

# HP Database and Middleware Automation

For Linux, Solaris, AIX, and Windows®

Software Version: 10.20

## Promote User Guide

Document Release Date: December 2013

Software Release Date: December 2013



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## Audience

The Promote solution is designed for experienced HP DMA administrators who want to move a specific customized workflow from one HP DMA server (the source) to another (the destination). This is useful, for example, if you want to move a workflow from a test environment to a production environment in an automated fashion.

To use the Promote workflows effectively, you should be familiar with HP DMA workflow execution and administration processes (see the [Additional Resources](#) on page 93).

**Note:** This document assumes that you are familiar with the process of running HP DMA workflows. If you are not, see the *HP DMA Quick Start Tutorial* for detailed instructions.

# Document Map

The following table shows you how to navigate this guide:

Topic	Description
<a href="#">About the Promote Solution</a>	<p>General information about the Promote solution, including what it does, what it contains, and best practices for using it effectively:</p> <ul style="list-style-type: none"> <li><a href="#">Why Promote</a></li> <li><a href="#">What is Promoted</a></li> <li><a href="#">Basic Principles of the Promote Solution</a></li> <li><a href="#">What the Promote Solution Contains</a></li> <li><a href="#">What the Promote Solution Does</a></li> <li><a href="#">HP DMA Environment Descriptions</a></li> <li><a href="#">Promote Scenarios</a></li> <li><a href="#">Best Practices for Using the Promote Solution</a></li> <li><a href="#">Purpose of the Target Server</a></li> <li><a href="#">Supported Products and Platforms</a></li> <li><a href="#">Promote Solution FAQs</a></li> </ul>
<a href="#">Workflow Details</a>	<p>Information about the workflows in the Promote solution, including prerequisites, how they work, how to run them, sample scenarios, and input parameters:</p> <ul style="list-style-type: none"> <li><a href="#">Promote Workflow – Export</a></li> <li><a href="#">Promote Workflow – Import</a></li> <li><a href="#">Promote Workflow – Export and Import</a></li> </ul>
<a href="#">Reference Information</a>	<p>Information about the Promote solution files and reports, and links to more information about using HP DMA:</p> <ul style="list-style-type: none"> <li><a href="#">Files Created By the Promote Workflows</a></li> <li><a href="#">Sample Promote Information File</a></li> <li><a href="#">Sample Preview Report</a></li> <li><a href="#">Additional Resources</a></li> </ul>

# Chapter 1

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## About the Promote Solution

The Promote solution enables you to promote (copy) a customized workflow and all related items from one HP DMA server (the source) to another HP DMA server (the destination) in a reliable and replicable manner. This is useful, for example, when you want to move a workflow from a development environment to a test environment or from a test environment to a production environment.

This chapter contains the following information:

[Why Promote](#)

[What is Promoted](#)

[Basic Principles of the Promote Solution](#)

[What the Promote Solution Contains](#)

[What the Promote Solution Does](#)

[HP DMA Environment Descriptions](#)

[Promote Scenarios](#)

[Best Practices for Using the Promote Solution](#)

[Purpose of the Target Server](#)

[Supported Products and Platforms](#)

[Promote Solution FAQs](#)

## Why Promote

Prior to the Promote solution, the only way to move workflows between two environments was to manually export and import each workflow. This mechanism only moved the workflow and its constituent steps. Permissions, policies, deployments, functions, Smart Groups, and Custom Fields had to be recreated manually in the new environment. This process was difficult, time-consuming, and error prone. In addition, there was no way to know whether the workflow in the destination environment matched the workflow that was tested in the source environment.

The Promote solution automates the process of moving a workflow and all related items from a development environment to a test environment or a test environment to a production environment. It minimizes the number of manual steps required and ensures that any workflow that you copy to the production environment will precisely match the workflow that was tested in the test environment.

This solution enables you to do the following things:

- Develop a workflow in a safe and self-contained "sandbox" environment, and then move that workflow to your test environment in a simple, automated, and repeatable manner.
- Test a workflow in a safe and self-contained test environment, and then move that workflow to your production environment in a simple, automated, and repeatable manner.
- Move everything related to a workflow, including steps, functions, deployments, policies, permissions, Smart Groups, and Custom Fields.
- Use a revision control tool (such as SVN or CVS) to version your workflows and keep them under change control.
- Preview the results of a potential promotion before committing changes in the destination environment.
- Compare your versioned workflow to the workflow in your production environment.

## What is Promoted

The Promote workflows promote the following automation items from the source HP DMA server to the destination HP DMA server:

Item	What is Promoted								
Locked Objects	<p>The Promote workflows handle workflows (and other automation items) that are locked as follows:</p> <div style="background-color: #f0f0f0; padding: 5px; margin: 10px 0;"> <p><b>Note:</b> The solution pack that contains the workflow (and other automation items) must be installed on the source server and the destination server.</p> </div> <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left; width: 50%;"><b>Condition</b></th> <th style="text-align: left; width: 50%;"><b>Result</b></th> </tr> </thead> <tbody> <tr> <td>A locked workflow or automation item on the source server does not exist (or is unlocked) on the destination server.</td> <td>The Promote workflows will give an appropriate error message and then fail.</td> </tr> <tr> <td>A locked workflow or automation item on the source server matches the same locked item on the destination server.</td> <td>The Promote workflows do not need to promote it.</td> </tr> <tr> <td>A locked workflow or automation item on the source server does <u>not</u> match the same locked item on the destination server.</td> <td>The Promote workflows will give an appropriate error message and then fail.</td> </tr> </tbody> </table>	<b>Condition</b>	<b>Result</b>	A locked workflow or automation item on the source server does not exist (or is unlocked) on the destination server.	The Promote workflows will give an appropriate error message and then fail.	A locked workflow or automation item on the source server matches the same locked item on the destination server.	The Promote workflows do not need to promote it.	A locked workflow or automation item on the source server does <u>not</u> match the same locked item on the destination server.	The Promote workflows will give an appropriate error message and then fail.
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A locked workflow or automation item on the source server does <u>not</u> match the same locked item on the destination server.	The Promote workflows will give an appropriate error message and then fail.								
Workflow	<p>The Promote workflows promote a single workflow that you specify by name from the source server to the destination server.</p> <div style="background-color: #f0f0f0; padding: 5px; margin: 10px 0;"> <p><b>Note:</b> The solution pack that contains the workflow must exist on the source server and the destination server.</p> </div> <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left; width: 50%;"><b>Condition</b></th> <th style="text-align: left; width: 50%;"><b>Result</b></th> </tr> </thead> <tbody> <tr> <td>A workflow with the same name exists on the destination server.</td> <td>The Promote workflows will always overwrite it.</td> </tr> <tr> <td>The workflow does not exist on the destination server.</td> <td>The Promote workflows will always create it.</td> </tr> </tbody> </table>	<b>Condition</b>	<b>Result</b>	A workflow with the same name exists on the destination server.	The Promote workflows will always overwrite it.	The workflow does not exist on the destination server.	The Promote workflows will always create it.		
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Item	What is Promoted							
Steps	<p>All steps included in the specified workflow are promoted.</p> <table border="0"> <thead> <tr> <th data-bbox="467 317 898 352"><b>Condition</b></th> <th data-bbox="930 317 1344 352"><b>Result</b></th> </tr> </thead> <tbody> <tr> <td data-bbox="467 373 898 436">A step with the same name exists on the destination server.</td> <td data-bbox="930 373 1344 688"> <p>If the step type (for example: script, email, or timer) on the source server matches the type on the destination server, the Promote workflows will always overwrite the step.</p> <p>If the step type does not match, the Promote workflows will give an appropriate error message and then fail.</p> </td> </tr> <tr> <td data-bbox="467 720 898 783">The step does not exist on the destination server.</td> <td data-bbox="930 720 1344 783">The Promote workflows will always create it.</td> </tr> </tbody> </table>		<b>Condition</b>	<b>Result</b>	A step with the same name exists on the destination server.	<p>If the step type (for example: script, email, or timer) on the source server matches the type on the destination server, the Promote workflows will always overwrite the step.</p> <p>If the step type does not match, the Promote workflows will give an appropriate error message and then fail.</p>	The step does not exist on the destination server.	The Promote workflows will always create it.
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Functions	<p>All functions imported by the steps included in the specified workflow are promoted.</p> <table border="0"> <thead> <tr> <th data-bbox="467 919 898 955"><b>Condition</b></th> <th data-bbox="930 919 1344 955"><b>Result</b></th> </tr> </thead> <tbody> <tr> <td data-bbox="467 976 898 1039">A function with the same name exists on the destination server.</td> <td data-bbox="930 976 1344 1039">The Promote workflows will always overwrite it.</td> </tr> <tr> <td data-bbox="467 1066 898 1129">The function does not exist on the destination server.</td> <td data-bbox="930 1066 1344 1129">The Promote workflows will always create it.</td> </tr> </tbody> </table>		<b>Condition</b>	<b>Result</b>	A function with the same name exists on the destination server.	The Promote workflows will always overwrite it.	The function does not exist on the destination server.	The Promote workflows will always create it.
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Item	What is Promoted																
Deployments	<p>The deployments associated with the specified workflow are promoted. You can use the Filter Deployments parameter to specify ALL, NONE, or INCLUDE/EXCLUDE to filter which deployments should be promoted.</p> <table border="1"> <thead> <tr> <th data-bbox="472 384 911 426">Condition</th> <th data-bbox="911 384 1385 426">Result</th> </tr> </thead> <tbody> <tr> <td data-bbox="472 426 911 520">A deployment with the same name exists on the destination server.</td> <td data-bbox="911 426 1385 520">The Promote workflows will always overwrite it.</td> </tr> <tr> <td data-bbox="472 520 911 615">The deployment does not exist on the destination server.</td> <td data-bbox="911 520 1385 615">The Promote workflows will always create it.</td> </tr> <tr> <td data-bbox="472 615 911 730">A deployment parameter of Password Type already exists on the destination server.</td> <td data-bbox="911 615 1385 730">The Promote workflows will preserve the password value.</td> </tr> <tr> <td data-bbox="472 730 911 961">A deployment parameter of Password Type does not exist on the destination server.</td> <td data-bbox="911 730 1385 961">For security reasons, the Promote workflows will promote the parameter name but leave the password value blank. The password value must be manually configured on the destination server.</td> </tr> <tr> <td data-bbox="472 961 911 1077">A deployment parameter of a non-password type already exists on the destination server.</td> <td data-bbox="911 961 1385 1077">The Promote workflows will overwrite the parameter value.</td> </tr> <tr> <td data-bbox="472 1077 911 1192">A deployment parameter of a non-password type does not exist on the destination server.</td> <td data-bbox="911 1077 1385 1192">The Promote workflows will promote the parameter name and value.</td> </tr> <tr> <td data-bbox="472 1192 911 1365">A deployment for the specified workflow exists on the destination server but is not specified to be promoted.</td> <td data-bbox="911 1192 1385 1365">The deployment will be preserved on the destination server.</td> </tr> </tbody> </table>	Condition	Result	A deployment with the same name exists on the destination server.	The Promote workflows will always overwrite it.	The deployment does not exist on the destination server.	The Promote workflows will always create it.	A deployment parameter of Password Type already exists on the destination server.	The Promote workflows will preserve the password value.	A deployment parameter of Password Type does not exist on the destination server.	For security reasons, the Promote workflows will promote the parameter name but leave the password value blank. The password value must be manually configured on the destination server.	A deployment parameter of a non-password type already exists on the destination server.	The Promote workflows will overwrite the parameter value.	A deployment parameter of a non-password type does not exist on the destination server.	The Promote workflows will promote the parameter name and value.	A deployment for the specified workflow exists on the destination server but is not specified to be promoted.	The deployment will be preserved on the destination server.
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Roles	<p>The roles specified in Roles on Destination Server are assigned to the promoted automation items (workflows, steps, deployments, and policies) that do not exist on the destination server prior to the promote operation. The roles for promoted items are given full permissions:</p> <table border="1" data-bbox="467 415 1141 611"> <thead> <tr> <th>Promoted item</th> <th>Permissions</th> </tr> </thead> <tbody> <tr> <td>Workflow</td> <td>READ, WRITE</td> </tr> <tr> <td>Step</td> <td>READ, WRITE</td> </tr> <tr> <td>Deployment</td> <td>READ, WRITE, EXECUTE</td> </tr> <tr> <td>Policy</td> <td>READ, WRITE</td> </tr> </tbody> </table> <p>The <u>first</u> role specified in Roles on Destination Server is set in the Roles attribute for promoted Smart Groups that do not exist on the destination server prior to the promote operation.</p> <p>Roles and permissions for existing items are preserved.</p> <p><b>Note:</b> Roles should be configured on the destination server <u>before</u> running the Promote workflows. If the specified roles do not exist on the destination server, the Promote workflows will fail.</p> <p>The administrator should review the permissions <u>after</u> running the Promote workflows and, for security reasons, remove permissions that are not required by specific roles.</p>	Promoted item	Permissions	Workflow	READ, WRITE	Step	READ, WRITE	Deployment	READ, WRITE, EXECUTE	Policy	READ, WRITE
Promoted item	Permissions										
Workflow	READ, WRITE										
Step	READ, WRITE										
Deployment	READ, WRITE, EXECUTE										
Policy	READ, WRITE										
Custom Fields	<p>All Custom Fields that are referenced by the specified workflow (or any promoted steps, deployments, or Smart Groups) are promoted.</p> <p>The following items are copied for each Custom Field:</p> <ul style="list-style-type: none"> <li>• Name</li> <li>• Object (organization, server, instance, or database)</li> <li>• Type (text, multi-line text, or list)</li> <li>• Options (for list type Custom Fields only)</li> </ul> <p><b>Note:</b> Because Custom Field values vary depending on the environment, their values are not promoted and must be manually configured on the destination server.</p>										

## **What is Not Promoted**

The Promote workflows do not promote the following:

- Environments: organizations, servers, instances, and databases
- Deployment targets other than Smart Groups
- Password values
- Custom Field values

## Basic Principles of the Promote Solution

The Promote solution is based on a set of basic principles. Understanding the basic principles ensures that you can use the full potential of the Promote solution and use it efficiently.

The following are basic principles regarding the Promote solution:

Promote copies a single workflow

Promote will not modify locked objects

Promote overwrites previously existing, unlocked content

"Gold standard" workflows

Preview mode

Rollback in case of failure

No delegation of rights

No content development on test or production servers

Solution Packs

No promotion of sensitive data

### Promote copies a single workflow

The Promote workflows promote a single workflow at a time.

### Promote will not modify locked objects

The Promote workflows will never promote locked objects (see "Locked Objects" in [What is Promoted](#)).

### Promote overwrites previously existing, unlocked content

Each run of [Promote Workflow – Export and Import](#) and [Promote Workflow – Import](#) overwrites the content on the HP DMA destination server as long as it is unlocked. Overwriting provides a deterministic and easy to understand use model for the Promote workflows: What you promoted last will be on the destination server. Previously promoted or installed content will be overwritten by the Promote workflows.

### "Gold standard" workflows

Within this document a "gold standard" workflow is a stable version of the workflow that is ready to be used in the next phase of the development-to-production lifecycle.

#### **Preview mode**

The Promote solution allows you to run the Promote solution in a preview mode. In preview mode no actual changes are committed on the destination HP DMA server. Preview mode allows you to compare your source content and current content on the destination server. It allows you to preview the changes on the destination server.

You can use preview mode at any time to compare your "gold standard" workflow to the workflow in a destination environment to make sure that nothing has changed.

#### **Rollback in case of failure**

If the Promote workflows fail—or are unable to verify the results—they will restore the destination server to its previous state. The workflow will rollback or undo all changes that were committed.

#### **No delegation of rights**

You need to log in to HP DMA using an account with sufficient rights to use the Promote workflows. For security and logging reasons you cannot provide credentials to run the Promote workflows in a deployment.

#### **No content development on test or production servers**

The Promote workflows were designed so that you should not do any content development on the test or production servers. All content development and customization is done on the development server(s). Stable content can then be promoted to the test and eventually the production servers.

#### **Solution Packs**

HP DMA content solution packs should be manually imported on all HP DMA servers used to promote. The solution packs are used to verify that the workflow version that was exported from the source server matches the workflow version that will be imported to the destination server.

The Promote workflows will fail if the solution pack version on the source server does not match the version on the destination server.

#### **No promotion of sensitive data**

For security reasons the Promote workflows do not promote certain items such as password values and roles.

## What the Promote Solution Contains

The Promote solution allows you to promote customized content from development servers to test servers, and then to production servers. It provides three workflows:

Workflow Name	Purpose
<a href="#">Promote Workflow – Export</a>	Exports a workflow and related items from the HP DMA database on the source server and stores them in a collection of XML files in a working directory/ZIP file.
<a href="#">Promote Workflow – Import</a>	Creates a workflow and related items on the specified destination server using the contents of the XML files that reside in the specified working directory/ZIP file.
<a href="#">Promote Workflow – Export and Import</a>	Exports a workflow and related items from the HP DMA database on the source server and stores them in a collection of XML files in a working directory/ZIP file. Then creates that workflow and all its components on a different HP DMA server. The functionality is the same as running the <a href="#">Promote Workflow – Export</a> workflow followed by running the <a href="#">Promote Workflow – Import</a> workflow.

## What the Promote Solution Does

You can use the Promote solution to promote (copy) a workflow from one HP DMA server (the source) to another HP DMA server (the destination).



This is useful, for example, when you want to copy a workflow that has been validated in your test environment onto an HP DMA server in your production environment.

You can perform the promote operation by using a single workflow as shown above (the one-phase approach), or you can run two separate workflows that carry out the export and import phases, respectively:



The two-phase approach is appropriate when different people (or groups) are responsible for the source and destination environments or when you want control the versions of the master copies of each workflow (and all related items).

In either case, if the specified workflow already exists on the destination server, HP DMA makes a backup copy of that workflow and all related automation items. This backup copy is used to restore the workflow on the destination server to its original state if the promote operation fails or is unable to verify the promoted workflow on the destination. You can also use the backup copy to perform a manual rollback in the future.

[Promote Workflow – Export and Import](#) and [Promote Workflow – Import](#) both support a preview mode that you can use to determine exactly which items will be created or updated on the destination server. The preview also shows you items that you must manually configure on the destination server after the promotion is completed. For example, for security reasons password values will not be promoted and you need to set them appropriately on the destination server. If you set the Preview Only parameter to YES, HP DMA will conclude the workflow after the preview without copying any information to the destination server.

**Tip:** The Promote workflows create a collection of XML files that contain the source and destination workflows and related automation items. You can store these files in the event that you later want to return to a specific version of the workflow.

## HP DMA Environment Descriptions

### HP DMA servers

Generally you should have three types of HP DMA servers:



- **Development**

The development server is used to develop workflows, steps, and deployments. This is your “sandbox”. You should load HP DMA solution packs here and do all your customizations (see “Import the Solution Pack” in the *HP DMA Quick Start Tutorial* for more information). You can also use this server for initial testing of the content in development.

- **Test**

The test server should resemble the production server as closely as possible. You use it primarily to conduct integration testing and user acceptance testing. You should load HP DMA solution packs on this server to verify that the versions match. Use the Promote solution to import the content you want to test. If a test reveals issues, fix the content on a development server and use the Promote solution to load the changed content to the test server.

- **Production**

This is the server your database and middleware administrators use to run workflows. You should load HP DMA solution packs on this server to verify that the versions match. Use the Promote Solution to import the content you want to use in production. Do not load any content that you have not thoroughly tested.

### HP DMA Archive

The Promote solution allows you to import content to a file system and export content from a file system. You can use a file system as an archive or use a revision control system to manage different versions of your customized content.

- **File system archive**

The Promote solution exports content to and imports content from the file system of the selected target server. It creates distinct directories for each export of content. This enables you to keep and identify different versions of your customized content. For actual archiving you should copy the exported content to an appropriately named location and save it.

- **Revision Control System**

The Promote solution exports content to and imports content from the file system of the selected target server. HP DMA is not integrated with any revision control system. You can easily use a revision control system of your choice (such as SVN or CVS) to manage versions of your customized content. Use the revision control system user interface to check in or check out customized content as needed.

## Promote Scenarios

You should structure your environments based on the hardware (or virtual machines) that you have available, the amount of testing that you are comfortable with, and the risk that you are willing to accept of breaking an existing workflow in production.

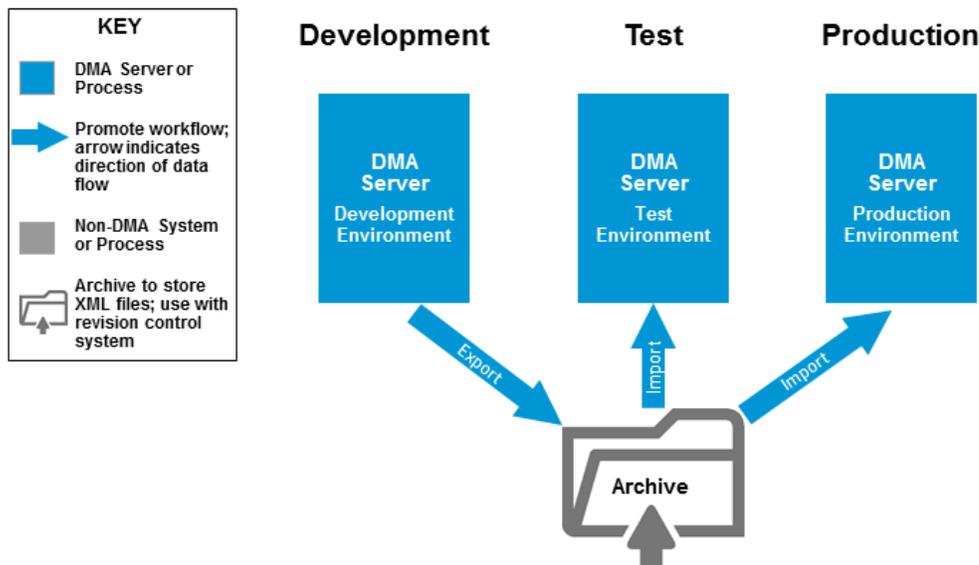
### Scenario 1: Minimal test configuration

Use this scenario in the following situations:

- You are limited by hardware.
- You do not have a firewall or proxy between development, test, and production HP DMA servers.

You should only use [Promote Workflow – Export](#) and [Promote Workflow – Import](#) in this scenario and not [Promote Workflow – Export and Import](#).

You should have a controlled process for importing content to the test and production servers.

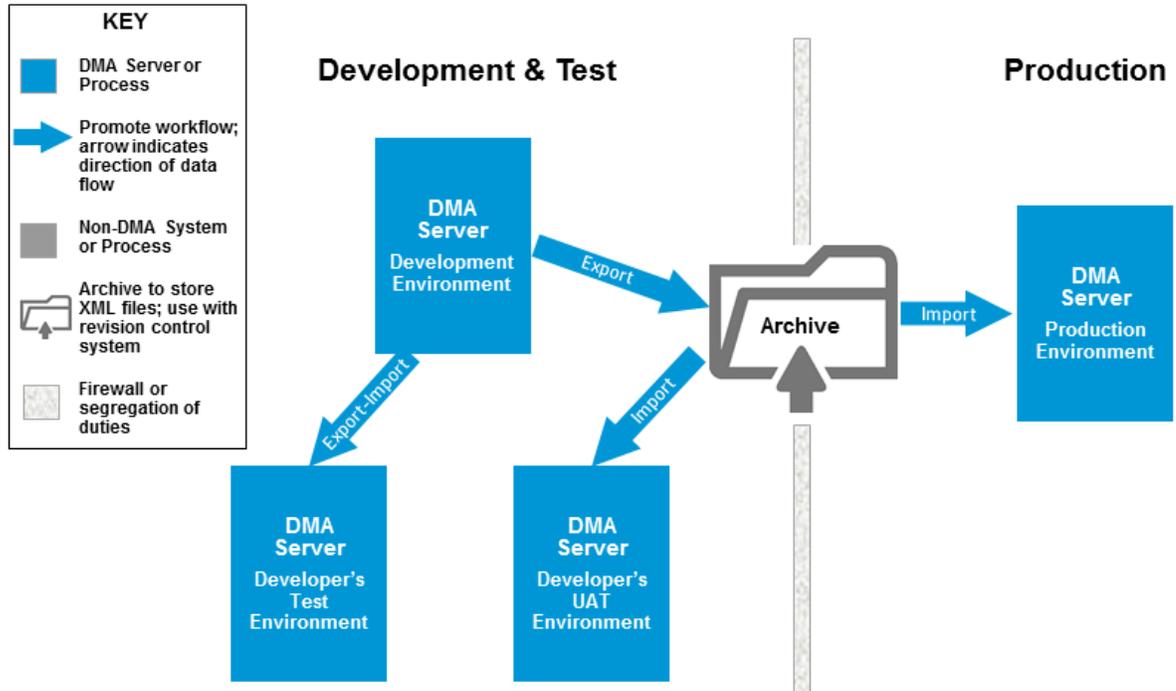


- |             |   |
|-------------|---|
| Development | Developers use the development server to conduct their own tests. They may export and potentially archive customized content at will. When customized content is ready for acceptance test, developers export it to an archive (file system or revision control system).  |
| Test        | The test system is used for acceptance and integration testing. Test runs are controlled events. For each test run, all content currently running on the production server is imported from the archive to the test server. Then the new content is imported and the required tests are conducted. Following this sequence ensures that the new content will work on the production server. |
| Production  | After all test have passed, the new content can be imported to the production server.   |

### Scenario 2: Better test configuration

Use this scenario in the following situations:

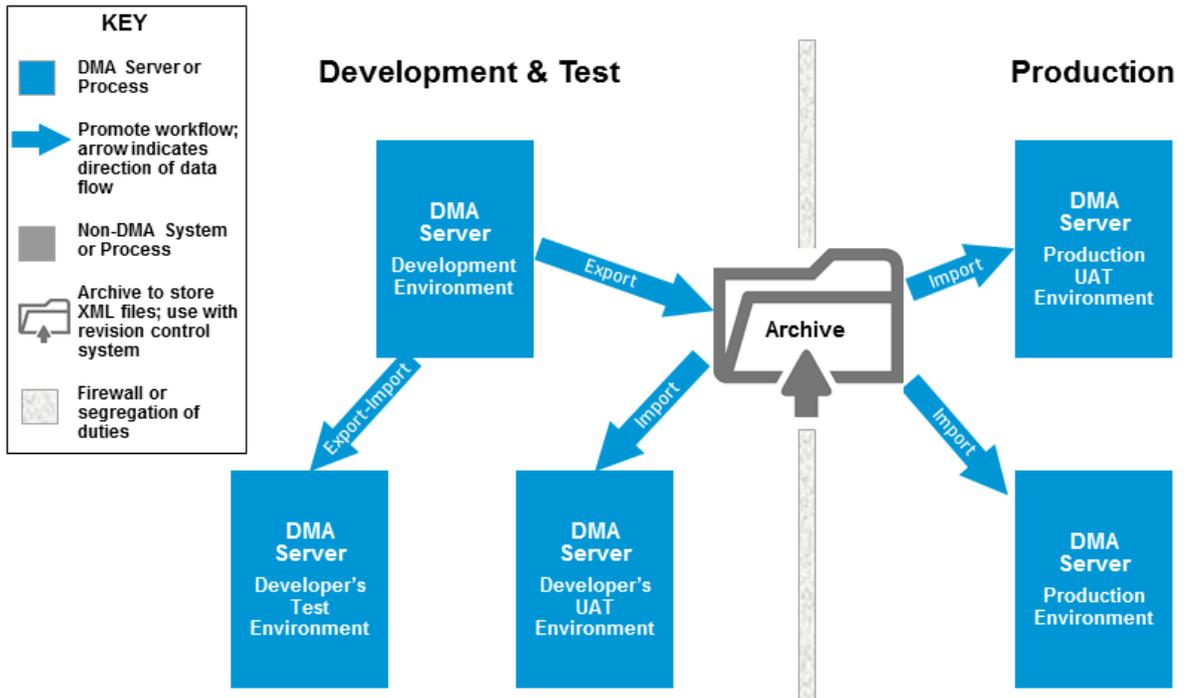
- You have a server (or virtual machine) available as a developer's User Acceptance Test (UAT) box. This server should only contain workflows that match the production server.
- You have HP DMA workflows customized for your enterprise.
- *Optional:* You have a firewall or use a proxy or you have segregated duties between development and production.



**Note:** This scenario is fully described in [Best Practices for Using the Promote Solution](#).

### Scenario 3: Best test configuration

This scenario matches the previous scenario ([Scenario 2: Better test configuration](#)) except you also have a server (or virtual machine) available as a production UAT box. This is appropriate when you segregate roles and the production users desire to perform their own testing. This server should only contain workflows that match the production server.



## Best Practices for Using the Promote Solution

This section provides instructions to use one of the [Promote Scenarios](#) and for specific use cases.

[Best Practice Details](#)

[Other Best Practices](#)

### Best Practice Details

**Tip:** These best practice details use [Scenario 2: Better test configuration](#) of HP DMA servers as an example. You can modify the instructions for the other scenarios in [Promote Scenarios](#).

Throughout this section you will find tables with information for how to run the Promote workflows. The following explains what the table items refer to:

Where to run <Promote_ workflow>	Since several HP DMA servers are involved in the Promote process, this is the specific server on which you run the Promote workflow—based on <a href="#">Scenario 2: Better test configuration</a> definitions.
Deployment target	This is the target server that you use when you set up the deployment to execute the <Promote_workflow>. See <a href="#">Purpose of the Target Server</a> for more information.
Destination	Only used in <a href="#">Promote Workflow – Export and Import</a> : This is the destination server to specify in Destination DMA URL. You also specify Destination DMA Password and Destination DMA Username for this destination.
Export Location or	This is the working directory/ZIP file where the workflow (and related automation items) XML files will be created.
Import Location	This is the working directory/ZIP file where the workflow (and related automation items) XML files will be retrieved.
Preview Only	Only used in <a href="#">Promote Workflow – Export and Import</a> and <a href="#">Promote Workflow – Import</a> : This is the value to specify for the Preview Only parameter.

Refer to [Workflow Details](#) for complete information to run the Promote workflows, including values to specify for all parameters.

## Prepare the HP DMA servers

1. Install the same HP DMA platform version on all HP DMA servers (see "How to Install HP DMA" or "How to Upgrade HP DMA" in the *HP DMA Installation Guide* for more information).
2. Ensure that the HP DMA servers are SA Managed Servers and are available targets for HP DMA (see "Install the DMA Client Files Policy" and "Add Available Targets" in the *HP DMA Installation Guide* for more information).
3. On all HP DMA servers, import the Promote Solution Pack (see "Import the Solution Pack" in the *HP DMA Quick Start Tutorial* for more information).
4. If you already have production workflows, you can use those workflows as the "gold standard" and copy them to the developer's test server and the developer's UAT server. Do the following for all production workflows:

- a. [Make existing production workflows the "gold standard"](#)
- b. Copy the working directory/ZIP file with the "gold standard" workflow from the Archive to the working directory/ZIP file on the developer's test server (**Destination**).
- c. Use [Promote Workflow – Import](#) to create the workflow on the developer's test server (**Destination**) using the copy of the "gold standard" workflow (and all related items) .

Where to run	Developer's test server
<a href="#">Promote Workflow – Import</a>	

Deployment	Developer's test server target
------------	--------------------------------

Import Location	Directory/ZIP file on the target server where the XML files are stored
-----------------	--

Preview Only	NO
--------------	----

- d. Copy the working directory/ZIP file with the "gold standard" workflow from the Archive to the working directory/ZIP file on the developer's UAT server (**Destination**).

- e. Use [Promote Workflow – Import](#) to create the workflow on the developer's UAT server (**Destination**) using the copy of the "gold standard" workflow (and all related items) .

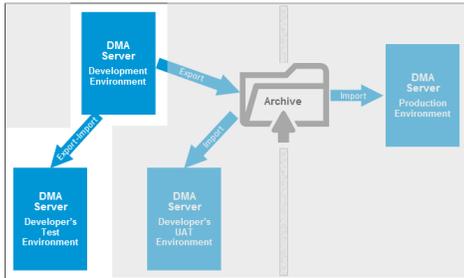
Where to run	Developer's UAT server
<a href="#">Promote Workflow – Import</a>	

Deployment target	Developer's UAT server
-------------------	------------------------

Import Location	Directory/ZIP file on the target server where the XML files are stored
-----------------	--

Preview Only	NO
--------------	----

## Develop and test the workflow



1. Develop your workflow in a development environment.
2. When the workflow is ready to be tested, use [Promote Workflow – Export and Import](#) to export the workflow and all related items from the HP DMA database on the development server (**Source**) and to automatically import them into the developer's test server (**Destination**).

Where to run            Development server  
[Promote Workflow – Export and Import](#)

Deployment target    Development server

Destination            Developer's test server

Export Location        Directory/ZIP file on the target server where the XML files are stored

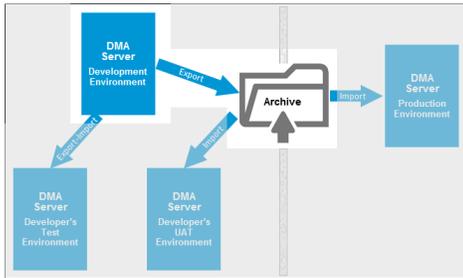
Preview Only            NO

**Note:** To use [Promote Workflow – Export and Import](#) the same user (with the appropriate roles) who runs the workflow on the development server must be available on the developer's test server.

3. Fully test all workflows in the developer's test environment.

**Note:** If testing fails, return to the development server to make any changes.

## Create a "gold standard" workflow



1. After your testing is successful in the developer's test environment, consider the tested workflow the "gold standard."
2. Use [Promote Workflow – Export](#) to export the workflow and all related items from the HP DMA database on the developer's server (**Source**) and to store the XML files on the same server.

Where to run      Development server

[Promote Workflow – Export](#)

Deployment target      Development server

Export Location      Directory/ZIP file on the target server where the XML files are stored

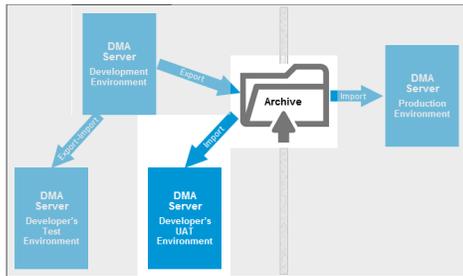
3. Copy the working directory/ZIP file from the target to your Archive.

**Tip:** The Archive is your file storage system. It can be a shared files location or even a thumb drive.

4. Link the Archive to a revision control system (for example: SVN or CVS) and commit the master copies of the XML files to it (see [HP DMA Archive](#) for more information about the Archive).

**Note:** HP DMA is not integrated with any revision control system. To version your workflows, you must manually check the XML files generated by the Promote workflows into your revision control system.

## Perform User Acceptance Test



1. Copy the working directory/ZIP file with the "gold standard" workflow from the Archive to the working directory/ZIP file on the developer's UAT server (**Destination**).
2. Use [Promote Workflow – Import](#) to create the workflow on the developer's UAT server (**Destination**) using the copy of the "gold standard" workflow (and all related items) .

Where to run      Developer's UAT server  
[Promote Workflow – Import](#)

Deployment      Developer's UAT server target

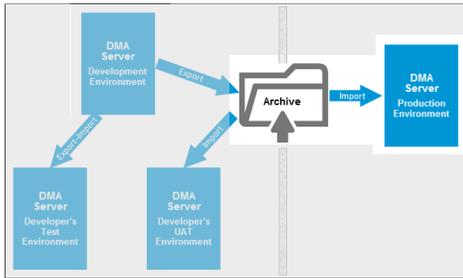
Import Location      Directory/ZIP file on the target server where the XML files are stored

Preview Only      NO

3. Fully test all workflows in the developer's UAT environment.

**Note:** If testing fails, return to the development server to make any changes.

## Copy to production



1. Copy the working directory/ZIP file with the "gold standard" workflow from the Archive to the working directory/ZIP file on the production server (**Destination**).
2. If you already have the workflow on the production server, use [Promote Workflow – Import](#) in Preview Only mode to compare the copy of the "gold standard" workflow to your production version.

Where to run	Production server
<a href="#">Promote Workflow – Import</a>	

Deployment target	Production server
-------------------	-------------------

Preview Only	YES
--------------	-----

Import Location	Directory/ZIP file on the target server where the XML files are stored
-----------------	--

3. If the results of the comparison are satisfactory, use [Promote Workflow – Import](#) to create the workflow on the production destination server using the copy of the "gold standard" workflow (and all related items).

Where to run	Production server
<a href="#">Promote Workflow – Import</a>	

Deployment target	Production server
-------------------	-------------------

Import Location	Directory/ZIP file on the target server where the XML files are stored
-----------------	--

Preview Only	NO
--------------	----

4. Use the workflow in the production environment to run your enterprise.

## Other Best Practices

The following are other best practices regarding the Promote solution:

[Use role-based access controls](#)

[Fix broken workflows](#)

[Promote the Discovery Solution Pack](#)

[Promote a single workflow](#)

[Promote all development workflows](#)

[Verify that production workflows are unchanged](#)

[Make existing production workflows the "gold standard"](#)

[Promote workflows in conjunction with an HP DMA platform upgrade](#)

### Use role-based access controls

Use the HP DMA role-based access controls to protect the production workflows (and related items) from being modified.

Limit the number of users whose roles have Administrator capability on the production server. Any other users who can access the production server should only have roles with Login Access capability.

To allow for emergency situations, follow these steps:

1. Create a single "Emergency" role.
2. Grant Workflow Creator capability—WRITE permission to the production workflows (and related items)—to this role.
3. Do NOT give any users the Emergency role unless an actual emergency occurs.

In the event of an emergency—when a workflow breaks in the production and must be fixed in production—follow these steps:

1. Assign the Emergency role to the user who will fix the workflow.
2. This user should repair the workflow.
3. After the workflow is repaired, revoke the role.

### Fix broken workflows

**Caution:** Repair the broken workflow and test that workflow in a development environment. Do not repair the workflow in the production environment.

If a production workflow is broken, follow these steps to fix it:

1. Use the Promote workflows to copy the broken workflow (and all related items) to the development environment.



## Purpose of the Target Server

The target server specified when you deploy and run any of the Promote workflows serves a different purpose than it does for other HP DMA workflows.

In the Promote context, the target server is simply the server where the source and backup XML files containing the workflow being promoted (and all related items) are stored or retrieved. The Promote log files are also stored on the target server. No operations other than storing and retrieving these files are performed on the target server.

**Note:** Only specify one target server when you run any of the Promote workflows.

The target server can be the source server, the destination server, or a third server.

All servers must be managed by the same SA Core. To do this, your HP DMA server must also be a managed server in your environment and must be included in an HP DMA organization. See the *HP DMA Installation Guide* or the *HP DMA Administrator Guide* for information about adding managed servers.

---

### Recommended Best Practice

Specify the HP DMA server where you are running the Promote workflow as the target server.

---

## Sample Scenarios

### Scenario 1: The Export target is the source server and the Import target is the destination server

If you are using the two-phase Promote process, you will need to copy the XML files from the target server specified for the Export phase to the target server that will be specified for the Import phase. For example:

1. Run [Promote Workflow – Export](#) on the source server using the source server as the target.
2. Copy the XML files from the working directory/ZIP file on the source server to the working directory/ZIP file on the destination server.
3. Run [Promote Workflow – Import](#) using the destination server as the target.

**Tip:** It may be convenient to store the XML files on an NFS share that is accessible to both target servers. This eliminates the copy step above.

## **Scenario 2: The Promote target is a separate server used for revision control**

If you are using the one-phase Promote process, you can use a separate target server with your revision control tool. For example:

1. Run [Promote Workflow – Export and Import](#) using a separate server as the target.
2. Use a revision control tool (such as SVN or CVS) to version the XML files generated by the Promote workflows. You must manually check the files in the desired working directory/ZIP file on your target into your revision control system. This allows you to keep the files under change control and revert to a specified version.

## Supported Products and Platforms

This solution requires the HP DMA version 10.20 (or later) platform and the HP DMA version 10.20 (or later) solution packs.

**Note:** The source and destination HP DMA servers must be running the same version of HP DMA (for example: version 10.20). You can force the Promote workflows to allow different platform versions by setting Ignore Platform Version.

Although you can use the Promote workflows to promote HP DMA content between different versions of HP DMA, HP only supports Promote when the source content version matches the destination content version. If you promote to a different version, you may need to make manual changes.

### Operating Systems

For specific target operating system versions supported by each workflow, see the *HP Database and Middleware Automation Support Matrix* available on the HP Software Product Manuals web site:

<http://h20230.www2.hp.com/selfsolve/manuals>

### Hardware Requirements

For HP DMA server hardware requirements, see the *HP DMA Installation Guide* and the *HP DMA Release Notes*.

## Promote Solution FAQs

The following are frequently asked questions regarding the Promote solution:

[What is promoted?](#)

[What is meant by "working directory/ZIP file"?](#)

[Are promoted workflows versioned?](#)

[What is the purpose of the target server in the promote process?](#)

[What happens if the promote process fails?](#)

[Can I manually roll back a promoted workflow?](#)

[Do I install solution packs on my destination server?](#)

[What capabilities or permissions do I need to be able to run the Promote workflows?](#)

[Do the Promote workflows create the roles that I need on the destination server?](#)

[How are permissions promoted?](#)

[Are existing policies, Smart Groups, or deployments deleted from the destination server when I promote a workflow?](#)

[How do I know if other workflows are affected when I promote a single workflow?](#)

[How do the Promote workflows handle workflows or other automation items that are locked?](#)

---

### What is promoted?

When you promote a workflow, you also promote any automation items referenced by that workflow or its deployments. Referenced steps, functions, and Custom Fields are always promoted. You can specify which deployments, policies, and Smart Groups are promoted, or you can promote all of them or none of them. The default behavior is to promote all referenced items. (See [What is Promoted](#) for more information.)

---

### What is meant by "working directory/ZIP file"?

Throughout this guide, the phrase "working directory/ZIP file" refers to the specific directory or ZIP file on the target server that contains the XML files and log files. The Promote workflows use the following:

- [Promote Workflow – Export](#) and [Promote Workflow – Export and Import](#) store these files on the target server in Export Location (either a directory or ZIP file).
- [Promote Workflow – Import](#) retrieves these files from the target server in the specified Import Location (either a directory or ZIP file).

#### Are promoted workflows versioned?

To create a versioned history of your promoted workflows, you can store the XML files produced by these workflows in a revision control system, such as SVN or CVS (see [Files Created By the Promote Workflows](#)).

**Tip:** When you run the workflows, be sure to specify the Export Location parameter to ensure that the XML files are stored in the correct location on the specified target server.

---

#### What is the purpose of the target server in the promote process?

The target server has one purpose: to store and retrieve the source and backup XML files created during the promote operation. The files are stored in the working directory/ZIP file on the target server. Log files are also stored in the same working directory/ZIP file.

See the [Purpose of the Target Server](#) on page 35 for more information.

---

#### What happens if the promote process fails?

If the Rollback on Error parameter is set to YES (the default), the following happens:

- Items are promoted one at a time. If one item fails, the workflow stops promoting any remaining items and then restores the failed item and any previously promoted items.
- If the workflow is unable to verify that the promoted workflow on the destination server is identical to the workflow on the source server, the destination server is restored to its original state.
- If no restore versions are available to restore promoted items, the promoted items remain on the destination server. They are not deleted. They will be overwritten in a future promote process.

If Rollback on Error is set to NO, the workflow stops promoting any remaining items but no attempt is made to roll back any changes made before the failure occurred.

---

#### Can I manually roll back a promoted workflow?

If you want to roll back a workflow that was promoted to the destination server, you can run the [Promote Workflow – Import](#) workflow using the backup files from the Promote operation to restore the original destination workflow and all related items.

**Tip:** Use one of the following methods to select a specific version:

- Specify Export Location in a meaningful way and in a unique location. That way, you can roll the destination server workflow back to a specific version.
- Use a revision control system such as SVN or CVS to manage different versions. Use the revision control system to revert to the desired version.

#### Do I install solution packs on my destination server?

Yes, you must install solution packs on your destination server. When you promote a workflow, the solution pack that contains the workflow on the source server is compared to the solution pack on the destination server. If the versions do not match, the Promote workflows will fail.

---

#### What capabilities or permissions do I need to be able to run the Promote workflows?

You need the following capabilities to run the Promote workflows:

- The HP DMA user who runs [Promote Workflow – Import](#) must have Administrator capability.
- The HP DMA user specified in the Destination DMA Username parameter in [Promote Workflow – Export and Import](#) must have Administrator capability.

The Promote workflows are like any other HP DMA workflow. You need the following permissions to use them:

- Read permission on any deployable copies of the workflows that you create from the read-only workflows delivered in the Promote Solution Pack
- Read, Write, and Execute permission on any deployment that will be used to execute the workflows in your environment
- Read and Execute permission on the organization that contains the specified target server

**Caution:** Take every precaution to ensure that unauthorized users cannot run the Promote workflows in your environment.

---

#### Do the Promote workflows create the roles that I need on the destination server?

No. You must create and configure the required roles on the destination server. Although you can do this at any time, it is good practice to create the roles prior to running the Promote workflows. If the roles do not exist on the destination server, the Promote workflows will fail.

---

#### How are permissions promoted?

Permissions are associated with roles. You must specify the parameter Roles on Destination Server. If the promoted item did not previously exist on the destination server, it will be given the specified roles with full permissions—READ, WRITE, and EXECUTE, based on the item type. If the promoted item already exists on the destination server, the roles and permissions will not be changed—you cannot use the Promote workflows to add or delete roles or permissions on items that already exist on the destination server.

**Note:** The administrator should review the permissions after running the Promote workflows and, for security reasons, remove permissions that are not required by specific roles.

---

**Are existing policies, Smart Groups, or deployments deleted from the destination server when I promote a workflow?**

No. Any policies, Smart Groups, or deployments that exist on the destination server remain there—even if you only specify a subset of them on a subsequent promote. Items are overwritten if they have changed.

For example, say that a workflow that you are promoting references three deployments: A, B, and C. You promote the workflow and with the Filter Deployments parameter set to ALL. All three of the deployments (A, B, and C) are promoted.

Later, you promote a revised version of the workflow, and you specify that only deployment A should be promoted. In this scenario, deployments B and C remain on the destination server. Deployment A is overwritten if it is different than the original version.

The Promote workflows do not delete automation items on the destination server using filters. You must manually delete them on the destination.

---

**How do I know if other workflows are affected when I promote a single workflow?**

It is possible that promoting a single workflow brings over related items that have changed (for example, functions or steps) and are used by other workflows. You should carefully review the Preview report to be aware of any other workflows that should be promoted.

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**How do the Promote workflows handle workflows or other automation items that are locked?**

If a workflow or automation item is locked on the source server but does not exist on the destination server, the workflow will fail. If the workflow or automation item exists and is locked on the destination server, the Promote workflows will compare the two versions. If the versions match, no promotion is necessary. If the versions do not match, the promote fails. If the workflow or automation item is unlocked on the destination server, it will be overwritten.

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# Chapter 2

## Workflow Details

The Promote solution contains the following workflows:

Workflow Name	Purpose
<a href="#">Promote Workflow – Export</a>	Exports a workflow and related items from the HP DMA database on the source server and stores them in a collection of XML files in a working directory/ZIP file.
<a href="#">Promote Workflow – Import</a>	Creates a workflow and related items on the specified destination server using the contents of the XML files that reside in the specified working directory/ZIP file.
<a href="#">Promote Workflow – Export and Import</a>	Exports a workflow and related items from the HP DMA database on the source server and stores them in a collection of XML files in a working directory/ZIP file. Then creates that workflow and all its components on a different HP DMA server. The functionality is the same as running the <a href="#">Promote Workflow – Export</a> workflow followed by running the <a href="#">Promote Workflow – Import</a> workflow.

Each workflow included in this solution pack has a set of input parameters whose values will be unique to your environment. If you provide correct values for the parameters that each scenario requires, the workflow will be able to accomplish its objective.

There are two steps required to customize this solution:

1. Ensure that all required parameters are visible. You do this by using the workflow editor.  
For simple content promotion scenarios, you can use the default values for most parameters. To use this solution's more advanced features, you will need to expose additional parameters.
2. Specify the values for those parameters. You do this when you create a deployment.

**Tip:** Detailed instructions are provided in the "How to Use this Workflow" topic for each workflow.

The information presented here assumes the following:

- HP DMA is installed and operational.
- At least one suitable target server is available (see [Supported Products and Platforms](#) on page 37).
- You are logged in to the HP DMA web interface.
- You have permission to create, edit, and deploy copies of the workflows included in this solution pack.

**Tip:** All parameters used by the workflows in this solution are provided in the "Parameters" topic associated with each workflow.

## Promote Workflow – Export

To use this workflow in your environment, see the following information:

Topic	Information Included
<a href="#">Prerequisites for this Workflow</a>	List of prerequisites that must be satisfied before you can run this workflow
<a href="#">How This Workflow Works</a>	Information about what the workflow does, including validation checks performed, and steps executed
<a href="#">How to Run This Workflow</a>	Instructions for running this workflow in your environment
<a href="#">Sample Scenario</a>	Examples of typical parameter values for this workflow
<a href="#">Parameters</a>	List of input parameters for this workflow

The information presented here assumes the following:

- HP DMA is installed and operational.
- At least one suitable target server is available (see [Supported Products and Platforms](#) on page 37).
- You are logged in to HP DMA as a user with Workflow Creator (or Administrator) capability.
- You have Read and Execute permission for the organization that contains your target server.

## Prerequisites for this Workflow

Be sure that the following prerequisites are satisfied before you run the [Promote Workflow – Export](#) workflow:

- You are using HP Database and Middleware Automation version 10.20 (or later).
- You have installed the latest version of the Promote Solution Pack.
- The HP DMA user who runs the workflow should have READ permission on the promoted items.

## How This Workflow Works

[Promote Workflow – Export](#) exports the specified workflow and related components from the HP DMA server where you run the workflow (the source). It stores this information in a collection of XML files.

After you export a workflow, you can use [Promote Workflow – Import](#) to transfer this workflow (and specified related automation items) to a different HP DMA server (the destination).

By using these two workflows together, you can promote a customized workflow and all its components from one HP DMA server (the source) to another HP DMA server (the destination) in a reliable and replicable manner. This is useful, for example, when you want to move a workflow from a test environment to a production environment.



For a list of the specific items exported, see [What is Promoted](#) on page 11. For a list of the XML files created, see [Files Created By the Promote Workflows](#) on page 85.

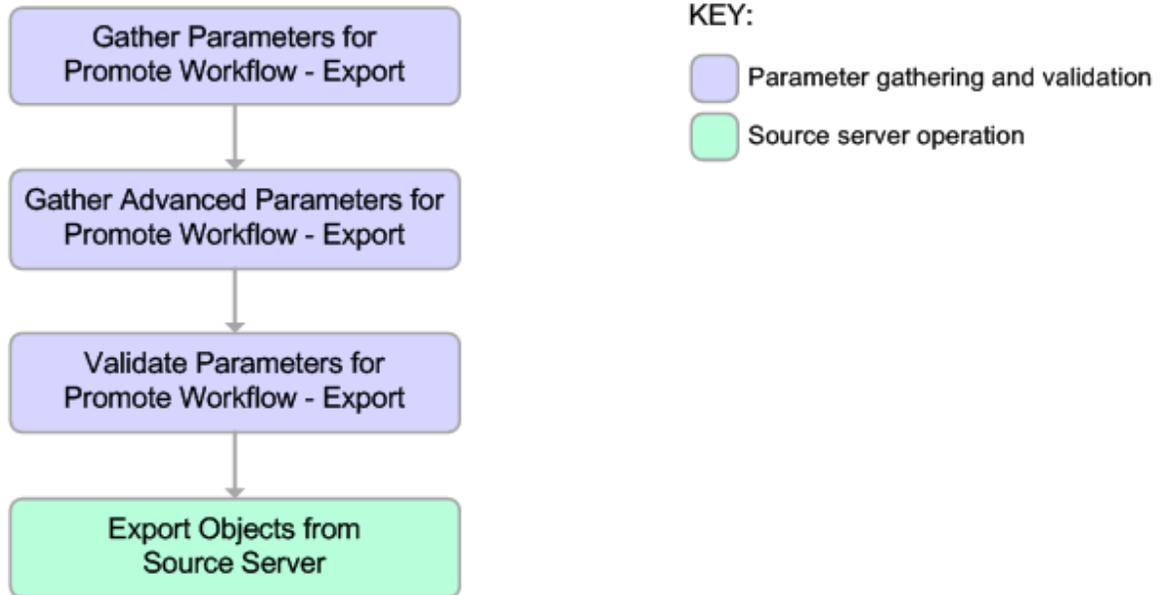
### Process Flow

The workflow exports the workflow and the related automation items from the HP DMA source server, and stores this information in a collection of XML files in the Export Location.

The export process creates the `promote_info.txt` file (see [Sample Promote Information File](#) on page 90 for an example).

**Steps Executed**

Promote Workflow – Export includes the following steps. Each step must complete successfully before the next step can start. If a step fails, the workflow reports a failure and all subsequent steps are skipped.



**Steps Used in Promote Workflow – Export**

Workflow Step	Description
Gather Parameters for Promote Workflow – Export	Gets the name of the workflow to be promoted and Export Location. Sets the working directory/ZIP file (for more information see <a href="#">What is meant by "working directory/ZIP file"?</a> ).
Gather Advanced Parameters for Promote Workflow – Export	Gets the advanced optional parameter for this workflow: Export Zip Archive setting that specifies whether to export the workflow and related automation items as a ZIP archive or a sub-directory.
Validate Parameters for Promote Workflow – Export	Verifies the following things: <ul style="list-style-type: none"> <li>• All required parameters have been specified.</li> <li>• The specified workflow exists on the source server, and the user has Read permission for that workflow.</li> </ul>
Export Objects from Source Server	Exports the workflow and the related automation items from the HP DMA source server, and stores this information in a collection of XML files in the working directory/ZIP file. Exports in the following order: <ol style="list-style-type: none"> <li>1. The workflow, itself</li> <li>2. Steps used in the workflow</li> <li>3. Functions referenced by steps used in the workflow</li> <li>4. Deployments associated with the workflow</li> <li>5. Policies associated with any promoted deployment</li> <li>6. Smart Groups associated with any promoted deployment</li> <li>7. Custom Fields that are referenced by the workflow, any promoted deployment, any promoted step, or any promoted Smart Group</li> </ol> Creates the <code>promote_info.txt</code> file (see <a href="#">Sample Promote Information File</a> on page 90 for an example).

**Note:** For input parameter descriptions and defaults, see [Parameters for Promote Workflow – Export](#) on page 53.

## How to Run This Workflow

The following instructions show you how to customize and run [Promote Workflow – Export](#) in your environment.

**Tip:** For detailed instructions to run HP DMA workflows—using the Run Oracle Compliance Audit workflow as an example—see *HP DMA Quick Start Tutorial*.

**Note:** Before following this procedure, review the [Prerequisites for this Workflow](#) on page 45, and ensure that all requirements are satisfied.

**Tip:** As a best practice, set the target for the deployment to the HP DMA server where you run [Promote Workflow – Export](#).

### To use the Promote Workflow – Export workflow:

1. On the HP DMA server where you run the workflow, create a deployable copy of the workflow (see "Create a Deployable Workflow" in *HP DMA Quick Start Tutorial*).
2. Determine the values that you will specify for the following parameters:

#### Input Parameters for Gather Parameters for Promote Workflow - Export

Parameter Name	Default Value	Required	Description
Export Location	no default	required	The location where the exported HP DMA artifacts are stored. This can be either a fully qualified ZIP filename (default) or a fully qualified directory path—based on the advanced parameter Export Zip Archive. If it is a directory, a time-stamped sub-directory or ZIP file will be created to store the files. The location is on the target server.
Workflow Name	no default	required	Name of the workflow to be promoted.

3. Create a new deployment (see "Create a Deployment" in *HP DMA Quick Start Tutorial* for instructions).
4. On the Parameters tab, specify values for the required parameters listed in step 2. You do not need to specify values for those parameters whose default values are appropriate for your environment.
5. On the Targets tab, specify a target for this deployment—where the exported workflow (and all related items) and the log files will be stored.

**Tip:** As a best practice, set the target to the HP DMA source server where the workflow is exported from.

6. Save the deployment (click **Save** in the lower right corner).
7. Run the workflow using this deployment (see "Run Your Workflow" in *HP DMA Quick Start Tutorial* for instructions).

#### To verify the results:

The workflow will complete and report SUCCESS on the Console if it has run successfully. If an error occurs during workflow execution, the error is logged, and the workflow terminates in the FAILURE state.

Results of each step are logged on the Output tab for each step. You can access this information from the Console page while the workflow is running or the History page after it finishes running.

You can examine the `promote_info.txt` file to determine specific information about the export (see [Sample Promote Information File](#) on page 90).

#### To use the exported workflow:

The collection of exported XML files enables you to create a gold master of your workflow, its deployments, custom fields, policies, and permissions. This can be used in conjunction with a revision control system to help manage your production workflows.

You can use the exported workflow in the following ways:

- You can copy the exported working directory/ZIP file to an Archive (see [HP DMA Archive](#) for more information).
- You can copy the exported working directory/ZIP file to the target server and working directory/ZIP file that you will use when you run [Promote Workflow – Import](#) on the destination server.

## Sample Scenario

This topic shows you how to use various parameters to achieve the following workflow export scenarios in your environment when using [Promote Workflow – Export](#).

### Scenario 1: Export All Automation Items to a ZIP File

In this scenario, all deployments, Smart Groups, and Custom Fields that are referenced by the workflow (or any of its deployments) are exported. The XML files will be stored in the specified Export Location on the target server.

### Example Parameter Values for Gather Parameters for Promote Workflow – Export

Parameter Name	Example	Description
Export Location	/Oracle Workflows/workflow123.zip	The location where the exported HP DMA artifacts are stored. This can be either a fully qualified ZIP filename (default) or a fully qualified directory path—based on the advanced parameter Export Zip Archive. If it is a directory, a time-stamped sub-directory or ZIP file will be created to store the files. The location is on the target server.
Workflow Name	Run Oracle Compliance Check - CIS	Name of the workflow to be promoted.

Be sure that the default values for all remaining input parameters are appropriate for your environment (see [Parameters for Promote Workflow – Export](#) on page 53).

**Scenario 2: Export All Automation Items to a Sub-Directory**

In this scenario, all deployments, Smart Groups, and Custom Fields that are referenced by the workflow (or any of its deployments) are exported. The XML files will be stored in the specified Export Location on the target server.

**Example Parameter Values for Gather Parameters for Promote Workflow – Export**

Parameter Name	Example	Description
Export Location	/Oracle Workflows	The location where the exported HP DMA artifacts are stored. This can be either a fully qualified ZIP filename (default) or a fully qualified directory path—based on the advanced parameter Export Zip Archive. If it is a directory, a time-stamped sub-directory or ZIP file will be created to store the files. The location is on the target server.
Workflow Name	Run Oracle Compliance Check - CIS	Name of the workflow to be promoted.

The following parameter is not visible by default in a deployment. You need to expose it before you can use it.

**Example Parameter Values for Gather Advanced Parameters for Promote Workflow – Export**

Parameter Name	Example	Description
Export Zip Archive	NO	Flag to indicate whether the workflow (and related automation items) and log files are exported as a ZIP file.  If set to YES or TRUE (the default), the files are exported to a ZIP file.  If set to NO or FALSE, the files are exported to a time-stamped sub-directory of the Export Location.

Be sure that the default values for all remaining input parameters are appropriate for your environment (see [Parameters for Promote Workflow – Export](#) on the next page).

## Parameters for Promote Workflow – Export

The following tables describe the required and optional input parameters for this workflow. For some parameters, if you do not specify a value for a parameter, a default value is assigned.

### Input Parameters Defined in this Step: Gather Parameters for Promote Workflow – Export

Parameter Name	Default Value	Required	Description
Export Location	no default	required	The location where the exported HP DMA artifacts are stored. This can be either a fully qualified ZIP filename (default) or a fully qualified directory path—based on the advanced parameter Export Zip Archive. If it is a directory, a time-stamped sub-directory or ZIP file will be created to store the files. The location is on the target server.
Workflow Name	no default	required	Name of the workflow to be promoted.

The following parameter is not visible by default in a deployment. You need to expose it before you can use it.

### Additional Input Parameters Defined in this Step: Gather Advanced Parameters for Promote Workflow - Export

Parameter Name	Default Value	Required	Description
Export Zip Archive	YES	optional	<p>Flag to indicate whether the workflow (and related automation items) and log files are exported as a ZIP file.</p> <p>If set to YES or TRUE (the default), the files are exported to a ZIP file.</p> <p>If set to NO or FALSE, the files are exported to a time-stamped sub-directory of the Export Location.</p>

## Promote Workflow – Import

To use this workflow in your environment, see the following information:

Topic	Information Included
<a href="#">Prerequisites for this Workflow</a>	List of prerequisites that must be satisfied before you can run this workflow
<a href="#">How This Workflow Works</a>	Information about what the workflow does, including validation checks performed, and steps executed
<a href="#">How to Run This Workflow</a>	Instructions for running this workflow in your environment
<a href="#">Sample Scenarios</a>	Examples of typical parameter values for this workflow
<a href="#">Parameters</a>	List of input parameters for this workflow

The information presented here assumes the following:

- HP DMA is installed and operational.
- At least one suitable target server is available (see [Supported Products and Platforms](#) on page 37).
- You are logged in to HP DMA as a user with Workflow Creator (or Administrator) capability.
- You have Read and Execute permission for the organization that contains your target server.

## Prerequisites for this Workflow

Be sure that the following prerequisites are satisfied before you run the [Promote Workflow – Import](#) workflow:

- You are using HP Database and Middleware Automation version 10.20 (or later).
- You have installed the latest version of the Promote Solution Pack.
- Any roles required to modify or execute the workflow (or workflows) that will be promoted must exist on the destination HP DMA server.
- The HP DMA user who runs the workflow should have READ and WRITE permissions on the promoted objects.
- The HP DMA user who runs the workflow must have Administrator capability.

Before you run [Promote Workflow – Import](#), you must have access to your exported workflow that was created when you ran either of the following::

- [Promote Workflow – Export](#)
- [Promote Workflow – Export and Import](#)

## How This Workflow Works

[Promote Workflow – Import](#) copies a workflow and related automation items to the HP DMA server where you run the workflow (the destination). This workflow consumes the collection of previously created XML files that contain the workflow and its related automation items.

Normally, you run [Promote Workflow – Export](#) before you run [Promote Workflow – Import](#) to produce the XML files.

By using these two workflows together, you can promote a customized workflow and all its components from one HP DMA server (the source) to another HP DMA server (the destination) in a reliable and replicable manner. This is useful, for example, when you want to move a workflow from a test environment to a production environment.



For a list of the specific items exported, see [What is Promoted](#) on page 11. For a list of the XML files created, see [Files Created By the Promote Workflows](#) on page 85.

**Tip:** You can use the preview mode to see what will be promoted to the destination server. In preview mode, no changes are made to the destination server.

**Process Flow**

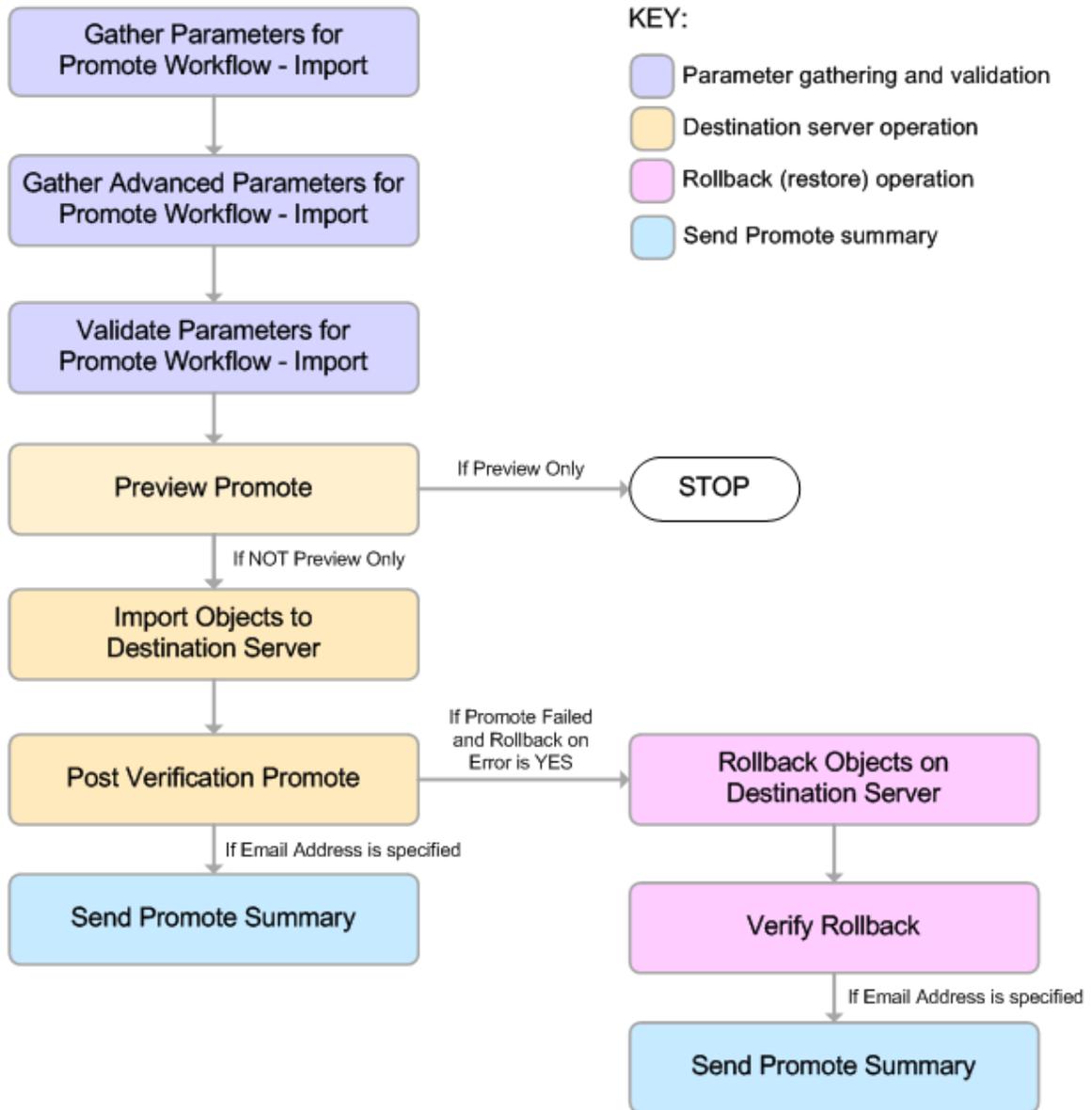
There are five phases included in the Promote Workflow - Import process flow.

Phase	Purpose	Artifacts Created
1	Compare the XML files to the workflow on the destination server (if the workflow already exists there).	objects_to_promote.txt promote_summary.txt See <a href="#">Sample Preview Report</a> on page 91 for an example
2	Back up the workflow on the destination server (if the workflow already exists there).	Destination backup files
3	Import the workflow to the destination server.	none
4	Validate the promoted workflow on the destination server.	none
5	If the promotion failed or cannot be validated, roll back the original version of the workflow on the destination server.	none

**Note:** If the Preview Only parameter is set to YES, only Phase 1 in this process is performed.

**Steps Executed**

Promote Workflow – Import includes the following steps. Each step must complete successfully before the next step can start. If a step fails, the workflow reports a failure and all subsequent steps are skipped.



**Steps Used in Promote Workflow - Import**

<b>Workflow Step</b>	<b>Description</b>
Gather Parameters for Promote Workflow – Import	Gets the preview mode setting (whether the promote operation only previews the changes without updating the destination server), the roles, the Import Location, and the filters for Deployments, Policies, and Smart Groups to promote.
Gather Advanced Parameters for Promote Workflow – Import	Gets the advanced optional parameters: Email Address that specifies optional email addresses where a summary report will be sent, Ignore Platform Version setting that specifies whether to ignore a difference in the source server version and the destination server version, and Rollback on Error setting that tells HP DMA what to do if the promote fails—if YES, rolls back the existing workflow (if any) on the destination server; if NO, does not roll back.
Validate Parameters for Promote Workflow – Import	Verifies the following: <ul style="list-style-type: none"><li>• All required parameters have been specified.</li><li>• The specified role exists on the destination server.</li><li>• The specified Import Location exists and contains the HP DMA exported XML files.</li><li>• The source server version matches the destination server version—unless Ignore Platform Version is YES.</li></ul>

## Steps Used in Promote Workflow - Import (continued)

Workflow Step	Description
Preview Promote	<p>The Preview Promote step looks for any conflicts that may arise as a result of the promote operation. The step reads each XML file in the working directory/ZIP file that contains an exported item (file name begins with <code>source_</code>) and performs the following checks:</p> <ul style="list-style-type: none"> <li>• It determines which deployments, policies, and Smart Groups to promote based on the filter parameters: Filter Deployments, Filter Smart Groups, and Filter Policies.</li> <li>• It identifies any exported policy attributes or parameters that represent passwords and prints a warning to the step log indicating that these items must be manually configured on the destination server after the promote operation is completed. If the password exists on the destination, the value will be preserved.</li> <li>• It determines whether an item with the same name and target level (if applicable) as the exported item already exists on the destination server.</li> </ul> <p>If an exported item exists on the destination server, the step compares the exported item to the destination item. The following summarizes the action taken based on the result of this comparison:</p> <p>Identical    Item does not need to be imported to the destination server.</p> <p>Not identical    The Preview Promote step logs a list of items that will be promoted in the file <code>objects_to_promote.txt</code> in the Import Location.</p> <div style="background-color: #f0f0f0; padding: 10px; margin: 10px 0;"> <p><b>Note:</b> Locked items are not overwritten. If a step or function is locked and is different on the destination server, then the version of the solution pack used during the Promote export does not match the solution pack version on your destination server. The promote will fail.</p> </div> <ul style="list-style-type: none"> <li>• It lists any items on the destination server that have dependencies on the existing item in the step log.</li> <li>• It creates the file <code>objects_to_promote.txt</code> that contains the automation items that will be promoted.</li> <li>• It creates a Preview report (<code>promote_summary.txt</code>). The Preview report lists what will be promoted and describes what you need to do after running the Promote workflows such as setting up passwords and Custom Fields. (See <a href="#">Sample Preview Report</a> on page 91 for an example.)</li> </ul> <div style="background-color: #f0f0f0; padding: 10px; margin: 10px 0;"> <p><b>Note:</b> If you are running the workflow in preview mode (parameter Preview Only is set to YES), the workflow stops after this step.</p> </div>

**Steps Used in Promote Workflow - Import (continued)**

Workflow Step	Description
Import Objects to Destination Server	<p>This step (and the following steps) are only executed if Preview Only is set to NO.</p> <p>Reads the XML files containing the exported workflow, backs up the workflow and the specified (filtered) related automation items, and then creates the items on the destination server.</p> <div style="background-color: #f0f0f0; padding: 5px; border: 1px solid #ccc;"> <p><b>Caution:</b> The workflow and automation items that previously existed on the destination server will be over-written.</p> </div>
Post Verification Promote	<p>The Post Verification Promote step is executed after the workflow and all related items are imported to the destination server to ensure that the promote operation was successful. In this case, all source items and destination items should be identical. Items that are unique to the destination environment, such as passwords, are ignored.</p> <p>If this comparison determines that the promoted workflow and all related items match the source workflow, the workflow ends in with a Success state.</p> <p>If this comparison determines that the promoted workflow and all related items do not match the source workflow:</p> <ol style="list-style-type: none"> <li>1. If Rollback on Error is set to YES: The workflow runs the Rollback Objects on Destination Server and Verify Rollback steps.</li> <li>2. The workflow ends in a Failure state.</li> </ol>
Send Promote Summary	<p>If Email Address is specified, this step emails a Promote summary for the successful promotion.</p>
Rollback Objects on Destination Server	<p>This step is only executed if the promote operation fails and Rollback on Error is set to YES:</p> <ul style="list-style-type: none"> <li>• If a previous version of the promoted workflow (or any related automation item) existed on the destination server prior to the promote operation: Deletes the promoted workflow (or related item) on the destination server, and restores the original workflow or related automation item to the item that was previously backed up (file names begin with <code>backup_</code>).</li> <li>• If no previous version of the promoted workflow (or any related automation item) existed on the destination server prior to the promote operation: The workflow (or related automation item) will be deleted from the destination server.</li> </ul>

**Steps Used in Promote Workflow - Import (continued)**

<b>Workflow Step</b>	<b>Description</b>
Verify Rollback	<p>The Verify Rollback step is only executed if a rollback is performed. For the workflow and all related automation items, the step checks the following:</p> <ul style="list-style-type: none"><li>• If the item was rolled back, the restored item on the destination server should be identical to the version of that item that was previously backed up (file names begin with <code>backup_</code>).</li><li>• If the item did not exist before the promotion, the item does not exist after the roll back.</li></ul>
Send Promote Summary	<p>If Email Address is specified, this step emails a Promote summary after a rollback occurs.</p>

**Note:** For input parameter descriptions and defaults, see [Parameters for Promote Workflow – Import](#) on page 75.

## How to Run This Workflow

The following instructions show you how to customize and run [Promote Workflow – Import](#) in your environment. These instructions assume that all deployments, Smart Groups, and Custom Fields will be promoted.

**Tip:** For detailed instructions to run HP DMA workflows—using the Run Oracle Compliance Audit workflow as an example—see *HP DMA Quick Start Tutorial*.

**Note:** Before following this procedure, review the [Prerequisites for this Workflow](#) on page 55, and ensure that all requirements are satisfied.

**Tip:** As a best practice, set the target for the deployment to the HP DMA server where you run [Promote Workflow – Import](#).

### To use the Promote Workflow – Import workflow:

1. On the HP DMA server where you run the workflow, create a deployable copy of the workflow (see "Create a Deployable Workflow" in *HP DMA Quick Start Tutorial*).
2. Determine the values that you will specify for the following parameters:

#### Input Parameters for Gather Parameters for Promote Workflow - Import

Parameter Name	Default Value	Required	Description
Filter Deployments	ALL	required	A filter for deployments to be promoted. Valid values are ALL, NONE, INCLUDE: followed by a comma separated list of deployments to include, or EXCLUDE: followed by a comma separated list of deployments to exclude. The value ALL will promote all deployments associated with the workflow; the value NONE will not promote any of the deployments associated with the workflow.  <b>Note:</b> Maximum number of characters is 1000.

**Input Parameters for Gather Parameters for Promote Workflow - Import (continued)**

Parameter Name	Default Value	Required	Description
Filter Policies	ALL	required	<p>A filter for policies to be promoted. Valid values are ALL, NONE, INCLUDE: followed by a comma separated list of policies to include, or EXCLUDE: followed by a comma separated list of policies to exclude. The value ALL will promote all policies associated with the workflow; the value NONE will not promote any of the policies associated with the workflow.</p> <p><b>Note:</b> Maximum number of characters is 1000.</p>
Filter Smart Groups	ALL	required	<p>A filter for Smart Groups to be promoted. Valid values are ALL, NONE, INCLUDE: followed by a comma separated list of Smart Groups to include, or EXCLUDE: followed by a comma separated list of Smart Groups to exclude. The value ALL will promote all Smart Groups associated with the workflow; the value NONE will not promote any of the Smart Groups associated with the workflow.</p> <p><b>Note:</b> Maximum number of characters is 1000.</p>
Import Location	no default	required	<p>The location where Promote Workflow – Import retrieves the exported HP DMA workflow (and related automation items) and will store the backup files and other artifacts. This can be either a fully qualified ZIP filename or a fully qualified directory path. The location is on the target server.</p>
Preview Only	YES	required	<p>If Preview Only is set to YES, the workflow will show you which items will be promoted, but it will not make any changes on the destination server. Valid values are YES/TRUE and NO/FALSE (case-insensitive).</p>

**Input Parameters for Gather Parameters for Promote Workflow - Import (continued)**

Parameter Name	Default Value	Required	Description								
Roles on Destination Server	no default	required	<p>Comma-separated list of roles that will be assigned to promoted items. At least one role must be specified.</p> <p>All roles are assigned to the following promoted items (workflows, steps, deployments, and policies) that do not exist on the destination HP DMA server prior to the promote operation. The roles specified for these promoted items are given full permissions:</p> <table border="0"> <tr> <td>Workflow</td> <td>READ, WRITE</td> </tr> <tr> <td>Step</td> <td>READ, WRITE</td> </tr> <tr> <td>Deployment</td> <td>READ, WRITE, EXECUTE</td> </tr> <tr> <td>Policy</td> <td>READ, WRITE</td> </tr> </table> <p>The <u>first</u> role specified in Roles on Destination Server is set in the Roles attribute for promoted Smart Groups that do not exist on the destination server prior to the promote operation.</p> <p>Role-based permissions for existing items are preserved.</p> <div style="background-color: #f0f0f0; padding: 5px;"> <p><b>Note:</b> If the roles do not yet exist on the destination server, you need to create them before attempting to promote.</p> </div>	Workflow	READ, WRITE	Step	READ, WRITE	Deployment	READ, WRITE, EXECUTE	Policy	READ, WRITE
Workflow	READ, WRITE										
Step	READ, WRITE										
Deployment	READ, WRITE, EXECUTE										
Policy	READ, WRITE										

**Note:** This is the minimum set of parameters required to run this workflow. You may want to specify additional parameters depending on your objectives.

See [Parameters for Promote Workflow – Import](#) on page 75 for detailed descriptions of all input parameters for this workflow, including default values.

3. Create a new deployment (see "Create a Deployment" in *HP DMA Quick Start Tutorial* for instructions).
4. On the Parameters tab, specify values for the required parameters listed in step 2. You do not need to specify values for those parameters whose default values are appropriate for your environment.
5. On the Targets tab, specify a target for this deployment—where the exported workflow (and all related items) and the log files are stored.

**Tip:** As a best practice, copy the exported working directory/ZIP file to the HP DMA server where you run the workflow (the destination) and set the target to the HP DMA to

the same server.

6. Save the deployment (click **Save** in the lower right corner).
7. Run the workflow using this deployment (see "Run Your Workflow" in *HP DMA Quick Start Tutorial* for instructions).

**To verify the results:**

The workflow will complete and report SUCCESS on the Console if it has run successfully. If an error occurs during workflow execution, the error is logged, and the workflow terminates in the FAILURE state.

Results of each step are logged on the Output tab for each step. You can access this information from the Console page while the workflow is running or the History page after it finishes running.

**Tip:** Examine the Output tab for any dependencies (for example, other workflows that use the promoted steps or functions) and decide if any other promotions are desired.

You should examine the Preview report in file `promote_summary.txt` to determine what objects were promoted and exactly what needs to be customized on the destination server (see [Sample Preview Report](#) on page 91 for an example).

**To track the history of promoted items on the destination server:**

You can track the history of promoted workflows, steps, and functions using the history tab:

Promoted Item	How to Access	Description
Workflow	Automation > Workflows > <i>&lt;promoted_workflow&gt;</i> > History	Date: <i>&lt;date_time_of_promotion&gt;</i> Person: <i>&lt;user_that_promoted_workflow&gt;</i> Source: REST API Comment: Promoted using " <i>&lt;promote_workflow_that_imported_item&gt;</i> " from DMA server <i>&lt;server_name&gt;</i>
Step	Automation > Steps > <i>&lt;promoted_step&gt;</i> > History	Date: <i>&lt;date_time_of_promotion&gt;</i> Person: <i>&lt;user_that_promoted_step&gt;</i> Source: REST API Comment: Promoted with " <i>&lt;promoted_workflow&gt;</i> "
Function	Automation > Functions > <i>&lt;promoted_function&gt;</i> > History	Date: <i>&lt;date_time_of_promotion&gt;</i> Person: <i>&lt;user_that_promoted_function&gt;</i> Source: REST API Comment: Promoted with " <i>&lt;promoted_workflow&gt;</i> "

#### **To use the promoted workflow on the destination server:**

Before you run the newly promoted workflow, use the Preview report (file `promote_summary.txt`) to customize the following on the destination server:

- Password values
- Custom Field values

Set up the environment on the destination server:

- Environments: organizations, servers, instances, and databases
- Targets for deployments

## Sample Scenarios

This topic shows you how to use various parameters to achieve the following workflow promotion scenarios in your environment when using [Promote Workflow – Import](#).

### Scenario 1: Preview All Automation Items but Do Not Import

In this scenario, all automation items for the specified workflow that are stored in Import Location are previewed. They are not created or updated on the destination server.

In this scenario, Preview Only is enabled by default.

In this scenario, Rollback on Error is enabled by default. The workflow and any related items that existed on the destination server prior to the promote operation will be restored in the event that the promote fails.

### Example Parameter Values for Gather Parameters for Promote Workflow – Import

Parameter Name	Example	Description								
Import Location	/Oracle Workflows/workflow123.zip	The location where Promote Workflow – Import retrieves the exported HP DMA workflow (and related automation items) and will store the backup files and other artifacts. This can be either a fully qualified ZIP filename or a fully qualified directory path. The location is on the target server.								
Roles on Destination Server	DMA Admins	<p>Comma-separated list of roles that will be assigned to promoted items. At least one role must be specified.</p> <p>All roles are assigned to the following promoted items (workflows, steps, deployments, and policies) that do not exist on the destination HP DMA server prior to the promote operation. The roles specified for these promoted items are given full permissions:</p> <table border="0"> <tr> <td>Workflow</td> <td>READ, WRITE</td> </tr> <tr> <td>Step</td> <td>READ, WRITE</td> </tr> <tr> <td>Deployment</td> <td>READ, WRITE, EXECUTE</td> </tr> <tr> <td>Policy</td> <td>READ, WRITE</td> </tr> </table> <p>The <u>first</u> role specified in Roles on Destination Server is set in the Roles attribute for promoted Smart Groups that do not exist on the destination server prior to the promote operation.</p> <p>Role-based permissions for existing items are preserved.</p> <div style="background-color: #f0f0f0; padding: 5px;"> <p><b>Note:</b> If the roles do not yet exist on the destination server, you need to create them before attempting to promote.</p> </div>	Workflow	READ, WRITE	Step	READ, WRITE	Deployment	READ, WRITE, EXECUTE	Policy	READ, WRITE
Workflow	READ, WRITE									
Step	READ, WRITE									
Deployment	READ, WRITE, EXECUTE									
Policy	READ, WRITE									

Be sure that the default values for all remaining input parameters are appropriate for your environment (see [Parameters for Promote Workflow – Import](#) on page 75).

**Scenario 2: Import All Automation Items**

In this scenario, all automation items for the specified workflow that are stored in Import Location are created or updated on the destination server. The Promote summary report will be emailed to a recipient.

In this scenario, Rollback on Error is enabled by default. The workflow and any related items that existed on the destination server prior to the promote operation will be restored in the event that the promote fails.

**Example Parameter Values for Gather Parameters for Promote Workflow – Import**

Parameter Name	Example	Description								
Import Location	/Oracle Workflows/workflow123.zip	The location where Promote Workflow – Import retrieves the exported HP DMA workflow (and related automation items) and will store the backup files and other artifacts. This can be either a fully qualified ZIP filename or a fully qualified directory path. The location is on the target server.								
Preview Only	NO	If Preview Only is set to YES, the workflow will show you which items will be promoted, but it will not make any changes on the destination server. Valid values are YES/TRUE and NO/FALSE (case-insensitive).								
Roles on Destination Server	DMA Admins	<p>Comma-separated list of roles that will be assigned to promoted items. At least one role must be specified.</p> <p>All roles are assigned to the following promoted items (workflows, steps, deployments, and policies) that do not exist on the destination HP DMA server prior to the promote operation. The roles specified for these promoted items are given full permissions:</p> <table border="0"> <tr> <td>Workflow</td> <td>READ, WRITE</td> </tr> <tr> <td>Step</td> <td>READ, WRITE</td> </tr> <tr> <td>Deployment</td> <td>READ, WRITE, EXECUTE</td> </tr> <tr> <td>Policy</td> <td>READ, WRITE</td> </tr> </table> <p>The <u>first</u> role specified in Roles on Destination Server is set in the Roles attribute for promoted Smart Groups that do not exist on the destination server prior to the promote operation.</p> <p>Role-based permissions for existing items are preserved.</p> <p><b>Note:</b> If the roles do not yet exist on the destination server, you need to create them before attempting to promote.</p>	Workflow	READ, WRITE	Step	READ, WRITE	Deployment	READ, WRITE, EXECUTE	Policy	READ, WRITE
Workflow	READ, WRITE									
Step	READ, WRITE									
Deployment	READ, WRITE, EXECUTE									
Policy	READ, WRITE									

The following parameter is not visible by default in a deployment. You need to expose it before you can use it.

**Example Parameter Values for Gather Advanced Parameters for Promote Workflow - Import**

Parameter Name	Example	Description
Email Address	JohnDoe@mycompany.com	Comma separated list of email addresses where the Promote summary report will be sent.

Be sure that the default values for all remaining input parameters are appropriate for your environment (see [Parameters for Promote Workflow – Import](#) on page 75).

**Scenario 3: Import Only a Subset of Deployments, Policies, and Smart Groups**

In this scenario, the deployments, policies, and Smart Groups to be promoted are specifically included or excluded.

- **Included objects:** Provided that these objects are referenced by the specified workflow or one (or more) of its deployments, the objects will be created or updated on the destination server. Any objects that are not explicitly specified will not be promoted.
- **Excluded objects:** All objects that are not in the exclude list and are referenced by the specified workflow or one (or more) of its deployments, the objects will be created or updated on the destination server.

In this scenario, Preview Only is set to NO.

In this scenario, Rollback on Error is enabled by default. The workflow and any related items that existed on the destination server prior to the promote operation will be restored in the event that the promote fails.

**Example Parameter Values for Gather Parameters for Promote Workflow – Import**

Parameter Name	Example	Description
Filter Deployments	INCLUDE: Run Oracle Compliance Check - CIS - Linux Svrs	<p>A filter for deployments to be promoted. Valid values are ALL, NONE, INCLUDE: followed by a comma separated list of deployments to include, or EXCLUDE: followed by a comma separated list of deployments to exclude. The value ALL will promote all deployments associated with the workflow; the value NONE will not promote any of the deployments associated with the workflow.</p> <p><b>Note:</b> Maximum number of characters is 1000.</p>
Filter Policies	EXCLUDE: Oracle Test Compliance	<p>A filter for policies to be promoted. Valid values are ALL, NONE, INCLUDE: followed by a comma separated list of policies to include, or EXCLUDE: followed by a comma separated list of policies to exclude. The value ALL will promote all policies associated with the workflow; the value NONE will not promote any of the policies associated with the workflow.</p> <p><b>Note:</b> Maximum number of characters is 1000.</p>

**Example Parameter Values for Gather Parameters for Promote Workflow – Import (continued)**

Parameter Name	Example	Description
Filter Smart Groups	INCLUDE: Linux Svrs, Europe Svrs	<p>A filter for Smart Groups to be promoted. Valid values are ALL, NONE, INCLUDE: followed by a comma separated list of Smart Groups to include, or EXCLUDE: followed by a comma separated list of Smart Groups to exclude. The value ALL will promote all Smart Groups associated with the workflow; the value NONE will not promote any of the Smart Groups associated with the workflow.</p> <p><b>Note:</b> Maximum number of characters is 1000.</p>
Import Location	/Oracle Workflows/workflow123.zip	The location where Promote Workflow – Import retrieves the exported HP DMA workflow (and related automation items) and will store the backup files and other artifacts. This can be either a fully qualified ZIP filename or a fully qualified directory path. The location is on the target server.
Preview Only	NO	If Preview Only is set to YES, the workflow will show you which items will be promoted, but it will not make any changes on the destination server. Valid values are YES/TRUE and NO/FALSE (case-insensitive).

**Example Parameter Values for Gather Parameters for Promote Workflow – Import (continued)**

Parameter Name	Example	Description								
Roles on Destination Server	DMA Admins	<p>Comma-separated list of roles that will be assigned to promoted items. At least one role must be specified.</p> <p>All roles are assigned to the following promoted items (workflows, steps, deployments, and policies) that do not exist on the destination HP DMA server prior to the promote operation. The roles specified for these promoted items are given full permissions:</p> <table border="0"> <tr> <td>Workflow</td> <td>READ, WRITE</td> </tr> <tr> <td>Step</td> <td>READ, WRITE</td> </tr> <tr> <td>Deployment</td> <td>READ, WRITE, EXECUTE</td> </tr> <tr> <td>Policy</td> <td>READ, WRITE</td> </tr> </table> <p>The <u>first</u> role specified in Roles on Destination Server is set in the Roles attribute for promoted Smart Groups that do not exist on the destination server prior to the promote operation.</p> <p>Role-based permissions for existing items are preserved.</p> <p><b>Note:</b> If the roles do not yet exist on the destination server, you need to create them before attempting to promote.</p>	Workflow	READ, WRITE	Step	READ, WRITE	Deployment	READ, WRITE, EXECUTE	Policy	READ, WRITE
Workflow	READ, WRITE									
Step	READ, WRITE									
Deployment	READ, WRITE, EXECUTE									
Policy	READ, WRITE									

Be sure that the default values for all remaining input parameters are appropriate for your environment (see [Parameters for Promote Workflow – Import](#) on the next page).

## Parameters for Promote Workflow – Import

The following tables describe the required and optional input parameters for this workflow. For some parameters, if you do not specify a value for a parameter, a default value is assigned.

### Input Parameters Defined in this Step: Gather Parameters for Promote Workflow - Import

Parameter Name	Default Value	Required	Description
Filter Deployments	ALL	required	<p>A filter for deployments to be promoted. Valid values are ALL, NONE, INCLUDE: followed by a comma separated list of deployments to include, or EXCLUDE: followed by a comma separated list of deployments to exclude. The value ALL will promote all deployments associated with the workflow; the value NONE will not promote any of the deployments associated with the workflow.</p> <p><b>Note:</b> Maximum number of characters is 1000.</p>
Filter Policies	ALL	required	<p>A filter for policies to be promoted. Valid values are ALL, NONE, INCLUDE: followed by a comma separated list of policies to include, or EXCLUDE: followed by a comma separated list of policies to exclude. The value ALL will promote all policies associated with the workflow; the value NONE will not promote any of the policies associated with the workflow.</p> <p><b>Note:</b> Maximum number of characters is 1000.</p>
Filter Smart Groups	ALL	required	<p>A filter for Smart Groups to be promoted. Valid values are ALL, NONE, INCLUDE: followed by a comma separated list of Smart Groups to include, or EXCLUDE: followed by a comma separated list of Smart Groups to exclude. The value ALL will promote all Smart Groups associated with the workflow; the value NONE will not promote any of the Smart Groups associated with the workflow.</p> <p><b>Note:</b> Maximum number of characters is 1000.</p>
Import Location	no default	required	<p>The location where Promote Workflow – Import retrieves the exported HP DMA workflow (and related automation items) and will store the backup files and other artifacts. This can be either a fully qualified ZIP filename or a fully qualified directory path. The location is on the target server.</p>

### Input Parameters Defined in this Step: Gather Parameters for Promote Workflow - Import (continued)

Parameter Name	Default Value	Required	Description								
Preview Only	YES	required	If Preview Only is set to YES, the workflow will show you which items will be promoted, but it will not make any changes on the destination server. Valid values are YES/TRUE and NO/FALSE (case-insensitive).								
Roles on Destination Server	no default	required	<p>Comma-separated list of roles that will be assigned to promoted items. At least one role must be specified.</p> <p>All roles are assigned to the following promoted items (workflows, steps, deployments, and policies) that do not exist on the destination HP DMA server prior to the promote operation. The roles specified for these promoted items are given full permissions:</p> <table> <tbody> <tr> <td>Workflow</td> <td>READ, WRITE</td> </tr> <tr> <td>Step</td> <td>READ, WRITE</td> </tr> <tr> <td>Deployment</td> <td>READ, WRITE, EXECUTE</td> </tr> <tr> <td>Policy</td> <td>READ, WRITE</td> </tr> </tbody> </table> <p>The <u>first</u> role specified in Roles on Destination Server is set in the Roles attribute for promoted Smart Groups that do not exist on the destination server prior to the promote operation.</p> <p>Role-based permissions for existing items are preserved.</p> <p><b>Note:</b> If the roles do not yet exist on the destination server, you need to create them before attempting to promote.</p>	Workflow	READ, WRITE	Step	READ, WRITE	Deployment	READ, WRITE, EXECUTE	Policy	READ, WRITE
Workflow	READ, WRITE										
Step	READ, WRITE										
Deployment	READ, WRITE, EXECUTE										
Policy	READ, WRITE										

The following parameters are not visible by default in a deployment. You need to expose them before you can use them.

### Additional Input Parameters Defined in this Step: Gather Advanced Parameters for Promote Workflow - Import

Parameter Name	Default Value	Required	Description
Email Address	no default	optional	Comma separated list of email addresses where the Promote summary report will be sent.
Ignore Platform Version	NO	optional	<p>If set to NO (default), the Promote workflows check that the source and destination HP DMA platform versions are the same. If set to YES, the Promote workflows ignore different HP DMA platform versions and will attempt to promote the workflow anyway. Valid values are YES/TRUE and NO/FALSE (case-insensitive).</p> <p><b>Caution:</b> Promote does not officially support promoting between different versions. Use at your own risk.</p>
Rollback on Error	YES	optional	Set to NO if you do NOT want HP DMA to rollback the workflow and all related items on the destination server to their original state in the event that the promote operation fails. Valid values are YES/TRUE and NO/FALSE (case-insensitive).

## Promote Workflow – Export and Import

The Promote Workflow workflow enables you to promote (copy) a customized workflow and all related items from one HP DMA server (the source) to another HP DMA server (the destination) in a reliable and replicable manner. This is useful, for example, when you want to move a workflow from a test environment to a production environment.



The functionality is the same as running the [Promote Workflow – Export](#) workflow followed by running the [Promote Workflow – Import](#) workflow.



**Note:** This workflow requires that the Trust SSL Certificates are configured the same on the two servers. If the HP DMA source server has an SSL Signed Certificate and the HP DMA destination server has Trust All Certs, you need to run the [Promote Workflow – Export](#) workflow and then run the [Promote Workflow – Import](#) workflow.

To run the Promote workflow, use the information found in the following workflows:

Workflow Name	Purpose
<a href="#">Promote Workflow – Export</a>	Exports a workflow and related items from the HP DMA database on the source server and stores them in a collection of XML files in a working directory/ZIP file.
<a href="#">Promote Workflow – Import</a>	Creates a workflow and related items on the specified destination server using the contents of the XML files that reside in the specified working directory/ZIP file.

For a list of the specific items copied, see [What is Promoted](#) on page 11. For a list of the XML files created, see [Files Created By the Promote Workflows](#) on page 85

**Tip:** You can use the preview mode to see what will be copied to the destination server. In preview mode, no changes are made to the destination server.

**Process Flow**

1. Export Process

First, the workflow exports the specified workflow and the related automation items from the HP DMA source server, and stores this information in a collection of XML files in the Export Location.

The export process creates the `promote_info.txt` file (see [Sample Promote Information File](#) on page 90 for an example).

2. Import Process

After the workflow exports the specified workflow and the related automation items to a collection of XML files, the workflow imports them to the destination server. There are five phases included in the import process flow.

Phase	Purpose	Artifacts Created
1	Compare the XML files to the workflow on the destination server (if the workflow already exists there).	<code>objects_to_promote.txt</code> <code>promote_summary.txt</code> See <a href="#">Sample Preview Report</a> on page 91 for an example
2	Back up the workflow on the destination server (if the workflow already exists there).	Destination backup files
3	Import the workflow to the destination server.	none
4	Validate the promoted workflow on the destination server.	none
5	If the promotion failed or cannot be validated, roll back the original version of the workflow on the destination server.	none

**Note:** If the Preview Only parameter is set to YES, only Phase 1 in this process is performed.

## Parameters for Promote Workflow - Export and Import

The following tables describe the required and optional input parameters for this workflow. For some parameters, if you do not specify a value for a parameter, a default value is assigned.

### Input Parameters Defined in this Step: Gather Parameters for Promote Workflow

Parameter Name	Default Value	Required	Description
Destination DMA Password	no default	required	Password for the user specified in the Destination DMA Username parameter.
Destination DMA URL	no default	required	URL for the destination HP DMA server. For example: <code>https://dma2.mycompany.com:8443/dma</code>
Destination DMA Username	no default	required	HP DMA user who will perform the promote operation on the destination server.
Export Location	no default	required	The location where the exported HP DMA artifacts are stored. This can be either a fully qualified ZIP filename (default) or a fully qualified directory path—based on the advanced parameter Export Zip Archive. If it is a directory, a time-stamped sub-directory or ZIP file will be created to store the files. The location is on the target server.
Filter Deployments	ALL	required	A filter for deployments to be promoted. Valid values are ALL, NONE, INCLUDE: followed by a comma separated list of deployments to include, or EXCLUDE: followed by a comma separated list of deployments to exclude. The value ALL will promote all deployments associated with the workflow; the value NONE will not promote any of the deployments associated with the workflow.  <b>Note:</b> Maximum number of characters is 1000.
Filter Policies	ALL	required	A filter for policies to be promoted. Valid values are ALL, NONE, INCLUDE: followed by a comma separated list of policies to include, or EXCLUDE: followed by a comma separated list of policies to exclude. The value ALL will promote all policies associated with the workflow; the value NONE will not promote any of the policies associated with the workflow.  <b>Note:</b> Maximum number of characters is 1000.

**Input Parameters Defined in this Step: Gather Parameters for Promote Workflow (continued)**

Parameter Name	Default Value	Required	Description								
Filter Smart Groups	ALL	required	<p>A filter for Smart Groups to be promoted. Valid values are ALL, NONE, INCLUDE: followed by a comma separated list of Smart Groups to include, or EXCLUDE: followed by a comma separated list of Smart Groups to exclude. The value ALL will promote all Smart Groups associated with the workflow; the value NONE will not promote any of the Smart Groups associated with the workflow.</p> <p><b>Note:</b> Maximum number of characters is 1000.</p>								
Preview Only	YES	required	<p>If Preview Only is set to YES, the workflow will show you which items will be promoted, but it will not make any changes on the destination server. Valid values are YES/TRUE and NO/FALSE (case-insensitive).</p>								
Roles on Destination Server	no default	required	<p>Comma-separated list of roles that will be assigned to promoted items. At least one role must be specified.</p> <p>All roles are assigned to the following promoted items (workflows, steps, deployments, and policies) that do not exist on the destination HP DMA server prior to the promote operation. The roles specified for these promoted items are given full permissions:</p> <table border="0"> <tr> <td>Workflow</td> <td>READ, WRITE</td> </tr> <tr> <td>Step</td> <td>READ, WRITE</td> </tr> <tr> <td>Deployment</td> <td>READ, WRITE, EXECUTE</td> </tr> <tr> <td>Policy</td> <td>READ, WRITE</td> </tr> </table> <p>The <u>first</u> role specified in Roles on Destination Server is set in the Roles attribute for promoted Smart Groups that do not exist on the destination server prior to the promote operation.</p> <p>Role-based permissions for existing items are preserved.</p> <p><b>Note:</b> If the roles do not yet exist on the destination server, you need to create them before attempting to promote.</p>	Workflow	READ, WRITE	Step	READ, WRITE	Deployment	READ, WRITE, EXECUTE	Policy	READ, WRITE
Workflow	READ, WRITE										
Step	READ, WRITE										
Deployment	READ, WRITE, EXECUTE										
Policy	READ, WRITE										
Workflow Name	no default	required	<p>Name of the workflow to be promoted.</p>								

The following parameters are not visible by default in a deployment. You need to expose them before you can use them.

**Additional Input Parameters Defined in this Step: Gather Advanced Parameters for Promote Workflow**

Parameter Name	Default Value	Required	Description
Email Address	no default	optional	Comma separated list of email addresses where the Promote summary report will be sent.
Export Zip Archive	YES	optional	<p>Flag to indicate whether the workflow (and related automation items) and log files are exported as a ZIP file.</p> <p>If set to YES or TRUE (the default), the files are exported to a ZIP file.</p> <p>If set to NO or FALSE, the files are exported to a time-stamped sub-directory of the Export Location.</p>
Ignore Platform Version	NO	optional	<p>If set to NO (default), the Promote workflows check that the source and destination HP DMA platform versions are the same. If set to YES, the Promote workflows ignore different HP DMA platform versions and will attempt to promote the workflow anyway. Valid values are YES/TRUE and NO/FALSE (case-insensitive).</p> <div style="background-color: #f0f0f0; padding: 5px; border: 1px solid #ccc;"> <p><b>Caution:</b> Promote does not officially support promoting between different versions. Use at your own risk.</p> </div>
Rollback on Error	YES	optional	Set to NO if you do NOT want HP DMA to rollback the workflow and all related items on the destination server to their original state in the event that the promote operation fails. Valid values are YES/TRUE and NO/FALSE (case-insensitive).

# Chapter 3

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## Reference Information

This chapter contains the following information:

Topic	Description
<a href="#">Files Created By the Promote Workflows</a>	List of the files that HP DMA creates when it extracts a workflow from the HP DMA database on the source server and creates (or updates) that workflow on the destination server.
<a href="#">Sample Promote Information File</a>	Example of the <code>promote_info.txt</code> file created by the <a href="#">Promote Workflow – Export and Import</a> and <a href="#">Promote Workflow – Export</a> workflows.
<a href="#">Sample Preview Report</a>	Example of the preview report created by the <a href="#">Promote Workflow – Export and Import</a> and <a href="#">Promote Workflow – Export</a> workflows.
<a href="#">Additional Resources</a>	Links to additional HP DMA documentation

## Files Created By the Promote Workflows

The Promote workflows create the following files in the working directory/ZIP file on the target server:

- Source Files** When the workflow to be promoted is exported from the source server, the Promote workflows create the source files (*source\_<type>\_<itemname>.xml*).
- Backup Files** If a previous version of the workflow to be promoted already exists on the destination server, the Promote workflows create the destination backup files (*backup\_<type>\_<itemname>.xml*).

During the Post Verification Promote step, HP DMA compares the source files (*source\_<type>\_<itemname>.xml*) to the promoted items on the destination server. If they match, the promotion is considered successful.

During the Verify Rollback step, HP DMA compares the backup files (*backup\_<type>\_<itemname>.xml*) to the existing (rolled back) items on the destination server. If they match, the rollback is considered successful.

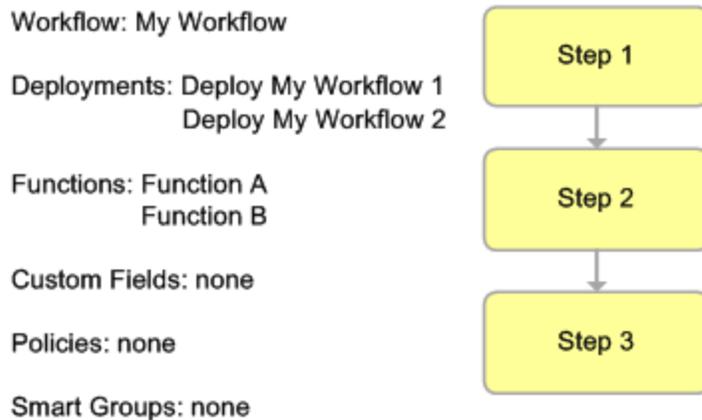
In the following table, italicized items are placeholders that represent pertinent prefix and the automation items associated with the workflow.

Item	Files
Workflow	<i>prefix_workflow_workflowName.xml</i>
Steps	<i>prefix_step_step1name.xml</i> <i>prefix_step_step2name.xml</i> <i>prefix_step_step3name.xml</i> ... <i>prefix_step_stepNname.xml</i>
Functions	<i>prefix_function_func1name.xml</i> <i>prefix_function_func2name.xml</i> <i>prefix_function_func3name.xml</i> ... <i>prefix_function_funcNname.xml</i>
Deployments	<i>prefix_deployment_deployment1name.xml</i> <i>prefix_deployment_deployment2name.xml</i> <i>prefix_deployment_deployment3name.xml</i> ... <i>prefix_deployment_deploymentNname.xml</i>
Policies	<i>prefix_policy_policy1name.xml</i> <i>prefix_policy_policy2name.xml</i> <i>prefix_policy_policy3name.xml</i> ... <i>prefix_policy_policyNname.xml</i>

Item	Files
Smart Groups	<i>prefix_smartgroup_smartgroup1name.xml</i> <i>prefix_smartgroup_smartgroup2name.xml</i> <i>prefix_smartgroup_smartgroup3name.xml</i> ... <i>prefix_smartgroup_smartgroupNname.xml</i>
Custom Field names	<i>prefix_customfield_customfield1name.xml</i> <i>prefix_customfield_customfield2name.xml</i> <i>prefix_customfield_customfield3name.xml</i> ... <i>prefix_customfield_customfieldNname.xml</i>

### Example

The tables below show an example of the files that are created when Promote Workflow promotes a very simple workflow from the Source server to the Destination server. This workflow does not use any Custom Fields, Smart Groups, or Policies.



## Source Files

The following files are created after the workflow is extracted on the source HP DMA server:

Item	Source File Name
Workflow	source_workflow_My_Workflow.xml
Steps	source_step_Step_1.xml source_step_Step_2.xml source_step_Step_3.xml
Functions	source_function_Function_A.xml source_function_Function_B.xml
Deployments	source_deployment_Deploy_My_Workflow_1.xml source_deployment_Deploy_My_Workflow_2.xml

## Backup Files

If the workflow already exists on the destination HP DMA server, the following files are created:

Item	Backup File Name
Workflow	backup_workflow_My_Workflow.xml
Steps	backup_step_Step_1.xml backup_step_Step_2.xml backup_step_Step_3.xml
Functions	backup_function_Function_A.xml backup_function_Function_B.xml
Deployments	backup_deployment_Deploy_My_Workflow_1.xml backup_deployment_Deploy_My_Workflow_2.xml

**Example: Contents of the Working Directory/ZIP File**

The working directory/ZIP file on the target server contains the following files after a copy of the Provision Websphere 8 and Deployment Manager workflow with a single deployment was promoted:

backup\_customfield\_Server.WebSphere\_Admin\_Password.xml  
backup\_customfield\_Server.WebSphere\_Admin\_User.xml  
backup\_deployment\_Deploy\_Provision\_WebSphere\_8\_and\_Deployment\_Manager.xml  
backup\_function\_discovery.xml  
backup\_function\_dmapythonvariables.xml  
backup\_function\_Import\_DMATools.xml  
backup\_function\_Import\_OSTools.xml  
backup\_function\_Import\_StepLog.xml  
backup\_function\_Import\_Validator.xml  
backup\_function\_Import\_WSTools.xml  
backup\_function\_ostools.xml  
backup\_function\_pythontools.xml  
backup\_function\_steplog.xml  
backup\_function\_wscommon.xml  
backup\_smartgroup\_Chicago\_Servers.xml  
backup\_smartgroup\_Vancouver\_Servers.xml  
backup\_step\_Create\_IBM\_Install\_Manager\_And\_WebSphere\_8\_Response\_File.xml  
backup\_step\_Create\_WebSphere\_8\_Deployment\_Manager\_Response\_File.xml  
backup\_step\_Create\_WebSphere\_8\_Profile.xml  
backup\_step\_Discover\_WebSphere.xml  
backup\_step\_Install\_IBM\_Install\_Manager\_And\_WebSphere\_8.xml  
backup\_step\_OS\_Prerequisite\_Check\_for\_WebSphere\_8.xml  
backup\_step\_Validate\_WebSphere\_8\_Deployment\_Manager\_Parameters.xml  
backup\_step\_WebSphere\_8\_Check\_File\_Download.xml  
backup\_step\_WebSphere\_8\_Cleanup\_Downloaded\_Files.xml  
backup\_step\_WebSphere\_8\_Deployment\_Manager\_Start\_Server.xml  
backup\_step\_WebSphere\_8\_Extract\_Archive.xml  
backup\_step\_WebSphere\_8\_Input\_Parameter\_Mapping.xml  
backup\_workflow\_Provision\_WebSphere\_8\_and\_Deployment\_Manager.xml

objects\_to\_promote.txt  
promote\_info.txt  
promote\_summary.txt  
source\_customfield\_Server.WebSphere\_Admin\_Password.xml  
source\_customfield\_Server.WebSphere\_Admin\_User.xml  
source\_deployment\_Deploy\_Provision\_WebSphere\_8\_and\_Deployment\_Manager.xml  
source\_function\_discovery.xml  
source\_function\_dmapythonvariables.xml  
source\_function\_Import\_DMATools.xml  
source\_function\_Import\_OSTools.xml  
source\_function\_Import\_StepLog.xml  
source\_function\_Import\_Validator.xml  
source\_function\_Import\_WSTools.xml  
source\_function\_ostools.xml  
source\_function\_pythontools.xml  
source\_function\_steplog.xml  
source\_function\_wscommon.xml  
source\_smartgroup\_Chicago\_Servers.xml  
source\_smartgroup\_Vancouver\_Servers.xml  
source\_step\_Create\_IBM\_Install\_Manager\_And\_WebSphere\_8\_Response\_File.xml  
source\_step\_Create\_WebSphere\_8\_Deployment\_Manager\_Response\_File.xml  
source\_step\_Create\_WebSphere\_8\_Profile.xml  
source\_step\_Discover\_WebSphere.xml  
source\_step\_Install\_IBM\_Install\_Manager\_And\_WebSphere\_8.xml  
source\_step\_OS\_Prerequisite\_Check\_for\_WebSphere\_8.xml  
source\_step\_Validate\_WebSphere\_8\_Deployment\_Manager\_Parameters.xml  
source\_step\_WebSphere\_8\_Check\_File\_Download.xml  
source\_step\_WebSphere\_8\_Cleanup\_Downloaded\_Files.xml  
source\_step\_WebSphere\_8\_Deployment\_Manager\_Start\_Server.xml  
source\_step\_WebSphere\_8\_Extract\_Archive.xml  
source\_step\_WebSphere\_8\_Input\_Parameter\_Mapping.xml  
source\_workflow\_Provision\_WebSphere\_8\_and\_Deployment\_Manager.xml

## Sample Promote Information File

The Promote Information File contains useful information for troubleshooting. This file is created by each run of [Promote Workflow – Export and Import](#) and [Promote Workflow – Export](#) and is stored in the Export Location on the target server. The following shows an example of the contents of the `promote_info.txt` file after a copy of the Provision Oracle Software workflow was promoted:

DMA Promote Version = 10.20

DMA Promote Workflow = Promote Workflow – Export

Source DMA Server = dma1.mycompany.com

Source DMA Platform Version = 10.20.0

Exported Workflow = \_Provision Oracle Software

Export Date and Time = 2013-10-10 15:03:27

Export User = promoteuser

DMA Solution Packs Installed on the Source DMA server at Export time = HP DMA Database Compliance Solution Pack, HP DMA Database Provisioning Solution Pack, Promote Solution Pack

## Sample Preview Report

The following shows the Preview Report after a copy of the Provision WebSphere 8 and Deployment Manager workflow with a single deployment was promoted. The file `promote_summary.txt` is in the working directory/ZIP file on the target server.

Promote Summary:

Objects that will be promoted to DMA Server: <Destination DMA Server>

Workflows: \_Provision WebSphere 8 and Deployment Manager

Step: WebSphere 8 Input Parameter Mapping

Step: Validate WebSphere 8 Deployment Manager Parameters

Step: OS Prerequisite Check for WebSphere 8

Step: WebSphere 8 Check File Download

Step: WebSphere 8 Extract Archive

Step: Create IBM Install Manager And WebSphere 8 Response File

Step: Install IBM Install Manager And WebSphere 8

Step: Create WebSphere 8 Deployment Manager Response File

Step: Create WebSphere 8 Profile

Step: WebSphere 8 Deployment Manager Start Server

Step: WebSphere 8 Cleanup Downloaded Files

Step: Discover WebSphere

Functions: Import DMATools, Import OSTools, Import StepLog, Import Validator, Import WSTools, discovery, dmapythonvariables, oostools, pythontools, steplog, wscommon

Deployment: Deploy Provision WebSphere 8 and Deployment Manager

**Note:** If policies are promoted, they are listed here.

Smartgroups: Vancouver Servers, Chicago Servers

Custom Fields: Server.WebSphere Admin Password, Server.WebSphere Admin User

> After promote user will need to populate with values all Custom Fields listed above.

## Configuration Messages in the Preview Report

If the promoted items require configuration on the destination server, the following messages are listed in the Preview Report after the pertinent item:

<b>Promoted Item</b>	<b>Condition</b>	<b>Message</b>
Step	If a step has a parameter of type password	> After Promote, user will have to set default password value for step parameter "<parameter name>" for the first promotion. For all subsequent promotions the password value will not be changed.
Deployment	If a deployment has a parameter of type password	> After Promote, user will have to set password value for deployment parameter "<parameter name>" for the first promotion. For all subsequent promotions the password value will not be changed.
Policy	If a policy has a parameter of type password	> After Promote, user will have to set password value for policy attribute "<parameter name>" for the first promotion. For all subsequent promotions the password value will not be changed.
Custom Field	If a Custom Field is promoted	> After promote user will need to populate with values all Custom Fields listed above.

## **Additional Resources**

For information about using the HP DMA web interface, see the *HP DMA User Guide*, the *HP DMA Administrator Guide*, and the *HP DMA Quick Start Tutorial*.

These documents are part of the HP DMA documentation library, which is available on the HP Software Product Manuals web site:

<http://h20230.www2.hp.com/selfsolve/manuals>