

# Perceptive Intelligent Capture

## Runtime Server Guide

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**perceptive**software  
from Lexmark

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## About Runtime Server

Perceptive Intelligent Capture with Supervised Learning is a product suite by Perceptive Software, Inc., for automatically processing incoming documents. In principle, Perceptive Intelligent Capture works with any electronically available document. This includes scanned images, faxes, emails, and files. Perceptive Intelligent Capture automatically classifies these documents and extracts meaningful information from them.

Perceptive Intelligent Capture uses a trainable, self-learning algorithm that minimizes user definition and intervention tasks. As part of the Perceptive Intelligent Capture suite, Perceptive Intelligent Capture Designer enables you to customize the automatic processing of incoming documents: which document classes are relevant in your enterprise and which information is to be extracted from the classified documents. All custom settings are saved in a Perceptive Intelligent Capture project file.

To process large volumes of documents, Perceptive Intelligent Capture organizes documents into batches. Perceptive Intelligent Capture Runtime Server uses the project files and stored settings for production processing.

Perceptive Intelligent Capture Runtime Server runs in the background as a server process. Multiple instances of Perceptive Intelligent Capture Runtime Server can be started simultaneously in a network or on a single machine. Because all instances cooperate with each other, running multiple instances optimizes load distribution. Batches that cannot be entirely processed automatically by Perceptive Intelligent Capture Runtime Server are forwarded to the quality assurance application Perceptive Intelligent Capture Verifier to be corrected manually.

## Remote Service Administration

System administrators can remotely administer machines that run instances of Perceptive Intelligent Capture Runtime Server. This Remote Service Administration feature, based on Microsoft Management Console (MMC) technology, provides a host environment for administering remote service.

## About Microsoft Management Console

Microsoft Management Console (MMC) is a tool for creating, saving, and opening collections of administrative tools called consoles. The Active Directory Domains and Trusts, Active Directory Sites and Services, and Active Directory Users and Computers administrative tools are all consoles. The console does not provide management, but it is the program that hosts management applications, called snap-ins. MMC provides a common host environment for snap-ins from a variety of software vendors. Using snap-ins, administrators and other users can create custom management tools. Administrators can save the tools they created for other uses or share them with other administrators and users. This model enables administrators to customize tools and create multiple tools of varying levels of complexity. By creating a custom MMC, you can avoid switching between programs and preconfigured MMCs.

The purpose of MMC is to create a set of integrated tools to perform specific tasks. The snap-ins provides the actual management behavior, while the MMC environment provides seamless integration between snap-ins. On its own, MMC is only a “container” (known as the “tools host.”) Snap-ins is extensions to the host that add management functionality. By combining snap-ins, you can create tailored administration consoles. Because a set of snap-ins can be saved into a tool, they can also be forwarded to others delegated to perform a specific task. When reopened, the tool appears in the last saved state.

With MMC, you can perform any of the following actions.

- Host Microsoft and independent software vendor (ISV) tools from one location.
- Customize the console for every administrative skill level.
- Integrate your tools using the extensible model.

## The Role of MMC

MMC is a Windows-based multiple document interface (MDI) application. Snap-ins extend the console while they perform management tasks. MMC programmatic interfaces permit the snap-ins to integrate with the console. However, the way that each snap-in actually does a task originates from within the snap-in. The relationship of the snap-in to the console consists of sharing a common hosting environment, and with cross-application integration. The console itself offers no management behavior. Snap-ins always reside in a console and do not run independently.

MMC is an integral part of all Microsoft Windows operating systems.

## Remote Administration Architecture

In the Perceptive Intelligent Capture Service Manager MMC snap-in, a hierarchical tree structure in the Tree view represents each individual machine and instance of Runtime Server. The Runtime Server pane displays batches for each instance.

A system administrator can perform any of the following actions.

- Control the operation of each instance of Perceptive Intelligent Capture Runtime Server over an entire network.
- Change the settings of each instance, such as workflow, import/export folder, and scripting parameters.
- Monitor the progress and status of the instances.

## About This User Guide

### Intended audience

This manual is for system administrators and others who will be customizing Perceptive Intelligent Capture Runtime Server or administering its server.

Readers should have sound knowledge of the Microsoft Windows operating system they work with.

For purposes of readability, this manual occasionally shortens the term Perceptive Intelligent Capture Runtime Server to Runtime Server. These terms are synonymous.

### Related documentation

In addition to this manual, Perceptive Intelligent Capture is shipped with the following documentation:

- Perceptive Intelligent Capture with Supervised Learning Installation Guide provides information about installing Perceptive Intelligent Capture and setting up the licensing file.
- Perceptive Intelligent Capture with Supervised Learning Product Licensing Guide provides information about how Perceptive Intelligent Capture is licensed.

- Perceptive Intelligent Capture with Supervised Learning v5.6 Release Notes highlight new features and enhancements available in Release 5.6.
- Perceptive Intelligent Capture Designer User's Guide provides information about using Perceptive Intelligent Capture Designer component to create custom applications.
- Perceptive Intelligent Capture Verifier User's Guide provides information about using the Perceptive Intelligent Capture's quality assurance utility, Perceptive Intelligent Capture Verifier.
- Perceptive Intelligent Capture Web Verifier provides information about using the web-based extension of the Verifier.
- Comprehensive online Help for Microsoft MMC and for Runtime Server.

All manuals are included on the installation media.

In addition, a variety of white papers, solution descriptions, product bulletins, and case studies about Perceptive Intelligent Capture and other Perceptive products are available.

## Getting started

Perceptive Intelligent Capture Runtime Server requires some configuration after installing the program, including port assignment, creation of a batch path file, and set up of the Runtime Service Manager.

If the program was installed by Perceptive personnel, Perceptive Intelligent Capture Runtime Server should already be configured. If not, all configurations must be done by someone with administrative privileges.

Before configuring the Runtime Service Manager, ensure that the users and groups discussed in Platform Requirements in the Perceptive Intelligent Capture Installation Guide exist. Specifically, check the domain user Perceptive Intelligent CaptureRTSvc. The Perceptive Intelligent Capture Runtime Service Manager runs under the identity of this user. If you are in a Workgroup environment, make sure this user is configured on all Perceptive Intelligent Capture servers.

## Configuring the batch path file

This file is used to specify the UNC name of the machine that contains the batches. To create it, use NotePad or another text editor to create a new file under the Batch directory and name it SrvName.DAT. In the body of the file, type either the name of the computer or its IP address. Use the following format:

```
\\computer name  
\\IP address
```

In case file system batches are used on a shared network, the file SrvName.dat must be configured in both the batch root folder and shared license folder.

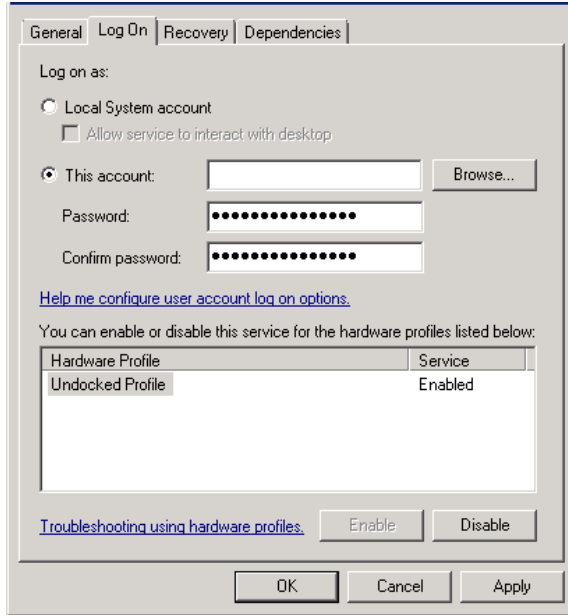
## Configure Runtime Service Manager

Below are the steps required for configuring the Runtime Service Manager. You must be logged on as an Administrator to do these steps.

1. Click **Start**.
2. Select **Run**.
3. At the **Command Prompt**, type `services.msc` and then press ENTER.
4. In the **Scope** pane, double-click the Perceptive Intelligent Capture Runtime Service Manager.



5. On the **General** tab, under **Startup type**, select **Automatic** from the drop-down list.
6. Go to the **Log On** tab.



**Log on tab for Perceptive Intelligent Capture Runtime Service Manager Properties dialog box**

7. Select **This account**.
8. Click **Browse**.
9. Find and add the domain user that is appropriate and sufficient for Perceptive Intelligent Capture processing network access rights, such as Perceptive Intelligent CaptureRTSvc, and then click **OK**.
10. Type the domain password for the user in the fields provided.
11. Click **Apply** and **OK**. Close the Computer Management MMC.

## Exiting Runtime Server

To quit the Perceptive Intelligent Capture Service Manager MMC snap-in, complete the following step.

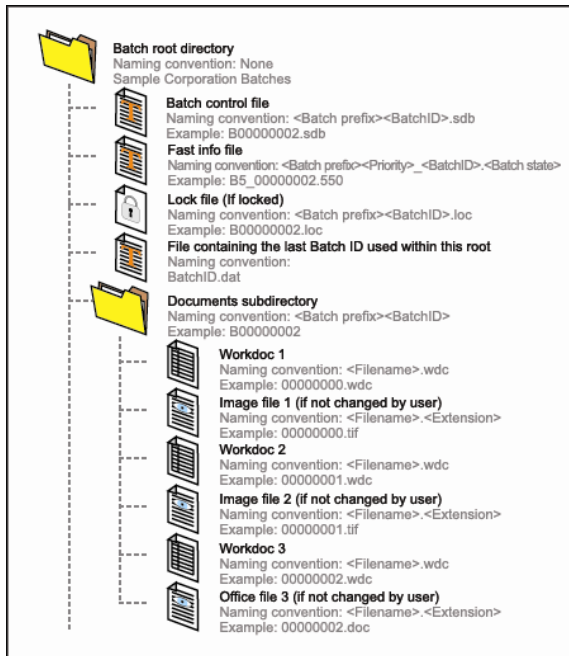
- On the **File** menu, click **Exit**.

## The concept of batches

A Perceptive Intelligent Capture batch manages one or more documents — sometimes thousands — and controls the flow of these documents through the system. Inside a batch, a second structure called a folder can be created for documents that are related to each other.

### Concept of a batch

A Perceptive Intelligent Capture batch is managed by Perceptive Intelligent Capture. All information about a batch is located in the batch repository. Only the images can be stored elsewhere.



### Structure of a batch

A batch has four parts, which are identified in the following list.

- **Batch control file.** Text files containing all information about the status of the batch, its folders, and documents. The batch control file also contains information about the Perceptive Intelligent Capture project that should be used for processing. The batch is self-contained. Batch control files are saved with the SDB extension.
- **Fast info file.** A copy of the main information from the SDB file. It provides a quick way to determine the status of a batch without opening the SDB file. When the fast info file is deleted, it is automatically recreated from the SDB file. The second character of the file name is the priority, and the last eight characters are the batch ID. The extension of the fast info file indicates the status of the batch as a number between 000 and 999.

- **Lock file.** The lock file allows multiple instances of Perceptive Intelligent Capture Runtime Server to access the batch root directory. The lock file is created and removed by Perceptive Intelligent Capture Runtime Server for the currently processed batch. (Lock files are also created in Designer and Verifier.) It is removed by the operating system if the program terminates abnormally. Lock files are saved with the LOC extension.
- **Subdirectory.** The subdirectory is named after the batch ID. The subdirectory contains the Workdocs (\*.wdc), usually the images (TIFF or similar) and attachments to a document, such as PD files or fax header files.

## Concept of a virtual folder

The batch control file has the following structure.

```
[Batch]
BatchID=00000040          // batch ID
BatchName=Checks           // optional arbitrary name
BatchState=100            // batch status (0-999)
BatchPriority=5           // batch priority (0-9)
Client=User04532          // client, i.e. license owner
LastModule=Capture        // which module had processed
                          // the batch before
LastUser=Anderson        // operator which had processed
                          // the batch before
CedarProjectName=D:\Proj\Sample.sdp // path to the Designer
                          // project
CedarProjectVersion=4     // version of the Designer
                          // project
FolderCount=3            // number of folders in batch
MaxFolderID=2            // maximum folder ID in batch
TotalDocCount=6          // number of documents in batch

[Folders]
F0=F00000040_000000      // enumeration of folders in
F1=F00000040_000001      // the batch
F2=F00000040_000002

[F00000040_000000]       // section of 1st folder
FolderID=F00000040_000000
FolderName=ChecksFolder_0000
FolderState=100
DocCount=1
Doc0=DB_00000250.wdc
Doc0_State=100
Doc0_Class=

[F00000040_000001]       // section of 2nd folder
FolderID=F00000040_000001
FolderName=ChecksFolder_0001
                          // optional arbitrary name
                          // of 2nd folder
FolderState=100          // status of 2nd folder
DocCount=3              // total number of documents in
                          // the second folder
Doc0=DB_00000251.wdc     // name of 1st doc. in the 2nd
                          // folder
Doc0_State=100           // state of 1st document in the
                          // 2nd folder
Doc0_Class=              // classification result of 1st
                          // document in the 2nd folder
Doc1=DB_00000252.wdc
Doc1_State=100
Doc1_Class=
...
```

### Batch control file

## Batch creation and usage

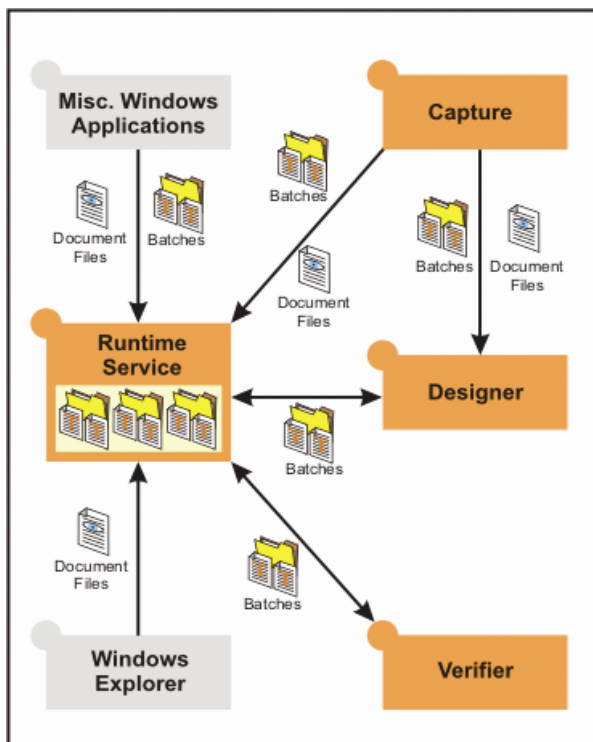
In the Perceptive Intelligent Capture process, batches are the primary mechanism for routing documents.

During production, batches are typically created in one of two ways.

- They can be created as part of the scanning process and then imported by Perceptive Intelligent Capture Runtime for processing.
- Perceptive Intelligent Capture can create the batches from documents stored in the file system and then process them. The Cedar BatchControl Library enables you to create batches programmatically.

If a batch stops processing at a certain pre-defined status that indicates failure of either the classification step or the extraction step, the batch can be handed over to Perceptive Intelligent Capture Verifier for manual correction. Verified batches obtain a corresponding status value and are then further processed by Perceptive Intelligent Capture Runtime Server.

During application design, Perceptive Intelligent Capture Designer and Perceptive Intelligent Capture Verifier require batches as document input that can be provided either by Perceptive Intelligent Capture Runtime Server or by BW Capture Module.



Exchange of batches and documents between applications

## Create a batch

### Create file system batches with BW Capture Module

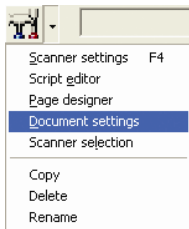
If you use the BW Capture Module to scan paper documents, you can forward the scanned images as batches directly to Perceptive Intelligent Capture Runtime Server or Perceptive Intelligent Capture Designer.

**Note** This requires BW Capture Module V3.0 or higher. If you are working with previous versions of BW Capture Module, use the approach described in section [Create batches with the Cedar BatchControl Library](#).

Batch creation occurs as part of the document export from the BW Capture Module. Batch creation must be defined in the job definition.

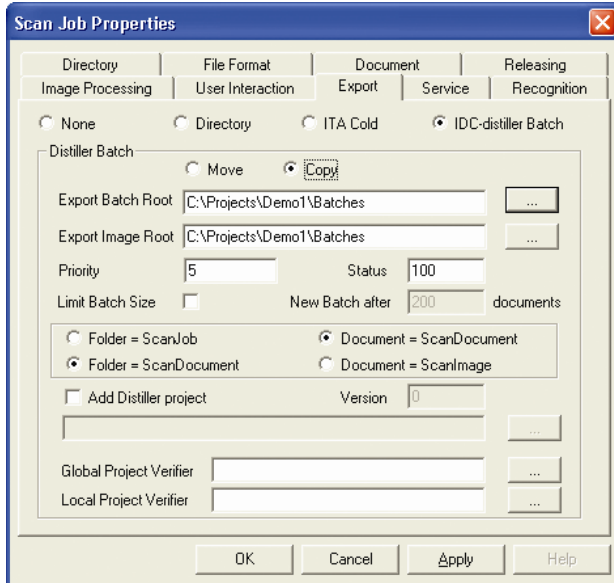
To configure Perceptive Intelligent Capture batch creation in BW Capture Module, complete the following steps.

1. Start the BW Capture Module. The administration user interface is displayed, with the *New* tab in the foreground.
2. On the **View** menu, select **Details**.
3. Create a new job definition or select an existing one.
  - Right-click **Job Definition** and select **Document Settings** or, from the **Job** definition menu, select **Storage Settings**.
  - In the toolbar, click the arrow next to the tools button. On the drop-down menu, select **Document Settings**.



4. On the **Scan Job Properties** dialog box, select the **Export** tab.

- On the **Export** tab, select the Perceptive Intelligent Capture **Batch** option. The controls for setting batch creation parameters are displayed.



- Set the required parameters:

- Move / Copy: BW Capture Module writes the scanned images to the Image base path specified in the **Directory Settings** tab. When the batch is generated, you can either copy the images from the Image base path to the **Export Image Root**, or you can move them. By default, they are copied.

**Note** Make sure that your image file names do not contain curly brackets – {}. Rename the files where necessary. Otherwise, the affected batches cannot be opened in the Web Verifier application.

- Export Batch Root: This is the directory where the batch control file will be written to. Subdirectories for the Workdocs will be created there. Click the **Browse** button to select a directory, or type the path into the text box.
- Export Image Root: This is the directory where subdirectories with the scanned images will be created. As a rule, export batch root and export image root should be the same.
- Priority: The priority determines the order of processing of batches. Enter an integer between 0 and 9 (0 corresponds to highest priority, 9 the lowest.) The default value is 5.
- Status: This is the batch status. Possible values are between 0 and 999. The default is 100. Perceptive Intelligent Capture Runtime Server uses this value to indicate that a batch structure has been created, but no further processing has been done. If you change the batch status in BW Capture Module, make sure that Perceptive Intelligent Capture Runtime Server uses a compliant status value for processing.

- Limit Batch Size / New Batch after: Creates several batches from one BW Capture Module job if the number of scanned documents per job exceeds the specified limit. We recommend that a batch is not larger than 100 documents to speed up parallel processing.
- Folder = ... / Document =L Specifies whether a folder is created on a per-document or a per-job basis. If you select per document, you can further specify whether a multi-page document corresponds to one folder or to several folders.
- Add Perceptive Intelligent Capture project / Version: To process the batches with Perceptive Intelligent Capture Runtime Server, you need to specify the project file. If your batches are input for Perceptive Intelligent Capture Designer, this parameter is not required.

## Create batches with the Cedar BatchControl Library

You can create batches programmatically using the Cedar BatchControl Library. The library can be used in Visual Basic or in Visual C++. It is installed with Perceptive Intelligent Capture and saved in the following path:

```
[INSTALL DIRECTORY]\Components\Cedar\CdrBatch.dll.
```

You can use the library to create batches with arbitrary scan clients or e-mail application.

## Create batches with Runtime Server

To create batches in **Perceptive Intelligent Capture** Runtime Server, set up this option when you create configuration settings. The batches will be created as soon as you start processing. Refer to the **Start the process** section for more information

## Set up Runtime Administration

MMC provides a common host environment for snap-ins from a variety of software vendors. The administrator can customize tools to work more efficiently. MMC provides the ability to create multiple tools of varying levels of complexity for task delegation. By creating a custom MMC, you can avoid switching between various programs and various pre-configured MMCs.

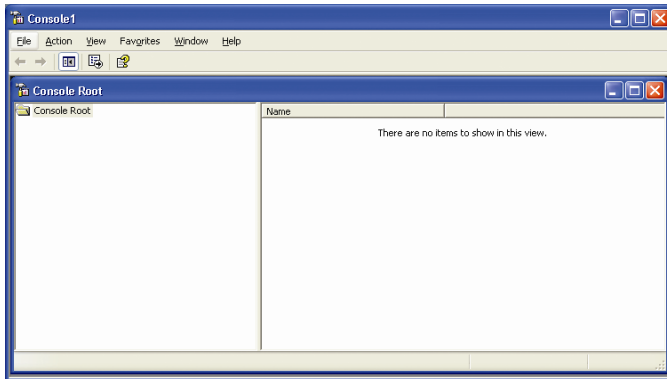
The starting point for setting up runtime administration in Perceptive Intelligent Capture Runtime is to add the required number of servers to the console if you want more than one. Then, you build the Runtime Service Tree in the user interface by adding machines and adding instances of Runtime to those machines. Once you set up the machines and instances, you can process batches in Runtime Server and monitor the process. As the batches process, you can view statistics, documents, classification, extraction, and performance.

## Set up snap-ins for multiple programs

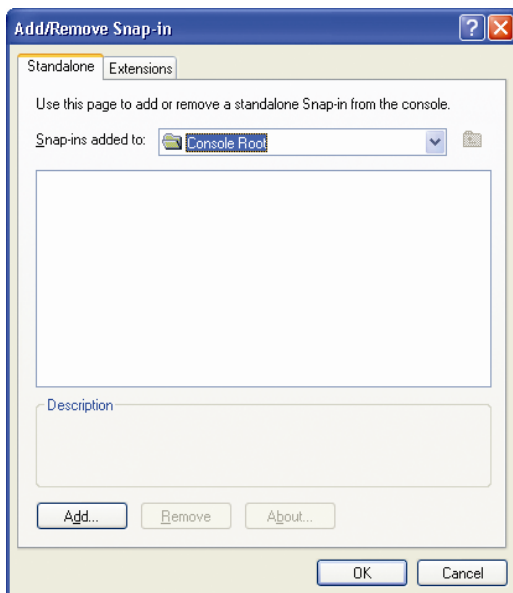
When you start Perceptive Intelligent Capture Runtime, you will notice a screen with two panes, the Tree Pane and the Runtime Server pane. The Tree pane contains the Console Root. The Console Root includes only one default folder called Perceptive Intelligent Capture Runtime Server. If you want to run multiple instances of the application, or if you want to add other programs to customize your Perceptive Intelligent Capture administration, you can add snap-ins. When you set up multiple snap-ins, you can remain in one program and within one configuration of MMC.

To add a snap-in, complete the following steps.

1. Under a 32-bit platform, on the Windows desktop, click **Start** and select **Run**. Type `mmc / 32`. A Console window appears. Consoles are saved as files with an `.msc` extension. When you save a console, all of the settings of the snap-ins save and appear when you open the file, even if you open the file on another computer or network.

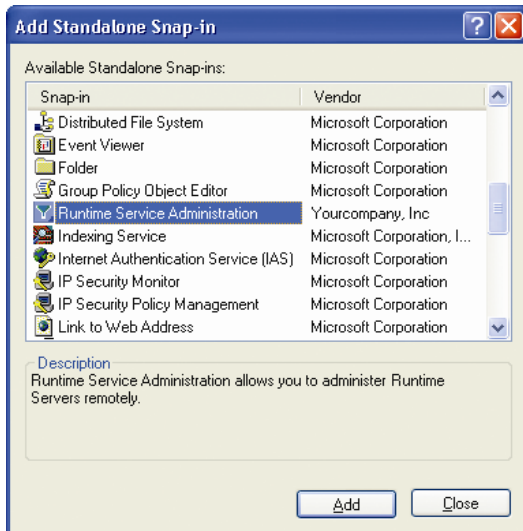


2. Select the Console. From the **File** menu, select **Add/Remove Snap-in**.





3. Click **Add**. A list of programs displays in the **Add Standalone Snap-In** dialog box.

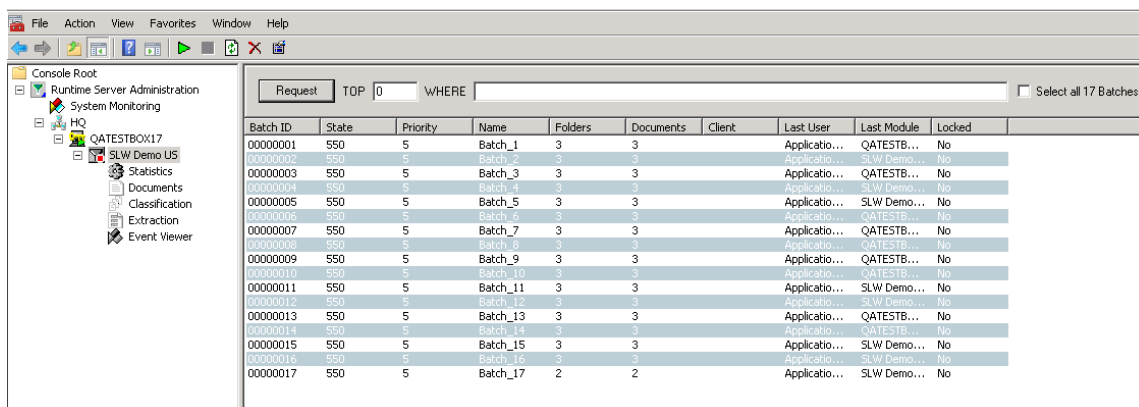


4. Add the desired application. To add another snap-in of Runtime Server, select Perceptive Intelligent Capture Runtime Server snap-in. The new instance appears in the tree as Perceptive Intelligent Capture Runtime Server. You can add groups and server instances to the snap-in. Items that you add to the console tree appear under the console root. The contents of the snap-in appear in the Runtime Server panel.

**Note** When running a 64-bit platform, you can run MMC in different modes (64 or 32). The system analyzes your msc file and runs the appropriate MMC version. However, when starting just mmc.exe you have to specify explicitly which version of MMC you want to run. For example: mmc.exe /32.

## The user interface

The **Perceptive Intelligent Capture** Runtime Server user interface consists of a main menu, a toolbar, a navigation pane that contains a tree with a *Favorites* tab, a result panel, and a status bar.



## Title bar

The title bar contains the name of the application and the path and name of the selected item in the scope panel.

## Main menu bar

The main menu bar includes general tools for Runtime Server. It also contains standard toolbar buttons for saving, opening, and viewing.

Option	Description
Console	Select Console to add a snap-in of either Runtime Server or another application.
Window	Select Window to change the display type of the application. Select from cascade, tile, and arrange icons. You can also refresh your window to display any changes.
Help	Online help is available in the Help menu. You can also find version information about Runtime Server here.

## Toolbar

This menu bar includes tools for using Runtime Server, and for viewing options and Favorites information. The toolbar contains buttons for performing the most common tasks. Depending on the item you select in the scope panel, the options on this menu vary.

### Runtime Server administration action menu

Item	Description
New RTS Group	Adds a new RTS Group. From here, you can add machine groups that include one or more machine instances.
New Window from Here	Adds a new window to simultaneously view items such as statistics and the document window. This is a standard MMC option.
New Taskpad View	Adds a new Taskpad view, which is a customized view with shortcuts. This is a standard MMC function.
Export List	Exports list. This is a standard MMC function.
Help	Microsoft Management Console help. This is a standard MMC function.

## Group Action menu

Item	Description
New Machine	Adds a new machine from a list of <b>Perceptive Intelligent Capture</b> installations. From here, you can add one or more machine instances.
Start All	Starts processing all of the Runtime instances in the group.
Stop All	Stops processing all of the Runtime instances in the group.
Refresh	Same as calling Refresh on each machine level.
Delete	Deletes the group.
New Window from Here	Adds a new window from the group. You can set up multiple windows with different machines and instances.
New Taskpad View	Adds a new Taskpad view, which is a customized view with shortcuts. This is a standard MMC function.
Export List	Exports a list of machines as a text file. This is a standard MMC function.
Help	Microsoft Management Console help. This is a standard MMC function.

## Machine Action menu

Item	Description
Start All	Starts all machine processes.
Stop All	Stops all machine processes.
Refresh	Refreshes display.
Delete	Deletes a machine.
License	Modifies or creates a license.
New RTS Instance	Adds a new Runtime Server instance.

Item	Description
View Choose Columns Large Icons Small Icons List Detail Customize	Microsoft Windows view options for the view window.
New Window from Here	Adds a new window. You can set up multiple windows with different machines and instances.
New Taskpad View	Adds a new Taskpad view, a customized view with shortcuts. This is a standard MMC function.
Export List	Exports list of machines. This is a standard MMC function.
Help	Microsoft Management Console Help. This is a standard MMC function.

## View options

Item	Description
Choose Columns	Selects columns to make visible in a folder.
Large Icons	Displays large icons in the toolbars.
Small Icons	Displays small icons in the toolbars.
List	Views items as a list, sorted alphabetically without details.
Detail	Gives a view of items with details on file size, type, and when last modified.
Customize	Customizes the appearance of a folder.

## Scope pane

The scope panel displays the console root, the Runtime Application folder, a group that contains one or more machines that run Perceptive Intelligent Capture Runtime Server instances on each machine, and a list of items that display monitoring options and control batch states. There are also options to operate and modify Perceptive Intelligent Capture Runtime Server.

## Favorites tab

The Favorites tab is where you can place items that you may want to view again on each instance of Perceptive Intelligent Capture Runtime Server.

## Results pane

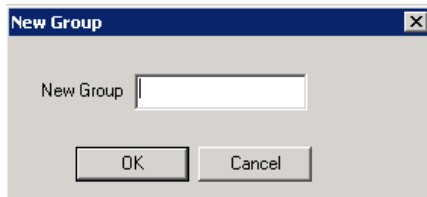
The Results panel displays a batch window that you can access by clicking on an instance in the tree tab. This window includes information about each batch. The Results pane also displays each of the monitoring functions, including windows for statistics, document, classification, extraction, and performance when selected in the scope pane. Each monitoring function has options for viewing items related to that function. For information on the displays for this window, see [Monitor the Process](#).

## Add machine groups

The flexibility of Perceptive Intelligent Capture Runtime Server enables you to add machine groups that include one or more machine instances. Machine instances contain Perceptive Intelligent Capture Runtime Server instances.

To add a machine, complete the following steps.

1. Select the Perceptive Intelligent Capture Runtime Server folder. From the **Action** menu, select **New Perceptive Intelligent Capture RTS Group** or right-click the machine group in the **Navigation** pane. Select **New Perceptive Intelligent Capture RTS Group**.



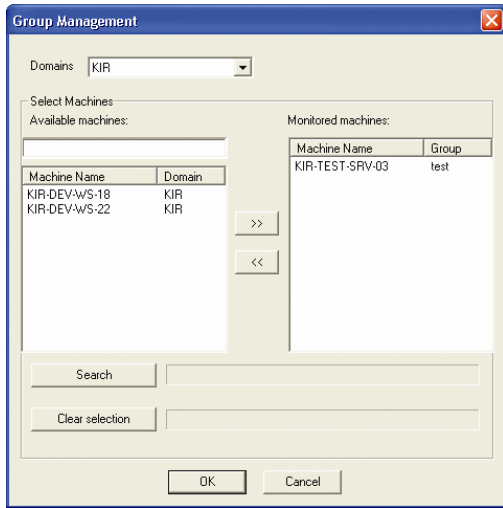
2. In the **New Group** dialog box, enter a name for the machine group. Click **OK**. The new group appears on the Tree.

## Add machines to a group

The Perceptive Intelligent Capture Service Manager must be started on the machine being added or the MMC will not connect to that machine.

After you set up a group, you need to add machines to that group. To add machines to a group, complete the following steps.

1. Select the machine group and select **Actions, Machines** or
2. Right-click the machine group. Select **New Machine**. The **Group Management** dialog box appears. It contains the names of all available Perceptive Intelligent Capture machines that are part of the Runtime Server domain and the group associated with the machine. You cannot add a machine that is being used in another group.



3. Select a domain.
4. Type the machine name in the field provided. If you are configuring Runtime Server to run as a stand-alone system, enter `localhost` as the machine name.
5. Click **OK**. The new machine appears under the group name in the tree.

## Set up license keys

Refer to [Setting the license key](#) for information on configuring license keys.

## Working with Runtime Server instances

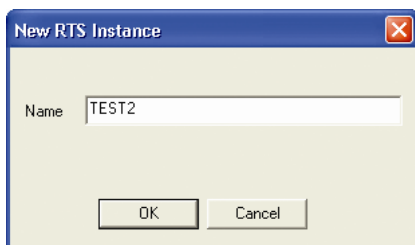
Runtime Server instances include one or more batches. With Runtime Server, you can add, delete, or modify the characteristics of instances to customize a Runtime process. Each instance has Runtime Services, which are options for monitoring each step of the processing. The number of instances that you can run at one time depends on CPU utilization.

### Add instances to a machine

In Perceptive Intelligent Capture Runtime Server, a list of instances appears under the machine name. You can add, modify, or delete instances to further customize the machine.

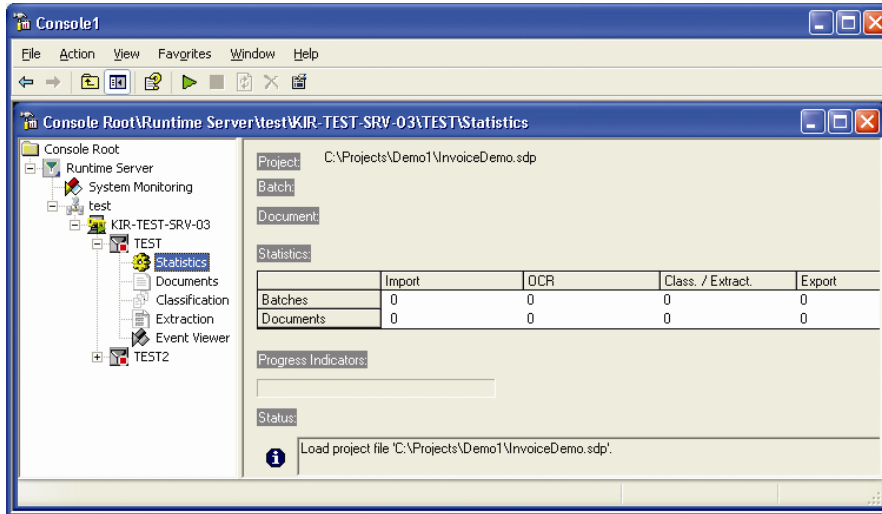
To add an instance to a machine:

1. On the main menu, click **Action**. Click **New**, and then select **RTS Instance**.
2. Enter a name for the new instance. Use a name that is logical and representative of the information being processed.



- Click **OK**. The new instance name appears under the selected machine name. The new instances appear in the Result Window.

**Note** Maximum character length for instance names is 32. While using Cloning of instances the maximum character length is set to 22. For more information on the cloning of instances, refer to the **Cloning instances** section.



## Delete instances

To delete an instance from a machine, complete the following steps.

- Select the instance from the navigation panel.
- Click **Action**, and then **Delete** or right-click the desired instance to delete from the machine list. A shortcut menu appears. Click **Delete**.

**Note** If you are using cloned instances, do not delete them through MMC as this leads to loss of the settings.

## Cloning instances

The workflow steps OCR, Classification and Extraction are those with the most load workforce. You can share the workload and make the application faster by cloning an RTS instance which is already created and properly configured.

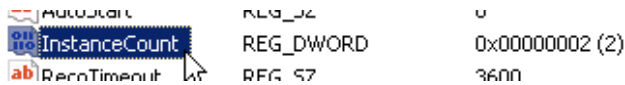
This saves time as you are able to clone an instance multiple times using the same settings.

**Note** Instances created for the workflow steps Import and Cleanup should **not** be cloned. Only one instance of Cleanup is needed per batch job. An Import instance is unique in its settings to import files from one import folder (any additional clones will simply compete against the same files).

If you modify an instance's settings, the clone instances will inherit these changes. Note that an RTS restart is required to apply the changes.

Enable the cloning of Runtime Server Instances by adding InstanceCount in the Windows registry. The value must be located within the Key for the Instance to be cloned:

1. Open the Windows registry.
2. Go to "HKEY\_LOCAL\_MACHINE \ Software \ Perceptive \ Services \ ImportInstance" or on a 64bit system:  
"HKEY\_LOCAL\_MACHINE \ Software \ Wow6432Node \ Perceptive \ Services \ ImportInstance".
3. Select the instance to be cloned.
4. Right-click the instance.
5. Add the following value: InstanceCount.
6. Right-click the new value and select **Modify** from the shortcut menu.
7. Enter an integer value.



The DWORD value reflects the number of instances you want to have. The entry shown above would create a second new instance being the clone of the original.

**Note** The DWORD value of 0 would delete the existing instance!


## Configure Runtime Server

Configuring Perceptive Intelligent Capture Runtime Server enables you to generate new batches and to specify processing options for existing batches.

### Administration access

Usually, the Perceptive Intelligent Capture Runtime Server is started as a service. The appropriate icon on your desktop is linked to the file "Start RTS as NT Service.bat" which is located in your Perceptive Intelligent Capture/bin folder.

To configure Perceptive Intelligent Capture Runtime Server, perform one of the following actions.

- On the **Options** menu, select **Settings**.
- On the toolbar, click **Properties** .

This displays the Perceptive Intelligent Capture Runtime Server Properties.



## General settings

For general settings such as referenced directories, files and program control options, select the General tab.

The screenshot shows the 'General' tab of the configuration window. It includes sections for Project File, Directories, Batch Scanning Delay and Mode, Logging Level, Automatic start / stop, Automatic restart, Client, Automated System Updates, and Extended Settings. The 'Use project file' option is selected under Project File. Under Directories, 'Use database' is checked, and 'Select Job' is set to 'SLW Demo US'. The 'Batch Root' and 'Image Root' are both set to 'D:\Projects\SLW Demo US\Batches'. The 'Export' path is 'c:\'. Under Batch Scanning Delay and Mode, 'Wait' is set to 90 seconds. Under Logging Level, 'Info' is selected. Under Automatic start / stop, 'Start at' and 'Terminate at' are both set to 2:00:00. Under Automatic restart, 'After 24 hours' is checked. Under Client, 'Default' is selected. Under Automated System Updates, 'Every 1 days' is selected, and 'Update system security' and 'Automatic pool update' are both checked. Under Extended Settings, 'Enable batch integrity verification' is checked, and 'Automatic Start' is unchecked.

### Under Project File

- *Use project file.* Lets you select path and file name of the Perceptive Intelligent Capture project that is used to process the documents. Select this option if Perceptive Intelligent Capture Runtime Server creates the batches or to import existing batches without project specification in the batch control file.
- *Use batch specific project file.* Uses the Perceptive Intelligent Capture project referenced in the batch control file. Select this option to import existing batches where the project is already specified in the batch control file.

### Under Directories

- *Use Database.* Uses the Perceptive Intelligent Capture Database as the source. This option is enabled by default if user is using a new instance.
- *Select Job.* Select the desired job from the job drop-down list here or create a new job by pressing *Create Job*. A job can be thought of as a Job Queue with batches pending for verification.
- *Batch Root.* This is the directory where the batch control file will be written to. Subdirectories for the Workdocs are created there.

- *Image Root.* This is the directory where subdirectories with the scanned images will be created. As a rule, batch root and image root should be the same. In special cases such as security reasons, the image root can be different from the batch root. The image path can also be stored as an absolute path in the Workdoc. If so, the image root directory is ignored. This option cannot be used if using database.
- *Export.* This is the directory used to export the results of the process. Exporting is normally script-controlled. The export directory is the standard path.

### Under Batch Scanning Delay and Mode

- *Wait.* Perceptive Intelligent Capture Runtime Server constantly polls the batch root directory. This parameter specifies the seconds between two polling cycles. Use a defined polling interval for permanent operation. The value should not be too small to restrict the network load. To prepare batches for Perceptive Intelligent Capture Designer, scanning once is sufficient.
- *Activate High Priority Mode.* If this option is checked, the processing order is determined according to priority and then input state. Otherwise it is determined according to input state and then priority (0 – highest priority). The benefit of this option is to easily determine urgent/ immediate batches for processing. This setting is typically reserved in configurations where Batch Priority is used in processing urgent/ immediate batches.

**Note** For cleanup instances, it is recommended to disable the High Priority Mode to maximize performance.

### Under Logging Level

- *No Logging / Info / Warning / Error.* Sets the scope of logging. The log file is created in the directory [Installation Directory]\Perceptive Intelligent Capture\Log. A new log file is created daily.
- *Delete log files.* Sets the number of days after which log files are deleted automatically.

### Under Automatic Start/Stop

Automatic Start of Specific Runtime Server Instances at Desired Time

- *Start at.* Perceptive Intelligent Capture provides a pair option *Start at* that allows starting specific Runtime Server host instances at desired time. This feature can be used to configure specific Runtime Server processes to be started at certain time of the day, for example, when the overall system's workload is not that high at night time.

The following figure shows the Runtime Server configuration for a host instance that is to be started every day at 11:00 PM and then terminated at 2:00 AM:

The screenshot shows the 'Batch Scanning Delay and Mode' configuration window. It includes the following settings:

- Wait:** 0 seconds (0 : scan once)
- Activate High Priority Mode:** ☐
- Logging Level:**
  - ☐ No Logging
  - ☐ Warning
  - ☒ Info
  - ☐ Error
- Delete log files after:** 0 days (0 : Never delete existing log files)
- Automatic start / stop:**
  - ☒ Start at 11:00:00 F
  - ☒ Terminate at 2:00:00 A
- Automatic restart:**
  - ☒ After timeout of 3600 sec.
  - ☒ After 24 hours
  - ☐ After 1000 documents
- Client:** Default

- *Terminate at.* Sets the time for automatic shutdown.

The program is blocked for a certain amount of time after the automatic shutdown. If the shutdown occurs during the first three quarters of an hour, you cannot activate the program within the same hour. If the shutdown occurs during the last quarter of an hour, you cannot activate the program within the same and the next hour.

### Under automatic restart

- *After timeout.* In error situations, **Perceptive Intelligent Capture** Runtime Server can restart itself after a certain timeout. If the program gets stuck, it will mark the current document as processed with status invalid and restart automatically after the timeout you specify.
- *After ... hours.* In this case, an automatic shutdown and restart occurs after the specified period of time in hours, regardless of whether an error has occurred. This option can be used to prevent error situations.

**Note** In case, an automatic restart occurs during an import, the application is designed to maintain batch integrity.

- *After ... documents.* In this case, an automatic shutdown and restart occurs after a certain number of documents have been processed, regardless of whether an error occurred. This option can also be used to prevent error situations.

### Under Client

- Perceptive Intelligent Capture Designer may use global variables in scripts that affect document processing. For each variable, it is possible to use client-specific values. In this box, you can enter the client name that must match one of the client names used by Designer. With the default entry, global variables do not vary by client.

### Under Automated System Updates

- *Update system security.* Allows Runtime Server to update the system security according to the time configured by users. The *Every...* and *Starting at...* will be available if the check box has been selected.
- *Automatic pool update.* Allows Runtime Server to automatically update the pool according to the time configured by users. The *Every...* and *Starting at...* will be available if the check box has been selected.

### Under Extended Settings

- *Enable Script debugging.* Some script options, for instance export over folders, can only be tested with Runtime Server. This option enables script debugging with Runtime Server (for expert users only).

**Note** This configuration option is only available when you start the Perceptive Intelligent Capture Runtime Server as an application and not as a service. Refer to the Perceptive Intelligent Capture Scripting Guide for information on how to activate this option.

- *Min. free storage / Min. free RAM.* Stops processing when the limits have been reached. The system will remain idle until new resources are available.
- *Automatic Start.* Allows Runtime Server to restart after a system reboot.
- *Enable batch integrity verification.* This setting is used to keep integrity of file system batches. It must be enabled on one instance. It is not used if database batches are used.

## Workflow settings

To specify the steps that should be carried out when processing documents, select the Workflow tab.

The screenshot shows the 'Workflow' tab with the following configuration:

Input State	Process Step	Output State
100	Import	succeeded: 100, failed: 50
200	OCR	succeeded: 200, failed: 150
200	Document Separation	valid: 230, invalid: 215
200	Classification	classified: 300, not classified: 250
300	Extraction	valid: 700, invalid: 550
700	Export	valid: 800, invalid: 750
650	Custom Processing	succeeded: 700, failed: 690
450	Database Export	succeeded: 800, failed: 760
800	Clean Up	

Additional settings at the bottom:

- ☐ Perform advanced import failure processing
- ☐ Perform folder based classification+extraction step
- ☐ Perform folder based serial processing
- Corrupted document's failure state: 0

### Process Step

Allows you to select the steps that should be done.

A step is enabled if the corresponding button appears pressed; it is disabled if the corresponding button does not appear to be pressed. Only enabled steps will be carried out by this instance of Perceptive Intelligent Capture Runtime Server. To switch selection, simply click the buttons.

For example, prepare batches for Perceptive Intelligent Capture Designer by activating the Import and the OCR step, or process batches from BW Capture Module by activating all steps but Import.

The Runtime Server has a workflow step, Database Export, which allows the administrator, project developer, or user to migrate file system batches into the database. The Database Export button is only available if Use Database is deselected in the General tab.

The Custom Processing workflow step allows the configuration of an additional custom workflow step that can be launched between existing workflow steps. For example, the RTS can be configured to import, OCR, Classify, and then prior to Extraction, to have a custom processing option to review all classification

results. The RTS will then loop through all available batches at state "input state" and fire a new project level "ProcessBatch" event allowing script to apply the required "re-batching" procedures, for example, resorting of documents within the next processed batch.

The RTS will only update the output state using the value configured in GUI for the Workdocs if the documents' batch state remained the same (equal to input state) after completion of the script processing.

### **Input State / Output State**

**Perceptive Intelligent Capture** Runtime Server polls the batch root directory. It processes batches from this directory only if their processing state corresponds to one of the defined input states.

When a processing step is finished, the batch assumes the corresponding defined output state. For some steps, there are two output states that indicate success or failure.

If the batch status indicates a failure, the batch will normally be handed to Perceptive Intelligent Capture Verifier, where the error is corrected. When the batch is verified, it again changes its status value to a valid input state for Perceptive Intelligent Capture Runtime Server, which will then resume processing. Runtime Server displays the last 10 error messages in a table that includes the time that the error message appeared.

The status of the batch is calculated from the status of the folders. The status of the folders is in turn calculated from the status of the documents. On the batch level, steps succeed only if they were successful for all documents in the batch.

Use input and output states to control the flow of batches through the system. For successful steps, define output states with matching input states to ensure further processing. For failed steps, define output states that make sure that the system stops processing these batches. For instance, it doesn't make sense to perform the extraction if the classification failed.

For imported batches, make sure that their output state matches the input state of the next processing step.

You can use any integer between 0 and 999 for input and output states.

Type the values into the appropriate boxes.

### **Perform advanced import failure processing**

This option is only available when Import button of the process step is selected. If enabled, the documents failing import steps are still organized into batches at failed import output state. If this is disabled the failing documents are not imported to the system at all and end up into the import\_bad\_images folder.

**Note** It is recommended to activate this option if you have configured RTS instances for an automatic restart after a certain time period. With this, batch integrity would be maintained. Refer to "Under Automatic Restart" in the **General settings** section.

### **Perform folder based classification & extraction step**

A folder is a structure within a batch that can be used for documents that are related to each other. For example, several TIFF images may be stored as multiple files, but actually belong to the same document.

Select this option to control batch classification and extraction processing using folders instead of batches.

**Note** This option is mandatory for any kind of document separation (script based, phrase based, Triton based or combined).

If enabled, the workflow steps are serialized per folder. This means that all documents within a folder are getting loaded at once prior to start folder processing. Classification and Extraction are then run on all documents in a folder before to process the next one.

Processing sequence:

Classify Doc1 → Extract Doc1 →

Classify Doc2 → Extract Doc2 →

Classify Doc3 → Extract Doc3

If unchecked, Classification is first run on all documents in all folders before to apply Extraction.

With this option activated, the *pWorkdoc.Folder/pWorkdoc.FolderCount* script methods are available, and can be utilized to access neighbor documents that belong to the same folder of the batch.

**Note** This option must be checked as prerequisite for phrase based multipage detection. With multipage detection, classification and extraction must be performed together. Refer to the *Perceptive Intelligent Capture Designer User's Guide* for more about multipage detection.

### Perform folder based serial processing

Select this option to control serial processing using folders instead of batches. This affects the interrupting options.

With this option activated, it is possible to perform the workflow steps Classification and Extraction separately.

Processing sequence:

Classify Doc1 → Classify Doc2 → Classify Doc3 → Extract Doc1 → Extract Doc2 → Extract Doc3

### Corrupted document failure state

This is a special output state indicating that processing failed because of an unexpected error, probably a damaged document. In this case, the document's status, and therefore the status of the corresponding batch, is reset to 0.

## Import settings

Creating batches within Perceptive Intelligent Capture Runtime Server happens during the import step. In this case, you need to define how and when your documents are to be organized in batches. Import settings are ignored if the batches have been prepared by an external program such as BW Capture Module.

To specify the import options for images, select the *Import* tab.

**Note** Prior to importing images, first make sure that the images' file names do not contain curly brackets – {}. Images containing curly brackets in file name cannot be opened in the Web Verifier application. First rename the files where necessary.

The screenshot shows the 'Import' tab of the settings dialog. The 'Import Directory' is set to 'C:\Projects\SLW Demo US\Import'. Under 'Document Grouping', '1 folder per document (no subdirectories)' is selected. 'Document Type' is set to 'tif'. Under 'Import Condition', 'Always import documents' is selected. Under 'Extended Settings', 'Limit batch size, max.' is set to 5 documents, 'Import priority' is 5, 'Batch prefix' is 'Batch\_', and 'Folder prefix' is 'Folder\_'. 'File transfer mode' is set to 'Move files'. Under 'Additional File Import', 'Import 1 additional file per imported document' is checked, and the file name is '#####.add'. Under 'E-mail Import', 'Download e-mails from Exchange server using "RTS\_Import" profile' is checked.

### Import Directory

- Select the directory where your images or files are stored.

### Under Document Type

- **Type.** Select or type the file name extension for the documents you want to process. Supported file types include \*.tif, \*.doc, \*.msg. Others may work, but require individual testing.
- **CI Documents.** If documents have been generated electronically, for instance using a word processor, a text representation is required to process them, but not a complete OCR like the one for images. Check this option to process files or e-mails. Do not use this option if you want to process scanned images or faxes.



- **Automatic.** Imports all documents determining whether they are images or CI Documents based on their file extensions and OCRs them accordingly.
- **Skip.** Defines a system extension which will not be imported, for example, sys. The “add” and “rdy” extensions are always considered as system extensions and ignored.

This feature is purchased separately and will not be available if it has not been licensed.

### Notes for Automatic Documents importing feature

In the previous software versions it was only possible to process one specific document type, such as XLS, for each Runtime Server instance with a fixed way of processing: either as “image” (i.e. processing with Accusoft libraries and then using configured OCR engine) or as so-called “CI document” like Word, Excel, PDF, etc.. Now, as soon as “Automatic” check box is activated, the Import workflow step is going to start importing all available documents distinguishing between “image” and “CI document” type automatically via internal predefined list of document extensions.

In this connection, the consequent OCR processing is no longer dependent on “CI document” setting and only depends on what kind of document is being effectively processed (“image” or “CI document”). Moreover, it is possible, to have multiple document files of different types (multiple “image” files and multiple “CI document” files) attached to a single Workdoc. For such a Workdoc the Runtime Server is going to use appropriate OCR engines when processing the document page by page.

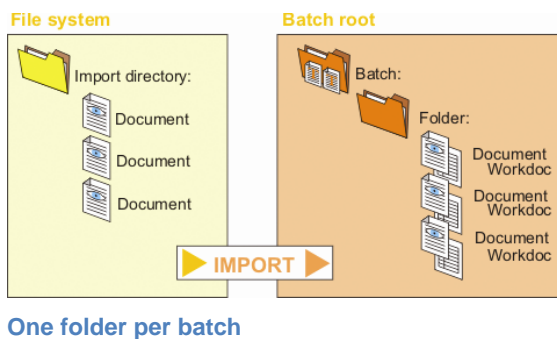
During the automatic importing of different documents it is also possible to ignore one specific user-defined document type, considering it as “system”, i.e. as a document that is not supposed to be imported as a part of processed Workdoc. This extension to ignore can be specified in the Skip edit box of the Document Type group box. Example: “sys”. In the connection, the following two extensions are considered as “system” always: “add” and “rdy”.

When importing image files into Perceptive Intelligent Capture, the system can automatically convert the imported image documents into one of 39 currently supported image formats. If the imported document is a multipage document, the system automatically splits the image pages into separate files in case the desired image format does not support multiple pages or combines them in one single image file. (See Designer User Guide section “Automatic Conversion of Documents during Import Phase”)

### Under Document Grouping

Set the options for creating batches and folder from files and subdirectories within the import directory.

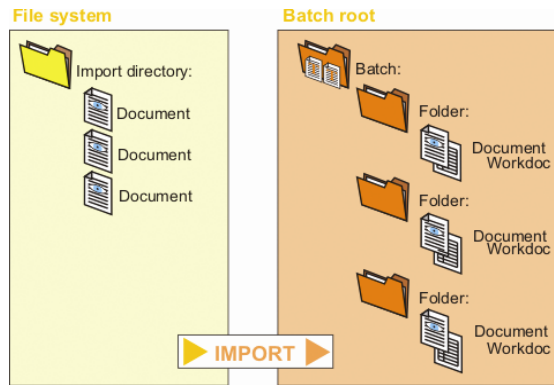
- **1 folder per batch (no subdirectories):** You can select this option if your import directory contains no subdirectories. A single batch with a single folder will be created from all the documents in the import directory. Additional batches will only be generated if the number of documents within a batch is restricted. (See below.)





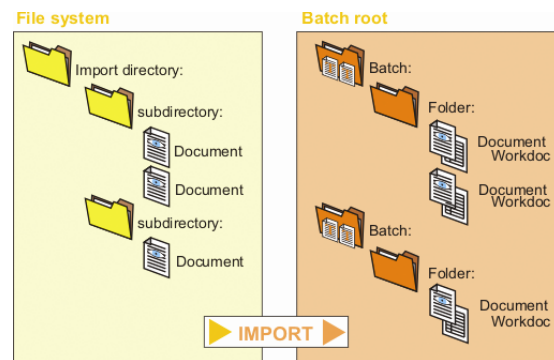
- **1 folder per document (no subdirectories):** You can select this option if your import directory contains no subdirectories. A single batch will be created from the documents. Within the batch, a folder will be created for each document.

**Note** You cannot use multipage detection if you select this feature.



One folder per document

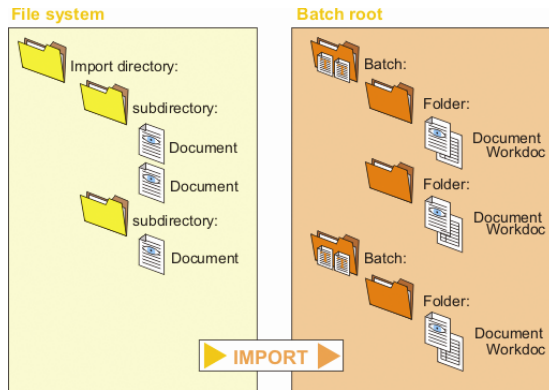
- **1 batch per subdirectory, 1 folder per batch:** You can select this option if your import directory contains subdirectories. A separate batch will be created for each subdirectory. Each batch will contain a single folder.



One batch per subdirectory, one folder per batch

- **1 batch per subdirectory, 1 folder per document:** You can select this option if your import directory contains subdirectories. A separate batch will be created for each subdirectory. Within a batch, a separate folder will be created for each document.

**Note** You cannot use multipage detection if you select this feature.



**One batch per subdirectory, one folder per document**

## Under Import Condition

Set the conditions that start the import and thus trigger the generation of batches. Set the file transfer mode accordingly.

- *Always import documents.* The import starts continuously.
- *Import only if ready file.* The import directory is monitored for the presence of a trigger file called import.rdy, which may be located in a directory or subdirectory.
- The import.rdy file is created by an external system at the end of data transfer to the shared directory. Runtime Server regularly scans the import.rdy file. If Runtime Server finds the \*.rdy file, it deletes it and then imports data for OCR, classifying, extracting, and exporting. Use this option when you want to import files from external systems.
- *Import only if minimal number* The import starts if the import directory including subdirectories contains a minimum number of documents. This is useful to pool the output of a fax or mail server.
- *Import only if all files older.* The import only starts if all files in the import directory including subdirectories are older than the specified period. If there is a document that does not meet the defined criteria, NO document will be imported. If you use this option and move documents from the import to the batch root directory, the import starts at regular intervals.
- *Import if min. no. docs OR.* Combines the previous options.
- *Import only files which are older than specified timespan.* Files that meet the condition will be imported leaving behind the documents that do not meet the rule.

## Under Further Settings

- *Limit batch size.* Creates an additional batch if the total number of documents exceeds the specified number of documents. The specified number will be the maximum number of documents per batch. This option is important if you want to have large batches in scanning to minimize operation costs but small batches in processing to optimize load balancing. Choose this option if you have large input directories and want to create small batches that can be distributed better.

- *Import \*.wtx files.* Use this option to process \*.wtx files generated by eRecognize. In the workflow options, you can skip the OCR step.
- *Import priority.* Sets the batch priority and thus the processing order. Enter an integer between 0 (highest priority) and 9 (lowest priority.) The default value is 5.
- *Batch prefix.* Sets a prefix for the batch name that will be complemented by a serial number. The batch name is visible in **Perceptive Intelligent Capture Runtime Server** and **Perceptive Intelligent Capture Designer**.
- *Folder prefix.* Sets a prefix for the folder name that will be complemented by a serial number. The folder name is visible in **Perceptive Intelligent Capture Designer**.
- *File transfer mode.* Specifies whether documents will be copied from the import directory to the batch root, or moved. If you copy documents, there will always be input in the import directory. This can cause continuous batch generation unless the files are removed by another process.

### Under Additional File Import

Used alone or in conjunction with Import only if ready file to check for additional associated files.

- **Import 1 Additional File.** This method checks for additional files that might be associated with documents and makes sure that you import only the desired associated files. Additional files could be faxes and associated header files. There must be a well-defined relationship between the file name of the image and the name of the associated file. To express this relationship, use literal characters, the \* as a wildcard character that represents the base name without the extension, and the special characters “#” and “?”.

#### Example 1:

You are processing e-mails that are written to the file system using the file name <subject>.msg. Some of these e-mails contain a Word document as attachment which is saved separately, but in the same directory. The e-mail and attachment have the same file name, but the Word document is saved as <subject>.doc. In this case, enter the expression \*.doc.

e-mail: Final.msg  
Attachment: Final.doc  
Additional File name: \*.doc

#### Example 2:

You are processing e-mails that are written to the file system using the file name <subject>.msg. Some e-mails contain attachments. The attachment's file name is constructed using the following naming convention: <first 8 characters of the subject>\_att.doc. In this case, enter the expression #####\_att.doc.

e-mail: Department.msg  
Attachment: Departme\_att.doc  
Additional File Name: #####\_att.doc

**Note** If this option is used in conjunction with the Import only if ready file...: option, Perceptive Intelligent Capture Runtime Server will delete the \*.rdy file first. Then it will check for additional files and will import them.

Though most often used with a \*.rdy file, you can also use this option independently, even if there are no additional files.

- *Import Document Only.* Check this option if a missing additional file indicates that there is something wrong. For instance, if you are processing faxes, there should be a header file for each fax. Use this feature in conjunction with Additional File Import.

**Note** Only TIFFS with additional files present will be imported. Any extra TIFF files not associated with additional files will remain in the directory. In any case, the \*.rdy will be deleted even if no files had been imported.

## Under E-mail import

**Note** These features are only available if a separate license has been purchased.

- Download e-mails from Exchange server using “RTS\_Import” profile:
- The Runtime Server host instance attempts to download e-mails from the Exchange server to the Import folder using the MAPI profile called “RTS\_Import” (this name is predefined and cannot be changed). Only the “Inbox” (default message) folder is processed.  
After a message is successfully downloaded, it should be moved to the Deleted Items folder on the Exchange server. If an error occurs, the message is moved to the \_Bad\_Mail folder on the Exchange server.
- Separate each part of MSG file into its own Workdoc:
- By default the message and its attachments of each downloaded e-mail are extracted but put into a single multi-file document (i.e. a Workdoc).
- If the option is checked, the system splits the message file and its attachments into individual Workdocs. Afterwards each item is processed independently by the system.

The separation of the MSG file into the message and its attachments can be applied either during the downloading of e-mails (if download is enabled) or directly in import folder before the Import step starts. In other words, if a customer prefers to process already downloaded MSG files, it is still possible to take the advantage of the Separate each part of MSG file into its own Workdoc feature.

- To import both message files and all the attachments, enable *Automatic* option in the *Document Type* group box.

## General notes for email importing feature

- For exact instructions on how to configure the environment for email importing, refer to the *Perceptive Intelligent Capture Installation Guide*.
- The main properties of the processed e-mail document can be retrieved from the Workdoc interface in Perceptive Intelligent Capture custom script through an “ISCBCdrEmailProperties”. The currently supported properties are: Email subject, List of email senders, List of email recipients, List of carbon copy recipients, Date and time the email was sent, Date and time the email was received at, Priority the email was sent with and Unique message identifier. For information regarding usage of these properties and interface, refer to the *Perceptive Intelligent Capture Scripting Guide*.
- The “PreImport” event is fired for every part of e-mail and one more time if “additional file” is going to be imported.
- In case the custom script returns “CancelImport”, it is considered as failure for the first (MSG) file, but ignored for subsequent parts. In both cases warning message is logged.
- The “PostImport” event is fired once per Workdoc after all parts have been successfully imported.
- Attachments are always processed like Automatic extension.
- Actual grouping (like “one Folder per Batch” or one “Folder per document” remains valid.
- To import MSG files, in group box “Document type” should be either “\*.msg” (to process MSG files only ignoring attached files) extension selected or Automatic check box activated.
- After separation, the attachments are removed from the downloaded / original MSG file.
- For testing purposes moving of the downloaded images to the Deleted Items directory can be switched off via a special Windows Registry setting. When required, this setting has to be created

manually in the “HKEY\_LOCAL\_MACHINE \ Software \ [WL SCN] \ Services” key as “DWORD” variable “LeaveDownloadedMessagesInInbox”. Set this variable to “1” if you would like to keep your messages in Inbox to download the same set of documents on each of the next Runtime Server import iteration.

**Note** Perceptive Intelligent Capture does not support Adobe XML Forms Architecture (XFA) PDF files as this technology is not native to PDF files. Perceptive Intelligent Capture does support AcroForms PDF files. You will be either notified when opening the PDF in Perceptive Intelligent Capture that your PDF viewer is not able to display this type of document or you can determine your PDF type by looking at the PDF Producer properties on the document. If you have PDF files with XFA formatting, you can either convert them from XFA electronic PDF to an image PDF; or you can print the XFA PDF and scan the document. For more information, refer to the “Workaround: section in the *Perceptive Intelligent Capture Installation Guide*.

## OCR settings

In general, OCR settings are defined in the Perceptive Intelligent Capture Designer project. You can override some OCR options from within Perceptive Intelligent Capture Runtime Server.

To change OCR settings, select the OCR+Export+Clean Up tab. The OCR group is located at the top.

General Workflow Import **OCR+Export+Clean Up** Extended Processing

**OCR**

Page Restriction for Multipage Documents:

OCR on document's  first page(s)

OCR on document's  last page(s)

\* Setting first and last pages to 0 means perform OCR on all pages, setting first or last pages to 1 or more means perform OCR on first or last pages only (or both).

☐ CI Docs only: Lightweight OCR (text recognition only, no geometrics)

☐ Verify OCR processing time-out for each page

**Export**

Perform export step on: ☒ batches ☐ folders

☒ Trigger script based export

☒ Generate protocol file for each exported batch

☐ Copy documents to export directory

☐ Generate PDF file on export

**Clean Up**

☒ Always clean up batches

☐ Clean up batch only if ready file available:

☐ Clean up batch only if all files are older than  hours

☐ Clean up if ready file available OR all files older than specified timespan

## Page Restrictions

- With Perceptive Intelligent Capture, by default, a full page OCR is done during the first processing step for all document pages. You can restrict the initial OCR to specified pages. If additional OCR results are required later, the recognition is performed on demand during the classification and extraction steps. On demand means that each processing step requires certain regions in a document to be recognized. The OCR results are stored in the Workdoc.
- To specify a range for the initial OCR, enter numbers into the corresponding text boxes. The default value is 0 in either case, meaning that OCR is done for all pages.
- *CI docs only.* Select this option to skip the layout analysis for electronically generated documents, such as e.g. e-mails. The extraction may not work properly with these settings. In addition, scripts that are using geometrical structures such as blocks will not work. *Note: Lightweight OCR works without detection of positional information, i.e. highlighting of words, blocks, lines will not be available.*
- *Verify OCR processing time-out for each page.* This option can be used when there are documents with huge amounts of pages (e.g., over 50). Once this option is activated the system is going to apply the so-called “time-out” check after the processing of each page to OCR. (Refer to the “After timeout” option in the **General settings** section.) If this setting is not activated and a 50-page document is being processed (with, for example, 30 minutes timeout setting), the system may not be able to process all 50 pages within 30 minutes. The whole document will be considered as hanging, causing useless loss of OCR results for such a document.

## Export settings

In general, export settings are defined in the Perceptive Intelligent Capture Designer project using script programming. Some export options can only be set from within Perceptive Intelligent Capture Runtime Server.

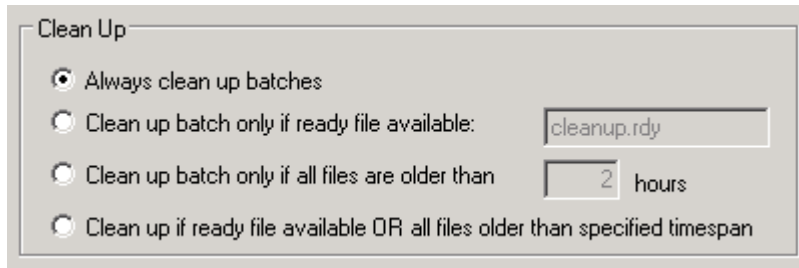
To change the export settings, select the OCR+Export+Clean Up tab. The Export group is located in the center.

- *Perform export step.* A folder is a structure within a batch that can be used for documents that have a relationship with each other. For instance, several TIFF images may be stored as multiple files, but actually belong to the same document. Select one of these options to export every time a folder is processed or to export every time a batch is processed.
- *Trigger script based export.* Use this option to switch export scripts on or off. This is useful for test purposes.
- *Generate protocol file for each exported batch.* Generates a separate log file each time a batch is exported.
- *Copy documents to export directory.* Copies the processed documents from the base directory to the image root directory.
- *Generate PDF files:* Select this option if you want to create PDF documents from your images and associated Workdoc. You keep the original layout and you can use the OCR results for full-text search within the PDF documents. The Workdoc is not visible.

## Clean up settings

Clean up means automatic removal of batch files from the batch root directory if they are no longer required.

To change the clean up settings, select the OCR+Export+Clean Up tab. The Clean Up group is located at the bottom.



- *Always clean up batches.* Removes batch files once the batch's last output state is reached.
- *Clean up batch only if ready file available:* The batch root directory is monitored for the presence of a trigger file. Clean up starts if the file is found. You can use this option to trigger the clean up from external systems.

This option is only available if file system access is set on the General tab ('Use database' is unchecked).

- *Clean up batch only if all files are older than.* The clean up starts if any batches in the batch job are older than the specified period. If you use this option and move documents from the import to the batch job, the clean up starts at regular intervals.
- *Clean up if ready file available OR.* Combines the previous options.

This option is only available if file system access is set on the General tab ('Use database' is unchecked).

**Note** If an RTS instance ONLY performs cleanup it is recommended NOT to activate "High priority Mode" in the General tab. But any combination of cleanup with other RTS steps except import it is highly recommended to keep High Priority Mode activated.

## Extended processing settings

If you use information from external files such as databases to process your batches and you need to update these files from time to time, or if you want to synchronize Perceptive Intelligent Capture Designer project files with Perceptive Intelligent Capture Verifier, select the *Extended Processing* tab. With extended processing, you can update an arbitrary number of target files with the information from the source files.

Runtime Server has a section in the Extended Processing tab for Document Separation. This section allows the user to configure a different project to use during processing for carrying out the document separation/merging workflow step.

The screenshot shows the 'Extended Processing' tab of a configuration window. The window has a title bar and a menu bar with the following tabs: General, Workflow, Import, OCR+Export+Clean Up, and Extended Processing. The 'Extended Processing' tab is active. It contains several sections:

- File Replacement:** A checkbox labeled 'Perform file replacement (replace destination file with source file):'. Below it is a table with three columns: 'Source File', 'Destination File', and 'Copy/Move'. The table is currently empty. Below the table are two text input fields: 'Source File:' and 'Target File:', each with a browse button (...). Below these fields are two radio buttons: 'Copy File' (selected) and 'Move File'. At the bottom of this section are three buttons: 'Update', 'Add', and 'Remove'.
- Verifier project file reference:** Two text input fields: 'Global project:' and 'Local project:', each with a browse button (...).
- Document separation:** A checkbox labeled 'Use special project for document separation workflow step'. Below it is a text input field labeled 'Use project:' with a browse button (...).
- Display Format:** Two checkboxes: 'Convert image to display format after failed classification' and 'Convert image to display format after failed extraction'.

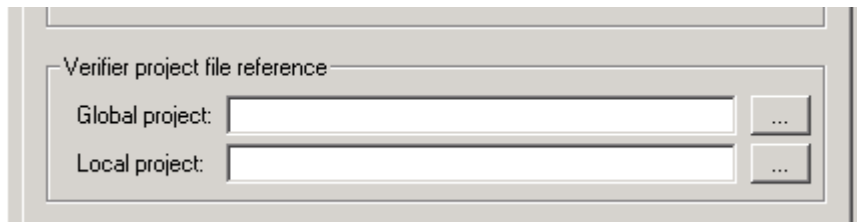
At the bottom of the window are three buttons: 'OK', 'Cancel', and 'Apply'.



## File replacement options

- *Perform file replacement.* Select this option to replace the target file with the source file. Clear this option if you only want to generate the target file if it does not yet exist.
- *Source File.* Select the file that contains up-to-date information.
- *Target File.* Select the file that is to be updated with information from the source file.
- *File Operation.* Select whether you want to copy or to move the source file to the target file.
- *Add.* Click this button to add a pair of source and target files to the list box.
- *Remove.* Click this button to remove the selected entry from the list box.
- *Update.* Click this button to perform the update for the selected entry in the list box.

## Verifier project reference options



There are two file paths to be set: Global Project and Local Project.

These options are useful for two purposes:

- For Standard Verifiers referencing projects across mapped network drives, these options enable the system to substitute local mapping for the network mapping. Working with a local copy of the global project speeds up processing time by circumventing potential network bottlenecks.
- For Advanced Verifiers, these paths are references to the local and global projects for the Supervised Learning Workflow. These options enable Advanced Verifiers to use different global projects with a local project. This is the most common use for these options. Usually, these options are used when you need to use different project files with similar Verifier/RTS configurations. For example, consider a project that uses one Import RTS instance to process U.S. invoices and another Import RTS instance to process German invoices, which have distinct formats for dates. Although the project imports all American and German invoices to the same batch root, one Import RTS instance looks to a project settings file called US.sdp to validate and extract U.S. dates, and the other instance looks to another file, DE.sdp, to validate and extract German dates.

The folders supplied for these paths may not exist when the RTS Import instance is working; they are created when the system writes this information into the batch structure in the \*.sdp file during batch creation. If *Use Batch Specific Project File* is enabled in the Verifier settings, the system automatically loads either the U.S. or German project settings file, depending on the location of the imported documents source.

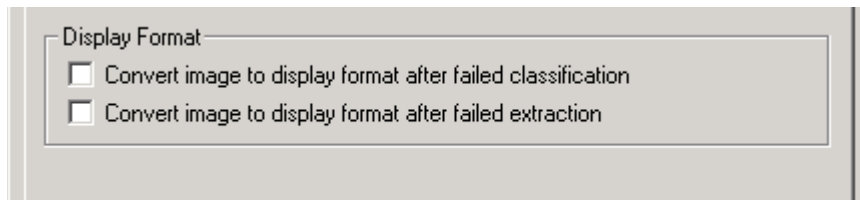
## Display format – JPEG conversion

Additional optimization has been done to Web Verifier to reduce the time taken to render/convert images on the client browser side. The Runtime Server is now able to store rendered images directly in the database and reduce some of the loading time on the client side.

This can be done via the RTS Extended Processing setting tab. A Display Format section exists which enables the administrator to configure RTS to automatically convert images if the document will be presented to the Web Verifier user for classification, or extraction verification.

Select Convert image to display after failed classification when you want to store converted images within the database for documents that have failed to classify.

Select Convert image to display after failed extraction when you want to store converted images within the database for documents that have failed to extract data.



There is no further configuration required for the Web Verifier application. When the Web Verifier opens a batch for verification, when the document is displayed to the user, the application will immediately use the rendered document existing within the database.

Some additional items of note:

- If the settings are not used, and the Web Verifier opens a document, the rendering of the image will be done at real time for the user.
- The *Display Format* settings are only applicable to Web Verifier and will have no impact to the Thick Verifier, LSM, or Designer.

## Setting the license key

To run Perceptive Intelligent Capture, you must have a license key. You can run either a single instance or multiple instances of Runtime Server using one license file with just one license key. Perceptive Intelligent Capture Runtime Server contains a default directory, located in the batch root directory, in which it creates the network license file. Perceptive Intelligent Capture Runtime Server will automatically go to this directory when it searches for the license file on startup. To make this possible, you must have a dongle that contains a license on a machine that you can use as a central point. For all other machines, you set the configuration to point to the machine that has the dongle.

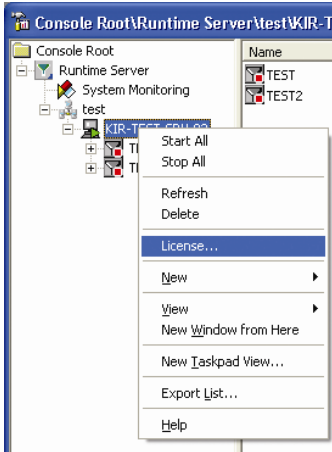
If you want to use different batch root directories simultaneously, you can enter a specific path for the network license file. However, you must configure this path manually for Perceptive Intelligent Capture Runtime Server and for Perceptive Intelligent Capture Verifier installation.

**Note** If you are intending to use the Perceptive Intelligent Capture Database as your document source, specify a license share or a file system folder which contains the license. Batch root directory licensing cannot be used when using the Database.

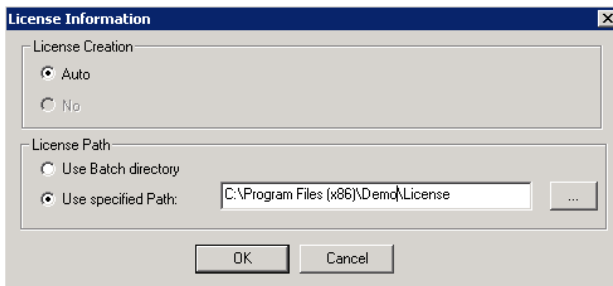
## Set license key for machines with a Dongle

To create the license automatically, complete the following steps.

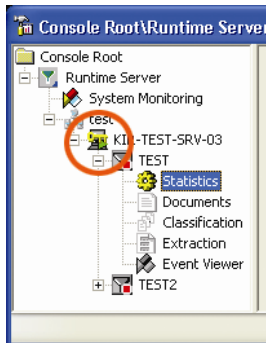
1. Right-click a machine node.



2. On the shortcut menu, click **License**. The **License Information** dialog box appears. Auto is already selected if the machine has a dongle.



3. Specify either the batch directory or another path.
4. Click **OK**. If the machine has a dongle, a gold key appears in the Scope view next to the machine name.

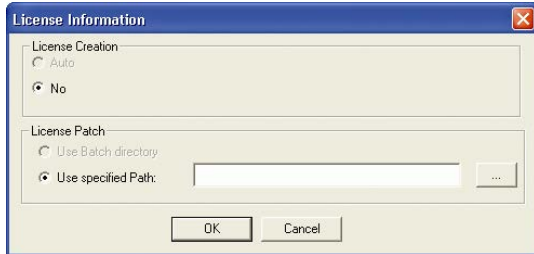


## Set license key for machines without a Dongle

To specify a path for the license, complete the following steps.

1. Right-click a machine node.

2. On the shortcut menu, click **License**. The License Information dialog box appears. A machine without a dongle will automatically say **No** in the **License Creation** selection.



3. Specify a path. Select **Use specified Path**, then enter or select a directory path.
4. Click **OK**.

A license should be generated approximately every five minutes. The server stops processing if no license was generated.

## Prepare an instance for “Document Separation” feature

To configure an RTS instance for Automatic Document Separation, we have to insert the ADS project as a project file in general tab of the RTS instance properties. For more information, refer to the **Project Properties for Document Separation** section of *Perceptive Intelligent Capture Designer Guide*.

Also, the batch root folder that contains the single page documents for merging has to be referenced.

### Batch properties

To create a batch for the Document Separation feature, configure an RTS instance for Import and OCR.

- The documents to import must be single-sided documents.
- The import creates batches with one folder per document.
- The workflow states should be different to the default workflow states. Otherwise, there will be conflicts with the other instances using RTS that have their own state numbers.

## Workflow for ADS

The most important setting for ADS is the checkbox for folder based serial processing, which is found on the Workflow tab of the instance settings just below the Workflow Step Definitions. This option has to be checked. For more information, refer to the [Workflow settings](#) section.

Input State	Process Step	Output State
100	Import	succeeded: 100, failed: 50
200	OCR	succeeded: 200, failed: 150
200	Document Separation	valid: 230, invalid: 215
200	Classification	classified: 300, not classified: 250
300	Extraction	valid: 700, invalid: 550
700	Export	valid: 800, invalid: 750
650	Custom Processing	succeeded: 700, failed: 690
450	Database Export	succeeded: 800, failed: 760
800	Clean Up	

☐ Perform advanced import failure processing  
☐ Perform folder based classification+extraction step  
☒ Perform folder based serial processing

Corrupted document's failure state: 0

Note the incoming and outgoing states. These state numbers must be completely different to those of the other instances. With two Runtime Servers being used, both failed outgoing states (155 for classification and extraction failures) for each workflow step will have to be set to a special state allocated specifically for the “manual validation of document separation required” case. Extraction is successful, when the Document Separation engine makes a secure split/merge decision. Extraction will be unsuccessful, when the ADS is unable to make a confident decision based on the Learnset. For more information, refer to the [Project Properties for Page Separation](#) section in the *Perceptive Intelligent Capture Designer Guide*.

Close the settings by clicking OK. Now the Automatic Document Separator instance is ready to be started.

## Run of the ADS instance

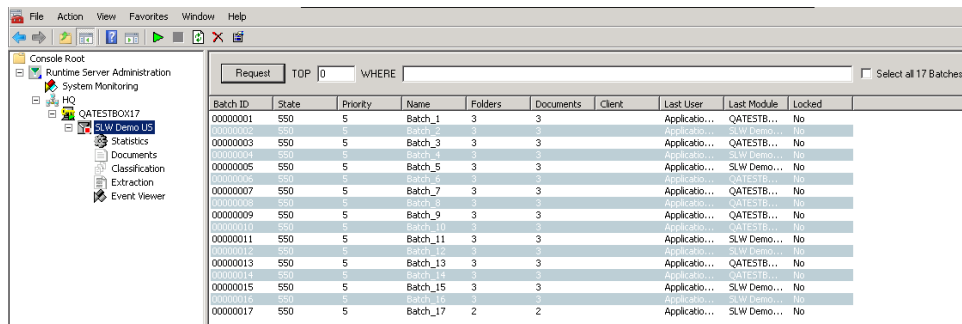
The first run of the ADS instance can take a while. There are two main reasons for this:

- Before the document separation can start, the ADS Learnset has to be generated. The documents in the prepared ADS Learnset folder (Refer to the *Perceptive Intelligent Capture Designer Guide* section **Document Separation Learnset**.) must be parsed and the Learnset information must be stored in the files: “Ads.dsf”, “Ads.ptb”, and “LearnTemp.ptb”, which is created in the ADS Learnset folder. This task is executed only once before first-time processing, when no Learnset information exists.
- The processing is folder based. This means that all documents of the batch are loaded to memory before the processing starts.

After the Automatic Document Separation, followed by the manual validation of its results in Perceptive Intelligent Capture, Verifier has finished the batch and it now goes in to “Document separation succeeded” state (such as 201 in the example above). The system is now ready to apply the next workflow steps such as classification, extraction, validation, export and so on. These workflow steps have to start from the “succeeded document separation” state as the input.

## Process batches

### Batch view



Batch ID	State	Priority	Name	Folders	Documents	Client	Last User	Last Module	Locked
00000001	550	5	Batch_1	3	3		Applicabo...	QATESTB...	No
00000002	550	5	Batch_2	3	3		Applicabo...	SLW Demo...	No
00000003	550	5	Batch_3	3	3		Applicabo...	QATESTB...	No
00000004	550	5	Batch_4	3	3		Applicabo...	SLW Demo...	No
00000005	550	5	Batch_5	3	3		Applicabo...	SLW Demo...	No
00000006	550	5	Batch_6	3	3		Applicabo...	QATESTB...	No
00000007	550	5	Batch_7	3	3		Applicabo...	QATESTB...	No
00000008	550	5	Batch_8	3	3		Applicabo...	QATESTB...	No
00000009	550	5	Batch_9	3	3		Applicabo...	QATESTB...	No
00000010	550	5	Batch_10	3	3		Applicabo...	QATESTB...	No
00000011	550	5	Batch_11	3	3		Applicabo...	SLW Demo...	No
00000012	550	5	Batch_12	3	3		Applicabo...	QATESTB...	No
00000013	550	5	Batch_13	3	3		Applicabo...	QATESTB...	No
00000014	550	5	Batch_14	3	3		Applicabo...	QATESTB...	No
00000015	550	5	Batch_15	3	3		Applicabo...	SLW Demo...	No
00000016	550	5	Batch_16	3	3		Applicabo...	QATESTB...	No
00000017	550	5	Batch_17	2	2		Applicabo...	SLW Demo...	No

The Batch view displays a list view of all batches with the following information:

- Batch ID
- Batch state
- Batch priority
- Batch name (optional)
- Total number of folders in the batch
- Total number of documents in the batch
- Client (the owner of the license)
- Last User (Name of the operator who previously processed the batch)
- Last module (name of the application that previously processed the batch)
- Locked. “Yes” indicates that the batch is locked because it is currently being accessed by another instance of Perceptive Intelligent Capture Runtime Server or by an instance of Perceptive Intelligent Capture Verifier.

- External group ID can be assigned to a batch
- External batch name is the name of the batch group
- Transaction ID can be assigned to a batch
- Transaction type can be assigned to a batch

**Note** The four table columns External group ID, External batch name, Transaction ID and Transaction type are not displayed by default. See the Installation Guide on how to activate these columns.

The Administrator can filter batches by performing a query that would retrieve a subset of records. It enables the Administrator to easily manage and show a subset of batches. The subset can be further filtered by specifying that the MMC only returns a specified number of TOP records and not the whole result list.

**Note** To filter for a batch ID, use a syntax as shown in the following example.

1. Batch ID = BatchIDnumber

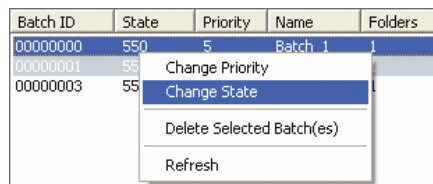
example: BatchID = 00000231

2. State = 550
3. Priority=3
4. Last Module = QATESTBOX80

The Batch ID number always has 8 digits.

If processing is stopped, you can right-click any entry in the list view.

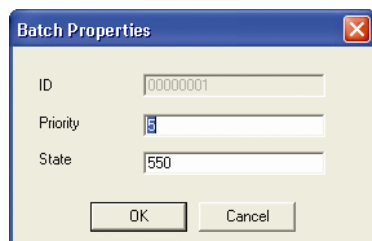
Batch ID	State	Priority	Name	Folders
00000000	550	5	Batch 1	1
00000001	55			
00000003	55			



A context menu with the following commands appears:

- *Change Priority.* You can manually enter a new priority for the selected batch. When you select Change Priority, a Change Batch Settings dialog box appears. Enter a different priority in this box, and then click OK.
- *Change State.* You can manually enter a new state for the selected batch.
- *Delete Selected Batches.* You can delete the selected batch, including the batch control file, the fast info file, and the documents in the subdirectory. If there is a separate image root directory, the images will not be deleted.
- *Refresh.* Updates the entire list view with new batch information.

Double-click a batch list item to change the priority and state.



**Note** Runtime Server records information on users/machines that perform batch changes. Each time one of the above operations takes place, the user name is recorded for auditing purposes

## Start the process

Once Perceptive Intelligent Capture Runtime Server is configured, you can start processing batches.

To start processing, complete one of the following options.

- From the **Action** menu, select **Start All**. Then in the toolbar, click the button with the green arrow.



- Right-click the desired instance. On the shortcut menu, click **Start**.

## Process projects containing SaxBasic scripts

**Note** Perceptive Intelligent Capture does not support the Sax Basic scripting engine. If you try to start an RTS instance that uses an older project with Sax Basic engine scripts, it will report an error, similar to the following examples.

```
Project {path} is using an unsupported Sax Basic engine and cannot be used.
```

```
Open this project in the Designer application to upgrade to the newer engine for custom scripting (WinWrap Basic).
```

The RTS instance stops immediately. You can then migrate this project to the supported WinWrap scripting engine in the Designer application.

## Stop the process

To stop processing, perform one of the following actions.

- On the **Control** menu, click **Stop**. In the toolbar, click the button with the red square.
- Right-click the desired instance. On the shortcut menu, click **Stop**.



## Refresh groups

To refresh groups when processing, complete the following steps.

- Select the group name in the scope panel.
- Right-click the name.
- On the shortcut menu, select **Refresh** or select **Action > Refresh** from the menu. This selection refreshes all machines by deleting them and re-adding the connections.

## Script debugging

If script debugging is enabled for the project (For more information, refer to the [General settings](#) section.) you can debug script from Perceptive Intelligent Capture Runtime Server. When a script fails while processing, you will be given the option of debugging the script in RTS. If you choose to debug the script in RTS, a script window will open in which you can modify the code.



## Monitor the Process

### Monitor the process with Perceptive Intelligent Capture Runtime Server

The View window of the Perceptive Intelligent Capture Runtime Server MMC snap-in contains several windows that display information about the current processing state. This window enables administrators to monitor local and remote Perceptive Intelligent Capture machines.

#### Statistics view

To access the Statistics View, select Statistics in the Navigation panel.

The screenshot shows the Perceptive Intelligent Capture Runtime Server MMC snap-in. The left pane displays the navigation tree with the following structure:

- Console Root
  - Runtime Server Administration
    - System Monitoring
      - HQ
        - QATESTBOX17
          - Instance1
            - Statistics (selected)
            - Documents
            - Classification
            - Extraction
            - Event Viewer
          - Instance2
            - Statistics
            - Documents
            - Classification
            - Extraction
            - Event Viewer

The main pane displays the following information:

- Project:** C:\Projects\Global.sdp
- Batch:** Batch\_21, ID = 00000021
- Document:** 00000475.wdc
- Statistics:**

	Import	OCR	Class. / Extract	Export	Clean Up
Batches	4	1	1	0	0
Documents	10	8	3	0	0
- Progress Indicators:** A progress bar showing the current progress of the task.
- Status:**

Performing OCR step on document '00000475.wdc', '00000475.tif' (3/3)

ID	Time	Error Description
8	22:49:25	Setting Automated System Update timer to 35 +
7	22:49:19	Batch '00000021' has been changed
6	22:49:19	User 'QATESTBOX17\Administrator' computer 'QATESTBOX17' is changing Batch(es) +
5	22:49:10	Host is stopping... [Stopped = 0]
4	22:48:43	Setting Automated System Update timer to 1 min 17 +
3	22:48:22	Setting Automated System Update timer to 1 min 38 +
2	22:48:13	Database Job 'Test1' has been created +
1	22:46:08	Username: SYSTEM, Computername: +

The Statistics View displays the following information:

- **Project.** The path to the currently used project file.
- **Batch.** For the currently processed batch, the name, the ID, the serial number, and the total number of batches in the batch root directory.
- **Document.** The path to the Workdoc of the currently processed document.
- **Statistics.** Progress since the last time the program was started.
- **Under Status.** A status message is displayed informing of the task currently performed. The list below shows status messages stating which tasks have been completed and whether any errors occurred.
- **Reset.** Counts the statistics from zero, starting with the next statistics change. To reset the counts, right-click the Statistics node in the scope panel. Select Reset.

## Document view

To access the Document View, click **Document** in the Navigation pane.

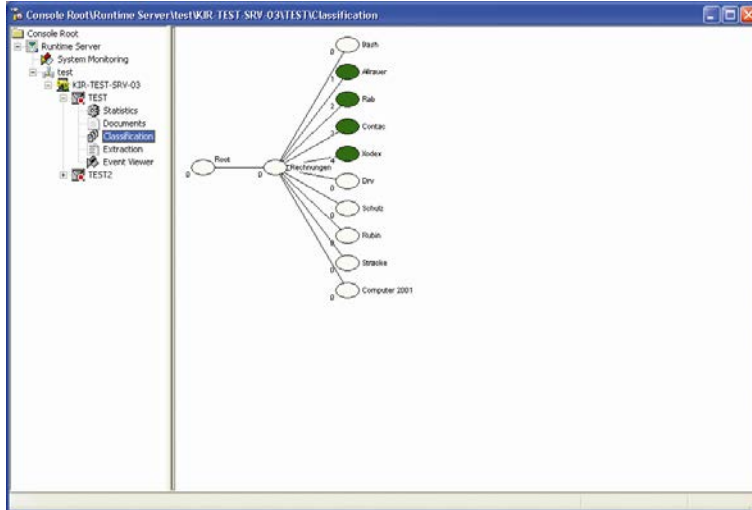


The Document View displays the first page of the currently processed document. Options for viewing the document appear in a toolbar above the document.

Button	Description	Keyboard Shortcut
	Adjusts the document display to the height of the viewer window.	n/a
	Adjusts the document display to the width of the viewer window.	n/a
	Adjusts the document display to the height or the width of the viewer window so that the entire page is displayed.	n/a
	Zooms in.	
	Zooms out.	

## Classification view

To access the Classification View, click Classification in the Navigation pane.



The Classification view displays the first page of the currently processed document with a continuously updated tree view of classification results, or just the updated tree view of classification results. Double-click a class to collapse or expand its sub-tree. Right-click the classification tree to view the document, or toggle off the document view.

## Extraction view

To access the Extraction View, click *Extraction* in the Navigation pane.

The screenshot shows the SAP NetWeaver Administrator console. The left pane displays a tree view of the system hierarchy. The right pane shows a table with the details of the selected 'Extraction' node.

**Tree View:**

- Console Root
  - Runtime Server
    - System Monitoring
      - Test
        - x3p-TEST-SRV-03
          - TEST
            - Statistics
              - Documents
                - Classification
                  - Extraction** (Selected)
                  - Event Viewer

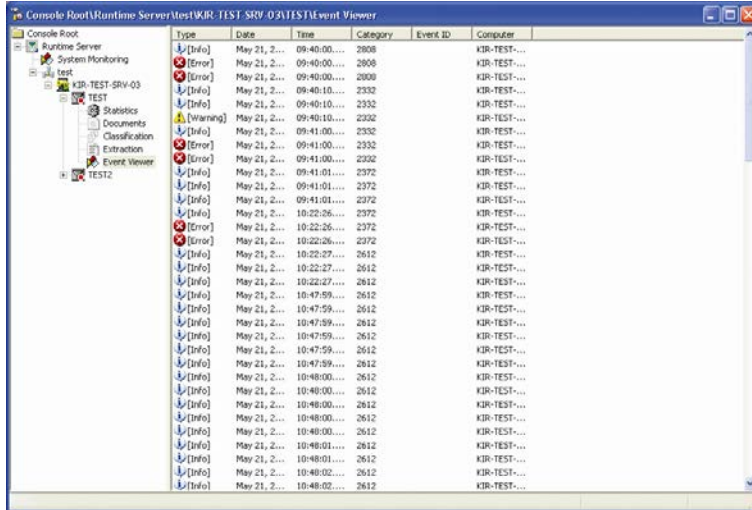
**Table:**

| Field Name      | Extracted Value |
|-----------------|-----------------|
| Rechnungsnummer | 434046          |
| Rechnungsdatum  | 12.01.2000      |
| Bestellnummer   | 0000020         |
| Netto           | 11.490,00       |
| MwSt            | 1.636,40        |
| Brutto          | 13.326,40       |

The Extraction View displays the first page of the currently processed document with a continuously updated list view of extraction results. On the document, valid fields are highlighted in green and invalid fields are highlighted in red. Move the cursor to the highlighted area to display the field name, and then right-click the extraction window to view the document.

## Event Viewer

To access the Event Viewer, click Event Viewer in the Navigation pane.



Using the event logs in the RTS Event Viewer you can gather information about RTS errors, warnings, and successful processes.

The Event Log starts automatically when you start an RTS instance. Events are separated into pages. To move from one page of events to another, use the black arrows on the toolbar.

## Event log




Information about RTS events is stored in a log file at [INSTALL\_FOLDER]\Perceptive Intelligent Capture\bin\log

### Example

C:\Program files\Perceptive\Perceptive Intelligent Capture\Log\M\_YYYYMMDD.log

A log file is created daily for system monitoring.

This event log records three types of events:

-  Error
-  Warning
-  Information.

An error is a significant problem, such as loss of functionality.

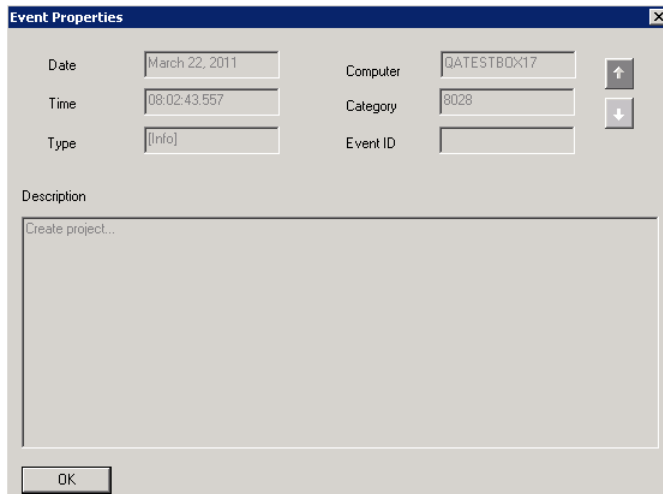
A warning is an event that is not necessarily significant, but that may indicate a possible future problem.

An info is an event that describes the successful completion of a major processing step that would otherwise have an adverse effect on the system. For example, the creation of a shared license file on the license server would be recorded as an info event.

## Monitor event properties

Each event includes a description that you can use for troubleshooting or information gathering.

To view Event Properties, double-click an event.



The Event Properties dialog box describes the event. This description is taken from the log file.

## Centralized Remote System Monitoring

Perceptive Intelligent Capture Runtime Server can cumulatively monitor all critical events in a distributed Runtime Server environment. Errors, warnings and informational messages can be stored; filtered by date and type; and e-mails can be sent automatically to notify an administrator of critical events or to notify the manufacturer that the license is due to expire.

### Configure system monitoring without email notification

Below are the steps required to start System Monitoring without e-mail notification.

Launch the Computer Management MMC from the Administrative Tools program group on the Perceptive Intelligent Capture server. To do this, complete the following steps.

1. Click **Start** on the Windows Desktop, select **Control Panel**. Double-click the **Administrative Tools** and then select **Computer Management**.
2. Double-click the **Services and Applications** node to expand it.
3. Select the **Services** sub-node.
4. Select the **Standard** tab at the bottom of the window.
5. In the **Scope** pane, right-click the Perceptive Intelligent Capture System Monitoring service and select **Start**.

The Perceptive Intelligent Capture System Monitoring service running on a specific workstation can monitor only those Runtime Server machines that were configured from that workstation via the Runtime Server administration console.

The Perceptive Intelligent Capture System Monitoring service has to be restarted after the RTS machines have been reconfigured in the MMC console; for example, after adding of a new remote RTS service.

## Configure system monitoring with email notification

To configure the Perceptive Intelligent Capture System Monitoring service to perform automatic email notification, you must complete the following steps to configure the registry settings.

1. Open “Runtime Server Monitor Configuration.reg” registry file located in \Perceptive\Perceptive Intelligent Capture\Bin” folder using Windows Notepad.  
**Note** For 64-bit operating systems, open the **Runtime Server Monitor Configuration 64bit.reg** registry file.
2. Modify the email parameters as desired and then run the Registry file with **regedit.exe** or **regedt.exe** utility. (Refer to the following table for more details regarding available parameters.)
3. Restart the “Perceptive Intelligent Capture System Monitoring” NT service (Refer to the [Configure system monitoring without email notification](#) section).

Email Notification features the encryption of Eail ID and Password in the System Monitoring Service.

To activate ID and Password encryption, complete the following steps.

1. Open the Windows registry.
2. Go to **HKEY\_LOCAL\_MACHINE/SOFTWARE/Perceptive** on 32-bit machines. On 64-bit machines go to **HKEY\_LOCAL\_MACHINE/SOFTWARE/Wow6432Node/Perceptive**.
3. Create the DWORD value “Email\_UserEncrypt” under System Monitoring and set the value to 0.
4. Restart the System Monitoring Services. The ‘E\_Username’ and ‘Email\_UserPassword’ is then encrypted.

**Note** The service does not send email messages immediately upon receipt but collects them into a messages group. The next group of messages is sent as a single email periodically. If the group does not contain any messages nothing is sent. The default email notification frequency of 5 minutes can be changed by editing the “Email\_Everymin” parameter.

### Example

```
"Email_Everymin"=dword:00000005
"Email_Recipient"="alexey@esterkin.com;administrator@johnsmithcompany.com"
"Email_SenderAddress"="administrator@johnsmithcompany.com"
"Email_SendUsing"="Pickup"
"Email_SMTPServer"="smtp.johnsmithcompany.com"
"Email_UserName"="SysMon"
"Email_UserPassword"="smpassword"
```

| Name                | Description  |
|---------------------|--|
| Email_Everymin      | Defines how often (in minutes) the e-mail notification service will check for messages and send them if any are available. |
| Email_Recipient     | Semi-colon separated list of system administrators to receive the e-mail notifications.                                    |
| Email_SenderAddress | Valid e-mail address to send the notifications from.   |

| Name               | Description  |
|--------------------|--|
| Email_SendUsing    | “Pickup” value means that the e-mails are to be sent via the local SMTP service. If this is the case the rest of configuration parameters below can be ignored as everything has to be configured via Windows SMTP service settings.<br><br>“Port” means that the e-mails are to be sent via a direct connection to a remote SMTP server. Below are the additional parameters for “send using port” method <u>only</u> . |
| Email_SMTPServer   | SMTP server (or “smart host” server).  |
| Email_UserName     | User name for Email_SenderAddress’s account.   |
| Email_UserPassword | User password for Email_SenderAddress’s account.   |

### System Monitoring view

The System Monitoring view can be activated by clicking on System Monitoring item available in the Runtime Server Administration.

To refresh the view to see the latest download message the user should click **Refresh**.

The following messages properties are available in the system monitoring view:

| Column Name | Column Description  |
|-------------|---|
| Type        | Type of the received message (can be error, warning or info).   |
| Computer    | Network name of the machine the message was sent from.  |
| Host        | Name of the Runtime Server host instance the message was sent by. If this name is empty, this means the message was sent by the Runtime Server Manager service. |
| Date & Time | Date and time the message was sent at.  |
| PID         | Windows Process ID of the processed the message was sent from.  |
| Description | Message content.  |

Currently displayed messages can be sorted by all properties listed above by clicking on the corresponding column header button.

The following filters are available for the downloaded messages:

| Filter            | User Action to Activate   | Description & Comments  |
|-------------------|---|---|
| Errors filter     | Click the “Error” check-box at the top of system monitoring view to enable or disable the filter.   | When checked, filters all messages with error type.   |
| Warnings filter   | Click the “Warning” check-box at the top of system monitoring view to enable or disable the filter. | When checked, filters all messages with warning type.   |
| Info filter       | Click the “Info” check-box at the top of system monitoring view to enable or disable the filter.    | When checked, filters all messages with info type.  |
| Time frame filter | Enter number of days value in “Show logs for last X days only” edit box.                            | As soon as this setting is entered the system will start filtering all messages received earlier than X days ago. In this connection, “0” value means “no filtering”. |

All downloaded messages stored in system “M\_” files placed into “Log” sub-directory of the application folder where Perceptive Intelligent Capture software was installed. All filtering settings affect representation in the system monitoring view only. Setting up a filter does not mean that some entries are going to be removed from the original storage files, which means that the filtering can be always roll-backed.

The preferred (last used) filtering and sorting options are saved in the Windows Registry every time a user modifies them and shall be restored next time the user starts the Runtime Server Administration console.

## Unified custom logging

User-defined errors, warnings and informational messages can be written to the Runtime Server log files reserved for calling applications with custom scripting. Supplementary information is written for every logged entry including the date and time the message was generated, the available virtual memory, the process identifier, and Windows resource usage. The user-defined messages can be added to the custom script via a “LogScriptMessageEx” method of the Project interface. For more information about usage of this method, refer to the *Perceptive Intelligent Capture Scripting Guide*.

All logs are written into Perceptive Intelligent Capture’s log folder where all Runtime Server component-level logs, crash logs, etc. are collected. The log files generated by the Verifier application have file names prefixed with “V\_”; by Designer with “D\_”; by Runtime Server with “H\_” and with “U\_” when logging from any other Perceptive Intelligent Capture tool.

The message is always written to the log file but depending on the severity of the message, it can also be sent to the system monitoring service of the Runtime Server or via e-mail to the registered system administrator recipients. (Refer to the **Centralized Remote System Monitoring** section.)

For the script-generated log entries of severity “CDRSeveritySystemMonitoring” the corresponding message is going to be forwarded to the cumulative System Monitoring pane of the Runtime Server. For this particular Runtime Server instance it is going to happen only if at least one instance of the System Monitoring service is running on any machine in a local area network being correctly configured to accept system notification from the machine (physical server), where the host instance is running and logging messages.



For the script-generated log entries of severity “CDRSeverityEmailNotification” the message is going to be additionally sent via e-mail to the pre-configured list of Perceptive Intelligent Capture system administrators / professional services members. The mandatory requirement (in addition to the requirements listed above for the system monitoring notification) for such a message to be sent is correct configuration of e-mail sub-system of the System Monitoring service.

## Advanced logging

The standard Runtime Server Log includes System Level Resource information and in the event of a system crash or failure, special error logs.

### System resource logging

The following System Resource information has been added to the Standard Service Manager and Host Log files.

- Available physical memory (in kb).
- Used physical memory (in kb).
- Available virtual memory (in kb).
- Used virtual memory (in kb).
- Virtual memory used by this RTS host instance process (in kb).
- Physical memory used by this RTS host instance process (in kb).
- Handles used by the process (in number of handles).
- GDI resources used by the process (in number of handles).
- User Objects used by the Process (in number of Objects).

These values are written to the Standard Service Manager.

- [Application directory]\Log\S\_yyyymmdd.log  
For example:  
C:\Program files\Perceptive\Perceptive Intelligent Capture\Log\S\_20070521.log

And the Host Log files:

- [Application directory]\Log\H\_<instance name>\_yyyymmdd.log  
For example:  
C:\Program files\Perceptive\Perceptive Intelligent Capture\Log\H\_Test\_20070521.log

Using the following format:

```
LoggingLevel | Date | Time | ErrorNumber | ProcessId |  
UsedPhysicalMemory/AvailablePhysicalMemory |  
UsedVirtualMemory/AvailableVirtualMemory |  
UsedVirtualMemoryByThisHost/UsedPhysicalMemoryByThisHost | ProcessHandles |  
GDIResources/UserObjects | Message | ServerName
```

### Example

```
[Info] | August 03, 2005 | 15:46:47 | 010 | 1804 | 330564k/193172k |  
366240k/911160k | 12176k/15388k | 183 | 43/59 | Check batches for further processing |  
W2K-MQUIJANO
```

## Crash or failure logging

In the case of a System or Application Crash or Failure an additional error log file will be created with a format:

C\_<Process ID>\_yyyymmdd.log This will log crashes under the following circumstances.

- *Import Crashes.* The log file will have stack information specific to the status of the system when the crash/failure occurred.
- *OCR Engine Crashes.* The log file will have a “ReadZone” entry for the specific OCR engine for which the crash occurred and stack information specific to the status of the system when the crash/failure occurred.
- *Classification Engine Crashes.* The log file will have a “Classify” entry for the specific Classification engine for which the crash occurred, the specific Class name where the crash occurs, and stack information specific to the status of the system when the crash/failure occurred.
- *Extraction Engine Crashes.* The log file will have an “EvalZone” entry for the specific Extraction engine for which the crash occurred, the field where the crash occurs, and stack information specific to the status of the system when the crash/failure occurred.
- *Export crashes.* The log file will have a “StepExport” and stack information specific to the status of the system when the crash/failure occurred.
- *Clean-up crashes.* The log file will have a “ProcessDocumentsCleanUp” and stack information specific to the status of the system when the crash/ failure occurred.
- *Script Events.* The name of the script event, the kind of sheet, which could be project level or a certain class, and, for script events on field level, the field name will be added to the crash/failure log.

## Appendix A Launch the Runtime Service

### Starting and Stopping the Runtime Service

To start the Perceptive Intelligent Capture Runtime Service Manager, click Windows Start, select *Programs, Perceptive, Perceptive Intelligent Capture 5.6, Perceptive Intelligent Capture Runtime Service* group and click Start Service. This option starts the Perceptive Intelligent Capture Runtime Server NT service and then launches the MMC console automatically.

To stop the Perceptive Intelligent Capture Runtime Service Manager, click Windows Start, select *Programs, Perceptive, Perceptive Intelligent Capture 5.6, Perceptive Intelligent Capture Runtime Service* group and click Stop Service. This option stops the Perceptive Intelligent Capture Runtime Server NT service.

### Getting Started: Configure Runtime Service for the First Use

Before configuring the **Perceptive Intelligent Capture** Runtime Service Manager, read the *Perceptive Intelligent Capture Installation Guide*.

Refer to the **Administration access** section for the first time configuration of the Runtime service Manager on Administration level.

Below are the steps required to configure the Runtime Service Manager if you plan to start and stop the service regularly, you must log on as an Administrator.

Launch the Computer Management MMC from the Administrative Tools program group on the Perceptive Intelligent Capture server. To do this:

1. Click **Start** on Windows Desktop, select **Control Panel**. Double-click **Administrative Tools** and select **Computer Management**.
2. Double-click the **Services and Applications** node to expand it.
3. Select the **Services** sub-node.
4. Select the **Standard** tab at the bottom of the window.
5. In the scope pane, double-click the Perceptive Intelligent Capture Runtime Service Manager service. The Perceptive Intelligent Capture Service Manager Properties dialog box appears.
6. On the **General** tab, under **Startup** type, there are three selections for Runtime Server.
  - Select **Automatic** to start Runtime Service when the machine boots up.
  - Select **Manual** to manually start the service each time.
  - Select **Disabled** to stop the service.
7. Select the **Log On** tab.
8. Under **Log on as**, select **This account**.
9. On the **Log On** tab, click **Browse**.
10. Click **Location** and browse to the domain that has the account.
11. Under **Enter the object name to select**, type **Perceptive Intelligent CaptureRTSvc** (the name of the domain user.) Click **Check Names** to verify your log on information and click **OK**.
12. If necessary, type the domain password for the user in the fields provided.

13. Click **OK**.
14. On the Computer Management MMC screen, complete the following substeps.
  1. Click the **Start** arrow on the toolbar to start the service.
  2. Click the black square on the tool bar to stop the service.
  3. To stop and restart the service, click the square and arrow button.
15. Close the Computer Management MMC.

### Use the Auto-Start Feature

The detail steps necessary to configure an RTS instance to automatically start after a system reboot are given below, as well as the steps needed to stop the RTS instance in case of problems.

To enable autostart on reboot, complete the following steps.

1. Make sure that the **Perceptive Intelligent Capture Service Manager** is configured **for Automatic Start**.
2. Stop the RTS instance you wish to configure for auto-start.
3. Bring up the **Perceptive Intelligent Capture** RTS Properties.
4. In the **General** tab, under **Extended Settings**, select **Automatic Start**.
5. Click **OK**.

To disable autostart use the MMC. If the RTS is in a hanged state and does not respond to the MMC, complete the following steps. To complete this process, you must be familiar with the Windows Registry.:

1. Stop the Perceptive Intelligent Capture Service
2. Locate the Registry Editor (for example, RegEdit32.exe).
3. Navigate to the key: Computer\HKEY\_LOCAL\_MACHINE\SOFTWARE\ Perceptive\Perceptive Intelligent Capture Services\project  
(Computer\HKEY\_LOCAL\_MACHINE\SOFTWARE\Wow6432Node\Perceptive\Perceptive Intelligent Capture Services\project for 64bit systems) where "project" is the name of the RTS instance to stop.
4. Change the **AutoStart** key value from 1 to 0.

### Schedule Runtime Service machines

With the help of third-party scheduling services, for example, Microsoft Windows Scheduled Tasks tool, it is possible to configure the start and stop times for Runtime Servers. This allows additional servers to be deployed to perform heavy duty work at off hours or to be stopped while scheduled backups take place.

**Note** In case of a clock change, any scheduled time will change according to the daylight savings applied.

| Batch file name                     | Purpose and Description  |
|-------------------------------------|--|
| Start RTS as NT Service.bat         | Starts the Perceptive Intelligent Capture Runtime Service as an NT service and launches the MMC administration console after the service starts. Remove "start /B mmc.exe..." line from this batch file if you do not want the MMC console to be launched. |
| Stop RTS running as NT Service.bat  | Stops the Perceptive Intelligent Capture Runtime Service that is running as NT service.  |
| Start System Monitoring Service.bat | Starts the Perceptive Intelligent Capture System Monitoring service to monitor Runtime Server machines configured in the MMC console.  |
| Stop System Monitoring Service.bat  | Stops the Perceptive Intelligent Capture System Monitoring service.  |

### User (script) initiated restarts of Runtime Server instances

In addition to standard functions of Perceptive Intelligent Capture Runtime Server used to configure stop, start and restart frequency of particular working (host) instances, it is also possible to manage stopping and restarting of the instances per custom script calls. A method "PerformScriptCommandRTS" of the public Project interface allows commands to be invoked to control Runtime Server instances from custom scripts in Perceptive Intelligent Capture. Refer to the *Perceptive Intelligent Capture Scripting Guide* for more details as to how this method is supposed to be utilized.

## Appendix B Troubleshooting

### Configuring a Port for Perceptive Intelligent Capture Runtime Server

In case of a conflict in port assignments or for the purpose of firewall configuration, it may appear to be required to set up a specific port for TCP/IP communication channel used by the Runtime Server.

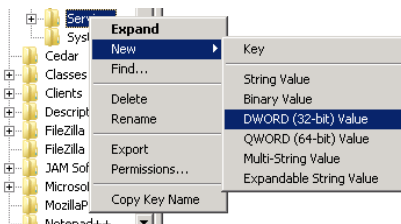
Otherwise, you do not have to configure a port.

Do these steps after you have installed Perceptive Intelligent Capture. This registry entry will be used by the main service as well by the Runtime Server instances and by the MMC. So it is not possible to use two different port numbers by different Perceptive Intelligent Capture applications on the same machine.

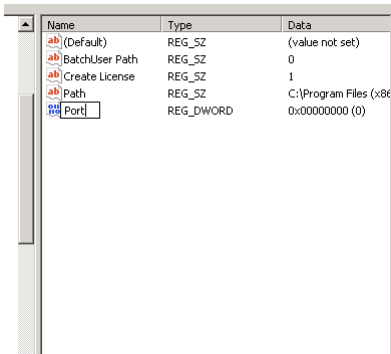
To set up the port, you will be editing the system's registry.

To do this, complete the following steps.

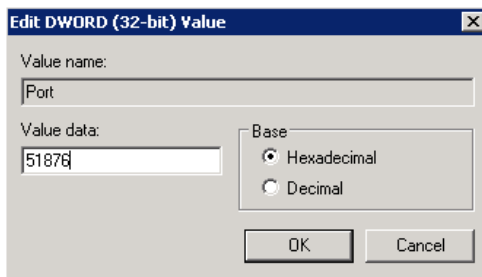
1. Click **Start** on Windows Desktop.
2. Click **Run**.
3. At the command prompt, type `RegEdit` and press ENTER.
4. Expand to `HKEY_LOCAL_MACHINE\SOFTWARE` or to `HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node` for 64 bit systems.
5. Expand the **Perceptive** key.
6. Right-click **Services** and select **New**, and then select **DWORD Value**.



7. Change the name of the new value to **Port**.



8. Right-click the **Port**, then an edit **DWORD Value** dialog box displays. For DWORD, set the value at 51876 if this port is available. If the port is not available, set it to any available open port and click **OK**.



If this port is already in use by another application, you must edit the system registry and set the port to a non-conflicting number on all Perceptive Intelligent Capture servers. The new port number would then be used by all Perceptive Intelligent Capture processes for communication.

## Appendix C Working with Large Document Volume

When working with a large document volume, you can take steps to ensure that the performance to the database is maintained for Perceptive Intelligent Capture.

Perceptive Intelligent Capture can be optimized to process large volume of documents, 5+ million pages per day.

The following configurations are required when working with 10k (or more) pages per day:

1. The Runtime Server instance responsible for **Import** should not have any other workflow step enabled. If **Import** and **Export** are configured in one RTS instance, these should be separated into two individual instances.
2. **Activate High Priority Mode** on the Runtime Server instances. The instance responsible for import should not be configured with this setting.
3. The **Enable Batch integrity verification** option should be disabled for all the Runtime Server instances connecting to the database.
4. In the Runtime Server Management Console, ensure that the RTS Filter is used to request only the top 100 batches. The TOP setting should be enabled to allow for quick response time of the batch list viewing within the MMC.
5. The Database Parallelism setting should be reviewed for the environment to determine if this can be disabled. Disabling Parallelism could impact WVC performance, whilst improving RTS performance. Always consult with the DBA regarding enabling/ disabling parallelism and monitor results for each environment.

This is applicable to version 5.3 and higher, where optimizations have been made for large scale document processing with the database.



## Glossary

|                      |  |
|----------------------|--|
| Absolute path        | A designation of the location of a file in relation to the root directory.   |
| Batch                | A logical organizational structure to control a set of documents during the process. A batch is normally created during the scan process from a batch of paper. The status of a batch is used to manage the input flow.  |
| Batch control file   | Text files containing all information about the status of the batch, its folders, and documents.   |
| Batch root directory | The root directory for batch storage. Usually the same as the image root directory.  |
| CI                   | A setting used to import text documents that were created electronically, such as with a word processor or e-mail application should not be used to import image files.  |
| Classification       | The process of assigning one or more classes and corresponding confidence values to one or more unknown documents.   |
| Clean up             | Automatic removal of batch files those are no longer required from the batch root directory.   |
| Console              | In Runtime Server, refers to a collection of administrative tools available in Microsoft MMC.  |
| DCOM/COM+            | Distributed Common Object Model DCOM (Distributed Component Object Model) is a set of Microsoft concepts and program interfaces in which client program objects can request services from server program objects on other computers in a network. DCOM is based on the Component Object Model (COM), which provides a set of interfaces allowing clients and servers to communicate within the same computer   |
| Designer             | Perceptive Intelligent Capture's design application.   |
| Document             | Any electronic file mainly consisting of ASCII text. If this is not the case, OCR or filtering must be applied to create the text representation. A document can be classified, a document can have fields for extraction, and a document can have one or more images attached.  |
| Domain               | In Windows context, a domain is a set of network resources (applications, printers, and so forth) for a group of users. Users need only to log in to the domain to gain access to the resources, which may be located on a number of different servers in the network.   |
| Dongle               | A dongle (pronounced DONG-uhl) is a mechanism for ensuring that only authorized users can copy or use specific software applications. Common mechanisms include a hardware key that plugs into a parallel or serial port on a computer and that a software application accesses for verification before continuing to run; special key diskettes accessed in a similar manner; and registration numbers that are loaded into some form of ROM (read-only memory) at the factory or during system setup. If more than one application requires a dongle, multiple dongles can be daisy-chained together from the same port. |
| Error event          | A significant problem, such as loss of data or loss of functionality.  |

|                     |   |
|---------------------|---|
| Event log           | Functionality in the event viewer. Enables you gather information about hardware, software, and system problems and to monitor RTS.   |
| Extended processing | Used for updating Perceptive Intelligent Capture files with information from external source files.   |
| Extraction          | Extraction is the process of automatically finding specified information in a document and writing the information to data fields associated with the document. Extraction is used for automatic indexing. In extraction, selected data from a document is automatically written to an extraction file.   |
| Extraction view     | Displays the first page of the currently processed document with a continuously updated list view of extraction results. On the document, valid fields are highlighted in green and invalid fields are highlighted in red.  |
| Fast info file      | A copy of the main information from the *.sdb file. It provides a quick way to determine the status of a batch without opening the *.sdb file. When the fast info file is deleted, it is automatically recreated from the *.sdb file. The second character of the file name is the priority, and the last eight characters are the batch ID. The extension of the fast info file indicates the status of the batch as a number between 000 and 999. |
| Folder              | A logical structure inside a batch for coherent documents. A folder may consist of all pages of a correspondence with many folders inside one batch.  |
| IDE                 | Integrated development environment. A programming environment packaged as an application program, typically consisting of a code editor, a compiler, a debugger, and a GUI builder.   |
| Image               | A digital raster image normally created during the scan process. The image is compressed and stored in a specific format. Internally, Perceptive Intelligent Capture uses a structure called an image that represents the raster image. The image possesses methods to load, store and manipulate it. The image can be displayed in the viewer.   |
| Image root          | The root directory for image storage. Usually the same as the batch root directory.   |
| Information event   | An event that describes the successful Runtime Server operation.  |
| ISV                 | Independent software vendor   |
| Lock file           | Allows multiple instances of Perceptive Intelligent Capture Runtime Server to access the batch root directory. The lock file is created and removed by Perceptive Intelligent Capture Runtime Server for the currently processed batch. It is removed by the operating system if the program terminates abnormally. Lock files are saved with the extension *.loc.  |
| Log file            | File that keeps a record of computer transactions.  |
| MDI                 | Multiple document interfaces.   |
| MMC                 | Microsoft Management Console. An ISV-expandable common presentation service for management applications used to manage Windows-based hardware, software, and networking components, and include items such as controls, wizards, tasks,   |

|  |  |
|--|--|
|  | documentation, and snap-ins. May be from Microsoft or other software vendors, or user-defined.   |
| OCR  | Optical Character Recognition. The reading and recognition of symbols of text from a piece of paper or a scanned image. OCR detects the symbols and converts them into characters and words that can be read electronically.   |
| Parallel processing                            | Dividing programs among multiple processors with the objective of running a program in less time.  |
| PDF  | Portable Document Format. A file format that has captured all the elements of a printed document as an electronic image that can be viewed, navigated, printed or forwarded.   |
| Performance                                    | The speed at which a computer operates.  |
| Results pane                                   | Displays information about each batch, each of the monitoring functions, including windows for statistics, document, classification, extraction, and performance when selected in the scope pane. Each monitoring function has options for viewing items related to that function.   |
| Scope pane                                     | Displays the console root, the Runtime Application folder, a group that contains one or more machines that run Perceptive Intelligent Capture runtime instances on each machine, and a list of items that display monitoring options and control batch states.   |
| Perceptive Intelligent Capture Runtime Server  | A Windows process used by Perceptive Intelligent Capture to process work based on a defined workflow step.   |
| Perceptive Intelligent Capture Service Manager | A Windows service used to instantiate each defined Perceptive Intelligent Capture Runtime Server.  |
| Perceptive Cedar BatchControl Library          | Library that enables you to create batches programmatically.   |
| Serial processing                              | Processing that occurs sequentially. There is an explicit order in which operations occur and in general the results of one action are known before a next action is considered.   |
| Snap-in  | An object that can be attached to another object and then function as part of the whole. A snap-in is a program designed to function as a modular component of another application. Snap-ins is basic components of Microsoft's Management Console (MMC). The MMC snap-ins is the actual management tools; the console - sometimes referred to as a "tools host" - is simply a framework into which the snap-ins is added. |
| Subdirectory                                   | Contains the Workdocs (*.wdc), usually the images (TIFF or similar) and attachments to a document, such as PDF files or fax header files. Named after the batch ID.  |
| Subtree  | A tree that is a child of a node.  |
| Timeout  | A period of time after which an error condition is assumed if some event has not occurred.   |

|               |  |
|---------------|--|
| Tree          | A parent-child data structure.   |
| UNC           | Universal Naming Convention.   |
| Verifier      | Perceptive Intelligent Capture's QA application.   |
| Warning event | An event that is not necessarily significant, but that may indicate a possible future problem.   |
| Web Verifier  | Perceptive Intelligent Capture's web based extension of the Verifier Thick client.   |
| Workdoc       | An internal structure representing the logical structure of a document. The Workdoc represents the data created during processing of a single document and is stored in a file with the extension *.wdc. Because, a Workdoc includes all OCR and analysis results, it may be larger than the document files. |

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