



# Database and Middleware Automation

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Linux, Solaris, AIX, and HP-UX

## Workflows for Tomcat

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# Tomcat Application Server

This section contains the following topics:

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

# Tomcat - Provision Software

This workflow deploys an Apache Tomcat Server binary to a specified location and provision multiple Tomcat instances supporting domain configuration. The domain configuration provides the ability to have a Tomcat (Catalina) home folder and multiple instance folders (Catalina base).

For example:

- Catalina Home: /opt/tomcat/apache-tomcat-8.0.1
- Catalina Base1:/vat/tomcat/tomcatinstance-1
- Catalina Base2:/vat/tomcat/tomcatinstance-2

This workflow requires Tomcat version 7.x and 8.x and JDK 1.7 and higher.

Use this workflow to install a new instance of a Apache Tomcat Server version 8.x.

The workflow performs checks to determine whether the Apache Tomcat and Java binaries exist on the target server. If they do not, the workflow downloads them from the software repository.

The workflow also performs validation checks at the operating system level, including file system space checks and Java version level checks.

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 Tomcat - 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 Tomcat - 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 Tomcat - Provision Software workflow:

1. The workflow requires unchallenged sudo access to a user (typically root) who can access all required files and directories.
2. The workflow requires the Java Development Kit (JDK) version 1.7 (or later).
3. For Windows OS, the JDK 1.7 has to be installed before running this workflow.

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



## How this Workflow Works

This topic contains the following information about the Tomcat - 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 paths specified for downloading Tomcat and Java binaries exist and point to the same folder, for example: `/example/downloads/`.
3. The Java version is 1.7 or later.
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 Tomcat and Java.

### **Steps Executed**

The Tomcat - 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** show

This workflow performs the following tasks:

1. Gathers mandatory and optional input parameters (user-provided) to provision Tomcat application server.
2. Validates the parameters needed to provision Tomcat application server.
3. Checks for the existence of a file before downloading.
4. Determines whether the Tomcat application server archive is present on the target server. If not present, the workflow downloads it from the software repository.
5. Extracts the Tomcat application server archive to the specified directories.
6. Validates the extracted files.
7. Updates standalone configuration.
8. Starts Tomcat application server.
9. Discovers Tomcat application server.
10. 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 Tomcat - 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 Defined in this Step: Gather Parameters for Provisioning Tomcat Software

Parameter Name	Default Value	Description
Domain Location	no default	The path to Tomcat domain location.
Download Location	no default	The location where the Java and Tomcat binaries will be downloaded and saved in the target machine.
Install Dir	/opt/tomcat C:\tomcat	Fully qualified path to where the binary files will be uncompressed.
Java Binary Archive	no default	Fully qualified path to where the compressed Java software package should be located on the target machine. The directory should exist on the target machine and must be the same directory specified in the Tomcat Binary Archive parameter. If the Java software package is not available in this directory, then it will be downloaded from the software repository and placed in this directory.
Tomcat Binary Archive	no default	Name of the Tomcat software package. If the Tomcat software package is not available in the target machine, then it will be downloaded from the software repository and placed in Download Location.
Tomcat Group	no default	The user group to which the Tomcat user belongs. This is not supported for Windows OS.
Tomcat Instance Name	no default	Tomcat Instance name that should be provisioned under the given domain as specified by 'Domain Location' parameter.
Tomcat User	no default	The user under which the Tomcat application server will run. The user will be created if not present and the password for the newly created user can be set using 'Tomcat User Password' parameter. If this password is left blank, the 'Tomcat User' value is used as password. This is not supported for Windows OS.

See "[Parameters for Tomcat - 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 Tomcat - Provision Software workflow:

Specify values for the following parameters to install the Apache Tomcat 8.0. The downloaded Tomcat and Java binaries will be removed upon successful or unsuccessful execution of the workflow.

Step Name	Parameter Name	Example Value	
Gather Parameters for Provisioning Tomcat Software	Domain Location	/apps/GTS/domain	
	Download Location	/opt/downloads	
	Install Dir	/opt/tomcat	
	Java Binary Archive	/example/downloads/jdk-7u71-linux-x64.gz	
	Tomcat Binary Archive	/example/downloads/apache-tomcat-7.0.64.tar.gz	
	Tomcat Group		
	Tomcat Instance Name	tomcatinstance1	
	Tomcat User	tomcat	
	Gather Advanced Parameters for Provisioning Tomcat Software	Clean on Failure	True
		Clean on Success	True
Custom KeyStore PassPhrase		keystore_password	
Custom KeyStore Path		/opt/tomcat/apache-tomcat-8.0.27/conf/mykeystore.jks	
Custom PrivateKey PassPhrase		pvtkey_password	
Custom TrustStore PassPhrase		truststore_password	
Custom TrustStore Path		/opt/tomcat/apache-tomcat-8.0.27/conf/mytruststore.jks	
Tomcat Admin Password		mypassword	

Step Name	Parameter Name	Example Value
	Tomcat Admin User	admin
	Tomcat Instance AJP Port	9009
	Tomcat Instance HTTP Port	18080
	Tomcat Instance SSL Port	18444
	Tomcat User Password	

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

## Parameters for Tomcat - 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 Defined in this Step: Gather Parameters for Provisioning Tomcat Software

Parameter Name	Default Value	Required	Example Value	Description
Domain Location	no default	required	/apps/GTS/domain C:\tomcatdomain	The path to Tomcat domain location.
Download Location	no default	required	/opt/downloads	The location where the Java and Tomcat binaries will be downloaded and saved in the target machine.
Install Dir	/opt/tomcat C:\tomcat	required	/opt/tomcat C:\tomcat	Fully qualified path to where the binary files will be uncompressed.
Java Binary Archive	no default	required	/example/downloads/jdk-7u71-linux-x64.gz	Fully qualified path to where the compressed Java software package should be located on the target machine. The directory should exist on the target machine and must be the same directory specified in the Tomcat Binary Archive parameter. If the Java software package is not available in this directory, then it will be

**Parameters Defined in this Step: Gather Parameters for Provisioning Tomcat Software, continued**

Parameter Name	Default Value	Required	Example Value	Description
				downloaded from the software repository and placed in this directory.
Tomcat Binary Archive	no default	required	/example/downloads/apache-tomcat-7.0.64.tar.gz	Name of the Tomcat software package. If the Tomcat software package is not available in the target machine, then it will be downloaded from the software repository and placed in Download Location.
Tomcat Group	no default	required		The user group to which the Tomcat user belongs. This is not supported for Windows OS.
Tomcat Instance Name	no default	required	tomcatinstance1	Tomcat Instance name that should be provisioned under the given domain as specified by 'Domain Location' parameter.
Tomcat User	no default	required	tomcat	The user under which the Tomcat application server will run. The user will be created if not present and the password for the newly



**Parameters Defined in this Step: Gather Parameters for Provisioning Tomcat Software, continued**

Parameter Name	Default Value	Required	Example Value	Description
				created user can be set using 'Tomcat User Password' parameter. If this password is left blank, the 'Tomcat User' value is used as password. This is not supported for Windows OS.

**Parameters Defined in this Step: Gather Advanced Parameters for Provisioning Tomcat Software**

Parameter Name	Default Value	Required	Example Value	Description
Clean on Failure	True	optional	True	Flag that determines whether to clean up on workflow failure. If set to 'True', the workflow will clean up the downloaded files. Valid values are 'True' and 'False'. The default value is 'True'.
Clean on Success	True	optional	True	Flag that determines whether to clean up on workflow success. If set to 'True', the workflow will clean up the downloaded files. Valid values are 'True' and 'False'. The default value is 'True'.
Custom KeyStore PassPhrase	no default	optional	keystore_password	The password required for the custom keystore, specified as the <i>-storepass</i> argument to the <i>keytool</i> command.
Custom KeyStore Path	no default	optional	/opt/tomcat/apache-tomcat-8.0.27/conf/mykeystore.jks	Fully qualified path to the custom trust store file.  If this value is provided, then value

**Parameters Defined in this Step: Gather Advanced Parameters for Provisioning Tomcat Software, continued**

Parameter Name	Default Value	Required	Example Value	Description
				for the Custom KeyStore PassPhrase and Custom PrivateKey PassPhrase parameters are required. If this field is blank, the SSL will not be enabled in Tomcat.
Custom PrivateKey PassPhrase	no default	optional	pvtkey_password	The password required to retrieve the private key from the keystore, specified as "-keypass" argument to keytool command.
Custom TrustStore PassPhrase	no default	optional	truststore_password	The password required for the custom TrustStore.
Custom TrustStore Path	no default	optional	/opt/tomcat/apache-tomcat-8.0.27/conf/mytruststore.jks	Fully qualified path to the custom TrustStore file.
Tomcat Admin Password	admin	optional	mypassword	Tomcat administrator password which is used to access the Administration Console. The users are maintained in a file called tomcat-users.xml under the conf folder.
Tomcat Admin User	no default	optional	admin	Tomcat administrator user which is used to access the Administration Console. The users are maintained in a file called tomcat-users.xml under the conf folder.
Tomcat Instance AJP Port	no default	optional	9009	Custom AJP port for TomcatInstance.
Tomcat Instance HTTP Port	no default	optional	18080	Custom HTTP port for TomcatInstance.
Tomcat Instance SSL Port	no default	optional	18444	Custom SSL port for TomcatInstance.

**Parameters Defined in this Step: Gather Advanced Parameters for Provisioning Tomcat Software, continued**

Parameter Name	Default Value	Required	Example Value	Description
				The Keystore details have to be provided in order to enable SSL.
Tomcat User Password	no default	optional		The password for 'Tomcat User' parameter.

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