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Oracle WebCenter Forms Recognition Runtime Server User's Guide

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Documentation for
Oracle WebCenter
Forms Recognition
administrators that
describes how to
create and configure
Runtime Server
instances for
automated document
processing.

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1 About This User Guide

This user guide is intended for system administrators and other users who will be customizing WebCenter Forms Recognition Runtime Server, or administrating 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 WebCenter Forms Recognition Runtime Server to *Runtime Server* or *RTS*. These terms are synonymous.

1.1 Related Documentation

In addition to this user guide, **WebCenter Forms Recognition** is provided with the following documentation:

- Oracle WebCenter Forms Recognition Installation Guide.
- Oracle WebCenter Forms Recognition Designer User's Guide.
- Oracle WebCenter Forms Recognition Verifier User's Guide.
- Oracle WebCenter Forms Recognition Web Verifier User's Guide.
- Oracle WebCenter Forms Recognition Scripting User's Guide.

All of the above mentioned documents are included on the installation media.

2 About Runtime Server

WebCenter Forms Recognition is a product suite by Oracle, for automatically processing incoming documents. In principle, Forms Recognition works with any electronically available document. This includes scanned images, faxes and files. WebCenter Forms Recognition automatically classifies these documents and extracts meaningful information from them.

WebCenter Forms Recognition uses a trainable, self-learning algorithm that minimizes user definition and intervention tasks. As part of the Forms Recognition suite, the Designer application 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 Forms Recognition project file.

To process large volumes of documents, WebCenter Forms Recognition organizes documents into batches. The Runtime Server uses the project files and stored settings for production processing.

The WebCenter Forms Recognition Runtime Server runs in the background as a server process. Multiple instances of 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 the Runtime Server are forwarded to the quality assurance application, Verifier, to be corrected manually.

2.1 Remote Service Administration

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

2.1.1 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 are 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 software tools from one location.

- Customize the console for every administrative skill level.
- Integrate your tools using the extensible model.

2.1.2 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 resides in a console and do not run independently.

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

2.2 Start Runtime Service and Management Console

To start the WebCenter Forms Recognition Runtime Service Manager, click **Start > Programs > Oracle > WebCenter Forms Recognition > Runtime Service > Start Runtime Service**. This starts the WebCenter Forms Recognition Runtime Server as a Windows service and then launches the WebCenter Forms Recognition Management Console automatically.

2.3 Stop Runtime Service

To stop the WebCenter Forms Recognition Runtime Service Manager, click **Start > Programs > Oracle > WebCenter Forms Recognition > Runtime Service > Stop Runtime Service**. This stops the WebCenter Forms Recognition Runtime Server as a Windows service.

2.4 Stop an Unresponsive Runtime Server

Complete the following steps, if the Runtime Server does not respond to the MMC:

1. Stop the **WebCenter Forms Recognition Service Manager** service.
2. Open Windows registry editor.
3. Navigate to **HKEY_LOCAL_MACHINE\Software\Oracle\Services\<instance name>** on a 32-bit system, or **HKEY_LOCAL_MACHINE\Software\Wow6432Node\Oracle\Services\<instance name>** on a 64-bit system.
4. In the right page, right-click the **AutoStart** key and click **Modify**.
5. In the **Edit String** dialog box, in the **Value** data field, type a character: 0 and click **OK**.

2.5 Groups

2.5.1 Add a Group

A group contains one or more machines. To add a machine group in the WebCenter Forms Recognition Management Console, complete the following steps:

1. Start the WebCenter Forms Recognition Management Console from the Windows Start menu. The default menu location is **Start > Programs > Oracle > WebCenter Forms Recognition > Runtime Service > Management Console**.
2. Select the **Runtime Server Administration** node in the navigation tree.

3. From the **Action** menu, select the **New RTS Group...** option. Alternatively, right-click the **Runtime Server Administration** node and select **New RTS Group...** from the pop-up menu.
4. In the *New Group* dialog, enter a name for the new machine group and click **OK**. The new machine group is displayed in the navigation tree of the console as a child of the **Runtime Server Administration** node.

2.5.2 Delete a Group

To delete the group, complete the following steps:

1. Start the WebCenter Forms Recognition Management Console from the Windows Start menu. The default menu location is **Start > Programs > Oracle > WebCenter Forms Recognition > Runtime Service > Management Console**.
2. Right-click the group to be deleted in **Runtime Server Administration** node in the navigation tree and then click **Delete**.

2.6 Machines

2.6.1 Add Machines to a Group

Before a WebCenter Forms Recognition server machine can be added to a group, the **WebCenter Forms Recognition Runtime Service Manager** service must be started on that machine, otherwise the Management Console will be unable to connect to it.

To add a machine to a group in the Management Console, complete the following steps:

1. Select the machine group in the navigation tree.
2. From the **Action** menu, select the **New Machine...** option. Alternatively, right-click the machine group node and select **New Machine...** from the pop-up menu.

The *Group Management* dialog is displayed. It contains a list of the names of all available WebCenter Forms Recognition machines that are part of the Runtime Server domain, and the group associated with the machine.

Note: You cannot add a machine that already belongs to a different machine group.

3. Select the appropriate domain from the **Domains** drop-down list.
4. Enter the machine name in the **Available Machines** field, or select it from the list and add it to the **Monitored Machines** list.

Note: To configure Runtime Server to run as a standalone system on the local machine, enter **localhost** as the machine name.

5. Click **OK**. The new machine is displayed in the navigation tree of the console as a child of the machine group node.

2.6.2 Delete a machine

To delete a machine from a group in the Management Console, complete the following steps:

1. Select the machine group in the navigation tree.
2. Right-click and then click **Delete**.

2.7 Instances

2.7.1 What is an instance?

An instance is an occurrence of Runtime Server that runs on an individual machine or a network of machines. An instance defines the workflow steps for batch processing.

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

Settings required to configure Runtime Service Manager service to stop and start automatically are found in Windows Computer Management > Services and Applications.

2.7.2 Add an Instance to a Machine

In the WebCenter Forms Recognition Management Console, instances are displayed as child nodes of the machine where they are configured. Instances can be added, modified, or deleted to further configure the machine.

To add an RTS instance to a machine, complete the following steps:

1. In the WebCenter Forms Recognition Management Console, select the machine node in the navigation tree.
2. From the **Action** menu, select the **New** option, then select **RTS Instance...** from the secondary menu. Alternatively, right-click the machine node and select **New > RTS Instance...** from the pop-up menus.
3. On the *New RTS Instance* dialog, enter a name for the new instance.

Note: Instance names can have a maximum length of 32 characters, except when using cloned instances, where the maximum length is 22 characters. For more information about cloning instance, refer to [Section 5.3.3: Cloning Instances](#).

The chosen name should be representative of the documents being processed and the workflow steps the instance will be processing. For example, **AP Invoices Import, Export**.

RTS instance names must not contain multi-byte characters.

4. Click **OK**. The new instance is displayed in the navigation tree of the console as a child of the machine node.

2.7.3 Delete Instance

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

1. Launch the WebCenter Forms Recognition Management Console.

2. Select the instance to delete in the navigation tree.
3. From the **Action** menu, select the **Delete** option. Alternatively, right-click the instance node and select **Delete** from the pop-up menu.

2.7.4 Defined Cloned Instances

The OCR, classification and extraction workflow steps are highly CPU-intensive. You can clone instances that execute these steps to enhance performance. The cloned instances inherit the settings of the original instance.

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.

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 registry key for the instance to be cloned, as described in the following steps:

1. Open the Windows Registry Editor.
2. Navigate to **HKEY_LOCAL_MACHINE\Software\Oracle\Services\<instance name>** on a 32-bit system, or **HKEY_LOCAL_MACHINE\Software\Wow6432Node\Oracle\Services\<instance name>** on a 64-bit system.
3. If a value named **InstanceCount** already exists for this key, go to step 5 below, otherwise right-click the instance key and select **New > DWORD (32-bit) Value** from the pop-up menus.
4. Enter **InstanceCount** for the value name.
5. Right-click the new value and select **Modify** from the pop-up menu.
6. Enter an integer value representing the number of the instances required.

Note: Entering **0** (zero) in this DWORD value will delete the existing instance.

7. Restart the WebCenter Forms Recognition Runtime Service Manager.

3 Configure Runtime Server Instance

Configuring WebCenter Forms Recognition Runtime Server enables you to generate new batches, and to specify processing options for existing batches.

1. Launch the WebCenter Forms Recognition Management Console.
2. Locate and select the RTS instance to be configured in the navigation tree.
3. From the **Action** menu, select the **Properties...** option. Alternatively, right-click on the RTS node and select **Properties...** from the pop-up menu, or click the *Properties* button on the toolbar.
4. The *WebCenter Forms Recognition Runtime Service Properties* dialog is displayed.

3.1 General Settings

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

3.1.1 About Project Reloading

In general, an RTS instance loads the project into memory the first time processing performs, that is, when either a document for import or a batch in an input state is found.

If there are no batches in an active input state and no documents to import, the system unloads the project from memory and the instance enters a "Batch scanning delay". The next time the instance begins processing, the system reloads the project.

The Minimize project reloading option is available to optimize this processing. If you select this option, the project file is kept in memory when entering a "Batch scanning delay". Routine checks on the project file are performed and if the project file differs from the currently loaded project, the project file is reloaded or loaded for the first time. The system checks the project file at the following times.

- When processing starts after a "Batch scanning delay" or on initial start.
- After processing completes, prior to entering a "Batch scanning delay".
- After between 5 and 30 minutes of "Batch scanning delays", and every 30 minutes thereafter.

3.1.2 Define Project File

The individual settings that comprise the **Project File** group are described below:

Use Project File	Lets you select path and file name of the Forms Recognition project that is used to process the documents. Select this option if WebCenter Forms Recognition 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 Forms Recognition 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.
Minimize project reloading	Optional. Clear this option, which generally improves performance when instances perform intermittent processing, is selected by default. However,

if an instance performs processing rarely, memory usage may improve by clearing this check box.

3.1.3 Directories

The individual settings that comprise the **Directories** group are described below:

Use Database	Uses the Forms Recognition Database as the source. This option is enabled by default if user is configuring a new instance.
Select Job	Select the desired job from the dropdown list or create a new job by clicking the Create Job button. A job can be thought of as a 'job queue' with batches pending for verification. When creating a database job, its name must not contain multi-byte characters.
Batch Root	This is the directory where the batch control file will be written. 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, the batch root and the image root should be the same directory. In special cases, such as for 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 the database for batch storage.
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.

3.1.4 Batch Scanning Delay and Mode

The individual settings that comprise the **Batch Scanning Delay and Mode** group are described below:

Wait	WebCenter Forms Recognition 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 WebCenter Forms Recognition 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. For cleanup instances, it is recommended to disable the High Priority Mode to maximize performance.

3.2 Create a Job

To create a new job, perform the following steps:

1. On the **General** tab, in the **Directories** section, select **Use Database**.
2. Click **Create Job**.
3. On the **Runtime Server** dialog box, type a name or a number, and then click **OK**.

3.3 Client

WebCenter Forms Recognition 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.

3.4 Logging Level

The individual settings that comprise the **Logging Level** group are described below:

No Logging, Info, Warning, Error	Sets the scope of logging. The log file is created in the directory <i><Installation Folder>\Bin\bin\Log</i> . A new log file is created daily.
----------------------------------	---

Delete Log Files After	Sets the number of days after which log files are deleted automatically.
------------------------	--

3.5 Automatic Start / Stop Instance

The individual settings that comprise the **Automatic Start / Stop** group are described below:

Start At	This setting 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.
----------	---

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 following hour.
--------------	--

3.6 Automatic Restart of Instance

The individual settings that comprise the **Automatic Restart** group are described below:

After Timeout	In error situations, WebCenter Forms Recognition 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. In the event that 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.
---------------------	--

After ... + Pages Document	In this case, an automatic shutdown and restart occurs after a document containing the specified number of pages (or more) has been processed, regardless of whether an error occurred. This option can also be used to prevent error situations.
----------------------------	---

3.7 Automated System Updates

The individual settings that comprise the **Automated System Updates** group are described below:

Update System Security	Allows Runtime Server to update the system security according to the time configured by users.
------------------------	--

Automatic Pool Update	Allows Runtime Server to automatically update the pool according to the time configured by users.
-----------------------	---

3.8 Extended Settings

The individual settings that comprise the **Extended Settings** group are described below:

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). This configuration option is only available when you start the WebCenter Forms Recognition Runtime Server as an application and not as a service. Refer to the <i>Oracle WebCenter Forms Recognition Scripting Guide</i> for information on how to activate this option.
-------------------------	---

Automatic Start	Allows Runtime Server to restart after a system reboot.
-----------------	---

Min Free Storage	Stops processing when the specified minimum free hard disk space has been reached. The system will remain idle until new resources are available.
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Min Free RAM	Stops processing when the specified minimum available RAM has been reached. The system will remain idle until new resources are available.
--------------	--

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.
-------------------------------------	---

3.9 Workflow Settings

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

3.9.1 Activate and Deactivate Process Steps

To specify the process steps you want an instance to perform, complete the following step in **Workflow** tab.

1. To activate a step, click the corresponding button.
2. To deactivate a step, click the button again.

3.9.2 Process Step

The settings on the **Workflow** tab define the processing steps that will be performed by the RTS instance.

A process step is active if the corresponding button appears pressed; it is deactivate if the corresponding button does not appear to be pressed. Only enabled process steps will be performed by this instance.

Import	Activate this step to import files from the file system.
OCR	Activate this step to OCR the imported files.
Document Separation	Activate this step to run the document separation engine.
Classification	Activate this step to assign the documents to classes.
Extraction	Activate this step to extract text from the documents and assign the extracted text to the fields defined in the project.
Export	Activate this step to export the documents according to the settings in the Export section on the OCR+Export+Cleanup tab.
Custom Processing	<p>Activate this step to configure an additional step that launches between other workflow steps.</p> <p>For example, you can configure the instance to import, OCR, classify, and then prior to extraction, to have a custom processing step to review all classification results.</p>
Database Export	Activate this step to migrate file system batches into the database. The button is disabled if you select the Use database option on the General tab.

Clean Up	Activate this step to perform cleanup according to the settings in the Clean Up section on the OCR+Export+Cleanup tab.
----------	--

3.9.3 Input State and Output State

Each running instance constantly polls for batches that have an input state matching one of its activated steps. The instance processes these batches and assigns the output state specified for success or failure.

Use the appropriate **Input State** and **Output States** to control the Workflow of batches through the system. For successful steps, define output states with matching input states to ensure further processing.

Runtime Server forwards failed batches to Verifier for manual correction. Processing resumes after a user corrects the batch. On the batch level, steps succeed only if they were successful for all documents in the batch.

3.9.4 Corrupt failure state

This special output state indicates that processing failed because of an unexpected error, such as a corrupt document. To set this output state, complete the following step:

In the Workflow tab, in the **Corrupted document failure state** box, select one of the available integer value.

3.9.5 Perform Import Failure Processing

This section describes the default processing and the advanced processing if **Perform advanced import failure processing** is active.

Use the advanced import failure processing feature to lock a batch in case one or more documents from the file system or a API external batch fails to import.

Default import failure processing of documents imported from the file system

- Any successfully imported documents are placed in an RTS batch set to succeed.
- Documents that fail to import are moved to the *[ImportDirectory]_BadImages* directory.

Advanced import failure processing of documents imported from the file system

- Any successfully imported documents are placed in an RTS batch set to fail.
- Documents that fail to import remain in the subdirectory.
- The list of failed documents is saved in *[ImportSubDirectory]\ImportFailed.rts*.
- The user can delete the failed documents or add other documents to the subdirectory.
- On each rescan, RTS attempts to import any document from the subdirectory to the same RTS batch.
- When there are no documents left in the subdirectory, the batch is set to succeed and the failed document list and subdirectory are removed.

Default import failure processing of documents uploaded by API

- Any successfully imported documents are placed in an RTS batch set to succeed.
- Documents that fail to import remain in the external batch.
- The external batch status is set to 15.
- The user can add or delete documents from the external batch.

- If the external batch is then marked ready for import, RTS imports any documents to a new RTS batch.

Advanced import failure processing of documents uploaded by API

- Any successfully imported documents are placed in an RTS batch set to fail.
- Documents that fail to import remain in the external batch.
- The external batch status is set to 15.
- The user can add or delete documents from the external batch.
- If the external batch is then marked ready for import, RTS imports any documents to the same RTS batch.
- Document order in the batch, as determined by document index values, is maintained.
- When the external batch contains no external documents, the RTS batch is set to succeed.

3.9.5.1 Activate Advanced Import Failure Processing

To active the advanced import failure processing, perform the following steps:

1. On the **Import** tab, in the **Extended Settings** section, select **Move files**.
2. In the **Document Grouping** section, select one of the following options:
 - 1 batch per subdirectory, 1 folder per batch
 - 1 batch per subdirectory, 1 folder per document
3. On the **Workflow** tab, activate the **Import** workflow step.
4. Optional. Modify the failed state for the **Import** workflow step.
5. Select **Perform advanced import failure processing** and then click **OK**.

3.9.6 Processing of batches imported using API

This section describes the processing of batches imported using API.

- If all documents in the external batch are successfully imported, the RTS batch state changes to succeed.
- If documents failed to import, the user can perform the following actions using API to update the batch:
 - Add replacement documents
 - Remove failed documents
 - Set the external batch to **Ready for Import** (status 20)
- When adding external documents, the user can optionally assign a zero-based index value. This index value defines the position of the document in the RTS batch and enables the user to insert newly added documents between previously imported documents.
- When the external batch is set to Ready for Import, RTS imports any documents in the external batch to the same RTS batch.

3.9.7 Perform folder based serial processing

To perform batch classification and extraction separately, complete the following step in **Workflow** tab:

1. To enable the option to perform batch classification and extraction separately, select **Perform folder based serial processing**.
If the option is enabled documents process as follows
 - a. Classify document 1 in folder 1
 - b. Classify document 2 in folder 1
 - c. Extract document 1 in folder 1
 - d. Extract document 2 in folder 1

- e. Classify document 1 in folder 2
 - f. Classify document 1 in folder 2
2. To disable the option to run classification and extraction separately, clear **Perform folder based serial processing**.

3.9.8 Perform Folder Based Classification and Extraction Step

In the context of WebCenter Forms Recognition, 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.

Enable the **Perform Folder Based Classification and Extraction Stop** option in **Workflow** tab to control batch classification and extraction processing using folders instead of batches.

1. When this option is enabled, the workflow steps are serialized per folder and processed as follows.
 - a. Classify document 1 in folder 1
 - b. Extract document 1 in folder 1
 - c. Classify document 2 in folder 1
 - d. Extract document 2 in folder 1
 - e. Classify document 1 in folder 2
 - f. Extract document 1 in folder 2

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

2. When this option is disabled, document are processed as follows.
 - a. Classify document 1 in folder 1
 - b. Classify document 1 in folder 1
 - c. Classify document 3 in folder 2
 - d. Extract document 1 in folder 1
 - e. Extract document 2 in folder 1
 - f. Extract document 3 in folder 2

3.10 Import Settings

The WebCenter Forms Recognition Runtime Server creates batches during the import step. In this case, the RTS must be configured to define when documents should be imported and how they should be organized in batches.

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

3.10.1 Import Source

To define the import source, perform one of the following steps:

- To import documents from a directory, perform the following sub steps:
 - a. On the **Import** tab, select **Import Directory**.
 - b. In the **Import Directory** field, type or browse to the import directory.
- To import documents from an external batch previously created using API, perform the following sub steps:
 - a. On the **Import** tab, select **Import Group**.
 - b. In the **Import Group** field, type an import group or select an entry from the list.

Note: The import group must exist before the import process starts. Several options on the Import tab are not applicable when Import Group is selected.

3.10.2 Document Type

The individual settings that comprise the **Document Type** group are described below:

Automatic	<p>If selected, all types of documents are imported, regardless of their type.</p> <hr/> <p>Note: If the imported file is a multipage document, the system automatically splits the image pages into separate files. Refer to the <i>Automatic Conversion of Documents During Import</i> section of the <i>Oracle WebCenter Forms Recognition Designer User's Guide</i> for further information.</p> <hr/>
Skip	<p>Defines a file extension that will be excluded from the import. The extensions <i>add</i> and <i>rdy</i> are always considered to be system extensions and will always be ignored.</p> <p>This setting is only enabled when the <i>Automatic</i> option (described above) is selected.</p> <hr/>
Type	<p>Defines a file extension that will be included for processing. Supported file types include tif, doc and msg.</p> <p>To import all files with a recognized extension, type an asterisk (*) or leave the field empty.</p> <hr/> <p>Note: If you selected Import Directory as import source, any other files remain in the import directory without any error reported. If you selected Import Group as import source, any other files remain in the external batches at status 15 and an error is reported.</p> <hr/>
CI Documents	<p>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. Select this option to process such files. For example, Non-Image PDFs.</p> <hr/> <p>Note: Do not enable this option where the RTS instance will be used to process scanned images or faxes.</p> <hr/>

3.10.3 Document Grouping

The options in the **Document Grouping** group define the structure that will be used when creating batches from files and subdirectories within the defined import directory. These options are described below:

1 Folder per Batch (No Subdirectories)	<p>This option is appropriate where the import directory contains no subdirectories.</p> <p>A single batch with a single folder will be created from all the documents in the import directory.</p>
1 Folder per Document (No Subdirectories)	<p>This option is appropriate where the import directory contains no subdirectories.</p> <p>A single batch will be created from the documents. Within the batch, a separate folder will be created for each document.</p> <p>Note: You cannot use multipage detection if you select this option.</p>
1 Batch per Subdirectory, 1 Folder per Batch	<p>This option is appropriate where the import directory contains subdirectories.</p> <p>A separate batch will be created for each subdirectory. Each batch will contain a single folder.</p>
1 Batch per Subdirectory, 1 Folder per Document	<p>This option is appropriate where the import directory contains subdirectories.</p> <p>A separate batch will be created for each subdirectory. Within the batch, a separate folder will be created for each document.</p> <p>Note: You cannot use multipage detection if you select this option.</p>

3.10.4 Import Condition

The options in the **Import Condition** group define the conditions that must be met for the *Import* processing step to begin. These options are described below:

Always Import Documents	All files that exist in the defined import directory and that match the <i>Document Type</i> definition will be imported when the RTS polls that directory.
Import Only if Ready File Available in Directory	Files created by external systems in the defined import directory will only be imported if a file of the defined name exists in the import directory or a subdirectory. The default name of this file is import.rdy , but this can be defined in the corresponding text input field for this option. The ready file itself will not be imported into the resulting batch.
Import Only if Minimal Number of Documents Are Available in Directory	Files will only be imported when the defined minimum number of documents that match the <i>Document Type</i> definition exist in the import directory and/or its subdirectories. The appropriate minimum number of documents can be defined in the corresponding text input field for this option.

Import Only if All Files Older Than	Files will only be imported if all files in the import directory and/or its subdirectories, that match the <i>Document Type</i> definition, are older than the defined time period. If one or more documents do not meet the defined age criteria, no documents will be imported. The required age of the documents can be defined in seconds, minutes or hours using the corresponding text input and dropdown fields for this option.
Import if Min. No. Docs Available OR All Files Older Than Specified Timespan	This option combines the two options described above. Field will be imported if either of the defined conditions is true.
Import Only Files Which Are Older Than Specified Timespan	This option works similarly to the <i>Import Only of All Files Older Than</i> option described above. However, in this case, files that meet the age condition will be imported, even if other files that do not meet the age condition exist in the import directory and/or subdirectories. Those files that do not meet the age condition will remain in the import directory (or subdirectory) until such time that they do meet the defined condition, at which point they will be imported.

3.10.5 Extended Settings

The individual settings that comprise the **Extended Settings** group are described below:

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. Choose this option if you have large input directories and want to create small batches that can be better distributed.
Import Priority	Sets the batch priority and thus the processing order. Enter an integer value 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 supplemented by an incremental number. The batch name is visible in WebCenter Forms Recognition Runtime Server and in Designer.
Folder Prefix	Sets a prefix for the folder name that will be supplemented by an incremental number. The folder name is visible in WebCenter Forms Recognition Designer.

File Transfer Mode	Specifies whether documents will be copied from the import directory to the batch root, or if they will be moved. If documents are copied, they will remain in the import directory, and this can cause continuous batch generation unless the files are removed by another process or the instance is stopped.
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3.10.6 Additional File Import

The settings for the **Additional File Import** feature can be used alone, or in conjunction with the *Import Only if Ready File Available in Directory* option, to check for additional associated files.

Note: If this feature is used in conjunction with the *Import Only if Ready File Available in Directory* option, **WebCenter Forms Recognition** Runtime Server will delete the *rdy* file first, and then it will check for additional files and will import them.

Although most often used with an *rdy* file, you can also use this feature independently, even if there are no additional files.

The available settings are described below:

Import 1 Additional File per Imported Document	<p>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, for example, faxes and associated header files.</p> <p>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 ?.</p> <p>Example 1:</p> <p>Image Filename: 204_ABC123_20150101.tif Attachment Filename: 204_ABC123_20150101.doc Additional Filename: *.doc</p> <p>Example 2:</p> <p>Image Filename: 204_ABC123_20150101.tif Attachment Filename: 204_ABC123_supp.doc Additional Filename: #####_supp.doc</p>
Import Document Only if Additional File Exists	<p>If this option is enabled, the image will only be imported if the defined additional file exists. If the image file is present in the import folder, but the defined additional file is not present, the image will not be imported, and will remain in the import directory.</p> <p>In any case, the *.rdy file will be deleted by the <i>Import</i> process, even if no files had been imported.</p>

3.11 OCR Settings

In general, OCR settings are defined in the WebCenter Forms Recognition project through the Designer application. Some of the OCR options defined within the project can be overridden from within WebCenter Forms Recognition Runtime Server.

To change OCR settings, select the **OCR + Export + Clean Up** tab.

3.11.1 Page Restrictions for Multipage Documents

With WebCenter Forms Recognition, by default, a full-page OCR is performed during the first processing step for all document pages, and the OCR results are stored in the workdoc. Using page restrictions for multipage documents it is possible to 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* processing steps.

To specify the page range for the initial OCR, enter the appropriate values in the *First Page(s)* and *Last Page(s)* fields as required. The default value for both of these fields is **0** (zero), meaning that OCR is performed on all pages.

Note: It is not required that a non-zero value be entered in both of the fields mentioned above. For example, if only the first five pages of a multipage document should have OCR performed, the value **5** should be entered in the *First Page(s)* field and the default value of **0** should be left in the *Last Page(s)* field.

3.11.2 CI Docs Only

This option can be selected to skip the layout analysis for electronically generated documents. However, the following considerations must be taken into account when enabling this option:

- The extraction may not work properly.
- Scripts that are using geometrical structures such as blocks will not work.
- Lightweight OCR works without detection of positional information. Therefore, the highlighting of words, blocks and lines will not be available.

3.11.3 Verify OCR Processing Time-Out for Each Page

This option can be used to process document which cannot be OCR within the timeout specified. When this option is enabled, the system will perform a timeout check after the processing of each page to OCR.

3.12 Export Settings

In general, export settings are defined in the WebCenter Forms Recognition project through the Designer application. Some of the export options defined within the project can be overridden from within WebCenter Forms Recognition Runtime Server.

To change export settings, select the **OCR + Export + Clean Up** tab.

3.12.1 Perform Export Step on Batches or Folders

To perform the export step every time the instance processes a batch, select **Batches**.

3.12.2 To perform the export step every time the instance processes a folder, select **Folders.Trigger Script Based Export**

This option must be enabled to execute any export scripts within the project. If this option is disabled, the *Export* process will be performed but any associated scripts will not be executed. This may prove useful for testing and troubleshooting the project and scripts.

For more information, refer to the *ExportDocument* event in the *Oracle WebCenter Forms Recognition Scripting Guide*.

3.12.3 Generate Protocol File

Select **Generate protocol file for each export batch** to generate a separate log file for each exported batch.

3.12.4 Copy Documents to Export Directory

When this option is selected, the original document file is copied to the defined export directory during the *Export* process.

3.12.5 Generate PDF File on Export

When this option is selected, a searchable PDF file is created from the original image and its associated workdoc during the *Export* process. The original document layout is preserved, and the OCR results are included within the resulting PDF file to enable full-text search. The workdoc is not visible within the PDF.

3.12.6 Export to XML

To export the workdoc to the Export directory in XML format, perform the following steps:

1. On the **OCR + Export + Clean Up** tab, in the **Export** section, select **Export to XML with cxml extension**.
2. Optional. In the extension box, modify the default extension type. The maximum length of the extension is 30 characters.

For more information, refer to the *ExportDocumentToXml* in the *Oracle WebCenter Forms Recognition Scripting Guide*.

3.13 Clean Up Settings

The *Clean Up* process is performed on successfully exported batches. It is the automatic removal of batch files from the batch root directory if they are no longer required. Only batches whose state indicates that they have been successfully exported will be removed. By default, this is indicated by a state value of **800**.

Note: If an RTS instance performs only the *Clean Up* process step, it is recommended that the **High priority Mode** option is not enabled in the *General* tab.

However, if an RTS instance is configured to process the *Clean Up* step as well as any other process steps except *Import*, it is highly recommended that **High Priority Mode** be activated.

To change export settings, select the **OCR + Export + Clean Up** tab.

Always Clean Up Batches	If this option is selected, the <i>Clean Up</i> process will be performed on batches as soon as they reach the state indicating that they have been successfully exported.
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Clean Up Batch Only if Ready File Available	If this option is selected, the <i>Clean Up</i> process will only be performed if a file with the name that is defined in the associated text field is present in the batch root directory.
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Note: This option is only available if the **Use Database** option is unchecked on the *General* tab.

Clean Up Batch Only if All Files Are Older Than	If this option is selected, the <i>Clean Up</i> process will only be performed on a batch if all exported files for the batch are older than the number of hours specified in the associated text field.
---	--

Clean Up if Ready File Available or All Files Older Than	If this option is selected, the <i>Clean Up</i> process will be performed for batches that meet either of the criteria described for the previous two options.
--	--

Note: This option is only available if the **Use Database** option is unchecked on the *General* tab.

Note: If you select any Clean Up option other than the first, do not execute Export and Clean Up in the same instance. The delayed Clean Up will prevent batch Export when the number of batches awaiting Clean Up exceeds the current `LimitBatchCountRequest` setting. The default value for this setting is 1000. For more information, [see 3.12.1 Modify the number of processed batches](#).

3.13.1 Modify the Number of Processed Batches

The registry setting `LimitBatchCountRequest` defined the number of batches processed in the Export step. A value of more than 1000 may decrease performance.

1. Open the Windows Registry Editor.
2. Navigate to `HKEY_LOCAL_MACHINE\Software\Oracle\Dataase` on a 32-bit system, or `HKEY_LOCAL_MACHINE\Software\Wow6432Node\Oracle\Database` on a 64-bit system. Create the *Database* key if it does not exist.
3. Right-click the `LimitBatchCountRequest` value and click **Modify**.
4. Edit **DWORD (32-bit) Value** dialog box, select **Decimal**.
5. Enter a number in the Value data field and click **OK**.

3.14 Extended Processing Settings

3.14.1 File Replacement

If a project implementation uses information from external files to process batches, and these files need to be periodically updated, or if you want to synchronize **WebCenter Forms Recognition** project files with a Verifier workstation, the *File Replacement* feature can be used to achieve this. Any number of target files can be configured to be updated or replaced.

The individual settings that comprise the **File Replacement** group are described below:

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, i.e. 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. The file will be created if it does not exist, file replacement creates the 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.

3.14.2 Verifier Project Reference

For Verifier instances 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.

There are two purposes for setting file paths.

- 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 define the local and the global project for the Supervised Learning Workflow. These options enable Advanced Verifiers to use different global projects with a local project. Set these options when you need to use different project files with similar Verifier and RTS configurations.

3.14.3 Document Separation

The Runtime Server configuration has a section in the *Extended Processing* tab for automatic document separation. The settings in this section allow the user to configure a different project to use during processing to perform the *Document Separation* workflow step.

Select **Use special project for document separation workflow step** to specify different project to use for document separation workflow. Browse through the path and file name of the project to be used for document separation or type the path and file name in the **Use project** field.

3.14.4 Display Format

During processing using the Web Verifier, document images are converted to JPEG format on the browser workstation by default. To improve Web Verifier performance is it possible to configure the Runtime Server to store converted images in the database, thus eliminating the requirement for this to be performed at the client workstation and improving performance of the Web Verifier.

The RTS instance can be configured to store converted images to the database in cases where the document will be presented to the Web Verifier user for classification verification, or extraction verification, or both.

The individual settings that comprise the **Display Format** group are described below:

Convert Image ... After Failed Classification	When this option is selected, converted images are stored in the database for documents that have failed classification.
---	--

Convert Image ... After Failed Extraction	When this option is selected, converted images are stored in the database for documents that have failed data extraction.
---	---

There is no further configuration required for the Web Verifier. 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.

Note: If the settings are not used, and the Web Verifier opens a document, the rendering of the image will be done in real time on the client workstation where Web Verifier is running.

The *Display Format* settings are only applicable to Web Verifier. These settings have no effect on the Verifier application, the Learn Set Manager or Designer.

4 Automatic Document Separation

The first run of the automatic document separation (ADS) instance can take some time due to the following reasons.

- The instance generates the ADS Learnset after the first run before it starts document separation. The instance parses the documents in the prepared ADS Learnset directory and stores the result in the ADS Learnset directory.
- The processing is folder based. This means that the instance loads all documents of the batch to memory before it start processing.

After ADS, it might be required to validate the results manually in Verifier. When finished, Verifier assigns the output state specified for valid document separation to the batch. Ensure that the input state of following workflow steps; classification, extraction, validation, and export match the output state of the document separation step.

Note: For more information, refer to the *Oracle WebCenter Forms Recognition Designer User's Guide*.

4.1.1 Configure an Import Instance for Document Separation

To configure an instance to create batches for document separation, complete the following steps. Document separation is successful when the document separation engine can perform a confident split and merge decision. For more information, Refer *Document Separation* in the *Oracle WebCenter Forms Recognition Designer User's Guide*.

Note: The documents to import must be single-sided documents and you must have scanned them in the correct order to the same folder.

1. Create a new instance.
2. Right-click the instance and then click **Properties**.
3. In the **Runtime Server Properties** dialog box, complete the following sub-steps.
 - a. On the **General** tab, in the **Use project file** field, type or browse to your ADS project file.
 - b. On the **Workflow** tab, activate the process steps **Import** and **OCR**.
 - c. To avoid conflicts, specify input and output states different for those of other instances.
 - d. Select **Perform folder based serial processing**.
 - e. On the **Import** tab, select **1 folder per batch (no subdirectories) or 1 batch per subdirectory, 1 folder per batch**.

Note: After the document separation step, downloaded MSG files do not contain attachments any more.

4. Click **OK**.

4.1.2 Configure a Document Separation Instance

To configure a document separation instance, complete the following steps:

1. Create a new instance.
2. Right-click the instance and then click **Properties**.

3. In the **Runtime Server Properties** dialog box, complete the following sub-steps.
 - a. On the **General** tab, in the **Use project file** field, type or browse to your ADS project file.
 - b. On the **Workflow** tab, activate the process steps **Document Separation**.
 - c. To avoid conflicts, specify input and output states different from those of other instances.
4. Select **Perform folder based classification + extraction step**.
5. Click **OK**.

Note: For more information, refer to the *Document Separation* section in the *Oracle WebCenter Forms Recognition Designer Guide*.

5 Multipage Detection

To configure an instance for multipage detection, complete the following steps:

Note: The documents to import must be single-sided documents.

1. Create a new instance.
2. Right-click the instance and then click **Properties**.
3. In the **Runtime Server Properties** dialog box, complete the following sub-steps.
 - a. On the **Workflow** tab, activate the process steps **Classification and Extraction**.
 - b. To avoid conflicts, specify input and output states different from those of other instances.
 - c. Select **Perform folder based classification+extraction step**.
4. Select **Perform folder based classification + extraction step**.
5. Click **OK**.

Note: For more information, refer to the *Multipage detection* section in the *Oracle WebCenter Forms Recognition Designer Guide*.

6 Batches

6.1 Batch State Files

A text file that contains the state of a batch and the minimum state of any of its folders. The state of the folders in turn represents the minimum state of any of its documents.

Batch State File Type	Description
Batch Control files	A text file that contains all information about the batch, such as its state, folders, and documents as well as the project used for processing.
Fast info file	A text file that contains a copy of the main information from the database about the batch. It provides a quick way to determine the state of a batch without opening the database file. If the fast info file is deleted, the instance automatically recreates it.
Lock file	Runtime Server, Designer and Verifier create a LOC file when processing a batch. No other instance or application can process a locked batch. If an application terminates abnormally, an instance unlocks the batch.
Subdirectories	The subdirectory name matches the batch ID and contains the workdoc (WDC) files, the documents and the document attachments.

6.2 Batch Creation

WebCenter Forms Recognition creates batches in the following ways:

1. By importing documents through Runtime Server or Designer.
2. By importing documents from the file system through scripts using the Cedar BatchControl Library.
3. By user-created exception batches in Verifier applications.

Note: For more information, refer to *About the exception handling settings in the Multipage detection section in the Oracle WebCenter Forms Recognition Verifier Guide* and *Oracle WebCenter Forms Recognition Web Verifier Guide*.

6.3 Batch View

Within the WebCenter Forms Recognition Management Console, the *Batch View* displays a list of all batches for the selected RTS instance, with the following information for each batch:

Column Name	Description
Batch ID	The unique batch identifier.
State	The current state of the batch.
Priority	The batch priority.
Name	The name given to the batch. If a batch has been manually renamed, for example, by a user in the Verifier application, that name is displayed. Otherwise, the system generated name for the batch is displayed.
Folders	The total number of folders in the batch.
Documents	The total number of documents in the batch.
Client	(Not used)
Last User	The name of the last user who processed or opened the batch.

Last Module	The name of the last WebCenter Forms Recognition module that processed or opened the batch. In the case of the Runtime Server, the name of the RTS instance will be displayed in this column. In the case of Verifier, the name of the machine where the Verifier application was run will be displayed. In the case of Web Verifier, the name of the WebCenter Forms Recognition Web Server will be displayed.
Locked	Displays Yes if the batch is currently being accessed by another instance of WebCenter Forms Recognition Runtime Server, or by an instance of WebCenter Forms Recognition Verifier. Otherwise, this column displays No .
External Group ID	Optional and not displayed by default. Refer to Section 6.9 of the <i>Oracle WebCenter Forms Recognition Installation Guide</i> for information about configuring and populating this column.
External Batch ID	Optional and not displayed by default. Refer to Section 6.9 of the <i>Oracle WebCenter Forms Recognition Installation Guide</i> for information about configuring and populating this column.
Transaction ID	Optional and not displayed by default. Refer to Section 6.9 of the <i>Oracle WebCenter Forms Recognition Installation Guide</i> for information about configuring and populating this column.
Transaction Type	Optional and not displayed by default. Refer to Section 6.9 of the <i>Oracle WebCenter Forms Recognition Installation Guide</i> for information about configuring and populating this column.

6.4 Filter the Batch View

The WebCenter Forms Recognition Management Console user can filter batches by performing a query to retrieve a subset of records that match the filter criteria. The subset can be further filtered by specifying that the WebCenter Forms Recognition Management Console only displays a specified number of records as opposed to the entire result list.

To apply a filter, enter the query in the **WHERE** field using the syntax shown in the following examples:

BatchID = <criteria>	Eg: BatchID=5
----------------------	---------------

State = <criteria>	Eg: State = 550
--------------------	-----------------

Priority = <criteria>	Eg: Priority = 2 Priority <= 3 Priority = 2 AND State = 700
-----------------------	---

Batch.name like <criteria>	Eg: batch.name like '%AP% ' The % symbol represents a wildcard for characters that precede and follow the defined string
----------------------------	---

FolderCount = <criteria>	Eg FolderCount = 1
--------------------------	--------------------

DocumentCount = <criteria>	Eg DocumentCount >= 3
----------------------------	-----------------------

LastUserId = <criteria>	Eg LastUserId = 3 1 = Application Administrator (RTS) 2 = Application Administrator (WVC) 3 = Application Administrator (Designer)
LastModuleID = <criteria>	Eg: LastModuleId in (select Id from Module where Name = 'SLW_Demo')
ExternalGroupID = <criteria>	The ID values are 111, 222, or 333 where 111 = ADM, 222 = VER, and 333 = VER/SET.
TransactionID = <criteria>	Eg: TransactionId = 2002
TransactionType = <criteria>	Eg: TransactionType = 3003

Note: The maximum number for characters in the **WHERE** field is 550.

6.5 Batch Actions

If the RTS instance is stopped, the WebCenter Forms Recognition Management Console user may right-click any entry in the list view, and perform the following actions by selecting the appropriate option from the pop-up menu as follows:

Change Priority	Displays the <i>Batch Properties</i> dialog allowing the WebCenter Forms Recognition Management Console user to manually change the priority of the selected batches.
Change State	Displays the <i>Batch Properties</i> dialog allowing the WebCenter Forms Recognition Management Console user to manually change the state of the selected batches.
Delete Selected Batches	Deletes the selected batches, including their associated batch control files and the contained documents. If batches are stored on the file system and the image root directory is different to the batch root directory, the images will not be deleted.
Refresh	Updates the entire list view with new batch information.

6.6 Refresh Batch View

To refresh RTS groups when processing, perform one of the following actions:

- Select the RTS group node in the navigation tree, then, from the **Action** menu, select the **Refresh** option.

- Right-click the RTS group node in the navigation tree and select **Refresh** from the pop-up menu.

6.7 Start the Batch Process Manually

After one or more WebCenter Forms Recognition Runtime Server instances are correctly configured, it can be used for processing documents and batches.

To start an RTS instance processing, perform one of the following actions in the WebCenter Forms Recognition Management Console:

- Select the RTS instance node in the navigation tree, then, from the **Action** menu, select the **Start** option.
- Select the RTS instance node in the navigation tree, then click the *Start* button in the toolbar.
- Right-click the RTS instance node in the navigation tree and select **Start** from the popup menu.

To start all instances of a machine, perform following action in the WebCenter Forms Recognition Management Console:

- Select the required machine on the left pane, then, from the **Action** menu, select the **Start ALL** option.

6.8 Stop the Batch Process Manually

To stop an RTS instance processing, perform one of the following actions in the WebCenter Forms Recognition Management Console:

- Select the RTS instance node in the navigation tree, then, from the **Action** menu, select the **Stop** option.
- Select the RTS instance node in the navigation tree, then click the *Stop* button in the toolbar.
- Right-click the RTS instance node in the navigation tree and select **Stop** from the popup menu.

To stop all instances of a machine, perform the following action in the WebCenter Forms Recognition Management Console:

- Select the required machine on the left pane, then, from the **Action** menu, select the **Stop All** option.

Note: The instance finishes currently processed documents for the active workflow step before it stops.

7 Monitor the Process

7.1 Monitor the Process with Runtime Server

The *View* window of the WebCenter Forms Recognition Management Console contains several windows that display information about the current processing state. This window allows administrators to monitor local and remote WebCenter Forms Recognition machines.

7.1.1 Statistics View

To access the *Statistics* view, select the **Statistics** child node of the desired RTS instance in the navigation tree. The *Statistics* view displays the following information:

Project	The full path and filename for the currently used project file.
Batch	The name and ID of the batch that is currently being processed, or was last processed, by the RTS instance.
Document	The filename of the workdoc for the document that is currently being processed, or was last processed, by the RTS instance.
Statistics	<p>This table displays the count of batches and documents that have been processed by the RTS instance since it was started. The columns show the counts for each processing step.</p> <p>To reset the counts in this table to zero, right-click the Statistics node in the navigation tree, then select Reset from the popup menu.</p>
Status	A status message displaying the task that is currently being performed by the RTS instance. The list below shows past status messages stating which tasks have been completed and whether any errors occurred.

Right click **Statistics** and then **Reset** to reset the Statistics view.

7.2 Event Viewer

Using the event logs in the RTS Event Viewer, an administrator can review information about RTS errors, warnings and successful processes.

To access the Event Viewer, select the **Event Viewer** child node of the appropriate RTS instance in the navigation tree.

Events are separated into pages within the event viewer. Directional arrow buttons in the toolbar allow the administrator to move from one page to another.

7.2.1 About system monitoring

The Runtime Server Manager Service monitors information, warnings, and error messages in a distributed Runtime Server environment. You can view messages in the system monitoring view of the Runtime Server Manager.

You can configure the system monitoring service to send emails automatically to notify system administrators of events which have been identified to generate emails, generally Warnings and Errors. For more information, refer to the *LogScriptMessageEx* in the *Multipage detection* section in the *Oracle WebCenter Forms Recognition Scripting Guide*.

Note: The system monitoring view displays messages from the M*.log files in the *<Installation Folder>\Bin\bin\Log* directory.

7.2.2 Configure System Monitoring with Email Notification

To configure the WebCenter Forms Recognition System Monitoring service to perform automatic email notification, you must complete the following steps to configure the registry settings:

1. Open the **Runtime Server Monitor Configuration.reg** file for editing in a text editor. This file is located in the following directory:

<Installation Folder>\Bin\bin

Note: For 64-bit operating systems, open the **Runtime Server Monitor Configuration 64-bit.reg** file.

2. Modify the email parameters as desired and save the file. Refer to the table below for further details about the available parameters and their values.
3. Execute the file using the **regedit.exe** or **regedt.exe** utility, as appropriate for the operating system.
4. Start or restart the **WebCenter Forms Recognition** System Monitoring service as described in [Section 8.3.1: Configure System Monitoring Without Email Notification](#).

7.2.3 Email Notification Parameters

Parameter	Description
Email_Everymin	Defines how often (in minutes) the email notification service will check for messages and send them if any are available. The default value for this parameter is 5 minutes, as follows: "Email_Everymin"=dword:00000005
Email_Recipient	Semi-colon separated list of system administrators to receive the email notifications. For example: "Email_Recipient"="john.smith@company.com;jane.brown@company.com"
Email_SenderAddress	A valid email address to send the notifications from. For example: "Email_SenderAddress"="system.administrator@company.com"
Email_SendUsing	Defines whether emails should be sent using the local SMTP service or a remote SMTP server. If the local SMTP service should be used, this parameter value must be set to <code>Pickup</code> as shown in this example: "Email_SendUsing"="Pickup" In this case, the remaining parameters below can be ignored as configuration is set in the Windows SMTP service settings. If a direct connection to a remote SMTP server should be used, this parameter value must be set to <code>Port</code> , as shown in this example:

	"Email_SendUsing"="Port" In this case, the remaining parameters below must be correctly configured.
Email_SMTPServer	The remote SMTP server address. For example: "Email_SMTPServer"="smtp.company.com"
Email_UserName	The user name for the account defined in the <i>Email_SenderAddress</i> parameter. For example: "Email_UserName"="SysMon"
Email_UserPassword	The password for the account defined in the <i>Email_SenderAddress</i> parameter. For example: "Email_UserPassword"="smpassword"

7.2.4 Encrypt Email Username and Password

The WebCenter Forms Recognition System Monitoring service supports encryption of the email user name and password within the Windows registry. To enable this encryption, complete the following steps:

6. Open the Windows Registry Editor.
7. Navigate to **HKEY_LOCAL_MACHINE\Software\Oracle\System Monitoring** on a 32-bit system, or **HKEY_LOCAL_MACHINE\Software\Wow6432Node\Oracle\System Monitoring** on a 64-bit system.
8. Right-click the **System Monitoring** key and select **New > DWORD (32-bit) Value** from the popup menus.
9. Enter **Email_UserEncrypt** for the value name.
10. Leave the default value of **0** (zero).
11. Restart the WebCenter Forms Recognition System Monitoring service. The *Email_UserName* and *Email_UserPassword* will be encrypted.

Note: The service does not send email messages immediately upon receipt but collects them into a messages group. The group of messages is sent as a single email periodically. If the group does not contain any messages nothing is sent.

7.3 Start System Monitoring

The system monitoring service running on a specific workstation monitors only those Runtime Server machines you configured from that workstation using the Runtime Server administration console. To start the system monitoring without email notifications, complete the following step:

In Windows Services, right-click **WebCenter Forms Recognition System Monitoring** and then click **Start**.

Note: Restart the system monitoring service when you reconfigure RTS machines in the Runtime Server Administration.

7.3.1 System Monitoring View

The *System Monitoring* view of the WebCenter Forms Recognition Management Console is activated by selecting the **System Monitoring** node in the navigation tree.

1. Optional. To refresh the view, in the right pane, click the **Refresh** button.

2. Optional. To sort the messages, click a column header.
3. Optional. To filter the messages, in the right pane, select or clear any of the following check boxes.
 - a. Error
 - b. Warning
 - c. Info
4. Optional. To display only the latest messages, in the right pane, in the **Show logs for last X days only** field, type the number of days you want to display.

8 Script Debugging

8.1 Enable script debugging

To enable script debugging, complete the following steps:

1. Close the **Runtime Server Management Console**.
2. In Windows Services, stop the **WebCenter Forms Recognition Runtime Service Manager** service.
3. Double click **DstMgr.exe** in the *<Installation Folder>\Bin\bin*.
4. Start the **WebCenter Forms Recognition Runtime Service Manager** service.
5. Right-click the required instance and then click **Properties**.
6. In the **Runtime Server Properties** dialog box, in the **General** tab, in the **Extended Settings** section, select **Enable Script debugging** and then click **OK**.
7. Start the required instance.

8.2 Stop script debugging

To stop script debugging, complete the following steps:

1. Stop all running instances in the **Runtime Server Administration** window and close the console.
 2. In **Windows Task Manager**, right-click **DstMgr.exe** and then click **End Task**.
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9 Optimize Large Scale Document Processing

When working with a large document volume, exceeding 10,000 pages per day, the following steps should be considered to ensure that the performance to the database is maintained for WebCenter Forms Recognition:

1. The Runtime Server instance responsible for the *Import* process should not have any other workflow steps enabled.
2. The Runtime Server instance responsible for the *Export* process should not have any other workflow steps enabled.
3. The Runtime Server instance responsible for the *OCR* process should not have any other workflow steps enabled.

Note: Define cloned instances to leverage the server load. Refer to Define Cloned Instances for more information.

4. The Runtime Server instance responsible for the *Classification* and *Extraction* process should not have any other workflow steps enabled.
5. Create one instance that executes the *Cleanup* step and ensure that the instance does not have any other workflow steps enabled.
6. The **Activate High Priority Mode** option should be enabled on the Runtime Server instances.

Note: The instance responsible for *Import* should not be configured with this setting.

7. The **Enable Batch Integrity Verification** option should be disabled for all the Runtime Server instances connecting to the database.
8. In the WebCenter Forms Recognition Management Console, ensure that the RTS filter is used to request only the top 100 batches. Enter the value **100** in the **Top** field setting in the *Batch View* to allow for quick response times when refreshing and viewing the batch list.
9. Review the performance of the server under load and remove any bottlenecks, such as insufficient RAM or number of cores.