

BEAProducts

Creating Templates and Domains Using the pack and unpack Commands

BEA AquaLogic Service Bus™ 2.1 BEA WebLogic Server® 9.1 Document Revised: December 16, 2005

Copyright

Copyright © 1995-2005 BEA Systems, Inc. All Rights Reserved.

Restricted Rights Legend

This software is protected by copyright, and may be protected by patent laws. No copying or other use of this software is permitted unless you have entered into a license agreement with BEA authorizing such use. This document is protected by copyright and may not be copied photocopied, reproduced, translated, or reduced to any electronic medium or machine readable form, in whole or in part, without prior consent, in writing, from BEA Systems, Inc.

Information in this document is subject to change without notice and does not represent a commitment on the part of BEA Systems. THE DOCUMENTATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. FURTHER, BEA SYSTEMS DOES NOT WARRANT, GUARANTEE, OR MAKE ANY REPRESENTATIONS REGARDING THE USE, OR THE RESULTS OF THE USE, OF THE DOCUMENT IN TERMS OF CORRECTNESS, ACCURACY, RELIABILITY, OR OTHERWISE.

Trademarks and Service Marks

Copyright © 1995-2005 BEA Systems, Inc. All Rights Reserved.BEA, BEA JRockit, BEA WebLogic Portal, BEA WebLogic Server, BEA WebLogic Workshop, Built on BEA, Jolt, JoltBeans, SteelThread, Top End, Tuxedo, and WebLogic are registered trademarks of BEA Systems, Inc. BEA AquaLogic, BEA AquaLogic Data Services Platform, BEA AquaLogic Enterprise Security, BEA AquaLogic Service Bus, BEA AquaLogic Service Registry, BEA Builder, BEA Campaign Manager for WebLogic, BEA eLink, BEA Liquid Data for WebLogic, BEA Manager, BEA MessageQ, BEA WebLogic Commerce Server, BEA WebLogic Communications Platform, BEA WebLogic Enterprise, BEA WebLogic Enterprise Platform, BEA WebLogic Enterprise Security, BEA WebLogic Express, BEA WebLogic Integration, BEA WebLogic Java Adapter for Mainframe, BEA WebLogic JDriver, BEA WebLogic Log Central, BEA WebLogic Network Gatekeeper, BEA WebLogic Personalization Server, BEA WebLogic Server Process Edition, BEA WebLogic SIP Server, BEA WebLogic WorkGroup Edition, Dev2Dev, Liquid Computing, and Think Liquid are trademarks of BEA Systems, Inc. BEA Mission Critical Support Continuum, and BEA SOA Self Assessment are service marks of BEA Systems, Inc.

All other names and marks are property of their respective owners.

Contents

1. Introduction

Overview of the pack and unpack Commands1-	1
Location of Command Scripts1-	-2
About the pack Command1-	2
About the unpack Command1-	2
About Domain and Managed Server Templates1-	.3
Additional Tools for Creating Templates and Domains1-	.3

2. pack and unpack Command Descriptions

pack
Syntax
Parameter Descriptions
Example
unpack
Syntax
Parameter Descriptions
Example

3. How Do I...?

Creating and Starting a Managed Server on a Remote Machine: Main Steps	3-1
How Do I: Use pack to Create a Managed Server Template	3-2
How Do I: Use unpack to Create a Managed Server on a Remote Machine	3-3
How Do I: Start Managed Servers on a Remote Machine	3-3

Creating Templates and Domains Using the pack and unpack Commands

iv



Introduction

This document describes how to use the pack and unpack commands to create templates and domains.

Topics in this section include:

- Overview of the pack and unpack Commands
- About Domain and Managed Server Templates
- Additional Tools for Creating Templates and Domains

Overview of the pack and unpack Commands

BEA provides several tools for creating domains and templates: the Configuration Wizard, the Domain Template Builder, WLST Offline, and the pack and unpack commands. The pack and unpack commands provide a simple, one-step method for creating domains and templates from the command line. They do not, however, allow you to customize the contents of your domain or template in the same way as the other tools. For more information about creating templates and domains using the Configuration Wizard, the Domain Template Builder, or WLST Offline, see "Additional Tools for Creating Templates and Domains" on page 1-3.

This section provides the following topics:

- Location of Command Scripts
- About the pack Command
- About the unpack Command

Location of Command Scripts

On both Windows and UNIX systems, pack and unpack are installed in the \common\bin subdirectory of the product installation directory, for example

C:\bea\weblogic91\common\bin.

About the pack Command

The pack command provides an alternative means for quickly creating a template from the command line in one simple step. Although the pack command does not allow you to customize the contents of your template in the same way as the Domain Template Builder, it is a useful tool for quickly creating the following:

- A domain template that contains a snapshot of an entire working domain that has been customized through the Administration Console, Configuration Wizard, or WebLogic Scripting Tool (WLST). This template can then be used to create a domain using unpack, the Configuration Wizard, or WebLogic Scripting Tool (WLST) Offline.
- A Managed Server template that contains a subset of the files in a domain that are required to create a Managed Server domain directory hierarchy on a remote machine. You can then use unpack to create the Managed Server domain directory on the remote machine. For more information, see "Creating and Starting a Managed Server on a Remote Machine: Main Steps" on page 3-1.

For a complete description of the pack command, see "pack" on page 2-1.

For additional information about the Domain Template Builder, the Configuration Wizard, or WLST, see "Additional Tools for Creating Templates and Domains" on page 1-3.

About the unpack Command

The unpack command provides a one-step method for quickly creating a domain from an existing template using the default settings defined in the template. When creating a domain, unpack does not provide the same customization options as the Configuration Wizard or WLST. However, if you use the unpack command with a domain template, you can do the following:

- Change the password for the default administrative user defined in the template
- Add an administrative user when the default administrative user already has a password specified in the template

- Specify the JDK and start mode for the domain
- Specify an applications directory, if one is supported by the template

Using unpack, you can also create a Managed Server domain directory using a Managed Server template created using the pack command. Because a Managed Server uses the settings defined for the Administration Server, you cannot change the JDK or the start mode, add administrative users, or change the Administrator password.

Note: You cannot use unpack to extend an existing domain.

For a complete description of the unpack command, see "unpack" on page 2-5.

For additional information about the Configuration Wizard, Domain Template Builder, or WLST, see "Additional Tools for Creating Templates and Domains" on page 1-3.

About Domain and Managed Server Templates

When you are using pack and unpack, the term *template* refers to a Java Archive (JAR) file that contains the files and scripts required to create a domain. The types of templates that can be created by the pack command and used by the unpack command to create domains include:

- *Domain template*—defines the full set of resources within a domain, including infrastructure components, applications, services, security options, and general environment and operating system options. Using the pack command, you can create a domain template from an existing domain. A domain template is used to create a new domain.
- *Managed Server template*—defines the subset of resources within a domain that are required to create a Managed Server domain directory on a remote machine. You create a Managed Server template using the pack command, with the -managed=true option. Subsequently, when you use the Managed Server template with the unpack command, the Managed Server domain directory that is created contains sufficient bootstrap information to start the Managed Server on the remote machine. You can start the Managed Server on the remote machine in either of two ways: using Node Manager, or using customized start scripts created when you unpacked the template on the remote machine.

Additional Tools for Creating Templates and Domains

Your BEA software provides several tools for creating templates and domains. The pack and unpack commands provide a one-step method for creating templates and domains. You can also use the tools defined in the following table to create templates and domains.

Introduction

To perform this task	Use these tools
Create a template	• Domain Template Builder—a stand-alone Java application that guides you through the process of creating custom domain and extension templates using a graphical user interface. The Domain Template Builder provides more control over template customization than the pack command. In addition to customizing basic template information, you can also control the following:
	- Application and domain directory contents
	- Database configuration scripts
	- Administration Server configuration
	- Basic security configuration
	- Start menu entries
	- Customized scripts and variables
	For more information, see <i>Creating Templates Using the Domain Template Builder</i> .
	• WLST Offline—a command-line scripting interface that you use to create a new domain or update an existing domain without connecting to a running WebLogic Server. The writeTemplate functionality of WLST Offline provides the same capability for creating a domain template as the pack command. You cannot create a Managed Server template using WLST Offline. For more information, see "Creating a Domain Template (Offline)" in "Creating and Configuring WebLogic Domains Using WLST Offline" in <i>WebLogic Scripting Tool</i> .

Table 1-1 Additional Tools for Creating Templates and Domains

To perform this task	Use these tools
Create a new domain or extend an existing domain	 Configuration Wizard—a stand-alone Java application that guides you through the process of creating or extending a domain. When creating a new domain, you can choose to accept the default settings or to customize the domain to more closely match your particular environment by adding and configuring Managed Servers, clusters, and machine definitions, or customizing predefined JDBC data sources, and JMS file store directories. You can also use the Configuration Wizard to extend an existing domain by adding predefined applications, services, or product component functionality. For more information, see <i>Creating WebLogic Domains Using the Configuration Wizard</i>. WLST Offline—a command-line scripting interface that you use to create a new domain or update an existing domain without connecting to a running WebLogic Server—supporting the same functionality as the Configuration Wizard. For more information, in <i>WebLogic Scripting Tool</i>.

Table 1-1 Additional Tools for Creating Templates and Domains (Continued)

Introduction



pack and unpack Command Descriptions

The following sections describe the pack and unpack commands:

- pack
- unpack

pack

The pack command creates a template archive (.jar) file that contains a snapshot of either an entire domain or a subset of a domain. You can use a template that contains a subset of a domain to create a Managed Server domain directory hierarchy on a remote machine.

The following table describes the files and directories that are included in both domain and Managed Server templates.

When you create this type of template	The following occurs	
Domain	 All files and directories in the source domain are included, with the following exceptions: Temporary files that are created when you start a server. The servers directory. Files in the security directory that are created automatically when you create the domain, such as DefaultAuthenticatorInit.ldift and XACMLRoleMapperInit.ldift. Note: If you configured additional security data, such as for users, groups, or roles, through the WebLogic Server Administration Console or other online tools, the security data is stored in the LDAP server and is not included in the template. You must first export the data and then import it into the target domain. 	
Managed Server (using the -managed=true option)	 The following files and directories are included by default: All files in the root directory with the following extensions: .cmd, .sh, .xml, .properties, and.ini. Any files with the.pem extension defined in the SSL configuration for your domain bin directory lib directory All files and subdirectories in the config directory The following files and directories are <i>not</i> included in a Managed Server template by default: Applications and certain application initialization files Temporary files that are created when you start a server The servers directory Files in the security directory that are created automatically when you create the domain, such as DefaultAuthenticatorInit.ldift and XACMLRoleMapperInit.ldift. Note: The config.xml file of the domain from which you are creating your template must contain Managed Server template that you create from that domain can only be used, with the unpack command, on the specified remote machines to create Managed Server domain directories for the 	

Syntax

```
pack -domain=domain -template=template -template_name"
[-template_author="author"][-template_desc="description"]
[-managed={true|false}][-log=log_file] [-log_priority=log_priority]
```

Parameter Descriptions

The following table describes the parameters that can be used with the pack command.

Parameter	Description
The following parameters are required:	
-domain= <i>domain</i>	The full or relative path to the domain from which the template is to be created.
-template= <i>template</i>	The full or relative path and filename of the template to be created. The template filename must include the .jar extension.
-template_name="template_name"	Descriptive name for the template. Quotes are required only if the value for this parameter contains spaces.
The following parameters are optional:	
-template_author="author"	The name of the author of the template. Quotes are required only if the value for this parameter contains spaces.
-template_desc="description"	Description of the template. Quotes are required only if the value for this parameter contains spaces.

Table 2-1 Parameters for pack Command

Parameter	Description
-managed={true false}	Specifies whether the template is to be used to create Managed Servers on remote machines. The default is false.
	When this parameter is set to true, a Managed Server template is created that contains a minimal set of files, including SerializedSystemIni.dat, config.xml, and nm_password.properties. It also includes a domain.properties file that is unique to the Managed Server template.
	Applications and certain application initialization files are not included.
	The resulting template can be used to create Managed Servers on remote machines.
-log=log_file	Name of the log file.
-log_priority= <i>log_priority</i>	The priority setting for the log file. Use a log4j priority string. Valid log4j priority strings are debug, info, warn, error, fatal. The priority string values correspond to the levels defined in the Level class. For more information, see http://logging.apache.org/log4j/docs/api/or g/apache/log4j/Level.html.

Table 2-1 Parameters for pack Command (Continued)

Example

Executing the following command using a domain named mydomain in the directory C:\bea\user_projects\domains creates a template file named mydomain.jar in the directory C:\bea\user_templates. The name of the template is specified as My WebLogic Domain.

```
pack -domain=C:\bea\user_projects\domains\mydomain
-template=C:\bea\user_templates\mydomain.jar -template_name="My WebLogic
Domain"
```

Related Topics

- "Creating and Starting a Managed Server on a Remote Machine: Main Steps" on page 3-1
- "How Do I: Use pack to Create a Managed Server Template" on page 3-2

unpack

Creates a full domain or a subset of a domain used for a Managed Server domain directory on a remote machine. You may use unpack only with a template compatible with your current installation. The template can be any of the following:

- A domain template provided by BEA and packaged with your current installation
- A domain template created using the Domain Template Builder or WLST Offline
- A domain template created using the pack command
- A Managed Server template created using the pack command. A Managed Server template, by default, contains only the files necessary for creating a Managed Server domain directory.

When you use the unpack command with a domain template, it creates a domain containing all of the application and resource files defined in the template. It also creates necessary start scripts, and certain security and configuration files.

When you use the unpack command with a Managed Server template, it creates a Managed Server domain directory that includes the following:

- A customized start script for each Managed Server in the domain
- A config_bootstrap.xml file (based on the config.xml in the template)
- A nm_password.properties file
- A SerializedSystemIni.dat file

An entry for the Managed Server domain directory is also created in the NM_HOME/nodemanager.domains file, where NM_HOME designates the Node Manager installation directory for the product installation on the remote machine. By default, this directory is located in WL_HOME/common/nodemanager, for example,

C:\bea\weblogic91\common\nodemanager\nodemanager.domains.

Note: By default, application files are not included in a Managed Server template created using the pack command. If an application in the domain from which you created a Managed Server template was deployed using external_stage mode, the Managed Server domain directory that you create with the unpack command will not contain any of the external_staged applications. Before you start the Managed Server, you will need to make sure that it has access to the externally staged application files. For more information, see "Controlling Deployment File Copying with Staging Modes" in *Deploying Applications to WebLogic Server*. For more information about using the pack and unpack commands to create a Managed Server domain directory, see "Creating and Starting a Managed Server on a Remote Machine: Main Steps" on page 3-1.

Syntax

```
unpack -template=template -domain=domain [-user_name=username]
[-password=password] [-app_dir=application_directory]
[-java_home=java_home_directory] [-server_start_mode={dev|prod}]
[-log=log_file] [-log_priority=log_priority]
```

Parameter Descriptions

The following table describes the parameters that can be used with the unpack command.

Parameter	Description
The following parameters are required:	
-template= <i>template</i>	The full or relative path and filename of the template being used to create the domain.
-domain=domain	The full or relative path to the domain to be created.

Table 2-2 Parameters for unpack Command

2-7

Parameter	Description
The following parameters are optional:	
-user_name= <i>username</i> -password= <i>password</i>	The username and password for the default administrator as currently defined in the template. This username/password combination is used to boot the Administration Server and connect to it. If you specify a new password for the default administrator, the password will be reset to the value specified.
	Note: If a password for the default administrator is not defined in the template, you must specify one.
	If no administrative users are defined in the template, you can create a new default administrator by specifying the -user_name and -password parameters.
	If a default administrator and password are currently defined in the template, you can add a new administrative user by specifying the -user_name and -password parameters.
	A valid username cannot include commas, tabs, or any characters in the following list: < > $\# \& ? () \{ \}$. Usernames are case sensitive.
	A valid password consists of a string of <i>at least</i> 8 case-sensitive characters. The unpack command encrypts the password value.
	Note: These parameters are not applicable if you are creating a domain using a Managed Server template.
-app_dir=application_directory	The full path to the directory used to store the applications defined in the template.
	Note: This parameter is only applicable if the template supports a separate applications directory.
-java_home= <i>java_home_directory</i>	The full path to the Java Home directory. When set, this identifies the default JVM used by the Administration Server for the domain.
	Note: This parameter is not applicable if you are creating a domain using a Managed Server template.

 Table 2-2 Parameters for unpack Command (Continued)

Parameter	Description
-server_start_mode={dev prod}	The start mode for the Administration Server: development or production.
	Note: This parameter is not applicable if you are creating a domain using a Managed Server template.
-log=log_file	Name of the log file.
-log_priority=log_priority	The priority setting for the log file. Use a log4j priority string. Valid log4j priority strings are debug, info, warn, error, fatal. The priority string values correspond to the levels defined in the Level class. For more information, see http://logging.apache.org/log4j/docs/api/org/ apache/log4j/Level.html.

Table 2-2 Parameters for unpack Command (Continued)

Example

Executing the following command using a template named mydomain.jar in the directory C:\bea\user_templates creates a domain named my_new_domain in the directory C:\bea\user_projects\domains.

```
unpack -template=C:\bea\user_templates\mydomain.jar
-domain=C:\bea\user_projects\domains\my_new_domain
```

Related Topics

- "Creating and Starting a Managed Server on a Remote Machine: Main Steps" on page 3-1
- "How Do I: Use unpack to Create a Managed Server on a Remote Machine" on page 3-3



How Do I...?

This section provides information and examples for creating templates and domains using pack and unpack:

- Creating and Starting a Managed Server on a Remote Machine: Main Steps
- How Do I: Use pack to Create a Managed Server Template
- How Do I: Use unpack to Create a Managed Server on a Remote Machine
- How Do I: Start Managed Servers on a Remote Machine

Creating and Starting a Managed Server on a Remote Machine: Main Steps

In some domains, you may want to run a Managed Server on a machine that is remote from the Administration Server for the domain. You can do so by using the pack command to create a Managed Server template (a .jar file that, by default, contains only the files necessary to create a Managed Server domain directory), copying the template to the remote machine, and unpacking the template to create a domain directory customized for a Managed Server.

Note: You must create the Managed Server domain directory on the remote machine that matches the definition of the Managed Servers specified in the template.

The steps to create a Managed Server domain directory on a remote machine are as follows:

1. Create a Managed Server template using the pack command. A Managed Server template, by default, contains only those files necessary to create a Managed Server on a remote machine.

For instructions, see "How Do I: Use pack to Create a Managed Server Template" on page 3-2.

- 2. Create a Managed Server domain directory by copying and unpacking the Managed Server template on a remote machine. For a detailed procedure, see "How Do I: Use unpack to Create a Managed Server on a Remote Machine" on page 3-3.
- 3. Start the Managed Server on the remote machine. For a detailed procedure, see "How Do I: Start Managed Servers on a Remote Machine" on page 3-3.

How Do I: Use pack to Create a Managed Server Template

You create a Managed Server template by executing the pack command, with the -managed=true option, on an existing domain that already includes the definition of one or more Managed Servers. This domain must also contain Managed Server definitions in the config.xml file.

- 1. From the command line on the local machine (that is, the machine that contains the Administration Server and the definition of Managed Servers), navigate to the *WL_HOME*\common\bin directory. In this pathname, *WL_HOME* is the product directory in which you installed WebLogic Server.
- 2. Execute the following command:

```
pack -managed=true -domain=domain
-template=template.jar -template_name="template_name"
```

In this command line:

- *domain*—The full or relative path to the domain from which the template is to be created.
- *template.jar*—The full or relative path to the template, and the filename of the template to be created.
- *template_name*—Descriptive name for the template enclosed in quotes.

For example, executing the following command creates a Managed Server template named mydomain_managed.jar from a domain named mydomain.

```
pack -managed=true -domain=C:\bea\user_projects\domains\mydomain
-template=C:\bea\user_templates\mydomain_managed.jar
-template_name="My Managed Server Domain"
```

For a complete description of the pack command, see "pack" on page 2-1.

How Do I: Use unpack to Create a Managed Server on a Remote Machine

- 1. Install WebLogic Server on each machine that you want to host a Managed Server for the domain.
 - **Note:** All WebLogic Server instances within a domain must run the same version of the WebLogic Server software. For more information about installing WebLogic Server, see the *Installation Guide*.
- 2. Establish a session with the remote machine that will host the Managed Server. You may use any valid method, such as telnet, to do so.
 - **Note:** The IP address and port number of the remote machine must match the definition of the Managed Servers specified in the Managed Server template.
- 3. Copy the Managed Server template to the remote machine. For details about how to create a Managed Server template, see "How Do I: Use pack to Create a Managed Server Template" on page 3-2.
- 4. On the remote machine, navigate to the *WL_HOME*\common\bin directory. In this pathname, *WL_HOME* is the product directory in which you installed WebLogic Server.
- 5. Execute the following command, using the Managed Server template that you copied to the machine in Step 3.

```
unpack -domain=domain -template=template.jar
```

In this command line:

- *domain*—The full or relative path to the domain to be created.
- *template.jar*—The full or relative path to the template from which the domain is to be created.

For example, executing the following command using a template named mydomain_managed.jar creates a domain named myManagedDomain.

```
unpack -domain=C:\bea\user_projects\domains\myManagedDomain
-template=C:\bea\user_templates\mydomain_managed.jar
```

How Do I: Start Managed Servers on a Remote Machine

When you create a domain directory for Managed Servers using the unpack command, it contains a customized start script for each Managed Server targeted to the current remote machine. For example, if you create a domain that contains two Managed Servers,

my_managed_server1 and my_managed_server2, and you target the servers to machine m1, when you create the Managed Server domain directory on machine m1, four custom start scripts are created: startmy_managed_server1.cmd/startmy_managed_server1.sh and startmy_managed_server2.cmd/startmy_managed_server2.sh. You can use these scripts to start the corresponding Managed Servers. Alternatively, you can use the startManagedWebLogic script with the required parameters.

- 1. Start the Administration Server for the domain as described in "Starting and Stopping Servers" in *Managing Server Startup and Shutdown*.
- 2. On the remote machine, navigate to the directory for the domain that you created in "How Do I: Use unpack to Create a Managed Server on a Remote Machine" on page 3-3.
- 3. Start the Managed Server on the remote machine by doing one of the following:
 - On a Windows system, open an MS-DOS command prompt window and enter one of the following at the prompt:

```
startmy_managed_server
startManagedWebLogic my_managed_server admin-url
```

- On a UNIX system, enter one of the following at the prompt:

```
./startmy_managed_server.sh
```

```
./startManagedWebLogic.sh my_managed_server admin-url
```

In these command lines, *my_managed_server* is the name of the Managed Server to be started and *admin-url* specifies the listen address (host name or IP address) and port number of the machine hosting the Administration Server. For your convenience, the startManagedWebLogic_Readme.txt file provides a list of all the Managed Servers and the *admin-url* for the domain.

Note: You can also start Managed Servers using the Node Manager. For details, see "Using Node Manager to Control Servers" in *Managing Server Startup and Shutdown*.