency.
9. Click **OK**.

   If you created a new rule, it is added and appears in the Rule Administration dialog box. If you modified a rule, its updated information is saved.

Deleting Archive Rules

To delete a rule, do the following.

1. Select Administration > Archive.

   The Archive Rule Administration dialog box appears.

2. Select the rule you want to delete and either right-click it and select Delete or click  .

   The rule is deleted and is removed from the Archive Rule Administration dialog box.

Appendix A: Programming Concepts

See the following topics for more information.

Understanding Procedure Syntax

The body of a procedure contains the assignments, SQL statements, and flow control that comprise the procedure. After you add or modify a SQL block, you can add or modify your source code.

The syntax for the procedure body is:

```
begin-procedure procedure-name [(arg1,arg2, … argN)]
   …
end-procedure
```

For example, the following procedure returns a value from a table matching on each of two input variables.

```
begin-procedure check-table-name ($t_term, $uid)

   let #found_match = 0
   let #recr_seqno = 0

   begin-select
      table-name_seqno as  ~#recr_seqno

         let #found_match = 1
         exit-select

      FROM table-name
      WHERE table-name_term = ~$t_term
        AND table-name_uid = ~$uid
   end-select

end-procedure
```

In this example, *procedure-name* is the name of the procedure to be created; *arg1*, *arg2*, and so on, are the names of the procedure parameters (both input and output); and the procedure body contains the code for the procedure.

Every SQL block must begin and end with the *begin-procedure* and *end-procedure* keywords. The begin-procedure statement defines the procedure start point and the name by which the procedure is referenced and run.

Understanding Database Population Selection Syntax

Database Population Selection logic contains the query for dynamically extracting input data to a header. You use this logic in procedures and associate them with headers so that you can capture header input variables from the input file.

For example:

```
begin-procedure test-query
!
   begin-select
           SSN       "$SSN",
           FIRST              "$FIRST",
           LAST               "$LAST",
           MI                 "$MI",
           DOB          "+DOB",
           SEX                "$SEX",
           FROM table_name
   end-select
!
end-procedure
```

You must write database source queries in the database syntax for the target database.

Syntax for Oracle

Note the following.

- The column alias must be enclosed by double quotation marks (“ ”)
- Use + instead of & for the column alias.

For example:

```
begin-select
         SSN "#SSN",
         FIRST          "$FIRST",
         LAST           "$LAST",
         MI              "$MI",
         DOB            "+DOB"
      FROM demo
   end-select
```

Syntax for IBM Informix

The column alias name must include a two-character translator to the proper special character designator.

- *NN_* for Number #.
- *SS_* for Character $.
- *DD_* for Date &.

For example:

```
begin-select
             trim(ssn)NN_SSN
             trim(first)SS_FIRST,
             trim(last) SS_LAST,
             trim(mi)SS_MI,
             dob DD_DOB
      from demo
```

Syntax for Microsoft SQL Server

Note the following:

- The column alias must use AS and []
- Use special character designators ($ for Character, # for Number, and & for Date).

For example:

```
begin-select
    SSN    AS [#SSN],
    LAST  AS [$LAST],
    FIRST AS [$FIRST],
    MI            AS [$MI],
    DOB   AS [&DOB]
    FROM DEMO
end-select
```

Understanding Operators

The following table describes symbol operators used in code.

Table 9: Symbol Operators and Descriptions

Operator Symbol	Description
'	Character string delimiter.
+	Addition operator.
/	Division operator
-	Subtraction operator.
*	Multiplication operator.
!	Indicates a comment.
,	Separates items.
=	Equal to operator.
!=	Not equal to operator.
<=	Less than or equal to operator.
>=	Greater than or equal to operator.
<	Less than operator.
>	Greater than operator.
(	Expression or list delimiter.
)	Expression or list delimiter.
||	Concatenation operator.
\q	Escape sequence for a single quote ('). When you insert strings that themselves contains strings or single quotes into the database, you must escape the single quotes. For example, to set a variable equal to the phrase "It's OK", you would use `let $some_var = 'It\qs OK.'`

In queries, you can use the following operators.

- []

  Commonly, this operator is used when you are dynamically building a WHERE clause of a query. The conditions of the query depend on the code that executes and on the input data, so the WHERE clause is built inside another variable.

  For example, consider a variable *$where_clause* that contains `WHERE first_name = 'John' and last_name = 'Smith'`. You can add that variable to a select statement as follows:

```
begin-select
   person_id     ~$pers_id
   FROM person
   $where_clause
end-select
```

  However, if you use the preceding query, all string variables in a query are replaced with their value surrounded by single quotes:

```
begin-select
   person_id     ~$pers_id
   FROM person
   'WHERE first_name = 'John' and last_name = 'Smith''
end-select
```

  The query does not work in this manner; instead, use the [ ] operators, which tell the NQL interpreter to do a straight quote replacement and to not include the surrounding quotes. The syntax is:

```
begin-select
   person_id     ~$pers_id
  FROM person
  [$where_clause]
end-select
```

  For example:

```
begin-select
  person_id     ~$pers_id
  FROM person
  WHERE first_name = 'John' and last_name = 'Smith'
end-select
```

- ~ (tilde)

  Use the tilde operator within the SELECT cluase of a query. The value of a specified column is placed into the specified variable. For example:

```
begin-select
   person_id    ~$pers_id
   FROM person
end-select
```

  The value of the *person_id* column will be placed into the *$pers_id* variable.

  If the tilde (~) was not specified, for example:

```
begin-select
   person_id     $pers_id
   FROM person
end-select
```

  The value of the variable is inserted into the query itself. When the above query is run, no value would typically be in *$pers_i*d, and the query would look as follows:

```
begin-select
   person_id     ''
   FROM person
end-select
```

  However, this query syntax is incorrect. If the tilde (~) operator occurs in the FROM clause or any clause after (such as WHERE, ORDER BY, and so on) the operator is ignored. Any variable referenced in the FROM clause or after is replaced with the value in the variable at the time of execution. For the two queries:

```
begin-select
   person_id   ~$pers_id
   FROM person
   WHERE person_id = $id
end-select

begin-select
   person_id    ~$pers_id
   FROM person
   WHERE person_id = ~$id
end-select
```

If *$id* = *999*, both queries evaluate to:

```
begin-select
    person_id    ~$pers_id
    FROM person
    where person_id = '999'
end-select
```

Accessing the Database

You can optionally select, insert, update, and delete data from your database by embedding the appropriate SQL statements within the body of a SQL block.

See the following topics for more information.

- Understanding Select Constructs on page 228.
- Understanding Insert, Update, and Delete Constructs on page 229.
- Understanding the execsp Statement on page 230.
- Understanding the begin-plsql Statement on page 230.

Understanding Select Constructs

The syntax for the Select construct is:

```
[ begin-select
   [select SQL logic]
end-select ]
```

For example:

```
begin-select
   last_name as  ~#tmp_last

      let #found_match = 1
      exit-select

   FROM last_names
   WHERE ssn = ~$t_ssn
end-select
```

In this example, the *last_name* column is selected from the *last_names* table, where the *ssn* column matches the temporary variable *$t_ssn*.

The ~ (tilde) character is used in the SELECT clause of a query. The value of a specified column is placed into the specified variable.

Use *exit-select* to immediately exit the SQL block in which it appears. Code is run until it reaches *end-select*.

Understanding Insert, Update, and Delete Constructs

The syntax for the Insert construct is:

```
begin-sql
   [insert SQL logic]
end-sql
```

The syntax for the Update construct is:

```
begin-sql
   [update SQL logic]
end-sql
```

The syntax for the Delete construct is:

```
begin-sql
   [delete SQL logic]
end-sql
```

For example:

```
begin-procedure inst-names
   begin-sql
      INSERT INTO names
      SELECT #var1, $var2, $var3, sysdate,
        FROM dual
       WHERE names_id NOT IN
            (SELECT names_id
               FROM names
              WHERE names_id = ~$t_id)
   end-sql
end-procedure
```

In this example, values are inserted into a database table.

Understanding the execsp Statement

This statement runs a SQL Server stored procedure.

This syntax is:

```
EXECSP spName($param1, #param2, ~$param3...)
```

The tilde (~) is used for output parameters.

Understanding the begin-plsql Statement

This statement runs an Oracle PL/SQL package or procedure.

- The begin-plsql statement allows a procedure to be called and for variables to be passed to it. It also allows the return of output variables.
- The => operator is used to assign values to variables.
- The tilde (~) character is used at the beginning of a program variable to indicate that it is an output variable type in the plsql code.

The syntax is:

```
begin-plsql
   package.procedure(
         in_variable,
         out_variable;
end-plsql
```

For example:

```
begin-plsql
   nolijpackage.proc_add_name(
      first => 'John',
      last => 'Smith',
      id => ?#t_id);
end-plsql
```

Understanding the Assignment Statement

The *let* statement is the Perceptive DataTransfer assignment operator, which is primarily used to assign a value (for example, constant, date, or other variable) to a variable.

The syntax for the let statement is:

```
let $var1 = $var2

let $var3 = tostring(#var4)

let $var5 = &var6
```

Character and string variables can be assigned only character values. Use the *tostring* function for conversion if you are assigning a numeric value to a character variable. See Understanding the tostring Function on page 242.

Numeric variables can be assigned only numeric values. Use the *tonum* function for conversion if you are assigning a character value to a numeric variable. See Understanding the tonum Function on page 242.

You must enclose hard-coded character values in single quotation marks (') .

For example:

```
let #var1 = 45

let $var2 = $var1

let $var3 = 'test string'
```

Understanding Flow Control

Perceptive DataTransfer supports the following flow-control statements:

- if...else: Evaluates a statement or value and branch, depending on the result. If TRUE, program execution branches to the code following the *if* statement. If FALSE, program execution branches to the code following the *else* statement. See Understanding the if...else Statement on page 232.
- loop...until: Allows multiple lines of program code to be executed continuously until a certain condition or value exists. See Understanding the loop...until Statement on page 233.
- evaluate: Evaluates a variable with multiple possible values and branches to a different block of logic for each value. See Understanding the evaluate Statement on page 234.
- for each: Iterates over all the specified nodes within a given subtree in an XML file. See Understanding the for each Statement on page 234.

Understanding the if...else Statement

The if…else statement is used to evaluate a statement or value and then branch, depending on the result. There are two basic forms of the if statement: *if* and *if…else*.

The *if* statement is most frequently used to perform an action when a certain condition is met or to skip the action if the condition is not met. The syntax is:

```
if <condition>
   <statement-list>
end-if
```

If the condition in the *if* statement is TRUE, all logic contained in the statement list is run, and if the condition is FALSE, all logic contained in the statement list is skipped. The *end-if* statement terminates the statement list:

```
if #var1 > 40
   let #var3 = 45
end-if
```

The *if...else* statement uses the keyword *else* followed by a second set of statements, as follows:

```
if <condition>
   <statement-list>
 else
   <statement-list>
end-if
```

If the condition is FALSE, Perceptive DataTransfer executes the statement list following the *else* clause instead of the statement list following the *if* clause:

```
if #var1 > 40
   let $var3 = 'Over 40'
 else
   let $var3 = 'Under 40'
end-if
```

Additional *if* statements can be nested within each other:

```
if #var1 > 40
   let $var3 = 'Over 40'
 else
   if #var1 = 40
      let $var3 = 'Equal 40'
    else
      let $var3 = 'Under 40'
   end-if
end-if
```

Understanding the loop...until Statement

The *loop…until* statement allows multiple lines of program code to be run continuously until a certain condition or value exists. The *until* statement evaluates with each loop to determine if the loop should continue.

For example:

```
#c = 0
loop
   <statement-list>
   let #c = #c + 1
until #c = 5
```

This loop executes each line in the statement list and increments the *#c* variable by one until it reaches five, after which the loop is completed.

Note The *until* statement must be the last statement in the loop construct.

Understanding the evaluate Statement

The *evaluate* statement is used to interpret a variable with multiple possible values and to branch to a different block of logic for each value or range of values. The evaluate statement is suitable for branching to three or more possible locations.

For example:

```
evaluate #age
   when > 40
      let $display_text = 'Under 40'
      break
   when = 40
      let $display_text = 'Equal 40'
      break
   when < 40
      let $display_text = 'Under 40'
      break
end-evaluate
```

You must use the *break* statement to exit the *evaluate* statement after you have executed the appropriate code to prevent program execution from continuing with the next *when* statement.

You can use consecutive *when* statements if you are executing the same logic block.

Use *when-other* as the exception handler.

Understanding the for each Statement

The *for each* statement iterates over all the specified nodes within a given subtree in an XML file. Use this statement when you are processing XML input files and XML headers.

Use the *node* function within each *for each* statement to return the value for the specified node.

For example:

```
for each 'Person'
    let $f_ssn = node('SSN')
    let $f_dob = cnvdate(node('Birth'), 'yyyy-MM-dd')
    let $f_sex = substr(node('Gender'), 1, 1)

    for each 'Name'
       let $f_first = node('FirstName')
       let $f_middle = node('MiddleName')
       let $f_last = node('LastName')
    next

    for each 'Contacts'
       for each 'Address'
          let $f_street1_1 = node('AddressLine')
          let $f_city_1 = node('City')
          let $f_st_1 = node('StateProvinceCode')
          let $f_zip_1 = node('PostalCode')
       next
       for each 'Phone'
          let $f_full_phone_1 = node('Home')
       next
        for each 'Phone'
           let $f_full_phone_2 = node('Home')
        next
     next
  next
```

In this example, each record corresponds to the XML subtree contained within the <Student> XML tag. The example code shows how to process each Student subtree.

Each *for each* loop specifies the tag, exactly as it appears in the XML, with which to iterate. In this example, for each loops iterate over every <Person> node within the <Student> subtree.

Use the keyword *next* to designate the end of the loop.

By nesting for each loops, with each inner loop iterating over the child nodes of the parent, you can iterate through the entire XML tree.

Use the *node* function within each loop to return the value of the specified node. For example, we iterate over each <Person> node, then over each <Contacts> node, and then over each <Address> node. Within the <Address> node are the leaf nodes <AddressLine>, <City>, <StateProvinceCode>, and <PostalCode>. To store the address line in a program variable, use the syntax `let $f_street1_1 = node('AddressLine')`.

Note the following.

- If you use XML syntax (*for each* or *node*) with input record data that is not XML, an error message is displayed when the corresponding job is run.
- If you iterate over a node that does not exist or that does not exist as a child to the current node, the loop is skipped because no matching child nodes could be found.
- If you use the node function to reference a node that does not exist, an empty string is returned.
- If you use the node function to refernece a node that is not a leaf node, the function returns a concatenated string of all the children nodes for the specified node.

  For example, if you use node('Address') instead of the leaf nodes of <Address>, you may receive, for example, 138 Conant Street Beverly MA 02915 as output. For nodes such as <Address>, such output may be useful; however, for a node like ('Contacts'), you would receive a string of all the addresses and phone numbers concatenated together, which would likely not be very useful.
- Because this XML syntax allows you to reference every node in the XML by the exact XML tag name, there are no input variables for XML header jobs. Other input files have an input variable for each data field in the file, but for XML input files, you must use the *for each* and *node* syntax to drill down to the desired part of the XML tree.
- Perceptive DataTransfer keeps the current context of the XML tree. If the code is currently within a particular *for each* loop, any code within that loop will only process within the current subtree of the XML. All for each and node calls are contextual, so the same tag name can exist in different levels of the XML.

Understanding Global Variables

Global variables are predefined variables that can be referenced at any point during program execution.

Perceptive DataTransfer supports the following global variables:

- _GL.BATCH_

  Run mode variable; specifies that a job is running in batch mode.
- _GL.DBNAME_

  Database variable; contains the database name or database instance name of the current database.
- _GL.FILENAME_

  Filename variable; contains the name of the current input data file.

- _GL.FILEPATH_

  File path variable; returns the destination path configured for input files that are downloaded from a file source (see Chapter 7,“Configuring File Sources.” for more information about configuring file sources).

- _GL.FILETYPE_

  File type variable; contains the extension of the current input data file.

- _GL.HEADER_

  Header variable; contains the title of the current header file (for example, *Recruit Card* or *Web Application*).

- _GL.INTERACTIVE_

  Run mode variable; specifies that a job is running in interactive mode.

- _GL.MATCH_

  Status constant; represents a matched record.

- _GL.NEW_

  Status constant; represents a new record.

- _GL.QASENABLED_

  Global variable that can be referenced within the code so you can determine if the current header is QAS-enabled. Values can be *Y* or *N*.

- _GL.ROWCOUNT_

  Row count variable; contains the number of rows returned from an embedded SQL select statement.

- _GL.RUNMODE_

  Run mode variable. Perceptive DataTransfer sets GL_RUNMODE to BATCH when a job is run from the Job Dashboard. You can configure the code to branch to specify the appropriate behavior when a job is run in batch or interactive mode. For example:

  ```
  if <_GL.RUNMODE_ = GL.INTERACTIVE_>
     <procedures for interactive mode>
   else
     <procedures for batch mode>
  end-if
  ```

- _GL.SUSPEND_

  Status constant; represents a suspended record.

- _GL.STATUS_

  Status variable; contains the status (*new*, *match*, or *suspend*) of the row being processed.

- _GL.USERID_

  User ID variable; contains the username of the logged in user.

Understanding String Functions

String functions are built-in routines for manipulating string variables and values. See the following topics for more information.

- Understanding the ascii function on page 238.
- Understanding the inschr function on page 239.
- Understanding the length Function on page 239.
- Understanding the lower function on page 240.
- Understanding the ltrim Function on page 240.
- Understanding the mixed Function on page 240.
- Understanding the mixedIt Function on page 241.
- Understanding the rtrim Function on page 241.
- Understanding the substr Function on page 241.
- Understanding the tonum Function on page 242.
- Understanding the tostring Function on page 242.
- Understanding the trunc Function on page 242.
- Understanding the unstring Function on page 242.
- Understanding the upper Function on page 243.

Understanding the ascii function

This function returns the ASCII value of the leftmost character of a string.

The syntax is:

```
ascii(string)
```

```
For example:
```

```
let #num = ascii('X')
```

Understanding the inschr function

This function converts a character to its ASCII equivalent.

The syntax is:

```
inschr(variable, replace character)
```

For example:

```
let $city = inschr($city, '&')
```

This statement replaces all occurrences of *&* in the value of *$city* with the ASCII equivalent of *&.*

Understanding the instr Function

The instr function searches *variable1* for the occurrence of *variable2* beginning at *start position*.

The syntax is:

```
instr (variable1, variable2, start position)
```

For example:

```
#pos1 = instr($street2,'Apt',1)

if instr('W|AP|AI|AF|N',$f_ethn,1) > 0
```

Understanding the length Function

This function returns the length of a string.

The syntax is:

```
length(string)
```

For example:

```
let #num = length('Hello')
```

Understanding the lower function

This function converts a string to lower case letters.

The syntax is:

```
lower(string)
```

For example:

```
let $tvar = lower($t_name)
```

Understanding the ltrim Function

This function removes all contiguous matching characters of type char_type from the left side of a string variable. If char_type is not specified, the ltrim function uses the space character by default. Perceptive DataTransfer begins scanning the string from the left-most character and removes all matching characters until it encounters a character of a type other than char_type.

The syntax is:

```
ltrim(string, char_type)
```

For example'

```
let $unpadded = ltrim('25 Main Street', ' ')
```

```
let $unpadded = ltrim('25 Main Street')
```

Understanding the mixed Function

This function converts a string to mixed case with the first characters typically being set to upper case.

The syntax is:

```
mixed(string)
```

For example

```
let $street = mixed('135 washington street')
```

```
let $street = mixed('135 WASHINGTON STREET')
```

Understanding the mixedlt Function

This function converts a string to mixed case, capitalizing the first character only.

The syntax is:

```
mixedlt(string)
```

For example:

```
let $street = mixedlt('135 vanarsdel street')

let $street = mixedlt('135 O'HENRY STREET')
```

Understanding the rtrim Function

This function removes all contiguous matching characters of type *char_type* from the right side of a string variable. If *char_type* is not specified, the rtrim function uses the space character by default. Perceptive DataTransfer begins scanning the string from the right-most character and removes all matching characters until it encounters a character of a type other than char_type.

The syntax is:

```
rtrim(string, char_type)
```

For example:

```
let $unpadded = rtrim('25 Main Street', ' ')
let $unpadded = rtrim('25 Main Street')
```

Understanding the substr Function

This function returns a portion of a string beginning at *start_pos* and extending *char_len* characters. If *start_pos* plus *char_len* is greater than the length of string, the extra characters are ignored.

The syntax is:

```
substr(string, start_pos, char_len)
```

For example:

```
let $short_var = substr('last first middle',6,12)
```

Understanding the tonum Function

This function converts a string to a number.

The syntax is:

```
tonum(string)
```

For example:

```
let #num = tonum('123.45')
```

Understanding the tostring Function

This function converts a number to a string.

The syntax is:

```
tostring (number)
```

For example:

```
let $term = tostring(#year)
```

Understanding the trunc Function

This function returns a truncated version of a long date.

The syntax is:

```
trunc(date value)
```

For example:

```
let $new_date = trunc($sysdate)
```

Understanding the unstring Function

This function splits a string into two smaller strings depending on the occurrence of a separator character.

This syntax is:

```
unstring($string1, $delimiiter, $out1, $out2)
```

For example:

```
unstring 'John Smith' by ' ' into $fname and $lname
```

Understanding the upper Function

This function converts a string to upper case letters.

The syntax is:

```
upper(string)
```

For example:

```
let $tvar = upper($t_name)
```

Understanding General Functions

General functions are a mixed collection of general purpose routines. See the following topics for more information.

Understanding the cnvdate Function

This function converts multiple long date values into a formatted date string. This function takes two parameters: the string to convert into a date and the format of the new date string. For the first parameter, the string must be in one of the following formats to be recognized as a valid date.

- dd-MMM-yy
- MM-dd-yy
- yyyy-MM-dd
- yyyy/MM/dd
- MMM dd yyyy
- dd-MMM-yyyy
- MM-dd-yyyy
- MM/dd/yyyy

The syntax is:

```
cnvdate(date value, 'format string')
```

For example:

```
let $tmp_date = cnvdate($t_date, 'DD-MMM-YYYY')
```

Understanding the do Function

This function executes a Perceptive DataTransfer procedure and optionally passes in one or more parameters.

The syntax is:

```
do procedure-name [arg1, arg2,… argN]
```

For example:

```
do check-dob
```

```
do lookup-name (#ssn, $last, $first)
```

Understanding the HobsonsUpdate Function

You can update Hobsons Connect CRM data using Hobsons Connect CRM web services. To do so, you create a connection group that contains a Hobsons Connect CRM connection, and then you can create a Hobsons Connect CRM header. You create a job that uses the Hobsons Connect CRM header and

connection and can use the appropriate NQL logic that updates Hobsons Connect CRM data when the job is run. This syntax, which is optional, is:

```
HobsonsUpdate(<web service name>, <contact id>, <attribute name 1>, <attribute value 1>, <attribute name 2>, <attribute value 2>, ... , <attribute name n>, <attribute value n>)
```

The required parameters are:

- *<web service name>*: the name of the Hobsons web service (for example, UpdateContact).
- *<contact id>*: the ID value of the contact record to update.

The additional parameters are any number of attribute name or value pairs. Both components of the pair are strings; the first string identifies the name of the Hobsons Connect CRM attribute to update, and the second string is the new value for the specified attribute.

The HobsonsUpdate function returns a string. If the update is successful, an empty string is returned. If it is not successful, a corresponding error message is returned.

An example of the syntax is:

```
let $err = HobsonsUpdate('UpdateContact', $id, 'first_name', $fname, 'last_name', $lname, 'dob', $dob')
```

This syntax runs the *UpdateContact* web service on the contact with id *$id* and updates the *first_name* attribute to the value in *$fname*, the *last_name* attribute to the value in *$lname*, and so on.

Understanding the ImageNowAddDoc Function

To upload a file to ImageNow, use the following syntax:

```
ImageNowAddDoc($filepath, $document_name, $index_map)
```

- The first parameter is an absolute path to the document you want to upload.
- The second parameter is the name to provide to the document when it uploads.
    - If this document name already exists in ImageNow, the function appends a number to the end until it finds a document name that does not exist. For example, if you try to name the document *document*, but *document* already exists, the function uses the name *document(1)*. If *document(1)* also exists, the function uses the name *document(2)*, and so on.
    - You can supply an empty document name. The function uses other criteria to determine if there is a matching document with no name. If it finds a match, the function appends the file to the existing document as a new page to that document. If no matching document is found, the function creates a new document with no name specified.
- The third parameter is the name of an ImageNow index map configured elsewhere in Perceptive DataTransfer. This object links all the necessary ImageNow document properties to program variables that can be used in the code. Perceptive DataTransfer then performs a lookup on the index map name to obtain all the mapping information necessary to upload the document. All ImageNow properties are replaced with the value in the corresponding program variable.

Any time the ImageNowAddDoc syntax is reached in the code, Perceptive DataTransfer obtains the Integration Server connection in the current connection group and uploads the document using ImageNow web service APIs. For more information about Integration Server connections, see Adding Integration Server Connections on page 80.

It also updates the document properties, including the custom properties, specified in the selected ImageNow index map. For more information about configuring ImageNow index maps, see Chapter 11,“Configuring ImageNow Index Maps.”

Understanding the InsertBinary Function

Use the InsertBinary function to insert a binary file directly into the database. The syntax is:

```
InsertBinary($filepath, $query)
```

Parameters are:

- *Filepath*: Absolute path to the file to insert into the database.
- *Query*: SQL query to execute that inserts or updates the record with the binary file. The query must contain a question mark (?) for which the binary file is substituted

For example:

```
InsertBinary('c:/temp/file.pdf', 'INSERT INTO file_table (id, binary_file) VALUES (1,
?)')
```

The absolute path to the file is *c:/temp/file.pdf*; the query also contains a ? symbol. Perceptive DataTransferwill execute the query and replace the ? with the binary contents of the file, which inserts the file directly into the database. You can also use a SQL UPDATE statement, instead of an INSERT statement, to add the file to an existing database record.

Understanding the isnull Function

This function returns TRUE if the variable contains no valid data (NULL); otherwise, it returns FALSE. It also returns TRUE if the string variable being queried is either null or is the empty string.

The syntax is:

```
isnull(variable)
```

For example:

```
if isnull($city)

let $valid = isnull($dob)
```

Understanding the logit Function

This function defines a custom logging type that will produce the logit type entries in the Log View dialog box.

When Perceptive DataTransfer is set up, custom logging or text may be written to the log file; this text does not cause a record to suspend but writes a comment to the log file.

The syntax is:

```
logit 'Custom log message'
```

For example:

```
logit 'No match on high school code'
```

```
logit 'Generated ID: '||$id
```

Understanding the lookup Function

This function substitutes an output value for an input value and stores it in a program variable. Lookup values are defined in the lookup tool (see Configuring Lookup Values on page 13 for more information).

```
The syntax is:
```

```
Let out_variable = lookup(Field, in_variable)
```

The *$out_variable* gets set to the output value from the lookup tool. The feield name is passed to the lookup() function, either through a single-quoted $Field name or custom text that you define, along with the *in_variable*.

For example, for the following fields defined in the lookup tool.

- Field: ActivityCustomMapping
- In: TestInput
- Out: TestOutput

Use the following function.

```
let $tmp_var = lookup('ActivityCustomMapping','TestInput')
```

$tmp_var is set to '*TestOutput*'.

For example, for the following fields defined in the lookup tool.

- Field: $ACTIVITY
- In: TestInput
- Out: TestOutput

Use:

```
let $tmp_var = lookup('$ACTIVITY','TestInput')
```

$tmp_var is set to '*TestOutput*'.

Note You do not need to use a variable name; you can use other parameters, such as activity codes or a custom name.

Note You define input and output variables only one time through the lookup tool.

Understanding the NWAddDoc Function

This function passes documents from Nolij Web into Perceptive DataTransfer. After Perceptive DataTransfer creates a new or match record for the document, the document is sent to Nolij Web using this Nolij Web API command.

It uses the following parameters.

- #docCode : wfdt code, determined by the filename extension by Nolij Web. This value can be *null*.
- $srcPath: Directory on the server in which this file is located.
- $fileName: Filename of the file.
- $folderID: Folder ID. String or numeric variables can be values.
- $subfolderID: not yet supported by Nolij Web API. String or numeric variable is accepted.
- #usercode: Nolij Web usercode for the authentication username stored for the Nolij Web connection. The value can be *null*. If *null* is passed, the API uses the default usercode for the authenticated user name.

The syntax is:

```
NWAddDoc(#docCode, $srcPath, $fileName, $folderID, $subfolderID, #usercode)
```

Understanding the prompt function

This function displays a string of message text to the user and allows users to update values for displayed variables. You define the prompt text to display, and you define the program variables that the user can update. You also define the label that is displayed for the variable; this label is displayed to the user instead of the actual variable name.

When a job is run in interactive mode, and this line of code is reached, job processing is paused, and the Prompt dialog box appears. The dialog box displays the prompt message and the labels for the variables you defined; it also displays the corresponding values for the variables. The user can modify the value of the variables.

The syntax is:

```
prompt string, variable1, label1, variable2, label2...variableN, labelN
```

For example:

```
prompt 'Address is not valid. Please adjust accordingly.", $fstreet1_1, 'Street 1',
$fstreet1_2, 'Street 2', $f_city_1, 'City', $f_st_1, 'State', $f_phone_1, 'Phone'
```

Understanding the QASAddressCheck Function

When you configure a job to use a connection group with a QAS connection and a QAS header, and you can also configure the logic, used by the job configured to use the QAS header and connection, to use the appropriate NQL syntax:

```
let $result = QASAddressCheck('country_code', $qas_f1, $qas_f2, $qas_f3, $qas_f4,
$qas_f5, 'address_1', 'address_2', 'state', 'zip' 'string6', ...'stringN')
```

Use this syntax to verify addresses through a web service call. The function takes the following parameters,.

- Country code: This parameter can be passed in as either a string literal or a program variable. Supported codes are *USA* and *CAN*.
- Parameters two through six: These parameters are program variables that are populated with the refined fields of the address. These parameters are output variables; the QASAddressCheck function accepts any number of input variables; however, the function always returns five outputs. For example:
  - The corrected street address is obtained for $qas_f1.
  - The corrected second street address (for example, an apartment number) is obtained for $qas_f2.
  - The corrected city is obtained for $qas_f3.
  - The corrected state code is obtained for $qas_f4.
  - The corrected nine-digit zip code is obtained for $qas_f5.
- Parameters 7 and on: These parameters are any number of address fields represented by any string expression (for example, string literals, string variables, concatenated strings, and so on.) The QASAddressCheck function will accept as few or as many address fields as needed. The QAS web service will accept any number of inputs and find and refine the matching address.

The QASAddressCheck function returns a string match code generated by QAS. This match code must be parsed so that you can determine the success or failure of the search and the accuracy of the returned address.

For example:

```
let $result = QASAddressCheck('USA', $qas_f1, $qas_f2, $qas_f3, $qas_f4, $qas_f5, '1600 Pennsylvania Ave', 'Washington', 'DC', '20500')
```

This example returns the following results.

- $qas_f1: 1600 Pennsylvania Ave NW
- $qas_f2
- $qas_f3: Washington
- $qas_f4: DC
- $qas_f5: 20500-0003
- $result: R533000200000f00080000

The QASAddressCheck function is frequently used with the PROMPT function. For example, the code may perform an address check, and if the results are insufficient (or nonexistent), the code might then use a PROMPT command to request that the user correct the address. A loop could be used to require the user to keep adjusting the address until a suitable match can be found. For more information about the PROMPT command, see Understanding the prompt function on page 249

Understanding the skip Function

This function skips all other processing and updates the status on the record. The first parameter is the status to use: NEW, MATCH, SUSPEND, or LOCK.

The syntax within matching routines is:

```
skip [NEW/MATCH/SUSPEND], 'Reason for new/match/suspend'
```

For example:

```
skip SUSPEND, 'Invalid birth date'
```

The syntax within procedure code is:

```
skip [SUSPEND/LOCK], 'Reason for suspend/lock'
```

The skip LOCK function locks the record, highlights it in a fuchsia color, and changes the status of the record to *Locked*.

Understanding the stop Function

This function causes program execution to pause and the Perceptive DataTransfer window to switch into review mode for any records previously collected using the store command.

The syntax is:

```
stop
```

For example:

```
<statement-list>
store 1, '#uid'
stop
```

Understanding the store Function

This function causes the matching set of unique IDs for the current record, in addition to a number indicating the relative matching step, to be stored internally for subsequent display and review by an operator.

The syntax is:

```
store step#, uid_var
```

For example:

```
<statement-list>
store 1, '#uid'
```

Understanding the toggle Function

This function returns the state of a form field set toggle associated with the variable being passed in.

All variables linked to form objects are associated with a field set, which may have a visible form toggle. A form toggle is an interactive checkbox indicating whether a group of fields will be included in the data upload process.

Passing any variable linked to a form group into the toggle function returns the state of the toggle button for that field set as either TRUE (data in this field set will be included in the upload) or FALSE (data in this field set will not be included in the upload).

Toggle checkboxes can be manually overridden to force certain data to be loaded or cause certain data to be skipped.

The syntax is:

```
toggle(variable)
```

For example:

```
if toggle($suffix)
```

Understanding the toggle_off Function

This function causes the form field set toggle associated with a linked form variable to be turned off (set to FALSE).

The syntax is:

```
toggle_off(variable)
```

For example:

```
toggle_off($last)
```

Understanding the toggle_on Function

This function causes the form field set toggle associated with a linked form variable to be turned on (set to TRUE).

The syntax is:

```
toggle_on(variable)
```

For example:

```
toggle_on($last)
```

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