

# HP Database and Middleware Automation Solution Packs

For the Red Hat Enterprise Linux version 5 operating system

Software Version: 9.14

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## Application Server Provisioning - WebSphere 7 Workflows

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Software Release Date: June 2012



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## About HP DMA Solution Packs

HP Database and Middleware Automation (HP DMA) software automates administrative tasks like provisioning and configuration, compliance, patching, and release management for databases and application servers. When performed manually, these day-to-day operations are error-prone, time consuming, and difficult to scale.

HP DMA automates these daily, mundane, and repetitive administration tasks that take up 60-70% of a database or application server administrator's day. Automating these tasks enables greater efficiency and faster change delivery with higher quality and better predictability.

HP DMA provides role-based access to automation content. This enables you to better utilize resources at every level:

- End-users can deliver routine, yet complex, DBA and middleware tasks.
- Operators can execute expert level tasks across multiple servers including provisioning, patching, configuration, and compliance checking.
- Subject matter experts can define, enforce, and audit full stack automation across network, storage, server, database, & middleware.

An HP DMA workflow performs a specific automated task—such as provisioning database or application servers, patching database or application servers, or checking a database or application server for compliance with a specific standard. You specify environment-specific information that the workflow requires by configuring its parameters.

Related HP DMA workflows are grouped together in solution packs. When you purchase or upgrade HP DMA content, you are granted access to download specific solution packs.



# Chapter 1

---

## Quick Start Tutorial

This topic shows you how to install your solution pack and run a workflow. There are five basic steps:

1. [Install the Solution Pack below](#)
2. [Create a Deployable Workflow on next page](#)
3. [Create a Deployment on page 11](#)
4. [Run Your Workflow on page 12](#)
5. [View the Results on page 12](#)

This tutorial provides a simplified demonstration using the Provision IBM HTTP Server and WebSphere 7 Two Node Cell workflow. Default values are supplied for most input parameters. Before executing these procedures, make sure that these default values are suitable for your environment.

**Note:** See the [Reference Information](#) included in this guide for descriptions of all available input parameters for this workflow, including default values.

The information presented in this tutorial assumes the following:

- HP DMA is installed and operational.
- At least one valid target is available.

**Note:** For information about other automation scenarios, see [How To Use This Solution](#).

## Install the Solution Pack

The following instructions assume that you have purchased the Application Server Provisioning solution pack.

**To install the solution pack:**

1. Go to [HP Live Network](#) to view a list of the latest available HP DMA solution packs.
2. Download the pertinent solution pack file from [HP Software Support Online](#).
3. Extract the ZIP file that contains your solution pack (for example: ASProvisioning.zip).
4. On the system where you downloaded the solution pack, open a web browser, and log in to the HP DMA server using an account with administrative privileges.

For instructions, see “Getting Started” in the *User Guide: Database and Middleware Automation*. This guide is included in the HP Server Automation documentation library (SA version 9.10 and later).

5. On the Solutions > Installed tab, click the **Browse** button in the lower right corner. The Choose File dialog opens.
6. Locate and select the ZIP file that you extracted in step 3, and click **Open**.
7. Click **Import solution pack**.

## Create a Deployable Workflow

The workflow templates provided by HP in your solution pack are read-only and cannot be deployed. When you are viewing a read-only item in the HP DMA web UI, you will see the lock icon in the lower right corner:



Read-only workflows are not deployable. You can create a deployable workflow by making a copy of a workflow template.

### To create a deployable copy of the workflow template:

1. In the HP DMA web interface, go to Automation > Workflows.
2. From the list of workflows, select the Provision IBM HTTP Server and WebSphere 7 Two Node Cell workflow template.
3. Click the **Copy** button in the lower left corner.
4. On the Documentation tab, specify the following:
  - Name – Name that will appear in the list of available workflows
  - Tags – Keywords that you can use later to search for this workflow (optional)
  - Type – Must be OS
  - Target level – Must be a Server
5. On the Roles tab, grant Read access to at least one user or group and Write access to at least one user or group.
6. Click **Save**.

Your new workflow now appears in the list of available workflows, and the following message is displayed:

✓ Workflow saved successfully. Would you like to [deploy the workflow now?](#)

7. Click the **deploy the workflow now** link in the green message bar.

For more information about creating and working with workflows, see “Workflows” in the *User Guide: Database and Middleware Automation*. This guide is included in the HP Server Automation documentation library (SA version 9.10 and later).

## Create a Deployment

Before you can run your new workflow, you must create a deployment. A deployment associates a workflow with one or more specific targets (in this case, a Server ).

### To create a deployment:

1. If you do not see the green message bar—for example, if you navigated to another page after you created your copy of the workflow template—follow these steps:
  - a. Go to the Automation > Deployments page.
  - b. In the lower right corner, click **New deployment**.
2. Specify the following:
  - Name – Name that will appear in the list of available deployments.
  - Workflow – From the drop-down list, select the workflow that you just created.
  - Schedule – Frequency or date when the workflow will run. If you select None, the workflow will run only once when you explicitly tell it to run.
3. From the list of AVAILABLE servers on the left side of the Targets area, click the **ADD** link for the target (or targets) where the workflow will run.

**Note:** If you are running a bridged execution workflow, the targets that you select on the Deployment page will be included in the lists of available targets that you can choose from on the Run page.

For more information about bridged execution workflows, see the *User Guide: Database and Middleware Automation*. This guide is included in the HP Server Automation documentation library (SA version 9.10 and later).

4. On the Parameters tab, specify values for the input parameters listed there.

These are a subset of the required parameters for this workflow. Parameters that are not visible in the deployment will have default values.

**Note:** See the [Reference Information](#) included in this guide for descriptions of all available input parameters for this workflow, including default values.

5. If you do not want to explicitly enter the values here, you can create a policy that stores the values and then reference that policy in your deployment (see [Using a Policy to Specify Parameter Values on page 192](#)).
6. Click **Save**.

Your new deployment now appears in the list of available workflows, and the following message is displayed:

✓ Deployment saved successfully. Would you like to [run the workflow now?](#)

7. Click the **run the workflow now** link in the green message bar.

## Run Your Workflow

Now you are ready to run your workflow against the server that you selected.

### To run the workflow:

1. If you do not see the green message bar—for example, if you navigated to another page after you created your deployment—follow these steps:
  - a. Go to the Automation > Run area.
  - b. In the list of WORKFLOWS on the left side, select the workflow that you created.
  - c. In the list of DEPLOYMENTS in the center, double-click the deployment that you just created.
2. If you are running a single-target workflow, select the check box for each target where you want to run the workflow.

If you are running a bridged execution workflow, click the **SELECT** link to specify each target. The targets that are available to choose from here are the targets that you selected on the Deployment page.

For more information about bridged execution workflows, see the *User Guide: Database and Middleware Automation*. This guide is included in the HP Server Automation documentation library (SA version 9.10 and later).

3. Click the **Run workflow** button.
4. The following message is displayed:



✓ Workflow started successfully. For status, see the [console](#) or [history](#).

5. To view the progress of your deployment, click the **console** link in the green message bar.

## View the Results

While your workflow is running, you can watch its progress on the Automation > Console page.

- To view the progress of the workflow as the deployment proceeds, click the workflow name in the upper box on the Console page.
- To view the outcome of a specific step, select that step in the left box in the Output area. Informational messages are displayed in the right box, and the values of any output parameters are listed.

While the workflow is running, its status indicator on the Console says RUNNING. After the workflow finishes, its status indicator changes to SUCCESS, FAILURE, or FINISHED.

After the workflow has finished running, you can view a summary of your deployment on the History page. This page lists all the deployments that have run on this HP DMA server during the time period specified in the Filter box.

While the workflow is running, the History page shows nothing in the status column. A workflow that results in the FINISHED state also shows nothing in the status column on this page.

To view step-by-step results, select the row in the table that corresponds to your deployment. The tabs below the table show you information about each step in the workflow. This includes the start and end time for each step, the exit code, and the following information:

- Output tab – any informational messages that were produced
- Errors tab – any errors that were reported
- Header tab – values assigned to any output parameters

# Chapter 2

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## About this Solution

The HP HP Database and Middleware Automation Application Server Provisioning solution contains the following workflows:

- [Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)
- [Add WebSphere 7 Node to Existing Cell on page 35](#)
- [Provision IBM HTTP Server and WebSphere 7 StandAlone Profile on page 46](#)

The workflows perform extensive validation checks prior to provisioning WebSphere 7. All parameter values are validated to ensure that they do not contain any prohibited characters (see the parameter descriptions in the [Reference Information on page 55](#) for details). Additional validation checks are performed at the operating system level. These include file system space checks and RPM checks (on Red Hat Linux platforms). All three workflows determine whether the pertinent files exist on the target machine; if they do not, the files are downloaded from the HP Server Automation core.

Although minimal WebSphere 7 knowledge is required to run this workflow using its default settings, the workflow is highly customizable and can support complex environment-specific deployment scenarios.

**Note:** For additional information about provisioning IBM WebSphere Application Server version 7, see the [HP DMA Application Server Provisioning Solution Pack version 9.10 User Guide](#).

The remaining topics in this chapter provide the following contextual information about this workflow:

- [Audience below](#)
- [Supported Products and Platforms on next page](#)
- [Prerequisites on next page](#)
- [How this Solution is Organized on page 16](#)
- [Additional Resources on page 20](#)

## Audience

This solution is designed for IT architects and engineers who are responsible for planning, implementing, and maintaining application-serving environments using IBM WebSphere Application Server version 7 (WebSphere 7).

To use this solution, you should be familiar with and its requirements (see links to the [WebSphere 7 Product Documentation on page 191](#)).

## Supported Products and Platforms

Most WebSphere 7 provisioning workflows are supported on Red Hat Enterprise Linux version 5 platforms.

### Operating Systems

For specific operating system versions supported, see the *HP Database and Middleware Automation version 9.14 Support Matrix* available in the HP Software product manuals library located here: <http://h20230.www2.hp.com/selfsolve/manuals>

### Hardware Requirements

- If you are using HP Server Automation, see the *HP Server Automation Quick Reference: SA Installation Requirements* or the *HP Server Automation Standard/Advanced Installation Guide*.
- If you are using HP Database and Middleware Automation version 1.00, see the *HP Database and Middleware Automation Installation Guide*.
- For WebSphere 7 hardware and software requirements, see the [WebSphere 7 Product Documentation on page 191](#).

### HP Software Requirements

This solution can be used with the following HP products:

- HP Server Automation version 9.11 (or later)
- HP Database and Middleware Automation Web Server version 6.0.17 (or later)

Bridged execution workflows can only be used with HP Server Automation version 9.11 (or later).

## Prerequisites

The following prerequisites must be satisfied before you can run the WebSphere 7 provisioning workflows in this solution pack:

Per the WebSphere 7 documentation, the following system libraries are required before provisioning IBM WebSphere Application Server version 7 on 64-bit Red Hat Linux:

Platform	Required Library
64-bit Red Hat Enterprise Linux version 5	compat-libstdc++-33-3.2.3-61 compat-db-4.2.52-5.1 libXp-1.0.0-8 compat-libstdc++-296-2.96-138 rpm-build-4.4.2-37.el5

Make sure that these libraries exist on each target server before running this workflow. If newer versions of these libraries are available, you can install the newer versions.

## How this Solution is Organized

In HP DMA, a workflow executes a process —such as installing a software product or creating a database.

A solution pack contains one or more related workflow templates. This solution contains the following workflow templates:

### **Provision IBM HTTP Server and WebSphere 7 Two Node Cell**

Use this workflow to provision a web server tier with two web servers and an application tier with a two node Network Deployment cell on a Red Hat Enterprise Linux platform. Each node is an IBM WebSphere Application Server version 7 server. The Network Deployment cell contains an application cluster and a replication cluster. The workflow does the following things:

- Provisions IBM HTTP Server version 7 on two target machines
- Provisions IBM WebSphere Application Server version 7 on two other target machines
- Creates a two node Network Deployment cell with a Deployment Manager profile and two custom node profiles
- Creates an application cluster that is both vertically and horizontally clustered to deploy applications
- Creates a replication cluster that is horizontally clustered to replicate HTTP sessions from one application server to the other, providing session persistence
- Creates unmanaged nodes and web server objects for mapping applications at deployment time
- Creates remote management of the two IBM HTTP Server version 7 web servers

### **Add WebSphere 7 Node to Existing Cell**

Use this workflow to add one new custom node to an existing WebSphere 7 cell. The workflow does the following things:

- Provisions IBM WebSphere Application Server version 7 on a target machine
- Creates and federates a custom node profile, expanding an n node Network Deployment cell to an n+1 node cell
- Expands the existing two clusters by adding cluster members to the new node
- Extends the vertically and horizontally clustered application cluster to deploy applications
- Extends the horizontally clustered replication cluster to replicate HTTP sessions from one application server to one of the other, providing session persistence

The Add WebSphere 7 Node to Existing Cell workflow works in conjunction with the Provision IBM HTTP Server and WebSphere 7 Two Node Cell workflow and expands the cell by one node (up to a maximum of 10 nodes in the cell).



#### Provision HTTP Server and WebSphere 7 StandAlone Profile

Use this workflow to provision IBM HTTP Server version 7 on a single target machine, provision IBM WebSphere Application Server version 7 on the same machine, and create a stand-alone profile. This workflow is intended for small non-production environments used for development and integration testing.

The workflow does the following things:

- Provisions IBM HTTP Server version 7 on a target machine
- Provisions IBM WebSphere Application Server version 7 on the same target machine
- Creates a stand-alone profile

#### What's Inside

Each workflow template has a Documentation tab that provides detailed information about that workflow.

The screenshot displays the HP Database & Middleware Automation (DMA) console interface. At the top, the header shows 'Database & Middleware Automation' and user information 'Server: myserver.mycompany.com User: admin Logout'. Below the header is a navigation bar with tabs: Home, Automation, Reports, Environment, Solutions, Setup, Workflows, Steps, Functions, Policies, Deployments, Run, Console, and History. The 'Workflows' tab is selected, and the 'Provision IBM HTTP Server and WebSphere 7 Two Node Cell' workflow is displayed. The workflow details include: Name: Provision IBM HTTP Server and WebSphere 7 Two Node Cell, Tags: (empty), Type: OS, and Target level: Server. The 'Documentation' tab is active, showing the 'Purpose' and 'Platforms' sections. The 'Purpose' section describes the workflow's goal to provision IBM HTTP Server V7 and IBM WebSphere Application Server 7 on two target machines, creating a two-node Network Deployment Cell. The 'Platforms' section lists the supported operating system platforms: Red Hat Enterprise Linux. At the bottom of the console, there are buttons for 'Copy', 'EXPORT', and 'EXTRACT POLICY', along with the HP logo and the text 'HP SERVER AUTOMATION APPLICATION SERVER PROVISIONING SOLUTION PACK'. The footer contains copyright information: '© 2006–2012 Hewlett-Packard Development Company, L.P. Web Server: 9.13.0 Repository: 9.10.0'.

Database & Middleware Automation Server: myserver.mycompany.com User: admin Logout

Home Automation Reports Environment Solutions Setup Workflows Steps Functions Policies Deployments Run Console History

Provision IBM HTTP Server and WebSphere 7 Two Node Cell

Documentation Workflow Deployments Roles

Name: Provision IBM HTTP Server and WebSphere 7 Two Node Cell

Tags:

Type: OS

Target level: Server

Documentation:

**Purpose**

The purpose of this workflow is to take advantage of Master-Sub flows and bridged execution functionality within DMA, where by a given workflow can be turned into a step in a larger workflow. This gives the ability to execute complex workflows across multiple target machines with very few parameters in a single workflow. This workflow provisions IBM HTTP Server V7 on two target machines. The workflow also provisions IBM WebSphere Application Server 7 on two other target machines and creates a Deployment Manager profile, and two Custom Node profiles, thus creating a two node Network Deployment Cell. This workflow also creates two clusters, the first which is meant for a given application to be deployed to it and is both vertically and horizontally clustered. The second cluster is meant for memory to memory replication of HTTP sessions and is horizontally clustered. All the cluster members are configured to take part in a replication domain, the application cluster members are the clients and the replication cluster members are the servers. The workflow also creates unmanaged nodes and web server objects for mapping applications at deployment time as well as remote management of those two IHS web servers.

**Platforms**

This workflow provisions IBM HTTP Server V7 on two target machines. The workflow also provisions IBM WebSphere Application Server 7 on two other target machines and creates a Deployment Manager profile, and two Custom Node profiles, thus creating a two node Network Deployment Cell on the following operating system platforms:

- Red Hat Enterprise Linux

Copy EXPORT EXTRACT POLICY

HP SERVER AUTOMATION APPLICATION SERVER PROVISIONING SOLUTION PACK

© 2006–2012 Hewlett-Packard Development Company, L.P.  
Web Server: 9.13.0 Repository: 9.10.0

A workflow consist of a sequence of steps. Each step performs a very specific task. Each step includes a documentation panel that briefly describes its function.

The screenshot shows the HP Database & Middleware Automation web interface. The top navigation bar includes 'Home', 'Automation', 'Reports', 'Environment', 'Solutions', and 'Setup'. The 'Automation' tab is selected, showing sub-tabs for 'Workflows', 'Steps', 'Functions', 'Policies', 'Deployments', 'Run', 'Console', and 'History'. The 'Steps' sub-tab is active, displaying a list of steps. The selected step is 'Gather Advanced Parameters for IHS and WebSphere Cell'. The step details are shown in a table with two columns: 'Properties' and 'Documentation'. The 'Properties' column lists: Name: Gather Advanced Parameters for IHS and WebSphere Cell, Tags: (empty), Type: OS, Category: Script, and Targetable: ☐. The 'Documentation' column contains: Description: Prepares the advanced parameters needed to provision and configure IBM HTTP Server and WebSphere Application Server V7.0. Return Code: 0 = Step ran successfully, 1 = Step failed. A 'Copy' button is located below the table. At the bottom, there is a copyright notice: © 2006–2012 Hewlett-Packard Development Company, L.P. Web Server: 9.13.0 Repository: 9.10.0.

Steps can have input and output parameters. Output parameters from one step often serve as input parameters to another step. Steps can be shared among workflows.

Parameter descriptions are also displayed in the following locations in the HP DMA web interface:

- On the Workflow tab for each workflow.

The screenshot shows the HP Database & Middleware Automation web interface. The 'Workflows' tab is selected, displaying a list of workflows. The selected workflow is 'Gather Advanced Parameters for IHS and WebSphere Cell'. The workflow details are shown in a table with two columns: 'Parameters' and 'Values'. The 'Parameters' column lists: Application Name: Gather Parameters for IHS and WebSphere Cell. Validate IHS 7 Parameters-Webserver Definition, Custom Node Parameters-Cell Name 1: Gather Parameters for IHS and WebSphere Cell.Blank, Custom Node Parameters-Cell Name 2: Gather Parameters for IHS and WebSphere Cell.Blank, and HTTP Access Log: Gather Parameters for IHS and WebSphere Cell.Blank. The 'Values' column lists: 0, 3, 8. A red arrow points to the 'Custom Node Parameters-Cell Name 1' parameter, with the text 'Click here' next to it. Another red arrow points to the 'Custom Node Parameters-Cell Name 1' parameter, with the text 'To see the parameter description here' next to it.

- On the Parameters tab for each step in the workflow

Database & Middleware Automation
 

Server: myserver.mycompany.com
 User: admin
 Logout

[Home](#)
[Automation](#)
[Reports](#)
[Environment](#)
[Solutions](#)
[Setup](#)

[Workflows](#)
[Steps](#)
[Functions](#)
[Policies](#)
[Deployments](#)
[Run](#)
[Console](#)
[History](#)

### Gather Advanced Parameters for IHS and WebSphere Cell

[General](#)
[Action](#)
[Parameters](#)
[History](#)
[Workflows](#)
[Solutions](#)
[Roles](#)

Input parameters

Name	Value	Description
Application Name		Required: Name of the application that will be used t
Custom Node Parameters-Cell Name 1		Required: Unique cell name that does not contain ar
Custom Node Parameters-Cell Name 2		Required: Unique cell name that does not contain ar
HTTP Access Log		Required: Used to configure web server instances in
HTTP Error Log		Required: Used to configure web server instances in
Install IHS for WebSphere 7-Password		Required: If Windows. This is the Administrator Use
Install IHS for WebSphere 7-Username		Required: If Windows. This is the Administrator Pas
Install WebSphere 7 Create Profile-Password		Required: If Windows. This is the Administrator Pas
Install WebSphere 7 Create Profile-Username		Required: If Windows. This is the Administrator Use
Instance		Optional: Used to run remote api call to sub flow.
Node Name		Required: Used to configure unmanaged node inside
Node OS		Required: Used to configure unmanaged node inside
Plugin Root		Required: Used to configure web server instances in
Validate Existing Install Custom Node Param		Required: Administrative user password for the Depl
Validate Existing Install Custom Node Param		Required: Deployment Manager administrative user.
Validate Existing Install Custom Node Param		Required: Host name or IP address of the machine v
Validate Existing Install Custom Node Param		Required: The SOAP port on which the Deployment

- On the Parameters tab in the deployment (organized by step) example

HP Database & Middleware Automation Server: myserver.mycompany.com User: admin Logout

Home Automation Reports Environment Solutions Setup

Workflows Steps Functions Policies Deployments Run Console History

### Example Deployment

Targets Parameters Roles

#### Gather Parameters for IHS and WebSphere Cell

All - DMA Password:  ☐ Enter at runtime  
Required: Password for the web service API.

All - DMA Username:  ☐ Enter at runtime  
Required: User capable of modifying the managed environment through the discovery web service API.

Application Name:  ☐ Enter at runtime  
Required: Name of the application that will be used through to create application servers and clusters that will be created under the profile.

WebSphere Deployment Manager - Cell Name:  ☐ Enter at runtime  
Required: Unique cell name that does not contain any of the following special characters / \ \* , ; = + ? [ < > & % " ' [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.

or

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Web Server: 9.13.0 Repository: 9.10.0

All parameters used by the workflows in this solution pack are also described in the [Reference Information on page 55](#) for this solution pack.

**Note:** The workflow templates included in this solution pack are read-only and cannot be deployed. To use a workflow template, you must first create a copy of the template and then customize that copy for your environment (see [Create a Deployable Workflow on page 10](#)

## Additional Resources

If you are using HP Server Automation version 9.10 (or later), see these documents:

- *HP Server Automation User Guide: Database and Middleware Automation*
- *HP Server Automation User Guide: Application Deployment Manager*

If you are using HP Server Automation version 9.0x, see these documents:

- *HP Database and Middleware Automation User Guide*
- *HP Server Automation Integration Guide*

If you are using HP Database and Middleware Automation version 1.00, see these documents:

- *HP Database and Middleware Automation Installation Guide*
- *HP Database and Middleware Automation User Guide*

## Chapter 3

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### How to Use this Solution

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 some simple provisioning scenarios, you can use the default values for most parameters. To use more advanced features of this solution, you will need to expose additional parameters.

2. Specify the values for those parameters. You do this when you create a deployment.

**Note:** Detailed instructions are provided in the "How to Use this Workflow" topic associated with 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 15](#)).
- 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.

**Note:** All parameters used by each workflow in this solution are described in the [Reference Information on page 55](#).

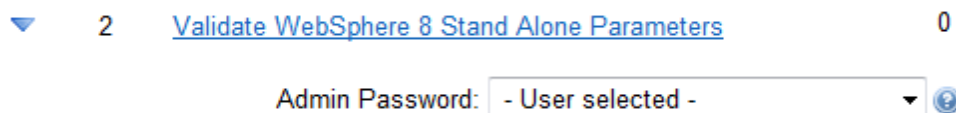
## How to Expose Additional Workflow Parameters

Each workflow in this solution pack has a set of input parameters. Some are required and some are optional. To run a workflow in your environment, you must specify values for a subset of these parameters when you create a deployment.

By default, only a few of the input parameters for each workflow are visible on the Deployment page, and the rest are hidden. In order to specify a value for a parameter that is currently hidden, you must first expose that parameter by changing its mapping in the workflow editor.

### To expose a hidden workflow parameter:

1. In the HP DMA web interface, go to Automation > Workflows.
2. From the list of workflows, select a deployable workflow (see [Create a Deployable Workflow on page 10](#)).
3. Go to the Workflow tab.
4. In the list of steps below the workflow diagram, click the ► (blue arrow) to the immediate left of the pertinent step name. This expands the list of input parameters for this step.
5. For the parameter that you want to expose, select - User Selected - from the drop-down list. For example:



6. Repeat steps 4 and 5 for all the parameters that you would like to specify in the deployment.
7. Click **Save** in the lower right corner.

## Provision IBM HTTP Server and WebSphere 7 Two Node Cell

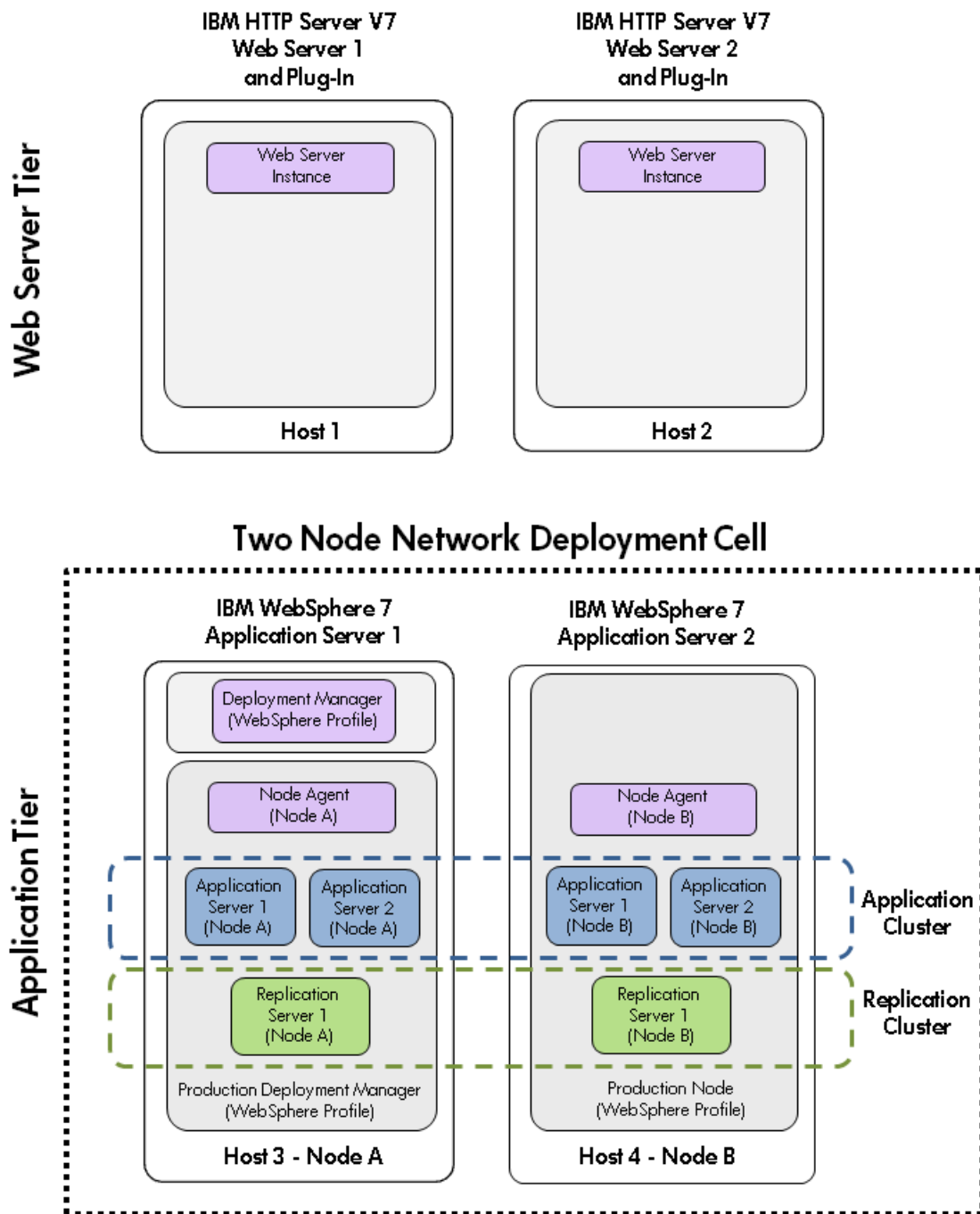
Use this workflow to provision a web server tier with two web servers and an application tier with a two node Network Deployment cell on a Red Hat Enterprise Linux platform. Each node is an IBM WebSphere Application Server version 7 server. The Network Deployment cell contains an application cluster and a replication cluster. The workflow does the following things:

- Provisions IBM HTTP Server version 7 on two target machines
- Provisions IBM WebSphere Application Server version 7 on two other target machines
- Creates a two node Network Deployment cell with a Deployment Manager profile and two custom node profiles
- Creates an application cluster that is both vertically and horizontally clustered to deploy applications
- Creates a replication cluster that is horizontally clustered to replicate HTTP sessions from one application server to the other, providing session persistence
- Creates unmanaged nodes and web server objects for mapping applications at deployment time
- Creates remote management of the two IBM HTTP Server version 7 web servers

All the cluster members are configured to take part in a replication domain. The application cluster members are the clients, and the replication cluster members are the servers.

This workflow takes advantage of master workflows, sub-flows, and bridged execution functionality within HP DMA so that some workflows become steps in a larger workflow. This gives the ability to execute complex workflows across multiple target machines using very few parameters.

## Architecture Diagram





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

Topic	Information Included
<a href="#">Prerequisites for this Workflow below</a>	List of prerequisites that must be satisfied before you can run this workflow
<a href="#">How this Workflow Works on page 27</a>	Information about what the workflow does, including validation checks performed, steps executed, and a high-level process flow
<a href="#">How to Run this Workflow on page 31</a>	Instructions for running this workflow in your environment
<a href="#">Sample Scenario on page 34</a>	Examples of typical parameter values for this workflow

**Note:** To view detailed information about the steps included in this workflow, see [Steps for Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 91](#).

## Prerequisites for this Workflow

Be sure that the following prerequisites are satisfied before you run the Provision IBM HTTP Server and WebSphere 7 Two Node Cell workflow:

### Hardware and Software Requirements

Type	Requirement
Number and Operating System of Servers	4 machines running RHEL 5.x
Number and Processor Architecture of CPUs	2 cores/server and x86 architecture for Web Server Tier 4 cores/server and x86 architecture for Application Tier
Memory per CPU/Server	4GB per IBM HTTP Server 16GB per IBM WebSphere Application Server
Virtual Memory Settings	None
Server Configuration	None
Storage	Local disk size should be 100GB/server with most of the space allocated to the /opt file system
Product Software	IBM WebSphere Application Server Network Deployment Manager 7 64-bit binaries IBM HTTP Server version 7 binaries

## Dependencies

1. This workflow requires unchallenged `sudo` access to a user (typically root) who can access all required files and directories.
2. Per the WebSphere 7 documentation, the following system libraries are required before provisioning IBM WebSphere Application Server version 7 on 64-bit Red Hat Linux:

Platform	Required Library
64-bit Red Hat Enterprise Linux version 5	compat-libstdc++-33-3.2.3-61 compat-db-4.2.52-5.1 libXp-1.0.0-8 compat-libstdc++-296-2.96-138 rpm-build-4.4.2-37.el5

Make sure that these libraries exist on each target server before running this workflow. If newer versions of these libraries are available, you can install the newer versions.

3. This workflow will install WebSphere Application Server as root because of the following IBM documented limitations:
  - Creation of a Linux service for WebSphere Application Server
  - Native registration with the operating system
  - Port conflicts that may occur with other installations of WebSphere Application Server that are not registered with the operating system

If there is a need to run as a non-root user after installation, you can run a recursive `chown` under the installation root and set owner permissions accordingly.

For more information about prerequisites for WebSphere 7, refer to the [WebSphere 7 Product Documentation on page 191](#).

## How this Workflow Works

The following information describes how the Provision IBM HTTP Server and WebSphere 7 Two Node Cell workflow works:

### Overview

This workflow does the following things in the order shown:

- Provisions IBM HTTP Server version 7 on two target machines
- Provisions IBM WebSphere Application Server version 7 on two other target machines
- Creates a two node Network Deployment cell with a Deployment Manager profile and two custom node profiles
- Creates an application cluster that is both vertically and horizontally clustered to deploy applications
- Creates a replication cluster that is horizontally clustered to replicate HTTP sessions from one application server to the other, providing session persistence
- Creates unmanaged nodes and web server objects for mapping applications at deployment time
- Creates remote management of the two IBM HTTP Server version 7 web servers

### Validation Checks Performed

This workflow automatically runs validation steps after each sub-flow step runs to make sure that the sub-flow steps successfully provisioned and configured the servers, plug-ins, Deployment Manager, and nodes. The workflow only proceeds to the next step if the validation was successful.

Most of the validation centers on special characters and spaces in the parameters. There are also validation checks that happen at the operating system level, including file system space checks and RPM checks for Red Hat Linux.

The workflow first performs the following parameter checks:

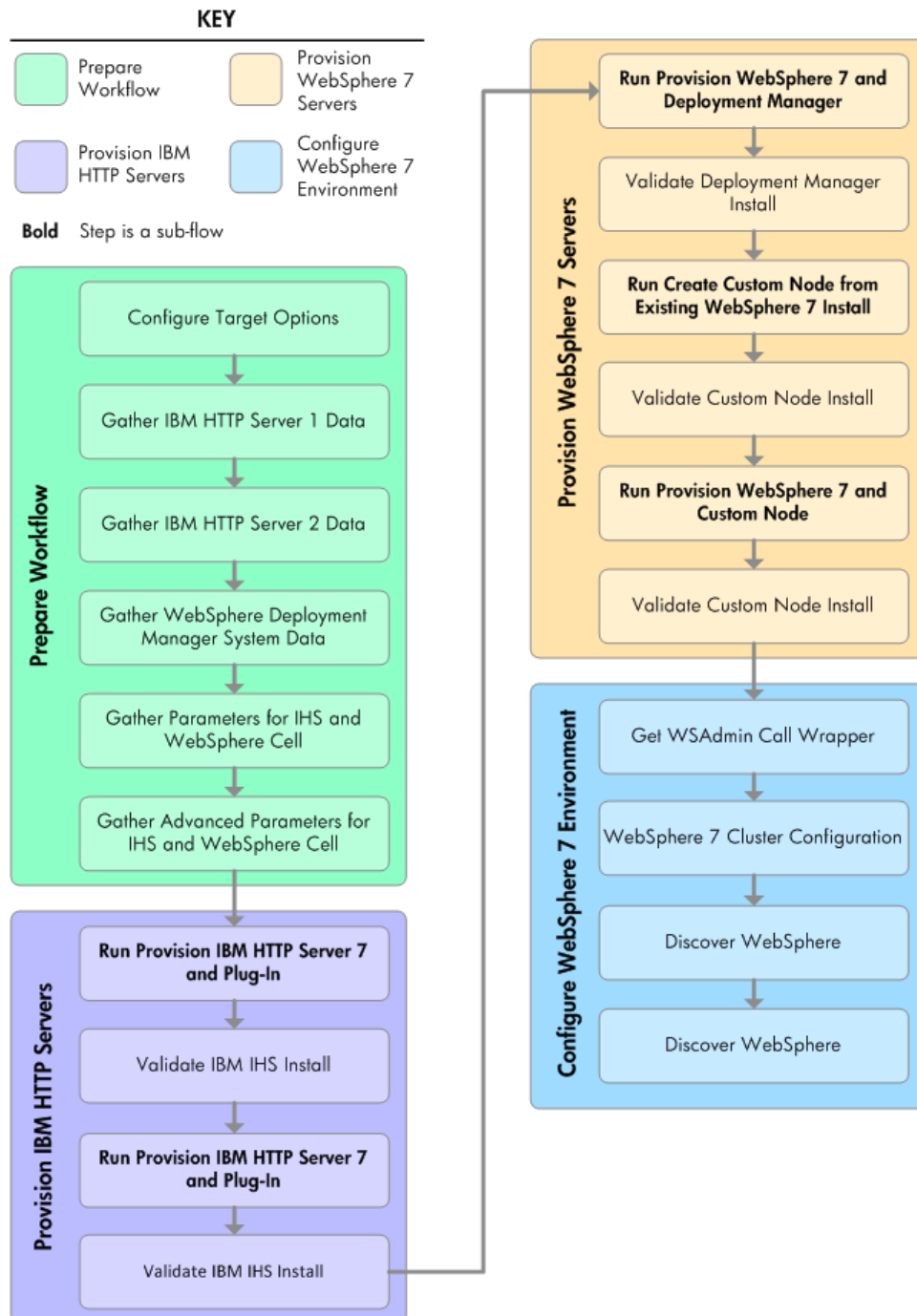
1. None of the following characters are used in the Admin User, Cell Name, Node Name, or Profile Name parameters: / \ \* , : ; = + ? | < > & % ' " [ ] > # \$ ^ { }
2. If Enable Security is true, Admin Password and Admin User are specified.
3. Admin Password (if specified) does not begin with a dash or contain a space.
4. Admin User (if specified) does not begin with a dash, a period, or a space.
5. Profile Name does not begin with a period.
6. Personal CertDN and Signing CertDN do not contain spaces.
7. If Ports File is specified, Validate Ports is true.
8. All specified file names are legal file names.

The workflow then performs the following operating system checks on the target machine:

1. All required libraries are present (see [Prerequisites for this Workflow on page 25](#)).
2. Sufficient disk space is available to install .
3. Sufficient disk space is available to extract the binary files from the compressed archive.

### Steps Executed

The Provision IBM HTTP Server and WebSphere 7 Two Node Cell workflow 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.



For parameter descriptions and defaults, see [Parameters for Provision IBM HTTP Server and WebSphere 7 Two Node Cell](#) on page 57.

#### Process Flow

The Provision IBM HTTP Server and WebSphere 7 Two Node Cell workflow provisions a web server tier and an application tier. For the web server tier, the workflow provisions two IBM HTTP Server 7 servers with plug-ins. For the application tier, the workflow provisions two WebSphere 7 servers, creates a Deployment Manager for one, and creates custom nodes (node agents) for both.

The workflow creates two clusters across the WebSphere 7 servers. The first cluster, which is vertically and horizontally clustered, is set up so that applications can be deployed to it. The second cluster, which is horizontally clustered, is meant for memory-to-memory replication of HTTP sessions.

All cluster members are configured to take part in a replication domain. The application cluster members are configured as the clients, and the replication cluster members are configured as the servers. The workflow creates unmanaged nodes and web server objects for mapping applications at deployment time. The workflow creates remote management of the two IBM HTTP Server version 7 servers.

The workflow sets minimum and maximum java heap sizes to 4GB and sets the garbage collection policy to generational concurrent (gencon).

**Workflow Steps**

This workflow performs the following steps and sub-flow steps:

Workflow Step	Description
<a href="#">Configure Target Options on page 98</a>	Prepares the target machine parameters needed to provision both IBM HTTP Server and WebSphere Application Server version 7.
<a href="#">Gather IBM HTTP Server 1 Data on page 99</a>	Retrieves the host name of the specified IBM HTTP Server 1 target machine in the HP DMA environment.
<a href="#">Gather IBM HTTP Server 2 Data on page 100</a>	Retrieves the host name of the specified IBM HTTP Server 2 target machine in the HP DMA environment.
<a href="#">Gather WebSphere Deployment Manager System Data on page 101</a>	Retrieves the host name of the specified IBM HTTP Deployment Manager target machine in the HP DMA environment.
<a href="#">Gather Parameters for IHS and WebSphere Cell on page 102</a>	Prepares the parameters needed to provision IBM HTTP Server and WebSphere Application Server version 7.
<a href="#">Gather Advanced Parameters for IHS and WebSphere Cell on page 104</a>	Prepares the advanced parameters needed to provision and configure IBM HTTP Server and WebSphere Application Server version 7.
<a href="#">Run Provision IBM HTTP Server 7 and Plug-in on page 125</a>	Calls the Provision IBM HTTP Server 7 and Plug-in workflow via the HP DMA API to provision IBM HTTP Server 1.
<a href="#">Validate IBM IHS install on page 129</a>	Validates that the provisioning of IBM HTTP Server and plug-in were successful for IBM HTTP Server 1.
<a href="#">Run Provision IBM HTTP Server 7 and Plug-in on page 125</a>	Calls the Provision IBM HTTP Server 7 and Plug-in workflow via the HP DMA API to provision IBM HTTP Server 2.
<a href="#">Validate IBM IHS install on page 129</a>	Validates that the provisioning of IBM HTTP Server and plug-in were successful for IBM HTTP Server 2.
<a href="#">Run Provision WebSphere 7 and Deployment Manager on page 130</a>	Calls the Provision WebSphere 7 and Deployment Manager workflow via the HP DMA API to provision IBM WebSphere 7 Application Server 1 with Deployment Manager.
<a href="#">Validate Deployment Manager Install on page 134</a>	Validates that the provisioning of IBM WebSphere Deployment Manager was successful for IBM WebSphere 7 Application Server 1.

Workflow Step	Description
<a href="#">Run Create Custom Node from Existing WebSphere 7 Install on page 135</a>	Calls the Create Custom Node From Existing WebSphere 7 workflow via the HP DMA API to provision IBM WebSphere 7 Application Server 1.
<a href="#">Validate Custom Node Install on page 138</a>	Validates that the creation and federation of the custom node were successful for IBM WebSphere 7 Application Server 1.
<a href="#">Run Provision WebSphere 7 and Custom Node on page 139</a>	Calls the Provision WebSphere 7 and Custom Node workflow via the HP DMA API to provision IBM WebSphere 7 Application Server 2.
<a href="#">Validate Custom Node Install on page 138</a>	Validates that the creation and federation of the custom node were successful for IBM WebSphere 7 Application Server 2.
<a href="#">Get WSAdmin Call Wrapper on page 143</a>	Creates the necessary call wrapper to call wsadmin to execute certain operations within the specified WebSphere environment.
<a href="#">WebSphere 7 Cluster Configuration on page 145</a>	Creates the cluster and cluster members for the specified WebSphere environment as well as replication domains, heap sizes, garbage collection policy, unmanaged nodes and web server instances.
<a href="#">Discover WebSphere on page 148</a>	Audits the Node A server's physical environment looking for WebSphere cells, clusters, and managed servers
<a href="#">Discover WebSphere on page 148</a>	Audits the Node B server's physical environment looking for WebSphere cells, clusters, and managed servers

## How to Run this Workflow

The following instructions show you how to customize and run the Provision IBM HTTP Server and WebSphere 7 Two Node Cell workflow in your environment.

The workflow provides default values for some parameters. These default values are usually sufficient for a "typical" installation. You can override the defaults by specifying parameter values in the deployment. You can also expose additional parameters in the workflow, if necessary, to accomplish more advanced scenarios. Any parameters not explicitly specified in the deployment will have the default values listed in [Parameters for Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 57](#)

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

### To use the Provision IBM HTTP Server and WebSphere 7 Two Node Cell workflow:

1. If you have not already done so, create a deployable copy of the Provision IBM HTTP Server and WebSphere 7 Two Node Cell workflow (see [Create a Deployable Workflow on page 10](#)).
2. Determine the values that you will specify for the following parameters:

Parameter Name	Default Value	Required	Description
All - DMA Password	no default	required	Password for the HP DMA web services API.
All - DMA Username	no default	required	User who is capable of modifying the managed environment through the HP DMA Discovery web services API.
Application Name	no default	required	Name of the application that will be used through to create the application servers and clusters that will be created under the profile.
WebSphere Deployment Manager - Cell Name	no default	required	Unique cell name that does not contain any of the following special characters / \ * , : ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.

**Note:** To avoid entering passwords in clear text, see [Using a Policy to Specify Parameter Values on page 192](#).

**Note:** This is the minimum set of parameters required to run this workflow. You may need to expose additional parameters depending on your provisioning objectives [How to Expose Additional Workflow Parameters on page 22](#)

See [Parameters for Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 57](#) for detailed descriptions of all input parameters for this workflow, including default values.

3. In the workflow editor, expose any additional parameters that you need (see [How to Expose Additional Workflow Parameters on page 22](#)).
4. Save the changes to the workflow (click **Save** in the lower right corner).
5. Create a new deployment (see [Create a Deployment on page 11](#) for instructions).
6. On the Deployment page, select the deployment that you created, and go to the Targets tab.
7. Select all the target servers that you plan to provision. The targets that you select here will be available in the Target Parameters drop-down menus on the Run page (see [step 11](#)).
8. Go to the Parameters tab.
9. Specify values for all parameters listed in [step 2](#) and any additional parameters that you exposed.
10. Save the deployment (click **Save** in the lower right corner).
11. Run the workflow using this deployment (see [Run Your Workflow on page 12](#) for instructions). Select the following targets:



Parameter Name	Default Value	Required	Description
Primary Target	no default	required	Any target machine (although this target is not currently used, it is included for backward compatibility with older workflows).
IBM HTTP Server System 1	no default	required	First target machine that will be (or was) provisioned with the IBM HTTP Server software.
IBM HTTP Server System 2	no default	required	Second target machine that will be (or was) provisioned with the IBM HTTP Server software.
Provision WebSphere 7 and Custom Node System	no default	required	Target machine that will be provisioned with IBM WebSphere software and a custom node profile.
WebSphere Deployment Manager System	no default	required	Target machine that will be provisioned with IBM WebSphere software, Deployment Manager, and a custom node profile.

**To verify the results:**

The workflow will complete and report SUCCESS on the Console if it has run successfully. If an invalid parameter value is specified, an error is logged, and the workflow terminates in the FAILURE state.

This workflow automatically runs validation steps after each sub-flow step runs to make sure that the sub-flow steps successfully provisioned and configured the servers, plug-ins, Deployment Manager, and nodes. The workflow only proceeds to the next step if the validation was successful.

*Optional:* if you want to further verify the results, perform the following steps:

1. After the workflow has completed, run the following command to check the version of WebSphere Application Server that was installed:

```
WAS_ROOT/bin/versionInfo.sh
```

Here, *WAS\_ROOT* is the directory where WebSphere 7 is installed. This is the path that you specified in the WebSphere Install Location parameter.

2. Validate that the profile has been created and is running by doing the following:
  - a. View the *WAS\_ROOT/profiles/PROFILE\_NAME/logs/AboutThisProfile.txt* file. This file is created after the creation of the profile and contains specific information about the profile.  
  
Here, *PROFILE\_NAME* is the name of the profile that you just created. This is the name that you specified in the Profile Name parameter.
  - b. Change to the *WAS\_ROOT/profiles/PROFILE\_NAME/logs/CELL\_NAME* directory, and tail the *SystemOut.log* file. Look for the following line:

*Server CELL\_NAME open for e-business*

Here, *CELL\_NAME* is the name of the WebSphere 7 cell to which this profile pertains. This is the name that you specified in the Cell Name parameter.

## Sample Scenario

The Provision IBM HTTP Server and WebSphere 7 Two Node Cell workflow is very straightforward. The purpose is to provision two IBM HTTP Server 7 servers and two WebSphere 7 servers and to create a two node cell.

This topic shows you typical parameter values used for the Provision IBM HTTP Server and WebSphere 7 Two Node Cell workflow.

Parameter Name	Example Value	Description
All - DMA Password	password	Password for the HP DMA web services API.
All - DMA Username	admin	User who is capable of modifying the managed environment through the HP DMA Discovery web services API.
Application Name	ProdApp	Name of the application that will be used through to create the application servers and clusters that will be created under the profile.
WebSphere Deployment Manager - Cell Name	ProdDmgr	Unique cell name that does not contain any of the following special characters / \ * , : ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.

**Note:** To avoid entering passwords in clear text, see [Using a Policy to Specify Parameter Values on page 192](#).

## Add WebSphere 7 Node to Existing Cell

The Add WebSphere 7 Node to Existing Cell workflow works in conjunction with the Provision IBM HTTP Server and WebSphere 7 Two Node Cell workflow and expands the cell by one node (up to a maximum of 10 nodes in the cell).

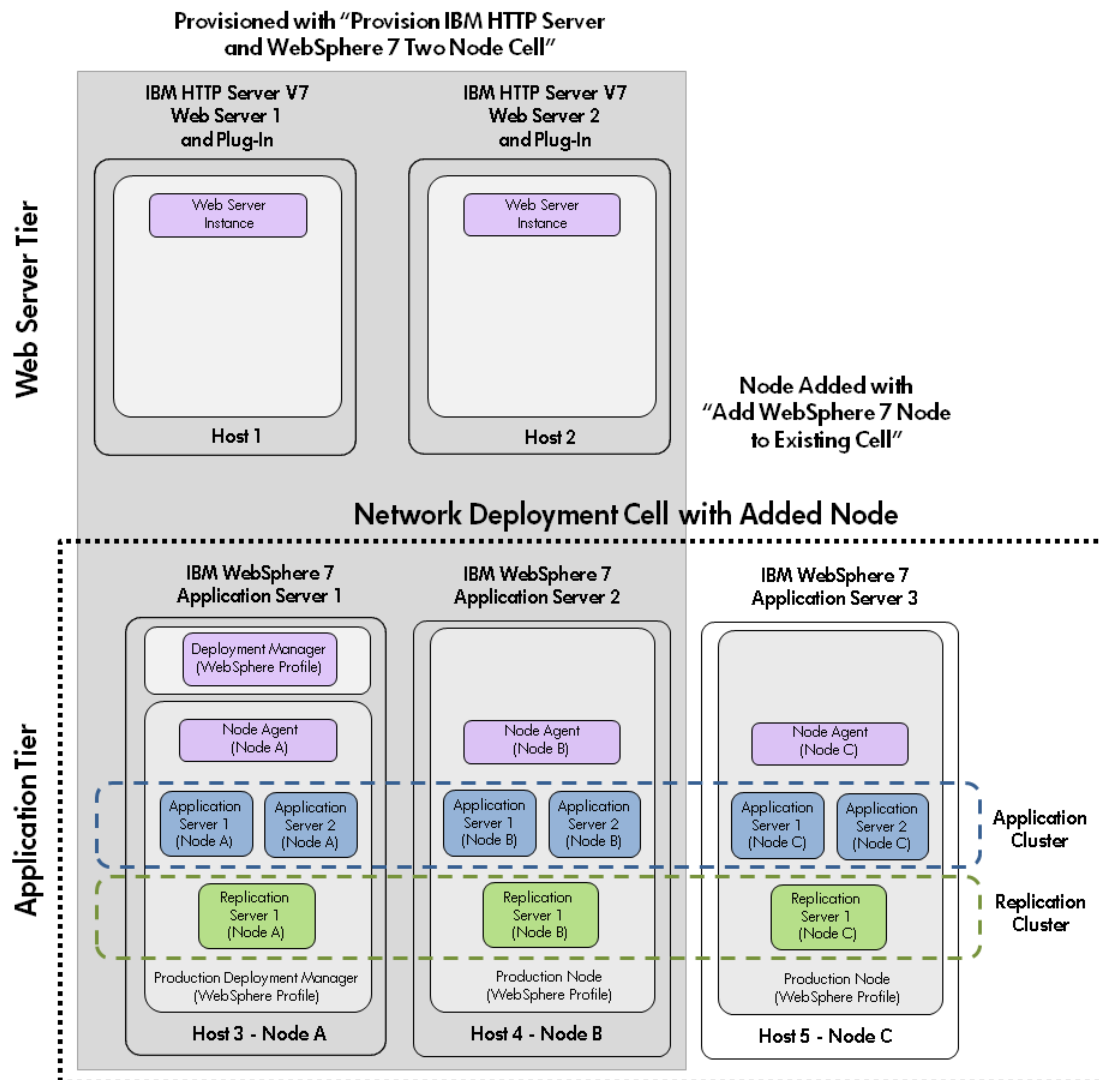
The Add WebSphere 7 Node to Existing Cell workflow does the following:

- Provisions IBM WebSphere Application Server version 7 on a target machine
- Creates and federates a custom node profile, expanding an n node Network Deployment cell to an n+1 node cell
- Expands the existing two clusters by adding cluster members to the new node
- Extends the vertically and horizontally clustered application cluster to deploy applications
- Extends the horizontally clustered replication cluster to replicate HTTP sessions from one application server to one of the other, providing session persistence

All the cluster members are configured to take part in a replication domain. The application cluster members are the clients, and the replication cluster members are the servers used to store session data.

This workflow takes advantage of master workflows, sub-flows, and bridged execution functionality within HP DMA so that some workflows become steps in a larger workflow. This gives the ability to execute complex workflows across multiple target machines using very few parameters.

## Architecture Diagram



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

Topic	Information Included
<a href="#">Prerequisites for this Workflow on next page</a>	List of prerequisites that must be satisfied before you can run this workflow
<a href="#">How this Workflow Works on page 38</a>	Information about what the workflow does, including validation checks performed, steps executed, and a high-level process flow
<a href="#">How to Run this Workflow on page 42</a>	Instructions for running this workflow in your environment
<a href="#">Sample Scenario on page 45</a>	Examples of typical parameter values for this workflow

**Note:** To view detailed information about the steps included in this workflow, see [Steps for Add WebSphere 7 Node to Existing Cell on page 92](#).

## Prerequisites for this Workflow

Before you can run the Add WebSphere 7 Node to Existing Cell workflow you must run the Provision IBM HTTP Server and WebSphere 7 Two Node Cell workflow to create a two-node cell server configuration.

Be sure that the following prerequisites are satisfied before you run the Add WebSphere 7 Node to Existing Cell workflow:

## Hardware and Software Requirements

Type	Requirement
Number and Operating System of Server	1 machine running RHEL 5.x
Number and Processor Architecture of CPU	4 cores/server and x86 architecture
Memory per CPU/Server	16GB per IBM WebSphere Application Server
Virtual Memory Settings	None
Server Configuration	None
Storage	Local disk size should be 100GB/server with most of the space allocated to the /opt file system
Product Software	IBM WebSphere Application Server Network Deployment Manager 7 64-bit binaries

## Dependencies

1. This workflow requires unchallenged `sudo` access to a user (typically root) who can access all required files and directories.
2. Per the WebSphere 7 documentation, the following system libraries are required before provisioning IBM WebSphere Application Server version 7 on 64-bit Red Hat Linux:

Platform	Required Library
64-bit Red Hat Enterprise Linux version 5	compat-libstdc++-33-3.2.3-61 compat-db-4.2.52-5.1 libXp-1.0.0-8 compat-libstdc++-296-2.96-138 rpm-build-4.4.2-37.el5

Make sure that these libraries exist on each target server before running this workflow. If newer versions of these libraries are available, you can install the newer versions.

3. This workflow will install WebSphere Application Server as root because of the following IBM documented limitations:
  - Creation of a Linux service for WebSphere Application Server
  - Native registration with the operating system
  - Port conflicts that may occur with other installations of WebSphere Application Server that are not registered with the operating system

If there is a need to run as a non-root user after installation, you can run a recursive `chown` under the installation root and set owner permissions accordingly.

## How this Workflow Works

The following information describes how the Add WebSphere 7 Node to Existing Cell workflow works:

### Overview

The Add WebSphere 7 Node to Existing Cell workflow works in conjunction with the Provision IBM HTTP Server and WebSphere 7 Two Node Cell workflow and expands the cell by one node (up to a maximum of 10 nodes in the cell).

This workflow does the following things in the order shown:

- Provisions IBM WebSphere Application Server version 7 on a target machine
- Creates and federates a custom node profile, expanding an n node Network Deployment cell to an n+1 node cell
- Expands the existing two clusters by adding cluster members to the new node
- Extends the vertically and horizontally clustered application cluster to deploy applications
- Extends the horizontally clustered replication cluster to replicate HTTP sessions from one application server to one of the other, providing session persistence

#### Validation Checks Performed

This workflow automatically runs a validation step after the Run Provision WebSphere 7 and Custom Node sub-flow step to verify that the sub-flow successfully provisioned and configured the server and the custom node. The workflow only proceeds to the next step if the validation was successful.

Most of the validation centers on special characters and spaces in the parameters. There are also validation checks that happen at the operating system level, including file system space checks and RPM checks for Red Hat Linux.

The workflow first performs the following parameter checks:

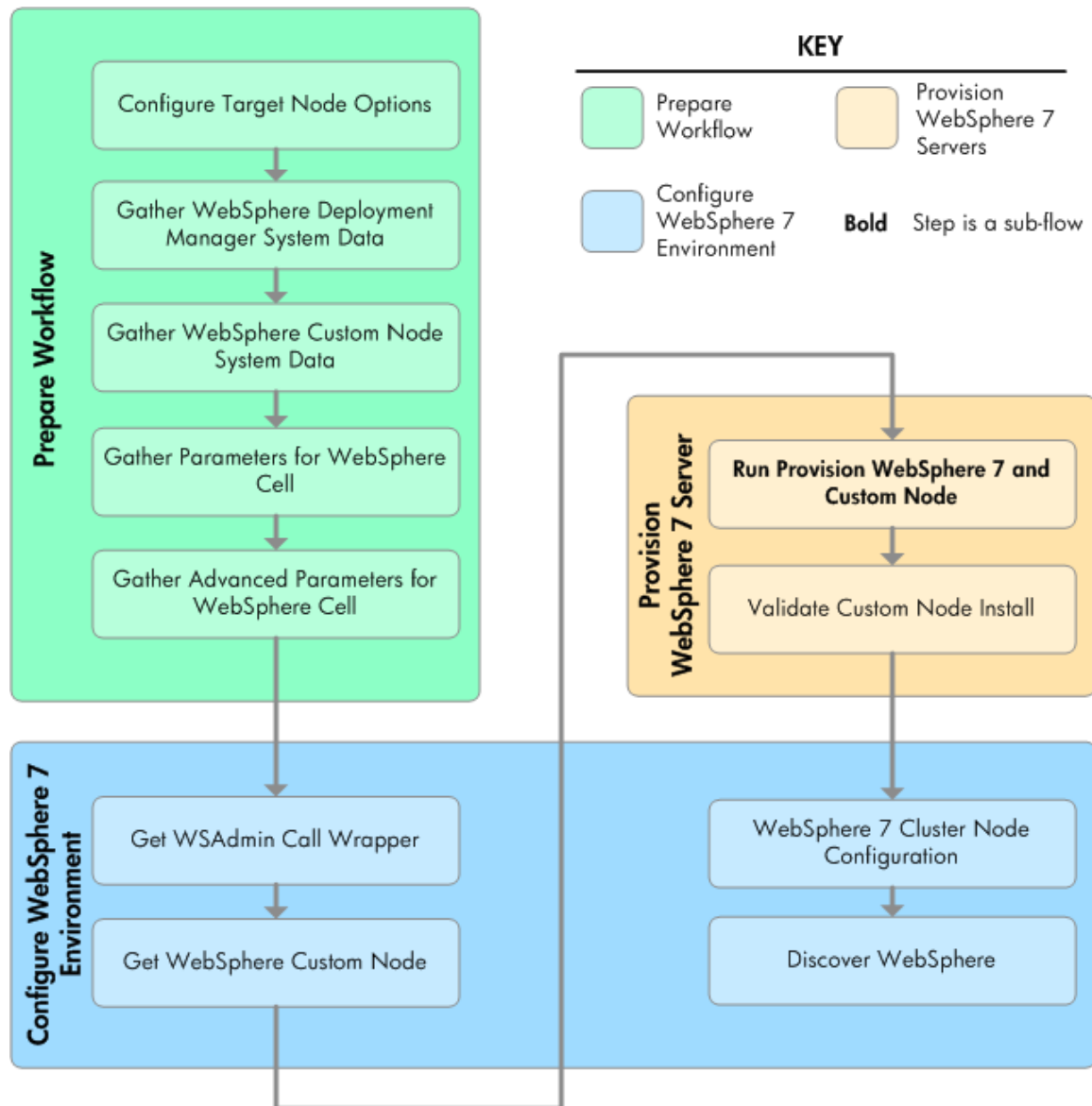
1. None of the following characters are used in the Admin User, Cell Name, Node Name, or Profile Name parameters: / \ \* , : ; = + ? | < > & % ' " [ ] > # \$ ^ { }
2. If Enable Security is true, Admin Password and Admin User are specified.
3. Admin Password (if specified) does not begin with a dash or contain a space.
4. Admin User (if specified) does not begin with a dash, a period, or a space.
5. Profile Name does not begin with a period.
6. Personal CertDN and Signing CertDN do not contain spaces.
7. If Ports File is specified, Validate Ports is true.
8. All specified file names are legal file names.

The workflow then performs the following operating system checks on the target machine:

1. All required libraries are present (see [Prerequisites for this Workflow on page 37](#)).
2. Sufficient disk space is available to install .
3. Sufficient disk space is available to extract the binary files from the compressed archive.

### Steps Executed

The Add WebSphere 7 Node to Existing Cell workflow 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.



For parameter descriptions and defaults, see [Parameters for Add WebSphere 7 Node to Existing Cell](#) on page 70.



#### Process Flow

The Add WebSphere 7 Node to Existing Cell workflow provisions a WebSphere 7 server and creates a custom node (node agent).

The workflow expands the two existing clusters across the new node. The first cluster, which is vertically and horizontally clustered, is set up so that applications can be deployed to it. The second cluster, which is horizontally clustered, is meant for memory-to-memory replication of HTTP sessions.

All cluster members are configured to take part in a replication domain. The application cluster members are configured as the clients and the replication cluster members are configured as the servers.

The workflow sets minimum and maximum java heap sizes to 4GB and sets the garbage collection policy to generational concurrent (gencon).

**Workflow Steps**

This workflow performs the following steps and sub-flow steps:

Workflow Step	Description
<a href="#">Configure Target Node Options on page 149</a>	Prepares the target machine parameters needed to provision WebSphere Application Server version 7.
<a href="#">Gather WebSphere Deployment Manager System Data on page 101</a>	Retrieves the host name of the specified IBM HTTP Deployment Manager target machine in the HP DMA environment.
<a href="#">Gather WebSphere Custom Node System Data on page 150</a>	Retrieves the host name of the specified IBM HTTP Server target machine in the HP DMA environment.
<a href="#">Gather Parameters for WebSphere Cell on page 151</a>	Prepares the parameters needed to provision WebSphere Application Server version 7.
<a href="#">Gather Advanced Parameters for WebSphere Cell on page 152</a>	Prepares the advanced parameters needed to provision and configure IBM WebSphere Application Server version 7.
<a href="#">Get WSAAdmin Call Wrapper on page 143</a>	Creates the necessary call wrapper to call wsadmin to execute certain operations within the specified WebSphere environment.
<a href="#">Get WebSphere Custom Node on page 173</a>	Calls WebSphere APIs to get node information.
<a href="#">Run Provision WebSphere 7 and Custom Node on page 139</a>	Calls the Provision WebSphere 7 and Custom Node workflow via the HP DMA API to provision an IBM WebSphere 7 Application server.
<a href="#">Validate Custom Node Install on page 138</a>	Validates that the creation and federation of the custom node were successful for the IBM WebSphere 7 Application server.
<a href="#">WebSphere 7 Cluster Node Configuration on page 174</a>	Creates the cluster and cluster members for the specified WebSphere environment. Creates the replication domains, heap sizes, garbage collection policy, unmanaged nodes and web server instances.
<a href="#">Discover WebSphere on page 148</a>	Audits the server's physical environment looking for WebSphere cells, clusters, and managed servers.

**How to Run this Workflow**

The following instructions show you how to customize and run the Add WebSphere 7 Node to Existing Cell workflow in your environment.

The workflow provides default values for some parameters. These default values are usually sufficient for a "typical" installation. You can override the defaults by specifying parameter values in the deployment. You can also expose additional parameters in the workflow, if necessary, to accomplish more advanced scenarios. Any parameters not explicitly specified in the deployment will have the default values listed in [Parameters for Add WebSphere 7 Node to Existing Cell on page 70](#)

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

**To use the Add WebSphere 7 Node to Existing Cell workflow:**

1. If you have not already done so, create a deployable copy of the Add WebSphere 7 Node to Existing Cell workflow (see [Create a Deployable Workflow on page 10](#)).
2. Determine the values that you will specify for the following parameters:

Parameter Name	Default Value	Required	Description
All - DMA Password	no default	required	Password for the HP DMA web services API.
All - DMA Username	no default	required	User who is capable of modifying the managed environment through the HP DMA Discovery web services API.

**Note:** To avoid entering passwords in clear text, see [Using a Policy to Specify Parameter Values on page 192](#).

**Note:** This is the minimum set of parameters required to run this workflow. You may need to expose additional parameters depending on your provisioning objectives [How to Expose Additional Workflow Parameters on page 22](#)

See [Parameters for Add WebSphere 7 Node to Existing Cell on page 70](#) for detailed descriptions of all input parameters for this workflow, including default values.

3. In the workflow editor, expose any additional parameters that you need (see [How to Expose Additional Workflow Parameters on page 22](#)).
4. Save the changes to the workflow (click **Save** in the lower right corner).
5. Create a new deployment (see [Create a Deployment on page 11](#) for instructions).
6. On the Deployment page, select the deployment that you created, and go to the Targets tab.
7. Select all the target servers that you plan to provision. The targets that you select here will be available in the Target Parameters drop-down menus on the Run page (see [step 11](#)).
8. Go to the Parameters tab.
9. Specify values for all parameters listed in [step 2](#) and any additional parameters that you

exposed.

10. Save the deployment (click **Save** in the lower right corner).
11. Run the workflow using this deployment (see [Run Your Workflow on page 12](#) for instructions). Select the following targets:

Parameter Name	Default Value	Required	Description
Provision WebSphere 7 and Custom Node System	no default	required	Target machine that will be provisioned with IBM WebSphere software and a custom node profile.
WebSphere Deployment Manager System	no default	required	Target machine that will be used to connect to the Deployment Manager.

**To verify the results:**

The workflow will complete and report SUCCESS on the Console if it has run successfully. If an invalid parameter value is specified, an error is logged, and the workflow terminates in the FAILURE state.

This workflow automatically runs a validation step after the Run Provision WebSphere 7 and Custom Node sub-flow step to verify that the sub-flow successfully provisioned and configured the server and the custom node. The workflow only proceeds to the next step if the validation was successful.

*Optional:* if you want to further verify the results, perform the following steps:

1. After the workflow has completed, run the following command to check the version of WebSphere Application Server that was installed:

```
WAS_ROOT/bin/versionInfo.sh
```

Here, *WAS\_ROOT* is the directory where WebSphere 7 is installed. This is the path that you specified in the WebSphere Install Location parameter.

2. Validate that the profile has been created and is running by doing the following:

- a. View the *WAS\_ROOT/profiles/PROFILE\_NAME/logs/AboutThisProfile.txt* file. This file is created after the creation of the profile and contains specific information about the profile.

Here, *PROFILE\_NAME* is the name of the profile that you just created. This is the name that you specified in the Profile Name parameter.

- b. Change to the *WAS\_ROOT/profiles/PROFILE\_NAME/logs/CELL\_NAME* directory, and tail the *SystemOut.log* file. Look for the following line:

```
Server CELL_NAME open for e-business
```

Here, *CELL\_NAME* is the name of the WebSphere 7 cell to which this profile pertains. This is the name that you specified in the Cell Name parameter.

## Sample Scenario

The Add WebSphere 7 Node to Existing Cell workflow works in conjunction with the Provision IBM HTTP Server and WebSphere 7 Two Node Cell workflow and expands the cell by one node (up to a maximum of 10 nodes in the cell).

The Add WebSphere 7 Node to Existing Cell workflow is very straightforward. The purpose is to provision a WebSphere 7 servers and to expand the Network Deployment cell by one node. Use this workflow to provision this configuration in a production environment.

This topic shows you typical parameter values used for the Add WebSphere 7 Node to Existing Cell workflow.

Parameter Name	Example Value	Description
All - DMA Password	password	Password for the HP DMA web services API.
All - DMA Username	admin	User who is capable of modifying the managed environment through the HP DMA Discovery web services API.

**Note:** To avoid entering passwords in clear text, see [Using a Policy to Specify Parameter Values on page 192](#).

## Provision IBM HTTP Server and WebSphere 7 StandAlone Profile

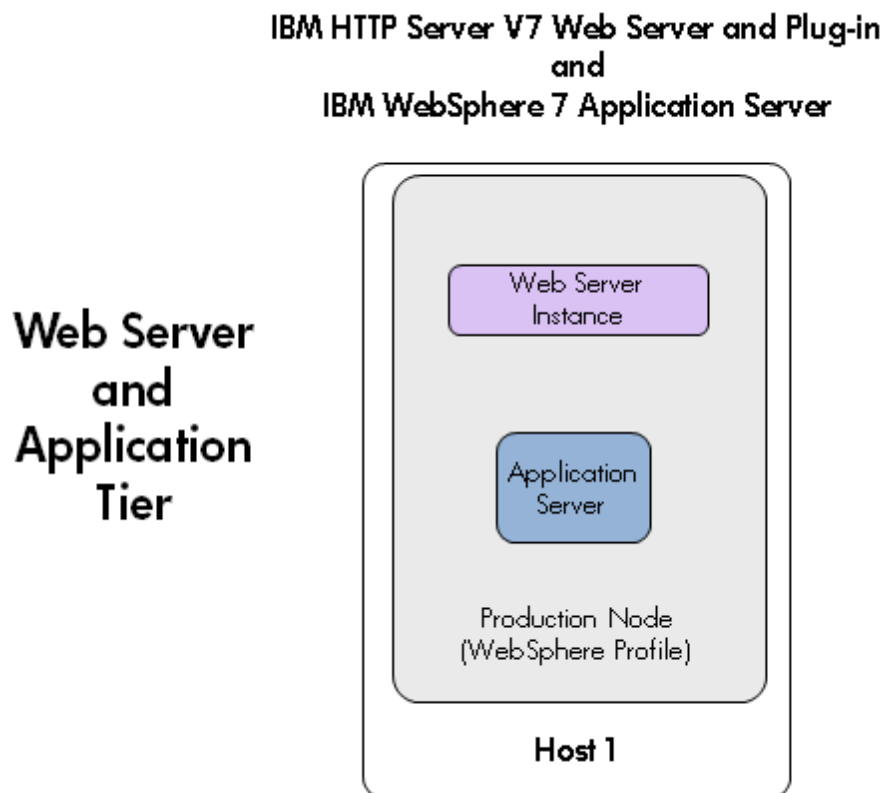
Use this workflow to provision IBM HTTP Server version 7 on a single target machine, provision IBM WebSphere Application Server version 7 on the same machine, and create a stand-alone profile. This workflow is intended for small non-production environments used for development and integration testing.

The workflow does the following things:

- Provisions IBM HTTP Server version 7 on a target machine
- Provisions IBM WebSphere Application Server version 7 on the same target machine
- Creates a stand-alone profile

This workflow takes advantage of master workflows, sub-flows, and bridged execution functionality within HP DMA so that some workflows become steps in a larger workflow. This gives the ability to execute complex workflows across multiple target machines using very few parameters.

### Architecture Diagram



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

Topic	Information Included
<a href="#">Prerequisites for this Workflow below</a>	List of prerequisites that must be satisfied before you can run this workflow
<a href="#">How this Workflow Works on next page</a>	Information about what the workflow does, including validation checks performed, steps executed, and a high-level process flow
<a href="#">How to Run this Workflow on page 51</a>	Instructions for running this workflow in your environment
<a href="#">Sample Scenario on page 53</a>	Examples of typical parameter values for this workflow

**Note:** To view detailed information about the steps included in this workflow, see [Steps for Provision IBM HTTP Server and WebSphere 7 StandAlone Profile on page 93](#).

## Prerequisites for this Workflow

Be sure that the following prerequisites are satisfied before you run the Provision HTTP Server and WebSphere 7 StandAlone Profile workflow:

### Hardware and Software Requirements

Type	Requirement
Number and Operating System of Server	1 machine running RHEL 5.x
Number and Processor Architecture of CPU	1 cores/server and x86 architecture
Memory per CPU/Server	2GB
Virtual Memory Settings	None
Server Configuration	None
Storage	Local disk size should be 20GB/server with most of the space allocated to the /opt file system
Product Software	IBM WebSphere Application Server Network Deployment Manager 7 64-bit binaries IBM HTTP Server version 7 binaries

### Dependencies

1. This workflow requires unchallenged `sudo` access to a user (typically root) who can access all required files and directories.

2. Per the WebSphere 7 documentation, the following system libraries are required before provisioning IBM WebSphere Application Server version 7 on 64-bit Red Hat Linux:

Platform	Required Library
64-bit Red Hat Enterprise Linux version 5	compat-libstdc++-33-3.2.3-61 compat-db-4.2.52-5.1 libXp-1.0.0-8 compat-libstdc++-296-2.96-138 rpm-build-4.4.2-37.el5

Make sure that these libraries exist on each target server before running this workflow. If newer versions of these libraries are available, you can install the newer versions.

3. This workflow will install WebSphere Application Server as root because of the following IBM documented limitations:
- Creation of a Linux service for WebSphere Application Server
  - Native registration with the operating system
  - Port conflicts that may occur with other installations of WebSphere Application Server that are not registered with the operating system

If there is a need to run as a non-root user after installation, you can run a recursive `chown` under the installation root and set owner permissions accordingly.

For more information about prerequisites for WebSphere 7, refer to the [WebSphere 7 Product Documentation on page 191](#).

## How this Workflow Works

The following information describes how the Provision HTTP Server and WebSphere 7 StandAlone Profile workflow works:

### Overview

This workflow does the following things in the order shown:

- Provisions IBM HTTP Server version 7 on a target machine
- Provisions IBM WebSphere Application Server version 7 on the same target machine
- Creates a stand-alone profile



#### Validation Checks Performed

Most of the validation centers on special characters and spaces in the parameters. There are also validation checks that happen at the operating system level, including file system space checks and RPM checks for Red Hat Linux.

The workflow first performs the following parameter checks:

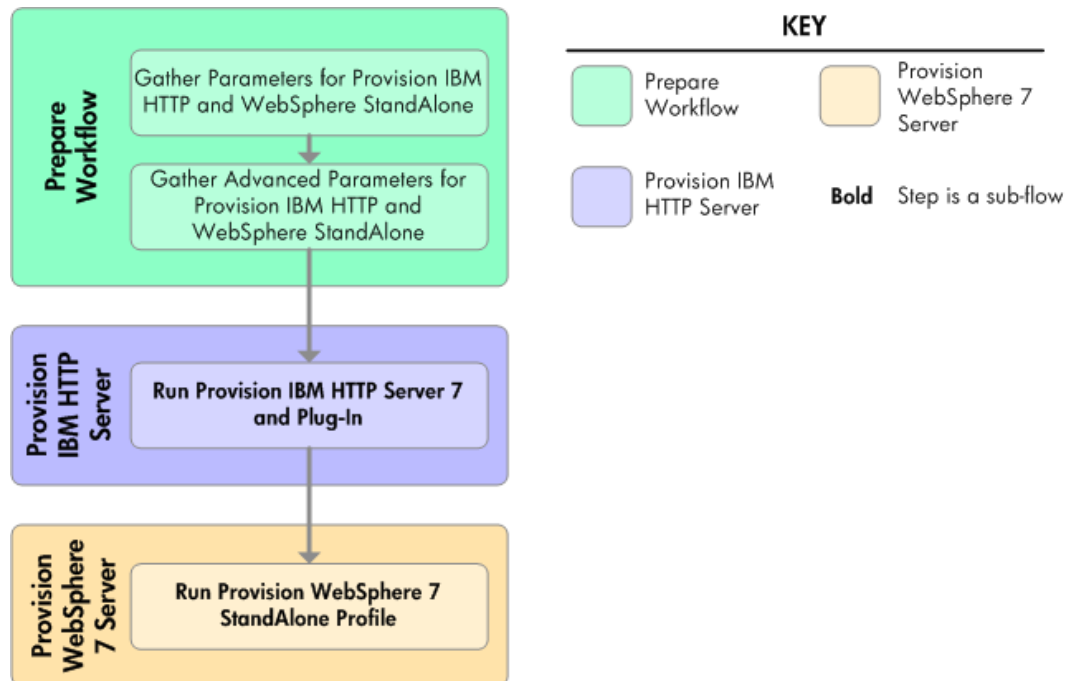
1. None of the following characters are used in the Admin User, Cell Name, Node Name, or Profile Name parameters: / \ \* , : ; = + ? | < > & % ' " [ ] > # \$ ^ { }
2. If Enable Security is true, Admin Password and Admin User are specified.
3. Admin Password (if specified) does not begin with a dash or contain a space.
4. Admin User (if specified) does not begin with a dash, a period, or a space.
5. Profile Name does not begin with a period.
6. Personal CertDN and Signing CertDN do not contain spaces.
7. If Ports File is specified, Validate Ports is true.
8. All specified file names are legal file names.

The workflow then performs the following operating system checks on the target machine:

1. All required libraries are present (see [Prerequisites for this Workflow on page 47](#)).
2. Sufficient disk space is available to install .
3. Sufficient disk space is available to extract the binary files from the compressed archive.

### Steps Executed

The Provision HTTP Server and WebSphere 7 StandAlone Profile workflow 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.



For parameter descriptions and defaults, see [Parameters for Provision HTTP Server and WebSphere 7 StandAlone Profile on page 83](#)

### Process Flow

The Provision HTTP Server and WebSphere 7 StandAlone Profile workflow provisions a single tier for both the web server and application server. The workflow provisions one IBM HTTP Server 7 server with a plug-in on a target machine. Next, the workflow provisions one WebSphere 7 server on the same target. Then the workflow creates a stand-alone profile.

### Workflow Steps

This workflow performs the following steps and sub-flow steps:

Workflow Step	Description
<a href="#">Gather Parameters for Provision IBM HTTP and WebSphere StandAlone on page 175</a>	Prepares the parameters needed to provision IBM HTTP Server and WebSphere Application Server version 7.
<a href="#">Gather Advanced Parameters for Provision IBM HTTP and WebSphere StandAlone on page 177</a>	Prepares the advanced parameters needed to provision and configure IBM HTTP Server and WebSphere Application Server version 7.
<a href="#">Run Provision IBM HTTP Server 7 and Plug-in on page 125</a>	Calls the Provision IBM HTTP Server 7 and Plug-in workflow via the HP DMA API.
<a href="#">Run Provision WebSphere 7 StandAlone Profile on page 187</a>	Calls the Provision WebSphere 7 StandAlone Profile via the HP DMA API.

## How to Run this Workflow

The following instructions show you how to customize and run the Provision HTTP Server and WebSphere 7 StandAlone Profile workflow in your environment.

The workflow provides default values for some parameters. These default values are usually sufficient for a "typical" installation. You can override the defaults by specifying parameter values in the deployment. You can also expose additional parameters in the workflow, if necessary, to accomplish more advanced scenarios. Any parameters not explicitly specified in the deployment will have the default values listed in [Parameters for Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 57](#)

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

### To use the Provision HTTP Server and WebSphere 7 StandAlone Profile workflow:

1. If you have not already done so, create a deployable copy of the Provision HTTP Server and WebSphere 7 StandAlone Profile workflow (see [Create a Deployable Workflow on page 10](#)).
2. Determine the values that you will specify for the following parameters:

Parameter Name	Default Value	Required	Description
Application Name	no default	required	Name of the application that will be used through to create the application server that will be created under the profile and modify the clusters.

(continued)

Parameter Name	Default Value	Required	Description
Cell Name	no default	required	Unique cell name that does not contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
DMA Password	no default	required	Password for the web service API.
DMA URL	no default	required	URL for the web service API.
DMA Username	no default	required	User capable of modifying the managed environment through the discovery web service API.
Node Name	no default	required	Unique node name that cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that the name is unique within that cell.

**Note:** To avoid entering passwords in clear text, see [Using a Policy to Specify Parameter Values on page 192](#).

**Note:** This is the minimum set of parameters required to run this workflow. You may need to expose additional parameters depending on your provisioning objectives [How to Expose Additional Workflow Parameters on page 22](#)

See [Parameters for Provision HTTP Server and WebSphere 7 StandAlone Profile on page 83](#) for detailed descriptions of all input parameters for this workflow, including default values.

3. In the workflow editor, expose any additional parameters that you need (see [How to Expose Additional Workflow Parameters on page 22](#)).
4. Save the changes to the workflow (click **Save** in the lower right corner).
5. Create a new deployment (see [Create a Deployment on page 11](#) for instructions).
6. On the Deployment page, select the deployment that you created, and go to the Targets tab.
7. Select any target servers that you may plan to provision. The targets that you select here will be available in the Target Parameters drop-down menu on the Run page (see [step 11](#)).
8. Go to the Parameters tab.
9. Specify values for all parameters listed in [step 2](#) and any additional parameters that you exposed.
10. Save the deployment (click **Save** in the lower right corner).

11. Run the workflow using this deployment (see [Run Your Workflow on page 12](#) for instructions). Select the target where you want to provision both the HTTP Server and the WebSphere 7 application server.

#### To verify the results:

The workflow will complete and report SUCCESS on the Console if it has run successfully. If an invalid parameter value is specified, an error is logged, and the workflow terminates in the FAILURE state.

*Optional:* if you want to further verify the results, perform the following steps:

1. After the workflow has completed, run the following command to check the version of WebSphere Application Server that was installed:

```
WAS_ROOT/bin/versionInfo.sh
```

Here, *WAS\_ROOT* is the directory where WebSphere 7 is installed. This is the path that you specified in the WebSphere Install Location parameter.

2. Validate that the profile has been created and is running by doing the following:

- a. View the *WAS\_ROOT/profiles/PROFILE\_NAME/logs/AboutThisProfile.txt* file. This file is created after the creation of the profile and contains specific information about the profile.

Here, *PROFILE\_NAME* is the name of the profile that you just created. This is the name that you specified in the Profile Name parameter.

- b. Change to the *WAS\_ROOT/profiles/PROFILE\_NAME/logs/CELL\_NAME* directory, and tail the *SystemOut.log* file. Look for the following line:

```
Server CELL_NAME open for e-business
```

Here, *CELL\_NAME* is the name of the WebSphere 7 cell to which this profile pertains. This is the name that you specified in the Cell Name parameter.

## Sample Scenario

The Provision HTTP Server and WebSphere 7 StandAlone Profile workflow is very straightforward. The purpose is to provision IBM HTTP Server 7 on a single machine and WebSphere 7 on the same machine, and to create a stand-alone profile. Use this workflow to provision this configuration in a small development environment used for development and integration testing.

This topic shows you typical parameter values used for the Provision HTTP Server and WebSphere 7 StandAlone Profile workflow.

Parameter Name	Example Value	Description
Application Name	DevApp	Name of the application that will be used through to create the application server that will be created under the profile and modify the clusters.
Cell Name	DevCell	Unique cell name that does not contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
DMA Password	password	Password for the web service API.
DMA URL	<code>/api/sop/running</code>	URL for the web service API.
DMA Username	SAadmin	User capable of modifying the managed environment through the discovery web service API.
Node Name	DevNode1	Unique node name that cannot contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that the name is unique within that cell.

**Note:** To avoid entering passwords in clear text, see [Using a Policy to Specify Parameter Values on page 192](#).

## Reference Information

This chapter contains information about the parameters used in the WebSphere 7 provisioning workflows:

- [Parameters for Provision IBM HTTP Server and WebSphere 7 Two Node Cell](#)
- [Parameters for Add WebSphere 7 Node to Existing Cell](#)
- [Parameters for Provision HTTP Server and WebSphere 7 StandAlone Profile](#)

This chapter contains information about the steps used in the WebSphere 7 provisioning workflows:

- [Steps for Provision IBM HTTP Server and WebSphere 7 Two Node Cell](#)
- [Steps for Add WebSphere 7 Node to Existing Cell](#)
- [Steps for Provision IBM HTTP Server and WebSphere 7 StandAlone Profile](#)
- [All WebSphere 7 Provisioning Steps](#)

This chapter contains general information about WebSphere 7:

[WebSphere 7 Product Documentation](#)

# Chapter 4

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## Parameter Information

The following provides detailed information about the parameters used by the WebSphere 7 provisioning workflows in this solution pack:

- [Parameters for Provision IBM HTTP Server and WebSphere 7 Two Node Cell on next page](#)
- [Parameters for Add WebSphere 7 Node to Existing Cell on page 70](#)
- [Parameters for Provision HTTP Server and WebSphere 7 StandAlone Profile on page 83](#)



## Parameters for Provision IBM HTTP Server and WebSphere 7 Two Node Cell

The following tables describe the required and optional input parameters for this workflow.

Most of these parameters are not initially visible in a deployment (see [How to Expose Additional Workflow Parameters on page 22](#)). For most parameters, if you do not specify a value for a parameter, a default value is assigned

For information about which steps use which parameters, see [Steps for Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 91](#).

### Parameters Defined in this Step: Configure Target Options

Parameter Name	Default Value	Required	Description
IBM HTTP Server System 1	no default	required	First target machine that will be (or was) provisioned with the IBM HTTP Server software.
IBM HTTP Server System 2	no default	required	Second target machine that will be (or was) provisioned with the IBM HTTP Server software.
Provision WebSphere 7 and Custom Node System	no default	required	Target machine that will be provisioned with IBM WebSphere software and a custom node profile.
WebSphere Deployment Manager System	no default	required	Target machine that will be provisioned with IBM WebSphere software, Deployment Manager, and a custom node profile.

### Parameters Defined in this Step: Gather Parameters for IHS and WebSphere Cell

Parameter Name	Default Value	Required	Description
All - DMA Password	no default	required	Password for the HP DMA web services API.
All - DMA Username	no default	required	User who is capable of modifying the managed environment through the HP DMA Discovery web services API.
Application Name	no default	required	Name of the application that will be used through to create the application servers and clusters that will be created under the profile.
WebSphere Deployment Manager - Cell Name	no default	required	Unique cell name that does not contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.

**Parameters Defined in this Step: Gather Advanced Parameters for IHS and WebSphere Cell**

Parameter Name	Default Value	Required	Description
Application Name	no default	required	Name of the application that will be used through to create the application servers and clusters that will be created under the profile.
Custom Node Parameters-Cell Name 1	ProdNode01	required	Unique cell name that does not contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
Custom Node Parameters-Cell Name 2	ProdNode02	required	Unique cell name that does not contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
HTTP Access Log	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/ logs/access_log</code>
HTTP Error Log	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/ logs/error_log</code>
Install IHS for WebSphere 7-Password	password	required for Windows targets	This is the Windows Administrator user's password.
Install IHS for WebSphere 7-Username	wasadmin	required for Windows targets	This is the Windows Administrator user who will install WebSphere 7.
Install WebSphere 7 Create Profile-Password	password	required for Windows targets	This is the WebSphere 7 Administrator user's password.

**Parameters Defined in this Step: Gather Advanced Parameters for IHS and WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Install WebSphere 7 Create Profile-Username	wasadmin	required for Windows targets	This is the WebSphere 7 Administrator user.
Instance	no default	optional	Used internally by the workflow.  <b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.
Node Name	no default	required	Used to configure an unmanaged node inside of WebSphere for management operational purposes.
Node OS	linux	required	Used to configure an unmanaged node inside of WebSphere for management operational purposes.
Plugin Root	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/Plugins</code>
Validate Existing Install Custom Node Parameters-Cell Name	ProdNode01	required	Unique cell name that does not contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
Validate Existing Install Custom Node Parameters-Dmgr Admin Password	password	optional	Administrative user password for the Deployment Manager. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).

**Parameters Defined in this Step: Gather Advanced Parameters for IHS and WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate Existing Install Custom Node Parameters-Dmgr Admin User	wasadmin	required	Deployment Manager administrative user. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate Existing Install Custom Node Parameters-Dmgr HostName	no default	required	Host name or IP address of the machine where the Deployment Manager is running. Specify this parameter and the Dmgr Port parameter to federate the new custom node as it is created.
Validate Existing Install Custom Node Parameters-Dmgr Port	8879	required	The SOAP port on which the Deployment Manager is listening. Specify this parameter and the Dmgr Host Name parameter to federate the new custom node as it is created.
Validate Existing Install Custom Node Parameters-Enable Security	true	required	Enables administrative security on the Deployment Manager. Must be set to either true or false. If Enable Security is true, the Dmgr Admin User and Dmgr Admin Password parameters must have values.
Validate Existing Install Custom Node Parameters-Install Location	see description	required	Fully qualified path where WebSphere Application Server will be installed. The default is: /opt/IBM/WebSphere/AppServer

**Parameters Defined in this Step: Gather Advanced Parameters for IHS and WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate Existing Install Custom Node Parameters-Node Name	ProdNode01	required	Unique node name that cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that the name is unique within that cell.
Validate Existing Install Custom Node Parameters-Profile Name	ProdNode01	required	A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate Existing Install Custom Node Parameters-Profile Path	see description	required	Fully qualified path to the profile. The default is: <code>/opt/IBM/WebSphere/AppServer/profiles/ProdNode01</code>
Validate Existing Install Custom Node Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the profile creation. The default is: <code>/tmp/custom_node_resp.txt</code>
Validate IHS 7 Parameters-Admin Auth Password	password	optional	The password used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-) or contain a space( ).
Validate IHS 7 Parameters-Admin Auth Password Confirm	password	optional	Confirms the Admin Auth Password.

**Parameters Defined in this Step: Gather Advanced Parameters for IHS and WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate IHS 7 Parameters-Admin Auth User	wasadmin	optional	The user ID used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-), a period(.), or a space( ) and cannot contain any of the following characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate IHS 7 Parameters-Admin Port	8008	required	The port on which the HTTP administration web server will run. This is usually 8008.
Validate IHS 7 Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: /opt/install/C1G36ML.tar.gz
Validate IHS 7 Parameters-Create Admin Auth	true	required	Set this to true to create a user ID and password to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. If this parameter is set to true, the following parameters must have values: Admin Auth Password, Admin Auth Password Confirm, and Admin Auth User.
Validate IHS 7 Parameters-Create Admin User Group	true	required	Set to true to create a user ID and group used to set up the IBM HTTP Administration Server on Linux and UNIX operating systems.
Validate IHS 7 Parameters-Extract Dir	/tmp/	required	Fully qualified path where the compressed software will be extracted on the target machine.
Validate IHS 7 Parameters-Http Port	80	required	The port on which the web server will listen. Usually, this is set to 80.

**Parameters Defined in this Step: Gather Advanced Parameters for IHS and WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate IHS 7 Parameters-Install Location	see description	required	Fully qualified path where IBM HTTP Server will be installed. The default is: <code>/opt/IBM/HTTPServer</code>
Validate IHS 7 Parameters-Install Plugin	true	required	Determines whether or not the WebSphere Application Server plug-in is installed. Valid values are true or false.
Validate IHS 7 Parameters-License Acceptance	true	required	Acknowledges that the end-user agrees to the IBM International Program License Agreement.
Validate IHS 7 Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file is used to drive the installation. The default is: <code>/tmp/ih7_resp.txt</code>
Validate IHS 7 Parameters-Run Admin Setup	true	required	Enables the install process to grant the Set Up Admin User write access to the necessary IBM HTTP Server and WebSphere Application Server plug-in configuration files. Valid options are true or false.
Validate IHS 7 Parameters-Set Up Admin Group	ih7admin	optional	Group name used to set up the IBM HTTP administration server on Linux and UNIX operating systems. This parameter must have a value if Create Admin User Group is set to true.
Validate IHS 7 Parameters-Set Up Admin User	ih7admin	optional	User ID used to set up the IBM HTTP administration server on Linux and UNIX operating systems. If Create Admin User Group is set to true, this parameter must have a value.
Validate IHS 7 Parameters-WebSphere Hostname	Server.Name	optional	Host name of the WebSphere Application Server machine. This parameter is required if Install Plugin is set to true. No spaces are allowed in the host name.

**Parameters Defined in this Step: Gather Advanced Parameters for IHS and WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Custom Node Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: <code>/opt/install/C1G35ML.tar.gz</code>
Validate WebSphere 7 Custom Node Parameters-Cell Name	ProdNode02	required	Unique cell name that does not contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
Validate WebSphere 7 Custom Node Parameters-Dmgr Admin Password	password	optional	Administrative user password for the Deployment Manager. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate WebSphere 7 Custom Node Parameters-Dmgr Admin User	wasadmin	optional	Deployment Manager administrative user. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> .
Validate WebSphere 7 Custom Node Parameters-Dmgr HostName	no default	optional	Host name or IP address of the machine where the Deployment Manager is running. Specify this parameter and the Dmgr Port parameter to federate the new custom node as it is created.
Validate WebSphere 7 Custom Node Parameters-Dmgr Port	8879	optional	The SOAP port on which the Deployment Manager is listening. Specify this parameter and the Dmgr Host Name parameter to federate the new custom node as it is created.



**Parameters Defined in this Step: Gather Advanced Parameters for IHS and WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Custom Node Parameters-Enable Security	true	required	Enables administrative security on the Deployment Manager. Must be set to either true or false. If Enable Security is true, the Dmgr Admin User and Dmgr Admin Password parameters must have values.
Validate WebSphere 7 Custom Node Parameters-Extract Dir	/tmp/	required	Fully qualified path where the compressed software will be extracted on the target machine.
Validate WebSphere 7 Custom Node Parameters-Federate Later	false	optional	If false, the new custom node will be federated during profile creation. If true, you must federate it later by using the <code>addNode</code> command.
Validate WebSphere 7 Custom Node Parameters-Install Location	see description	required	Fully qualified path where WebSphere Application Server will be (or was) installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>
Validate WebSphere 7 Custom Node Parameters-License Acceptance	true	required	Acknowledges that the end-user agrees to the IBM International Program License Agreement.
Validate WebSphere 7 Custom Node Parameters-Node Name	ProdNode02	required	Unique node name that cannot contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that the name is unique within that cell.

**Parameters Defined in this Step: Gather Advanced Parameters for IHS and WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Custom Node Parameters-Profile Name	ProdNode02	required	A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate WebSphere 7 Custom Node Parameters-Profile Path	see description	required	Fully qualified path to the profile. The default is: /opt/IBM/WebSphere/AppServer/profiles/ProdNode03
Validate WebSphere 7 Custom Node Parameters-Profile Type	custom	required	Because this workflow creates a custom node profile, the value must be custom.
Validate WebSphere 7 Custom Node Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the installation and profile creation. The default is: /tmp/custom_node_resp.txt
Validate WebSphere 7 Deployment Manager Parameters-Admin Password	password	optional	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate WebSphere 7 Deployment Manager Parameters-Admin User	wasadmin	optional	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.

**Parameters Defined in this Step: Gather Advanced Parameters for IHS and WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Deployment Manager Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: <code>/opt/install/C1G35ML.tar.gz</code>
Validate WebSphere 7 Deployment Manager Parameters-Enable Security	true	required	Enables administrative security. Must be set to either true or false. If Enable Security is true, the Admin User and Admin Password parameters must have values.
Validate WebSphere 7 Deployment Manager Parameters-Extract Dir	see description	required	Fully qualified path where the compressed software will be extracted on the target machine. The default is: <code>/opt/install</code>
Validate WebSphere 7 Deployment Manager Parameters-Install Location	see description	required	Fully qualified path where WebSphere Application Server will be (or was) installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>
Validate WebSphere 7 Deployment Manager Parameters-License Acceptance	true	required	Acknowledges that the end user agrees to the IBM International Program License Agreement.

**Parameters Defined in this Step: Gather Advanced Parameters for IHS and WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Deployment Manager Parameters-Node Name	ProdManager	required	Unique node name that cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that the name is unique within that cell.
Validate WebSphere 7 Deployment Manager Parameters-Profile Name	ProdDmgr	required	A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate WebSphere 7 Deployment Manager Parameters-Profile Path	see description	required	Fully qualified path to the profile. The default is: <code>/opt/IBM/WebSphere/AppServer/profiles/ProdDmgr</code>
Validate WebSphere 7 Deployment Manager Parameters-Profile Type	management	required	Because this workflow creates a Deployment Manager profile, the value must be management.
Validate WebSphere 7 Deployment Manager Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the installation and profile creation. The default is: <code>/tmp/dmgr_resp.txt</code>

**Parameters Defined in this Step: Gather Advanced Parameters for IHS and WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Deployment Manager Parameters-Server Type	DEPLOYMENT_MANAGER	required	Specifies the type of management profile. Specify DEPLOYMENT_MANAGER for a Deployment Manager server.
Validate WebSphere 7 Deployment Manager Parameters-Windows Admin Password	no default	required for Windows targets	This is the Administrator user password.
Validate WebSphere 7 Deployment Manager Parameters-Windows Admin User	no default	required for Windows targets	This is the Administrator user.
Web Server Config File	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/conf/httpd.conf</code>
Web Server Name	value of Application Name	required	Used to configure web server instances inside of WebSphere for management operational purposes.

## Parameters for Add WebSphere 7 Node to Existing Cell

The following tables describe the required and optional input parameters for this workflow.

**Note:** Most of these parameters are not initially visible in a deployment (see [How to Expose Additional Workflow Parameters on page 22](#)). For most parameters, if you do not specify a value for a parameter, a default value is assigned.

For information about which steps use which parameters, see [Steps for Add WebSphere 7 Node to Existing Cell on page 92](#).

### Parameters Defined in This Step: Configure Target Node Options

Parameter Name	Default Value	Required	Description
Provision WebSphere 7 and Custom Node System	no default	required	Target machine that will be provisioned with IBM WebSphere software and a custom node profile.
WebSphere Deployment Manager System	no default	required	Target machine that will be used to connect to the Deployment Manager.

### Parameters Defined in This Step: Gather Parameters for WebSphere Cell

Parameter Name	Default Value	Required	Description
All - DMA Password	no default	required	Password for the HP DMA web services API.
All - DMA Username	no default	required	User who is capable of modifying the managed environment through the HP DMA Discovery web services API.

### Parameters Defined in this Step: Gather Advanced Parameters for WebSphere Cell

Parameter Name	Default Value	Required	Description
Application Name	no default	required	Name of the application that will be used through to create the application server that will be created under the profile and modify the clusters.
Custom Node Parameters-Cell Name 1	no default	required	Name of the existing WebSphere 7 cell to which a new custom node will be added.

**Parameters Defined in this Step: Gather Advanced Parameters for WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Custom Node Parameters-Cell Name 2	no default	required	Not used in this workflow.
DMA URL	see description	required	URL for the HP DMA web services API. The default is: <code>/api/sop/running</code>
HTTP Access Log	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/logs/access_log</code>
HTTP Error Log	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/logs/error_log</code>
Install IHS for WebSphere 7-Password	password	required for Windows targets	This is the Windows Administrator user's password.
Install IHS for WebSphere 7-Username	wasadmin	required for Windows targets	This is the Windows Administrator user who will install WebSphere 7.
Install WebSphere 7 Create Profile-Password	password	required for Windows targets	This is the WebSphere 7 Administrator user's password.
Install WebSphere 7 Create Profile-Username	wasadmin	required for Windows targets	This is the WebSphere 7 Administrator user.

**Parameters Defined in this Step: Gather Advanced Parameters for WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Instance	no default	optional	Used internally by the workflow.  <b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.
Node Name	no default	required	Used to configure an unmanaged node inside of WebSphere for management operational purposes.
Node OS	linux	required	Used to configure an unmanaged node inside of WebSphere for management operational purposes.
Plugin Root	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/Plugins</code>
Validate Existing Install Custom Node Parameters-Cell Name	ProdNode01	required	Name of the existing cell to which the new custom node will be added.
Validate Existing Install Custom Node Parameters-Dmgr Admin Password	password	optional	Administrative user password for the Deployment Manager in the existing cell to which the new custom node will be added.
Validate Existing Install Custom Node Parameters-Dmgr Admin User	wasadmin	required	Administrative user for the Deployment Manager in the existing cell to which the new custom node will be added.



**Parameters Defined in this Step: Gather Advanced Parameters for WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate Existing Install Custom Node Parameters-Dmgr HostName	no default	required	Host name or IP address of the machine where the Deployment Manager is running. Specify this parameter and the Dmgr Port parameter to federate the new custom node as it is created.
Validate Existing Install Custom Node Parameters-Dmgr Port	8879	required	The SOAP port on which the Deployment Manager is listening. Specify this parameter and the Dmgr Host Name parameter to federate the new custom node as it is created.
Validate Existing Install Custom Node Parameters-Enable Security	true	required	Enables administrative security on the Deployment Manager. Must be set to either true or false. If Enable Security is true, the Dmgr Admin User and Dmgr Admin Password parameters must have values.
Validate Existing Install Custom Node Parameters-Install Location	see description	required	Fully qualified path where WebSphere Application Server will be installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>
Validate Existing Install Custom Node Parameters-Node Name	ProdNode01	required	Unique node name for the new custom node. This name cannot contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> .

**Parameters Defined in this Step: Gather Advanced Parameters for WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate Existing Install Custom Node Parameters-Profile Name	ProdNode01	required	A unique profile name for the new custom node profile. It cannot begin with a period (.) and cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate Existing Install Custom Node Parameters-Profile Path	see description	required	Fully qualified path to the profile. The default is: /opt/IBM/WebSphere/AppServer/profiles/ProdNode01
Validate Existing Install Custom Node Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the profile creation. The default is: /tmp/custom_node_resp.txt
Validate IHS 7 Parameters-Admin Auth Password	password	optional	The password used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-) or contain a space( ).
Validate IHS 7 Parameters-Admin Auth Password Confirm	password	optional	Confirms the Admin Auth Password.

**Parameters Defined in this Step: Gather Advanced Parameters for WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate IHS 7 Parameters-Admin Auth User	wasadmin	optional	The user ID used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-), a period(.), or a space( ) and cannot contain any of the following characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate IHS 7 Parameters-Admin Port	8008	required	The port on which the HTTP administration web server will run. This is usually 8008.
Validate IHS 7 Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: /opt/install/C1G36ML.tar.gz
Validate IHS 7 Parameters-Create Admin Auth	true	required	Set this to true to create a user ID and password to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. If this parameter is set to true, the following parameters must have values: Admin Auth Password, Admin Auth Password Confirm, and Admin Auth User.
Validate IHS 7 Parameters-Create Admin User Group	true	required	Set to true to create a user ID and group used to set up the IBM HTTP Administration Server on Linux and UNIX operating systems.
Validate IHS 7 Parameters-Extract Dir	/tmp/	required	Fully qualified path where the compressed software will be extracted on the target machine.
Validate IHS 7 Parameters-Http Port	80	required	The port on which the web server will listen. Usually, this is set to 80.

**Parameters Defined in this Step: Gather Advanced Parameters for WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate IHS 7 Parameters-Install Location	see description	required	Fully qualified path where IBM HTTP Server will be installed. The default is: <code>/opt/IBM/HTTPServer</code>
Validate IHS 7 Parameters-Install Plugin	true	required	Determines whether or not the WebSphere Application Server plug-in is installed. Valid values are true or false.
Validate IHS 7 Parameters-License Acceptance	true	required	Acknowledges that the end-user agrees to the IBM International Program License Agreement.
Validate IHS 7 Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file is used to drive the installation. The default is: <code>/tmp/ih7_resp.txt</code>
Validate IHS 7 Parameters-Run Admin Setup	true	required	Enables the install process to grant the Set Up Admin User write access to the necessary IBM HTTP Server and WebSphere Application Server plug-in configuration files. Valid options are true or false.
Validate IHS 7 Parameters-Set Up Admin Group	ih7admin	optional	Group name used to set up the IBM HTTP administration server on Linux and UNIX operating systems. This parameter must have a value if Create Admin User Group is set to true.
Validate IHS 7 Parameters-Set Up Admin User	ih7admin	optional	User ID used to set up the IBM HTTP administration server on Linux and UNIX operating systems. If Create Admin User Group is set to true, this parameter must have a value.
Validate IHS 7 Parameters-WebSphere Hostname	Server.Name	optional	Host name of the WebSphere Application Server machine. This parameter is required if Install Plugin is set to true. No spaces are allowed in the host name.

**Parameters Defined in this Step: Gather Advanced Parameters for WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Custom Node Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: <code>/opt/install/C1G35ML.tar.gz</code>
Validate WebSphere 7 Custom Node Parameters-Cell Name	ProdNode03	required	Unique cell name that does not contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
Validate WebSphere 7 Custom Node Parameters-Dmgr Admin Password	password	optional	Administrative user password for the Deployment Manager. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate WebSphere 7 Custom Node Parameters-Dmgr Admin User	wasadmin	optional	Deployment Manager administrative user. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> .
Validate WebSphere 7 Custom Node Parameters-Dmgr HostName	no default	optional	Host name or IP address of the machine where the Deployment Manager is running. Specify this parameter and the Dmgr Port parameter to federate the new custom node as it is created.
Validate WebSphere 7 Custom Node Parameters-Dmgr Port	8879	optional	The SOAP port on which the Deployment Manager is listening. Specify this parameter and the Dmgr Host Name parameter to federate the new custom node as it is created.

**Parameters Defined in this Step: Gather Advanced Parameters for WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Custom Node Parameters-Enable Security	true	required	Must be set to true if administrative security is enabled on the deployment manager. Valid values are true or false. If Enable Security is true, the Dmgr Admin User and Dmgr Admin Password parameters must have values.
Validate WebSphere 7 Custom Node Parameters-Extract Dir	/tmp/	required	Fully qualified path where the compressed software will be extracted on the target machine.
Validate WebSphere 7 Custom Node Parameters-Federate Later	false	optional	If false, the new custom node will be federated during profile creation. If true, you must federate it later by using the <code>addNode</code> command.
Validate WebSphere 7 Custom Node Parameters-Install Location	see description	required	Fully qualified path where WebSphere Application Server will be (or was) installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>
Validate WebSphere 7 Custom Node Parameters-License Acceptance	true	required	Acknowledges that the end-user agrees to the IBM International Program License Agreement.
Validate WebSphere 7 Custom Node Parameters-Node Name	ProdNode03	required	Unique node name that cannot contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> .

**Parameters Defined in this Step: Gather Advanced Parameters for WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Custom Node Parameters-Profile Name	ProdNode03	required	A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate WebSphere 7 Custom Node Parameters-Profile Path	see description	required	Fully qualified path to the profile. The default is: /opt/IBM/WebSphere/AppServer/profiles/ProdNode03
Validate WebSphere 7 Custom Node Parameters-Profile Type	custom	required	Because this workflow creates a custom node profile, the value must be custom.
Validate WebSphere 7 Custom Node Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the installation and profile creation. The default is: /tmp/custom_node_resp.txt
Validate WebSphere 7 Deployment Manager Parameters-Admin Password	password	optional	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate WebSphere 7 Deployment Manager Parameters-Admin User	wasadmin	optional	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.

**Parameters Defined in this Step: Gather Advanced Parameters for WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Deployment Manager Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: <code>/opt/install/C1G35ML.tar.gz</code>
Validate WebSphere 7 Deployment Manager Parameters-Enable Security	true	required	Enables administrative security. Must be set to either true or false. If Enable Security is true, the Admin User and Admin Password parameters must have values.
Validate WebSphere 7 Deployment Manager Parameters-Extract Dir	see description	required	Fully qualified path where the compressed software will be extracted on the target machine. The default is: <code>/opt/install</code>
Validate WebSphere 7 Deployment Manager Parameters-Install Location	see description	required	Fully qualified path where WebSphere Application Server will be (or was) installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>
Validate WebSphere 7 Deployment Manager Parameters-License Acceptance	true	required	Acknowledges that the end user agrees to the IBM International Program License Agreement.



**Parameters Defined in this Step: Gather Advanced Parameters for WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Deployment Manager Parameters-Node Name	ProdManager	required	Unique node name that cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that the name is unique within that cell.
Validate WebSphere 7 Deployment Manager Parameters-Profile Name	ProdDmgr	required	A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate WebSphere 7 Deployment Manager Parameters-Profile Path	see description	required	Fully qualified path to the profile. The default is: <code>/opt/IBM/WebSphere/AppServer/profiles/ProdDmgr</code>
Validate WebSphere 7 Deployment Manager Parameters-Profile Type	management	required	Because this workflow creates a Deployment Manager profile, the value must be management.
Validate WebSphere 7 Deployment Manager Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the installation and profile creation. The default is: <code>/tmp/dmgr_resp.txt</code>

**Parameters Defined in this Step: Gather Advanced Parameters for WebSphere Cell (continued)**

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Deployment Manager Parameters-Server Type	DEPLOYMENT_MANAGER	required	Specifies the type of management profile. Specify DEPLOYMENT_MANAGER for a Deployment Manager server.
Validate WebSphere 7 Deployment Manager Parameters-Windows Admin Password	no default	required for Windows targets	This is the Administrator user password.
Validate WebSphere 7 Deployment Manager Parameters-Windows Admin User	no default	required for Windows targets	This is the Administrator user.
Web Server Config File	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/conf/httpd.conf</code>
Web Server Name	value of Application Name	required	Used to configure web server instances inside of WebSphere for management operational purposes.

## Parameters for Provision HTTP Server and WebSphere 7 StandAlone Profile

The following tables describe the required and optional input parameters for this workflow.

Most of these parameters are not initially visible in a deployment (see [How to Expose Additional Workflow Parameters on page 22](#)). For most parameters, if you do not specify a value for a parameter, a default value is assigned

For information about which steps use which parameters, see [Steps for Provision IBM HTTP Server and WebSphere 7 StandAlone Profile on page 93](#).

### Parameters Defined in this Step: Gather Parameters for Provision IBM HTTP and WebSphere StandAlone

Parameter Name	Default Value	Required	Description
Application Name	no default	required	Name of the application that will be used through to create the application server that will be created under the profile and modify the clusters.
Cell Name	no default	required	Unique cell name that does not contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
DMA Password	no default	required	Password for the web service API.
DMA URL	no default	required	URL for the web service API.
DMA Username	no default	required	User capable of modifying the managed environment through the discovery web service API.
Node Name	no default	required	Unique node name that cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that the name is unique within that cell.

**Note:** To avoid entering passwords in clear text, see [Using a Policy to Specify Parameter Values on page 192](#).

**Parameters Defined in this Step: Gather Advanced Parameters for Provision IBM HTTP and WebSphere StandAlone**

Parameter Name	Default Value	Required	Description
Install IHS for WebSphere 7-Password	password	required for Windows targets	This is the Windows Administrator user's password.
Install IHS for WebSphere 7-Username	wasadmin	required for Windows targets	This is the Windows Administrator user who will install WebSphere 7.
Install WebSphere 7 Create Profile-Password	password	required for Windows targets	This is the WebSphere 7 Administrator user's password.
Install WebSphere 7 Create Profile-Username	wasadmin	required for Windows targets	This is the WebSphere 7 Administrator user.
Instance	no default	optional	Used internally by the workflow.  <b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.
Node Name	no default	required	Used to configure an unmanaged node inside of WebSphere for management operational purposes.
Validate IHS 7 Parameters-Admin Auth Password	password	optional	The password used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-) or contain a space( ).
Validate IHS 7 Parameters-Admin Auth Password Confirm	wasadmin	optional	Confirms the Admin Auth Password.

**Parameters Defined in this Step: Gather Advanced Parameters for Provision IBM HTTP and WebSphere StandAlone (continued)**

Parameter Name	Default Value	Required	Description
Validate IHS 7 Parameters-Admin Auth User	wasadmin	optional	The user ID used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-), a period(.), or a space( ) and cannot contain any of the following characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate IHS 7 Parameters-Admin Port	8008	required	The port on which the HTTP administration web server will run. This is usually 8008.
Validate IHS 7 Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: /opt/install/C1G36ML.tar.gz
Validate IHS 7 Parameters-Create Admin Auth	true	required	Set this to true to create a user ID and password to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. If this parameter is set to true, the following parameters must have values: Admin Auth Password, Admin Auth Password Confirm, and Admin Auth User.
Validate IHS 7 Parameters-Create Admin User Group	true	required	Set to true to create a user ID and group used to set up the IBM HTTP Administration Server on Linux and UNIX operating systems.
Validate IHS 7 Parameters-Extract Dir	/tmp/	required	Fully qualified path where the compressed software will be extracted on the target machine.
Validate IHS 7 Parameters-Http Port	80	required	The port on which the web server will listen. Usually, this is set to 80.

**Parameters Defined in this Step: Gather Advanced Parameters for Provision IBM HTTP and WebSphere StandAlone (continued)**

Parameter Name	Default Value	Required	Description
Validate IHS 7 Parameters-Install Location	see description	required	Fully qualified path where IBM HTTP Server will be installed. The default is: <code>/opt/IBM/HTTPServer</code>
Validate IHS 7 Parameters-Install Plugin	true	required	Determines whether or not the WebSphere Application Server plug-in is installed. Valid values are true or false.
Validate IHS 7 Parameters-License Acceptance	true	required	Acknowledges that the end-user agrees to the IBM International Program License Agreement.
Validate IHS 7 Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file is used to drive the installation. The default is: <code>/tmp/ih7_resp.txt</code>
Validate IHS 7 Parameters-Run Admin Setup	true	required	Enables the install process to grant the Set Up Admin User write access to the necessary IBM HTTP Server and WebSphere Application Server plug-in configuration files. Valid options are true or false.
Validate IHS 7 Parameters-Set Up Admin Group	ih7admin	optional	Group name used to set up the IBM HTTP administration server on Linux and UNIX operating systems. This parameter must have a value if Create Admin User Group is set to true.
Validate IHS 7 Parameters-Set Up Admin User	ih7admin	optional	User ID used to set up the IBM HTTP administration server on Linux and UNIX operating systems. If Create Admin User Group is set to true, this parameter must have a value.

**Parameters Defined in this Step: Gather Advanced Parameters for Provision IBM HTTP and WebSphere StandAlone (continued)**

Parameter Name	Default Value	Required	Description
Validate IHS 7 Parameters-WebSphere Hostname	Server.Name	optional	Host name of the WebSphere Application Server machine. This parameter is required if Install Plugin is set to true. No spaces are allowed in the host name.
Validate WebSphere 7 Stand Alone Parameters-Admin Password	password	optional	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate WebSphere 7 Stand Alone Parameters-Admin User	wasadmin	optional	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters / \ * , ; ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate WebSphere 7 Stand Alone Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: <code>/opt/install/C1G35ML.tar.gz</code>
Validate WebSphere 7 Stand Alone Parameters-Enable Security	true	required	Enables administrative security. Must be set to either true or false. If Enable Security is true, the Admin User and Admin Password parameters must have values
Validate WebSphere 7 Stand Alone Parameters-Extract Dir	/tmp/	required	Fully qualified path where the compressed software will be extracted on the target machine

**Parameters Defined in this Step: Gather Advanced Parameters for Provision IBM HTTP and WebSphere StandAlone (continued)**

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Stand Alone Parameters-Install Location	see description	required	Fully qualified path where WebSphere Application Server will be installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>
Validate WebSphere 7 Stand Alone Parameters-License Acceptance	true	required	Acknowledges that the end user agrees to the IBM International Program License Agreement.
Validate WebSphere 7 Stand Alone Parameters-Profile Path	value of current_node_name	required	Fully qualified path to the profile. For example: <code>/opt/IBM/WebSphere/AppServer/profiles/AppServer1.</code>
Validate WebSphere 7 Stand Alone Parameters-Profile Type	standAlone	required	Because this workflow creates a stand-alone profile, the value must be standAlone.
Validate WebSphere 7 Stand Alone Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the installation and profile creation. The default is: <code>/tmp/standalone_resp.txt</code>
Validate WebSphere 7 Stand Alone Parameters-Server Name	server1	required	Name of the application server that will be created under the profile.



**Note:** To avoid entering passwords in clear text, see [Using a Policy to Specify Parameter Values on page 192](#).

# Chapter 5

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## Step Information

The following topics provide detailed information about the steps used by the WebSphere 7 provisioning workflows in this solution pack:

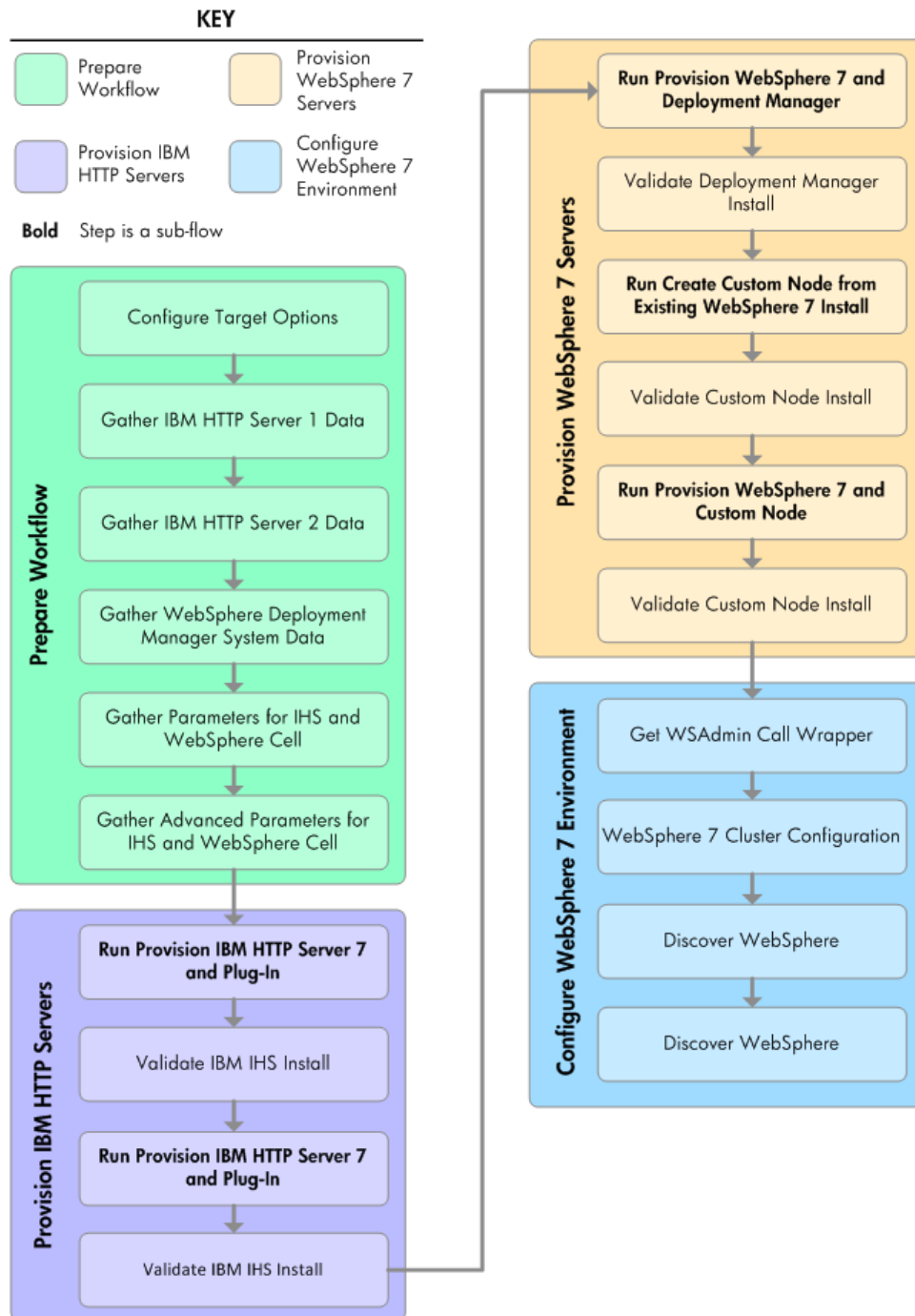
- [Steps for Provision IBM HTTP Server and WebSphere 7 Two Node Cell on next page](#)
- [Steps for Add WebSphere 7 Node to Existing Cell on page 92](#)
- [Steps for Provision IBM HTTP Server and WebSphere 7 StandAlone Profile on page 93](#)

The following topic provide detailed information about all the steps used by the WebSphere 7 provisioning workflows in this solution pack:

[All WebSphere 7 Provisioning Steps on page 94](#)

## Steps for Provision IBM HTTP Server and WebSphere 7 Two Node Cell

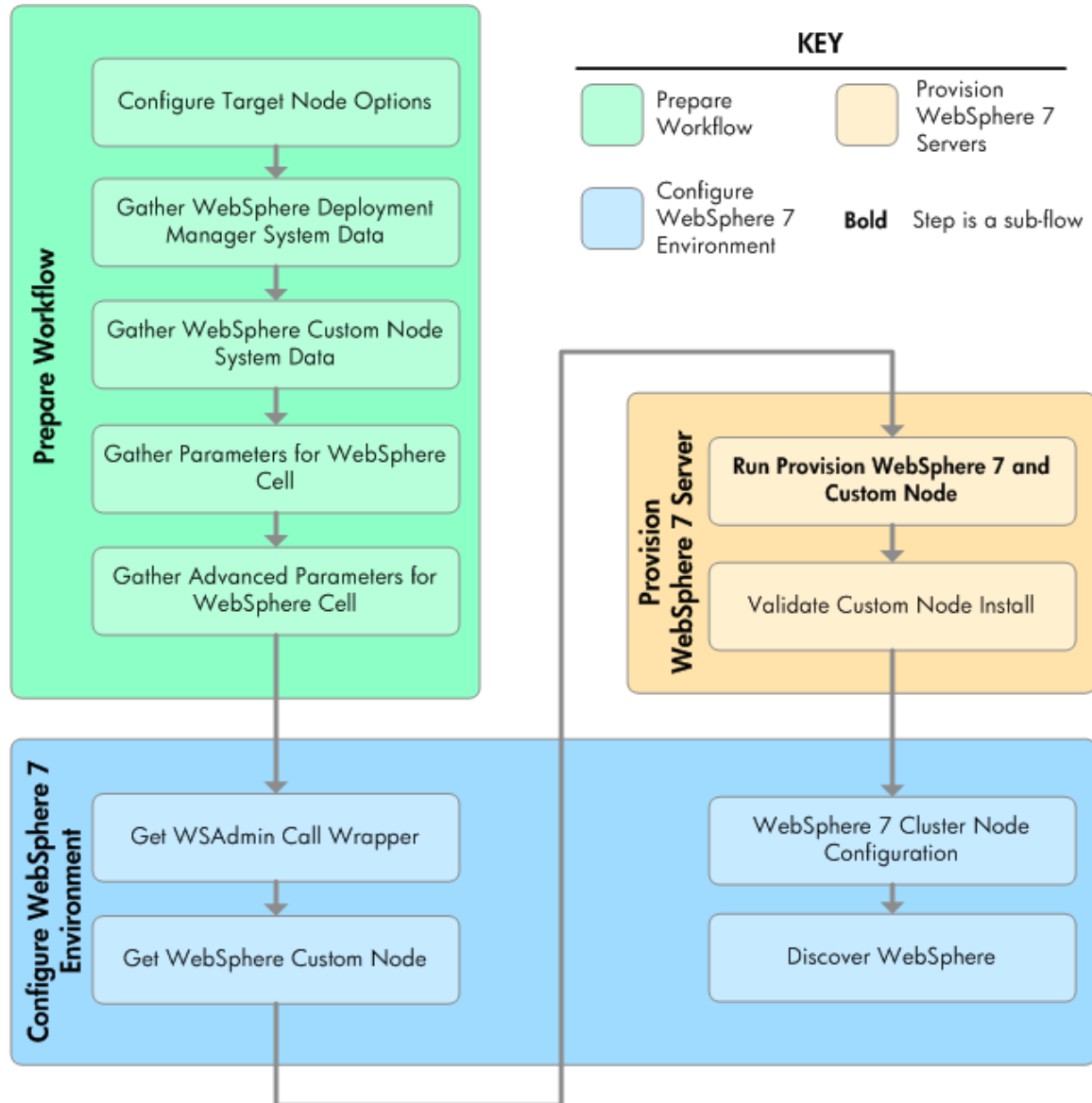
This workflow includes the following steps. Each step must complete successfully before the next step can start. If a step fails, the workflow reports a failure, and all subsequent steps are skipped.



For parameter descriptions and defaults, see [Parameters for Provision IBM HTTP Server and WebSphere 7 Two Node Cell](#) on page 57.

## Steps for Add WebSphere 7 Node to Existing Cell

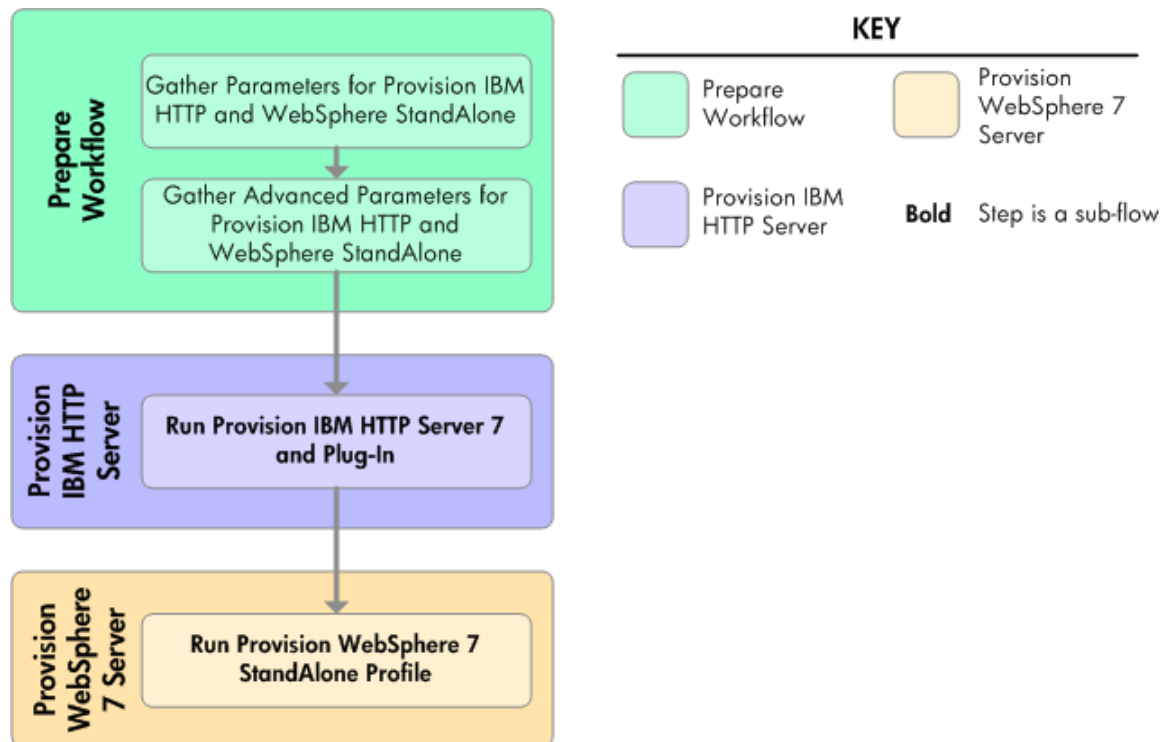
The Add WebSphere 7 Node to Existing Cell workflow includes the following steps. Each step must complete successfully before the next step can start. If a step fails, the workflow reports a failure, and all subsequent steps are skipped.



For parameter descriptions and defaults, see [Parameters for Add WebSphere 7 Node to Existing Cell](#) on page 70.

## Steps for Provision IBM HTTP Server and WebSphere 7 StandAlone Profile

The Provision HTTP Server and WebSphere 7 StandAlone Profile workflow 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.



For parameter descriptions and defaults, see [Parameters for Provision HTTP Server and WebSphere 7 StandAlone Profile on page 83](#).

## All WebSphere 7 Provisioning Steps

The following topics provide detailed information about the steps used by the WebSphere 7 provisioning workflows in this solution pack:

### Prepare Workflow Steps:

Step	Description	Workflows that Use this Step
<a href="#">Configure Target Node Options on page 149</a>	Prepares the target machine parameters needed to provision WebSphere Application Server version 7.	<a href="#">Add WebSphere 7 Node to Existing Cell on page 35</a>
<a href="#">Configure Target Options on page 98</a>	Prepares the target machine parameters needed to provision both IBM HTTP Server and WebSphere Application Server version 7.	<a href="#">Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23</a>
<a href="#">Gather Advanced Parameters for IHS and WebSphere Cell on page 104</a>	Prepares the advanced parameters needed to provision and configure IBM HTTP Server and WebSphere Application Server version 7.	<a href="#">Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23</a>
<a href="#">Gather Advanced Parameters for Provision IBM HTTP and WebSphere StandAlone on page 177</a>	Prepares the advanced parameters needed to provision and configure IBM HTTP Server and WebSphere Application Server version 7.	<a href="#">Provision IBM HTTP Server and WebSphere 7 StandAlone Profile on page 46</a>
<a href="#">Gather Advanced Parameters for WebSphere Cell on page 152</a>	Prepares the advanced parameters needed to provision and configure IBM WebSphere Application Server version 7.	<a href="#">Add WebSphere 7 Node to Existing Cell on page 35</a>
<a href="#">Gather IBM HTTP Server 1 Data on page 99</a>	Retrieves the host name of the specified IBM HTTP Server 1 target machine in the HP DMA environment.	<a href="#">Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23</a>
<a href="#">Gather IBM HTTP Server 2 Data on page 100</a>	Retrieves the host name of the specified IBM HTTP Server 2 target machine in the HP DMA environment.	<a href="#">Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23</a>
<a href="#">Gather Parameters for IHS and WebSphere Cell on page 102</a>	Prepares the parameters needed to provision IBM HTTP Server and WebSphere Application Server version 7.	<a href="#">Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23</a>

Step	Description	Workflows that Use this Step
<a href="#">Gather Parameters for Provision IBM HTTP and WebSphere StandAlone on page 175</a>	Prepares the parameters needed to provision IBM HTTP Server and WebSphere Application Server version 7.	<a href="#">Provision IBM HTTP Server and WebSphere 7 StandAlone Profile on page 46</a>
<a href="#">Gather Parameters for WebSphere Cell on page 151</a>	Prepares the parameters needed to provision WebSphere Application Server version 7.	<a href="#">Add WebSphere 7 Node to Existing Cell on page 35</a>
<a href="#">Gather WebSphere Custom Node System Data on page 150</a>	Retrieves the host name of the specified IBM HTTP Server target machine in the HP DMA environment.	<a href="#">Add WebSphere 7 Node to Existing Cell on page 35</a>
<a href="#">Gather WebSphere Deployment Manager System Data on page 101</a>	Retrieves the host name of the specified IBM HTTP Deployment Manager target machine in the HP DMA environment.	<ul style="list-style-type: none"> <li>• <a href="#">Add WebSphere 7 Node to Existing Cell on page 35</a></li> <li>• <a href="#">Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23</a></li> </ul>

**Provision IBM HTTP Servers Steps:**

Step	Description	Workflows that Use this Step
<a href="#">Run Provision IBM HTTP Server 7 and Plug-in on page 125</a>	Calls the Provision IBM HTTP Server 7 and Plug-in workflow via the HP DMA API.	<ul style="list-style-type: none"> <li>• <a href="#">Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23</a></li> <li>• <a href="#">Provision IBM HTTP Server and WebSphere 7 StandAlone Profile on page 46</a></li> </ul>
<a href="#">Validate IBM IHS install on page 129</a>	Validates that the provisioning of IBM HTTP Server and plug-in were successful for the IBM HTTP server.	<a href="#">Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23</a>

**Provision WebSphere 7 Servers Steps:**

Step	Description	Workflows that Use this Step
<a href="#">Run Create Custom Node from Existing WebSphere 7 Install on page 135</a>	Calls the Create Custom Node From Existing WebSphere 7 workflow via the HP DMA API to provision an IBM WebSphere 7 Application server.	<a href="#">Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23</a>
<a href="#">Run Provision WebSphere 7 and Custom Node on page 139</a>	Calls the Provision WebSphere 7 and Custom Node workflow via the HP DMA API to provision an IBM WebSphere 7 Application server.	<ul style="list-style-type: none"> <li>• <a href="#">Add WebSphere 7 Node to Existing Cell on page 35</a></li> <li>• <a href="#">Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23</a></li> </ul>
<a href="#">Run Provision WebSphere 7 and Deployment Manager on page 130</a>	Calls the Provision WebSphere 7 and Deployment Manager workflow via the HP DMA API to provision an IBM WebSphere 7 Application server with Deployment Manager.	<a href="#">Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23</a>
<a href="#">Run Provision WebSphere 7 StandAlone Profile on page 187</a>	Calls the Provision WebSphere 7 StandAlone Profile via the HP DMA API.	<a href="#">Provision IBM HTTP Server and WebSphere 7 StandAlone Profile on page 46</a>
<a href="#">Validate Custom Node Install on page 138</a>	Validates that the creation and federation of the custom node were successful for the IBM WebSphere 7 Application server.	<ul style="list-style-type: none"> <li>• <a href="#">Add WebSphere 7 Node to Existing Cell on page 35</a></li> <li>• <a href="#">Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23</a></li> </ul>
<a href="#">Validate Deployment Manager Install on page 134</a>	Validates that the provisioning of IBM WebSphere Deployment Manager was successful for the IBM WebSphere 7 Application server.	<a href="#">Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23</a>



**Configure WebSphere 7 Environment Steps:**

Step	Description	Workflows that Use this Step
<a href="#">Discover WebSphere on page 148</a>	Audits the server's physical environment looking for WebSphere cells, clusters, and managed servers.	<ul style="list-style-type: none"> <li>• <a href="#">Add WebSphere 7 Node to Existing Cell on page 35</a></li> <li>• <a href="#">Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23</a></li> </ul>
<a href="#">Get WebSphere Custom Node on page 173</a>	Calls WebSphere APIs to get node information.	<a href="#">Add WebSphere 7 Node to Existing Cell on page 35</a>
<a href="#">Get WSAdmin Call Wrapper on page 143</a>	Creates the necessary call wrapper to call wsadmin to execute certain operations within the specified WebSphere environment.	<ul style="list-style-type: none"> <li>• <a href="#">Add WebSphere 7 Node to Existing Cell on page 35</a></li> <li>• <a href="#">Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23</a></li> </ul>
<a href="#">WebSphere 7 Cluster Configuration on page 145</a>	Creates the cluster and cluster members for the specified WebSphere environment as well as replication domains, heap sizes, garbage collection policy, unmanaged nodes and web server instances.	<a href="#">Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23</a>
<a href="#">WebSphere 7 Cluster Node Configuration on page 174</a>	Creates the cluster and cluster members for the specified WebSphere environment. Creates the replication domains, heap sizes, garbage collection policy, unmanaged nodes and web server instances.	<a href="#">Add WebSphere 7 Node to Existing Cell on page 35</a>

## Configure Target Options

### Purpose

This step enables you to specify the target machines where IBM HTTP Server and WebSphere 7 will be provisioned in a two-node cell configuration. These targets are specified at run-time. They are not specified in the deployment.

### Input Parameters

Parameter Name	Default Value	Required	Description
IBM HTTP Server System 1	no default	required	First target machine that will be (or was) provisioned with the IBM HTTP Server software.
IBM HTTP Server System 2	no default	required	Second target machine that will be (or was) provisioned with the IBM HTTP Server software.
Provision WebSphere 7 and Custom Node System	no default	required	Target machine that will be provisioned with IBM WebSphere software and a custom node profile.
WebSphere Deployment Manager System	no default	required	Target machine that will be provisioned with IBM WebSphere software, Deployment Manager, and a custom node profile.

### Output Parameters

Parameter Name	Description
IBM HTTP Server System 1	First target machine that will be (or was) provisioned with the IBM HTTP Server software.
IBM HTTP Server System 2	Second target machine that will be (or was) provisioned with the IBM HTTP Server software.
Provision WebSphere 7 and Custom Node System	Target machine that will be provisioned with IBM WebSphere software and a custom node profile.
WebSphere Deployment Manager System	Target machine that will be provisioned with IBM WebSphere software, Deployment Manager, and a custom node profile.

### Return Codes

0 = No errors occurred during the execution of this step.

1 = One or more errors occurred.

### Used By Workflows

[Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)

## Gather IBM HTTP Server 1 Data

### Purpose

This step retrieves the host name of the specified target machine in the HP DMAenvironment.

### Input Parameters

Parameter Name	Default Value	Required	Description
IBM HTTP Server System 1	no default	required	First target machine that will be (or was) provisioned with the IBM HTTP Server software.

### Output Parameters

Parameter Name	Description
hostname	Host name of the first target machine that will be provisioned with the IBM HTTP Server software. The Server.Name metadata field for this target contains the host name.

### Return Codes

0 = No errors occurred during the execution of this step.

1 = One or more errors occurred.

### Used By Workflows

[Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)

## Gather IBM HTTP Server 2 Data

### Purpose

This step retrieves the host name of the specified target machine in the HP DMAenvironment.

### Input Parameters

Parameter Name	Default Value	Required	Description
IBM HTTP Server System 2	no default	required	Second target machine that will be (or was) provisioned with the IBM HTTP Server software.

### Output Parameters

Parameter Name	Description
hostname	Host name of the second target machine that will be provisioned with the IBM HTTP Server software. The Server.Name metadata field for this target contains the host name.

### Return Codes

0 = No errors occurred during the execution of this step.

1 = One or more errors occurred.

### Used By Workflows

[Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)

## Gather WebSphere Deployment Manager System Data

### Purpose

This step retrieves the host name of the specified target machine in the HP DMAenvironment.

### Input Parameters

Parameter Name	Default Value	Required	Description
WebSphere Deployment Manager System Data	no default	required	Target machine that will be provisioned with IBM WebSphere software, deployment manager, and a custom node profile.

### Output Parameters

Parameter Name	Description
hostname	Host name of the target machine that will be provisioned with IBM WebSphere software, deployment manager, and a custom node profile. The Server.Name metadata field for this target contains the host name.

### Return Codes

0 = No errors occurred during the execution of this step.

1 = One or more errors occurred.

### Used By Workflows

- [Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)
- [Add WebSphere 7 Node to Existing Cell on page 35](#)

## Gather Parameters for IHS and WebSphere Cell

### Purpose

This step prepares the workflow to provision IBM HTTP Server and WebSphere 7.

### Input Parameters

Parameter Name	Default Value	Required	Description
All - DMA Password	no default	required	Password for the HP DMA web services API.
All - DMA URL	see description	required	URL for the HP DMA web services API. The default is: <code>/api/sop/running</code>
All - DMA Username	no default	required	User who is capable of modifying the managed environment through the HP DMA Discovery web services API.
Application Name	no default	required	Name of the application that will be used through to create the application servers and clusters that will be created under the profile.
WebSphere Deployment Manager - Cell Name	no default	required	Unique cell name that does not contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.

### Output Parameters

Parameter Name	Description
Blank	Optional: Used to hide unused parameters in later steps.
Call Wrapper	<p>Command that will execute this step as a specific user. Different types of steps use different call wrappers.</p> <p>For UNIX targets the default is: <code>/opt/opsware/dma/jython.sh</code></p> <p>For Windows targets the default is: <code>jython</code> running as Administrator</p> <p><b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.</p>
Instance	<p>Used internally by the workflow.</p> <p><b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.</p>

Parameter Name	Description
Validate IHS 7 Parameters-Webserver Definition	Name of the application that will be used through to create application servers and clusters that will be created under the profile.  A web server definition allows for web server administration through the WebSphere administrative console. This parameter must be set if the Install Plugin parameter is set to true. An example would be webserver1. No spaces are allowed in the Webserver Definition name.
Web Service Password	Password for the HP DMA web services API.
Web Service URL	URL for the HP DMA web services API.
Web Service User	User who is capable of modifying the managed environment through the HP DMA Discovery web services API.
WebSphere Deployment Manager - Cell Name	Unique cell name that does not contain any of the following special characters / \ * , : ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.

**Return Codes**

0 = No errors occurred during the execution of this step.

1 = One or more errors occurred.

**Used By Workflows**

[Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)

## Gather Advanced Parameters for IHS and WebSphere Cell

### Purpose

This step prepares the advanced parameters required to provision and configure IBM HTTP Server and WebSphere 7.

Most of these parameters are not initially visible in a deployment (see [How to Expose Additional Workflow Parameters on page 22](#)). For most parameters, if you do not specify a value for a parameter, a default value is assigned

### Input Parameters

Parameter Name	Default Value	Required	Description
Application Name	no default	required	Name of the application that will be used through to create the application servers and clusters that will be created under the profile.
Custom Node Parameters-Cell Name 1	ProdNode01	required	Unique cell name that does not contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
Custom Node Parameters-Cell Name 2	ProdNode02	required	Unique cell name that does not contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
HTTP Access Log	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/ logs/access_log</code>
HTTP Error Log	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/ logs/error_log</code>
Install IHS for WebSphere 7-Password	password	required for Windows targets	This is the Windows Administrator user's password.



Parameter Name	Default Value	Required	Description
Install IHS for WebSphere 7-Username	wasadmin	required for Windows targets	This is the Windows Administrator user who will install WebSphere 7.
Install WebSphere 7 Create Profile-Password	password	required for Windows targets	This is the WebSphere 7 Administrator user's password.
Install WebSphere 7 Create Profile-Username	wasadmin	required for Windows targets	This is the WebSphere 7 Administrator user.
Instance	no default	optional	Used internally by the workflow.  <b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.
Node Name	no default	required	Used to configure an unmanaged node inside of WebSphere for management operational purposes.
Node OS	linux	required	Used to configure an unmanaged node inside of WebSphere for management operational purposes.
Plugin Root	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/Plugins</code>
Validate Existing Install Custom Node Parameters-Dmgr Admin Password	password	optional	Administrative user password for the Deployment Manager. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).

Parameter Name	Default Value	Required	Description
Validate Existing Install Custom Node Parameters-Dmgr Admin User	wasadmin	required	Deployment Manager administrative user. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate Existing Install Custom Node Parameters-Dmgr HostName	no default	required	Host name or IP address of the machine where the Deployment Manager is running. Specify this parameter and the Dmgr Port parameter to federate the new custom node as it is created.
Validate Existing Install Custom Node Parameters-Dmgr Port	8879	required	The SOAP port on which the Deployment Manager is listening. Specify this parameter and the Dmgr Host Name parameter to federate the new custom node as it is created.
Validate Existing Install Custom Node Parameters-Enable Security	true	required	Enables administrative security on the Deployment Manager. Must be set to either true or false. If Enable Security is true, the Dmgr Admin User and Dmgr Admin Password parameters must have values.
Validate Existing Install Custom Node Parameters-Install Location	see description	required	Fully qualified path where WebSphere Application Server will be installed. The default is: /opt/IBM/WebSphere/AppServer

Parameter Name	Default Value	Required	Description
Validate Existing Install Custom Node Parameters- Node Name	ProdNode01	required	Unique node name that cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that the name is unique within that cell.
Validate Existing Install Custom Node Parameters- Profile Name	ProdNode01	required	A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate Existing Install Custom Node Parameters- Profile Path	see description	required	Fully qualified path to the profile. The default is: <code>/opt/IBM/WebSphere/AppServer/ profiles/ProdNode01</code>
Validate Existing Install Custom Node Parameters- Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the profile creation. The default is: <code>/tmp/custom_node_resp.txt</code>
Validate IHS 7 Parameters- Admin Auth Password	password	optional	The password used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-) or contain a space( ).
Validate IHS 7 Parameters- Admin Auth Password Confirm	password	optional	Confirms the Admin Auth Password.

Parameter Name	Default Value	Required	Description
Validate IHS 7 Parameters-Admin Auth User	wasadmin	optional	The user ID used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-), a period(.), or a space( ) and cannot contain any of the following characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate IHS 7 Parameters-Admin Port	8008	required	The port on which the HTTP administration web server will run. This is usually 8008.
Validate IHS 7 Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: /opt/install/C1G36ML.tar.gz
Validate IHS 7 Parameters-Create Admin Auth	true	required	Set this to true to create a user ID and password to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. If this parameter is set to true, the following parameters must have values: Admin Auth Password, Admin Auth Password Confirm, and Admin Auth User.
Validate IHS 7 Parameters-Create Admin User Group	true	required	Set to true to create a user ID and group used to set up the IBM HTTP Administration Server on Linux and UNIX operating systems.
Validate IHS 7 Parameters-Extract Dir	/tmp/	required	Fully qualified path where the compressed software will be extracted on the target machine.
Validate IHS 7 Parameters-Http Port	80	required	The port on which the web server will listen. Usually, this is set to 80.

Parameter Name	Default Value	Required	Description
Validate IHS 7 Parameters-Install Location	see description	required	Fully qualified path where IBM HTTP Server will be installed. The default is: <code>/opt/IBM/HTTPServer</code>
Validate IHS 7 Parameters-Install Plugin	true	required	Determines whether or not the WebSphere Application Server plug-in is installed. Valid values are true or false.
Validate IHS 7 Parameters-License Acceptance	true	required	Acknowledges that the end-user agrees to the IBM International Program License Agreement.
Validate IHS 7 Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file is used to drive the installation. The default is: <code>/tmp/ihs7_resp.txt</code>
Validate IHS 7 Parameters-Run Admin Setup	true	required	Enables the install process to grant the Set Up Admin User write access to the necessary IBM HTTP Server and WebSphere Application Server plug-in configuration files. Valid options are true or false.
Validate IHS 7 Parameters-Set Up Admin Group	ihsadmin	optional	Group name used to set up the IBM HTTP administration server on Linux and UNIX operating systems. This parameter must have a value if Create Admin User Group is set to true.
Validate IHS 7 Parameters-Set Up Admin User	ihsadmin	optional	User ID used to set up the IBM HTTP administration server on Linux and UNIX operating systems. If Create Admin User Group is set to true, this parameter must have a value.
Validate IHS 7 Parameters-WebSphere Hostname	Server.Name	optional	Host name of the WebSphere Application Server machine. This parameter is required if Install Plugin is set to true. No spaces are allowed in the host name.

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Custom Node Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: <code>/opt/install/C1G35ML.tar.gz</code>
Validate WebSphere 7 Custom Node Parameters-Dmgr Admin Password	password	optional	Administrative user password for the Deployment Manager. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate WebSphere 7 Custom Node Parameters-Dmgr Admin User	wasadmin	optional	Deployment Manager administrative user. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> .
Validate WebSphere 7 Custom Node Parameters-Dmgr HostName	no default	optional	Host name or IP address of the machine where the Deployment Manager is running. Specify this parameter and the Dmgr Port parameter to federate the new custom node as it is created.
Validate WebSphere 7 Custom Node Parameters-Dmgr Port	8879	optional	The SOAP port on which the Deployment Manager is listening. Specify this parameter and the Dmgr Host Name parameter to federate the new custom node as it is created.
Validate WebSphere 7 Custom Node Parameters-Enable Security	true	required	Enables administrative security on the Deployment Manager. Must be set to either true or false. If Enable Security is true, the Dmgr Admin User and Dmgr Admin Password parameters must have values.

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Custom Node Parameters-Extract Dir	/tmp/	required	Fully qualified path where the compressed software will be extracted on the target machine.
Validate WebSphere 7 Custom Node Parameters-Federate Later	false	optional	If false, the new custom node will be federated during profile creation. If true, you must federate it later by using the <code>addNode</code> command.
Validate WebSphere 7 Custom Node Parameters-Install Location	see description	required	Fully qualified path where WebSphere Application Server will be (or was) installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>
Validate WebSphere 7 Custom Node Parameters-License Acceptance	true	required	Acknowledges that the end-user agrees to the IBM International Program License Agreement.
Validate WebSphere 7 Custom Node Parameters-Node Name	ProdNode02	required	Unique node name that cannot contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that the name is unique within that cell.
Validate WebSphere 7 Custom Node Parameters-Profile Name	ProdNode02	required	A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> .

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Custom Node Parameters-Profile Path	see description	required	Fully qualified path to the profile. The default is: <code>/opt/IBM/WebSphere/AppServer/profiles/ProdNode03</code>
Validate WebSphere 7 Custom Node Parameters-Profile Type	custom	required	Because this workflow creates a custom node profile, the value must be custom.
Validate WebSphere 7 Custom Node Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the installation and profile creation. The default is: <code>/tmp/custom_node_resp.txt</code>
Validate WebSphere 7 Deployment Manager Parameters-Admin Password	password	optional	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate WebSphere 7 Deployment Manager Parameters-Admin User	wasadmin	optional	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> .
Validate WebSphere 7 Deployment Manager Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: <code>/opt/install/C1G35ML.tar.gz</code>



Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Deployment Manager Parameters-Enable Security	true	required	Enables administrative security. Must be set to either true or false. If Enable Security is true, the Admin User and Admin Password parameters must have values.
Validate WebSphere 7 Deployment Manager Parameters-Extract Dir	see description	required	Fully qualified path where the compressed software will be extracted on the target machine. The default is: <code>/opt/install</code>
Validate WebSphere 7 Deployment Manager Parameters-Install Location	see description	required	Fully qualified path where WebSphere Application Server will be (or was) installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>
Validate WebSphere 7 Deployment Manager Parameters-License Acceptance	true	required	Acknowledges that the end user agrees to the IBM International Program License Agreement.
Validate WebSphere 7 Deployment Manager Parameters-Node Name	ProdManager	required	Unique node name that cannot contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that the name is unique within that cell.

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Deployment Manager Parameters-Profile Name	ProdDmgr	required	A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate WebSphere 7 Deployment Manager Parameters-Profile Path	see description	required	Fully qualified path to the profile. The default is: /opt/IBM/WebSphere/AppServer/profiles/ProdDmgr
Validate WebSphere 7 Deployment Manager Parameters-Profile Type	management	required	Because this workflow creates a Deployment Manager profile, the value must be management.
Validate WebSphere 7 Deployment Manager Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the installation and profile creation. The default is: /tmp/dmgr_resp.txt
Validate WebSphere 7 Deployment Manager Parameters-Server Type	DEPLOYMENT_MANAGER	required	Specifies the type of management profile. Specify DEPLOYMENT_MANAGER for a Deployment Manager server.

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Deployment Manager Parameters- Windows Admin Password	no default	required for Windows targets	This is the Administrator user password.
Validate WebSphere 7 Deployment Manager Parameters- Windows Admin User	no default	required for Windows targets	This is the Administrator user.
Web Server Config File	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/conf/httpd.conf</code>
Web Server Name	value of Application Name	required	Used to configure web server instances inside of WebSphere for management operational purposes.

**Output Parameters**

Parameter Name	Description
HTTP Access Log	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/logs/access_log</code>
HTTP Error Log	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/logs/error_log</code>
Install IHS for WebSphere 7- Password	This is the Windows Administrator user's password.

Parameter Name	Description
Install IHS for WebSphere 7-Username	This is the Windows Administrator user who will install WebSphere 7.
Install WebSphere 7 Create Profile-Password	This is the WebSphere 7 Administrator user's password.
Install WebSphere 7 Create Profile-Username	This is the WebSphere 7 Administrator user.
Instance	Used internally by the workflow.  <b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.
Node OS	Used to configure an unmanaged node inside of WebSphere for management operational purposes.
Plugin Root	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/Plugins</code>
Validate Existing Install Custom Node Parameters-Cell Name	Unique cell name that does not contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
Validate Existing Install Custom Node Parameters-Dmgr Admin Password	Administrative user password for the Deployment Manager. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate Existing Install Custom Node Parameters-Dmgr Admin User	Deployment Manager administrative user. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> .

Parameter Name	Description
Validate Existing Install Custom Node Parameters- Dmgr HostName	Host name or IP address of the machine where the Deployment Manager is running. Specify this parameter and the Dmgr Port parameter to federate the new custom node as it is created.
Validate Existing Install Custom Node Parameters- Dmgr Port	The SOAP port on which the Deployment Manager is listening. Specify this parameter and the Dmgr Host Name parameter to federate the new custom node as it is created.
Validate Existing Install Custom Node Parameters- Enable Security	Enables administrative security on the Deployment Manager. Must be set to either true or false. If Enable Security is true, the Dmgr Admin User and Dmgr Admin Password parameters must have values.
Validate Existing Install Custom Node Parameters- Install Location	Fully qualified path where WebSphere Application Server will be installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>
Validate Existing Install Custom Node Parameters- Node Name	Unique node name that cannot contain any of the following special characters <code>/\*, ;, =, +, ?,  , &lt;, &gt;, &amp;, %, ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that the name is unique within that cell.
Validate Existing Install Custom Node Parameters- Profile Name	A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters <code>/\*, ;, =, +, ?,  , &lt;, &gt;, &amp;, %, ' " [ ] &gt; # \$ ^ { }</code> .
Validate Existing Install Custom Node Parameters- Profile Path	Fully qualified path to the profile. The default is: <code>/opt/IBM/WebSphere/AppServer/ profiles/ProdNode01</code>

Parameter Name	Description
Validate Existing Install Custom Node Parameters-Response File	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the profile creation. The default is: <code>/tmp/custom_node_resp.txt</code>
Validate IHS 7 Parameters-Admin Auth Password	The password used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-) or contain a space( ).
Validate IHS 7 Parameters-Admin Auth Password Confirm	Confirms the Admin Auth Password.
Validate IHS 7 Parameters-Admin Auth User	The user ID used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-), a period(.), or a space( ) and cannot contain any of the following characters <code>/\*, ;, =, +, ?,  , &lt;, &gt;, &amp;, %, ' " [ ] &gt; # \$ ^ { }</code> .
Validate IHS 7 Parameters-Admin Port	The port on which the HTTP administration web server will run. This is usually 8008.
Validate IHS 7 Parameters-Binary Archive	Fully qualified path to the compressed software package on the target machine. The default is: <code>/opt/install/C1G36ML.tar.gz</code>
Validate IHS 7 Parameters-Create Admin Auth	Set this to true to create a user ID and password to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. If this parameter is set to true, the following parameters must have values: Admin Auth Password, Admin Auth Password Confirm, and Admin Auth User.
Validate IHS 7 Parameters-Create Admin User Group	Set to true to create a user ID and group used to set up the IBM HTTP Administration Server on Linux and UNIX operating systems.
Validate IHS 7 Parameters-Extract Dir	Fully qualified path where the compressed software will be extracted on the target machine.

Parameter Name	Description
Validate IHS 7 Parameters-Http Port	The port on which the web server will listen. Usually, this is set to 80.
Validate IHS 7 Parameters-Install Location	Fully qualified path where IBM HTTP Server will be installed. The default is: <code>/opt/IBM/HTTPServer</code>
Validate IHS 7 Parameters-Install Plugin	Determines whether or not the WebSphere Application Server plug-in is installed. Valid values are true or false.
Validate IHS 7 Parameters-License Acceptance	Acknowledges that the end-user agrees to the IBM International Program License Agreement.
Validate IHS 7 Parameters-Response File	Fully qualified path where the response file that this workflow creates will be located. This file is used to drive the installation. The default is: <code>/tmp/ihs7_resp.txt</code>
Validate IHS 7 Parameters-Run Admin Setup	Enables the install process to grant the Set Up Admin User write access to the necessary IBM HTTP Server and WebSphere Application Server plug-in configuration files. Valid options are true or false.
Validate IHS 7 Parameters-Set Up Admin Group	Group name used to set up the IBM HTTP administration server on Linux and UNIX operating systems. This parameter must have a value if Create Admin User Group is set to true.
Validate IHS 7 Parameters-Set Up Admin User	User ID used to set up the IBM HTTP administration server on Linux and UNIX operating systems. If Create Admin User Group is set to true, this parameter must have a value.
Validate IHS 7 Parameters-WebSphere Hostname	Host name of the WebSphere Application Server machine. This parameter is required if Install Plugin is set to true. No spaces are allowed in the host name.
Validate WebSphere 7 Custom Node Parameters-Binary Archive	Fully qualified path to the compressed software package on the target machine. The default is: <code>/opt/install/C1G35ML.tar.gz</code>

Parameter Name	Description
Validate WebSphere 7 Custom Node Parameters-Cell Name	Unique cell name that does not contain any of the following special characters / \ * , : ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
Validate WebSphere 7 Custom Node Parameters-Dmgr Admin Password	Administrative user password for the Deployment Manager. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate WebSphere 7 Custom Node Parameters-Dmgr Admin User	Deployment Manager administrative user. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters / \ * , : ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate WebSphere 7 Custom Node Parameters-Dmgr HostName	Host name or IP address of the machine where the Deployment Manager is running. Specify this parameter and the Dmgr Port parameter to federate the new custom node as it is created.
Validate WebSphere 7 Custom Node Parameters-Dmgr Port	The SOAP port on which the Deployment Manager is listening. Specify this parameter and the Dmgr Host Name parameter to federate the new custom node as it is created.
Validate WebSphere 7 Custom Node Parameters-Enable Security	Enables administrative security on the Deployment Manager. Must be set to either true or false. If Enable Security is true, the Dmgr Admin User and Dmgr Admin Password parameters must have values.
Validate WebSphere 7 Custom Node Parameters-Extract Dir	Fully qualified path where the compressed software will be extracted on the target machine.



Parameter Name	Description
Validate WebSphere 7 Custom Node Parameters-Federate Later	If false, the new custom node will be federated during profile creation. If true, you must federate it later by using the <code>addNode</code> command.
Validate WebSphere 7 Custom Node Parameters-Install Location	Fully qualified path where WebSphere Application Server will be (or was) installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>
Validate WebSphere 7 Custom Node Parameters-License Acceptance	Acknowledges that the end-user agrees to the IBM International Program License Agreement.
Validate WebSphere 7 Custom Node Parameters-Node Name	Unique node name that cannot contain any of the following special characters <code>/\*, ;, =, +, ?,  , &lt;, &gt;, &amp;, %, ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that the name is unique within that cell.
Validate WebSphere 7 Custom Node Parameters-Profile Name	A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters <code>/\*, ;, =, +, ?,  , &lt;, &gt;, &amp;, %, ' " [ ] &gt; # \$ ^ { }</code> .
Validate WebSphere 7 Custom Node Parameters-Profile Path	Fully qualified path to the profile. The default is: <code>/opt/IBM/WebSphere/AppServer/ profiles/ProdNode03</code>
Validate WebSphere 7 Custom Node Parameters-Profile Type	Because this workflow creates a custom node profile, the value must be custom.

Parameter Name	Description
Validate WebSphere 7 Custom Node Parameters-Response File	Required: Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the installation and profile creation.
Validate WebSphere 7 Deployment Manager Parameters-Admin Password	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate WebSphere 7 Deployment Manager Parameters-Admin User	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate WebSphere 7 Deployment Manager Parameters-Binary Archive	Fully qualified path to the compressed software package on the target machine. The default is: <code>/opt/install/C1G35ML.tar.gz</code>
Validate WebSphere 7 Deployment Manager Parameters-Enable Security	Enables administrative security. Must be set to either true or false. If Enable Security is true, the Admin User and Admin Password parameters must have values.
Validate WebSphere 7 Deployment Manager Parameters-Extract Dir	Fully qualified path where the compressed software will be extracted on the target machine. The default is: <code>/opt/install</code>

Parameter Name	Description
Validate WebSphere 7 Deployment Manager Parameters-Install Location	Fully qualified path where WebSphere Application Server will be (or was) installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>
Validate WebSphere 7 Deployment Manager Parameters-License Acceptance	Acknowledges that the end user agrees to the IBM International Program License Agreement.
Validate WebSphere 7 Deployment Manager Parameters-Node Name	Unique node name that cannot contain any of the following special characters <code>/\*, ;, =, +, ?,  , &lt;, &gt;, &amp;, %, ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that the name is unique within that cell.
Validate WebSphere 7 Deployment Manager Parameters-Profile Name	A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters <code>/\*, ;, =, +, ?,  , &lt;, &gt;, &amp;, %, ' " [ ] &gt; # \$ ^ { }</code> .
Validate WebSphere 7 Deployment Manager Parameters-Profile Path	Fully qualified path to the profile. The default is: <code>/opt/IBM/WebSphere/AppServer/profiles/ProdDmgr</code>
Validate WebSphere 7 Deployment Manager Parameters-Profile Type	Because this workflow creates a Deployment Manager profile, the value must be management.

Parameter Name	Description
Validate WebSphere 7 Deployment Manager Parameters-Response File	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the installation and profile creation. The default is: <code>/tmp/dmgr_resp.txt</code>
Validate WebSphere 7 Deployment Manager Parameters-Server Type	Specifies the type of management profile. Specify DEPLOYMENT_MANAGER for a Deployment Manager server.
Validate WebSphere 7 Deployment Manager Parameters-Windows Admin Password	This is the Administrator user password.
Validate WebSphere 7 Deployment Manager Parameters-Windows Admin User	This is the Administrator user.
Web Server Config File	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/conf/httpd.conf</code>
Web Server Name	Used to configure web server instances inside of WebSphere for management operational purposes.

**Return Codes**

0 = No errors occurred during the execution of this step.

1 = One or more errors occurred.

**Used By Workflows**

[Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)

## Run Provision IBM HTTP Server 7 and Plug-in

### Purpose

This step installs IBM HTTP Server version 7 and its plug-in. It calls the Provision IBM HTTP Server 7 and Plug-in workflow via the HP DMADMA web services API.

### Input Parameters

Parameter Name	Default Value	Required	Description
Call Wrapper	see description	required	<p>Command that will execute this step as a specific user. Different types of steps use different call wrappers.</p> <p>For UNIX targets the default is:  <code>/opt/opsware/dma/jython.sh</code></p> <p>For Windows targets the default is: <code>jython</code> running as Administrator</p> <p><b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.</p>
Install IHS for WebSphere 7-Password	password	required for Windows targets	This is the Windows Administrator user's password.
Install IHS for WebSphere 7-Username	wasadmin	required for Windows targets	This is the Windows Administrator user who will install WebSphere 7.
Instance	no default	optional	<p>Used internally by the workflow.</p> <p><b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.</p>
Password	no default	required	Password for the HP DMA web services API.
Servers	Server.name	required	Target machine that will be provisioned with IBM WebSphere HTTP software.
URL	no default	required	URL for the HP DMA web services API.

Parameter Name	Default Value	Required	Description
Username	no default	required	User capable of modifying the managed environment through the HP DMA Discovery web services API.
Validate IHS 7 Parameters-Admin Auth Password	password	optional	The password used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-) or contain a space( ).
Validate IHS 7 Parameters-Admin Auth Password Confirm	password	optional	Confirms the Admin Auth Password.
Validate IHS 7 Parameters-Admin Auth User	wasadmin	optional	The user ID used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-), a period(.), or a space( ) and cannot contain any of the following characters / \ * , ; : = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate IHS 7 Parameters-Admin Port	8008	required	The port on which the HTTP administration web server will run. This is usually 8008.
Validate IHS 7 Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: <code>/opt/install/C1G36ML.tar.gz</code>
Validate IHS 7 Parameters-Create Admin Auth	true	required	Set this to true to create a user ID and password to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. If this parameter is set to true, the following parameters must have values: Admin Auth Password, Admin Auth Password Confirm, and Admin Auth User.

Parameter Name	Default Value	Required	Description
Validate IHS 7 Parameters-Create Admin User Group	true	required	Set to true to create a user ID and group used to set up the IBM HTTP Administration Server on Linux and UNIX operating systems.
Validate IHS 7 Parameters-Extract Dir	/tmp/	required	Fully qualified path where the compressed software will be extracted on the target machine.
Validate IHS 7 Parameters-Http Port	80	required	The port on which the web server will listen. Usually, this is set to 80.
Validate IHS 7 Parameters-Install Location	see description	required	Fully qualified path where IBM HTTP Server will be installed. The default is: <code>/opt/IBM/HTTPServer</code>
Validate IHS 7 Parameters-Install Plugin	true	required	Determines whether or not the WebSphere Application Server plug-in is installed. Valid values are true or false.
Validate IHS 7 Parameters-License Acceptance	true	required	Acknowledges that the end-user agrees to the IBM International Program License Agreement.
Validate IHS 7 Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file is used to drive the installation. The default is: <code>/tmp/ih7_resp.txt</code>
Validate IHS 7 Parameters-Run Admin Setup	true	required	Enables the install process to grant the Set Up Admin User write access to the necessary IBM HTTP Server and WebSphere Application Server plug-in configuration files. Valid options are true or false.

Parameter Name	Default Value	Required	Description
Validate IHS 7 Parameters-Set Up Admin Group	ihsadmin	optional	Group name used to set up the IBM HTTP administration server on Linux and UNIX operating systems. This parameter must have a value if Create Admin User Group is set to true.
Validate IHS 7 Parameters-Set Up Admin User	ihsadmin	optional	User ID used to set up the IBM HTTP administration server on Linux and UNIX operating systems. If Create Admin User Group is set to true, this parameter must have a value.
Validate IHS 7 Parameters-WebSphere Hostname	Server.Name	optional	Host name of the WebSphere Application Server machine. This parameter is required if Install Plugin is set to true. No spaces are allowed in the host name.
Validate IHS 7 Parameters-Webserver Definition	no default	required	<p>Name of the application that will be used through to create application servers and clusters that will be created under the profile.</p> <p>A web server definition allows for web server administration through the WebSphere administrative console. This parameter must be set if the Install Plugin parameter is set to true. An example would be webserver1. No spaces are allowed in the Webserver Definition name.</p>

**Output Parameters**

This step has no output parameters.

**Return Codes**

0 = No errors occurred during the execution of this step.

1 = One or more errors occurred.

**Used By Workflows**

[Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)



## Validate IBM IHS install

### Purpose

This step validates that the provisioning of IBM HTTP Server and plug-in were successful on the target machine.

### Input Parameters

Parameter Name	Default Value	Required	Description
IHS 7 Install Location	no default	required	Fully qualified path where IBM HTTP Server was installed. For example: <code>/opt/IBM/HTTPServer</code>

### Output Parameters

This step has no output parameters.

### Return Codes

0 = IBM HTTP Server was successfully provisioned.

1 = IBM HTTP Server was not successfully provisioned.

### Used By Workflows

[Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)

## Run Provision WebSphere 7 and Deployment Manager

### Purpose

This step provisions WebSphere 7 Deployment Manager on the specified target server. It calls the Provision WebSphere 7 and Deployment Manager workflow via the HP DMAApplication programming interface (API).

### Input Parameters

Parameter Name	Default Value	Required	Description
Call Wrapper	see description	required	<p>Command that will execute this step as a specific user. Different types of steps use different call wrappers.</p> <p>For UNIX targets the default is:  <code>/opt/opsware/dma/jython.sh</code></p> <p>For Windows targets the default is: <code>jython</code> running as Administrator</p> <p><b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.</p>
Instance	no default	optional	<p>Used internally by the workflow.</p> <p><b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.</p>
Password	no default	required	Password for the HP DMA web services API.
Servers	Server.name	required	Target machine that will be provisioned with IBM WebSphere HTTP software.
URL	no default	required	URL for the HP DMA web services API.
Username	no default	required	User capable of modifying the managed environment through the HP DMA Discovery web services API.

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Deployment Manager Parameters-Admin Password	password	optional	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate WebSphere 7 Deployment Manager Parameters-Admin User	wasadmin	optional	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters / \ * , ; ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate WebSphere 7 Deployment Manager Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: <code>/opt/install/C1G35ML.tar.gz</code>
Validate WebSphere 7 Deployment Manager Parameters-Cell Name	no default	required	Required: Unique cell name that does not contain any of the following special characters / \ * , ; ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
Validate WebSphere 7 Deployment Manager Parameters-Enable Security	true	required	Enables administrative security. Must be set to either true or false. If Enable Security is true, the Admin User and Admin Password parameters must have values.
Validate WebSphere 7 Deployment Manager Parameters-Extract Dir	see description	required	Fully qualified path where the compressed software will be extracted on the target machine. The default is: <code>/opt/install</code>
Validate WebSphere 7 Deployment Manager Parameters-Install Location	see description	required	Fully qualified path where WebSphere Application Server will be (or was) installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Deployment Manager Parameters-License Acceptance	true	required	Acknowledges that the end user agrees to the IBM International Program License Agreement.
Validate WebSphere 7 Deployment Manager Parameters-Node Name	ProdManager	required	Unique node name that cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that the name is unique within that cell.
Validate WebSphere 7 Deployment Manager Parameters-Profile Name	ProdDmgr	required	A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate WebSphere 7 Deployment Manager Parameters-Profile Path	see description	required	Fully qualified path to the profile. The default is: /opt/IBM/WebSphere/AppServer/profiles/ProdDmgr
Validate WebSphere 7 Deployment Manager Parameters-Profile Type	management	required	Because this workflow creates a Deployment Manager profile, the value must be management.
Validate WebSphere 7 Deployment Manager Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the installation and profile creation. The default is: /tmp/dmgr_resp.txt

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Deployment Manager Parameters-Server Type	DEPLOYMENT_MANAGER	required	Specifies the type of management profile. Specify DEPLOYMENT_MANAGER for a Deployment Manager server.
Validate WebSphere 7 Deployment Manager Parameters-Windows Admin Password	no default	required for Windows targets	This is the Administrator user password.
Validate WebSphere 7 Deployment Manager Parameters-Windows Admin User	no default	required for Windows targets	This is the Administrator user.

**Output Parameters**

This step has no output parameters.

**Return Codes**

0 = No errors occurred during the execution of this step.

1 = One or more errors occurred.

**Used By Workflows**

[Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)

## Validate Deployment Manager Install

### Purpose

This step validates that the provisioning of WebSphere 7 Deployment Manager was successful on the target machine.

### Input Parameters

Parameter Name	Default Value	Required	Description
Deployment Manager Install Location	no default	required	Required: Fully qualified path where WebSphere 7 Application Server was be installed. For example: /opt/IBM/WebSphere/AppServer.

### Output Parameters

This step has no output parameters

### Return Codes

0 = WebSphere 7 Deployment Manager was successfully provisioned.

1 = WebSphere 7 Deployment Manager was not successfully provisioned.

### Used By Workflows

[Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)

## Run Create Custom Node from Existing WebSphere 7 Install

### Purpose

This step creates a custom node in an existing WebSphere 7 cell on the specified target server. It calls the Create Custom Node From Existing WebSphere 7 workflow via the HP DMAApplication programming interface (API).

### Input Parameters

Parameter Name	Default Value	Required	Description
Call Wrapper	see description	required	<p>Command that will execute this step as a specific user. Different types of steps use different call wrappers.</p> <p>For UNIX targets the default is: /opt/opsware/dma/jython.sh</p> <p>For Windows targets the default is: jython running as Administrator</p> <p><b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.</p>
Create WebSphere 7 Profile-Password	no default	required	This is the Administrator password (required for Windows targets).
Create WebSphere 7 Profile-Username	no default	required	This is the Administrator user (required for Windows targets).
Instance	no default	optional	<p>Used internally by the workflow.</p> <p><b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.</p>
Password	no default	required	Password for the HP DMA web services API.
Servers	Server.name	required	Target machine that will be provisioned with IBM WebSphere HTTP software.
URL	no default	required	URL for the HP DMA web services API.

Parameter Name	Default Value	Required	Description
Username	no default	required	User capable of modifying the managed environment through the HP DMA Discovery web services API.
Validate Existing Install Custom Node Parameters-Cell Name	ProdNode01	required	Unique cell name that does not contain any of the following special characters / \ * , : ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
Validate Existing Install Custom Node Parameters-Dmgr Admin Password	password	optional	Administrative user password for the Deployment Manager. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate Existing Install Custom Node Parameters-Dmgr Admin User	wasadmin	required	Deployment Manager administrative user. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters / \ * , : ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate Existing Install Custom Node Parameters-Dmgr HostName	no default	required	Host name or IP address of the machine where the Deployment Manager is running. Specify this parameter and the Dmgr Port parameter to federate the new custom node as it is created.
Validate Existing Install Custom Node Parameters-Dmgr Port	8879	required	The SOAP port on which the Deployment Manager is listening. Specify this parameter and the Dmgr Host Name parameter to federate the new custom node as it is created.
Validate Existing Install Custom Node Parameters-Enable Security	true	required	Enables administrative security on the Deployment Manager. Must be set to either true or false. If Enable Security is true, the Dmgr Admin User and Dmgr Admin Password parameters must have values.



Parameter Name	Default Value	Required	Description
Validate Existing Install Custom Node Parameters-Install Location	see description	required	Fully qualified path where WebSphere Application Server will be installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>
Validate Existing Install Custom Node Parameters-Node Name	ProdNode01	required	Unique node name that cannot contain any of the following special characters <code>/\*, ;, =, +, ?,  , &lt;, &gt;, &amp;, %, ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that the name is unique within that cell.
Validate Existing Install Custom Node Parameters-Profile Name	ProdNode01	required	A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters <code>/\*, ;, =, +, ?,  , &lt;, &gt;, &amp;, %, ' " [ ] &gt; # \$ ^ { }</code> .
Validate Existing Install Custom Node Parameters-Profile Path	see description	required	Fully qualified path to the profile. The default is: <code>/opt/IBM/WebSphere/AppServer/profiles/ProdNode01</code>
Validate Existing Install Custom Node Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the profile creation. The default is: <code>/tmp/custom_node_resp.txt</code>

**Output Parameters**

This step has no output parameters.

**Return Codes**

0 = No errors occurred during the execution of this step.

1 = One or more errors occurred.

**Used By Workflows**

[Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)

## Validate Custom Node Install

### Purpose

This step validates that the custom node was created and federated into the existing WebSphere 7 cell.

### Input Parameters

Parameter Name	Default Value	Required	Description
Custom Node Install Location	no default	required	Fully qualified path where WebSphere Application Server was installed. For example: <code>/opt/IBM/WebSphere/AppServer.</code>

### Output Parameters

This step has no output parameters.

### Return Codes

0 = The custom node was successfully created and federated.

1 = The custom node was not successfully created and federated.

### Used By Workflows

- [Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)
- [Add WebSphere 7 Node to Existing Cell on page 35](#)

## Run Provision WebSphere 7 and Custom Node

### Purpose

This step provisions WebSphere 7 on the specified target server and creates a custom node. It calls the Provision WebSphere 7 and Custom Node workflow via the HP DMAApplication programming interface (API).

### Input Parameters

Parameter Name	Default Value	Required	Description
Call Wrapper	see description	required	<p>Command that will execute this step as a specific user. Different types of steps use different call wrappers.</p> <p>For UNIX targets the default is: /opt/opsware/dma/jython.sh</p> <p>For Windows targets the default is: jython running as Administrator</p> <p><b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.</p>
Install WebSphere 7 Create Profile-Password	no default	required	This is the Administrator user's password (required for Windows targets).
Install WebSphere 7 Create Profile-Username	no default	required	This is the Administrator user (required for Windows targets).
Instance	no default	optional	<p>Used internally by the workflow.</p> <p><b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.</p>
Password	no default	required	Password for the HP DMA web services API.
Servers	Server.name	required	Target machine that will be provisioned with IBM WebSphere HTTP software.

Parameter Name	Default Value	Required	Description
Username	no default	required	User capable of modifying the managed environment through the HP DMA Discovery web services API.
Validate WebSphere 7 Custom Node Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: <code>/opt/install/C1G35ML.tar.gz</code>
Validate WebSphere 7 Custom Node Parameters-Cell Name	ProdNode02	required	Unique cell name that does not contain any of the following special characters <code>/\ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
Validate WebSphere 7 Custom Node Parameters-Dmgr Admin Password	password	optional	Administrative user password for the Deployment Manager. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate WebSphere 7 Custom Node Parameters-Dmgr Admin User	wasadmin	optional	Deployment Manager administrative user. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters <code>/\ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> .
Validate WebSphere 7 Custom Node Parameters-Dmgr HostName	no default	optional	Host name or IP address of the machine where the Deployment Manager is running. Specify this parameter and the Dmgr Port parameter to federate the new custom node as it is created.
Validate WebSphere 7 Custom Node Parameters-Dmgr Port	8879	optional	The SOAP port on which the Deployment Manager is listening. Specify this parameter and the Dmgr Host Name parameter to federate the new custom node as it is created.

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Custom Node Parameters-Enable Security	true	required	Enables administrative security on the Deployment Manager. Must be set to either true or false. If Enable Security is true, the Dmgr Admin User and Dmgr Admin Password parameters must have values.
Validate WebSphere 7 Custom Node Parameters-Extract Dir	/tmp/	required	Fully qualified path where the compressed software will be extracted on the target machine.
Validate WebSphere 7 Custom Node Parameters-Federate Later	false	optional	If false, the new custom node will be federated during profile creation. If true, you must federate it later by using the <code>addNode</code> command.
Validate WebSphere 7 Custom Node Parameters-Install Location	see description	required	Fully qualified path where WebSphere Application Server will be (or was) installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>
Validate WebSphere 7 Custom Node Parameters-License Acceptance	true	required	Acknowledges that the end-user agrees to the IBM International Program License Agreement.
Validate WebSphere 7 Custom Node Parameters-Node Name	ProdNode02	required	Unique node name that cannot contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that the name is unique within that cell.
Validate WebSphere 7 Custom Node Parameters-Profile Name	ProdNode02	required	A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> .

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Custom Node Parameters-Profile Path	see description	required	Fully qualified path to the profile. The default is: <code>/opt/IBM/WebSphere/AppServer/profiles/ProdNode03</code>
Validate WebSphere 7 Custom Node Parameters-Profile Type	custom	required	Because this workflow creates a custom node profile, the value must be custom.
Validate WebSphere 7 Custom Node Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the installation and profile creation. The default is: <code>/tmp/custom_node_resp.txt</code>

**Output Parameters**

This step has no output parameters.

**Return Codes**

0 = No errors occurred during the execution of this step.

1 = One or more errors occurred.

**Used By Workflows**

- [Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)
- [Add WebSphere 7 Node to Existing Cell on page 35](#)

## Get WSAAdmin Call Wrapper

### Purpose

This step creates a special call wrapper that will call `wsadmin` to execute certain operations within the specified WebSphere environment.

### Input Parameters

Parameter Name	Default Value	Required	Description
Call Wrapper	see description	required	<p>Command that will execute this step as a specific user. Different types of steps use different call wrappers.</p> <p>For UNIX targets the default is:  <code>/opt/IBM/WebSphere/dma/jython.sh</code></p> <p>For Windows targets the default is:  <code>jython</code> running as Administrator</p> <div> <b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value. </div>
Enable Security	true	optional	Enables administrative security on the Deployment Manager. Must be set to either true or false. If Enable Security is true, the Dmgr Admin User and Dmgr Admin Password parameters must have values.
Web-sphere Home	<p>UNIX targets:  <code>/opt/IBM/WebSphere/AppServer</code></p> <p>Windows targets:  <code>C:\Program Files\IBM\WebSphere\AppServer</code></p>	optional	Fully qualified path where WebSphere Application Server will be (or was) installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>

Parameter Name	Default Value	Required	Description
Wsadmin Password	wasadmin	optional	<p>Password to use for the <code>wsadmin</code> script.</p> <p>When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).</p>
Wsadmin User-name	password	optional	<p>User name to use for the <code>wsadmin</code> script.</p> <p>When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code>.</p>

#### Output Parameters

Parameter Name	Description
WSAdmin Call Wrapper	<p>Command that enables the workflow to communicate with the WebSphere 7 <code>wsadmin</code> utility. The command is constructed based on the input parameters specified in the Get WSAdmin Call Wrapper step.</p> <p>UNIX target example:</p> <pre>/opt/IBM/WebSphere/AppServer/bin/wsadmin.sh -lang jython -user wasadmin -password password -f</pre> <p>Windows target example:</p> <pre>C:\Program Files\IBM\WebSphere\AppServer\bin\wsadmin.bat -lang jython -user wasadmin -password password -f</pre>

#### Return Codes

0 = No errors occurred during the execution of this step.

1 = One or more errors occurred.

#### Used By Workflows

- [Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)
- [Add WebSphere 7 Node to Existing Cell on page 35](#)



## WebSphere 7 Cluster Configuration

### Purpose

This step creates the cluster and the cluster members for the given WebSphere environment as well as replication domains, heap sizes, garbage collection (GC) policy, unmanaged nodes, and web server instances.

### Input Parameters

Parameter Name	Default Value	Required	Description
Application Name	no default	required	Name of the application that will be used through to create the application servers and clusters that will be created under the profile.
Call Wrapper	no default	optional	<p>Command that enables the workflow to communicate with the WebSphere 7 <code>wsadmin</code> utility. The command is constructed based on the input parameters specified in the Get WSAAdmin Call Wrapper step.</p> <p>UNIX target example:</p> <pre>/opt/IBM/WebSphere/AppServer/bin/wsadmin.sh -lang jython -user wasadmin -password password -f</pre> <p>Windows target example:</p> <pre>C:\Program Files\IBM\WebSphere\AppServer\bin\wsadmin.bat - lang jython -user wasadmin -password password -f</pre>
HTTP Access Log	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/logs/access_log</code>
HTTP Admin Passwd	password	optional	The password used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-) or contain a space( ).
HTTP Admin Port	8008	required	The port on which the HTTP administration web server will run. This is usually 8008.

Parameter Name	Default Value	Required	Description
HTTP Admin User	wasadmin	optional	The user ID used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-), a period(.), or a space( ) and cannot contain any of the following characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
HTTP Error Log	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/logs/error_log</code>
IHS 1 Host Name	no default	required	First target machine that will be (or was) provisioned with the IBM HTTP Server software.
IHS 2 Host Name	no default	required	Second target machine that will be (or was) provisioned with the IBM HTTP Server software.
Node Operating System	linux	required	Used to configure an unmanaged node inside of WebSphere for management operational purposes.
Plugin Root	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/Plugins</code>
Web Server Conf File	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/conf/httpd.conf</code>
Web Server Name	value of Application Name	required	Used to configure web server instances inside of WebSphere for management operational purposes.
Web Server Port	80	required	The port on which the web server will listen. Usually, this is set to 80.
Web Server Root	80	required	The port on which the web server will listen. Usually, this is set to 80.

**Output Parameters**

This step has no output parameters.

**Return Codes**

0 = No errors occurred during the execution of this step.

1 = One or more errors occurred.

#### **Used By Workflows**

[Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)

## Discover WebSphere

### Purpose

This step audits the server's physical environment looking for WebSphere cells, clusters, and managed servers.

Discovery is ONLY additive. It will not remove instances or databases currently in your environment.

### Input Parameters

Parameter Name	Default Value	Required	Description
Known Profile Roots	optional	optional	Comma delimited list of any known (or suspected) PROFILE_ROOTs. Use this to discover WebSphere cells that are not currently running.
Trust SSL Certificates	False	optional	If True, this step will trust any SSL used to connect to the HP DMA Web Service.
Web Service Password	no default	required	Password for the HP DMA web services API.
Web Service URL	<code>https:// host :4433/dma</code>	required	URL for the HP DMA discovery web services API.
Web Service User	administrator	required	User who is capable of modifying the managed environment through the HP DMA Discovery web services API.

### Output Parameters

This step has no output parameters.

### Return Codes

0 = No errors occurred during the execution of this step.

1 = One or more errors occurred.

### Used By Workflows

- [Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)
- [Add WebSphere 7 Node to Existing Cell on page 35](#)

## Configure Target Node Options

### Purpose

This step enables you to specify two target machines:

- The machine where the Deployment Manager for an existing WebSphere 7 cell is located.
- The target machine where the new custom node will be provisioned.

These targets are specified at run-time. They are not specified in the deployment.

### Input Parameters

Parameter Name	Default Value	Required	Description
Provision WebSphere 7 and Custom Node System	no default	required	Target machine that will be provisioned with IBM WebSphere software and a custom node profile.
WebSphere Deployment Manager System	no default	required	Target machine that will be used to connect to the Deployment Manager.

### Output Parameters

Parameter Name	Description
Provision WebSphere 7 and Custom Node System	Target machine that will be provisioned with IBM WebSphere software and a custom node profile.
WebSphere Deployment Manager System	Target machine that will be used to connect to the Deployment Manager.

### Return Codes

0 = No errors occurred during the execution of this step.

1 = One or more errors occurred.

### Used By Workflows

- [Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)
- [Add WebSphere 7 Node to Existing Cell on page 35](#)

## Gather WebSphere Custom Node System Data

### Purpose

This step retrieves the host name of the specified target machine in the HP DMAenvironment. This is the target machine where the new Custom Node will be provisioned.

### Input Parameters

Parameter Name	Default Value	Required	Description
WebSphere Deployment Manager System Data	no default	required	Required: Target machine that will be used to connect to the deployment manager.

### Output Parameters

Parameter Name	Description
hostname	Required: Target machine that will be provisioned with IBM WebSphere software and custom node profile.

### Return Codes

0 = No errors occurred during the execution of this step.

1 = One or more errors occurred.

### Used By Workflows

- [Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)
- [Add WebSphere 7 Node to Existing Cell on page 35](#)

## Gather Parameters for WebSphere Cell

### Purpose

This step prepares the workflow to provision a new Custom Node and add it to an existing WebSphere 7 cell.

### Input Parameters

Parameter Name	Default Value	Required	Description
All - DMA Password	no default	required	Required: Password for the web service API.
All - DMA Username	no default	required	Required: User capable of modifying the managed environment through the discovery web service API.

### Output Parameters

Parameter Name	Description
Blank	Optional: Used to hide unused parameters in later steps.
Call Wrapper	Required: Command that will execute the step as a specific user (by default, sudo su - root /opt/datapalette/jython/jython on UNIX targets and jython running as Administrator on Windows targets).
Instance	Optional: Used to run remote api call to sub flow
Web Service Password	Required: Password for the web service API.
Web Service User	Required: User capable of modifying the managed environment through the discovery web service API.

### Return Codes

0 = No errors occurred during the execution of this step.

1 = One or more errors occurred.

### Used By Workflows

- [Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)
- [Add WebSphere 7 Node to Existing Cell on page 35](#)

## Gather Advanced Parameters for WebSphere Cell

### Purpose

This step prepares the advanced parameters required to provision WebSphere 7, create a custom node, and add that node to an existing cell.

### Input Parameters

Parameter Name	Default Value	Required	Description
Application Name	no default	required	Name of the application that will be used through to create the application server that will be created under the profile and modify the clusters.
Custom Node Parameters-Cell Name 1	no default	required	Name of the existing WebSphere 7 cell to which a new custom node will be added.
Custom Node Parameters-Cell Name 2	no default	required	Not used in this workflow.
DMA URL	see description	required	URL for the HP DMA web services API. The default is: <code>/api/sop/running</code>
HTTP Access Log	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/logs/access_log</code>
HTTP Error Log	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/logs/error_log</code>
Install IHS for WebSphere 7-Password	password	required for Windows targets	This is the Windows Administrator user's password.
Install IHS for WebSphere 7-Username	wasadmin	required for Windows targets	This is the Windows Administrator user who will install WebSphere 7.



Parameter Name	Default Value	Required	Description
Install WebSphere 7 Create Profile-Password	password	required for Windows targets	This is the WebSphere 7 Administrator user's password.
Install WebSphere 7 Create Profile-Username	wasadmin	required for Windows targets	This is the WebSphere 7 Administrator user.
Instance	no default	optional	Used internally by the workflow.  <b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.
Node Name	no default	required	Used to configure an unmanaged node inside of WebSphere for management operational purposes.
Node OS	linux	required	Used to configure an unmanaged node inside of WebSphere for management operational purposes.
Plugin Root	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/Plugins</code>
Validate Existing Install Custom Node Parameters-Cell Name	ProdNode01	required	Name of the existing cell to which the new custom node will be added.
Validate Existing Install Custom Node Parameters-Dmgr Admin Password	password	optional	Administrative user password for the Deployment Manager in the existing cell to which the new custom node will be added.

Parameter Name	Default Value	Required	Description
Validate Existing Install Custom Node Parameters-Dmgr Admin User	wasadmin	required	Administrative user for the Deployment Manager in the existing cell to which the new custom node will be added.
Validate Existing Install Custom Node Parameters-Dmgr HostName	no default	required	Host name or IP address of the machine where the Deployment Manager is running. Specify this parameter and the Dmgr Port parameter to federate the new custom node as it is created.
Validate Existing Install Custom Node Parameters-Dmgr Port	8879	required	The SOAP port on which the Deployment Manager is listening. Specify this parameter and the Dmgr Host Name parameter to federate the new custom node as it is created.
Validate Existing Install Custom Node Parameters-Enable Security	true	required	Enables administrative security on the Deployment Manager. Must be set to either true or false. If Enable Security is true, the Dmgr Admin User and Dmgr Admin Password parameters must have values.
Validate Existing Install Custom Node Parameters-Install Location	see description	required	Fully qualified path where WebSphere Application Server will be installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>

Parameter Name	Default Value	Required	Description
Validate Existing Install Custom Node Parameters-Node Name	ProdNode01	required	Unique node name for the new custom node. This name cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate Existing Install Custom Node Parameters-Profile Name	ProdNode01	required	A unique profile name for the new custom node profile. It cannot begin with a period (.) and cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate Existing Install Custom Node Parameters-Profile Path	see description	required	Fully qualified path to the profile. The default is: /opt/IBM/WebSphere/AppServer/profiles/ProdNode01
Validate Existing Install Custom Node Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the profile creation. The default is: /tmp/custom_node_resp.txt
Validate IHS 7 Parameters-Admin Auth Password	password	optional	The password used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-) or contain a space( ).
Validate IHS 7 Parameters-Admin Auth Password Confirm	password	optional	Confirms the Admin Auth Password.

Parameter Name	Default Value	Required	Description
Validate IHS 7 Parameters-Admin Auth User	wasadmin	optional	The user ID used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-), a period(.), or a space( ) and cannot contain any of the following characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate IHS 7 Parameters-Admin Port	8008	required	The port on which the HTTP administration web server will run. This is usually 8008.
Validate IHS 7 Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: /opt/install/C1G36ML.tar.gz
Validate IHS 7 Parameters-Create Admin Auth	true	required	Set this to true to create a user ID and password to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. If this parameter is set to true, the following parameters must have values: Admin Auth Password, Admin Auth Password Confirm, and Admin Auth User.
Validate IHS 7 Parameters-Create Admin User Group	true	required	Set to true to create a user ID and group used to set up the IBM HTTP Administration Server on Linux and UNIX operating systems.
Validate IHS 7 Parameters-Extract Dir	/tmp/	required	Fully qualified path where the compressed software will be extracted on the target machine.
Validate IHS 7 Parameters-Http Port	80	required	The port on which the web server will listen. Usually, this is set to 80.

Parameter Name	Default Value	Required	Description
Validate IHS 7 Parameters-Install Location	see description	required	Fully qualified path where IBM HTTP Server will be installed. The default is: <code>/opt/IBM/HTTPServer</code>
Validate IHS 7 Parameters-Install Plugin	true	required	Determines whether or not the WebSphere Application Server plug-in is installed. Valid values are true or false.
Validate IHS 7 Parameters-License Acceptance	true	required	Acknowledges that the end-user agrees to the IBM International Program License Agreement.
Validate IHS 7 Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file is used to drive the installation. The default is: <code>/tmp/ihs7_resp.txt</code>
Validate IHS 7 Parameters-Run Admin Setup	true	required	Enables the install process to grant the Set Up Admin User write access to the necessary IBM HTTP Server and WebSphere Application Server plug-in configuration files. Valid options are true or false.
Validate IHS 7 Parameters-Set Up Admin Group	ihsadmin	optional	Group name used to set up the IBM HTTP administration server on Linux and UNIX operating systems. This parameter must have a value if Create Admin User Group is set to true.
Validate IHS 7 Parameters-Set Up Admin User	ihsadmin	optional	User ID used to set up the IBM HTTP administration server on Linux and UNIX operating systems. If Create Admin User Group is set to true, this parameter must have a value.
Validate IHS 7 Parameters-WebSphere Hostname	Server.Name	optional	Host name of the WebSphere Application Server machine. This parameter is required if Install Plugin is set to true. No spaces are allowed in the host name.

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Custom Node Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: <code>/opt/install/C1G35ML.tar.gz</code>
Validate WebSphere 7 Custom Node Parameters-Cell Name	ProdNode03	required	Unique cell name that does not contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
Validate WebSphere 7 Custom Node Parameters-Dmgr Admin Password	password	optional	Administrative user password for the Deployment Manager. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate WebSphere 7 Custom Node Parameters-Dmgr Admin User	wasadmin	optional	Deployment Manager administrative user. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> .
Validate WebSphere 7 Custom Node Parameters-Dmgr HostName	no default	optional	Host name or IP address of the machine where the Deployment Manager is running. Specify this parameter and the Dmgr Port parameter to federate the new custom node as it is created.
Validate WebSphere 7 Custom Node Parameters-Dmgr Port	8879	optional	The SOAP port on which the Deployment Manager is listening. Specify this parameter and the Dmgr Host Name parameter to federate the new custom node as it is created.

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Custom Node Parameters-Enable Security	true	required	Must be set to true if administrative security is enabled on the deployment manager. Valid values are true or false. If Enable Security is true, the Dmgr Admin User and Dmgr Admin Password parameters must have values.
Validate WebSphere 7 Custom Node Parameters-Extract Dir	/tmp/	required	Fully qualified path where the compressed software will be extracted on the target machine.
Validate WebSphere 7 Custom Node Parameters-Federate Later	false	optional	If false, the new custom node will be federated during profile creation. If true, you must federate it later by using the <code>addNode</code> command.
Validate WebSphere 7 Custom Node Parameters-Install Location	see description	required	Fully qualified path where WebSphere Application Server will be (or was) installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>
Validate WebSphere 7 Custom Node Parameters-License Acceptance	true	required	Acknowledges that the end-user agrees to the IBM International Program License Agreement.
Validate WebSphere 7 Custom Node Parameters-Node Name	ProdNode03	required	Unique node name that cannot contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> .

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Custom Node Parameters-Profile Name	ProdNode03	required	A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate WebSphere 7 Custom Node Parameters-Profile Path	see description	required	Fully qualified path to the profile. The default is: /opt/IBM/WebSphere/AppServer/profiles/ProdNode03
Validate WebSphere 7 Custom Node Parameters-Profile Type	custom	required	Because this workflow creates a custom node profile, the value must be custom.
Validate WebSphere 7 Custom Node Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the installation and profile creation. The default is: /tmp/custom_node_resp.txt
Validate WebSphere 7 Deployment Manager Parameters-Admin Password	password	optional	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate WebSphere 7 Deployment Manager Parameters-Admin User	wasadmin	optional	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.



Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Deployment Manager Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: <code>/opt/install/C1G35ML.tar.gz</code>
Validate WebSphere 7 Deployment Manager Parameters-Enable Security	true	required	Enables administrative security. Must be set to either true or false. If Enable Security is true, the Admin User and Admin Password parameters must have values.
Validate WebSphere 7 Deployment Manager Parameters-Extract Dir	see description	required	Fully qualified path where the compressed software will be extracted on the target machine. The default is: <code>/opt/install</code>
Validate WebSphere 7 Deployment Manager Parameters-Install Location	see description	required	Fully qualified path where WebSphere Application Server will be (or was) installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>
Validate WebSphere 7 Deployment Manager Parameters-License Acceptance	true	required	Acknowledges that the end user agrees to the IBM International Program License Agreement.

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Deployment Manager Parameters-Node Name	ProdManager	required	Unique node name that cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that the name is unique within that cell.
Validate WebSphere 7 Deployment Manager Parameters-Profile Name	ProdDmgr	required	A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate WebSphere 7 Deployment Manager Parameters-Profile Path	see description	required	Fully qualified path to the profile. The default is: /opt/IBM/WebSphere/AppServer/profiles/ProdDmgr
Validate WebSphere 7 Deployment Manager Parameters-Profile Type	management	required	Because this workflow creates a Deployment Manager profile, the value must be management.
Validate WebSphere 7 Deployment Manager Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the installation and profile creation. The default is: /tmp/dmgr_resp.txt

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Deployment Manager Parameters-Server Type	DEPLOYMENT_MANAGER	required	Specifies the type of management profile. Specify DEPLOYMENT_MANAGER for a Deployment Manager server.
Validate WebSphere 7 Deployment Manager Parameters-Windows Admin Password	no default	required for Windows targets	This is the Administrator user password.
Validate WebSphere 7 Deployment Manager Parameters-Windows Admin User	no default	required for Windows targets	This is the Administrator user.
Web Server Config File	see description	required	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/conf/httpd.conf</code>
Web Server Name	value of Application Name	required	Used to configure web server instances inside of WebSphere for management operational purposes.

**Output Parameters**

Parameter Name	Description
DMA Master URL	URL for the HP DMA web services API. The default is: <code>/api/sop/running</code>
HTTP Access Log	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/logs/access_log</code>

Parameter Name	Description
HTTP Error Log	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/ logs/error_log</code>
Install IHS for WebSphere 7-Password	This is the Windows Administrator user's password.
Install IHS for WebSphere 7-Username	This is the Windows Administrator user who will install WebSphere 7.
Install WebSphere 7 Create Profile-Password	This is the WebSphere 7 Administrator user's password.
Install WebSphere 7 Create Profile-Username	This is the WebSphere 7 Administrator user.
Instance	Used internally by the workflow.  <b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.
Node OS	Used to configure an unmanaged node inside of WebSphere for management operational purposes.
Plugin Root	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/Plugins</code>
Validate Existing Install Custom Node Parameters-Cell Name	Unique cell name that does not contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
Validate Existing Install Custom Node Parameters-Dmgr Admin Password	Administrative user password for the Deployment Manager. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).

Parameter Name	Description
Validate Existing Install Custom Node Parameters- Dmgr Admin User	Deployment Manager administrative user. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate Existing Install Custom Node Parameters- Dmgr HostName	Host name or IP address of the machine where the Deployment Manager is running. Specify this parameter and the Dmgr Port parameter to federate the new custom node as it is created.
Validate Existing Install Custom Node Parameters- Dmgr Port	The SOAP port on which the Deployment Manager is listening. Specify this parameter and the Dmgr Host Name parameter to federate the new custom node as it is created.
Validate Existing Install Custom Node Parameters- Enable Security	Enables administrative security on the Deployment Manager. Must be set to either true or false. If Enable Security is true, the Dmgr Admin User and Dmgr Admin Password parameters must have values.
Validate Existing Install Custom Node Parameters- Install Location	Fully qualified path where WebSphere Application Server will be installed. The default is: /opt/IBM/WebSphere/AppServer
Validate Existing Install Custom Node Parameters- Node Name	Unique node name that cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that the name is unique within that cell.
Validate Existing Install Custom Node Parameters- Profile Name	A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.

Parameter Name	Description
Validate Existing Install Custom Node Parameters-Profile Path	Fully qualified path to the profile. The default is: <code>/opt/IBM/WebSphere/AppServer/profiles/ProdNode01</code>
Validate Existing Install Custom Node Parameters-Response File	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the profile creation. The default is: <code>/tmp/custom_node_resp.txt</code>
Validate IHS 7 Parameters-Admin Auth Password	The password used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-) or contain a space( ).
Validate IHS 7 Parameters-Admin Auth Password Confirm	Confirms the Admin Auth Password.
Validate IHS 7 Parameters-Admin Auth User	The user ID used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-), a period(.), or a space( ) and cannot contain any of the following characters <code>/\*,.;=+? &lt;&gt;&amp;%'"[]&gt;#\$%^{}</code> .
Validate IHS 7 Parameters-Admin Port	The port on which the HTTP administration web server will run. This is usually 8008.
Validate IHS 7 Parameters-Binary Archive	Fully qualified path to the compressed software package on the target machine. The default is: <code>/opt/install/C1G36ML.tar.gz</code>
Validate IHS 7 Parameters-Create Admin Auth	Set this to true to create a user ID and password to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. If this parameter is set to true, the following parameters must have values: Admin Auth Password, Admin Auth Password Confirm, and Admin Auth User.
Validate IHS 7 Parameters-Create Admin User Group	Set to true to create a user ID and group used to set up the IBM HTTP Administration Server on Linux and UNIX operating systems.

Parameter Name	Description
Validate IHS 7 Parameters-Extract Dir	Fully qualified path where the compressed software will be extracted on the target machine.
Validate IHS 7 Parameters-Http Port	The port on which the web server will listen. Usually, this is set to 80.
Validate IHS 7 Parameters-Install Location	Fully qualified path where IBM HTTP Server will be installed. The default is: <code>/opt/IBM/HTTPServer</code>
Validate IHS 7 Parameters-Install Plugin	Determines whether or not the WebSphere Application Server plug-in is installed. Valid values are true or false.
Validate IHS 7 Parameters-License Acceptance	Acknowledges that the end-user agrees to the IBM International Program License Agreement.
Validate IHS 7 Parameters-Response File	Fully qualified path where the response file that this workflow creates will be located. This file is used to drive the installation. The default is: <code>/tmp/ihs7_resp.txt</code>
Validate IHS 7 Parameters-Run Admin Setup	Enables the install process to grant the Set Up Admin User write access to the necessary IBM HTTP Server and WebSphere Application Server plug-in configuration files. Valid options are true or false.
Validate IHS 7 Parameters-Set Up Admin Group	Group name used to set up the IBM HTTP administration server on Linux and UNIX operating systems. This parameter must have a value if Create Admin User Group is set to true.
Validate IHS 7 Parameters-Set Up Admin User	User ID used to set up the IBM HTTP administration server on Linux and UNIX operating systems. If Create Admin User Group is set to true, this parameter must have a value.
Validate IHS 7 Parameters-WebSphere Hostname	Host name of the WebSphere Application Server machine. This parameter is required if Install Plugin is set to true. No spaces are allowed in the host name.
Validate WebSphere 7 Custom Node Parameters-Binary Archive	Fully qualified path to the compressed software package on the target machine. The default is: <code>/opt/install/C1G35ML.tar.gz</code>

Parameter Name	Description
Validate WebSphere 7 Custom Node Parameters-Cell Name	Unique cell name that does not contain any of the following special characters / \ * , : ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
Validate WebSphere 7 Custom Node Parameters-Dmgr Admin Password	Administrative user password for the Deployment Manager. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate WebSphere 7 Custom Node Parameters-Dmgr Admin User	Deployment Manager administrative user. When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters / \ * , : ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate WebSphere 7 Custom Node Parameters-Dmgr HostName	Host name or IP address of the machine where the Deployment Manager is running. Specify this parameter and the Dmgr Port parameter to federate the new custom node as it is created.
Validate WebSphere 7 Custom Node Parameters-Dmgr Port	The SOAP port on which the Deployment Manager is listening. Specify this parameter and the Dmgr Host Name parameter to federate the new custom node as it is created.
Validate WebSphere 7 Custom Node Parameters-Enable Security	Enables administrative security on the Deployment Manager. Must be set to either true or false. If Enable Security is true, the Dmgr Admin User and Dmgr Admin Password parameters must have values.
Validate WebSphere 7 Custom Node Parameters-Extract Dir	Fully qualified path where the compressed software will be extracted on the target machine.



Parameter Name	Description
Validate WebSphere 7 Custom Node Parameters-Federate Later	If false, the new custom node will be federated during profile creation. If true, you must federate it later by using the <code>addNode</code> command.
Validate WebSphere 7 Custom Node Parameters-Install Location	Fully qualified path where WebSphere Application Server will be (or was) installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>
Validate WebSphere 7 Custom Node Parameters-License Acceptance	Acknowledges that the end-user agrees to the IBM International Program License Agreement.
Validate WebSphere 7 Custom Node Parameters-Node Name	Unique node name that cannot contain any of the following special characters <code>/\*, ;, =, +, ?,  , &lt;, &gt;, &amp;, %, ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that the name is unique within that cell.
Validate WebSphere 7 Custom Node Parameters-Profile Name	A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters <code>/\*, ;, =, +, ?,  , &lt;, &gt;, &amp;, %, ' " [ ] &gt; # \$ ^ { }</code> .
Validate WebSphere 7 Custom Node Parameters-Profile Path	Fully qualified path to the profile. The default is: <code>/opt/IBM/WebSphere/AppServer/ profiles/ProdNode03</code>
Validate WebSphere 7 Custom Node Parameters-Profile Type	Because this workflow creates a custom node profile, the value must be custom.

Parameter Name	Description
Validate WebSphere 7 Custom Node Parameters-Response File	Required: Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the installation and profile creation.
Validate WebSphere 7 Deployment Manager Parameters-Admin Password	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate WebSphere 7 Deployment Manager Parameters-Admin User	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate WebSphere 7 Deployment Manager Parameters-Binary Archive	Fully qualified path to the compressed software package on the target machine. The default is: /opt/install/C1G35ML.tar.gz
Validate WebSphere 7 Deployment Manager Parameters-Enable Security	Enables administrative security. Must be set to either true or false. If Enable Security is true, the Admin User and Admin Password parameters must have values.
Validate WebSphere 7 Deployment Manager Parameters-Extract Dir	Fully qualified path where the compressed software will be extracted on the target machine. The default is: /opt/install

Parameter Name	Description
Validate WebSphere 7 Deployment Manager Parameters-Install Location	Fully qualified path where WebSphere Application Server will be (or was) installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>
Validate WebSphere 7 Deployment Manager Parameters-License Acceptance	Acknowledges that the end user agrees to the IBM International Program License Agreement.
Validate WebSphere 7 Deployment Manager Parameters-Node Name	Unique node name that cannot contain any of the following special characters <code>/\*, ;, =, +, ?,  , &lt;, &gt;, &amp;, %, ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that the name is unique within that cell.
Validate WebSphere 7 Deployment Manager Parameters-Profile Name	A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters <code>/\*, ;, =, +, ?,  , &lt;, &gt;, &amp;, %, ' " [ ] &gt; # \$ ^ { }</code> .
Validate WebSphere 7 Deployment Manager Parameters-Profile Path	Fully qualified path to the profile. The default is: <code>/opt/IBM/WebSphere/AppServer/profiles/ProdDmgr</code>
Validate WebSphere 7 Deployment Manager Parameters-Profile Type	Because this workflow creates a Deployment Manager profile, the value must be management.

Parameter Name	Description
Validate WebSphere 7 Deployment Manager Parameters-Response File	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the installation and profile creation. The default is: <code>/tmp/dmgr_resp.txt</code>
Validate WebSphere 7 Deployment Manager Parameters-Server Type	Specifies the type of management profile. Specify DEPLOYMENT_MANAGER for a Deployment Manager server.
Validate WebSphere 7 Deployment Manager Parameters-Windows Admin Password	This is the Administrator user password.
Validate WebSphere 7 Deployment Manager Parameters-Windows Admin User	This is the Administrator user.
Web Server Config File	Used to configure web server instances inside of WebSphere for management operational purposes. The default is: <code>/opt/IBM/HTTPServer/conf/httpd.conf</code>
Web Server Name	Used to configure web server instances inside of WebSphere for management operational purposes.

**Return Codes**

0 = No errors occurred during the execution of this step.

1 = One or more errors occurred.

**Used By Workflows**

- [Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)
- [Add WebSphere 7 Node to Existing Cell on page 35](#)

## Get WebSphere Custom Node

### Purpose

This step calls the WebSphere 7 APIs to retrieve information about existing nodes and creates the name of the new Custom Node.

### Input Parameters

Parameter Name	Default Value	Required	Description
Call Wrapper	see description	required	<p>Command that will execute this step as a specific user. Different types of steps use different call wrappers.</p> <p>For UNIX targets the default is: <code>/opt/opsware/dma/jython.sh</code></p> <p>For Windows targets the default is: <code>jython</code> running as Administrator</p> <div><b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.</div>

### Output Parameters

Parameter Name	Description
Node Name	Node name that will be used for the new Custom Node that will be added to the cell. This name is derived by the workflow in the <a href="#">Get WebSphere Custom Node above</a> step.

### Return Codes

0 = No errors occurred during the execution of this step.

1 = One or more errors occurred.

### Used By Workflows

- [Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)
- [Add WebSphere 7 Node to Existing Cell on page 35](#)

## WebSphere 7 Cluster Node Configuration

### Purpose

This step creates a cluster member for the specified WebSphere 7 node.

### Input Parameters

Parameter Name	Default Value	Required	Description
Call Wrapper	see description	required	<p>Command that will execute this step as a specific user. Different types of steps use different call wrappers.</p> <p>For UNIX targets the default is: <code>/opt/opsware/dma/jython.sh</code></p> <p>For Windows targets the default is: <code>jython</code> running as Administrator</p> <div><b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.</div>
Node Name	no default	required	<p>Node name that will be used for the new Custom Node that will be added to the cell. This name is derived by the workflow in the <a href="#">Get WebSphere Custom Node on previous page</a> step.</p>

### Output Parameters

This step has no output parameters.

### Return Codes

0 = No errors occurred during the execution of this step.

1 = One or more errors occurred.

### Used By Workflows

- [Provision IBM HTTP Server and WebSphere 7 Two Node Cell on page 23](#)
- [Add WebSphere 7 Node to Existing Cell on page 35](#)

## Gather Parameters for Provision IBM HTTP and WebSphere StandAlone

### Purpose

This step prepares the parameters needed to provision IBM HTTP Server and WebSphere Application Server version 7.

### Input Parameters

Parameter Name	Default Value	Required	Description
Application Name	no default	required	Name of the application that will be used through to create the application server that will be created under the profile and modify the clusters.
Cell Name	no default	required	Unique cell name that does not contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
DMA Password	no default	required	Password for the web service API.
DMA URL	no default	required	URL for the web service API.
DMA Username	no default	required	User capable of modifying the managed environment through the discovery web service API.
Node Name	no default	required	Unique node name that cannot contain any of the following special characters <code>/ \ * , ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that the name is unique within that cell.

### Output Parameters

Parameter Name	Description
Blank	Optional: Used to hide unused parameters in later steps.
Call Wrapper	Required: Command that will execute the step as a specific user (by default, <code>sudo su - root /opt/datapalette/jython/jython</code> on UNIX targets and <code>jython</code> running as Administrator on Windows targets).
Instance	Optional: Used to run remote api call to sub flow
Validate IHS 7 Parameters-Webserver Definition	Required: Name of the application that will be used through to create application servers and clusters that will be created under the profile.

Parameter Name	Description
Validate WebSphere 7 Stand Alone Parameters-Cell Name	Required: Unique cell name that does not contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
Validate WebSphere 7 Stand Alone Parameters-Node Name	Required: Unique node name that cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that the name is unique within that cell.
Validate WebSphere 7 Stand Alone Parameters-Profile Name	Required: A unique profile name. It cannot begin with a period (.) and cannot contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Web Service Password	Required: Password for the web service API.
Web Service URL	Required: URL for the web service API.
Web Service User	Required: User capable of modifying the managed environment through the discovery web service API.

**Return Codes**

0 = Step ran successfully.

1 = Step failed.

**Used By Workflow**

[Provision IBM HTTP Server and WebSphere 7 StandAlone Profile on page 46](#)



## Gather Advanced Parameters for Provision IBM HTTP and WebSphere StandAlone

### Purpose

This step prepares the advanced parameters needed to provision and configure IBM HTTP Server and WebSphere Application Server version 7.

### Input Parameters

Parameter Name	Default Value	Required	Description
Install IHS for WebSphere 7-Password	password	required for Windows targets	This is the Windows Administrator user's password.
Install IHS for WebSphere 7-Username	wasadmin	required for Windows targets	This is the Windows Administrator user who will install WebSphere 7.
Install WebSphere 7 Create Profile-Password	password	required for Windows targets	This is the WebSphere 7 Administrator user's password.
Install WebSphere 7 Create Profile-Username	wasadmin	required for Windows targets	This is the WebSphere 7 Administrator user.
Instance	no default	optional	Used internally by the workflow.  <b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.
Node Name	no default	required	Used to configure an unmanaged node inside of WebSphere for management operational purposes.
Validate IHS 7 Parameters-Admin Auth Password	password	optional	The password used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-) or contain a space( ).

(continued)

Parameter Name	Default Value	Required	Description
Validate IHS 7 Parameters-Admin Auth Password Confirm	wasadmin	optional	Confirms the Admin Auth Password.
Validate IHS 7 Parameters-Admin Auth User	wasadmin	optional	The user ID used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-), a period(.), or a space( ) and cannot contain any of the following characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate IHS 7 Parameters-Admin Port	8008	required	The port on which the HTTP administration web server will run. This is usually 8008.
Validate IHS 7 Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: /opt/install/C1G36ML.tar.gz
Validate IHS 7 Parameters-Create Admin Auth	true	required	Set this to true to create a user ID and password to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. If this parameter is set to true, the following parameters must have values: Admin Auth Password, Admin Auth Password Confirm, and Admin Auth User.
Validate IHS 7 Parameters-Create Admin User Group	true	required	Set to true to create a user ID and group used to set up the IBM HTTP Administration Server on Linux and UNIX operating systems.
Validate IHS 7 Parameters-Extract Dir	/tmp/	required	Fully qualified path where the compressed software will be extracted on the target machine.

(continued)

Parameter Name	Default Value	Required	Description
Validate IHS 7 Parameters-Http Port	80	required	The port on which the web server will listen. Usually, this is set to 80.
Validate IHS 7 Parameters-Install Location	see description	required	Fully qualified path where IBM HTTP Server will be installed. The default is: <code>/opt/IBM/HTTPServer</code>
Validate IHS 7 Parameters-Install Plugin	true	required	Determines whether or not the WebSphere Application Server plug-in is installed. Valid values are true or false.
Validate IHS 7 Parameters-License Acceptance	true	required	Acknowledges that the end-user agrees to the IBM International Program License Agreement.
Validate IHS 7 Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file is used to drive the installation. The default is: <code>/tmp/ih7_resp.txt</code>
Validate IHS 7 Parameters-Run Admin Setup	true	required	Enables the install process to grant the Set Up Admin User write access to the necessary IBM HTTP Server and WebSphere Application Server plug-in configuration files. Valid options are true or false.
Validate IHS 7 Parameters-Set Up Admin Group	ih7admin	optional	Group name used to set up the IBM HTTP administration server on Linux and UNIX operating systems. This parameter must have a value if Create Admin User Group is set to true.

(continued)

Parameter Name	Default Value	Required	Description
Validate IHS 7 Parameters-Set Up Admin User	ihsadmin	optional	User ID used to set up the IBM HTTP administration server on Linux and UNIX operating systems. If Create Admin User Group is set to true, this parameter must have a value.
Validate IHS 7 Parameters-WebSphere Hostname	Server.Name	optional	Host name of the WebSphere Application Server machine. This parameter is required if Install Plugin is set to true. No spaces are allowed in the host name.
Validate WebSphere 7 Stand Alone Parameters-Admin Password	password	optional	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate WebSphere 7 Stand Alone Parameters-Admin User	wasadmin	optional	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate WebSphere 7 Stand Alone Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: <code>/opt/install/C1G35ML.tar.gz</code>
Validate WebSphere 7 Stand Alone Parameters-Enable Security	true	required	Enables administrative security. Must be set to either true or false. If Enable Security is true, the Admin User and Admin Password parameters must have values

(continued)

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Stand Alone Parameters-Extract Dir	/tmp/	required	Fully qualified path where the compressed software will be extracted on the target machine
Validate WebSphere 7 Stand Alone Parameters-Install Location	see description	required	Fully qualified path where WebSphere Application Server will be installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>
Validate WebSphere 7 Stand Alone Parameters-License Acceptance	true	required	Acknowledges that the end user agrees to the IBM International Program License Agreement.
Validate WebSphere 7 Stand Alone Parameters-Profile Path	value of current_node_name	required	Fully qualified path to the profile. For example: <code>/opt/IBM/WebSphere/AppServer/profiles/AppServer1.</code>
Validate WebSphere 7 Stand Alone Parameters-Profile Type	standAlone	required	Because this workflow creates a stand-alone profile, the value must be standAlone.
Validate WebSphere 7 Stand Alone Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the installation and profile creation. The default is: <code>/tmp/standalone_resp.txt</code>

(continued)

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Stand Alone Parameters-Server Name	server1	required	Name of the application server that will be created under the profile.

**Output Parameters**

Parameter Name	Description
Install IHS for WebSphere 7-Password	This is the Windows Administrator user's password.
Install IHS for WebSphere 7-Username	This is the Windows Administrator user who will install WebSphere 7.
Install WebSphere 7 Create Profile-Password	This is the WebSphere 7 Administrator user's password.
Install WebSphere 7 Create Profile-Username	This is the WebSphere 7 Administrator user.
Instance	Used internally by the workflow.  <b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.
Validate IHS 7 Parameters-Admin Auth Password	The password used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-) or contain a space( ).

Parameter Name	Description
Validate IHS 7 Parameters-Admin Auth Password Confirm	Confirms the Admin Auth Password.
Validate IHS 7 Parameters-Admin Auth User	The user ID used to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. When Create Admin Auth is set to true, this parameter must have a value. It cannot begin with a dash(-), a period(.), or a space( ) and cannot contain any of the following characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate IHS 7 Parameters-Admin Port	The port on which the HTTP administration web server will run. This is usually 8008.
Validate IHS 7 Parameters-Binary Archive	Fully qualified path to the compressed software package on the target machine. The default is: /opt/install/C1G36ML.tar.gz
Validate IHS 7 Parameters-Create Admin Auth	Set this to true to create a user ID and password to authenticate to the IBM HTTP administration server using the WebSphere Application Server administrative console. If this parameter is set to true, the following parameters must have values: Admin Auth Password, Admin Auth Password Confirm, and Admin Auth User.
Validate IHS 7 Parameters-Create Admin User Group	Set to true to create a user ID and group used to set up the IBM HTTP Administration Server on Linux and UNIX operating systems.
Validate IHS 7 Parameters-Extract Dir	Fully qualified path where the compressed software will be extracted on the target machine.
Validate IHS 7 Parameters-Http Port	The port on which the web server will listen. Usually, this is set to 80.

Parameter Name	Description
Validate IHS 7 Parameters-Install Location	Fully qualified path where IBM HTTP Server will be installed. The default is: <code>/opt/IBM/HTTPServer</code>
Validate IHS 7 Parameters-Install Plugin	Determines whether or not the WebSphere Application Server plug-in is installed. Valid values are true or false.
Validate IHS 7 Parameters-License Acceptance	Acknowledges that the end-user agrees to the IBM International Program License Agreement.
Validate IHS 7 Parameters-Response File	Fully qualified path where the response file that this workflow creates will be located. This file is used to drive the installation. The default is: <code>/tmp/ihs7_resp.txt</code>
Validate IHS 7 Parameters-Run Admin Setup	Enables the install process to grant the Set Up Admin User write access to the necessary IBM HTTP Server and WebSphere Application Server plug-in configuration files. Valid options are true or false.
Validate IHS 7 Parameters-Set Up Admin Group	Group name used to set up the IBM HTTP administration server on Linux and UNIX operating systems. This parameter must have a value if Create Admin User Group is set to true.
Validate IHS 7 Parameters-Set Up Admin User	User ID used to set up the IBM HTTP administration server on Linux and UNIX operating systems. If Create Admin User Group is set to true, this parameter must have a value.
Validate IHS 7 Parameters-WebSphere Hostname	Host name of the WebSphere Application Server machine. This parameter is required if Install Plugin is set to true. No spaces are allowed in the host name.



Parameter Name	Description
Validate WebSphere 7 Stand Alone Parameters-Admin Password	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate WebSphere 7 Stand Alone Parameters-Admin User	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate WebSphere 7 Stand Alone Parameters-Binary Archive	Fully qualified path to the compressed software package on the target machine. The default is: /opt/install/C1G35ML.tar.gz
Validate WebSphere 7 Stand Alone Parameters-Enable Security	Enables administrative security. Must be set to either true or false. If Enable Security is true, the Admin User and Admin Password parameters must have values
Validate WebSphere 7 Stand Alone Parameters-Extract Dir	Fully qualified path where the compressed software will be extracted on the target machine
Validate WebSphere 7 Stand Alone Parameters-Install Location	Fully qualified path where WebSphere Application Server will be installed. The default is: /opt/IBM/WebSphere/AppServer
Validate WebSphere 7 Stand Alone Parameters-License Acceptance	Acknowledges that the end user agrees to the IBM International Program License Agreement.

Parameter Name	Description
Validate WebSphere 7 Stand Alone Parameters-Profile Path	Fully qualified path to the profile. For example: /opt/IBM/WebSphere/AppServer/profiles/AppServer1.
Validate WebSphere 7 Stand Alone Parameters-Profile Type	Because this workflow creates a stand-alone profile, the value must be standAlone.
Validate WebSphere 7 Stand Alone Parameters-Response File	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the installation and profile creation. The default is: /tmp/standalone_resp.txt
Validate WebSphere 7 Stand Alone Parameters-Server Name	Name of the application server that will be created under the profile.

**Return Codes**

0 = Step ran successfully

1 = Step failed

**Used By Workflow**

[Provision IBM HTTP Server and WebSphere 7 StandAlone Profile on page 46](#)

## Run Provision WebSphere 7 StandAlone Profile

### Purpose

This step calls the Provision WebSphere 7 StandAlone Profile via DMA API.

### Input Parameters

Parameter Name	Default Value	Required	Description
Call Wrapper	see description	required	<p>Command that will execute this step as a specific user. Different types of steps use different call wrappers.</p> <p>For UNIX targets the default is:  <code>/opt/opsware/dma/jython.sh</code></p> <p>For Windows targets the default is: <code>jython</code> running as Administrator</p> <p><b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.</p>
Install WebSphere 7 Create Profile-Password	password	required for Windows targets	This is the WebSphere 7 Administrator user's password.
Install WebSphere 7 Create Profile-Username	wasadmin	required for Windows targets	This is the WebSphere 7 Administrator user.
Instance	no default	optional	<p>Used internally by the workflow.</p> <p><b>Caution:</b> This parameter is derived by the workflow. Under most circumstances, you should not change its mapping or its value.</p>
Password	no default	required	Password for the web service API.
Servers		required	Target machine that will be provisioned with IBM WebSphere software.
URL		required	URL for the web service API.

(continued)

Parameter Name	Default Value	Required	Description
Username		required	User capable of modifying the managed environment through the discovery web service API.
Validate WebSphere 7 Stand Alone Parameters-Admin Password	password	optional	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-) or contain a space( ).
Validate WebSphere 7 Stand Alone Parameters-Admin User	wasadmin	optional	When Enable Security is set to true, this parameter must contain a string that does not begin with a dash(-), a period(.), or a space( ). It cannot contain any of the following characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }.
Validate WebSphere 7 Stand Alone Parameters-Binary Archive	see description	required	Fully qualified path to the compressed software package on the target machine. The default is: <code>/opt/install/C1G35ML.tar.gz</code>
Validate WebSphere 7 Stand Alone Parameters-Cell Name		required	Unique cell name that does not contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.  Unique cell name that does not contain any of the following special characters / \ * , ; = + ?   < > & % ' " [ ] > # \$ ^ { }. If you plan to federate into an existing cell later, make sure that this name is not the same as the existing cell name.
Validate WebSphere 7 Stand Alone Parameters-Enable Security	true	required	Enables administrative security. Must be set to either true or false. If Enable Security is true, the Admin User and Admin Password parameters must have values
Validate WebSphere 7 Stand Alone Parameters-Extract Dir	/tmp/	required	Fully qualified path where the compressed software will be extracted on the target machine

(continued)

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Stand Alone Parameters-Install Location	see description	required	Fully qualified path where WebSphere Application Server will be installed. The default is: <code>/opt/IBM/WebSphere/AppServer</code>
Validate WebSphere 7 Stand Alone Parameters-License Acceptance	true	required	Acknowledges that the end user agrees to the IBM International Program License Agreement.
Validate WebSphere 7 Stand Alone Parameters-Node Name		required	Unique node name that cannot contain any of the following special characters <code>/ \ * , : ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> . If you plan to federate into an existing cell later, make sure that the name is unique within that cell.
Validate WebSphere 7 Stand Alone Parameters-Profile Name		required	A unique profile name. It cannot begin with a period ( <code>.</code> ) and cannot contain any of the following special characters <code>/ \ * , : ; = + ?   &lt; &gt; &amp; % ' " [ ] &gt; # \$ ^ { }</code> .
Validate WebSphere 7 Stand Alone Parameters-Profile Path	value of current_node_name	required	Fully qualified path to the profile. For example: <code>/opt/IBM/WebSphere/AppServer/profiles/AppServer1.</code>
Validate WebSphere 7 Stand Alone Parameters-Profile Type	standAlone	required	Because this workflow creates a stand-alone profile, the value must be standAlone.
Validate WebSphere 7 Stand Alone Parameters-Response File	see description	required	Fully qualified path where the response file that this workflow creates will be located. This file will then be used to drive the installation and profile creation. The default is: <code>/tmp/standalone_resp.txt</code>

**(continued)**

Parameter Name	Default Value	Required	Description
Validate WebSphere 7 Stand Alone Parameters-Server Name	server1	required	Name of the application server that will be created under the profile.

**Output Parameters**

None

**Return Codes**

0 = Step ran successfully

1 = Step failed

**Used By Workflow**[Provision IBM HTTP Server and WebSphere 7 StandAlone Profile on page 46](#)

# Chapter 6

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## Other Reference Information

The following topics provide additional information pertinent to the workflows in this solution pack:

- [WebSphere 7 Product Documentation below](#)
- [Using this Solution Pack With HP Server Automation below](#)

## WebSphere 7 Product Documentation

For the current list of hardware and software requirements, as well as supported platforms for WebSphere 7, see:

<http://www.ibm.com/software/webservers/appserv/doc/latest/prereq.html>

For WebSphere 7 product documentation, see:

<http://publib.boulder.ibm.com/infocenter/wasinfo/v7r0/index.jsp>

For IBM Red Book resources for WebSphere 7, see:

<http://publib-b.boulder.ibm.com/Redbooks.nsf/portals/WebSphere>

## Using this Solution Pack With HP Server Automation

HP Database and Middleware Automation (HP DMA) version 1.00 is compatible with HP Server Automation version 9.02 (and later 9.0x versions).

For information about running HP DMA workflows from HP Server Automation versions prior to 9.10, refer to the following documents:

- *HP Server Automation Application Deployment User Guide* (version 9.02 and later 9.0x versions)
- *HP Database and Middleware Automation User Guide* (version 1.00)

HP Database and Middleware Automation version 9.10 is compatible with HP Server Automation version 9.10 (and later).

For information about running HP Database and Middleware Automation workflows from HP Server Automation version 9.10 (and later), refer to the following documents:

- *User Guide: Application Deployment Manager*
- *User Guide: Database and Middleware Automation User Guide*

These guides are included in the HP Server Automation documentation library (version 9.10 and later).

# Chapter 7

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## Tips and Best Practices

This portion of the online helpdocument contains a collection of tips and best practices that will enable you to use HP DMA more effectively. It contains the following topics:

[Using a Policy to Specify Parameter Values below](#)

## Using a Policy to Specify Parameter Values

It is sometimes advantageous to provide parameter values by using a policy rather than explicitly specifying the values in a deployment. This approach has the following advantages:

- Passwords are obfuscated (not displayed in clear text).
- The policy can be used in any deployment.
- It is faster and less error-prone than specifying parameter values manually.

To establish a policy, you can either [Create a Policy](#) or [Extract a Policy](#) from a workflow.

After you establish the policy, you must [Reference the Policy in the Deployment](#).

If you are using HP Server Automation, see the *User Guide: Database and Middleware Automation*. This guide is included in the HP Server Automation documentation library (SA version 9.10 and later).

If you are using HP DMA 1.00, see "Policies" in the *HP Database and Middleware Automation User Guide* for more information.

## Create a Policy

The first step in this approach is to create a policy that provides parameter values. There are two ways to do this: (1) create a new policy, and define all attributes manually (as shown here) or (2) extract a policy from a workflow (see [Extract a Policy on next page](#)).

**To create a policy that provides parameter values:**

1. In the HP DMA web UI, go to Automation > Policies.
2. Click **New Policy**.
3. In the **Name** box, specify the name of the policy
4. For each parameter value that you want to provide using this policy, perform the following actions on the Attributes tab:
  - a. From the drop-down list, select the type of attribute:
    - A Text attribute contains simple text that users can view while deploying and running workflows.



- A List attribute contains a comma-delimited list of values (or a large amount of text not suitable for a Text attribute).
    - A Password attribute contains simple text, but it is obfuscated so that users cannot see the text.
  - b. In the text box to the left of the Add button, specify the name of the attribute.  
  
For your convenience, this name should be similar to the parameter name used in the pertinent workflow (or workflows).
  - c. Click **Add**.
  - d. In the new text box to the right of the attribute's name, enter a value for this attribute.  
  
To remove an attribute, click the **Remove** button.
5. On the Roles tab, grant Read and Write permission to any additional users and groups who will be using this policy. By default, any groups to which you belong have Read and Write permission.
  6. Click the **Save** button (lower right corner).

## Extract a Policy

An alternative to creating your own policy one attribute at a time is to extract the policy. This automatically creates a reusable policy that provides values for all input parameters associated with a workflow. This is a convenient way to create a policy.

### To extract a policy:

1. Go to Automation > Workflows.
2. Select the Workflow that you want to work with.
3. Click the Extract Policy link at the bottom of the screen.
4. Specify values for each attribute listed.
5. *Optional:* Remove any attributes that you do not want to use.

**Note:** Extracted policies only use Text type attributes. Therefore, passwords are not obfuscated when you specify them in an extracted policy. You can, however, delete an automatically extracted attribute and then add a new one of type Password.

6. *Optional:* Add any new attributes that you want to use.
7. *Optional:* On the Roles tab, select the Read box for any users or user groups that you want to be able to use this policy to provide parameter values in a Deployment. Select the Write box for any users or groups that you want to be able to modify this Policy (add or remove attributes).
8. Click **Save**.

## Reference the Policy in the Deployment

After you create a policy, you can reference its attributes in a deployment.

### To reference policy attributes in a deployment:

1. Create or access the deployment.

See “Deployments” in the *User Guide: Database and Middleware Automation* for details. This guide is included in the HP Server Automation documentation library (SA version 9.10 and later).

2. On the Parameters tab, perform the following steps for each parameter whose value you want to provide by referencing a policy attribute:
  - a. In the text box to the right of the parameter name, type the first few characters of the policy name.  
  
A drop-down list of policy attributes appears.
  - b. From the drop-down list, select the attribute that you want to reference.
3. Click **Save** to save your changes to the deployment.

# Chapter 8

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## Troubleshooting

These topics can help you address problems that might occur when you install and run the workflows in this solution pack:

- [Target Type below](#)
- [User Permissions and Related Requirements below](#)
- [Discovery in HP Server Automation on next page](#)

For additional information, refer to the “Troubleshooting” chapter in the *HP Server Automation User Guide: Database and Middleware Automation*.

If you are using HP Database and Middleware Automation version 1.00, see the *HP Database and Middleware Automation Installation Guide*.

## Target Type

In your deployment, make sure that you have specified the correct type of target. The workflow type and the target type must match. A workflow designed to run against an instance target, for example, cannot run against a server target.

## User Permissions and Related Requirements

Roles define access (Read or Write) permissions for organizations, workflows, steps, policies, and deployments. Deployments have an extra permission: Execute. Users are assigned to roles, and they gain access to these items according to the permissions defined for their roles.

**Note:** The following information pertains only to HP DMA 1.00:

Roles can be defined in one of two ways: native or LDAP groups.

- Native roles define groups of HP DMA users in the repository.
- LDAP groups are retrieved from the LDAP server configured in the Setup > Expert Engine area. No user information is stored in the repository for LDAP groups. This allows you to use your corporate directory for defining users and their permissions making security audits easier.

Roles are assigned on the Roles tab of the Setup page. See “Roles” in the *HP Database and Middleware Automation User Guide* (version 1.00) for more information.

Make sure that the HP DMA users in your environment are assigned roles that grant them the permissions they need to accomplish their tasks. For example:

- To view a workflow, your role must have Read permission for that workflow.
- To view a deployment, your role must have Read permission for that deployment.

- To edit a workflow, your role must have Write permission for that workflow.
- To run a deployment, your role must have Execute permission for that deployment.

Permissions determine what features and functions are available and active in the HP DMA UI. For a detailed breakdown, see the HP Database and Middleware Automation *User Guide*.

**Note:** In HP Server Automation, roles and permissions work differently. Both roles and permissions are assigned by the SA administrator. See the HP Server Automation *Administration Guide* and the *User Guide: Database and Middleware Automation* for more information. Both guides are included in the HP Server Automation documentation library (SA version 9.10 and later).

## Discovery in HP Server Automation

HP DMA uses a process called “discovery” to find information about the servers, networks, and database instances on target machines in your managed environment.

In HP DMA version 1.00, discovery is automatically activated when an agent is started on a target machine.

In HP Server Automation, you must explicitly initiate the process of discovery—it is not automatic. Refer to the *User Guide: Database and Middleware Automation* for instructions. This guide is included in the SA documentation library (version 9.10 and later).

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# Glossary

## B

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### bridged execution

A bridged execution workflow includes some steps that run on certain targets and other steps that run on different targets. An example of a bridged execution workflow is Extract and Refresh Oracle Database via RMAN (in the Database Refresh solution pack). This workflow extracts the contents of a database on one target (the Source) and creates a new database with the same contents on another target (the Destination). This workflow is useful when you want to clone a database - for example, to move it from a traditional IT infrastructure location into a private cloud. Bridged execution workflows are supported on HP Server Automation version 9.11 (and later).

## C

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### cross-platform

Cross-platform database refresh involves converting the data from one type of byte ordering to another. This is necessary, for example, if you want to load a database dump file on a little-endian Linux target that was created on a big-endian Solaris server.

## D

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### deployment

Deployments associate a workflow with a target environment in which a workflow runs. You can customize a deployment by specifying values for any workflow

parameters that are designated - User Selected - in the workflow. You must save a deployment before you can run the workflow. You can re-use a saved deployment as many times as you like.

### destination

In a database refresh scenario, the contents of a database dump file are loaded into the DESTINATION database.

### DESTINATION

In a database refresh scenario, the contents of a database dump file are loaded into the DESTINATION database.

## I

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### input parameters

A workflow has a set of required parameters for which you must specify a value. The required parameters are a subset of all the parameters associated with that workflow. The remaining parameters are considered optional. You can specify a value for an optional parameter by first exposing it using the workflow editor and then specifying the value when you create a deployment.

## M

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### mapping

An input parameter is said to be "mapped" when its value is linked to an output parameter from a previous step in the workflow or to a metadata field. Mapped parameters are not visible on the Deployment page. You can "unmap" a parameter by specifying - User Selected - in the workflow editor. This parameter will

then become visible on the Deployment page.

### O

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#### Oracle Data Pump

Oracle Data Pump is a utility that enables you to move data or metadata from one database to another. You can use Data Pump to move a complete database or a subset of a database.

### P

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#### parameters

Parameters are pieces of information - such as a file system path or a user name - that a step requires to carry out its action. Values for parameters that are designated User Selected in the workflow can be specified in the deployment. Parameters that are marked Enter at Runtime in the deployment must be specified on the target system when the workflow runs.

### R

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#### raw devices

In Sybase ASE version 15, you can create and mount database devices on raw bound devices. This enables Sybase ASE to use direct memory access from your address space to the physical sectors on the disk. This can improve performance by reducing memory copy operations from the user address space to the operating system kernel buffers.

#### Recovery Manager (RMAN)

Oracle Recovery Manager (RMAN) is a backup and recovery tool included in Oracle Database Enterprise Edition (and related products). RMAN enables you to efficiently backup and restore data files, control files, server parameter files, and archived redo log files. It provides block-

level corruption detection during both the backup and restore phases. It is optimized for performance and space consumption.

### S

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#### source

In a database refresh scenario, the contents of the SOURCE database are extracted and stored in a file (or multiple files).

#### SOURCE

In a database refresh scenario, the contents of the SOURCE database are extracted and stored in a file (or multiple files).

#### source database

In the context of MS SQL database refresh, the "source database" is the database from which the backup file is created.

#### steps

Steps contains the actual code used to perform a unit of work detailed in a workflow.

### T

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#### target instance

In the context of MS SQL database refresh, the term "target instance" refers to the SQL Server instance where the database that will be restored resides.

### W

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#### workflow

A workflow automates the process followed for an operational procedure. Workflows contain steps, which are linked together to form business logic for a common task. Workflows connect existing tasks in order to perform a new

business process by building on existing best practices and processes.

### **workflow editor**

The workflow editor is the tool that you use to assemble steps into workflows. You can map each input parameter to output parameters of previous steps or built-in metadata (such as the server name, instance name, or database name). You can also specify User Selected to expose a parameter in the deployment; this enables the person who creates the deployment to specify a value for that parameter.