Oracle® Fusion Middleware

Command Reference for Oracle WebLogic Server

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Oracle Fusion Middleware Command Reference for Oracle WebLogic Server, 12c (12.2.1.4.0)

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Preface

This document describes Oracle WebLogic Server command-line reference features and Java utilities and how to use them to administer Oracle WebLogic Server.

Audience

This document is written for system administrators and application developers deploying e-commerce applications using the Java Platform, Enterprise Edition (Java EE). It is assumed that readers are familiar with Web technologies and the operating system and platform where Oracle WebLogic Server is installed.

Documentation Accessibility

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Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

Related Documentation

- Using Ant Tasks to Configure and Use a WebLogic Server Domain in *Developing Applications with Oracle WebLogic Server*
- *Understanding the WebLogic Scripting Tool*
- *Administering Server Environments for Oracle WebLogic Server*
- *Oracle WebLogic Server Administration Console Online Help*

New and Changed WebLogic Server Features

For a comprehensive listing of the new WebLogic Server features introduced in this release, see *What's New in Oracle WebLogic Server*.

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

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Using the Oracle WebLogic Server Java Utilities

Oracle WebLogic Server provides a number of Java utilities and Ant tasks for performing administrative and programming tasks, installing and configuring the WebLogic Server environment, building and deploying applications, generating certificates for development environments, providing convenient shortcuts, and more.

To use these utilities and tasks, you must set your `CLASSPATH` correctly. For more information, see Modifying the Classpath. The command-line syntax is specified for all utilities and, for some, examples are provided.

The Apache Web site provides other useful Ant tasks as well, including tasks for packaging EAR, WAR, and JAR files. For more information, see `http://jakarta.apache.org/ant/manual/`.

appc

The `appc` compiler generates and compiles the classes needed to deploy EJBs and JSPs to Oracle WebLogic Server. It also validates the deployment descriptors for compliance with the current specifications at both the individual module level and the application level.See appc Reference in *Developing Enterprise JavaBeans, Version 2.1, for Oracle WebLogic Server*.

AppletArchiver

The `AppletArchiver` utility runs an applet in a separate frame, keeps a record of all of the downloaded classes and resources used by the applet, and packages these into either a `.jar` file or a `.cab` file. (The `cabarc` utility is available from Microsoft.)

Syntax

```
$ java utils.applet.archiver.AppletArchiver URL filename
```

Table 1-1 describes the arguments passed to the `AppletArchiver` utility.

Table 1-1 AppletArchiver Arguments

Argument	Definition
URL	URL for the applet.
filename	Local filename that is the destination for the `.jar`/`.cab` archive.

autotype (deprecated)

Use the `autotype` Ant task to generate non-built-in data type components, such as the serialization class, for Web Services. The fully qualified name for the `autotype` Ant task is `weblogic.ant.taskdefs.webservices.javaschema.JavaSchema`.

For a complete list of Web Services Ant tasks, see Ant Task Reference in *WebLogic Web Services Reference for Oracle WebLogic Server*.

BuildXMLGen

Use BuildXMLGen to generate a `build.xml` file for enterprise applications in the split-directory structure. For complete documentation of this utility, see Building Applications in a Split Development Directory in *Developing Applications for Oracle WebLogic Server*.

CertGen

The `CertGen` utility generates certificates that should only be used for demonstration or testing purposes, not in a production environment.

As of version 12.1.2 of WebLogic Server, the `CertGen` utility generates certificates with the following attributes by default:

- 2048-bit public key.
- SHA256 message digest algorithm.
- Subject Key Identifier extension.
- Authority Key Identifier extension (if the CA certificate contains a Subject Key ID.)

Syntax

```
$ java utils.CertGen
      -certfile <cert_file> -keyfile <private_key_file>
      -keyfilepass <private_key_password>
     [-cacert <ca_cert_file>][-cakey <ca_key_file>]
     [-cakeypass <ca_key_password>]
     [-selfsigned][-strength <key_strength>]
     [-digestalgorithm] <message digest algorithm>
     [-e <email_address>][-cn <common_name>]
     [-ou <org_unit>][-o <organization>]
     [-l <locality>][-s <state>][-c <country_code>]
     [-keyusage [digitalSignature,nonRepudiation,keyEncipherment,
       dataEncipherment,keyAgreement,keyCertSign,
       cRLSign,encipherOnly,decipherOnly]]
     [-keyusagecritical true|false]
     [-noskid]
     [-subjectkeyid <subject_key_identifier>]
     [-subjectkeyidformat UTF-8|BASE64]
     [-help]
```

Table 1-2 describes the arguments that are passed to the `CertGen` utility.

Table 1-2 CertGen Arguments

Argument	Definition
`-certfile` *`cert_file`* `-keyfile` *`private_key_file`*	Respectively, the output file names without extensions of the generated public certificate and private key. The appropriate extensions are appended when the `pem` and `der` files are created.
`-keyfilepass` *`private_key_password`*	The password for the generated private key.
`-cacert` *`ca_cert_file`* `-cakey` *`ca_key_file`* `-cakeypass` *`ca_key_password`*	Respectively, the public certificate, private key file, and private key password of the CA that will be used as the issuer of the generated certificate. If one or more of these options are not specified, the relevant demonstration CA files will be used: `CertGenCA.der` and `CertGenCAKey.der`. The `CertGen` utility first looks in the current working directory, then in the *`WL_HOME`*`/lib` directory.
`-selfsigned`	Generates a self-signed certificate that can be used as a trusted CA certificate. If this argument is specified, the *`ca_cert_filename`*, *`ca_key_filename`*, and *`ca_key_password`* arguments should not be specified.
`-digestalgorithm [message digest algorithm]`	The message digest algorithm used with the signature algorithm to sign the certificate. The default is SHA256. Supported values are MD5, SHA1, SHA256, SHA384, and SHA512.
`-strength` *`key_strength`*	The length (in bits) of the keys to be generated. The default is 2048 bits. The longer the key, the more difficult it is for someone to break the encryption. Generating a certificate with an RSA key length less than 1024 bits may not work in JDK 7u40+. See `http://www.oracle.com/technetwork/java/javase/7u40-relnotes-2004172.html` for additional information.
`-e` *`email_address`*	The email address associated with the generated certificate.
`-cn` *`common_name`*	The name associated with the generated certificate.
`-ou` *`org_unit`*	The name of the organizational unit associated with the generated certificate.
`-o` *`organization`*	The name of the organization associated with the generated certificate.
`-l` *`locality`*	The name of a city or town.
`-s` *`state`*	The name of the state or province in which the organizational unit (`ou`) operates if your organization is in the United States or Canada, respectively. Do not abbreviate.
`-c` *`country_code`*	Two-letter ISO code for your country. The code for the United States is US.

Table 1-2 (Cont.) CertGen Arguments

Argument	Definition
`-keyusage [digitalSignature, nonRepudiation,keyEncipherment, dataEncipherment,keyAgreement, keyCertSign,cRLSign, encipherOnly,decipherOnly]`	Generate certificate with a key usage extension, and with bits set according to the comma-separated list of bit names. Specify a key usage when you want to restrict the operation for a key that could be used for more than one operation.
`-keyusagecritical true|false`	By default, a key usage extension is marked critical. To generate a certificate with a non-critical extension, use `-keyusagecritical false`.
`-noskid`	Prevents a subject key identifier extension in the certificate from being generated. CertGen ignores `-subjectkeyid` and `-subjectkeyidformat` if you specify `-noskid`.
`-subjectkeyid` *`subject_key_identifier`*	Generates a certificate with the specified subject key identifier.
`-subjectkeyidformat UTF-8|BASE64`	The format of the `subjectkeyid` value; UTF-8 is the default.

Example

By default, the CertGen utility looks for the `CertGenCA.der` and `CertGenCAKey.der` files in the current directory, or in the *`WL_HOME`* directory, as specified in the `weblogic.home` system property or the `CLASSPATH`. Alternatively, you can specify CA files on the command line.

Enter the following command to generate certificate files named `testcert` with private key files named `testkey`:

```
$ java utils.CertGen -keyfilepass mykeypass
-certfile testcert -keyfile testkey
Generating a certificate with common name machine-name and key strength 2048
issued by CA with certificate from CertGenCA.der file and key from CertGenCAKey.der file
```

ClientDeployer

You use `weblogic.ClientDeployer` to extract the client-side JAR file from a Java EE EAR file, creating a deployable JAR file. The `weblogic.ClientDeployer` class is executed on the Java command line with the following syntax:

```
java weblogic.ClientDeployer ear-file client
```

The *`ear-file`* argument is an expanded directory (or Java archive file with a `.ear` extension) that contains one or more client application JAR files.

For example:

```
java weblogic.ClientDeployer app.ear myclient
```

In the preceding example, `app.ear` is the EAR file that contains a Java EE client packaged in `myclient.jar`.

Once the client-side JAR file is extracted from the EAR file, use the `weblogic.j2eeclient.Main` utility to bootstrap the client-side application and point it to a WebLogic Server instance as follows:

```
java weblogic.j2eeclient.Main clientjar URL [application args]
```

For example:

```
java weblogic.j2eeclient.Main helloWorld.jar t3://localhost:7001 Greetings
```

clientgen

Use `clientgen` to generate the client-side artifacts, such as the JAX-RPC stubs, needed to invoke a Web Service. See Ant Task Reference in *WebLogic Web Services Reference for Oracle WebLogic Server*.

Conversion (deprecated)

WebLogic Server 9.0 does not support conversion or upgrading from a pre-6.0 version of Oracle WebLogic Server. To upgrade from version 6.1 or later, see *Upgrading Oracle WebLogic Server*.

dbping

The `dbping` command-line utility tests the connection between a DBMS and your client machine via a JDBC driver. You must complete the installation of the driver before attempting to use this utility. To install a driver, see the documentation from your driver vendor. Also see Using Third-Party Drivers with WebLogic Server in *Developing JDBC Applications for Oracle WebLogic Server*.

Creating a DB2 Package with dbping

With the WebLogic Type 4 JDBC Driver for DB2, you can also use the `dbping` utility to create a package on the DB2 server. When you ping the database with the dbping utility, the driver automatically creates the default package on the database server if it does not already exist. If the default package already exists on the database server, the `dbping` utility uses the existing package.

The default DB2 package includes 200 dynamic sections. You can specify a different number of dynamic sections to create in the DB2 package with the `-d` option. The `-d` option also sets `CreateDefaultPackage=true` and `ReplacePackage=true` on the connection used in the connection test, which forces the DB2 driver to replace the DB2 package on the DB2 server. (See Using DataDirect Documentation in *Developing JDBC Applications for Oracle WebLogic Server*.) You can use the `-d` option with dynamic sections set at `200` to forcibly recreate a default package on the DB2 server.

> **Note:**
>
> When you specify the `-d` option, the `dbping` utility *recreates* the default package and uses the value you specify for the number of dynamic sections. It does not modify the existing package.
>
> To create a DB2 package, the user that you specify must have CREATE PACKAGE privileges on the database.

Syntax

```
$ java utils.dbping DBMS [-d dynamicSections] user password DB
```

Table 1-3 describes the arguments that are passed to the `dbping` command-line utility.

Table 1-3 dbping Arguments

Argument	Definition
DBMS	Varies by DBMS and JDBC driver: `DB2B`—WebLogic Type 4 JDBC Driver for DB2 `DERBY`—Embedded Derby driver `JCONN2`—Sybase JConnect (JDBC 2.0) driver `JCONN3`—Sybase JConnect (JDBC 2.0) driver `JCONNECT`—Sybase JConnect driver `INFORMIXB`—WebLogic Type 4 JDBC Driver for Informix `MSSQLSERVER4`—WebLogic jDriver for Microsoft SQL Server `MSSQLSERVERB`—WebLogic Type 4 JDBC Driver for Microsoft SQL Server `MYSQL`— MySQL's Type 4 Driver `ORACLE`—WebLogic jDriver for Oracle `ORACLEB`—WebLogic Type 4 JDBC Driver for Oracle `ORACLE_THIN`—Oracle Thin Driver `POINTBASE`—PointBase Universal Driver `SYBASEB`—WebLogic Type 4 JDBC Driver for Sybase
`[-d` *dynamicSections*`]`	Specifies the number of dynamic sections to create in the DB2 package. This option is for use with the WebLogic Type 4 JDBC Driver for DB2 only. If the `-d` option is specified, the driver automatically sets CreateDefaultPackage=true and ReplacePackage=true on the connection and creates a DB2 package with the number of dynamic sections specified.
user	Valid database username for login. Use the same values you use with `isql`, `sqlplus`, or other SQL command-line tools. For DB2 with the `-d` option, the user must have CREATE PACKAGE privileges on the database.
password	Valid database password for the user. Use the same values you use with `isql` or `sqlplus`.

Table 1-3 (Cont.) dbping Arguments

Argument	Definition
DB	Name and location of the database. Use the following format, depending on which JDBC driver you use: `DB2B`—Host:Port/DBName `DERBY`—Host:Port/DBName `JCONN2`—Host:Port/DBName `JCONN3`—Host:Port/DBName `JCONNECT`—Host:Port/DBName `INFORMIXB`—Host:Port/DBName/InformixServer `MSSQLSERVER4`—Host:Port/DBName or [DBName@]Host[:Port] `MSSQLSERVERB`—Host:Port/DBName `MYSQL`—Host:Port/DBName `ORACLE`—DBName (as listed in tnsnames.ora) `ORACLEB`—Host:Port/DBName `ORACLE_THIN`—Host:Port/DBName `POINTBASE`—Host[:Port]/DBName `SYBASEB`—Host:Port/DBName Where: • *`Host`* is the name of the machine hosting the DBMS. • *`Port`* is port on the database host where the DBMS is listening for connections. • *`DBName`* is the name of a database on the DBMS. • *`InformixServer`* is an Informix-specific environment variable that identifies the Informix DBMS server.

Examples

The following is an example using the Oracle Thin Driver.

```
C:\>java utils.dbping ORACLE_THIN scott tiger dbserver1:1561:demo

**** Success!!! ****

You can connect to the database in your app using:

java.util.Properties props = new java.util.Properties();
  props.put("user", "scott");
  props.put("password", "tiger");
  props.put("dll", "ocijdbc9");
  props.put("protocol", "thin");
  java.sql.Driver d =
    Class.forName("oracle.jdbc.driver.OracleDriver").newInstance();
  java.sql.Connection conn =
    Driver.connect("jdbc:oracle:thin:@dbserver1:1561:demo", props);
```

The following is an example using the Derby driver. Derby is an open source relational database management system bundled with WebLogic Server for use by the sample applications and code examples as a demonstration database.

```
$ java utils.dbping DERBY examples examples localhost:1527/demo
**** Success!!! ****
You can connect to the database in your app using:

  java.util.Properties props = new java.util.Properties();
  props.put("user", "examples");
  props.put("password", "examples");
  java.sql.Driver d =
    Class.forName("org.apache.derby.jdbc.ClientDriver").newInstance();
  java.sql.Connection conn =
    Driver.connect("jdbc:derby://localhost:1527/demo", props);
```

ddcreate (deprecated)

This Ant task calls EARInit, which generates an `application.xml` and a `weblogic-application.xml` file for an `EAR`.See EarInit (deprecated).

DDInit (deprecated)

`DDInit` is a utility for generating deployment descriptors for applications to be deployed on Oracle WebLogic Server. Target a module's archive or folder and `DDInit` uses information from the module's class files to create appropriate deployment descriptor files.

In its command-line version, `DDInit` writes new files that overwrite existing descriptor files. If `META-INF` or `WEB-INF` does not exist, `DDInit` creates it.

Specify the type of Java EE deployable unit (either Web Application or Enterprise Application) for which you want deployment descriptors generated by using the `DDInit` command specific to the type, as described below.

WebInit (deprecated)

Target a `WAR` file or a folder containing files that you intend to archive as a `WAR` file, and `WebInit` will create `web.xml` and `weblogic.xml` files for the module.

```
prompt> java weblogic.marathon.ddinit.WebInit <module>
```

EarInit (deprecated)

The `EarInit` tool is deprecated in this version of Oracle WebLogic Server. As a result, you should not:

- Use the `DDInit` utility to generate deployment descriptors for Enterprise applications.
- Use the `ddcreate` ant task, which calls `EarInit`.

Generate an `application.xml` and a `weblogic-application.xml` file for an `EAR` using this command. Target an existing `EAR` or a folder containing `JAR` or `WAR` files you intend to archive into an `EAR` file.

```
prompt> java weblogic.marathon.ddinit.EarInit <module>
```

Deployer

Using the weblogic.Deployer tool, you can deploy Java EE applications and components to WebLogic Servers in a command-line or scripting environment. For detailed information on

using this tool, see weblogic.Deployer Command-Line Reference in *Deploying Applications to Oracle WebLogic Server*.
The `weblogic.Deployer` utility replaces the `weblogic.deploy` utility, which has been deprecated.

DeploymentPersistentTool

The `DeploymentPersistentTool` utility reads the application's runtime state from the persistent store.

Syntax

```
$ java weblogic.deploy.utils.DeploymentPersistentTool [-list] [-remove] [-dir directory] [-store store-name] [-appexp application-id-regular-expression] [-nofilecheck]
```

Table 1-4 DeploymentPersistentTool Arguments

Argument	Definition
`-list`	Lists the application's runtime states.
`-remove`	Removes the application runtime states.
`-dir` *directory*	Specify the name of the directory contain the store. File path can be either absolute or relative.
`-store` *store-name*	Specify the name of the persistence store to open.
`-appexp` *application-id-regular-expression*	Specify which application's names to print using a user specified regular expression as a filter. By default, this is set to `*` and matches all application names.
`-nofilecheck`	When set, the DeploymentPersistentTool will not check for the existence of a file prior to running.

Examples

This example runs the `DeploymentPersistentTool` utility on the Administration Server:

```
$ java weblogic.deploy.utils.DeploymentPersistentTool -list -dir ${adminServer.dir}/servers/adminServer/data/store/default -store _WLS_ADMINSERVER
```

This example runs the `DeploymentPersistentTool` utility on different Managed Servers:

```
$ java weblogic.deploy.utils.DeploymentPersistentTool -list -dir ${adminServer.dir}/servers/server1/data/store/default -store _WLS_SERVER1

$ java weblogic.deploy.utils.DeploymentPersistentTool -list -dir ${adminServer.dir}/servers/server2/data/store/default -store _WLS_SERVER2
```

der2pem

The `der2pem` utility converts an X509 certificate from DER format to PEM format. The `.pem` file is written in the same directory and has the same filename as the source `.der` file.

Syntax

```
$ java utils.der2pem derFile [headerFile] [footerFile]
```

Table 1-5 describes the arguments that are passed to the `der2pem` utility.

Table 1-5 der2pem Arguments

Argument	Description
derFile	The name of the file to convert. The filename must end with a `.der` extension, and must contain a valid certificate in `.der` format.
headerFile	The header to place in the PEM file. The default header is "-----BEGIN CERTIFICATE-----". Use a header file if the DER file being converted is a private key file, and create the header file containing one of the following: • "-----BEGIN RSA PRIVATE KEY-----" for an unencrypted private key. • "-----BEGIN ENCRYPTED PRIVATE KEY-----" for an encrypted private key. **Note:** There must be a new line at the end of the header line in the file.
footerFile	The header to place in the PEM file. The default header is "-----END CERTIFICATE-----". Use a footer file if the DER file being converted is a private key file, and create the footer file containing one of the following in the header: • "-----END RSA PRIVATE KEY-----" for an unencrypted private key. • "-----END ENCRYPTED PRIVATE KEY-----" for an encrypted private key. **Note:** There must be a new line at the end of the header line in the file.

Example

```
$ java utils.der2pem graceland_org.der
Decoding
.............................................................
```

Derby

Derby is an open source relational database management system based on Java, JDBC, and SQL standards. It is bundled with WebLogic Server for use by the sample applications and code examples as a demonstration database.See http://db.apache.org/derby.

ejbc (deprecated)

For each deployment descriptor either specified in the command line or present in a `.jar` file, `ejbc` creates wrapper classes for the corresponding EJBean class. It then runs these through

the RMI compiler, which generates a client-side stub and a server-side skeleton.See appc Reference in *Developing Enterprise JavaBeans, Version 2.1, for Oracle WebLogic Server*.

EJBGen

EJBGen is an Enterprise JavaBeans 2.0 code generator. You can annotate your Bean class file with javadoc tags and then use EJBGen to generate the Remote and Home classes and the deployment descriptor files for an EJB application, reducing to one the number of EJB files you need to edit and maintain.

See EJBGen Reference in *Developing Enterprise JavaBeans, Version 2.1, for Oracle WebLogic Server*.

encrypt

The `weblogic.security.Encrypt` utility encrypts clear text strings for use with Oracle WebLogic Server. The utility uses the encryption service of the current directory, or the encryption service for a specified Oracle WebLogic Server domain root directory.

> **Note:**
>
> An encrypted string must have been encrypted by the encryption service in the Oracle WebLogic Server domain where it will be used. If not, the server will not be able to decrypt the string.

You can run the `weblogic.security.Encrypt` utility only on a machine that has at least one server instance in an Oracle WebLogic Server domain; it cannot be run from a client.

> **Note:**
>
> Oracle recommends running the utility from the Administration Server domain directory or on the machine hosting the Administration Server and specifying a domain root directory.

Syntax

```
java [-Dweblogic.RootDirectory=dirname]
     [-Dweblogic.management.allowPasswordEcho=true]
       weblogic.security.Encrypt [password]
```

Table 1-6 describes the arguments that are passed to the `weblogic.security.Encrypt` utility.

Table 1-6 Encrypt Arguments

Argument	Definition
dirname	Optional. Oracle WebLogic Server domain directory in which the encrypted string will be used. If not specified, the default domain root directory is the current directory (the directory in which the utility is being run).
`weblogic.management.allowPasswordEcho`	Optional. Allows echoing characters entered on the command line. `weblogic.security.Encrypt`expects that no-echo is available; if no-echo is not available, set this property to `true`.
password	Optional. Cleartext string to be encrypted. If omitted from the command line, you will be prompted to enter a password.

Examples

The utility returns an encrypted string using the encryption service of the domain located in the current directory.

```
java weblogic.security.Encrypt xxxxxx
{AES}yWv/i0qhfM4/IvzoghzjHj/xpJUkQPF8OWuSfh0f0Ss=
```

The utility returns an encrypted string using the encryption service of the specified domain location.

```
java -Dweblogic.RootDirectory=./mydomain weblogic.security.Encrypt xxxxxx
{AES}wr86u9Z5DHr+5p7WIbzTDSy4M/sl7EYnX/K5xzcarDQ=
```

The utility returns an encrypted string in the current directory, without echoing the password.

```
java weblogic.security.Encrypt
Password:
{AES}LIX8hoiStcAhph0PGCpveouw/0UO0lciODuj+TQh/bs=
```

getProperty

The `getProperty` utility gives you details about your Java setup and your system. It takes no arguments.

Syntax

```
$ java utils.getProperty
```

Example

```
$ java utils.getProperty
-- listing properties --
user.language=en
java.home=c:\java11\bin\..
awt.toolkit=sun.awt.windows.WToolkit
file.encoding.pkg=sun.io
java.version=1.1_Final
file.separator=\
line.separator=
user.region=US
```

```
file.encoding=8859_1
java.vendor=Sun Microsystems Inc.
user.timezone=PST
user.name=mary
os.arch=x86
os.name=Windows NT
java.vendor.url=http://www.sun.com/
user.dir=C:\weblogic
java.class.path=c:\weblogic\classes;c:\java\lib\cla...
java.class.version=45.3
os.version=4.0
path.separator=;
user.home=C:\
```

host2ior

The `host2ior` utility obtains the Interoperable Object Reference (IOR) of an Oracle WebLogic Server.

Syntax

```
$ java utils.host2ior hostname port
```

ImportPrivateKey

The `ImportPrivateKey` utility is used to load a private key into a private keystore file.

Syntax

```
$ java utils.ImportPrivateKey
      -certfile <cert_file> -keyfile <private_key_file>
     [-keyfilepass <private_key_password>]
      -keystore <keystore> -storepass <storepass> [-storetype <storetype>]
      -alias <alias> [-keypass <keypass>]
     [-help]
```

Table 1-7 describes the arguments that are passed to the `ImportPrivateKey` utility.

Table 1-7 ImportPrivateKey Arguments

Argument	Definition
`-certfile` *`cert_file`*	The name of the certificate associated with the private key.
`-keyfile` *`private_key_file`*	The name of the generated private key file.
`-keyfilepass` *`private_key_password`*	The password for the private key.
`-keystore` *`keystore`*	The name of the keystore file. A new keystore is created if one does not exist.
`-storepass` *`storepass`*	The password for the keystore.

Table 1-7 (Cont.) ImportPrivateKey Arguments

Argument	Definition
`-storetype storetype`	The type (format) of the keystore. The *storetype* argument, which is the same as that used by the `keytool` command, specifies the type of Java keystore. The default *storetype* is `jks`, defined by the `keystore.type` property in the `java.security` file: `keystore.type=jks` You can specify another *storetype* (for example, `pcks12` or `nCipher.SWorld`) if a configured security provider supports that type.
`-alias alias`	The name that is used for looking up the certificate and private key being imported into the keystore.
`-keypass keypass`	The password of the private key entry being imported into the keystore. If *keypass* is not specified, the first default is *private_key_password*, and the second default is *storepass*.

> **Note:**
>
> If you used `CertGen` to create a private key file protected by a password (`-keyfilepass private_key_password`), that password is the one required by `ImportPrivateKey` to extract the key from the key file and insert the key in the newly created keystore (which will contain both the certificate(s) from *cert_file* and the private key from *private_key_file*).

Example

Use the following steps to:

- Generate a certificate and private key using the `CertGen` utility
- Create a keystore and store a private key using the `ImportPrivateKey` utility

> **Note:**
>
> By default, the CertGen utility looks for the `CertGenCA.der` and `CertGenCAKey.der` files in the current directory, or in the *WL_HOME*`/server/lib` directory, as specified in the `weblogic.home` system property or the CLASSPATH.
>
> Alternatively, you can specify CA files on the command line. If you want to use the default settings, there is no need to specify CA files on the command line.

To generate a certificate:

1. Enter the following command to generate certificate files named `testcert` with private key files named `testkey`:

```
$ java utils.CertGen -keyfilepass mykeyfilepass
-certfile testcert -keyfile testkey
```

```
Generating a certificate with common name return and key strength 1024
issued by CA with certificate from CertGenCA.der file and key from CertGenCAKey.der
file
```

2. Convert the certificate from DER format to PEM format.

```
$ java utils.der2pem CertGenCA.der
```

3. Concatenate the certificate and the Certificate Authority (CA).

```
$ cat testcert.pem CertGenCA.pem >> newcerts.pem
```

4. Create a new keystore named `mykeystore` and load the private key located in the `testkey.pem` file.

```
$ java utils.ImportPrivateKey -keystore mykeystore -storepass password
-keyfile mykey -keyfilepass mykeyfilepass -certfile newcerts.pem -keyfile
testkey.pem -alias passalias

No password was specified for the key entry
Key file password will be used

Imported private key testkey.pem and certificate newcerts.pem
into a new keystore mykeystore of type jks under alias passalias
```

jhtml2jsp

The `jhtml2jsp` utility converts JHTML files to JSP files. Be sure to inspect the results carefully. Given the unpredictable nature the JHTML code, `jhtml2jsp` does not necessarily produce flawless translations.

The output is a new JSP file named after the original file.

The HTTP servlets auto-generated from JSP pages differ from the regular HTTP servlets generated from JHTML. JSP servlets extend `weblogic.servlet.jsp.JspBase`, and so do not have access to the methods available to a regular HTTP servlet.

If your JHTML pages reference these methods to access the `servlet context` or `config` objects, you must substitute these methods with the reserved words in JSP that represent these implicit objects.

If your JHTML uses variables that have the same name as the reserved words in JSP, the tool will output a warning. You must edit your Java code in the generated JSP page to change the variable name to something other than a reserved word.

Syntax

```
$ java weblogic.utils.jhtml2jsp [-d directory] filename.jhtml
```

Table 1-8 describes the argument that is passed to the `jhtml2jsp` tool.

Table 1-8 jhtml2jsp Arguments

Argument	Definition
`-d directory`	Optional. The target directory. If the target directory isn't specified, output is written to the current directory.

jspc (deprecated)

The `jspc` utility is a JSP-specific compiler task. Use appc instead.

logToZip

The `logToZip` utility searches an HTTP server log file, finds the Java classes loaded into it by the server, and creates an uncompressed `.zip` file that contains those Java classes. It is executed from the document root directory of your HTTP server.
To use this utility, you must have access to the log files created by the HTTP server.

Syntax

```
$ java utils.logToZip logfile codebase zipfile
```

Table 1-9 describes the arguments that are passed to the `logToZip` utility.

Table 1-9 logToZip Arguments

Argument	Definition
logfile	Required. Fully-qualified pathname of the log file.
codebase	Required. Code base for the applet, or "" if there is no code base. By concatenating the code base with the full package name of the applet, you get the full pathname of the applet (relative to the HTTP document root).
zipfile	Required. Name of the `.zip` file to create. The resulting `.zip` file is created in the directory in which you run the program. The path name for the specified file can be relative or absolute. In the examples shown below, a relative path name is given, so the `.zip` file is created in the current directory.

Examples

The following example shows how a `.zip` file is created for an applet that resides in the document root itself, that is, with no code base:

```
$ cd /HTTP/Serv/docs
$ java utils.logToZip /HTTP/Serv/logs/access "" app2.zip
```

The following example shows how a `.zip` file is created for an applet that resides in a subdirectory of the document root:

```
C:\>cd \HTTP\Serv
C:\HTTP\Serv>java utils.logToZip \logs\applets\classes app3.zip
```

MBean Commands

Use the MBean commands (`CREATE`, `DELETE`, `GET`, `INVOKE`, and `SET`) to administer MBeans. See Editing Commands in *WLST Command Reference for WebLogic Server*.

MulticastTest

The `MulticastTest` utility helps you debug multicast problems when configuring a WebLogic cluster. The utility sends out multicast packets and returns information about how effectively multicast is working on your network. Specifically, `MulticastTest` displays the following types of information via standard output:

1. A confirmation and sequence ID for each message sent out by the current server.
2. The sequence and sender ID of each message received from any clustered server, including the current server.
3. A missed-sequenced warning when a message is received out of sequence.
4. A missed-message warning when an expected message is not received.

To use `MulticastTest`, start one copy of the utility on each node on which you want to test multicast traffic.

> **Tip:**
>
> Do NOT run the `MulticastTest` utility by specifying the same multicast address (the `-a` parameter) as that of a currently running WebLogic Cluster. The utility is intended to verify that multicast is functioning properly before starting your clustered WebLogic Servers.

For information about setting up multicast, see the configuration documentation for the operating system and hardware of the WebLogic Server host machine. See *Administering Clusters for Oracle WebLogic Server*.

Syntax

```
$ java utils.MulticastTest -n name -a address [-p portnumber]
     [-t timeout] [-s send]
```

Table 1-10 describes the arguments that are passed to the `MulticastTest` utility.

Table 1-10 MulticastTest Arguments

Argument	Definition
`-n name`	Required. A name that identifies the sender of the sequenced messages. Use a different name for each test process you start.
`-a address`	The multicast address on which: (a) the sequenced messages should be broadcast; and (b) the servers in the clusters are communicating with each other. (The default is 237.0.0.1.)
`-p portnumber`	Optional. The multicast port on which all the servers in the cluster are communicating. (The multicast port is the same as the listen port set for WebLogic Server, which defaults to 7001 if not set.)
`-t timeout`	Optional. Idle timeout, in seconds, if no multicast messages are received. If not set, the default is 600 seconds (10 minutes). If a timeout is exceeded, a positive confirmation of the timeout is sent to `stdout`.

Table 1-10 (Cont.) MulticastTest Arguments

Argument	Definition
`-s send`	Optional. Interval, in seconds, between sends. If not set, the default is 2 seconds. A positive confirmation of each message sent out is sent to `stdout`.

Example

```
$ java utils.MulticastTest -N server100 -A 237.155.155.1
Set up to send and receive on Multicast on Address 237.155.155.1 on port 7001
Will send a sequenced message under the name server100 every 2 seconds.
Received message 506 from server100
Received message 533 from server200
   I (server100) sent message num 507
Received message 507 from server100
Received message 534 from server200
   I (server100) sent message num 508
Received message 508 from server100
Received message 535 from server200
   I (server100) sent message num 509
Received message 509 from server100
Received message 536 from server200
   I (server100) sent message num 510
Received message 510 from server100
Received message 537 from server200
   I (server100) sent message num 511
Received message 511 from server100
Received message 538 from server200
   I (server100) sent message num 512
Received message 512 from server100
Received message 539 from server200
   I (server100) sent message num 513
Received message 513 from server100
```

myip

The `myip` utility returns the IP address of the host.

Syntax

```
$ java utils.myip
```

Example

```
$ java utils.myip
Host toyboat.toybox.com is assigned IP address: 192.0.0.1
```

pem2der

The `pem2der` utility converts an X509 certificate from PEM format to DER format. The `.der` file is written in the same directory as the source `.pem` file.

Syntax

```
$ java utils.pem2der pemFile
```

Table 1-11 describes the argument that is passed to the `pem2der` utility.

Table 1-11 pem2der Arguments

Argument	Description
pemFile	The name of the file to be converted. The filename must end with a `.pem` extension, and it must contain a valid certificate in `.pem` format.

Example

```
$ java utils.pem2der graceland_org.pem
Decoding
.....................................................................
.....................................................................
.....................................................................
.....................................................................
.....................................................................
```

rmic

The WebLogic RMI compiler is a command-line utility for generating and compiling remote objects. Use `weblogic.rmic` to generate dynamic proxies on the client-side for custom remote object interfaces in your application, and to provide hot code generation for server-side objects. See Using the WebLogic RMI Compiler in *Developing RMI Applications for Oracle WebLogic Server*.

Schema

The `Schema` utility lets you upload SQL statements to a database using the WebLogic JDBC drivers. For additional information about database connections, see *Developing JDBC Applications for Oracle WebLogic Server*.

Syntax

```
$ java utils.Schema driverURL driverClass [-u username]
     [-p password] [-verbose] SQLfile
```

Table 1-12 describes the arguments that are passed to the `Schema` utility.

Table 1-12 Schema Arguments

Argument	Definition
driverURL	Required. URL for the JDBC driver.

Table 1-12 (Cont.) Schema Arguments

Argument	Definition
driverClass	Required. Pathname of the JDBC driver class.
-u *username*	Optional. Valid username.
-p *password*	Optional. Valid password for the user.
-verbose	Optional. Prints SQL statements and database messages.
SQLfile	Required. Text file with SQL statements.

Example

The following code shows a `Schema` command line for the `examples.utils` package:

```
$ java utils.Schema
"jdbc:derby://localhost:1527/demo"
"org.apache.derby.jdbc.ClientDriver" -u examples
-p examples examples/utils/ddl/demo.ddl

utils.Schema will use these parameters:
       url: jdbc:derby://localhost:1527/demo
    driver: org.apache.derby.jdbc.ClientDriver
      user: examples
  password: examples
  SQL file: examples/utils/ddl/demo.ddl
```

SearchAndBuild

This Ant task executes `build.xml` files that are included within the `FileSet`. The task assumes that all of the files defined in `FileSet` are valid build files, and executes the `Ant` task of each of them.
Make certain that your `FileSet` filtering is correct. If you include the `build.xml` file that `SearchAndBuildTask` is being called from, you will be stuck in an infinite loop as this task will execute the top level build file—itself—forever.

Example

```
<project name="all_modules" default="all" basedir=".">
<taskdef name="buildAll"
classname="weblogic.ant.taskdefs.build.SearchAndBuildTask"/>
<target name="all">
<buildAll>
<fileset dir="${basedir}">
<include name="**\build.xml"/>
<exclude name="build.xml"/>
</fileset>
</buildAll>
</target>
</project>
```

system

The `system` utility displays basic information about your computer's operating environment, including the manufacturer and version of your JDK, your `CLASSPATH`, and details about your operating system.

Syntax

```
$ java utils.system
```

Example

```
$ java utils.system
* * * * * * * java.version * * * * * * *
1.8.0_121

* * * * * * * java.vendor * * * * * * *
Oracle Corporation

* * * * * * * java.class.path * * * * * * *
C:\Oracle\wlserver\samples\server\examples\build\serverclasses;C:\Java\JDK18~1.0_7\lib\to
ols.jar;
C:\Oracle\wlserver\server\lib\weblogic.jar;C:\Oracle\oracle_common\modules\net.sf.antcont
rib_1.1.0.0_1-0b3\lib
\ant-contrib.jar;C:\Oracle\wlserver\modules\features\oracle.wls.common.nodemanager.jar;
C:\Oracle\wlserver\common\derby\lib\derbynet.jar;C:\Oracle\wlserver\common\derby\lib\derb
yclient.jar;
C:\Oracle\wlserver\common\derby\lib\derby.jar;C:\Oracle\wlserver\samples\server\examples\
build\clientclasses

* * * * * * * os.name * * * * * * *
Windows 7

* * * * * * * os.arch * * * * * * *
amd64

* * * * * * * os.version * * * * * * *
6.1
```

ValidateCertChain

WebLogic Server provides the `ValidateCertChain` utility to check whether or not an existing certificate chain will be rejected by WebLogic Server.
The utility uses certificate chains from PEM files, PKCS-12 files, PKCS-12 keystores, and JKS keystores.

> **Note:**
>
> Support for PEM and PKCS-12 files is deprecated in this release.

A complete certificate chain must be used with the utility. The following is the syntax for the `ValidateCertChain` utility:

```
java utils.ValidateCertChain -file pemcertificatefilename (Deprecated, use -pkcs12store
or -jks)
java utils.ValidateCertChain -pem pemcertificatefilename (Deprecated, use -pkcs12store
or -jks)
java utils.ValidateCertChain -pkcs12store pkcs12storefilename
java utils.ValidateCertChain -pkcs12file pkcs12filename password (Deprecated, use -
pkcs12store or -jks)
java utils.ValidateCertChain -jks alias storefilename [storePass]
```

Example of valid certificate chain:

```
java utils.ValidateCertChain -jks mykey mykeystore
Cert[0]: CN=zippy,OU=FORTESTINGONLY,O=MyOrganization,L=MyTown,ST=MyState,C=US
Cert[1]: CN=CertGenCAB,OU=FOR TESTINGONLY,O=MyOrganization,L=MyTown,ST=MyState,C=US

Certificate chain appears valid
```

Example of invalid certificate chain:

```
java utils.ValidateCertChain -jks mykey mykeystore
Cert[0]: CN=corba1 OU=FOR TESTING ONLY, O=MyOrganization,L=MyTown,ST=MyState,C=US
CA cert not marked with critical BasicConstraint indicating it is a CA
Cert[1]: CN=CACERT,OU=FOR TESTING ONLY, O=MyOrganization,L=MyTown,ST=MyState,C=US

Certificate chain is invalid
```

verboseToZip

When executed from the document root directory of your HTTP server, `verboseToZip` takes the standard output from a Java application run in verbose mode, finds the Java classes referenced, and creates an uncompressed `.zip` file that contains those Java classes.

Syntax

```
$ java utils.verboseToZip inputFile zipFileToCreate
```

Table 1-13 describes the arguments that are passed to `verboseToZip`.

Table 1-13 verboseToZip Arguments

Argument	Definition
inputFile	Required. Temporary file that contains the output of the application running in verbose mode.
zipFileToCreate	Required. Name of the `.zip` file to be created. The resulting `.zip` file is be created in the directory in which you run the program.

Example

```
$ java -verbose myapplication > & classList.tmp
$ java utils.verboseToZip classList.tmp app2.zip
```

WebLogicMBeanMaker

The `WebLogicMBeanMaker` utility takes an XML MBean Description File (MDF) and outputs some intermediate Java files, including an MBean interface, an MBean implementation, and an associated MBean information file. Together, these intermediate files form the MBean type for a custom security provider
See Understand What the WebLogic MBeanMaker Provides in *Developing Security Providers for Oracle WebLogic Server*.

Syntax

```
$ java -DMDF=xmlfile -DFiles=filesdir -DcreateStubs=true|false
weblogic.management.commo.WebLogicMBeanMaker
```

Table 1-14 describes the arguments that are passed to `WebLogicMBeanMaker`.

Table 1-14 WebLogicMBeanMaker Arguments

Argument	Description
`-DMDF=xmlfile`	Specifies that the WebLogic MBeanMaker utility should translate the MDF file, represented by `xmlfile`, into code. Whenever `xmlfile` is specified, a new set of output files is generated.
`-DFiles=filesdir`	Specifies the location, represented by `filesdir`, where the WebLogic MBeanMaker utility places the intermediate files for the MBean type.
`-DcreateStubs=true|false`	Specifies whether the WebLogic MBeanMaker utility overwrites any existing MBean implementation file.

wlappc

The `wlappc` utility compiles and validates a Java EE EAR file, an EJB JAR file, or a WAR file for deployment.

See Building Modules and Applications Using wlappc in *Developing Applications for Oracle WebLogic Server*.

wlcompile

Use the `wlcompile` Ant task to invoke the `javac` compiler to compile your application's Java files in a split development directory structure.

wlconfig

The `wlconfig` Ant task enables you to configure a WebLogic Server domain by creating, querying, or modifying configuration MBeans on a running Administration Server instance. For complete documentation on this Ant task, see Using Ant Tasks to Configure a WebLogic Server Domain in *Developing Applications for Oracle WebLogic Server*.

wldeploy

The `wldeploy` Ant task enables you to perform `weblogic.Deployer` tool functions using attributes specified in an Ant task.
See Deployer. For more information about `wldeploy`, see Deploying and Packaging from a Split Development Directory in *Developing Applications for Oracle WebLogic Server*.

wlpackage

You use the `wlpackage` Ant task to package your split development directory application as a traditional EAR file that can be deployed to WebLogic Server.
See Deploying and Packaging from a Split Development Directory in *Developing Applications for Oracle WebLogic Server*.

wlserver

The `wlserver` Ant task enables you to start, reboot, shutdown, or connect to a WebLogic Server instance.
The server instance may already exist in a configured WebLogic Server domain, or you can create a new single-server domain for development by using the `generateconfig=true` attribute. For complete documentation on this Ant task, see Starting Servers and Creating Domains Using the wlserver Ant Task in *Developing Applications for Oracle WebLogic Server*.

wsdl2Service

The `wsdl2Service` Ant task is a web services tool that takes as input an existing WSDL file and generates the Java interface that represents the implementation of your web service and the `web-services.xml` file that describes the web service.
See Developing WebLogic Web Services Starting From a WSDL File: Main Steps in *Developing JAX-WS Web Services for Oracle WebLogic Server*.

2

weblogic.Server Command-Line Reference

The `weblogic.Server` class is the main class for a WebLogic Server instance. You start a server instance by invoking `weblogic.Server` in a Java command.You can invoke the class directly in a command prompt (shell), indirectly through scripts, or through Node Manager. Oracle recommends using `java weblogic.Server` primarily for initial development but not as a standard mechanism for starting production systems for the following reasons:

- `java weblogic.Server` will not function if you select a product directory outside of the *`ORACLE_HOME`* directory.
- When executing `java weblogic.Server`, patches will not be recognized by the WebLogic Server run time.

The following sections explain how to use the `weblogic.Server` class to start WebLogic Server:

- Required Environment and Syntax for weblogic.Server
- Default Behavior
- weblogic.Server Configuration Options
- Using the weblogic.Server Command Line to Start a Server Instance
- Using the weblogic.Server Command Line to Create a Domain
- Verifying Attribute Values That Are Set on the Command Line

For information about using scripts to start an instance of WebLogic Server, see Starting an Administration Server with a Startup Script and Starting Managed Servers With a Startup Script in *Administering Server Startup and Shutdown for Oracle WebLogic Server*.

For information about using the Node Manager to start an instance of WebLogic Server, see Using Node Manager to Control Servers in the *Administering Node Manager for Oracle WebLogic Server*.

Required Environment and Syntax for weblogic.Server

Before you can use the `weblogic.Server` class to start a WebLogic Server instance, you must install WebLogic Server, set the `CLASSPATH` environment variable, and include a Java Virtual Machine (JVM) in your `PATH` environment variable.

Environment

To set up your environment for the `weblogic.Server` command:

1. Install and configure the WebLogic Server software, as described in *Installing and Configuring Oracle WebLogic Server and Coherence*.
2. If desired, modify the `CLASSPATH` environment variable, as described in Modifying the Classpath.
3. Include a Java Virtual Machine (JVM) in your `PATH` environment variable. You can use any JVM that is listed in Supported Configurations.

If you do not include a JVM in the `PATH` environment variable, you must provide a pathname for the Java executable file that the JVM provides.

Modifying the Classpath

After installation, WebLogic Server's classpath is already set, but you may choose to modify it for a number of reasons such as adding a patch to WebLogic Server, updating the version of Derby you are using, or adding support for Log4j logging.

To apply a patch to ALL of your WebLogic Server domains without the need to modify the classpath of a domain, give the patch JAR file the name, `weblogic_sp.jar`, and copy it into the *`WL_HOME`*`/server/lib` directory. The `commEnv.cmd/sh` script will automatically include a JAR named `weblogic_sp` on the classpath for you.

If you would rather not use the name `weblogic_sp.jar` for your patch file or you would just like to make sure a JAR file, such as one mentioned below, comes before `weblogic.jar` on the classpath:

- For ALL domains, edit the `commEnv.cmd/sh` script in *`WL_HOME`*`/common/bin` and prepend your JAR file to the `WEBLOGIC_CLASSPATH` environment variable.
- To apply a patch to a SPECIFIC WebLogic Server domain, edit the `setDomainEnv.cmd/sh` script in that domain's `bin` directory, and prepend the JAR file to the `PRE_CLASSPATH` environment variable.

> **Note:**
>
> `setDomainEnv` is designed to be sourced from other scripts, such as the `startWebLogic` script. `setDomainEnv` should not be called directly from within an interactive shell. Doing so can cause unpredictable issues in the domain.

If you use Derby, the open-source all-Java database management system included with Oracle WebLogic Server for use by the sample applications and code examples, include the following files on the classpath:

- *`WL_HOME`*`/common/derby/lib/derbyclient.jar` - for the driver on the client side
- *`WL_HOME`*`/common/derby/lib/derbynet.jar` and *`WL_HOME`*/common/derby/lib/derby.jar - for running the Derby network server

If you use WebLogic Enterprise Connectivity, include the following files on the classpath:

`WL_HOME``/server/lib/wlepool.jar`

`WL_HOME``/server/lib/wleorb.jar`

If you use Log4j logging, include the following file on the classpath:

`WL_HOME``/server/lib/log4j.jar`

The shell environment in which you run a server determines which character you use to separate path elements. On Windows, you typically use a semicolon (;). In a BASH shell, you typically use a colon (:).

Syntax

The syntax for invoking `weblogic.Server` is as follows:

```
java [options] weblogic.Server [-help]
```

The `java weblogic.Server -help` command returns a list of frequently used options.

Default Behavior

Understand the default sequence of operations that occur when a WebLogic Server instance is started without any options having been passed to the `weblogic.Server` class.

If you have set up the required environment described in Environment, when you enter the command `java weblogic.Server` with no options, WebLogic Server does the following:

1. Looks in the *domain_name*`/config` directory for a file named `config.xml`.
2. If `config.xml` exists in the *domain_name*`/config` directory, WebLogic Server does the following:
   a. If only one server instance is defined in `config/config.xml`, it starts that server instance.

      For example, if you issue `java weblogic.Server` from *ORACLE_HOME*`\user_projects\domains\medrec`, WebLogic Server starts the MedRec server.

   b. If there are multiple server instances defined in `config/config.xml`:
      - If an Administration Server is defined, it looks for the server with that name.
      - If an Administration Server is not defined, it looks for a server configuration named `myserver`. If it finds such a server configuration, it starts the `myserver` instance.
      - If it does not find a server named `myserver`, WebLogic Server exits the `weblogic.Server` process and generates an error message.
3. If there is no `config.xml` file in the current directory, WebLogic Server prompts you to create one. If you respond `y`, WebLogic Server does the following:
   a. Creates a server configuration named `myserver`, and persists the configuration in a file named `config/config.xml`.

      Any options that you specify are persisted to the `config.xml` file. For example, if you specify `-Dweblogic.ListenPort=8001`, then WebLogic Server saves `8001` in the `config.xml` file. For any options that you do not specify, the server instance uses default values.

      You can configure WebLogic Server to make backup copies of the configuration files. This facilitates recovery in cases where configuration changes need to be reversed or the unlikely case that configuration files become corrupted. See Configuration File Archiving in *Understanding Domain Configuration for Oracle WebLogic Server*.

   b. Uses the username and password that you supply to create a user with administrative privileges. It stores the definition of this user along with other basic, security-related data in *domain_name*`/security` files named `DefaultAuthenticatorInit.ldift`, `DefaultRoleMapperInit.ldift`, and `SerializedSystemIni.dat`.

      WebLogic Server also encrypts and stores your username and password in a *server_name*`/security/boot.properties` file, which enables you to bypass the login prompt during subsequent instantiations of the server. See Boot Identity Files in *Administering Server Startup and Shutdown for Oracle WebLogic Server*.

   c. Creates two scripts, `bin/startWebLogic.cmd` and `bin/startWebLogic.sh`, which you can use to start subsequent instantiations of the server. You can use a text editor to

modify startup options such as whether the server starts in production mode or development mode. The `startWebLogic` script contains comments that describe each option.

Note that the server starts as an Administration Server in a new domain. There are no other servers in this domain, nor are any of your deployments or third-party solutions included. You can add them as you would add them to any WebLogic domain.

weblogic.Server Configuration Options

You can use `weblogic.Server` options to configure the attributes of a server instance. The following attributes are commonly used when starting a server instance:

- JVM Parameters
- Location of Configuration Data
- Options that Override a Server's Configuration

WebLogic Server provides other startup options that enable you to temporarily override a server's saved configuration. For information about these startup options, see Options that Override a Server's Configuration.

Unless you are creating a new domain as described in Using the weblogic.Server Command Line to Create a Domain, all startup options apply to the current server instantiation; they do not modify the persisted values in an existing `config.xml` file. Use the WebLogic Server Administration Console or WebLogic Scripting Tool (WLST) to modify the `config.xml` file. See Creating Domains Using WLST Offline in *Understanding the WebLogic Scripting Tool*.

For information on verifying the WebLogic Server attribute values that you set, see Verifying Attribute Values That Are Set on the Command Line.

JVM Parameters

Table 2-1 describes frequently used options that configure the Java Virtual Machine (JVM) in which the server instance runs. For a complete list of JVM options, see the documentation for your specific JVM. For a list of JVMs that can be used with WebLogic Server, see Supported Configurations.

Table 2-1 Frequently Used Options for Setting JVM Parameters

Option	Description
`-Xms and -Xmx`	Specify the minimum and maximum values (in megabytes) for Java heap memory. For example, you might want to start the server with the default allocation of 256 megabytes of Java heap memory to the WebLogic Server. To do so, start the server using the `java -Xms256m` and `-Xmx512m` options. The values assigned to these parameters can dramatically affect the performance of your WebLogic Server and are provided here only as general defaults. In a production environment you should carefully consider the correct memory heap size to use for your applications and environment.

Table 2-1 (Cont.) Frequently Used Options for Setting JVM Parameters

Option	Description
`-classpath`	The minimum content for this option is described under Modifying the Classpath. Instead of using this argument, you can use the `CLASSPATH` environment variable to specify the classpath.
`-client -server`	Used by some JVMs to start a HotSpot virtual machine, which enhances performance. For a list of JVMs that can be used with WebLogic Server, see Supported Configurations.
`-Dfile.encoding=`*`Canonical Name`* `weblogic.Server`	To display special characters on Linux browsers, set the JVM `file.encoding` system property to `ISO8859_1`. For example: `java -Dfile.encoding=ISO8859_1 weblogic.Server` For a complete listing, see the Supported Encodings page available at `http://docs.oracle.com/javase/7/docs/technotes/guides/intl/encoding.doc.html`.

Location of Configuration Data

All server instances must have access to configuration data. Table 2-2 provides options for indicating the location of this data.

Table 2-2 Options for Indicating the Location of Configuration Data

Option	Description
`-Dweblogic.home=`*`WL_HOME`*	Specifies the location of the WebLogic home directory, which contains essential information. By default, `weblogic.Server` determines the location of the WebLogic home directory based on values in the classpath.
`-Dweblogic.RootDirectory=`*`path`*	Specifies the server's root directory. See A Server's Root Directory in *Understanding Domain Configuration for Oracle WebLogic Server*. By default, the root directory is the directory from which you issue the start command.
`-Dweblogic.management.GenerateDefaultConfig=true`	Prevents the `weblogic.Server` class from prompting for confirmation when creating a `config.xml` file. Valid only if you invoke `weblogic.Server` in an empty directory. See Default Behavior.

Table 2-2 (Cont.) Options for Indicating the Location of Configuration Data

Option	Description
`-Dweblogic.Domain=`*`domain`*	Specifies the name of the domain. If you are using `weblogic.Server` to create a domain, you can use this option to give the domain a specific name. In addition, this option supports a directory structure that WebLogic Server required in releases prior to 7.0 and continues to support in current releases. Prior to 7.0, all configuration files were required to be located in the following pathname: `.../config/`*`domain_name`*`/config.xml` In this pathname, *`domain_name`* is the name of the domain. If your domain's configuration file conforms to that pathname, and if you invoke the `weblogic.Server` command from a directory other than `config/`*`domain_name`*, you can include the `-Dweblogic.Domain=`*`domain`* argument to cause WebLogic Server to search for a `config.xml` file in a pathname that matches `config/`*`domain_name`*`/config.xml`.

For information on how a Managed Server retrieves its configuration data, see the `-Dweblogic.management.server` entry in Table 2-3.

The WebLogic Server Administration Console does not display values that you set on the command line. For information on verifying the attribute values that you set, see Verifying Attribute Values That Are Set on the Command Line.

Example

The following example starts a Managed Server instance named SimpleManagedServer. Specifying a `config.xml` file is not valid because Managed Servers contact the Administration Server for their configuration data. Multiple instances of WebLogic Server can use the same root directory. However, if your server instances share a root directory, make sure that all relative filenames are unique. In this example, SimpleManagedServer shares its root directory with SimpleServer. The command itself is issued from the `D:\` directory after running *`WL_HOME`*`\server\bin\setWLSEnv.cmd`:

```
D:\> java -Dweblogic.Name=SimpleManagedServer
 -Dweblogic.management.server=http://localhost:7001
 -Dweblogic.RootDirectory=c:\my_domains\SimpleDomain weblogic.Server
```

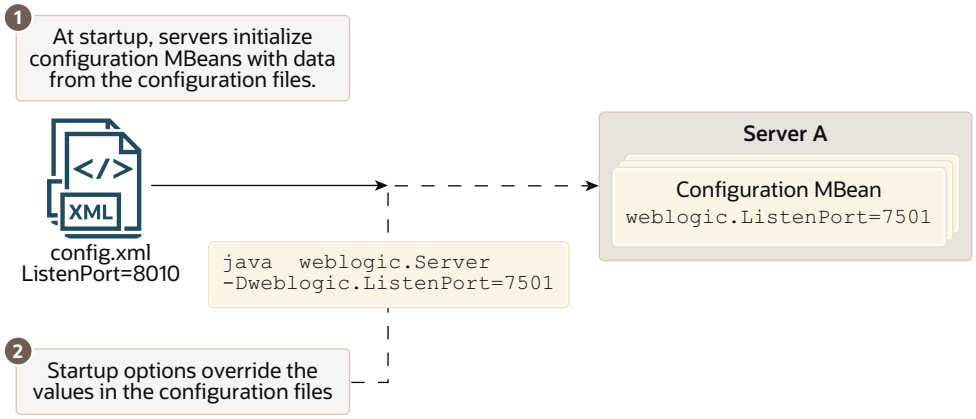
Options that Override a Server's Configuration

In most cases, you do not use startup options to override the configuration that is saved in the domain's `config.xml` file. However, in some extraordinary cases you might need to do so.

> **Tip:**
>
> When you use a startup option to override a configuration value, the server instance uses this value for the duration of its life cycle. Even if you use the WebLogic Server Administration Console, the WebLogic Scripting Tool, or some other utility to change the value in the configuration, the value will remain overridden until you restart the server without using the override.

For example, in a production environment, your organization might have a policy against modifying the domain's `config.xml` file, but you need to shut down the Administration Server and restart it using a temporary listen port. In this case, when you use the `weblogic.Server` command to start the Administration Server, you can include the `-Dweblogic.ListenPort=7501` startup option to change the listen port for the current server session. The server instance initializes its configuration MBeans from the `config.xml` file but substitutes `7501` as the value of its listen port. When you subsequently restart the server without passing the startup option, it will revert to using the value from the `config.xml` file, `8010`. (See Figure 2-1.)

Figure 2-1 Overriding config.xml Values



The following options temporarily override a server's configuration:

- Server Communication
- SSL
- HTTP Strict Transport Security
- Security
- Message Output and Logging
- Other Server Configuration Options
- Clusters
- Deployment

Server Communication

Table 2-3 describes the options for configuring how servers communicate.

Table 2-3 Options for Configuring Server Communication

Option	Description
`-Dweblogic.management.server=[`*`protocol`*`://]`*`Admin-host:port`*	Starts a server instance as a Managed Server and specifies the Administration Server that will configure and manage the server instance. The domain's configuration file does not specify whether a server configuration is an Administration Server or a Managed Server. You determine whether a server instance is in the role of Administration Server or Managed Server with the options that you use to start the instance. If you omit the `-Dweblogic.management.server` option in the start command, the server starts as an Administration Server (although within a given domain, there can be only one active Administration Server instance). Once an Administration Server is running, you must start all other server configurations as Managed Servers by including the `-Dweblogic.management.server` option in the start command. For *`protocol`*, specify `HTTP`, `HTTPS`, `T3`, or `T3S`. The `T3S` and `HTTPS` protocols require you to enable SSL on the Managed Server and the Administration Server and specify the Administration Server's SSL listen port. **Note:** Regardless of which protocol you specify, the initial download of a Managed Server's configuration is over HTTP or HTTPS. After the RMI subsystem initializes, the server instance can use the T3 or T3S protocol. For `Admin-host`, specify localhost or the DNS name or IP address of the machine where the Administration Server is running. For `port`, specify the Administration Server's listen port. If you set up the domain-wide administration port, `port` must specify the domain-wide administration port. See Configuring Managed Server Connections to the Administration Server in *Administering Server Startup and Shutdown for Oracle WebLogic Server*.
`-Dweblogic.ListenAddress=`*`host`*	Specifies the address at which this server instance listens for requests. The *`host`* value must be either the DNS name or the IP address of the computer that is hosting the server instance. This startup option overrides any listen address value specified in the `config.xml` file. The override applies to the current server instantiation; it does not modify the value in the `config.xml` file. Use any of the administration tools listed in Summary of System Administration Tools and APIs in *Understanding Oracle WebLogic Server* to modify the `config.xml` file. See Configure listen addresses in the *Oracle WebLogic Server Administration Console Online Help* and Creating Domains Using WLST Offline in *Understanding the WebLogic Scripting Tool*.

Table 2-3 (Cont.) Options for Configuring Server Communication

Option	Description
`-Dweblogic.ListenPort=`*`portnumber`*	Enables and specifies the plain-text (non-SSL) listen port for the server instance. This startup option overrides any listen port value specified in the `config.xml` file. The override applies to the current server instantiation; it does not modify the value in the `config.xml` file. Use any of the administration tools listed in Summary of System Administration Tools and APIs in *Understanding Oracle WebLogic Server* to modify the `config.xml` file. The default listen port is 7001. See Configure listen ports in the *Oracle WebLogic Server Administration Console Online Help* and Creating Domains Using WLST Offline in *Understanding the WebLogic Scripting Tool*.
`-Dweblogic.ssl.ListenPort=`*`portnumber`*	Enables and specifies the port at which this WebLogic Server instance listens for SSL connection requests. This startup option overrides any SSL listen port value specified in the `config.xml` file. The override applies to the current server instantiation; it does not modify the value in the `config.xml` file. Use any of the administration tools listed in Summary of System Administration Tools and APIs in *Understanding Oracle WebLogic Server* to modify the `config.xml` file. The default SSL listen port is 7002. See Configure listen ports in the *Oracle WebLogic Server Administration Console Online Help* and Creating Domains Using WLST Offline in *Understanding the WebLogic Scripting Tool*.
`-Dweblogic.management.discover={true|false}`	**Note:** This option was removed as of WebLogic Server 9.0. Determines whether an Administration Server recovers control of a domain after the server fails and is restarted. A `true` value causes an Administration Server to communicate with all known Managed Servers and inform them that the Administration Server is running. A false value prevents an Administration Server from communicating with any Managed Servers that are currently active in the domain. **Tip:** Specify `false` for this option only in the development environment of a single server. Specifying `false` can cause server instances in the domain to have an inconsistent set of deployed modules. In WebLogic Server 9.0, this command is deprecated because if an Administration Server stops running while the Managed Servers in the domain continue to run, each Managed Server will periodically attempt to reconnect to the Administration Server at the interval specified by the `ServerMBean` attribute `AdminReconnectIntervalSecs`. See *Administering Server Startup and Shutdown for Oracle WebLogic Server*.

The WebLogic Server Administration Console does not display values that you set on the command line. For information on verifying the attribute values that you set, see Verifying Attribute Values That Are Set on the Command Line.

SSL

Each Weblogic Server instance uses an instance of `weblogic.management.configuration.SSLMBean` to represent its SSL configuration.

All of the options in the following table that start with `-Dweblogic.security.SSL` modify the configuration of the server's `SSLMBean`. For example, the `-Dweblogic.security.SSL.ignoreHostnameVerification` option sets the value of the `SSLMBean`'s `ignoreHostnameVerification` attribute.

Table 2-4 describes the options for configuring a server to communicate using Secure Sockets Layer (SSL).

> **Note:**
>
> As of WebLogic Server version 12.1.1, JSSE is the only SSL implementation that is supported. The Certicom-based SSL implementation is removed and is no longer supported in WebLogic Server.

Table 2-4 Options for Configuring SSL

Option	Description
`-Dweblogic.security.SSL.ignoreHostnameVerification=true`	Disables host name verification, which enables you to use the demonstration digital certificates that are shipped with WebLogic Server. By default, when a WebLogic Server instance is in the role of SSL client (it is trying to connect to some other server or application via SSL), it verifies that the host name that the SSL server returns in its digital certificate matches the host name of the URL used to connect to the SSL server. If the host names do not match, the connection is dropped. If you disable host name verification, either by using this option or by modifying the server's configuration in the `config.xml` file, the server instance does not verify host names when it is in the role of SSL client. **Note:** Oracle does not recommend using the demonstration digital certificates or turning off host name verification in a production environment. This startup option overrides any host name verification setting in the `config.xml` file. The override applies to the current server instantiation; it does not modify the value in the `config.xml` file. Use the WebLogic Server Administration Console or WLST to modify the `config.xml` file. See Using Host Name Verification in *Administering Security for Oracle WebLogic Server*.
`-Dweblogic.security.SSL.HostnameVerifier=`*`hostnameverifierimplementation`*	Specifies the name of a custom host name verifier class. The class must implement the `weblogic.security.SSL.HostnameVerifier` interface.

Table 2-4 (Cont.) Options for Configuring SSL

Option	Description
-Dweblogic.security.SSL.sessionCache.ttl=*sessionCacheTimeToLive*	Modifies the default server-session time-to-live for SSL session caching. The *sessionCacheTimeToLive* value specifies (in milliseconds) the time to live for the SSL session. The default value is 90000 milliseconds (90 seconds). This means if a client accesses the server again (via the same session ID) within 90 seconds, WebLogic Server will use the existing SSL session. You can change this value by setting -Dweblogic.security.SSL.sessionCache.ttl in the server startup script. For *sessionCache.ttl*: • The minimum value is 1 • The maximum value is Integer.MAX_VALUE • The default value is 90000
-Dweblogic.security.SSL.CertificateCallback=*callback-handler*	Specifies a certificate callback handler class, which evaluates details contained the end-user certificate passed in a secure connection request to WebLogic Server. Depending on the details contained in the certificate, the callback handler returns a true or false, which determines whether authentication is successful. **Note:** If you use a certificate callback implementation in WebLogic Server, a callback is generated whenever a request is received over a secure port. As a result, using certificate callbacks may impose a performance overhead that should be taken into consideration. See Checking the Validity of End User Certificates in *Administering Security for Oracle WebLogic Server*.
-Dweblogic.management.pkpassword=*pkpassword*	Specifies the password for retrieving SSL private keys from an encrypted flat file. Use this option if you store private keys in an encrypted flat file.
-Dweblogic.security.SSL.trustedCAKeyStore=*path*	**Deprecated**. If you configure a server instance to use the SSL features that were available before WebLogic Server 8.1, you can use this argument to specify the certificate authorities that the server or client trusts. The *path* value must be a relative or qualified name to the Sun JKS keystore file (contains a repository of keys and certificates). If a server instance is using the SSL features that were available before 8.1, and if you do not specify this argument, the WebLogic Server or client trusts all of the certificates that are specified in *JAVA_HOME*\jre\lib\security. Oracle recommends that you do not use the demonstration certificate authorities in any type of production deployment. See Configuring SSL in *Administering Security for Oracle WebLogic Server*.

Table 2-4 (Cont.) Options for Configuring SSL

Option	Description
`-Dsecurity.use.interopCA=true`	If you are using WebLogic Server together with a version of WebLogic Server prior to 12.1.2, be aware that the demo trust keystore of the previous versions does not contain the demo CA certificate used as of version 12.1.2. Therefore, if an instance of WebLogic Server sends its public certificate to an instance of WebLogic Server running a prior version, that public certificate will not automatically be trusted. Use this system property to generate interoperable demo certificates signed by the previous demo CA certificate.
`-Dweblogic.security.SSL.protocolVersion=`*`protocol`*	Specifies the protocol that is used for SSL connections. The *`protocol`* value can be one of the following: • `SSL3` — Only SSL v3.0 messages are sent and accepted. • `TLS1` — Enables any protocol starting with TLS for messages that are sent and accepted; for example, TLS v1.0, TLS v1.1, TLS v1.2 and TLS v1.3. **Note:** – WebLogic Server supports TLS v1.3 only with JDK 8 Update 261 (JDK 8u261) or later. If you are running an earlier JDK version, then TLS v1.3 may not be available. – Support for TLS v1.0 and v1.1 is deprecated. Although TLS v1.1 is the default minimum protocol version configured in WebLogic Server, Oracle strongly recommends that you do not use TLS v1.0 and v1.1 in production environments. In addition, these versions may be disabled by default in certain JDK updates by the underlying JSSE provider. • `ALL` — Depends on the JSSE provider and JDK version. (This is the default.) See Using the weblogic.security.SSL.protocolVersion System Property in *Administering Security for Oracle WebLogic Server*.

Table 2-4 (Cont.) Options for Configuring SSL

Option	Description
-Dweblogic.security.SSL.minimumProtocolVersion=*protocol*	Specifies the *minimum protocol version* that is used for SSL connections. The *protocol* value can be one of the following: • SSLv3 — Specifies SSL v3.0 as the minimum protocol version enabled in SSL connections. • TLSv1 — Specifies TLS v1.0 as the minimum protocol version enabled in SSL connections. • TLSv*x.y* — Specifies TLS v*x.y* as the minimum protocol version enabled in SSL connections, where *x* is between 1 and 9, and *y* is between 0 and 9, inclusive. **Note:** • TLS v1.1 is the default minimum protocol version configured in WebLogic Server. However, Oracle recommends the use of TLS v1.2 or later in a production environment. • Support for TLS v1.0 and v1.1 is deprecated. Oracle strongly recommends that you do not use TLS v1.0 and v1.1. In addition, these versions may be disabled by default in certain JDK updates by the underlying JSSE provider. • WebLogic Server supports TLS v1.3 only with JDK 8 Update 261 (JDK 8u261) or later. If you are running an earlier JDK version, then TLS v1.3 may not be available. See Using the weblogic.security.SSL.minimumProtocolVersion System Property in *Administering Security for Oracle WebLogic Server*.
-Dweblogic.security.ssl.sslcontext.protocol=*protocol*	Specifies the javax.net.ssl.SSLContext algorithm for the JSSE provider. For some JSSE providers, there is a correlation between the javax.net.ssl.SSLContext algorithm and the initially enabled SSL/TLS protocols. If the JSSE provider configured in your system interprets the protocol parameter differently, you may need to set this property. Refer to the vendor-specific documentation for the correlations between the javax.net.ssl.SSLContext setting and the enabled SSL/TLS protocols. **Note:** When using the IBM JSSE provider, WebLogic Server attempts to select a javax.net.ssl.SSLContext algorithm equivalent to the default TLS. Standard supported values are SSL, SSLv3, TLS (the default), TLSv1, TLSv1.1, TLSv1.2, and TLSv1.3. WebLogic Server does not support SSLv2. Note that support for TLSv1.3 is available only with JDK 8 Update 261 (JDK 8u261) or later. For earlier JDK versions, TLS v1.3 may not be available. See Using the weblogic.security.ssl.sslcontext.protocol System Property in *Administering Security for Oracle WebLogic Server*.

The WebLogic Server Administration Console does not display values that you set on the command line. For information on verifying the attribute values that you set, see Verifying Attribute Values That Are Set on the Command Line.

Setting Additional SSL Attributes

To set additional SSL attributes from the startup command, do the following:

1. To determine which SSL attributes can be configured from startup options, view the WebLogic Server Javadoc for the `SSLMBean` and `ServerMBean`, described in *MBean Reference for Oracle WebLogic Server*. The Javadoc also indicates valid values for each attribute.

   Each attribute that `SSLMBean` and `ServerMBean` expose as a setter method can be set by a startup option.

2. To set attributes in the `SSLMBean`, add the following option to the start command:

   `-Dweblogic.ssl.`*`attribute-name=value`*
   where *`attribute-name`* is the name of the MBean's setter method without the `set` prefix.

3. To set attributes in the `ServerMBean`, add the following option to the start command:

   `-Dweblogic.server.`*`attribute-name=value`*
   where *`attribute-name`* is the name of the MBean's setter method without the `set` prefix.

For example, the `SSLMBean` exposes its `Enabled` attribute with the following setter method:

```
setEnabled()
```

To enable SSL for a server instance named MedRecServer, use the following command when you start MedRecServer:

```
java -Dweblogic.Name=MedRecServer -Dweblogic.ssl.Enabled=true weblogic.Server
```

The WebLogic Server Administration Console does not display values that you set on the command line. For information on verifying the attribute values that you set, see Verifying Attribute Values That Are Set on the Command Line.

HTTP Strict Transport Security

HTTP Strict Transport Security (HSTS) is a web security policy mechanism that allows a web server to be configured so that web browsers, or other user agents, can access the server using only secure connections, such as HTTPS. Web servers declare this policy using the Strict-Transport-Security HTTP response header field.

For more information about HSTS, see Using HTTP Strict Transport Security in *Developing Web Applications, Servlets, and JSPs for Oracle WebLogic Server*.

Table 2-5 describes the system properties that you add to WebLogic Server domain start up scripts to enable HSTS and customize the response header.

Table 2-5 Options for Configuring HSTS

Option	Description
`-Dweblogic.http.headers.enableHSTS={true|false}`	Specifies whether the server is configured to use HSTS. The default value of this system property is `false`, indicating that WebLogic Server will NOT send the HSTS header by default. Set this property to `true` to enable HSTS. When enabled, the following default HSTS header is sent with all responses: `Strict-Transport-Security: max-age=31536000; includeSubDomains; preload` The values specified in this response are the minimum values required by the HSTS preload submission web site https://hstspreload.org/. You can customize these values using the system properties described in the following rows of this table.
`-Dweblogic.http.headers.hsts.maxage=`*`max-age-seconds`*	Specifies the time, in seconds, that the browser remembers that a site is only to be accessed using HTTPS. The default value is 31536000 seconds (one year).
`-Dweblogic.http.headers.hsts.includesubdomains={true|false}`	Specifies whether the HSTS policy applies to this HSTS host as well as any subdomains of the host's domain name. If this directive is not specified, the property defaults to `true` and is included in the header response.
`-Dweblogic.http.headers.hsts.preload={true|false}`	Specifies that the site is requesting inclusion in the HTTP Strict Transport Security (HSTS) preload list, which is a list of sites that are hardcoded into Chrome (and other browsers) as using HTTPS only. If this directive is not specified, the property defaults to `true` and is included in the header response. Ensure that your site meets all the necessary requirements before including the `preload` directive in your response header. To ensure your site is successfully preloaded, request submission at `https://hstspreload.org/`.

Security

Table 2-6 describes the options for configuring general security parameters.

Table 2-6 Options for General Security Parameters

Option	Description
`-Dweblogic.management.username=`*`username`*	Specifies the username under which the server instance will run. As of WebLogic Server 12.1.1, the boot username property `weblogic.management.username` has been deprecated and will be removed in a future release, and you will no longer be able to specify the username in the command for starting WebLogic Server in production mode. As an alternative, Oracle recommends that you use the `boot.properties` file to specify the boot username for WebLogic Server. See Boot Identity Files in *Administering Server Startup and Shutdown for Oracle WebLogic Server*. See Provide User Credentials to Start and Stop Servers in *Administering Server Startup and Shutdown for Oracle WebLogic Server*.
`-Dweblogic.management.password=`*`password`*	Specifies the user password. As of WebLogic Server 12.1.1, the boot password system property `weblogic.management.password` has been deprecated and will be removed in a future release, and you will no longer be able to specify the password in the command for starting WebLogic Server in production mode. As an alternative, Oracle recommends that you use the `boot.properties` file to specify the boot password for WebLogic Server. See Boot Identity Files in *Administering Server Startup and Shutdown for Oracle WebLogic Server*. See Provide User Credentials to Start and Stop Servers in *Administering Server Startup and Shutdown for Oracle WebLogic Server*.
`-Dweblogic.system.StoreBootIdentity=true`	Creates a `boot.properties` file in the server's root directory. The file contains the username and an encrypted version of the password that was used to start the server. Do not specify this argument in a server's `ServerStartMBean`. See Specifying User Credentials When Starting a Server with the Node Manager in *Administering Server Startup and Shutdown for Oracle WebLogic Server*. Oracle recommends that you do not add this argument to a startup script. Instead, use it only when you want to create a `boot.properties` file. See Boot Identity Files in *Administering Server Startup and Shutdown for Oracle WebLogic Server*.
`-Dweblogic.system.BootIdentityFile=`*`filename`*	Specifies a boot identity file that contains a username and password. The *`filename`* value must be the fully qualified pathname of a valid boot identity file. For example: `-Dweblogic.system.BootIdentityFile=`*`WL_HOME`*`\mydomain\servers\myserver\security\boot.properties` If you do not specify a filename, a server instance, or the WLST `SHUTDOWN` command, use the `boot.properties` file in the server's root directory. If there is no boot identity file, when starting a server, the server instance prompts you to enter a username and password.

Table 2-6 (Cont.) Options for General Security Parameters

Option	Description
`-Dweblogic.system.RemoveBootIdentity=true`	Removes the boot identity file after a server starts.
`-Dweblogic.security.anonymousUserName=`*`name`*	Assigns a user ID to anonymous users. By default, all anonymous users are identified with the string `<anonymous>`. To emulate the security behavior of WebLogic Server 6.x, specify `guest` for the *`name`* value and create a user named `guest` in your security realm. See Users, Groups, and Security Roles in *Securing Resources Using Roles and Policies for Oracle WebLogic Server*.
`-Djava.security.manager` `-Djava.security.policy[=]=`*`filename`*	Standard Java EE options that enable the Java Security Manager and specify a filename (using a relative or fully-qualified pathname) that contains Java 2 security policies. To use the WebLogic Server sample policy file, specify *`WL_HOME`*`\server\lib\weblogic.policy`. Using `-Djava.security.policy==`*`filename`* (note the double equal sign (==)) causes the policy file to override any default security policy. When JACC is enabled, this property causes WebLogic Server to ignore any policy files that are used for servlet and EJB authorization. A single equal sign (=) causes the policy file to be appended to an existing security policy. **Note:** The WebLogic JACC provider does not require the Java Security Manager to be enabled. See Using the Java Security Manager to Protect WebLogic Resources in *Developing Applications with the WebLogic Security Service*.
`-Dweblogic.security.fullyDelegateAuthorization=true`	By default, roles and security policies cannot be set for an EJB or Web application through the WebLogic Server Administration Console unless security constraints were defined in the deployment descriptor for the EJB or Web application. Use this option when starting WebLogic Server to override this problem. This startup option does not work with EJBs or EJB methods that use `<unchecked>` or `<restricted>` tags or Web applications that do not have a role-name specified in the `<auth-constraint>` tag.
`-Dweblogic.management.anonymousAdminLookupEnabled=true`	Enables you to retrieve an `MBeanHome` interface without specifying user credentials. The `MBeanHome` interface is part of the WebLogic Server JMX API. If you retrieve `MBeanHome` without specifying user credentials, the interface gives you read-only access to the value of any MBean attribute that is not explicitly marked as protected by the Weblogic Server MBean authorization process. This startup option overrides the Anonymous Admin Lookup Enabled setting on the *domain_name* > Security > General page in the WebLogic Server Administration Console. By default, the `MBeanHome` API allows access to MBeans only for WebLogic users who are in one of the default security roles. See Users, Groups, an Security Roles in *Securing Resources Using Roles and Policies for Oracle WebLogic Server*.

Table 2-6 (Cont.) Options for General Security Parameters

Option	Description
-Dweblogic.security.identityAssertionTTL=*seconds*	Configures the number of seconds that the Identity Assertion cache stores a Subject. When using an Identity Assertion provider (either for an X.509 certificate or some other type of token), Subjects are cached within the server. This greatly enhances performance for servlets and EJB methods with `<run-as>` tags as well as for other places where identity assertion is used but not cached (for example, signing and encrypting XML documents). There might be some cases where this caching violates the desired semantics. By default, Subjects remain in the cache for 300 seconds, which is also the maximum allowed value. Setting the value to `-1` disables the cache. Setting a high value generally improves the performance of identity assertion, but makes the Identity Assertion provider less responsive to changes in the configured Authentication provider. For example, a change in the user's group will not be reflected until the Subject is flushed from the cache and recreated.
-Djavax.security.jacc.PolicyConfigurationFactory.provider= weblogic.security.jacc.simpleprovider .PolicyConfigurationFactoryImpl -Djavax.security.jacc.policy.provider= weblogic.security.jacc.simpleprovider .SimpleJACCPolicy -Dweblogic.security.jacc.RoleMapperFactory.provider= weblogic.security.jacc.simpleprovider.RoleMapperFactoryImpl	Defining these three system properties is required to enable the use of the Java Authorization Contract for Containers in the security realm. When these providers are in use, JACC handles authorization decisions for the EJB and servlet containers for external applications. Any other authorization decisions for internal applications are handled by the authorization in the WebLogic Security framework. **Note:** JACC authorization does not require the use of Java SE security. The WebLogic JACC implementation expects that the policy object is the default `sun.security.provider.PolicyFile` class. When starting, WebLogic Server attempts to locate and instantiate the classes specified by the JACC startup properties and fails if it cannot find or instantiate them (if, for example, the files specified by the startup properties are not valid classes). See Using the Java Authorization Contract for Containers in *Developing Applications with the WebLogic Security Service*
-Dweblogic.security.ldap. maxSize=<*max bytes*>	Limits the size of the data file used by the embedded LDAP server. When the data file exceeds the specified size, WebLogic Server eliminates from the data file space occupied by deleted entries.
-Dweblogic.security.ldap.changeLogThreshold= <*number of entries*>	Limits the size of the change log file used by the embedded LDAP server. When the change log file exceeds the specified number of entries, WebLogic Server truncates the change log by removing all entries that have been sent to all Managed Servers.

Table 2-6 (Cont.) Options for General Security Parameters

Option	Description
-Dweblogic.security.providers.authentication.ldap.socketTimeout=*seconds*	Sets a timeout value for the LDAP Authentication provider connection to an LDAP server. If multiple LDAP servers are specified in the `LDAPServerMBean.Host` attribute, the socket timeout applies to each individual LDAP server connection attempt that is made. The default value is 0, which sets no socket timeout on connections. Note that the `LDAPServerMBean.ConnectTimeout` attribute sets the timeout limit for *all* connection attempts that are made. Typically the socket timeout is used in conjunction with the connect timeout and the parallel connect delay. See Configuring Failover for LDAP Authentication Providers in *Administering Security for Oracle WebLogic Server*.

The WebLogic Server Administration Console does not display values that you set on the command line. See Verifying Attribute Values That Are Set on the Command Line.

Message Output and Logging

Table 2-7 describes options for configuring a server instance's message output.

Table 2-7 Options for Configuring Message Output

Option	Description
-Dweblogic.Stdout="*filename*"	Redirects the server and JVM standard output stream to a file. You can specify a pathname that is fully qualified or relative to the WebLogic Server root directory. See Redirect JVM output in the *Oracle WebLogic Server Administration Console Online Help*.
-Dweblogic.Stderr="*filename*"	Redirects the server and JVM standard error stream to a file. You can specify a pathname that is fully qualified or relative to the WebLogic Server root directory. See Redirecting JVM Output in *Configuring Log Files and Filtering Log Messages for Oracle WebLogic Server*.
-Dweblogic.AdministrationMBeanAuditingEnabled={true|false}	Determines whether the Administration Server emits configuration auditing log messages when a user changes the configuration or invokes management operations on any resource within a domain. By default, the Administration Server does not emit configuration auditing messages. See Enable configuration auditing in the *Oracle WebLogic Server Administration Console Online Help*.

The WebLogic Server Administration Console does not display values that you set on the command line. For information on verifying the attribute values that you set, see Verifying Attribute Values That Are Set on the Command Line.

Setting Logging Attributes

Each Weblogic Server instance uses an instance of `weblogic.management.configuration.LogMBean` to represent the configuration of its logging services.

To set values for `LogMBean` attributes from the startup command, do the following:

1. To determine which log attributes can be configured from startup options, see `LogMBean` in *MBean Reference for Oracle WebLogic Server*. The Javadoc also indicates valid values for each attribute.

   Each attribute that the `LogMBean` exposes as a setter method can be set by a startup option.

2. Add the following option to the start command:

   ```
   -Dweblogic.log.attribute-name=value
   ```

   where *`attribute-name`* is the name of the MBean's setter method without the `set` prefix.

The `LogMBean` exposes its `FileName` attribute with the following setter method:

```
setFileName()
```

To specify the name of the MedRecServer instance's local log file, use the following command when you start MedRecServer:

```
java -Dweblogic.Name=MedRecServer
     -Dweblogic.log.FileName="C:\logfiles\myServer.log"
     weblogic.Server
```

The WebLogic Server Administration Console does not display values that you set on the command line. For information on verifying the attribute values that you set, see Verifying Attribute Values That Are Set on the Command Line.

Clusters

Table 2-8 describes options for configuring additional attributes of a cluster.

Table 2-8 Options for Configuring Cluster Attributes

Option	Description
`-Dweblogic.cluster.multicastAddress`	Determines the Multicast Address that clustered servers use to send and receive cluster-related communications. By default, a clustered server refers to the Multicast Address that is defined in the `config.xml` file. Use this option to override the value in `config.xml`. **Note:** The WebLogic Server Administration Console does not display values that you set on the command line. For information on verifying the attribute values that you set, see Verifying Attribute Values That Are Set on the Command Line. Regardless of how you set the Multicast Address, all servers in a cluster must communicate at the same Multicast Address.

Deployment

Table 2-9 describes options for configuring additional attributes for deployment.

Table 2-9 Options for Configuring Deployment Attributes

Option	Description
`-Dweblogic.deployment.IgnorePrepareStateFailures=true`	Overrides the default deployment behavior by allowing a server to transition to `Running` even with static deployment `Prepare` failures. **Note:** This server level flag may cause inconsistent deployment behavior within clusters, such as issues with HttpSessionReplication or SFSB replication.

Other Server Configuration Options

Table 2-10 describes options for configuring additional attributes of a server instance.

Table 2-10 Options for Configuring Server Attributes

Option	Description
`-Dweblogic.Name=`*`servername`*	Specifies the name of the server instance that you want to start. The specified value must refer to the name of a server that has been defined in the domain's `config.xml` file.
`-Dweblogic.ProductionModeEnabled={true|false}`	This attribute is **deprecated** in WebLogic Server 9.0. Determines whether a server starts in production mode. A `true` value prevents a WebLogic Server from automatically deploying and updating applications that are in the *`domain_name`*`/autodeploy` directory. If you do not specify this option, the assumed value is `false`. To enable production mode, you can use WLST to set `DomainMBean.isProductionModeEnabled` to `true`, or use the WebLogic Server Administration Console. See Change to production mode in the *Oracle WebLogic Server Administration Console Online Help*. **Note:** It is recommended that you enable production mode via the WebLogic Server Administration Console, in `config.xml`, or by supplying the `production` argument to startWebLogic script, for example, `startWebLogic.cmd production`. You should only enable production mode from the command line on the Administration Server. **Note:** It is important to note that when ProductionModeEnabled is set from the command line on the Administration Server, this value is propagated to all Managed Servers.

Table 2-10 (Cont.) Options for Configuring Server Attributes

Option	Description
`-Dweblogic.management.startupMode=`*`MODE`*	The argument *`MODE`* represents either of the following: • `STANDBY` — Starts a server and places it in the `STANDBY` state. See *Administering Server Startup and Shutdown for Oracle WebLogic Server*. To use this startup argument, the domain must be configured to use the domain-wide administration port. See Administration Port and Administrative Channel in *Administering Server Environments for Oracle WebLogic Server* and Configure the domain-wide administration port in the *Oracle WebLogic Server Administration Console Online Help*. • `ADMIN` — Starts a server and places it in the `ADMIN` state. See *Administering Server Startup and Shutdown for Oracle WebLogic Server*. Specifying the startup mode startup option overrides any startup mode setting in the `config.xml` file. The override applies to the current server instantiation and in the `config.xml` file. The system property has the highest precedence over the server configuration settings in the `config.xml` and becomes part of edit session changes if starting an edit session via Administration Console or WLST. If a system property is specified on the server startup: • The value cannot be changed in the run time. • Starting a new edit session can cause the system property value to be persisted in `config.xml`.
`-Dweblogic.apache.xerces.maxentityrefs=`*`numerical-value`*	Limits the number of entities in an XML document that the WebLogic XML parser resolves. If you do not specify this option, the XML parser that WebLogic Server installs resolves 10,000 entity references in an XML document, regardless of how many an XML document contains.
`-Dweblogic.jsp.windows.caseSensitive=true`	Causes the JSP compiler on Windows systems to preserve case when it creates output files names. See Using the WebLogic JSP Compiler in *Developing Web Applications, Servlets, and JSPs for Oracle WebLogic Server*.

Table 2-10 (Cont.) Options for Configuring Server Attributes

Option	Description
-Dweblogic.servlet.optimisticSerialization=true	When `optimistic-serialization` is turned on, WebLogic Server does not serialize-deserialize context and request attributes upon `getAttribute(name)` when the request is dispatched across servlet contexts. This means that you must make sure that the attributes common to Web applications are scoped to a common parent classloader (application scoped) or you must place them in the system classpath if the two Web applications do not belong to the same application. When `optimistic-serialization` is turned off (default value), WebLogic Server serialize-deserializes context and request attributes upon `getAttribute(name)` to avoid the possibility of ClassCastExceptions. The optimistic-serialization value can also be specified at domain level in the `WebAppContainerMBean`, which applies for all Web applications. The value in weblogic.xml, if specified, overrides the domain level value. The default value is false.
-Dweblogic.servlet.maxLoggingURILength=*length*	By default, when using extended log format in HTTP access logs, the maximum logged URI length is 256 characters. If the URI exceeds that length, the logged URI is truncated. You can use this property to increase the length of the URI that is logged. See DNS Related Fields in *Administering Server Environments for Oracle WebLogic Server*.
-Dweblogic.jdbc.qualifyRMName=false	When set, restores pre-WebLogic Server 11*g*R1 (10.3.1) behavior of not qualifying the JTA registration name with the domain name.
-Dweblogic.ScatteredReadsEnabled=true and -Dweblogic.GatheredWritesEnabled=true	When each is set to true, increases efficiency during I/O in environments with high network throughput. These command options are used together to optimize WebLogic Server performance for use with Oracle Exalogic. See the *Oracle Exalogic Enterprise Deployment Guide*.
-Dweblogic.replication.enableLazyDeserialization= true	When set to true, increases efficiency with session replication. This command option is used to optimize WebLogic Server performance for use with Oracle Exalogic. See the *Oracle Exalogic Enterprise Deployment Guide*.
-Dweblogic.resourcepool.max_test_wait_secs=*seconds*	The amount of time, in seconds, WebLogic Server waits before considering a connection test failed. By default, a server instance is assigned a value of 10 seconds. If set to zero, the server instance waits indefinitely.

Table 2-10 (Cont.) Options for Configuring Server Attributes

Option	Description
`-Dweblogic.wsee.client.ssl.usejdk=true`	When set to true, switches from `WlsSSLAdapter` to `JdkSSLAdapter`. By default, WebLogic Server Web services use the `weblogic.wsee.connection.transport.https.WlsSSLAdapter` class for the SSL adapter. Setting the flag to true forces the use of `JdkSSLAdapter` from `weblogic.wsee.connection.transport.https.JdkSSLAdapter`. The `weblogic.wsee.connection.transport.https.HTTPSClientTransport` class that defines the `USE_JDK_SSL_PROPERTY` is used only in JAX-RPC. The property is not currently supported in JAX-WS.
`-Dweblogic.http.URIDecodeEncoding=`*`charset-name`*	The argument *`charset-name`* specifies the encoding used by the WebLogic Server Web container to decode the URI of an HTTP request or to encode the `Location` header in an HTTP response. The default value is `UTF-8`. See Determining the Encoding of an HTTP Request in *Developing Web Applications, Servlets, and JSPs for Oracle WebLogic Server*.
`-Dweblogic.utils.http.requestparams.useArrayMap= true`	When set to true in the server startup command, HTTP request parameters are stored using an ArrayMap. By default, HTTP request parameters are stored in a TreeMap.

The WebLogic Server Administration Console does not display values that you set on the command line. For information on verifying the attribute values that you set, see Verifying Attribute Values That Are Set on the Command Line.

Using the weblogic.Server Command Line to Start a Server Instance

The basic procedure to start a WebLogic Server instance is to run the `setWLSEnv` script to set the environment, change to the root directory of a domain, and enter the `java weblogic.Server` command.

Complete the following steps:

1. In a command shell, set up the required environment variables by running the following script:

   `WL_HOME``\server\bin\setWLSEnv.cmd` (on Windows)

   `WL_HOME``/server/bin/setWLSEnv.sh` (on UNIX)

   where *`WL_HOME`* is the directory in which you installed the WebLogic Server software.

2. In the command shell, change to the root of the domain directory, usually *`ORACLE_HOME`*`\user_projects\domains\`*`DOMAIN_NAME`*. For example, change to the *`ORACLE_HOME`*`\user_projects\domains\medrec` directory.

3. To start an Administration Server, enter the following command:

   ```
   java weblogic.Server
   ```

> **Note:**
>
> The password you use must be a string of at least 8 case-sensitive characters. The space character is not supported. See Creating a WebLogic Domain in *Creating WebLogic Domains Using the Configuration Wizard*.

4. If the domain's Administration Server is already running, and if you have already defined a Managed Server in the `config.xml` file, you can start a Managed Server as follows:

```
java -Dweblogic.Name=managed-server-name
-Dweblogic.management.server=url-for-Administration-Server
weblogic.Server
```

For example, if you create a Managed Server named MedRecManagedServer in the MedRec domain, you can enter the following command:

```
java -Dweblogic.Name=MedRecManagedServer
-Dweblogic.management.server=localhost:7011
weblogic.Server
```

> **Note:**
>
> If you are using the demo certificates in a multi-server domain, Managed Server instances will fail to boot if you specify the fully-qualified DNS name of the Administration Server host machine, as in the argument *`url-for-Administration Server`*. See Limitation on CertGen Usage in *Administering Security for Oracle WebLogic Server*.

Using the weblogic.Server Command Line to Create a Domain

You can invoke the `weblogic.Server` class to create a domain that contains a single server instance. However, you cannot invoke the `weblogic.Server` class either to add Managed Server instances to a domain, or to modify an existing domain.
As described in Default Behavior, if `weblogic.Server` is unable to find a `config.xml` file, it offers to create the file. Any command option that you specify and that corresponds to an attribute that is persisted in the `config.xml` file will be persisted. For example, the `-Dweblogic.Name` and `-Dweblogic.Domain` options specify the name of a server configuration and the name of a domain. If `weblogic.Server` is unable to find a `config.xml` file, both of these values are persisted in `config.xml`. However, the `-Dweblogic.system.BootIdentityFile` option, which specifies a file that contains user credentials for starting a server instance, is not an attribute that the `config.xml` file persists.

To create and instantiate a simple example domain and server, do the following:

1. In a command shell, set up the required environment variables by running the following script:

   `WL_HOME``\server\bin\setWLSEnv.cmd` (on Windows)

   `WL_HOME``/server/bin/setWLSEnv.sh` (on UNIX)

   where *`WL_HOME`* is the directory in which you installed the WebLogic Server software.

2. In the command shell, create an empty directory.

3. In the empty directory, enter the following command:

```
java -Dweblogic.Domain=SimpleDomain -Dweblogic.Name=SimpleServer
-Dweblogic.management.username=weblogic  -Dweblogic.management.password=password
-Dweblogic.ListenPort=7001 weblogic.Server
```

After you enter this command, WebLogic Server asks if you want to create a new `config.xml` file. If you enter `y`, it then instantiates a domain named SimpleDomain. The domain's Administration Server is configured as follows:

- The name of the Administration Server is SimpleServer.
- The domain's security realm defines one administrative user, `weblogic`, with a password of *password*.
- For the listen address of the Administration Server, you can use `localhost`, the IP address of the host computer, or the DNS name of the host computer. See Configure listen addresses in the *Oracle WebLogic Server Administration Console Online Help*.
- The Administration Server listens on port 7001.

Entering the `weblogic.Server` command as described in this section creates the following files:

- `config.xml`
- `DefaultAuthenticatorInit.ldift`, `DefaultRoleMapperInit.ldift`, and `SerializedSystemIni.dat`, which store basic security-related data.
- `boot.properties` file, which contains the username and password in an encrypted format. This file enables you to bypass the prompt for username and password when you start the server. See Boot Identity Files in *Administering Server Startup and Shutdown for Oracle WebLogic Server*.
- `startWebLogic.cmd` and `startWebLogic.sh`, that you can use to start subsequent instantiations of the server.

> **Note:**
>
> Invoking `weblogic.Server` in an empty directory results in implicit domain creation which uses the same configuration process as WLST offline and the Configuration Wizard and thus ensures that you always see uniform domains. As a result, implicitly creating a domain in an empty directory using `weblogic.Server` may take around 15 seconds.

Verifying Attribute Values That Are Set on the Command Line

The WebLogic Server Administration Console does not display values that you set on the command line because the startup options set attribute values for the server's local configuration MBean. To see the values that are in a server's local configuration MBean, use WLST instead as follows:

1. Complete the procedure described in Main Steps for Using WLST in Interactive or Script Mode in *Understanding the WebLogic Scripting Tool*.

```
>java weblogic.WLST
```

2. Start a WebLogic Server instance (see Starting and Stopping Servers in *Administering Server Startup and Shutdown for Oracle WebLogic Server*) and connect WLST to the

server using the `connect` command. For detailed information about the `connect` command, see connect in the *WLST Command Reference for WebLogic Server*.

```
wls:/(offline)> connect('username','password','t3s://localhost:7002')
Connecting to weblogic server instance running at t3s://localhost:7002 as username
weblogic ...

wls:/mydomain/serverConfig>
```

3. For example, to determine the multicast address that a cluster member is using, connect WLST to that server instance and enter the following commands:

```
wls:/mydomain/serverConfig> cd('Clusters/cluster_name')
wls:/mydomain/serverConfig/Clusters/mycluster> cmo.getMulticastAddress()

'239.192.0.0'
```

4. To determine the severity level of messages that the server instance prints to standard out, connect WLST to that server instance and enter the following commands:

```
wls:/mydomain/serverConfig> cd('Servers/server_name/Log/server_name')
wls:/mydomain/serverConfig/Servers/myserver/Log/myserver>cmo.getStdoutSeverity()

'Notice'
```

See *Understanding the WebLogic Scripting Tool*and Understanding WebLogic Server MBeans in *Developing Custom Management Utilities Using JMX for Oracle WebLogic Server*.