



# Database and Middleware Automation

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Linux, Solaris, AIX, HP-UX, and Windows

## Workflows for Apache

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## Contents

Apache Web Server .....	5
Apache - Provision Software .....	6
Prerequisites for this workflow .....	8
How this workflow works .....	9
How to Run this Workflow .....	11
Sample Scenarios .....	14
Parameters for Apache - Provision Software .....	16
Send documentation feedback .....	19



# Apache Web Server

This section contains the following topics:

Workflow type	Workflow name
Provisioning	<a href="#">"Apache - Provision Software" on the next page</a>

# Apache - Provision Software

This workflow does the following:

- deploy an Apache web server archive to a specified location.
- provision new Apache instances. The new instances will be pointing to the deployed Apache Web Server location.
- upgrade/patch existing Apache instances. The existing instances will be pointing to the deployed Apache Web Server location.

This workflow provisions Apache web server versions 2.2.x and 2.4.x. The upgrade/patch is supported with in the same version family, for example, 2.2 to 2.2.x.

This Workflow requires a compressed file (.zip or tar.gz). For Windows OS, it should be a .zip file.

The workflow can create multiple Apache instances (new) and upgrade/patch multiple Apache instances (existing). Content root directory corresponds to the instance location of an Apache server installation.

The newly provisioned instances will have the configuration files copied from a deployed Apache Web Server location. Also a copy of the htdocs and cgi content will be copied to the content home of the newly created instances.

Topic	Information Included
"Prerequisites for this workflow"	List of prerequisites that must be satisfied before you can run this workflow
"How this workflow works"	Information about what the workflow does, including validation checks performed, steps executed, and a high-level process flow
"How to Run this Workflow"	Instructions for running this workflow in your environment
"Sample Scenarios"	Examples of typical parameter values for this workflow
"Parameters for Apache - Provision Software"	List of input parameters for this workflow

The process of deploying and running this workflow is the same for all scenarios, but the parameters required will differ depending on the specific scenario that you are implementing.

The workflow provides default values for most parameters. These default values are usually sufficient for a typical provisioning scenario. 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 Apache - Provision Software"](#).

**Note:** For information about the steps in this workflow, see the ["How this workflow works"](#) on [page 9](#).

**Note:** The documentation for this workflow contains steps that are referred to by their base names. The names in the DMA user interface may have a version appended, for example, v2.

## Prerequisites for this workflow

The following prerequisites must be satisfied before you can run the Apache - Provision Software workflow:

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

For information about prerequisites for Apache HTTP Server, refer to the [Apache HTTP Server Documentation](#).



## How this workflow works

This topic contains the following information about the Apache - Provision Software workflow:

### **Validation Checks Performed**

The workflow checks the following things prior to extracting the binaries. If any of these checks fails, the workflow fails.

1. All required parameters have values. If any required parameter does not have a value—either a value that you specify or a default value—the workflow fails.
2. Directories and host names are valid. No illegal characters are included. The fully qualified path specified for downloading Apache web server binaries exists: `/example/downloads/`.
3. The additional packages that are used by the deployment package must be installed on the target system.
4. The operating system is a supported platform.
5. Sufficient disk space is available to extract the binary files from the compressed archive.
6. Sufficient disk space is available to install Apache web server.

### **Steps Executed**

The Apache - Provision Software 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 subsequent steps are skipped.

## Process Flow

This workflow performs the following tasks:

1. Gathers mandatory and optional input parameters (user-provided) to provision Apache web server.
2. Validates the parameters needed to provision Apache web server.
3. Checks for the existence of a file before downloading.
4. Automates the transfer of files. Verifies checksum of each file transferred.
5. Installs the supported binary files.
6. Extracts the Apache web server archive to the specified directories.
7. Creates and configures new Apache web server instances.
8. Configures existing Apache web server instances.
9. Starts the HTTP server.
10. Tests the installation.
11. Creates Apache services for UNIX.
12. Discovers Apache web server.
13. Gathers files and cleans up.
14. Cleans up downloaded files that are no longer required, based on user-specified flags, in the event of workflow success or failure.

## How to Run this Workflow

This topic explains how to customize and run the Tomcat - Provision Software workflow in your environment.

**Note:** Prior to running this workflow, review the ["Prerequisites for this workflow"](#), and ensure that all requirements are satisfied.

### To customize and run the Apache - Provision Software workflow:

1. Create a deployable copy of the workflow.
2. Determine the values that you will specify for the following parameters. These are the parameters that are visible in the deployment by default.

#### Parameters in the step: Gather Parameters for Apache Provision Software

Parameter Name	Default Value	Description
Apache Group	no default	The user-group that the Apache server will run under Example: apachegrp. The group will be created if it is not already present
Apache Instances	no default	Comma separated list of absolute path to instance locations to provision or to patch. If an instance is already present then the instance location references will be remapped to current installation.
Apache User	no default	The user under which the Apache server will run under. The user will be created if not present and the password for the newly created user can be set using Apache HTTP User Password parameter.
Httpd Distribution Archive	True	The .zip or tar archive that contains the Apache installed archive.
Apache Installation Location	no default	The installation location for Apache server.
Instance HTTP Port	True	Comma separated list of the HTTP Ports to be used in running the instances. This value must be in correspondence to the instance location.
Staging Location	no default	The temporary location to download the HTTPd distribution package.

**Parameters in the step: Gather Advanced Parameters for Apache Provision Software**

Parameter Name	Default Value	Description
Apache Content Location	no default	Comma separated list of absolute path to the content homes. The values are in correspondence to the instance home location.
Apache HTTP User Password	no default	This is required when the Apache HTTP user does not exist and the user must be created. This will be the password of the newly created user. This is mandatory if the target machine is running Windows OS.
Cleanup Existing Installation	no default	If "True" is specified, the process will be stopped and the location will be erased if the workflow runs successfully. If "False" is specified, the workflow fails when there is a conflict. Valid values are "True" and "False".
Cleanup On Failure	True	Determines whether to remove downloaded and extracted files as well as cleans up installed directory on failure of workflow. Default is set to True, which will clean up on failure.
Cleanup On Success	True	Determines whether to remove downloaded and extracted files as well as cleans up installed directory on successful execution of workflow. Default is set to True, which will clean up on failure.
Enable SSL	False	Enables the Server Side Includes feature for the content directory. The values are 'True' or 'False'.
Instance SSL Port	no default	Comma separated list of values corresponding to an instance name. This will be used to initialize the listener port in the SSL configuration file. Example: If Instance Name Parameter value is http_instance1,http_instance2, the port values can be 1234,4321 where 1234 belongs to http_instance1 and 4321 belongs to http_instance2.
Overwrite Service	False	The values of this parameter can be True or False . If True is specified, then the service which already exists will be backed up and overwritten.
SSL Cert File	no default	Comma separated list of paths to the SSL cert file. This value will be updated in the SSL configuration of instance configuration folder.
SSL Key File	True	Comma separated list of paths to the SSL key file. This value will be updated in the SSL configuration of instance configuration folder.
Service Name	no default	Comma separated set of values. The name for the Apache service in a UNIX machine.
IP-Hostname Configuration	no default	Comma separated list of values in the following format: ipaddress1=hostname1,ipaddress2=hostname2,ipaddress3=hostname3  The number of ipaddress=hostname values must be equal to the number of instances to be provisioned by the workflow.

See "[Parameters for Apache - Provision Software](#)" 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. You will specify values for those parameters when you create the deployment.
4. Save the changes to the workflow (click **Save** in the lower right corner).
5. Create a new deployment.
6. On the Parameters tab, specify values for the required parameters listed in step 2 and any additional parameters that you have exposed. You do not need to specify values for those parameters whose default values are appropriate for your environment.
7. On the Targets tab, specify one or more targets for this deployment.
8. Save the changes to the workflow (click **Save** in the lower right corner).
9. Run the workflow using this deployment.

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.

## Sample Scenarios

This topic shows you how to use various parameters to achieve the following provisioning scenarios in your environment using the Apache - Provision Software workflow.

Specify values for the following parameters to install the Apache web server. The downloaded Apache web server binaries will be removed upon successful or unsuccessful execution of the workflow.

Step Name	Parameter Name	Example Value
Gather Parameters for Provisioning Apache Software	Apache Group	apacheusergroup
	Apache Instances	
	Apache User	apacheuser
	Httpd Distribution Archive	apache2.zip
	Apache Installation Location	/tmp/apache/
	Instance HTTP Port	
	Staging Location	/tmp/temp/
Gather Advanced Parameters for Provisioning Tomcat Software	Apache Content Location	httpd.conf
	Apache HTTP User Password	
	Cleanup Existing Installation	True
	Cleanup On Failure	True

Step Name	Parameter Name	Example Value
	Cleanup On Success	True
	Enable SSL	False
	Instance SSL Port	
	Overwrite Service	False
	SSL Cert File	
	SSL Key File	True
	Service Name	
	IP-Hostname Configuration	127.0.0.1=localhost,192.168.1.123=local@companydomain.com

Be sure that the default values for all remaining parameters are appropriate for your environment.

## Parameters for Apache - Provision Software

The following tables describe the required and optional input parameters for this workflow. Several of these parameters are not initially visible in a deployment. For many parameters, if you do not specify a value for a parameter, a default value is assigned.

### Parameters in the step: Gather Parameters for Apache Provision Software

Parameter Name	Default Value	Required	Example Value	Description
Apache Group	no default	required	apacheusergroup	The user-group that the Apache server will run under Example: apachegrp. The group will be created if it is not already present
Apache Instances	no default	required		Comma separated list of absolute path to instance locations to provision or to patch. If an instance is already present then the instance location references will be remapped to current installation.
Apache User	no default	required	apacheuser	The user under which the Apache server will run under. The user will be created if not present and the password for the newly created user can be set using Apache HTTP User Password parameter.
Httpd Distribution Archive	True	required	apache2.zip	The .zip or tar archive that contains the Apache installed archive.
Apache Installation Location	no default	required	/tmp/apache/	The installation location for Apache server.
Instance HTTP Port	True	required		Comma separated list of the HTTP Ports to be used in running the instances. This value must be in correspondence to the instance location.
Staging Location	no default	required	/tmp/temp/	The temporary location to download the HTTPd distribution package.

### Parameters in the step: Gather Advanced Parameters for Apache Provision Software

Parameter Name	Default Value	Required	Example Value	Description
Apache Content Location	no default	optional	httpd.conf	Comma separated list of absolute path to the content homes. The values are in correspondence to the instance home location.



**Parameters in the step: Gather Advanced Parameters for Apache Provision Software, continued**

Parameter Name	Default Value	Required	Example Value	Description
Apache HTTP User Password	no default	optional		This is required when the Apache HTTP user does not exist and the user must be created. This will be the password of the newly created user. This is mandatory if the target machine is running Windows OS.
Cleanup Existing Installation	no default	optional	True	If "True" is specified, the process will be stopped and the location will be erased if the workflow runs successfully. If "False" is specified, the workflow fails when there is a conflict. Valid values are "True" and "False".
Cleanup On Failure	True	optional	True	Determines whether to remove downloaded and extracted files as well as cleans up installed directory on failure of workflow. Default is set to True, which will clean up on failure.
Cleanup On Success	True	optional	True	Determines whether to remove downloaded and extracted files as well as cleans up installed directory on successful execution of workflow. Default is set to True, which will clean up on failure.
Enable SSL	False	optional	False	Enables the Server Side Includes feature for the content directory. The values are 'True' or 'False'.
Instance SSL Port	no default	optional		Comma separated list of values corresponding to an instance name. This will be used to initialize the listener port in the SSL configuration file. Example: If Instance Name Parameter value is http_instance1,http_instance2, the port values can be 1234,4321 where 1234 belongs to http_instance1 and 4321 belongs to http_instance2.
Overwrite Service	False	optional	False	The values of this parameter can be True or False . If True is specified, then the service which already exists will be backed up and overwritten.
SSL Cert File	no default	optional		Comma separated list of paths to the SSL cert file. This value will be updated in the SSL configuration of instance configuration folder.
SSL Key File	True	optional	True	Comma separated list of paths to the SSL key file. This value will be updated in the SSL configuration of instance configuration folder.
Service Name	no default	optional		Comma separated set of values. The name for the Apache service in a UNIX machine.
IP-Hostname Configuration	no default	optional		Comma separated list of values in the following format: ipaddress1=hostname1,ipaddress2=hostname2,ipaddress3=hostname3  The number of ipaddress=hostname values must be equal to the number of instances to be provisioned by the workflow.



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