CUSTOMER

SAP BusinessObjects Business Intelligence platform
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Web Application Deployment Guide for Unix

SAP

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1 Document History

The following table provides an overview of the most important document changes.

> **Note**
>
> For an up-to-date list of web application servers supported by this release, see the *Product Availability Matrix* (Supported Platforms/PAR), available on the SAP BusinessObjects section of the SAP Support Portal at: https://support.sap.com/home.html.

Table 1:

Version	Date	Description
SAP BusinessObjects Business Intelligence platform 4.1	May, 2013	First release of this document.
SAP BusinessObjects Business Intelligence platform 4.1 Support Package 1	August, 2013	Updated Security exception when deploying AdminTools, dswsbobje, or BusinessProcessBI to JBoss 7.1 [page 91]. Workaround may also be required for `dswsbobje` and `BusinessProcessBI` applications when deploying to JBoss 7.1. SAP Software Update Manager (SUM) is now used instead of SAP Java Support Package Manager (JSPM) to deploy web applications to SAP Netweaver technology platform. Updated SAP NetWeaver Technology Platform Deployment with SAP Software Update Manager (SUM) [page 78].
SAP BusinessObjects Business Intelligence platform 4.1 Support Package 2	November, 2013	• Weblogic 10 has been dropped from supported platforms • *Changes to installed languages* has been updated because you can add languages by doing a modify installation rather than a full re-installation. • Updated *wdeploy predeploy* and *wdeploy predeployall* sections to include jrockit parameter • added WebSphere 8.5.5 as a supported platform
SAP BusinessObjects Business Intelligence platform 4.1 Support Package 4	June, 2014	• Added *MOBIServer* to *Split web tier deployments* • Changed *weblogic11* to *sapappsvr73* in the section *SAP NetWeaver technology platform deployment with SAP Software Update Manager (SUM* • changed contents of *config.apache* in section *To deploy to separate IHS web and WebSphere web application servers* • Updated *Web Services on split web tier servers*, *Web application clustering support*, and *Fail-over and load balancing*. • Updated *Split web tier deployments* to state that web applications are supported, though no performance improvement is realized. • Removed section *SAP configuration file* because WDeploy is not supported for deployment to SAP NetWeaver technology platform.
SAP BusinessObjects Business Intelligence platform 4.1 Support Package 5	November, 2014	• Updated the section Web application clustering support. Updated the Fault tolerant for BI launchpad and CMC.

Version	Date	Description
SAP BusinessObjects Business Intelligence platform 4.2	November , 2015	• Removed Tomcat 6 as it is deprecated and updated Tomcat 8. • Added Information about JDK 8 in To deploy web applications on a remote machine [page 29] • Added Information in Tomcat Known Issues Error is displayed when explorer is launched after an update [page 93].
SAP BusinessObjects Business Intelligence platform 4.2 Support Package 01	December, 2015	Added JBoss 6.4.0 administrative console manual deployment JBoss 6.4.0 administrative console manual deployment [page 75]
SAP BusinessObjects Business Intelligence platform 4.2 Support Package 02	March, 2016	Updated with only branding changes
SAP BusinessObjects Business Intelligence platform 4.2 Support Package 03	August, 2016	Added information about WebSphere administrative console manual deployment CLI mode in WebSphere 7.0 administrative console manual deployment - Command Line Interface Method [page 83] and WebSphere 8.5 administrative console manual deployment - Command Line Interface Method [page 85]

2 Getting Started

2.1 About this document

This document tells you how to deploy BI platform web applications to a web application server using the WDeploy tool.

For information related to the installation of the BI platform, see the *SAP BusinessObjects Business Intelligence Platform Installation Guide*.

For information related to the administration of an SAP BusinessObjects Business Intelligence platform server, see the *SAP BusinessObjects Business Intelligence Platform Administrator Guide*.

2.2 What's new in the Web Application Deployment Guide?

Web application server support

For a list of platforms, databases, web application servers, web servers, and other systems supported by this release, see the *Product Availability Matrix* (Supported Platforms/PAR), available on the SAP BusinessObjects section of the SAP Support Portal at: https://support.sap.com/home.html. The *Product Availability Matrix* takes precedence over any discrepancies in the *Web Application Deployment Guide*.

BI platform 4.x

The following features have been introduced as of BI platform 4.x:

Table 2: What's new with the WDeploy deployment tool

Feature	Description
GUI interface	New GUI interface for `deployall` and `undeployall` actions.
Two levels of log files	One log summary to help administrators understand the deployment status; one detailed log to help developers troubleshoot deployment issues.
Easier configuration	Centralized configuration file for WDeploy global parameters; access server and WDeploy parameters from WDeploy GUI.
Localization support	WDeploy GUI localization support.
No intermediate WAR files	Intermediate WAR files are no longer created as a part of the deployment process. If you need to create a WAR file that is not tailored to a specific web application server, use the `wdeploy buildwarall` command.

Feature	Description
Simplified deployment	The number of WAR files used for BI platform web applications has been reduced. This helps reduce duplicate resource consumption and number of queries made from the web application server to the CMS.

Table 3: What's new in this document

Feature	Description
Content reorganization	Rather than list each WDeploy command for every web application server, now a WDeploy command is now shown only once, with examples for each supported web application server.
New features documented	New WDeploy features have been documented.

BI platform product documentation is available in supported languages from the support web site, and is refreshed with up-to-date content as it becomes available between releases. For the most recent product documentation, visit http://help.sap.com.

2.3 Who should read this documentation

This documentation is intended for the system administrator or IT professional working to support an installation of the BI platform. Familiarity with your overall network environment, port usage conventions, database environment, and web server software is essential.

2.4 Variables

The following variables are used throughout this guide.

Variable	Description
`<BIP_INSTALL_DIR>`	The directory where the BI platform is installed.
`<WAS_HOSTNAME>`	The hostname or IP of the web application server where BI platform web applications are deployed.
`<WEB_APP>`	The name of a BI platform web application. For example, a value for `<WEB_APP>` is `BOE`. This application has a configuration file called `BOE.properties`, and the WDeploy tool creates `BOE.war` during predeploy steps for certain application servers. For a complete list of BI platform web applications, see SAP BusinessObjects Business Intelligence platform WAR and EAR files [page 12].

Variable	Description
`<WEB_APP_SERVER>`	The shorthand name of the web application server used by the WDeploy tool. For example, the value of `<WEB_APP_SERVER>` for Tomcat 8.0 is `tomcat8`. For a complete list of values, see Values for WEB_APP_SERVER [page 46].

2.5 Terminology

The following terms are used throughout the BI platform documentation:

Table 4:

Term	Definition
add-on products	Products that work with the BI platform but have their own installation program, such as SAP BusinessObjects Explorer
Auditing Data Store (ADS)	The database used to store auditing data
BI platform	An abbreviation for the SAP BusinessObjects Business Intelligence platform
bundled database; bundled web application server	The database or web application server shipped with the BI platform
cluster (noun)	Two or more Central Management Servers (CMSs) working together and using a single CMS database
cluster (verb)	To create a cluster. For example, to create a cluster: 1. Install a CMS and CMS database on machine A. 2. Install a CMS on machine B. 3. Point the CMS on machine B to the CMS database on machine A.
cluster key	Used to decrypt the keys in the CMS database. You can change the cluster key in the CCM, but you cannot reset the key like a password. It contains encrypted content and is important not to lose.
CMS	An abbreviation for the Central Management Server
CMS database	The database used by the CMS to store information about the BI platform

Term	Definition
deployment	The BI platform software installed, configured, and running on one or more machines
installation	An instance of BI platform files created by the installation program on a machine
machine	The computer on which the BI platform software is installed
major release	A full release of the software, such as 4.0
migration	The process of transferring BI content from a previous major release (for example, from XI 3.1), using the upgrade management tool. This term does not apply to deployments with the same major release. See promotion.
minor release	A release of some components of the software, such as 4.2
node	A group of BI platform servers that run on the same machine and are managed by the same Server Intelligence Agent (SIA)
Patch	A small update for a specific Support Package version
promotion	The process of transferring BI content between deployments with the same major release (for example, 4.0 to 4.0), using the promotion management application
server	A BI platform process. A server hosts one or more services.
Server Intelligence Agent (SIA)	A process that manages a group of servers, including stopping, starting, and restarting servers
Support Package	A software update for a minor or major release
web application server	A server that processes dynamic content. For example, the bundled web application server for 4.2 is Tomcat 8.
upgrade	The planning, preparation, migration, and post-processes required to complete a migration process

3 Overview of web application deployment

The BI platform installation program can deploy web applications only to the bundled Tomcat web application server. All other supported web application servers require that web applications be deployed after the installation is complete. It is recommended that you use the WDeploy web application deployment tool. For information and instructions on how to deploy using the WDeploy tool, see the "To deploy web applications with the WDeploy tool" section of this guide.

You can also deploy web applications with your application server's administrative console if you prefer. Web applications deployed with the web application server's administrative console must first be modified to be deployable WAR or EAR files. The `wdeploy predeploy` and `wdeploy predeployall` commands automate this process. After using these predeployment commands, jump to the "To deploy web applications with the administrative console" section of the guide for instructions. However, if you have extensive knowledge of your web application server and know how to customize web applications for deployment, this process can be done by hand. The manual tailoring of web applications for deployment to a web application server is not covered in this guide.

3.1 Overview of OSGi WAR files

The OSGi framework for Java web applications simplifies the deployment of the web applications bundled with the BI platform. It allows web applications, language packs, SDKs, plugins, and other resources to exist in a single bundle that can be deployed to a web application server in one step.

Deploying a single WAR file also means fewer web sessions are needed when a user accesses multiple web applications, which reduces the memory, disk, and processing load placed on a web application server.

3.2 Fail-over and load balancing

The BI platform supports clustered web application servers with load balancing. Hardware or software load balancers can be used as the entry-point for the web application servers to ensure that the processing is evenly distributed among the web application servers.

The following persistence types are currently supported:

- Source IP address persistence.
- Cookie persistence Insert mode (ArrowPoint Cookie)

> **Note**
>
> Load balancing a cluster of BI platform servers is not required, as the Central Management Server (CMS) already distributes work between cluster nodes.

3.2.1 Web application clustering support

The BI platform can be used in environments with different clustered, load balanced, or fault tolerant configurations. The table below lists configuration support for Web-hosted BI tools, CMC, and BI launch pad web applications.

Web application	Clustered web application servers	Load balancers with session affinity	Load balances without session affinity	Fault tolerant (See *Description of fault tolerance*).
BI launch pad (stateless)	Supported	Supported	Unsupported	No
CMC (stateful)	Supported	Supported	Unsupported	No
Web-hosted BI tools	Supported	Supported	Unsupported	Yes

> **Note**
>
> The WDeploy tool is not supported for deployment to a cluster or cluster software such as Websphere Application Server Network Deployment.

Description of fault tolerance

Fault Tolerance (or failover) is supported in the form of document serialization by BI platform tools. The CMC and the BI Launchpad do not support failover.If the web tier has been configured correctly, the following behavior is supported in event of a web server failure:

Table 5:

Web application	Description of fault tolerance
BI Launchpad	You need to log on again.
CMC	You need to log on again.
Web-hosted BI tool	You need to log on again but the document content will be preserved.

When configuring failover you must consider the frequency with which data from objects is serialized. Saving state too frequently can cause additional overhead on the web application servers and cause the user experience to be slower. Consult the web application vendor's documentation for suggested configuration settings.

3.3 SAP BusinessObjects Business Intelligence platform WAR and EAR files

The functionality that makes up the BI platform is divided between several web applications to make it easy to deploy only the components required by your organization. In the BI platform 4.2, many of the core web

applications included with previous releases have been bundled into a single OSGi archive. This saves web application server memory and the reduces the number of web sessions needed for web applications that previously had multiple archives.

For example, BI platform XI 3.x included the Central Management Console (CMC) and InfoView (now BI launch pad) web applications archived as `CMC.war` and `InfoView.war`. The BI platform 4.2 has consolidated the CMC and InfoView (now BI launch pad) web applications, along with others, into a single archive named `BOE.war` or `BOE.ear`.

The WDeploy tool is used to automate the process of tailoring web applications to be deployable on a supported web application server. While it is possible for an experienced administrator to manually tailor a web application for a specific web application server, it is recommended that the WDeploy tool be used to automate the process.

The following table lists the web application archives, the web applications that require them. Web applications not automatically deployed by the installation program must be deployed post-install.

Web application archive (may be WAR or EAR)	Deployed automatically?	Description
`BOE`	Yes	OSGi archive of core web applications, including: • Analytical Reporting • CMC • SAP Crystal Reports • BI launch pad (formerly InfoView) • Eclipse IDE support • Lifecycle Manager • Monitoring • OpenDocument • BI workspace (formerly Dashboard Builder) • Platform search • Platform services • Visual difference • SAP BusinessObjects Dashboards (formerly Xcelsius)
`BusinessProcessBI` (deprecated)	Yes	This web application is deprecated. It provides support for legacy Crystal Reports web services and SDK components, including: • Crystal Enterprise • Crystal Reports Report Application Server (RAS) • SAP BusinessObjects Dashboards (formerly Xcelsius) • SAP BusinessObjects Analysis, OLAP edition (formerly Voyager)
`clientapi`	Yes	SAP Crystal Reports JavaScript API support.
`dswsbobje`	Yes	Web Services components, including: • Session

Web application archive (may be WAR or EAR)	Deployed automatically?	Description
		• BI platform • BI catalog • Federation Administration tool • Live Office • Web service query tool (formerly Query as a Web Service) • Publishing • Report Engine • SAP BusinessObjects Web Intelligence (formerly Web Intelligence) • SAP BusinessObjects Dashboards web services (formerly Xcelsius)
`jsfplatform`	No	Java Server Faces support and examples.
`MobileOTA14`	No	Web application for mobile client support.
`OpenSearch`	No	OpenSearch support.
`AdminTools`	Yes	Query Builder support.

The following table compares the WAR files shipped in previous versions, and where to find the functionality in the BI platform 4.2.

Previous web application archive (may be WAR or EAR)	New web application archive (may be WAR or EAR)
`AdminTools`	`AdminTools`
`AnalyticalReporting`	`BOE`
`BusinessProcessBI`	`BusinessProcessBI` (deprecated)
`CmcApp`	`BOE`
`CmcAppActions`	`BOE`
`CrystalReports`	`BOE`
`Xcelsius`	`BOE`
`dswsbobje`	`dswsbobje`
`InfoViewApp`	`BOE`
`InfoViewAppActions`	`BOE`
`LCM`	`BOE`
`OpenDocument`	`BOE`
`PerformanceManagement`	`BOE`
`PlatformServices`	`BOE`
`PMC_Help`	`BOE`

Previous web application archive (may be WAR or EAR)	New web application archive (may be WAR or EAR)
VoyagerClient	BOE
XCTemplateUploader	BOE

3.3.1 To deploy MobileOTA14.war for mobile application support

The BI platform installation program does not deploy the MobileOTA14 web application that provides support for mobile applications.

To use mobile applications, you must deploy the MobileOTA14 archive (`MobileOTA14.war` or `MobileOTA14.ear`) manually once the installation process is complete.

> **Note**
>
> The WDeploy GUI tool cannot be used to deploy individual web applications. To deploy an individual web application, such as MobileOTA14, use the WDeploy command-line tool.

1. Before deploying the MobileOTA14 web application, ensure that the WDeploy configuration file `config.<WEB_APPLICATION_SERVER>` has been configured appropriately for your web application server. See WDeploy configuration files [page 31].
2. Deploy the MobileOTA14 web application.

   To deploy the MobileOTA14 web application, use the following WDeploy command:

   ```
   wdeploy.sh <WEB_APPLICATION_SERVER>
     -Dwar_dir=<LOCATION_OF_MOBILEOTA14.WAR>
     -DAPP=MobileOTA14
     deploy
   ```

   For example, the following command deploys MobileOTA14 to a WebSphere 7 web application server:

   ```
   wdeploy.sh websphere7
     -Dwar_dir=/sap/sap/businessobjects_xi40/mobile_14/Client
     -DAPP=MobileOTA14
     deploy
   ```
3. Restart the web application server.
4. Access the following URL to ensure that the MobileOTA14 web application is working:

   `http://<HOSTNAME>:<PORT>/MobileOTA14`

   Substitute `<HOSTNAME>` for the web application server hostname, and `<PORT>` for the web application server port number.

For more information on mobile products, refer to the *SAP BusinessObjects Mobile Installation and Deployment Guide*.

3.3.2 To deploy OpenSearch.war for OpenSearch support

The installation program does not deploy the OpenSearch web application that provides support for OpenSearch applications.

To use OpenSearch applications, you must deploy the `OpenSearch.war` archive manually once the installation process is complete.

> **Note**
>
> The WDeploy GUI tool cannot be used to deploy individual web applications. To deploy an individual web application, such as OpenSearch, use the WDeploy command-line tool.

1. Ensure that web application server's connection details have been set in the WDeploy web application server configuration file. The file is located in:

   `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf/config.<WEB_APP_SERVER>`

   For more information on the WDeploy web application server configuration file, see "Configuration files" in the *SAP BusinessObjects Business Intelligence Platform Web Application Deployment Guide*.
2. Update the OpenSearch configuration in the OpenSearch web application's `config.properties` file. The file is located in:

   `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/warfiles/OpenSearch/WEB-INF`

   Ensure that the following parameters are configured for your server:
   - `cms`: the CMS hostname and CMS port number. For example, use the format: `<CMS_HOSTNAME>:<PORT>`.
   - `opendoc`: the URL of the OpenDocument web application. For example: `http://<WAS_HOSTNAME>:<PORT>/BOE/OpenDocument/opendoc/openDocument.jsp`.
   - `proxy.rpurl`: reverse proxy URL, if your organization uses a reverse proxy server.
   - `proxy.opendoc.rpurl`: the OpenDoc reverse proxy server URL, if your organization uses an OpenDoc reverse proxy server.
3. Deploy the OpenSearch web application.

   To deploy the OpenSearch web application, use the following WDeploy command:

   ```
   wdeploy.sh <WEB_APPLICATION_SERVER>
     -Dapp_source_dir=<LOCATION_OF_OPENSEARCH_WEB_APP_SOURCE_TREE>
     -DAPP=OpenSearch
     deploy
   ```

   For example, the following command deploys the OpenSearch web application to a WebSphere 7 web application server:

   ```
   wdeploy.sh websphere7
     -Dwar=/sap/sap_bobj/enterprise_xi40/warfiles/OpenSearch
     -DAPP=OpenSearch
     deploy
   ```

For more information on OpenSearch related products, refer to "OpenSearch" section of the *SAP BusinessObjects Business Intelligence Platform Administrator Guide*.

3.4 Default context roots

All web applications can be deployed to a custom context root on your web application server. The following table lists the context roots for each web application.

Web application	Context path
Central Management Console (CMC)	`/BOE/CMC`
BI launch pad	`/BOE/BI`
Open Document	`/BOE/OpenDocument`
SAP Crystal Reports JavaScript API	`/clientapi`
Web Services provider	`/dswsbobje`
BI Business Processes (deprecated)	`/BusinessProcessBI`

3.5 Custom root contexts and context paths

BI platform web applications can be deployed to a custom location on a web application server. This location is reflected in the URL used to access the web application from a web browser, and is often known as the context.

A root context is the top-level folder on a web application server in which web applications are located. The default root context for BI platform web applications is `/BOE`. For example, on a web application server named www.mycompany.com, the URL prefix used to access web applications on the server would be `http://www.mycompany.com/BOE/`.

A context path (sometimes referred to as a virtual directory) is a folder within a root context, in which a web application is located. For example, the default context path for the BI launch pad application is `/BI`. The URL used to access the BI launch pad web application on a web application server named www.mycompany.com would be `http://www.mycompany.com/BOE/BI`.

Both the root context and the context path can be changed to suit the needs of your organization. The following table lists examples of deploying a web application named MyApp to different root and web application context paths. The following topics describe how to customize root and web application context paths.

3.5.1 To change the root context

You can change the root context used by the BI platform web applications (excluding the `AdminTools` web application. `AdminTools` must use the default root context to function correctly). The default setting is to have an empty root context, so the web application context path is shown directly after the server address in a URL.

For example, an empty root context results in a URL such as `http://localhost:8080/BOE/CMC`, where `http://localhost:8080/` is the server and port number, there is no root context, and `BOE/CMC` is the web application context path. Setting the root context to `/MY_COMPANY` would change the URL example shown above to `http://localhost:8080/`*MY_COMPANY*`/BOE/CMC`.

When using the WDeploy tool, the root context can be set in the *Options* screen. When using the WDeploy command-line tools, the root context for the BI platform web applications is set in the following configuration file:

`<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf/wdeploy.conf`

Use a text editor to update the value for `root_context_path` given in `wdeploy.conf`.

For example, `wdeploy.conf` configuration file contains the following parameters by default:

```
as_lang=en
work_dir=
war_dir=
app_source_tree=
disable_CMC=false
disable_InfoView=false
JCoStandalone=
root_context_path=
recent_app_svr=<WEB_APP_SERVER>
```

3.5.2 To change a web application's context path

You can change the default context path (sometimes referred to as the virtual directory) of BI platform web applications.

For example, the BOE web application's default context path is `BOE`, which can be seen in the sample URL `http://localhost:8080/BOE/CMC`. In this example, `http://localhost:8080/` is the server and port number, `BOE` is the web application, and `/CMC` is a component included within the BOE web application.

The context path for BI platform web applications is set in the following configuration file:

`<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf/apps/<WEB_APP>.properties`

Use a text editor to update the value of the `appvdir` parameter found in configuration file `WEB_APP.properties`.

For example, the `BOE.properties` configuration file contains the following parameters by default:

```
warfile=BOE.war
appvdir=BOE
buildfile=BOE.xml
osgisupported=true
```

4 To deploy web applications with the WDeploy tool

4.1 Overview of WDeploy

The WDeploy tool is included with the BI platform to ease deployment of web applications to Java-based web application servers.

There are two different interfaces to WDeploy:

- A traditional, text-based interface that processes commands and parameters given on the command-line.
- A new console-based guided assistant similar to the BI platform installation program, which prompts the user to enter deployment parameters.

While each supported web application server requires different commands and web application package updates, WDeploy provides a consistent interface for administrators, and automates the adjustments needed for deployment to a specific web application server.

For example, to deploy a web application to an IBM WebSphere web application server, a single WDeploy command performs the following tasks:

1. Creates settings specific to IBM WebSphere in the web application's `web.xml` file.
2. Bundles the web application content into a web archive.
3. Creates an EAR file containing the web application.
4. Calls IBM WebSphere deployment tools to deploy the web application.

4.2 WDeploy prerequisites

This section details prerequisites for the deployment of the BI platform web applications to supported web application servers.

> **Note**
>
> Before deploying web applications to WebSphere, see WASX7017E: Exception deploying in WebSphere [page 95].

For more information on WDeploy GUI prerequisites, see WDeploy GUI tool prerequisites [page 69].

4.2.1 Before you deploy web applications

Your web application server must be installed and working before you install the BI platform. Consult your web application server documentation for installation instructions.

Your web application server should have at least 5 GB of free disk space, in addition to any other requirements given by other software installed on the machine.

We recommended that you change the heap size and maximum perm size settings of your JVM to **`-Xms128m -Xmx2048m -XX:MaxPermSize=512m`**. If using Tomcat for example, your modified settings would look like this:

```
JAVA_OPTS="-Xms128m -Xmx2048m -XX:MaxPermSize=512m"
```

> **Note**
>
> For SAP Netweaver technology platform, ensure that the maximum heap size is at least 4096 megabytes. For example: `JAVA_OPTS="-Xms128m -Xmx4096m -XX:MaxPermSize=512m"`

Consult your JVM documentation for information on changing your Java memory settings.

Before you begin the deployment process, ensure that the web application server is installed and verify that the application server is running correctly by launching its administrative console.

4.2.2 Hardware requirements

The deployment of web applications to a web application server with the WDeploy tool requires at least 4 GB of RAM (8 GB for SAP NetWeaver Technology Platform), and 15 GB of free disk space, plus a minimum 5 GB of free space on the partition that hosts the `/tmp` temporary folder, for the deployment of web applications. This is in addition to any other requirements of the web application server or any other servers or services installed on the host.

4.2.3 64-bit support

The BI platform is only supported on 64-bit operating systems and only supports 64-bit web application servers with a 64-bit JDK.

4.2.4 Minimum rights for deploying web applications with a different account

> **Tip**
>
> It is recommended that you install the BI platform and run the WDeploy tool (`wdeploy.sh`) with the same user account used to install your web application server.

To deploy web applications with the WDeploy tool with a user account different from the one used to install the web application server, you must ensure that this account has appropriate permissions to certain web application server directories. Set the privileges listed in the following table before running the WDeploy tool. Alternatively, ensure this separate account is a member of the same group as the web application server account and set the privileges for the User and Group columns only.

> **Note**
>
> In addition to the right to execute files or folders mentioned in the tables below, the right to execute is also required on the parent directory.

Tomcat 7 and 8

Directory	Recursive	User	Group	Other	Example command
Tomcat user account home and BI platform user folder subdirectory	No	rwx	r-x	r-x	`chmod 755 ~<TOMCAT_USER>`
Web application deployment directory (`$as_dir/webapps`)	No	rwx	rwx	rwx	`chmod 777 <TC_HOME>/webapps`
Tomcat binary directory (`$as_dir/bin`)	No	rwx	rwx	rwx	`chmod 777 <TC_HOME>/bin`
Tomcat configuration directory (`$as_dir/conf`)	Yes	rwx	rwx	rwx	`chmod -R 777 <TC_HOME>/conf`
Tomcat library directory (`$as_dir/lib`)	No	rwx	r-x	r-x	`chmod 755 <TC_HOME>/lib/*`

WebLogic 11gR1

Directory	Recursive	User	Group	Other	Example command
WebLogic user account home and BI platform user folder subdirectory	No	rwx	r-x	r-x	`chmod 755 <WL_USER>`
Web domain binaries ($WL_HOME/<PROJECT>/<DOMAIN>/<BASE>/bin)	No	rwx	rwx	rwx	`chmod 777 <WL_HOME>/user_projects/domains/base_domain/bin`
WebLogic server libraries ($WL_HOME/server/lib)	No	rwx	r-x	r-x	`chmod 755 <WL_SERVER>/user_projects /lib`
WebLogic server binaries ($WL_HOME/server/domains/base_domain common/bin)	No	rwx	rwx	r-x	`chmod 775 <WL_SERVER>/user_projects /bin`
WebLogic server modules ($WL_HOME/server/domains/base_domain modules)	No	rwx	rwx	r-x	`chmod 775 <WL_SERVER>/modules`
WebLogic Java ($WL_HOME/jdk150_06)	No	rwx	rwx	r-x	`chmod 775 <WL_SERVER>/jdk150_06`

WebSphere 7.0, 8.5, and 8.5.5

Directory	Recursive	User	Group	Other	Example command
WebSphere user account home and BI platform user folder subdirectory	No	rwx	r-x	r-x	`chmod 755 ~<WEBSPHERE_USER>`
WebSphere profiles directory (`$WEBS_HOME/AppServer/profiles`)	Yes	rwx	rwx	rwx	`chmod -R 777 <WEBSPHERE_HOME>/AppServer/profiles`
WebSphere admin script (`$as_dir/bin/wsadmin.sh`)	No	rwx	r-x	r-x	`chmod 755 <WEBSPHERE_HOME>/bin/wsadmin.sh`
WebSphere plugin script (`$as_dir/bin/GenPluginCfg.sh`)	No	rwx	r-x	r-x	`chmod 755 <WEBSPHERE_HOME>/bin/GenPluginCfg.sh`
WebSphere security (`$as_dir/bin/securityProcs.jacl`)	No	rwx	r-x	r-x	`chmod 755 <WEBSPHERE_HOME>/bin/securityProcs.jacl`
WebSphere security (`$as_dir/bin/LTPA_LDAPsecurityProcs.jacl`)	No	rwx	r-x	r-x	`chmod 755 <WEBSPHERE_HOME>/bin/LTPA_LDAPsecurityProcs.jacl`

Directory	Recursive	User	Group	Other	Example command
WebSphere plugins directory (`$as_dir/plugins`)	No	rwx	r-x	r-x	`chmod 755 <WEBSPHERE_HOME>/plugins`
WebSphere Java directory (`$as_dir/java`)	No	rwx	r-x	r-x	`chmod 755 <WEBSPHERE_HOME>/java`
WebSphere deployment tool directory (`$as_dir/deploytool`)	No	rwx	r-x	r-x	`chmod 755 <WEBSPHERE_HOME>/deploytool`
WebSphere properties directory (`$as_dir/properties`)	No	rwx	r-x	r-x	`chmod 755 <WEBSPHERE_HOME>/properties`

Note

You must accept the WebSphere web application server SSL certificate before you can use WDeploy. To accept the certificate, use `wsadmin` command in the format

```
<WEBSPHERE_HOME>/AppServer/bin/wsadmin
                  -conntype SOAP -port <ADMIN_PORT> -user <AS_ADMIN_USERNAME>
                  -password <AS_ADMIN_PASSWORD>
```

. For example:

```
./wsadmin -conntype SOAP
                -port 8880 -user administrator -password websphere
```

4.2.5 Set ulimit to unlimited

To successfully build and deploy BI platform web applications, the host operating system or user account `ulimit` setting must be configured as *unlimited*.

Set the `ulimit` configuration with the `ulimit` command, or for Linux, modify the system configuration file `/etc/security/limits.con`. For more information about the `ulimit` setting, see the documentation included with your operating system.

4.2.6 To set up the Java environment

WDeploy requires a Java Virtual Machine to be available on the host system. Java Development Kit (JDK) 1.6 is installed automatically by the BI platform installation program, but must be set up or copied from the BI platform server when manually installed on a dedicated machine.

The JDK installed by the BI platform installation program is used by default. If you are using a dedicated web application server, you must set up the JDK by performing either a Web Tier installation, or manually installing an appropriate JDK (1.5 or 1.6, as supported by the web application server). When setting up a JDK manually, ensure that the following environment settings have been configured:

- WDeploy attempts to use the JVM installed with the BI platform first. If this JVM cannot be found, then WDeploy attempts to use the `<JAVA_HOME>` environment variable setting that is set to a valid Java directory. If no valid or suitable JVM is found, WDeploy exits.
- The user account `PATH` environment variable includes:
  `<JAVA_HOME>/bin`
- To allow WDeploy to run from any directory, update the `PATH` environment variable to include:
  `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy`

4.2.7 Web application server parameter configuration files

Before using the WDeploy command-line interface to deploy a web application, ensure that the correct parameters are set in the WDeploy web application deployment server parameter configuration file. Set parameters are used as default settings, and no longer need to be given on the command-line.

> **Note**
>
> You do not need to set parameters in these deployment configuration files if you are using the GUI interface, or if you are only predeploying using the `wdeploy predeploy` or `wdeploy predeployall` commands.

The configuration file appropriate for your web application server is located in the following folder: `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf`. For example, if you are using Tomcat 8, select `/opt/sap/sap_bobj/enterprise_xi40/wdeploy/conf/config.tomcat8`.

Use a text editor to update values specific to your organization's web application server. For more information on how to configure WDeploy configuration files, see WDeploy configuration files [page 31].

Parameters set in the WDeploy web application server parameter configuration file can be overridden when calling WDeploy from the command-line, using switches and parameters to change the default behavior. However, it is highly recommended that you configure the parameters in the `config.<WEB_APP_SERVER>` configuration file appropriate for your deployment.

4.2.8 To install WDeploy on remote web application server

To deploy web applications to a dedicated web application server, perform a *Web Tier* or *Custom / Expand* installation with the BI platform installation program. If you prefer to copy the WDeploy tool manually, copy the following folder to the web application server:

```
<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy
```

> **Note**
>
> When copying the WDeploy tool manually, ensure that the environment variable `JAVA_HOME` is configured appropriately on the web application server.

4.3 SAP System Landscape Directory (SLD) registration

Your organization may use the SAP System Landscape Directory (SLD) Data Supplier (DS) to maintain a central repository of information about your organization's SAP software. It provides administrators with detailed information about the system's topology and software components. For more information on setting up the BI platform for SLD, see “Registration of BI platform in the System Landscape” in the *SAP BusinessObjects Business Intelligence Platform Administrator Guide* and SAP Note 1653689.

The SLD registration notifies the SLD when web applications are deployed or undeployed, keeping the SLD database current with the latest information about your organization's web application deployments.

Web application components can be registered with SLD on the following web application servers:

- SAP Netweaver Technology Platform
- Apache Tomcat 7.0 and 8.0
- IBM WebSphere 7.0

4.3.1 To enable SLD registration for SAP Netweaver Technology Platform

SAP System Landscape Directory Data Supplier (SLD-DS) integration is available for SAP Netweaver technology platform. For information on SLD-DS integration and SAP Netweaver technology platform, see the System Landscape Directory SCN document at: http://scn.sap.com/docs/DOC-8042.

4.3.2 To enable SLD registration for Tomcat

To use SAP System Landscape Directory Data Supplier (SLD-DS) with Apache Tomcat, the SLDREG registration tool must be installed on each Apache Tomcat web application server.

> **Note**
>
> SLDREG is not installed as a part of the BI platform. For information on installing SLDREG, refer to SAP Note 1018839.

To configure SLDREG so that the SLD is updated whenever web applications are deployed or undeployed from an Apache Tomcat web application server, refer to SAP Note 1508421.

> **Note**
>
> The required `sap.com~TomcatSLDDataSupplierWEB.war` file attached to SAP Note 1508421 can also be found in the `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/warfiles/webapps` folder after the *Java Web Applications* feature is installed during a *Web Tier* installation.

4.3.3 To enable SLD registration for WebSphere

To use SAP System Landscape Directory Data Supplier (SLD-DS) with WebSphere, the SLDREG registration tool must be installed on each WebSphere web application server.

> **Note**
>
> SLDREG is not installed as a part of the BI platform. For information on installing SLDREG, refer to SAP Note 1018839.

To configure SLDREG so that the SLD is updated whenever web applications are deployed or undeployed from a WebSphere web application server, refer to SAP Note 1482727.

4.4 Deployment modes

WDeploy supports two different deployment modes:

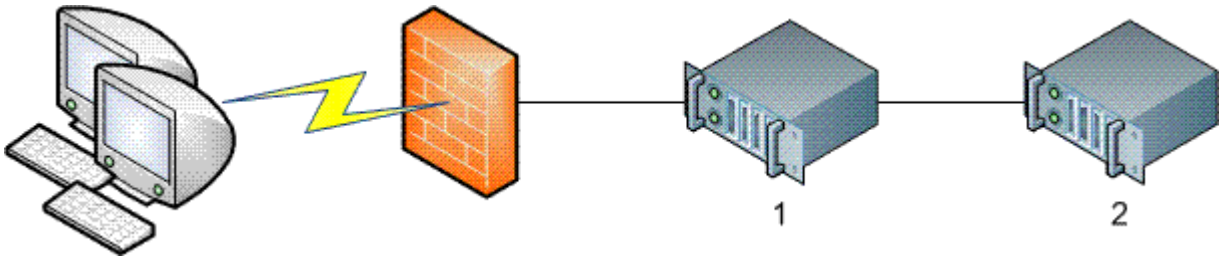
1. Standalone mode (a web application server)
   The web application server serves both static content (HTML pages, images, documents, JavaScript, Cascading Style Sheets) and dynamic content (Java Server Pages, JAR files, XML files).
2. Split web tier mode (a web application server plus a dedicated web server)
   A dedicated web server receives requests from web browsers and serves all static content (HTML pages, images, documents, JavaScript, Cascading Style Sheets). Requests for dynamic content (Java Server Pages, JAR files, XML files) are forwarded to the dedicated application server and returned to the web browser when the content has been formed.
   This mode is suited to larger production deployments where scalability and performance are key.

It is also possible to use WDeploy to deploy web applications to a web application server installed on the same system as the BI platform. This configuration can be used for small development or test systems, and is not recommended for production systems.

4.4.1 Standalone deployments

Standalone mode refers to a web application server serving both static and dynamic content to web clients. The web application server could run on the same machine as the BI platform, or on a separate machine connected by network.

In the following diagram, web clients connect through a firewall to a web application server [1] that serves both static and dynamic content. Processing requests from the web application server are sent to the BI platform Central Management Server (CMS) [2].



In the diagram above, the WDeploy is installed as a component of the CMS [2], and web applications are separated out into directories for static and dynamic content. The dynamic content can now be copied to the web application server [1].

The WDeploy tool can also be installed or copied to a dedicated web application server [1], making it easy to deploy separated content received from a CMS [2].

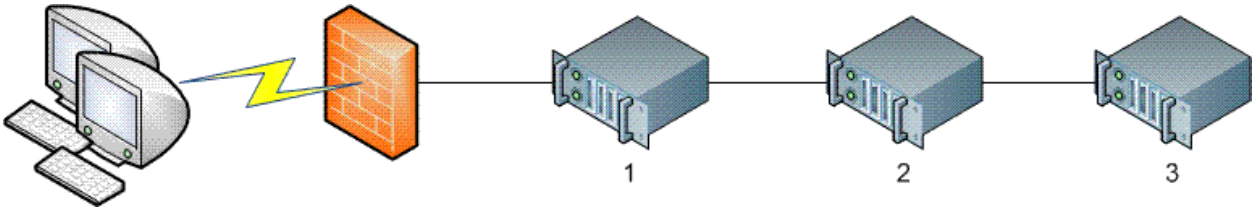
This mode is best suited for small deployments with a limited number of users. The advantage of a standalone deployment is that it is easy to deploy and maintain, but it may not scale to a large number of users because the web application server delivers both static and dynamic content.

4.4.2 Split web tier deployments

A web tier deployment separates static and dynamic web application content so that static content is served by a web server, and dynamic content is served by a web application server. The web and web application servers could run on the same machine, or separate machines connected to a network.

> **Note**
>
> There is no performance improvement if you deploy the following web applications in split web tier mode. WDeploy will process these web applications as standalone web applications even in split tier mode:
>
> - Web Services
> - MobileOTA14
> - MOBIServer
> - OpenSearch
> - jsfplatform

In the following diagram, web clients connect through a firewall to a web server [1] that serves only static content (HTML pages, images, documents, JavaScript, Cascading Style Sheets). When dynamic content is required, the web server sends a request to the web application server [2]. Any requests that require further processing by the BI platform are sent to Central Management Server (CMS) for processing [3].



In the diagram above, the WDeploy is installed as a component of the CMS [3], and web applications are separated out into directories for static and dynamic content. The dynamic content can now be copied to the web application server [2], and the static content copied to the web server [1].

The WDeploy command can also be installed on dedicated web [1] and web application [2] servers, making it easy to deploy separated content received from a CMS [3].

If an organization implements security measures that restrict access to server machines, the separated static and dynamic content can be sent separately to those with the authority to deploy content.

Split deployments are best suited to mid or large-sized deployments with a large or increasing number of users. The advantage of a split deployment is that it is scalable and provides good performance.

> **Note**
>
> Web, web application, and BI platform servers can be clustered to provide an even greater degree of scalability, availability, and performance.

4.4.2.1 Supported dedicated web and web application server combinations

WDeploy supports the following web and web application server configurations for split deployments:

- Apache 2.2 web server with Tomcat 7 or 8
- Apache 2.2 web server with WebLogic 10.3.x
- IBM IHS web server 7 with WebSphere 7.0
- IBM IHS web server 8.5 with WebSphere 8.5 or 8.5.5

> **Note**
>
> Apache and IBM IHS web servers are all given as `apache` in WDeploy configuration files.

4.4.2.2 To deploy web applications on a remote machine

Use the procedure below to deploy web applications to a remote machine. In this procedure, Box 1 refers to the machine hosting a BI platform installation, and Box 2 is the remote machine on which the web application server is installed.

1. Create on Box 2 the following directories.

- `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy`. This folder contains the WDeploy scripts and configuration files.
- `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/warfiles/webapps`
- `<BIP_INSTALL_DIR>/InstallData`

These directories reflect the default directory structure installed on Box 1.

> **Tip**
>
> Although you can customize the folder structure to meet your specific requirements, it is recommended that you maintain files within the same folder structure or hierarchy in Box 2 as in Box 1.

2. Copy the following files from Box 1 to Box 2.
   - Folder `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy`.

     > **Tip**
     >
     > Remove the contents under `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/workdir` before the file copy, if that folder is not empty.

   - Folder `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/warfiles/webapps`.
   - Folder `<BIP_INSTALL_DIR>/InstallData/setup.engine`.
3. Set the `JAVA_HOME` environment variable to the JDK 8 directory.

> **Note**
>
> To deploy any web application server using Wdeploy tool we recommend you to use bundled SAP JVM 8.

4. Modify the WDeploy configuration file for your web application server. Provide all the required information to enable WDeploy to deploy the web application.

   For example, to modify the configuration file for WebLogic 11, you would modify the file to:

```
as_domain_dir=C:\Oracle\Middleware\user_projects\domains\base_domain
as_instance=AdminServer
as_admin_port=7001
as_admin_username=weblogic
as_admin_password=weblogic
```

   The configuration file is located in the following directory:

   `<BOE_INSTALL_DI>R/sap_bobj/enterprise_xi40/wdeploy/conf/config.<WEB_APP_SERVER>`

5. Run the WDeploy script from its location in Box 2 by opening command line console and entering the following command:

```
<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/wdeploy.sh
                <WEB_APP_SERVER>
    -Dapp_source_tree="<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/warfiles/
webapps"
    deployall
```

> **Note**
>
> - You can set WDeploy parameter defaults values in the WDeploy configuration file

<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf/wdeploy.conf, instead of giving parameters on the command-line. For example, set the parameters:

- app_source_tree or war_dir
- work_dir
- root_context_path

For more information, see WDeploy configuration file [page 32].

- You pass the argument -Dwar_dir to specify the location of generic WAR files as input for deployment. For example, to deploy a generic BOE.war file:

```
<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/wdeploy.sh
<WEB_APP_SERVER>
    -Dwar_dir="/myGenericWarFiles/BOE.war"
    -DAPP=BOE
    deploy
```

  - To create generic WAR files for all BI platform applications, run the following command:

```
<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/wdeploy.sh
                buildwarall
    -Dapp_source_tree="<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/
warfiles/webapps"
    -Dwar_dir="/myGenericWarFiles"
```

- Pass the parameter -Dwar_dir=<TARGET_LOCATION_OF_GENERIC_WAR_FILE> to specify the location to output the generic WAR files to.

4.5 WDeploy configuration files

The WDeploy configuration files contain settings saved in a key-value pair text format. Read by WDeploy when it starts, the options and parameters saved in the configuration files are used as default settings and no longer need to be given on the command-line. However, all options and parameters can still be given on the command-line, which overrides the configuration file. Options and parameters given on the command-line do not change the options stored in configuration files.

> **Note**
>
> It is recommended that web application server administrator account passwords are not stored in the WDeploy configuration file, but rather passed to WDeploy from the command-line with the parameter -Das_admin_password=<PASSWORD>.

There are three configuration files used by WDeploy:

- WDeploy configuration file (<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf/wdeploy.conf): stores general WDeploy settings that apply to all web applications severs.
- Web application server configuration files (<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf/config.<WEB_APP_SERVER>): stores settings for a specific web application server.
- Web application configuration file (<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf/apps/<WEB_APP>.properties): stores individual deployment settings for each web application.

4.5.1 WDeploy configuration file

The <BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf/wdeploy.conf configuration file stores settings likely to be shared among any web application servers in your deployment.

Properties stored in the WDeploy configuration file can be overridden from the command-line using the –D<PROPERTY> switch parameter. However, it is highly recommended that you configure the parameters in the config.<WEB_APP_SERVER> configuration file appropriate for your deployment.

For a complete list of WDeploy properties, see WDeploy property parameters [page 38].

4.5.2 Web application server configuration files

As each web server and web application server requires different WDeploy settings, the WDeploy tool references a configuration file for each supported server. The configuration files are stored in the WDeploy conf folder as follows:

<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf/config.<WEB_APP_SERVER>

Substitute <WEB_APP_SERVER> for the name of the web application server to which the WDeploy tool deploys.

The following list shows all configuration files for currently supported web application servers:

- config.jboss7 (JBoss 7.1)
- config.sapappsvr73 (SAP Netweaver Technology Platform)
- config.tomcat7 (Tomcat 7.0)
- config.tomcat8 (Tomcat 8.0)
- config.weblogic11 (WebLogic 10.3.x (11gR1))
- config.websphere7 (WebSphere 7.0)
- config.websphere8 (WebSphere 8.5 or 8.5.5)

The following sections list the configuration options available for each supported web and web application server.

4.5.2.1 JBoss 7.1 configuration file

Set default values for the following parameters in config.jboss7 (JBoss 7.1) to avoid having to give them on the command-line every time.

Table 6: Mandatory WDeploy parameters for JBoss 7.1

Parameter name	Description	Example
as_dir	Installed location of the JBoss web application server (<JBOSS_HOME>).	**/opt/jboss-as-7.1.1.Final**
as_instance	Name of the JBoss application server instance.	**default**

4.5.2.2 Tomcat 7 or 8 configuration file

Set default values for the following parameters in `config.tomcat7` or `config.tomcat8` to avoid having to give them on the command-line every time.

When deploying to a split environment, where a Tomcat web application server is paired with a dedicated Apache web server, see To deploy to separate Apache web and Tomcat web application servers [page 59].

Table 7: Mandatory WDeploy parameters for Tomcat 7 or 8

Parameter name	Description	Example
`as_instance`	Application server instance name.	**`localhost`**
`as_service_name`	Name of the Tomcat service when the application server is installed as a Windows service (only applicable for installations on Microsoft Windows).	**`Tomcat7`** or **`Tomcat8`**
`as_dir`	Installed location of Tomcat 7 or 8.	**`/opt/tomcat`**
`as_service_key`	Registry key used by Tomcat to give Java parameters (only applicable for installations on Microsoft Windows).	**`HKLM\SOFTWARE\Wow6432Node\Apache Software Foundation\Procrun 2.0\$<as_service_name>\Parameters\Java`**
`as_service_key_value`	Tomcat's Java parameters: the value of the registry key `as_server_key`.	Options.

4.5.2.3 WebLogic 11gR1 configuration file

Set default values for the following parameters in `config.weblogic11` to avoid having to give them on the command-line every time.

Table 8: Mandatory WDeploy parameters for WebLogic 11gR1

Parameter name	Description	Example
`as_admin_port`	WebLogic administration request port.	**`7001`**
`as_admin_username`	WebLogic administrative account username.	**`weblogic`**
`as_admin_password`	WebLogic administrative account password.	**`password`**
`as_instance`	Name of the WebLogic application server instance.	**`AdminServer`**

Parameter name	Description	Example
`as_domain_dir`	WebLogic domain directory.	**`/opt/bea/weblogic/user_projects/domains/base_domain`**

4.5.2.4 WebSphere 7, 8.5, or 8.5.5 configuration file

Set default values for the following parameters in `config.websphere7` or `config.websphere8` to avoid having to give them on the command-line every time.

Table 9: Mandatory WDeploy parameters for WebSphere 7 , 8.5, or 8.5.5

Parameter name	Description	Example value
`as_soap_port`	Port number for SOAP application server administration. If not set, the default SOAP port number will be used.	**`8880`**
`as_instance`	The name of the WebSphere application server instance.	**`server1`**
`as_admin_password`	WebSphere administrative account password.	**`password`**
`as_admin_username`	WebSphere administrative account username.	**`administrator`**
`as_profile_name`	Name of the profile created for Websphere Application Server. Give this parameter when a non-default profile is used for the deployment.	**`AppSrv01`**
`as_virtual_host`	Virtual host to which the application must be bound.	**`default_host`**
`as_admin_is_secure`	Instructs WDeploy that WebSphere security is enabled. **Note** Values for `as_admin_username` and `as_admin_password` must be set when `as_admin_is_secure` is true").	**`false`**
`as_dir`	Installed location of WebSphere.	**`/opt/IBM/WebSphere/AppServer`**
`ws_instance`	Web server instance when deployed to a split environment (dedicated web server).	**`webserver1`**

Parameter name	Description	Example value
`enforce_file_limit`	Indicates to WDeploy whether or not the web application server may encounter issues loading applications that contain more than 65,535 files (**`false`** by default).	**`false`**
`as_plugin_cfg_dir`	Location of the WebSphere `plugin-cfg.xml` file. This parameter is only required for split web tier deployments.	/opt/AppServers/IBM/WebSphere7/profiles/AppSrv01/config/cells/`<cell_name>`/nodes/`<webserver_node>`/servers/`<webserver_name>`

4.5.2.5 Dedicated web servers in split deployments

When deploying web applications to a dedicated web server in split deployments, use the name of the supported web server:

- `config.apache` (Apache Web Server or IBM IHS)

> **Note**
>
> It is recommended that web application server administrator account passwords are not stored in the WDeploy configuration file, but rather passed to WDeploy from the command-line with the parameter `-Das_admin_password=<PASSWORD>`.

Split deployments employ a dedicated web application server to serve dynamic content, and a dedicated web server to serve static content. The following table lists the web application servers that can be configured for a split deployment of the BI platform.

Application Server	Apache web server
JBoss 7.1	No
SAP NetWeaver Technology Platform	N/A
Tomcat 7.0	Yes
Tomcat 8.0	Yes
WebLogic 11gR1	Yes
WebSphere 7	Yes (IHS 7)
WebSphere 8.5 and 8.5.5	Yes (IHS 8.5)

4.5.2.5.1 Apache or IBM IHS (split deployment) configuration file

Set default values for the following parameters in `config.apache` to avoid having to give them on the command-line every time.

> **Note**
>
> The same configuration file (config.apache) is used for Apache 2.2 or IBM IHS.

Table 10: Mandatory WDeploy parameters for Apache 2.2 or IBM IHS (split deployment)

Parameter name	Description	Example
`connector_type`	The Apache connector type used to configure split mode	**`tomcat8`**
`deployment_dir`	Directory under which `WDeploy` creates a subdirectory for static content served by the web server. WDeploy creates a virtual directory on the web server, mapping the subdirectory to the URL	**`/opt/apache2/htdocs`**
`plugin_install_dir`	The root plugin installation directory for WebSphere application servers.	**`${ws_dir}/Plugins`**
`ws_dir`	The Apache web server installation directory.	**`/opt/apache2`**

> **Note**
>
> When using IBM IHS with a WebSphere 7, 8.5, or 8.5.5 web application server, ensure that `as_plugin_cfg_dir` is correctly configured in `config.websphere7` or `config.websphere8`.

4.5.3 Web application configuration property file

Each web application can be deployed to a different location on the web application server, and can be configured with different packaging options.

Each deployable web application is configured in the configuration file `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf/app/<WEB_APP>.properties`.

The following settings are available in a `<WEB_APP>.properties` configuration file:

Table 11:

Variable	Description	Example
`warfile`	Name of the WAR file to create for this web application.	`dswsbobje.war`

Variable	Description	Example
appvdir	Name of the context path (also known as a virtual directory) to which the web application is deployed.	dswsbobje
buildfile	Ant build file used to build the web application.	dswsbobje.xml
deploy_as_a_filetree	Toggle to enable the deployment of an exploded WAR file when true.	true
classloading_mode	Setting to determine the Classloader order.	PARENT_LAST
classloader_package_filtering	Filter for classloader.	com.ctc.wstx.*,javax.xml.*,org.apache.*

When deploying a web application to a specific location on a web application server, use the `appvdir` variable to set the location of the web application within the server's root context. For example, if a web application server's root context was `http://www.mycompany.com/BOE`, setting `appvdir` to `mywebapp/` would result in the web application being accessible from `http://www.mycompany.com/BOE/mywebapp/`.

4.6 Using the WDeploy command-line tool

Before using the WDeploy command-line tool, ensure that the WDeploy configuration files have been configured appropriately for your web application server. See WDeploy configuration files [page 31].

For information on WDeploy prerequisites, see:

- WDeploy prerequisites [page 19]
- WDeploy GUI tool prerequisites [page 69]

The WDeploy command-line tool is installed as a part of the BI platform:

```
<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/wdeploy.sh
```

There are two types of commands:

- General commands
  Used to provide high-level information about the tool itself and the available web application server deployment. They are not used together with server names, properties, or actions. For example:
  - `wdeploy.sh help`
  - `wdeploy.sh listappservers`
- Deployment commands
  Used to deploy specific web applications to a specific web application server. These commands always follow the format: server, properties, action. For example:

  ```
  wdeploy.sh <WEB_APP_SERVER> [-D<PROPERTY>=<value>] <ACTION>
  ```

  Where:

- <WEB_APP_SERVER> is the name of the web or web application server and must match the name of the WDeploy configuration file <BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf/config.<WEB_APP_SERVER>.
  For example, for SAP Netweaver technology platform, the configuration file is named <BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf/config.sapappsvr73, so the name given for the <WEB_APP_SERVER> parameter is sapappsvr73.
- -D<PROPERTY>=<value> is at least one key-value pair. Parameters given on the command-line override those in the configuration file.
  For example, to deploy the BOE web application, use -D*APP=BOE*. This overrides any value for -D*APP=* stored in the web application server configuration file config.<WEB_APP_SERVER>.
- <ACTION> is the name of the operation to perform.
  For example, the deployall action will deploy all web applications to the web application server given as <WEB_APP_SERVER> in the first parameter.

4.6.1 Syntax

4.6.1.1 WDeploy server names

WDeploy uses a server name on the command-line and as part of the filename for server configuration files. The server name is the first parameter given on the command-line when running the WDeploy tool:

```
wdeploy.sh <WEB_APP_SERVER> [-D<PROPERTY>=<value>] <ACTION>
```

<WEB_APP_SERVER> is the name of the web or web application server. The name given must match the name of the configuration file in <BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf.

For a complete list of valid names for <WEB_APP_SERVER>, see Values for WEB_APP_SERVER [page 46].

4.6.1.2 WDeploy property parameters

WDeploy properties can be set on the command-line with the -D<PROPERTY> switch parameter. Repeat the -D<PROPERTY> switch parameter for each property to be set.

For example, in the following command, multiple invocations of the -D<PROPERTY> switch parameter are used to set multiple properties for a Tomcat 8 web application server (as_dir, as_instance, as_service_name, and APP:

```
wdeploy.sh Tomcat8
  -Das_dir=/opt/tomcat8
  -Das_instance=localhost
  -Das_service_name=Tomcat8
  -DAPP=BOE
  deployonly
```

Properties can also be configured in the wdeploy.config configuration file. This allows properties to be set by default, and over-ridden from the command-line when required. For more information on the wdeploy.conf configuration file, see WDeploy configuration file [page 32].

The following table lists all properties for WDeploy.

Table 12: Properties for WDeploy

Property	Description	Example value
APP	Name of the web application to deploy, as found in the WAR or EAR file name and the web application properties file: `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf/apps/<WEB_APP>.properties` This property is used when working with individual web applications, as with the `wdeploy predeploy`, `wdeploy deploy`, or `wdeploy deployonly` commands.	BOE
app_source_dir	Location of an individual web application's source files. This property is used when working with individual web applications, as with the `wdeploy predeploy`, `wdeploy deploy`, or `wdeploy deployonly` commands.	`<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/warfiles/webapps/<WEB_APP>`
app_source_tree	Location of the source files for all available web applications (the parent folder of `app_source_dir`). This property is used when working with all available web applications simultaneously, as with the `wdeploy predeployall`, `wdeploy deployall` or `wdeploy deployonlyall` commands.	`<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/warfiles/webapps`
as_admin_is_secure	For web application servers that use SSL encryption during web application deployment, such as WebSphere. **Note** Setting this value to true indicates requires that you also give an administrator account name and password.	`false` (default) `true`
as_admin_password	Web application server administrative account password.	password
as_admin_port	Port number for web application server administrative access.	8080
as_admin_username	Web application server administrative account username.	administrator
as_dir	Installation directory of the web application server.	/opt/tomcat8
as_domain_dir	Installation directory of the web application server. For WebLogic application servers, `as_domain_dir` is the domain root.	/opt/bea/weblogic
as_instance	Mandatory for all the application servers. Name of the web application server instance.	localhost

Property	Description	Example value
as_lang	Preferred language for the WDeploy user interface.	• Czech: CS • Danish: DA • Dutch: NL • English: EN • Finnish: FI • French: FR • German: DE • Hungarian: HU • Italian: IT • Japanese: JA • Korean: KO • Norwegian Bokmal: NB • Polish: PL • Portuguese: PT • Romanian: RO • Russian: RU • Simplified Chinese: zh_CN • Slovak: SK • Spanish: ES • Swedish: SV • Thai: TH • Traditional Chinese: zh_TW • Turkish: TR
as_mode	Type of web application deployment. A standalone is a web application server that serves both static and dynamic web content. A split deployment uses a dedicated web server to serve static content, and a web application server to serve dynamic content.	standalone split
as_service_key	For Tomcat running on Windows. When installed as a service, the name of the Windows registry key where the JVM startup parameters are stored.	HKLM\SOFTWARE\Apache Software Foundation\Procrun 2.0\<AS_SERVICE_NAME>\Parameters\Java
as_service_key_value	For Tomcat running on Windows. When installed as a service, the value of Windows registry key where the JVM startup parameters are stored.	
as_service_name	For Tomcat running on Windows. The name of the Tomcat service.	Tomcat8
as_sid	The system ID of the target instance.	AS1

Property	Description	Example value
as_soap_port	Mandatory for WebSphere. Port number for SOAP application server administration. If not set, the default SOAP port number is used.	8880
as_virtual_host	For WebSphere only. Virtual host to which the application must be bound.	default_host
connector_type	For web servers running in split mode, such as Apache. Set connector_type to the name of the dedicated web application server used by the web server.	tomcat8
deploy_as_a_filetree	For WebLogic web application servers. Indicates whether the application must be deployed as a file tree (expanded format) or as a packaged WAR or EAR file.	false (default) true
deployment_dir	Directory under which WDeploy creates a subdirectory for static content served by a dedicated web server. WDeploy creates a virtual directory on the web server, mapping the subdirectory to the URL.	/opt/apache2
disable_CmcApp	Disables the CMC web application when set to true.	false true
disable_InfoView	Disables the BI launch pad web application when set to true.	false true
enforce_file_limit	Tells WDeploy whether or not the web application contains more than 85,535 files. Set to false by default, except for WebSphere.	false (default) true
JCoStandalone	Use when the BI platform is integrated with an SAP BW system. Set to false when deploying to an SAP Netweaver Web application server component . Set to true when deploying to any other application server.	false true
recent_app_svr	The most recent web application server to which web applications were deployed.	Tomcat8
root_context_path	Web application root context path to which all web applications are deployed. To deploy a web application to a folder within the root context, see the appvdir setting in the web application .properties configuration file.	/BOE
work_dir	Folder in which WDeploy manipulates the web applications WAR or EAR archives (for example, to split static and dynamic content in a web application). This folder stores the results of the wdeploy predeploy action and stores data required to undeploy web applications.	<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/workdir

Property	Description	Example value
ws_dir	For web servers running in split mode, such as Apache. The web server home directory.	/opt/apache2
ws_instance	For WebSphere only. The name of the web server where the application is installed, in split mode.	webserver1
ws_type	For web servers running in split mode, such as Apache. The name of the web server, as found to the <BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf/config.<WEB_SERVER> file. **Note** Apache and IBM HTTP Server both have a ws_type of apache.	apache
war_dir	Location of WAR or EAR archives to deploy or the target output location to create generic WAR files in.	/myGenericWarFiles

4.6.1.2.1 Mandatory property parameters for split web tier deployments

Some properties are required for split web tier deployments (separate web and web application servers). When deploying to a split web tier deployment, ensure that the following property parameters are either given on the command-line, or are configured in the web or web application server configuration file (config.<WEB_APP_SERVER>).

- Set the -Das_mode=split property to separate static content for the web server and dynamic content for the web application server.
- Set the -Dconnector_type=<CONNECTOR_TYPE> property to the appropriate connector type. Set connector_type to the name of the dedicated web application server used by the web server. For example, when using an Apache web server and a Tomcat 8 web application server, connector_type should be set to tomcat8.
- On deployments where the web server runs on the same host as the web application server, you must give the -Dws_type=<WEB_SERVER_TYPE> and -Dws_dir=<WEB_SERVER_DIR> properties.

4.6.1.3 WDeploy actions

The last parameter of a WDeploy command is the action to be performed. The following section defines each valid action, and what each does.

Table 13: WDeploy Actions

Action	Description
`predeploy`	The `wdeploy predeploy` command prepares a web application for deployment to the target web application server. The web application's `web.xml` configuration file is updated, along with any other changes required to make the web application deployable to the target web application server. Once configured, the web application is packaged into a WAR or EAR file and saved to `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/workdir/<WEB_APP_SERVER>`. This file can be deployed manually through the web application server's administrative console, or with the `wdeploy deploy` command. Use `wdeploy predeploy` to prepare the BOE web application so that it is ready for deployment to a specific web application server. For example: `wdeploy.sh <WEB_APP_SERVER> -DAPP=BOE predeploy`

`predeployall`	The `wdeploy predeployall` command performs the `wdeploy predeploy` command for all web applications located in the BI platform web application source directory:
	
	`<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/warfiles/webapps`
	
	Use `wdeploy predeployall` to apply the `wdeploy predeploy` command to all web applications. For example:
	
	`wdeploy.sh <WEB_APP_SERVER> predeployall`
	
	Note
	
	Predeployment does not require access to the web application server, with the exception of WebSphere. When deploying to WebSphere, the `default_virtual_host` parameter is mandatory.

`deploy`	The `wdeploy deploy` command is a concatenation of the `wdeploy predeploy` and `wdeploy deployonly` commands, which prepares and deploys a web application to the target web application server with just one command. Use `wdeploy deploy` to prepare and deploy the BOE web application to the target web application server. `wdeploy.sh <WEB_APP_SERVER> -DAPP=BOE deploy`

Action	Description
deployall	The wdeploy deployall command performs the wdeploy deploy command for all web applications located in the BI platform web application source directory: <BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/warfiles/webapps Use wdeploy deployall to apply the wdeploy deploy command to all web applications. For example: ```wdeploy.sh <WEB_APP_SERVER> deployall```

deployonly	The wdeploy deployonly command deploys a prepared web application to the target web application server.
	
	Deployable WAR or EAR files located in <BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/workdir/<WEB_APP_SERVER> are deployed to the web application server by the wdeploy deployonly command invoking the web application server's command-line interface.
	
	If a web application has not already been prepared for deployment, the wdeploy predeploy command is called automatically.
	
	Use wdeploy deployonly to deploy a prepared BOE web application to a web application server. For example:
	
	``wdeploy.sh <WEB_APP_SERVER>
	  -DAPP=BOE
	  deployonly```

deployonlyall	The wdeploy deployonlyall command performs the wdeploy deployonly command for all prepared web applications. Use wdeploy deployonlyall to apply the wdeploy deployonly command to all prepared web applications. For example: ```wdeploy.sh <WEB_APP_SERVER> deployonlyall```

buildwarall	Builds a generic WAR file from the web application source tree. For example:
	
	``wdeploy.sh buildwarall
	  -Dapp_source_tree=<LOCATION_OF_APP_SOURCE_TREE>
	  -Dwar_dir=<TARGET_LOCATION_OF_GENERIC_WAR_FILE>```

listapps	Lists the web applications available for deployment to a web application server. For example: ```wdeploy.sh <WEB_APP_SERVER> listapps```
listdeployedapps	Lists all web applications currently deployed to a web application server. This action can only be run on a web server or web application server system. For example: ```wdeploy.sh <WEB_APP_SERVER> listdeployedapps```

Action	Description

`undeploy`	The `wdeploy undeploy` command invokes the target web application server's command-line interface to remove a deployed BI platform web application from the server.
	
	Use the `wdeploy undeploy` command to undeploy the BOE web application from the target web application server.
	
	`wdeploy.sh <WEB_APP_SERVER>`
	`  -DAPP=BOE`
	`  undeploy`

`undeployall`	The `wdeploy undeployall` command performs the `wdeploy undeploy` command for all BI platform web applications deployed to the target web application server. For example: `wdeploy.sh <WEB_APP_SERVER> undeployall`
`validateconfig`	Validates the WDeploy configuration for the supported web application servers to ensure that the deployment can be successful. For example: `wdeploy.sh <WEB_APP_SERVER> validateconfig`

Substitute `<WEB_APP_SERVER>` for the name of the web application server.

4.6.1.4 WDeploy general commands

WDeploy general commands are used to provide high-level information about the tool itself and the available web application server deployment. They are not used together with server names, properties, or actions. The following general commands are available:

- `wdeploy help`: displays a summary of available WDeploy command-line usage.
- `wdeploy listappservers`: lists all Java web application servers supported by this version of WDeploy.
- `wdeploy version`: displays the version number of the WDeploy tool itself.
- `wdeploy buildwarall`: generates a generic WAR file by using the web application source tree.
  Usage:

  ```
  wdeploy.sh
     buildwarall
     -Dapp_source_tree=<LOCATION_OF_WEB_APP_SOURCE>
     -Dwar_dir=<TARGET_LOCATION_OF_GENERIC_WAR_FILES>
  ```

  For example:

  ```
  wdeploy.sh
     buildwarall
     -Dapp_source_tree=/sap/sap_bobj/enterprise_xi40/warfiles/webapps
     -Dwar_dir=/myGenericWarFiles
  ```

4.6.2 Examples of using WDeploy

This section contains examples of using WDeploy commands for supported web application servers.

> **Remember**
>
> Before using WDeploy, ensure that the WDeploy configuration files have been configured appropriately for your web application server. See WDeploy configuration files [page 31]. Read Special considerations [page 58] for a list of important information specific to your web application server.

4.6.2.1 Values for WEB_APP_SERVER

In the following examples, substitute the variable `<WEB_APP_SERVER>` for the name of your web application server, as shown in the table below.

Table 14:

Web application server	`<WEB_APP_SERVER>` name
JBoss 7.1	`jboss7`
SAP Netweaver Technology Platform	`sapappsvr73`
Tomcat 7.0	`tomcat7`
Tomcat 8.0	`tomcat8`
WebLogic 11gR1	`weblogic11`
WebSphere 7.0	`websphere7`
WebSphere 8.5 or 8.5.5	`websphere8`

4.6.2.2 wdeploy predeploy

The `wdeploy predeploy` command prepares a web application for deployment to the target web application server.

The web application's internal `web.xml` configuration file is set by WDeploy, along with any other changes required to make the web application deployable to the target web application server.

Once configured, the web application is packaged into a WAR or EAR file and saved to `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/<WEB_APP_SERVER>`.

The resulting WAR or EAR file can be deployed manually through the web application server's administrative console, or with the `wdeploy deploy` command.

Example

For example, use `wdeploy predeploy` to prepare the BOE web application so that it is ready for deployment to a specific web application server.

```
wdeploy.sh <WEB_APP_SERVER>
  -DAPP=BOE
  predeploy
```

Substitute `<WEB_APP_SERVER>` for the name of the web application server, as shown in the following table.

The table below lists example parameters for predeploying the BOE web application for specific web application servers. All parameters are required, unless they are marked as optional in the configuration files. Parameters given on the command-line over-ride those stored in configuration files. However, it is recommended that you configure the parameters in the `config.<WEB_APP_SERVER>` configuration file appropriate for your deployment.

Table 15:

Server	Parameters

JBoss 7.1 (`jboss7`)	`wdeploy.sh jboss7`
	`  -Das_instance=default`
	`  -DAPP=BOE`
	`  predeploy`

SAP Technology (`sapappsvr73`)	`wdeploy.sh sapappsvr73`
	`  -DAPP=BOE`
	`  predeploy`

Tomcat 7.0 (`tomcat7`)	`wdeploy.sh tomcat7`
	`  -DAPP=BOE`
	`  predeploy`

Tomcat 8.0 (`tomcat8`)	`wdeploy.sh tomcat8`
	`  -DAPP=BOE`
	`  predeploy`

WebLogic 11gR1 (`weblogic11`)	`wdeploy.sh weblogic11`
	`  -DAPP=BOE`
	`  predeploy`
	
	If the WegLogic web application server is hosted on a Linux machine that uses the JRockit Java Virtual Machine, and if you are predeploying the dswsbobje or the BOE web applications, you must include the -Djvm_is_jrockit=true option:
	
	`wdeploy weblogic11`
	`  -DAPP=dswsbobje`
	`  -Djvm_is_jrockit=true`
	`  predeploy`
	`wdeploy weblogic11`
	`  -DAPP=BOE`
	`  -Djvm_is_jrockit=true`
	`  predeploy`

Server	Parameters
WebSphere 7.0 (`websphere7`)	`wdeploy.sh websphere7 -Das_virtual_host=default_host -DAPP=BOE predeploy`
WebSphere 8.5 or 8.5.5 (`websphere8`)	`wdeploy.sh websphere8 -Das_virtual_host=default_host -DAPP=BOE predeploy`

4.6.2.3 wdeploy predeployall

The `wdeploy predeployall` command performs the `wdeploy predeploy` command for all web applications located in the BI platform web application source directory:

`<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/warfiles/webapps`

Example

For example, use `wdeploy predeployall` to apply the `wdeploy predeploy` command to all web applications.

```
wdeploy.sh <WEB_APP_SERVER> predeployall
```

Substitute `<WEB_APP_SERVER>` for the name of the web application server, as shown in the following table.

The table below lists example parameters for predeploying all web applications for specific web application servers. All parameters are required, unless they are marked as optional in the configuration files. Parameters given on the command-line over-ride those stored in configuration files. However, it is recommended that you configure the parameters in the `config.<WEB_APP_SERVER>` configuration file appropriate for your deployment.

Table 16:

Server	Parameters
JBoss 7.1 (`jboss7`)	`wdeploy.sh jboss7 predeployall`
SAP Technology (`sapappsvr73`)	`wdeploy.sh sapappsvr73 predeployall`
Tomcat 7.0 (`tomcat7`)	`wdeploy.sh tomcat7 predeployall`

Server	Parameters
Tomcat 8.0 (`tomcat8`)	`wdeploy.sh tomcat8 predeployall`

WebLogic 11gR1 (`weblogic11`)	`wdeploy.sh weblogic11 predeployall`
	If the WegLogic web application server is hosted on a Linux machine that uses the JRockit Java Virtual Machine, and if you are predeploying the dswsbobje or the BOE web applications, you must include the -Djvm_is_jrockit=true option:
	`wdeploy.sh weblogic11 -Djvm_is_jrockit=true predeployall`

WebSphere 7.0 (`websphere7`)	`wdeploy.sh websphere7 -Das_virtual_host=default_host predeployall`
WebSphere 8.5 and 8.5.5 (`websphere8`)	`wdeploy.sh websphere8 -Das_virtual_host=default_host predeployall`

4.6.2.4 wdeploy deployonly

The `wdeploy deployonly` command deploys a prepared web application to the target web application server.

Deployable WAR or EAR files located in `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/workdir/<WEB_APP_SERVER>` are deployed to the web application server by the `wdeploy deployonly` command invoking the web application server's command-line interface.

If a web application has not already been prepared for deployment, the `wdeploy predeploy` command is called automatically.

Example

For example, use `wdeploy deployonly` to deploy a prepared BOE web application to a web application server.

```
wdeploy.sh <WEB_APP_SERVER>
  -DAPP=BOE
  deployonly
```

Substitute `<WEB_APP_SERVER>` for the name of the web application server, as shown in the following table.

The table below lists example parameters for deploying the BOE web application to specific web application servers. All parameters are required, unless they are marked as optional in the configuration files. Parameters given on the command-line over-ride those stored in configuration files. However, it is recommended that you

configure the parameters in the `config.<WEB_APP_SERVER>` configuration file appropriate for your deployment.

Table 17:

Server	Parameters
JBoss 7.1 (`jboss7`)	The `wdeploy deployonly` command does not support JBoss 7.1. You must use the `wdeploy predeploy` or `wdeploy predeployall` commands of the WDeploy tool to create WAR files and deploy manually using the JBoss Command Line Interface (CLI) or the file system deployment scanner.
SAP NetWeaver Technology Platform(`sapappsvr73`)	The `wdeploy deployonly` command does not support SAP NetWeaver Technology Platform. You must use the `wdeploy predeploy` or `wdeploy predeployall` commands of the WDeploy tool to create SCA files and deploy manually using SAP Software Update Manager (SUM).

Tomcat 7.0 (`tomcat7`)	`wdeploy.sh tomcat7`
	`-Das_dir=/opt/tomcat7`
	`-Das_instance=localhost`
	`-Das_service_name=Tomcat7`
	`-DAPP=BOE`
	`deployonly`

Tomcat 8.0 (`tomcat8`)	`wdeploy.sh tomcat8`
	`-Das_dir=/opt/tomcat8`
	`-Das_instance=localhost`
	`-Das_service_name=Tomcat8`
	`-DAPP=BOE`
	`deployonly`

WebLogic 11gR1 (`weblogic11`)	`wdeploy.sh weblogic11`
	`-Das_domain_dir=/opt/bea/user_projects/domains/base_domain`
	`-Das_admin_port=7001`
	`-Das_instance=AdminServer`
	`-Das_admin_username=weblogic`
	`-Das_admin_password=weblogic`
	`-DAPP=BOE`
	`deployonly`

WebSphere 7.0 (`websphere7`)	`wdeploy.sh websphere7`
	`-Das_dir=/opt/IBM/WebSphere/AppServer`
	`-Das_instance=server1`
	`-Das_virtual_host=default_host`
	`-Das_profile_name=AppSrv01`
	`-Das_soap_port=8880`
	`-DAPP=BOE`
	`deployonly`

Server	Parameters

WebSphere 8.5 or 8.5.5 (`websphere8`)	`wdeploy.sh websphere8`
	`-Das_dir=/opt/IBM/WebSphere/AppServer`
	`-Das_instance=server1`
	`-Das_virtual_host=default_host`
	`-Das_profile_name=AppSrv01`
	`-Das_soap_port=8880`
	`-DAPP=BOE`
	`deployonly`

4.6.2.5 wdeploy deployonlyall

The `wdeploy deployonlyall` command performs the `wdeploy deployonly` command for all prepared web applications.

Example

For example, use `wdeploy deployonlyall` to apply the `wdeploy deployonly` command to all prepared web applications.

```
wdeploy.sh <WEB_APP_SERVER> deployonlyall
```

Substitute `<WEB_APP_SERVER>` for the name of the web application server, as shown in the following table.

The table below lists example parameters for deploying all web applications to specific web application servers. All parameters are required, unless they are marked as optional in the configuration files. Parameters given on the command-line over-ride those stored in configuration files. However, it is recommended that you configure the parameters in the `config.<WEB_APP_SERVER>` configuration file appropriate for your deployment.

Table 18:

Server	Parameters
JBoss 7.1 (`jboss7`)	The `wdeploy deployonlyall` command does not support JBoss 7.1. You must use the `wdeploy predeploy` or `wdeploy predeployall` commands of the WDeploy tool to create WAR files and deploy manually using the JBoss Command Line Interface (CLI) or the file system deployment scanner.
SAP Technology (`sapappsvr73`)	The `wdeploy deployonlyall` command does not support SAP technology. You must use the `wdeploy predeploy` or `wdeploy predeployall` commands of the WDeploy tool to create SCA files and deploy manually using SAP Software Update Manager (SUM).

Tomcat 7.0 (`tomcat7`)	`wdeploy.sh tomcat7`
	`-Das_dir=/opt/tomcat7`
	`-Das_instance=localhost`
	`-Das_service_name=Tomcat7`
	`deployonlyall`

Server	Parameters

Tomcat 8.0 (`tomcat8`)	`wdeploy.sh tomcat8`
	`  -Das_dir=/opt/tomcat8`
	`  -Das_instance=localhost`
	`  -Das_service_name=Tomcat8`
	`  deployonlyall`

WebLogic 11gR1 (`weblogic11`)	`wdeploy.sh weblogic11`
	`  -Das_domain_dir=/opt/bea/user_projects/domains/base_domain`
	`  -Das_admin_port=7001`
	`  -Das_instance=AdminServer`
	`  -Das_admin_username=weblogic`
	`  -Das_admin_password=weblogic`
	`  deployonlyall`

WebSphere 7.0 (`websphere7`)	`wdeploy.sh websphere7`
	`  -Das_dir=/opt/ibm/WebSphere/AppServer`
	`  -Das_instance=server1`
	`  -Das_virtual_host=default_host`
	`  -Das_profile_name=AppSrv01`
	`  -Das_soap_port=8880`
	`  deployonlyall`

WebSphere 8.5 or 8.5.5 (`websphere8`)	`wdeploy.sh websphere8`
	`  -Das_dir=/opt/ibm/WebSphere/AppServer`
	`  -Das_instance=server1`
	`  -Das_virtual_host=default_host`
	`  -Das_profile_name=AppSrv01`
	`  -Das_soap_port=8880`
	`  deployonlyall`

4.6.2.6 wdeploy deploy

The `wdeploy deploy` command is a concatenation of the `wdeploy predeploy` and `wdeploy deployonly` commands, which prepares and deploys a web application to the target web application server with just one command.

Example

For example, use `wdeploy deploy` to prepare and deploy the BOE web application to the target web application server.

```
wdeploy.sh <WEB_APP_SERVER>
  -DAPP=BOE
  deploy
```

Substitute `<WEB_APP_SERVER>` for the name of the web application server, as shown in the following table.

The table below lists example parameters for deploying the BOE web application to specific web application servers. All parameters are required, unless they are marked as optional in the configuration files. Parameters

given on the command-line over-ride those stored in configuration files. However, it is recommended that you configure the parameters in the `config.<WEB_APP_SERVER>` configuration file appropriate for your deployment.

Table 19:

Server	Parameters
JBoss 7.1 (`jboss7`)	The `wdeploy deploy` command does not support JBoss 7.1. You must use the `wdeploy predeploy` or `wdeploy predeployall` commands of the WDeploy tool to create WAR files and deploy manually using the JBoss Command Line Interface (CLI) or the file system deployment scanner.
SAP Technology AS Java (`sapappsvr73`)	The `wdeploy deploy` command does not support SAP technology AS Java. You must use the `wdeploy predeploy` or `wdeploy predeployall` commands of the WDeploy tool to create SCA files and deploy manually using SAP Software Update Manager (SUM).

Tomcat 7.0 (`tomcat7`)	`wdeploy.sh tomcat7`
	`-Das_dir=/opt/tomcat7`
	`-Das_instance=localhost`
	`-Das_service_name=Tomcat7`
	`-DAPP=BOE`
	`deploy`

Tomcat 8.0 (`tomcat8`)	`wdeploy.sh tomcat8`
	`-Das_dir=/opt/tomcat8`
	`-Das_instance=localhost`
	`-Das_service_name=Tomcat8`
	`-DAPP=BOE`
	`deploy`

WebLogic 11gR1 (`weblogic11`)	`wdeploy.sh weblogic11`
	`-Das_domain_dir=/bea/user_projects/domains/base_domain`
	`-Das_admin_port=7001`
	`-Das_instance=AdminServer`
	`-Das_admin_username=weblogic`
	`-Das_admin_password=weblogic`
	`-DAPP=BOE`
	`deploy`

WebSphere 7.0 (`websphere7`)	`wdeploy.sh websphere7`
	`-Das_dir=/opt/ibm/WebSphere/AppServer`
	`-Das_instance=server1`
	`-Das_virtual_host=default_host`
	`-Das_profile_name=AppSrv01`
	`-Das_soap_port=8880`
	`-DAPP=BOE`
	`deploy`

Server	Parameters

WebSphere 8.5 or 8.5.5 (`websphere8`)	`wdeploy.sh websphere8`
	`  -Das_dir=/opt/ibm/WebSphere/AppServer`
	`  -Das_instance=server1`
	`  -Das_virtual_host=default_host`
	`  -Das_profile_name=AppSrv01`
	`  -Das_soap_port=8880`
	`  -DAPP=BOE`
	`  deploy`

4.6.2.7 wdeploy deployall

The `wdeploy deployall` command performs the `wdeploy deploy` command for all web applications located in the BI platform web application source directory:

`<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/warfiles/webapps`

Example

For example, use `wdeploy deployall` to apply the `wdeploy deploy` command to all web applications.

```
wdeploy.sh <WEB_APP_SERVER> deployall
```

Substitute `<WEB_APP_SERVER>` for the name of the web application server, as shown in the following table.

The table below lists example parameters for deploying the all web applications to specific web application servers. All parameters are required, unless they are marked as optional in the configuration files. Parameters given on the command-line over-ride those stored in configuration files. However, it is recommended that you configure the parameters in the `config.<WEB_APP_SERVER>` configuration file appropriate for your deployment.

Table 20:

Server	Parameters
JBoss 7.1 (`jboss7`)	The `wdeploy deployall` command does not support JBoss 7.1. You must use the `wdeploy predeploy` or `wdeploy predeployall` commands of the WDeploy tool to create WAR files and deploy manually using the JBoss Command Line Interface (CLI) or the file system deployment scanner.
SAP Netweaver Technology Platform (`sapappsvr73`)	The `wdeploy deployall` command does not support SAP Netweaver technology platform. You must use the `wdeploy predeploy` or `wdeploy predeployall` commands of the WDeploy tool to create SCA files and deploy manually using SAP Software Update Manager (SUM).

Server	Parameters

Tomcat 7.0 (`tomcat7`)	`wdeploy.sh tomcat7`
	`  -Das_dir=/opt/tomcat7`
	`  -Das_instance=localhost`
	`  -Das_service_name=Tomcat7`
	`  deployall`

Tomcat 8.0 (`tomcat8`)	`wdeploy.sh tomcat8`
	`  -Das_dir=/opt/tomcat8`
	`  -Das_instance=localhost`
	`  -Das_service_name=Tomcat8`
	`  deployall`

WebLogic 11gR1 (`weblogic11`)	`wdeploy.sh weblogic11`
	`  -Das_domain_dir=/opt/bea/user_projects/domains/`
	`base_domain`
	`  -Das_admin_port=7001`
	`  -Das_instance=AdminServer`
	`  -Das_admin_username=weblogic`
	`  -Das_admin_password=weblogic`
	`  deployall`

WebSphere 7.0 (`websphere7`)	`wdeploy.sh websphere7`
	`  -Das_dir=/opt/ibm/WebSphere/AppServer`
	`  -Das_instance=server1`
	`  -Das_virtual_host=default_host`
	`  -Das_profile_name=AppSrv01`
	`  -Das_soap_port=8880`
	`  deployall`

WebSphere 8.5 or 8.5.5 (`websphere8`)	`wdeploy.sh websphere8`
	`  -Das_dir=/opt/ibm/WebSphere/AppServer`
	`  -Das_instance=server1`
	`  -Das_virtual_host=default_host`
	`  -Das_profile_name=AppSrv01`
	`  -Das_soap_port=8880`
	`  deployall`

4.6.2.8 wdeploy undeploy

The `wdeploy undeploy` command invokes the target web application server's command-line interface to remove a deployed BI platform web application from the server.

Example

For example, use the `wdeploy undeploy` command to undeploy the BOE web application from the target web application server.

```
wdeploy.sh <WEB_APP_SERVER>
  -DAPP=BOE
```

```
  undeploy
```

Substitute `<WEB_APP_SERVER>` for the name of the web application server, as shown in the following table.

The table below lists example parameters for undeploying the BOE web application from specific web application servers. All parameters are required, unless they are marked as optional in the configuration files. Parameters given on the command-line over-ride those stored in configuration files. However, it is recommended that you configure the parameters in the `config.<WEB_APP_SERVER>` configuration file appropriate for your deployment.

Table 21:

Server	Parameters
JBoss 7.1 (`jboss7`)	The `wdeploy undeploy` command does not support JBoss 7.1.
SAP Netweaver Technology Platform (`sapappsvr73`)	The `wdeploy undeploy` command does not support SAP Netweaver technology platform.

Tomcat 7.0 (`tomcat7`)	`wdeploy.sh tomcat7`
	`  -Das_dir=/opt/tomcat7`
	`  -Das_instance=localhost`
	`  -DAPP=BOE`
	`  -Das_service_name=Tomcat7`
	`  undeploy`

Tomcat 8.0 (`tomcat8`)	`wdeploy.sh tomcat8`
	`  -Das_dir=/opt/tomcat8`
	`  -Das_instance=localhost`
	`  -DAPP=BOE`
	`  -Das_service_name=Tomcat8`
	`  undeploy`

WebLogic 11gR1 (`weblogic11`)	`wdeploy.sh weblogic11`
	`  -Das_domain_dir=/opt/bea/user_projects/domains/`
	`base_domain`
	`  -Das_admin_port=7001`
	`  -Das_instance=AdminServer`
	`  -Das_admin_username=weblogic`
	`  -Das_admin_password=weblogic`
	`  -DAPP=BOE`
	`  undeploy`

WebSphere 7.0 (`websphere7`)	`wdeploy.sh websphere7`
	`  -Das_dir=/opt/ibm/WebSphere/AppServer`
	`  -Das_instance=server1`
	`  -Das_virtual_host=default_host`
	`  -Das_profile_name=AppSrv01`
	`  -Das_soap_port=8880`
	`  -DAPP=BOE`
	`  undeploy`

Server	Parameters

WebSphere 8.5 or 8.5.5 (`websphere8`)	`wdeploy.sh websphere8`
	`  -Das_dir=/opt/ibm/WebSphere/AppServer`
	`  -Das_instance=server1`
	`  -Das_virtual_host=default_host`
	`  -Das_profile_name=AppSrv01`
	`  -Das_soap_port=8880`
	`  -DAPP=BOE`
	`  undeploy`

4.6.2.9 wdeploy undeployall

The `wdeploy undeployall` command performs the `wdeploy undeploy` command for all BI platform web applications deployed to the target web application server.

Example

```
wdeploy.sh <WEB_APP_SERVER> undeployall
```

Substitute `<WEB_APP_SERVER>` for the name of the web application server, as shown in the following table.

The table below lists example parameters for undeploying all web applications from specific web application servers. All parameters are required, unless they are marked as optional in the configuration files. Parameters given on the command-line over-ride those stored in configuration files. However, it is recommended that you configure the parameters in the `config.<WEB_APP_SERVER>` configuration file appropriate for your deployment.

Table 22:

Server	Parameters
JBoss 7.1 (`jboss7`)	The `wdeploy undeployall` command does not support JBoss 7.1.
SAP Technology (`sapappsvr73`)	The `wdeploy undeployall` command does not support SAP technology.

Tomcat 7.0 (`tomcat7`)	`wdeploy.sh tomcat7`
	`  -Das_dir=/opt/tomcat7`
	`  -Das_instance=localhost`
	`  -Das_service_name=Tomcat7`
	`  undeployall`

Tomcat 8.0 (`tomcat8`)	`wdeploy.sh tomcat8`
	`  -Das_dir=/opt/tomcat8`
	`  -Das_instance=localhost`
	`  -Das_service_name=Tomcat8`
	`  undeployall`

Server	Parameters
WebLogic 11gR1 (`weblogic11`)	`wdeploy.sh weblogic11 -Das_domain_dir=/opt/bea/user_projects/domains/base_domain -Das_admin_port=7001 -Das_instance=AdminServer -Das_admin_username=weblogic -Das_admin_password=weblogic undeployall`
WebSphere 7.0 (`websphere7`)	`wdeploy.sh websphere7 -Das_dir=/opt/ibm/WebSphere/AppServer -Das_instance=server1 -Das_virtual_host=default_host -Das_profile_name=AppSrv01 -Das_soap_port=8880 undeployall`
WebSphere 8.5 or 8.5.5 (`websphere8`)	`wdeploy.sh websphere8 -Das_dir=/opt/ibm/WebSphere/AppServer -Das_instance=server1 -Das_virtual_host=default_host -Das_profile_name=AppSrv01 -Das_soap_port=8880 undeployall`

4.6.3 Special considerations

The following section contains important information related to the deployment of web applications on your web application server.

4.6.3.1 SAP NetWeaver Technology Platform

4.6.3.1.1 Prerequisites for deployment on SAP NetWeaver Technology Platform

> **Note**
>
> If you have any existing SAP BusinessObjects Business Intelligence platform web applications running on the server, they must be undeployed before continuing.

Before deploying BI platform web applications to an SAP NetWeaver Application Server component(any version), you must ensure that .html and .htm files are never compressed. For example, in SAP NetWeaver AS component 7.3:

1. Logon to your SAP Administrator portal.

   For example: `http://<servername>:50200/nwa`

2. Navigate to: *Configuration* > *Infrastructure* > *Java System Properties*.
3. On the *Services* tab, select *HTTP provider*.
4. Under *Extended Details*, modify the *AlwaysCompressed* and *NeverCompressed* properties as follows:
   - *AlwaysCompressed*: Remove `*.htm,*.html,text/html` from this property. This field cannot be blank - enter a space if blank.
   - *NeverCompressed*: Add `*.htm,*.html,text/html` to this property.

   Table 23: Example

Name	Default Calculated Value
AlwaysCompressed	(set to empty space if blank)
NeverCompressed	`*.htm,*.html,text/html`

5. Save your changes before exiting.

4.6.3.2 Tomcat

4.6.3.2.1 To deploy to separate Apache web and Tomcat web application servers

To reduce the load on a web application server, you can set up a separate, dedicated, web server to serve static content. All static content will be served by the web server, while dynamic content will be served by the web application server. The following instructions show you how to use the WDeploy tool to split web application resources into static and dynamic content and deploy this content appropriately.

1. Set up the Apache web server and ensure that it is working correctly. Load a web page, such as Apache's default test page, to verify that the web server is serving content correctly.

   Open a web browser and enter the web server URL. For example: `http://apache.mycompany.com`.

2. Ensure that your Tomcat web application server is working correctly.

   Open a web browser and enter the IP address or hostname of the web application server, and a port number. For example: `http://tomcat.mycompany.com:8080`.

   > **Note**
   >
   > If you have any existing BI platform web applications running on the server, they must be undeployed before continuing.

3. Download the Apache Tomcat connector from the Tomcat web site. The Apache Tomcat connector allows you to connect an Apache web server with a Tomcat web application server, so Apache can forward requests for dynamic resources to Tomcat.
4. Follow the plug-in configuration instructions on the Apache web site for configuring the bridge between Apache web server and Tomcat web application server.
   Requests for dynamic resources are now forwarded to Tomcat when received by Apache.

5. Ensure that the bridge between the web server and web application server is working by pointing a browser to the web server and verifying that dynamic content from the web application server is served correctly.

   For example, visit the URL: `http://apache.mycompany.com/jsp-examples/`.

   > **Note**
   >
   > This example URL will only work if you have manually deployed the `jsp-examples` web application.

6. If the web application server is installed on the same machine as the BI platform, run WDeploy locally on that machine. If the web application server runs on a different machine copy the WDeploy command and environment to the web application server. See *To deploy web applications on a remote machine*.
7. Configure WDeploy environment to separate content between the web server and the web application server. This is known as "split" mode.

   The WDeploy configuration files for Apache and Tomcat are located in `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf`.

   - Edit the WDeploy configuration file for Tomcat. For example, for Tomcat 8.0, the file `config.tomcat8` will look similar to this:

     ```
     as_dir=/opt/Tomcat
     as_instance=localhost
     as_service_name=tomcat8
     ```

   - Edit `config.apache`. For example:

     ```
     ws_dir=/opt/apache224
     connector_type=tomcat8
     deployment_dir=/opt/apache224/htdocs
     ```

8. Use `wdeploy predeploy` in split mode to separate source web applications into static and dynamic files.

   For example:

   - Run the following command to extract static content for the Apache web server.

     ```
     wdeploy.sh tomcat8 -Das_mode=split
         -Dws_type=apache predeployall
     ```

9. Run `wdeploy deployonlyall` command to deploy the dynamic content to Tomcat application server and static content to Apache.

   If Apache and Tomcat are on the same machine, static and dynamic content will be automatically deployed to servers by the following command:

   ```
   wdeploy.sh tomcat8 -Das_mode=split
       -Dws_type=apache deployonlyall
   ```

   > **Note**
   >
   > If your dynamic and static content are in a custom location, use the `-Dwork_dir` parameter.

   If Apache and Tomcat are on different machines, dynamic content will be automatically deployed to Tomcat by the following command. Static content must be manually deployed to the remote Apache machine afterwards.

   ```
   wdeploy.sh tomcat8 -Das_mode=split
   ```

```
deployonlyall
```

> **Note**
>
> If your dynamic and static content are in a custom location, use the `-Dwork_dir` parameter.

Copy static content to the `htdocs` directory on the web server:

- Extract the zip files on the web application server under `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/workdir/tomcat8/resources`.
- Copy these folders from the Tomcat web application server to the Apache `<WS_DIR>/htdocs` folder on the Apache server.
- Copy the `bobj.<application>.conf` files from the Tomcat web application server to the Apache `<WS_DIR>/conf` folder on the Apache server.
- Update Apache `httpd.conf` under `<WS_DIR>/conf` with the application configuration files. For each web application include an entry in `httpd.conf`. For example, to include BOE, you would enter:

  ```
  Include conf/bobj.BOE.conf
  ```

Static content is now served by a dedicated web server, and dynamic content is served by a dedicated web application server.

4.6.3.2.2 Tomcat gzip compression

If you install a new installation of the BI platform and choose to use the bundled Tomcat web application server, Tomcat's HTTP gzip compression is enabled automatically.

The gzip compression improves web application server response time and throughput. However, if you plan to deploy web applications to the Tomcat web application server, note that the deployment of web applications to a Tomcat server with gzip compression enabled may differ from the process used to deploy web applications to a version of Tomcat bundled with an earlier release of the BI platform.

4.6.3.3 WebLogic

4.6.3.3.1 To deploy to separate Apache web and WebLogic web application servers

To reduce the load on a web application server, you can set up a separate, dedicated, web server to serve static content. All static content will be served by the web server, while dynamic content will be served by the web application server. The following instructions show you how to use the WDeploy tool to split web application resources into static and dynamic content and deploy this content appropriately.

1. Set up the Apache web server and ensure that it is working correctly. Load a web page, such as Apache's default test page, to verify that the web server is serving content correctly.

   Open a web browser and enter the IP address or hostname of the web server, and a port number if the server is not listening on port 80. For example: `http://apache.mycompany.com`.

2. Ensure that your WebLogic web application server is working correctly.

   Open a web browser and enter the IP address or hostname of the web application server, and a port number. For example: `http://weblogic.mycompany.com:7001`.

   > **Note**
   >
   > If you have any existing BI platform web applications running on the server, they must be undeployed before continuing.

3. Download the WebLogic Apache HTTP Server Plug-In from the BEA web site. The plug-in allows you to connect an Apache web server with a WebLogic web application server, so Apache can forward requests for dynamic resources to WebLogic.
4. Follow the plug-in configuration instructions on the BEA web site for configuring the bridge between Apache web server and WebLogic.
   Requests for dynamic resources are now forwarded to WebLogic when received by Apache.
5. Ensure that the bridge between the web server and web application server is working by pointing a browser to the web server and verifying that dynamic content from the web application server is served correctly.

   For example, visit the URL: `http://apache.mycompany.com/jsp-examples/`.

   > **Note**
   >
   > This example URL will only work if you have manually deployed the `jsp-examples` web application.

6. If the web application server is installed on the same machine as the BI platform, run WDeploy locally on that machine. If the web application server runs on a different machine copy the WDeploy command and environment to the web application server. See *To deploy web applications on a remote machine*.
7. Configure the WDeploy environment to separate content between the web server and the web application server. This is known as "split" mode.

   The WDeploy configuration files for Apache and WebLogic are located in `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf`.

   - Edit `config.weblogic11`. For example:

     ```
     as_admin_port=7001
     as_admin_username=weblogic
     as_admin_password=weblogic
     as_instance=AdminServer
     as_domain_dir=/usr/bea/user_projects/domains/base_domain
     ```

   - Edit `config.apache`. For example:

     ```
     ws_dir=/opt/apweblogic11
     ache224/
     connector_type=weblogic11
     deployment_dir=/opt/apache224/htdocs
     ```

8. Use `wdeploy predeploy` in split mode to split source web applications into separate static and dynamic resources.

   For example:

   - Run the following command to extract static content for the Apache web server and dynamic content for WebLogic application server.

     ```
     wdeploy.sh weblogic11 -Das_mode=split
     ```

```
    -Dws_type=apache predeployall
```

Dynamic content is located in: `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/workdir/weblogic11/application`. Static content is located in: `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/workdir/weblogic11/resources`.

9. Run `wdeploy deployonlyall` to deploy the dynamic content to WebLogic application server and static content to Apache.

   If Apache and WebLogic are on the same machine, static and dynamic content will be automatically deployed to the servers with this command:

```
wdeploy.sh weblogic11 -Das_mode=split
    -Dws_type=apache deployonlyall
```

> **Note**
>
> If your dynamic and static content are in a custom location, use the `-Dwork_dir` parameter.

   If Apache and WebLogic are on different machines, dynamic content will be automatically deployed to WebLogic by the following command. Static content must then be manually copied over and deployed to the remote Apache machine.

```
./wdeploy.sh weblogic11 -Das_mode=split
    deployonlyall
```

> **Note**
>
> If your dynamic and static content resides in a custom location, use the `-Dwork_dir` parameter.

   Copy static content to the `htdocs` directory on the web server:

   - Extract the zip files on the web application server under `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/workdir/WebLogic11/resources`.
   - Copy these folders from the WebLogic web application server to the Apache `<WS_DIR>/htdocs` folder on the Apache server.
   - Copy the `bobj.<application>.conf` files from the WebLogic web application server to the Apache `<WS_DIR>/conf` folder on the Apache server.
   - Update Apache `httpd.conf` under `<WS_DIR>/conf` with the application configuration files. For each web application include an entry in `httpd.conf`. For example, to include BOE, you would enter:

```
Include conf/bobj.BOE.conf
```

Static content is now served by a dedicated web server, and dynamic content is served by a dedicated web application server.

4.6.3.4 WebSphere

4.6.3.4.1 To deploy to separate IHS web and WebSphere web application servers

To reduce the load on a web application server, you can set up a separate, dedicated, web server to serve static content. All static content will be served by the web server, while dynamic content will be served by the web application server. The following instructions show you how to use the WDeploy tool to split web application resources into static and dynamic content and deploy this content appropriately.

1. Set up an IBM HTTP Server (IHS) web server and ensure that it is working correctly. Load a web page, such as the IHS default test page, to verify that the web server is serving content correctly.

   Open a web browser and enter the IP address or hostname of the web server, and a port number if the server is not listening on port 80. For example: `http://ihs.mycompany.com`.
2. Ensure that your WebSphere web application server is working correctly.

   Open a web browser and enter the IP address or hostname of the web application server, and a port number. For example: `http://websphere.mycompany.com:9080`.

   > **Note**
   >
   > If you have any existing BI platform web applications running on the server, they must be undeployed before continuing.
3. Run the web server plug-in installation wizard to install the plug-in that bridges WebSphere with IHS, and follow the directions to enter information about your IHS web server.
4. Follow the plug-in configuration instructions on the WebSphere web site for configuring the bridge between IHS and WebSphere.
   Requests for dynamic resources are now forwarded to WebSphere when received by IHS.
5. Ensure that the bridge between the web server and web application server is working by pointing a browser to the web server and verifying that dynamic content from the web application server is served correctly.

   For example, visit the URL: `http://ihs.mycompany.com/snoop/`.
6. If the web application server is installed on the same machine as the BI platform, run WDeploy locally on that machine. If the web application server runs on a different machine copy the WDeploy command and environment to the web application server. See *To deploy web applications on a remote machine*.
7. Configure WDeploy environment to separate content between the web server and the web application server. This is known as "split" mode.

   The WDeploy configuration files for Apache and WebSphere are located in `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf`.

   - Edit `config.apache`. For example:

     ```
     ws_dir=C:\Program Files (x86)\IBM\HTTPServer
     connector_type=websphere7
     deployment_dir=${ws_dir}/htdocs
     plugin_install_dir=C:\Program Files\IBM\HTTPServer\Plugins
     ```
   - Edit `config.websphere7`. For example:

     ```
     as_soap_port=8880
     #as_admin_username=admin
     ```

```
#as_admin_password=password
as_dir=/opt/websphere/appserver
as_instance=server1
as_plugin_cfg_dir=/opt/ibm/WebSphere/AppSever/profiles/AppSrv01/config/cells/
<CELLNAME>/nodes/<NODENAME>/servers/${ws_instance}
as_profile_name=AppSrv01
as_virtual_host=default_host
as_admin_is_secure=false
enforce_file_limit=true
ws_instance=webserver1
```

8. Use `wdeploy predeploy` in split mode to split source web applications into separate static and dynamic resources.

   > **Note**
   >
   > Before running `wdeploy predeploy`, ensure that parameter `as_plugin_cfg_dir` in `config.websphere<X>` has been set to the folder that contains the WebSphere file `plugin-cfg.xml`.

   For example:

   - Run the following command to extract static content for the IHS web server.

     ```
     wdeploy.sh websphere7
        -Das_mode=split
        -Dws_type=apache
        predeployall
     ```

   The dynamic content of web applications is located in: `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/workdir/websphere7/application`. The static content is located in: `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/workdir/websphere7/resources`.

9. Run `wdeploy deployonlyall` command to deploy the dynamic content to WebSphere application server and static content to IHS.

   If IHS and WebSphere are on the same machine, static and dynamic content will be automatically deployed to servers by the following command:

   ```
   wdeploy.sh websphere7 -Das_mode=split
       -Dws_type=apache deployonlyall
   ```

   > **Note**
   >
   > If your dynamic and static content are in a custom location, use the `-Dwork_dir` parameter.

   If IHS and WebSphere are on different machines, dynamic content will be automatically deployed to WebSphere by the following command. Static content must be manually deployed to the remote IHS machine afterwards.

   ```
   ./wdeploy.sh websphere7 -Das_mode=split
       deployonlyall
   ```

   > **Note**
   >
   > If your dynamic and static content are in a custom location, use the `-Dwork_dir` parameter.

   Copy static content to the `htdocs` directory on the web server:

- Extract the zip files on the web application server under `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/workdir/websphere7/resources`.
- Copy these folders from the WebSphere web application server to the IHS `<WS_DIR>/htdocs` folder on the IHS server.
- Copy the `bobj.<application>.conf` files from the WebSphere web application server to the IHS `<WS_DIR>/conf` folder on the IHS server.
- Update IHS `httpd.conf` under `<WS_DIR>/conf` with the application configuration files. For each web application include an entry in `httpd.conf`. For example, to include BOE, you would enter:

```
Include conf/bobj.BOE.conf
```

10. Copy the `plugin-cfg.xml` file to the IHS and WebSphere work folders. If you are using the WebSphere administrative console to deploy, and IHS and WebSphere are installed on the same host system, skip to the next step. The WDeploy command will automatically copy `plugin-cfg.xml` when IHS and WebSphere are installed on the same host system.

    For example, copy the following file:

    `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/work_dir/websphere7/application/PluginSplit/plugin-cfg.xml`

    To the WebSphere work folder:

    `<WS_HOME>/AppServer/profiles/AppSrv01/config/cells/<CELL_NAME>/nodes/<NODE_NAME>/servers/<SERVER_NAME>`

    And to the IHS work folder:

    `<WS_DIR>/Plugins/config/<WEB_SERVER_NAME>`

11. Ensure that both static and dynamic content are correctly configured by trying to access a web application through the web server. For example, create a URL that includes the address of the web server with the root context of a web application deployed to the web application server: `http://ihs.mycompany.com/BOE/CMC/`. In this example, `ihs.mycompany.com` is the web server, and `/BOE/CMC/` is a deployed web application.

Static content is now served by a dedicated web server, and dynamic content is served by a dedicated web application server.

4.6.3.4.2 To load classes with application class loader first

You should set the class-loading behavior of your installed web applications to *Classes loaded with application class loader first (parent last)* using the WebSphere *Administrative console*. This ensures that common classes bundled with the BI platform web applications, such as the JavaServer Faces (JSF) library, are used rather than any implementations supplied by WebSphere.

Log in to the WebSphere *Integrated Solutions Console* with the Administrator account. You can run the WebSphere *Administrative console* program, or use a web browser to open `http://<WAS_HOSTNAME>:<PORT>/ibm/console` where `<WAS_HOSTNAME>` is the name of your WebSphere server, and `<PORT>` is the port number on which the server listens for login requests. The default port number is 9060.

1. Select *Applications* > *Application Type* > *WebSphere enterprise applications* in the menu.
   The *Enterprise Applications* screen appears.

2. Choose the web application deployed by WDeploy from the list of administered resources.
   The *Enterprise Applications* configuration screen appears.
3. Click *Manage Modules*.
   The *Manage Modules* screen appears.
4. Select the web application module (in the *Module* column).
   The *Manage Modules General Properties* screen appears.
5. Select *Classes loaded with application class loader first (parent last)* from the *Class loader order* property.
   A confirmation message appears.
6. Click *Save directly to the master configuration*.
   The web application configuration is saved and you are returned to the *Manage Modules* screen.
7. Click *OK*.
   A master configuration change confirmation message appears.
8. Click *Save directly to the master configuration*.
   The web application configuration is saved and you are returned to the *Enterprise Applications* screen.
9. Select the web application checkbox and click *Start*.
   A message appears to confirm that the web application started successfully.

When deploying more than one web application, repeat steps 2 to 9 for each web application.

4.6.4 Split web tier pre-deployment without access to a web application server

The WDeploy command can separate static and dynamic content for deployment to a web server and web application server. Access to a web application server's deployment folder is not required: the separated content can be copied from the server hosting WDeploy to the web and web application servers manually.

When WDeploy is installed on a dedicated web server, the `wdeploy predeploy` or `wdeploy predeployall` commands are used to create static content from web applications directly to the web server's content directory. Some parameters are mandatory for particular web or web application servers:

Table 24:

Web or web application server	Parameters required for predeployment
WebSphere Application Server	`as_virtual_host`
Apache and IBM IHS	`ws_dir`, `deployment_dir`, `connector_type`

4.6.5 To disable the CMC or BI launch pad web applications

The Central Management Console (CMC) and BI launch pad (previously InfoView) web applications are now included within the `BOE` archive (`BOE.war` or `BOE.ear`). To disable either the CMC or BI launch pad web application, so either or both cannot be accessed when the `BOE` archive is deployed to a web application server, use the WDeploy tool.

To disable the CMC web application, use the `-Ddisable_CmcApp=true` switch when deploying `BOE.war` to the web applications server. For example, the following command will deploy BOE.war to a Tomcat 8 web application server but disable the CMC:

```
wdeploy.sh tomcat8 -DAPP=BOE -Ddisable_CmcApp=true deploy
```

To disable the BI launch pad web application, included the `-Ddisable_InfoView=true` switch when deploying `BOE.war` to the web applications server. For example, the following command will deploy BOE.war to a Tomcat 8 web application server but disable BI launch pad:

```
wdeploy.sh tomcat8 -DAPP=BOE -Ddisable_InfoView=true deploy
```

4.6.6 Changes to installed languages

To add language support for web applications, you must re-install the BI platform and select the required language(s) during the installation process. Once the second installation is complete, any deployed web applications that require the new language(s) must be re-deployed to the web application server.

This is because the installation program does not redeploy web applications automatically. The web applications must be re-packaged and re-deployed to the web application server.

4.7 Using the WDeploy GUI tool

The WDeploy GUI tool is installed as a part of the BI platform and provides an alternative, graphical, method of running the `wdeploy deployall` or `wdeploy undeployall` commands.

> **Note**
>
> - We recommend using the WDeploy command-line tool rather than the WDeploy GUI tool. The command-line tool has more robust functionality.
> - The WDeploy GUI tool cannot be used to predeploy web applications. Use the command-line tool to run the `wdeploy predeployall` command.

For information on WDeploy requirements, see:

- WDeploy prerequisites [page 19]
- WDeploy GUI tool prerequisites [page 69]

To perform other deployment operations, use the command-line version of WDeploy.

The WDeploy GUI tool defaults to an English interface, but prompts the user to choose a language if any language packs are installed and the tool is run for the first time. The following language packs are supported by the BI platform:

- Czech
- Simplified Chinese
- Traditional Chinese

- Danish
- Dutch
- English
- Finnish
- French
- German
- Hungarian
- Italian
- Japanese
- Korean
- Norwegian Bokmal
- Polish
- Portuguese
- Romanian
- Russian
- Slovak
- Spanish
- Swedish
- Thai
- Turkish

4.7.1 WDeploy GUI tool prerequisites

To use the WDeploy GUI tool, ensure that the following requirements are met:

- Set the `PERL_HOME` environment variable.
  If you do not already have Perl 5.8.9 installed, set `PERL_HOME` to `<BIP_INSTALL_DIR>/InstallData/setup.engine/perl`.
  It is recommended that you use the version of Perl installed with the BI platform. To use your own version of Perl 5.8.9, ensure that the following modules are also installed:
  - `Text::CharWidth`
    Gets the number of occupied columns of a string on terminal. For more information, see the `CharWidth.pm` article at http://search.cpan.org .
  - `Text::WrapI18N`
    Line wrapping module with support for multibyte, fullwidth, and combining characters and languages without whitespaces between words. For more information, see the `WrapI18N.pm` article at http://search.cpan.org .

4.7.2 Starting WDeploy GUI tool

The WDeploy GUI tool is located in the folder `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy`. The syntax of the WDeploy command (from the `wdeploy` directory) is:

```
./wdeployGUI.sh
```

When the WDeploy GUI tool is run for the first time, it prompts for which language to use for displaying information in the user interface. Select a language and continue.

4.7.3 WDeploy GUI tool window

The WDeploy GUI tool allows users to deploy and undeploy web applications to a web application server. Any web applications not deployed by the BI platform installation program or WDeploy tool will be unaffected.

Select a supported web application server from the *Select Web Application Server Type* drop-down. When a web application server is selected, review the information in the *Web Application Server Information* section and the *Application Server Domain Root Directory* section to ensure that it is correct for your web application server.

For more advanced options, select *Options*.

Note

Not all web applications are deployed automatically. Web applications that are not deployed automatically must be deployed with the WDeploy command-line tool or with the web application server administrative console.

Web application archive (may be WAR or EAR)	Deployed automatically?
`BOE`	Yes
`AdminTools`	Yes
`dswsbobje`	Yes
`BusinessProcessBI` (deprecated)	Yes
`clientapi`	No
`MobileOTA14`	No
`jsfplatform`	No
`OpenSearch`	No

4.7.4 Web application updates made by WDeploy

Table 25: Changes made to web application configuration by WDeploy

Server	Changes made
Apache web server	For each application, `${ws_dir}/conf/bobj.${APP}.conf` file is created, containing connector configuration, directory and servlet mapping information. File `${ws_dir}/conf/httpd.conf` is modified to include that file.
Tomcat	Files added to the `classpath` are dropped in `${as_dir}/shared/lib` `${as_dir}/bin/bobjeEnv.${APP}.[sh\|bat]` file is created, containing library path modifications, and java properties modifications to add the application's properties. `${as_dir}/bin/catalina.[sh|bat]` file is modified to include this file. On Windows, additional java properties are added to the Tomcat service startup parameters. Library path modifications must manually be made to the system-wide PATH environment variable. Restart Tomcat to take changes into account.
WebLogic	Files to add to the `classpath` are bundled in the application (added to `WEB-INF/lib`). `${as_domain_dir}/bin/bobjeEnv.${APP}.[sh|cmd]` file is created, containing library path and java properties modifications. `${as_domain_dir}/bin/startWebLogic.[sh|cmd]` file is modified to include this file.
WebSphere	Files to add to the `classpath` are bundled in the application (added to `WEB-INF/lib`). Properties are added as JVM custom properties. Library path modifications are done modifying the environment of the JVM. Web Server plugin gets automatically regenerated.

4.7.5 WDeploy GUI tool options

The *Options* screen of the WDeploy GUI tool allows you to select custom folders to use for the deployment of web applications. This is equivalent to setting properties when using the WDeploy command-line. For more information on WDeploy parameters, see WDeploy property parameters [page 38].

- *WDeploy work directory* (equivalent to the `work_dir` parameter).
- *Web application source tree location* (equivalent to the `app_source_tree` parameter) or *Generic WAR files location* (equivalent to the `war_dir` parameter).
- *Web applications root context* (equivalent to the `root_context_path` parameter).

> **Note**
>
> Non-English characters in paths are currently not accepted as valid by the WDeploy GUI tool.

4.7.6 Adding the password to the WDeploy GUI file

The WDeploy GUI tool saves your input in a file and uses that information to deploy the web applications. You must manually add your password to this file even if you entered it when running the GUI, because passwords are not automatically recorded for security reasons.

To add your web application server password to the WDeploy GUI file:

1. Open the file containing WDeploy information:

   `<BOE_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf/config.<WEB_APP_SERVER>`
2. Locate the line containing the password information:

   `as_admin_password=`
3. Replace the value for the password, if any, with your web application password.
4. Save the file and re-run the WDeploy GUI.

4.8 After deploying web applications

After deploying or undeploying web applications, restart the web application server.

To verify the web application server configuration, make sure that BI launch pad and the Central Management Console (CMC) can be launched in a web browser. For example:

- `http[s]://<WEB_APP_SERVER>:<PORT>/<BI_LAUNCHPAD_CONTEXT>`
- `http[s]://<WEB_APP_SERVER>:<PORT>/<CMC_CONTEXT>`

Replace `<WEB_APP_SERVER>` with the hostname or IP address of the web or web application server, and `<PORT>` with the port number used for either HTTP or HTTPS communication. The default root context used for BI launch pad is `/BOE/BI`; the default context used for the CMC is `/BOE/CMC`.

4.9 Log files

The WDeploy tool creates two log files with detailed information that may be useful for diagnosing problems or monitoring activity.

1. `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/logs/WDeploy_summary.log`: a high-level record of WDeploy activity that includes information on the version of WDeploy, the JDK being used, the command issued, configuration, WAR file location, actions or events and their outcomes, and any error messages or warnings displayed to the user at runtime.
2. `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/logs/WDeploy.log`: includes everything in `WDeploy_summary.log`, but also includes timestamps and any warning or error messages.

When a WDeploy command is issued, `WDeploy_summary.log.01` is overwritten with the current command, and `WDeploy.log` is appended.

As the `WDeploy.log` file grows to more than 512 KB, the file is renamed with a unique numbered suffix. For example, `WDeploy.log` will be renamed to `WDeploy.log.01`. If a file named `WDeploy.log.01` already exists, `WDeploy.log.02` will be created.

5 To deploy web applications with the administrative console

5.1 To manually deploy web applications

The WDeploy tool must be used to generate deployable WAR or EAR files before they can be deployed to your web application server.

The following steps will deploy a web application using the application server's administrative console.

1. Run the `wdeploy predeploy` command to prepare a single web application, or `wdeploy predeployall` to prepare all web applications.

   Example 1: using `wdeploy predeploy` to prepare the BOE.war web application WAR file for deployment to Tomcat.

   ```
   wdeploy.sh tomcat8
     -Das_dir=/opt/usr/tomcat
     -Das_instance=localhost
     -Das_service_name=Tomcat8
     -DAPP=BOE
     predeploy
   ```

   Example 2: using `wdeploy predeployall` to prepare all web applications for deployment to Tomcat.

   ```
   wdeploy.sh tomcat8
     -Das_dir=/opt/usr/tomcat
     -Das_instance=localhost
     -Das_service_name=Tomcat8
     predeployall
   ```

   > **Note**
   >
   > The `predeploy` and `predeployall` commands can be used on machines that do not host a web application server, as long as the parameters required by the `predeploy` or `predeployall` commands are given.

   The WDeploy command will prepare web applications for deployment on a web application server, and creates WAR or EAR files in `BIP_INSTALL_DIR/sap_bobj/enterprise_xi40/wdeploy/workdir/<APP_SERVER>/application` unless you provide the `-Dwork_dir` parameter.

2. Follow the manual deployment procedure specific to your web application server.

Your web application can now be manually deployed on your web application server.

Repeat these steps for any other web applications that need to be installed.

5.1.1 JBoss 6.4.0 administrative console manual deployment

Ensure that the web application server is installed, configured, and running (either in standalone or domain mode depending on your environment). Use the `wdeploy predeploy` command to create WAR files such as `BOE.war` or `AdminTools.war` that can be deployed manually to JBoss:

```
wdeploy.sh jboss6 predeployall
```

The `wdeploy predeploy` command creates an exploded WAR file structure for the Web Services web applications (folders named `dswsbobje.war` and `BusinessProcessBI.war`). For example:

```
jboss6
  application
    dswsbobje.war
      axis2-web
      images
      META-INF
      WEB-INF
```

Once the WAR files are created, copy them to a new location before deploying to JBoss using the JBoss Command Line Interface (CLI).

1. From the JBoss `bin` directory, run the command `jboss-cli` to start the JBoss CLI and press enter.
2. Run the command `connect` to connect to application server and press enter.
3. Run the `/deployment` command on the compressed WAR file or exploded WAR folder.
   - For compressed `.war` files, such as `BOE.war`:
     Standalone server:
     `deploy BOE.war`
   - For exploded `.war` file structures, such as `dswsbobje.war`:
     Standalone server:
     `cd subsystem=deployment-scanner/scanner=default`
     `:write-attribute(name=auto-deploy-exploded,value=true)`

   A message indicating successful deployment is displayed after completion: `{"outcome" => "success"}`

Log onto the JBoss *Administration Console* web interface with the Administrator account at `http://<WAS_HOSTNAME:/WAS_PORT>/console` to confirm that your application is running.

5.1.2 JBoss 7.1 administrative console manual deployment

Ensure that the web application server is installed, configured, and running (either in standalone or domain mode depending on your environment). Use the `wdeploy predeploy` command to create WAR files such as `BOE.war` or `AdminTools.war` that can be deployed manually to JBoss:

```
wdeploy.sh jboss7 -DAPP=BOE predeploy
```

The `wdeploy predeploy` command creates an exploded WAR file structure for the Web Services web applications (folders named `dswsbobje.war` and `BusinessProcessBI.war`). For example:

```
jboss7
```

```
  application
    dswsbobje.war
      axis2-web
      images
      META-INF
      WEB-INF
```

Once the WAR files are created, copy them to a new location before deploying to JBoss using the JBoss Command Line Interface (CLI).

When deploying the `AdminTools`, `dswsbobje`, or `BusinessProcessBI` web applications to JBoss 7.1, we recommend you to refer Security exception when deploying AdminTools, dswsbobje, or BusinessProcessBI to JBoss 7.1 [page 91]

1. From the JBoss `bin` directory, run the command `jboss-cli --connect` to start the JBoss CLI and connect to the application server.
2. Run the `/deployment` command on the compressed WAR file or exploded WAR folder. If you are deploying to a managed domain, also run the `/server-group` command.

   Assume for the following examples that the WAR is stored in `/BIPwebapps/` and the server group is named `main-server-group`.

   - For compressed `.war` files, such as `BOE.war` set the `archive` value to `true`:
     Standalone server:

     ```
     /deployment=BOE.war:add(enabled="true",runtime-
     name="BOE.war",content=[{"path"=>"/BIPwebapps/BOE.war","archive"=>true}])
     ```

     Managed domain:

     ```
     /deployment=BOE.war:add(runtime-name="BOE.war",content=[{"path"=>"/BIPwebapps/
     BOE.war","archive"=>true}])
     /server-group=main-server-group /deployment=BOE.war:add(enabled=true)
     ```

   - For exploded `.war` file structures, such as `dswsbobje.war` set the `archive` value to `false`:
     Standalone server:

     ```
     /deployment=dswsbobje.war:add(enabled="true",runtime-
     name="dswsbobje.war",content=[{"path"=>"/BIPwebapps/
     dswsbobje.war","archive"=>false}])
     ```

     Managed domain:

     ```
     /deployment=dswsbobje.war:add(runtime-
     name="dswsbobje.war",content=[{"path"=>"/BIPwebapps/
     dswsbobje.war","archive"=>false}])
     /server-group=main-server-group /deployment=dswsbobje.war:add(enabled=true)
     ```

   A message indicating successful deployment is displayed after completion: `{"outcome" => "success"}`

Log onto the JBoss *Administration Console* web interface with the Administrator account at `http://<WAS_HOSTNAME>:9990/console` to confirm that your application is running.

5.1.3 SAP NetWeaver Technology Platform

5.1.3.1 Prerequisites for deployment on SAP NetWeaver Technology Platform

> **Note**
>
> If you have any existing SAP BusinessObjects Business Intelligence platform web applications running on the server, they must be undeployed before continuing.

Before deploying BI platform web applications to an SAP NetWeaver Application Server component(any version), you must ensure that .html and .htm files are never compressed. For example, in SAP NetWeaver AS component 7.3:

1. Logon to your SAP Administrator portal.

   For example: `http://<servername>:50200/nwa`
2. Navigate to: *Configuration* > *Infrastructure* > *Java System Properties*.
3. On the *Services* tab, select *HTTP provider*.
4. Under *Extended Details*, modify the *AlwaysCompressed* and *NeverCompressed* properties as follows:
   - *AlwaysCompressed*: Remove `*.htm,*.html,text/html` from this property. This field cannot be blank - enter a space if blank.
   - *NeverCompressed*: Add `*.htm,*.html,text/html` to this property.

   Table 26: Example

Name	Default Calculated Value
AlwaysCompressed	(set to empty space if blank)
NeverCompressed	`*.htm,*.html,text/html`

5. Save your changes before exiting.

5.1.3.2 Configuration required before deploying SAP BusinessObjects Explorer to SAP NetWeaver Technology Platform

Before deploying the BI platform web application (`explorer`) to SAP NetWeaver Technology Platform, you must set the `disable.compression.filter` property to `true` in the `/WEB-INF/classes/default.settings.properties` file. By default this value is set to `false`. Modify `default.settings.properties` from the following location:

- `<BIP_INSTALL_DIR>`/sap_bobj/warfiles/webapps/explorer/WEB-INF/classes/

> **Note**
>
> The WDeploy tool does not support deployment to or undeployment from SAP NetWeaver Technology Platform. You must use the `predeploy` or `predeployall` commands of the WDeploy tool to create SCA

files and deploy manually using SAP Software Update Manager (SUM). For detailed instructions on how to perform a manual deployment to SAP NetWeaver Technology Platform, see SAP NetWeaver Technology Platform Deployment with SAP Software Update Manager (SUM) [page 78].

5.1.3.3 SAP NetWeaver Technology Platform Deployment with SAP Software Update Manager (SUM)

Make sure that the web application server is installed, configured, and running. Use the `wdeploy predeploy` command to create SCA packages such as `BOE.sca` and `AdminTools.sca` that can be deployed manually to SAP NetWeaver technology platform.

```
wdeploy.sh sapappsvr73 -DAPP=BOE predeploy
```

You need the SAP Software Update Manager (SUM) to deploy web applications to SAP NetWeaver technology platform. Download SUM from the following location:

https://support.sap.com/swdc *>Support Packages and Patches >A – Z Index>S>SL Toolset <release>>Entry by Component>Software Update Manager (SUM)*.

Install SUM on the same system that hosts SAP NetWeaver technology platform, with network access to the SCA packages to be deployed.

1. Unpack the Software Update Manager package with the following command:

   ```
   SAPCAR - xvf <download directory>\<path>\<Archive>.SAR -R <SAPNW_INSTALL_DRIVE>:
   \usr\sap\<sapsid>
   ```

   Extracting the above files creates a **SUM** folder under the path specified by you.

   > **Note**
   >
   > SAPSID is the System ID which you specify when installing NetWeaver.
   >
   > *SAPSID*: Every R/3 installation (SAP system) of a database server and several app servers running the application logic is uniquely identified by a single SID (SAP System Identification), SAPSID — a three-character code such as C11, PRD, E56, etc.)

2. Run the following `predeploy` or `predeployall` command to generate the SCA files, such as BOE.sca and AdminTools.sca:

   ```
   wdeploy.sh sapappsvr73 predeployall
   ```

   The resulting BI platform web applications are located in:

   ```
   <BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/workdir/sapappsvr73/application
   ```

3. Copy all SCA files to the following folder:

   ```
   <SAPNW_INSTALL>/usr/sap/Trans/EPS/in
   ```

4. Start the SAP NetWeaver application server component and perform the following:

   1. Execute the command `startsap ALL`.

5. Start the Software Update Manager server process with the following command `STARTUP confighostagent <SAPSID>`

You need to start the Software Update Manager server process as a root user from the directory where you installed the Software Update Manager server.

> **Example**
>
> Start the Software Update Manager server process with the following command `STARTUP confighostagent <SAPSID>` from the location `/urs/sap/<sid>/SUM`.

You can find the batch files in the driver where you extracted the SAR.files to the SUM folder.

6. Start the GUI of SUM from a browser at `http://<host>:1128/lmsl/sumjava/<SAPSID>/index.html`
7. In the *Define Target* step, choose the *Manually prepared directory* option, and enter the *Stack file or Directory* path in the text box manually, and select *Next*.
8. Follow the update procedure until the deployment is complete and a confirmation tab is displayed.

> **Note**
>
> For details, see the latest `ProcessOverview.html` report, stored in `<SAPNW_INSTALL_DRIVE>:\usr\sap\<sapsid>\SUM\sdt\htdoc`.

For more information on the Software Update Manager, see the user guides and other documentation at http://help.sap.com.

> **Note**
>
> If you encounter an HTTP or session error when accessing a successfully deployed application (such as the CMC), wait a few minutes and then try refreshing the page.

5.1.4 Tomcat 7 and 8 administrative console manual deployment

Ensure that the web application server is installed, configured, and running. Use the `wdeploy predeploy` command to create WAR files such as `BOE.war` and `AdminTools.war` that can be deployed manually to Tomcat:

```
wdeploy.sh tomcat8 -DAPP=BOE predeploy
```

1. Log onto the *Tomcat Manager* administrative console application at `http://<WAS_HOSTNAME>:<PORT>/manager/html`.

   The default port number is 8080.
2. Set the *Context Path* for the web application to be deployed.

   The context path must be the name of the WAR file, but without its extension and prefaced by a forward-slash. For example, to deploy a web application packaged as `<YOUR_WEB_APPLICATION>.war`, the context path must be `/<YOUR_WEB_APPLICATION>`.
3. Set the *XML Configuration File* setting the location of an XML file that contains the context path and document base.

The document base is the predeployed WAR file you created with the `wdeploy predeploy` command. For example:

```
<Context
  docBase="<BOE_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/workdir/tomcat8/
application/<YOUR_WEB_APPLICATION>.war"
        path="<context_path>"
  crossContext="false" debug="0" reloadable="false" trusted="false"
/>
```

4. Enter the full path to the WAR file and press *Deploy*.
   The WAR file is deployed.

5.1.4.1 To deploy to a Tomcat cluster

To manually deploy web applications to a Tomcat web application cluster distributed over multiple machines, deploy the web applications to each Tomcat web application server. Use the administrative console to deploy web applications to the `webapps` subfolder in the Tomcat home directory for each server instance.

> **Note**
>
> When using Tomcat, stop the web application server before issuing the `wdeploy undeployall` action command.

> **Tip**
>
> It is recommended that you install and configure a hardware or software load balancer if running BI platform web applications on a Tomcat web application cluster. Consult the Tomcat documentation for information on setting up load balancing on a Tomcat cluster.

5.1.5 WebLogic 11gR1 administrative console manual deployment

Before deploying, ensure that the web application server is installed, configured, and running. Create a WebLogic domain in which to run BI platform web applications.

Use the `wdeploy predeploy` command to create WAR files such as `BOE.war` and `AdminTools.war` that can be deployed manually to WebLogic:

```
wdeploy.sh weblogic11 -DAPP=BOE predeploy
```

> **Note**
>
> The `wdeploy predeploy` command creates an unpackaged folder structure for the Web Services web applications (`dswsbobje` and `BusinessProcessBI`) rather than a WAR file. For example:

```
weblogic11
  application
```

```
    dswsbobje
      dswsbobje
                          axis2-web
                          images
                          META-INF
                          WEB-INF
                              lib
      META-INF
  Resources
```

You must select the second, inner `dswsbobje` or `BusinessProcessBI` folder when deploying to WebLogic.

1. Log onto the *WebLogic Server Administrative Console* with a web browser at `http://<WAS_HOSTNAME>:<PORT>/console`.

   The default port number is 7001.

   The *WebLogic Server Administration Console* web page is displayed.
2. (Optional) On the *Change Center* panel, click *Lock & Edit*.

   This step is only required if your domain configuration is locked, such as in a production environment.
3. On the *Domain Structure* panel, click *Deployments*.
4. On the *Summary of Deployments* page, click *Install* and on the *Install Application Assistant* page navigate to the WAR file or folder path:

Option	Description
WAR file (such as `BOE.war`)	Select the path to the WAR file. For example: `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/workdir/weblogic11/application/BOE.war`
Folder structure (such as `dswsbobje`)	Select the path to the folder structure. For example: `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/workdir/weblogic11/application/dswsbobje/dswsbobje` **Note** You must select the second, inner `dswsbobje` or `BusinessProcessBI` folder when deploying to WebLogic.

   Click *Next*.
5. Select *Install this deployment as an application* and click *Next*. After reviewing and providing any additional parameters in the wizard, click *Finish*.
6. (Optional) On the *Change Center* panel, click *Activate Changes* to apply the changes to the web application server.

   This step is only required if your domain configuration is locked, such as in a production environment.

Open the web application in a web browser to confirm that it now runs.

5.1.6 WebSphere 7.0 and 8.5 administrative console manual deployment

5.1.6.1 WebSphere 7.0 administrative console manual deployment - Graphpical User Interface Method

Ensure that the web application server is installed, configured, and running. Use the `wdeploy predeploy` command to create EAR files such as `BOE.ear` and `AdminTools.ear` that can be deployed manually to WebSphere:

```
wdeploy.sh websphere7 -DAPP=BOE predeploy
```

If you are deploying the `BOE` application, or all web applications, increase the time-out setting to avoid a time-out message and deployment failure (see To change the WebSphere 7.0 or 8.5 deployment time-out setting [page 85]).

1. Log onto the WebSphere *Integrated Solutions Console* with the Administrator account at `http://<WAS_HOSTNAME>:<PORT>/ibm/console`.

   The default port number is 9060.
2. Select *Applications* > *Application Types* > *WebSphere enterprise applications* in the menu.
   The *Enterprise Applications* screen appears.
3. Click *Install*.
   The *Preparing for the application installation* screen *Path to the new application* appears.
4. Click *Browse* and choose the web application's EAR file.
   The fully-qualified path to the web application's EAR file appears in the *Full Path* field.
5. Proceed to the next screen.
   The *How do you want to install the application?* screen appears.
6. Accept the default option of *Fast Path* and proceed to the next screen.
   The *Install New Application* screen *Step 1: Select installation options* appears.
7. Accept the default options and proceed to the next screen.
   The *Step 2: Map modules to servers* screen appears.
8. Accept the default options and proceed to the next screen.
   The *Step 3: Summary* screen appears.
9. Review the summary and click *Finish*.
   The web application is installed and a master configuration change confirmation message appears.
10. Click *Save directly to the master configuration*.
    The web application configuration is saved and you are returned to the *Enterprise Applications* screen. Notice that the web application is not yet running.
11. Choose the web application from the list of deployed applications (administered resources).
    The *Configuration* screen appears.
12. Click *Manage Modules*.
    The *Manage Modules* screen appears.
13. Select the web application module (in the *Module* column).
    The *Manage Modules General Properties* screen appears.
14. Select *Classes loaded with local class loader first (parent last)* from the *Class loader order* property.

A confirmation message appears.

15. Click *Save directly to the master configuration*.
    The web application configuration is saved and you are returned to the *Manage Modules* screen.
16. Click *OK*.
    A master configuration change confirmation message appears.
17. Click *Class loading and update detection*.
    The *Class loader* configuration screen appears.
18. Enter a desired polling interval in the *Polling interval for updated files* box and click *OK*.
    A master configuration change confirmation message appears.
19. Click *Save directly to the master configuration*.
    The web application configuration is saved and you are returned to the *Enterprise Applications* screen.
20. Select the web application checkbox and click *Start*.
    A message appears to confirm that the web application started successfully.

The web application has been deployed, configured, and started. Test the web application by using the root context you provided above. Repeat these steps for each web application.

5.1.6.2 WebSphere 7.0 administrative console manual deployment - Command Line Interface Method

Deploy the of EAR files that are one GB or more in size, using WebSphere administrative console manual deployment - Command Line Interface method

Ensure that the web application server is installed, configured, and running. Use the `wdeploy predeploy` command to create EAR files such as `BOE.ear` and `AdminTools.ear` that can be deployed manually to WebSphere:

```
wdeploy.sh websphere7 -DAPP=BOE predeploy
```

If you are deploying the `BOE` application, or all web applications, increase the time-out setting to avoid a time-out message and deployment failure (see To change the WebSphere 7.0 or 8.5 deployment time-out setting [page 85]).

1. From the WebSphere `bin` directory, run the `wsadmin.bat -lang jacl` command to start the WebSphere Command Line Interface and press enter.
2. Run the `$AdminApp install <Location of BOE.ear>/BOE.ear` command on the EAR file.
3. Once the deployment is completed, run the `$AdminConfig save` to save the deployment.

The web application has been deployed, configured, and started.

Log onto the WebSphere *Administration Console* web interface with the Administrator account at `http://<WAS_HOSTNAME:/WAS_PORT>/console` to confirm that your application is running.

5.1.6.3 WebSphere 8.5 administrative console manual deployment - Graphpical User Interface Method

Ensure that the web application server is installed, configured, and running. Use the `wdeploy predeploy` command to create EAR files such as `BOE.ear` and `AdminTools.ear` that can be deployed manually to WebSphere:

```
wdeploy.sh websphere8 -DAPP=BOE predeploy
```

If you are deploying the `BOE` application, or all web applications, increase the time-out setting to avoid a time-out message and deployment failure (see To change the WebSphere 7.0 or 8.5 deployment time-out setting [page 85]).

1. Log onto the WebSphere *Integrated Solutions Console* with the Administrator account at `http://<WAS_HOSTNAME>:<PORT>/ibm/console`.

   The default port number is 9060.
2. Select *Applications* > *Application Types* > *WebSphere enterprise applications* in the menu.
   The *Enterprise Applications* screen appears.
3. Click *Install*.
   The *Preparing for the application installation* screen *Path to the new application* appears.
4. Click *Browse* and choose the web application's EAR file.
   The fully-qualified path to the web application's EAR file appears in the *Full Path* field.
5. Proceed to the next screen.
   The *How do you want to install the application?* screen appears.
6. Accept the default option of *Fast Path* and proceed to the next screen.
   The *Install New Application* screen *Step 1: Select installation options* appears.
7. Accept the default options and proceed to the next screen.
   The *Step 2: Map modules to servers* screen appears.
8. Select the modules you want to deploy and proceed to the next screen.
   The *Step 3: Summary* screen appears.
9. Review the summary and click *Finish*.
   The web application is installed and a master configuration change confirmation message appears.
10. Click *Save directly to the master configuration*.
    The web application configuration is saved and you are returned to the *Enterprise Applications* screen. Notice that the web application is not yet running.
11. Choose the web application from the list of deployed applications (administered resources).
    The *Configuration* screen appears.
12. Click *Manage Modules*.
    The *Manage Modules* screen appears.
13. Select the web application module (in the *Module* column).
    The *Manage Modules General Properties* screen appears.
14. Select *Classes loaded with local class loader first (parent last)* from the *Class loader order* property.
    A confirmation message appears.
15. Click *Save directly to the master configuration*.
    The web application configuration is saved and you are returned to the *Manage Modules* screen.
16. Click *OK*.

A master configuration change confirmation message appears.

17. Click *Class loading and update detection*.
    The *Class loader* configuration screen appears.
18. Enter a desired polling interval in the *Polling interval for updated files* box and click *OK*.
    A master configuration change confirmation message appears.
19. Click *Save directly to the master configuration*.
    The web application configuration is saved and you are returned to the *Enterprise Applications* screen.
20. Select the web application checkbox and click *Start*.
    A message appears to confirm that the web application started successfully.

The web application has been deployed, configured, and started. Test the web application by using the root context you provided above. Repeat these steps for each web application.

5.1.6.4 WebSphere 8.5 administrative console manual deployment - Command Line Interface Method

Deploy the of EAR files that are one GB or more in size, using WebSphere administrative console manual deployment - Command Line Interface method

Ensure that the web application server is installed, configured, and running. Use the `wdeploy predeploy` command to create EAR files such as `BOE.ear` and `AdminTools.ear` that can be deployed manually to WebSphere:

```
wdeploy.sh websphere8 -DAPP=BOE predeploy
```

If you are deploying the `BOE` application, or all web applications, increase the time-out setting to avoid a time-out message and deployment failure (see To change the WebSphere 7.0 or 8.5 deployment time-out setting [page 85]).

1. From the WebSphere `bin` directory, run the `wsadmin.bat -lang jacl` command to start the WebSphere Command Line Interface and press enter.
2. Run the `$AdminApp install <Location of BOE.ear>/BOE.ear` command on the EAR file.
3. Once the deployment is completed, run the `$AdminConfig save` to save the deployment.

The web application has been deployed, configured, and started.

Log onto the WebSphere *Administration Console* web interface with the Administrator account at `http://<WAS_HOSTNAME:/WAS_PORT>/console` to confirm that your application is running.

5.1.6.5 To change the WebSphere 7.0 or 8.5 deployment time-out setting

The deployment of the BI platform web applications to a WebSphere 7, 8.5, or 8.5.5 web application server may take some time.

If you receive a time-out message while deploying web applications to a WebSphere 7, 8.5, or 8.5.5, increase the deployment time-out setting.

1. Use a text editor to edit the configuration file `deployment.xml`. The location of `deployment.xml` will vary depending on how your server was installed and configured.

   The `deployment.xml` configuration file is typically located in `<DEPLOYMENT_CELL>/applications/isclite.ear/deployments/isclite/deployment.xml`.

   Substitute `<DEPLOYMENT_CELL>` with the name of the deployment server cell name.

   For example, if the cell is named `NetworkDeploymentCell01`, the full path to `deployment.xml` could be `/opt/ibm/WebSphere/AppServer/profiles/Dmgr01/config/cells/NetworkDeploymentCell01/applications/isclite.ear/deployments/isclite/deployment.xml`.
2. Set the attribute `invalidationTimeout` to the desired value, in minutes, where the maximum value is `-1` (do not time out).
3. Save `deployment.xml`.
4. Restart the WebSphere service.

The WebSphere time-out setting has been changed.

5.1.6.6 To deploy to a WebSphere cluster

To manually deploy the BI platform web applications to a WebSphere web application cluster distributed over multiple machines, you need to deploy the web applications to the machine hosting the WebSphere Deployment Manager. Once all the required web applications have been installed, you can use the WebSphere Integrated Solutions Console to separately deploy these applications to the cluster.

> **Tip**
>
> It is recommended that you install and configure a hardware or software load balancer if running BI platform web applications on a WebSphere web application cluster. To configure the load balancer and cluster setup, consult your WebSphere documentation.

To deploy your web applications to a WebSphere cluster, use the following general workflow:

1. If the BI platform is installed to the same machine hosting the WebSphere Deployment Manager, skip to step 3. If the BI platform and the WebSphere Deployment Manager runs on different machines first copy the WDeploy tool and environment to the machine hosting the WebSphere administration server.
2. Modify the `config.websphere<X>` file located in `<BIP_INSTALL_DIR>\SAP BusinessObjects Enterprise XI 4.0\wdeploy\conf`.

   You need to provide information for the administration server. For example:

   ```
   as_dir=C:\Program Files\IBM\WebSphere\AppServer
   as_soap_port=8779
   as_virtual_host=default_host
   as_admin_is_secure=false
   enforce_file_limit=true
   ```
3. Open a command-line console and run the following command:

   ```
   wdeploy.sh websphere7 predeployall
   ```

> **Note**
>
> Use `websphere8` for WebSphere 8.5 or 8.5.5.

4. Open the WebSphere Integrated Solutions Console.
5. Go to *Applications* > *Enterprise Applications* to separately install each web application to deploy from the following directory: `<BIP_INSTALL_DIR>\SAP BusinessObjects Enterprise XI 4.0\wdeploy\workdir\websphere<X>\application\`

   > **Note**
   >
   > All web applications are stored as `EAR` modules.

6. Follow the Install new application steps in the console to install the web application

   > **Note**
   >
   > In *Map modules to servers*, make sure that you highlight the target cluster and select the module to install before clicking Apply.

7. After installing the application, click *Save*.
8. Repeat steps 5 to 7 for each EAR file to install.
9. Go to *System administration* > *Nodes* and select the nodes in the cluster that are not indicated as synchronized
10. Click *Synchronize*.
11. For each application server in the cluster, go to *Servers* > *Application servers* > *<app_server_name>* > *Session management* > *Distributed environment settings* > *Tuning parameters* > *Custom tuning parameters* and select *All session attributes* from the *Write contents* property.

    The *Write contents* property must be set to *All session attributes* to ensure proper fail-over of your web application. If you are not using custom settings, ensure that you are using a suitable tuning level for your deployment, such as *High* or *Low*, that sets this property to *All session attributes*.

12. Go to *Applications* > *Enterprise Applications* to start the application just installed.

6 Known issues and work-arounds

6.1 Windows line endings in wdeploy.sh script

The `wdeploy.sh` script may contain Windows DOS line endings when copied from a Windows machine to a Unix or Linux system.

To resolve this problem, use a text editor or a utility like `dos2unix` to convert `wdeploy.sh` from Windows DOS line endings (carriage return, line break) to Unix line endings (carriage return).

6.2 Renaming BOE web application or web application source tree

When the BI platform web application source tree in folder is renamed, it may not be properly deployed by the WDeploy tool. This occurs on all supported platforms. The source tree folder is located in:

`<BIP_INSTALL_DIR>/enterprise_xi40/warfiles/webapps`

To work around this issue, follow these steps:

1. Locate the BOE web application configuration file, `BOE.properties` in `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/conf/apps`
2. Rename `BOE.properties` so that it reflects the new name for the web application WAR file.
   For example, if you want to rename the web application from BOE to MYBOE, and you have already renamed `BOE.war` to `MYBOE.war`, rename `BOE.properties` to `MYBOE.properties`.
3. Use a text editor to update the contents of the newly named `.properties` file. Update the web application information in the configuration file.

   ```
   #Business Objects Configuration Utility
   #BOE specific properties
   warfile=<WEB_APP_NAME>.war
   appvdir=<WEB_APP_NAME>
   buildfile=<WEB_APP_NAME>.xml
   osgisupported=true
   ```

   For example, if you want to rename the web application from BOE to MYBOE, replace `<WEB_APP_NAME>` above with `MYBOE`.
4. Rename `BOE.xml` so it reflects the new name for the web application WAR file.
   For example, if you want to rename the web application from BOE to MYBOE, and you have already renamed `BOE.war` or `BOE.ear` to `MYBOE.war` or `MYBOE.ear` , rename `BOE.xml` to `MYBOE.xml`.

The WDeploy tool can now deploy the newly-named web application to the web application server.

6.3 Using WDeploy in a pure IPv6 environment

Using the `wdeploy` command in a pure IPv6 environment with the Oracle Java Development Kit (JDK), the Oracle JDK may not allow the web application server to bind with an IPv6 address, causing `wdeploy` commands to fail.

This is because the Oracle JDK defaults to use IPv4 addresses. Change the Oracle JDK settings so that Java uses IPv6 addresses by setting the `JAVA_OPTIONS` variable in your environment or start-up script:

```
JAVA_OPTIONS="-Djava.net.preferIPv6Addresses=true"
```

For example, on a WebLogic web application server, add `JAVA_OPTIONS="-Djava.net.preferIPv6Addresses=true"` to the `setDomainEnv.sh` or `setDomainEnv.cmd` scripts.

Restart your web application server, and verify connectivity with the `::1` or `localhost` alias in the `hosts` file.

6.4 Web Services on split web tier servers

The Web Services web application (`dswsbobje.war`) is not supported on split web tier deployments. Split web tier deployments have separate web and web application servers. WDeploy will process the Web Services web application as a standalone web application even in a split web tier deployment.

6.5 WDeploy with non-English languages

When using a non-English language in the WDeploy tool:

- The WDeploy GUI tool does not support non-English characters in the server admin username or password parameters in the `config.<WEB_APP_SERVER>` configuration file.
- On Windows, the WDeploy GUI and command-line tools may fail and throw an exception when passing in non-English file paths with UTF-8 characters. The log file indicates that the path consists of invalid characters and cannot be found.

6.6 Web application not removed from server

If a web application was not removed with the WDeploy undeploy or undeployall commands, use the administrative console to stop all web applications and restart the server, then re-run the `undeploy` or `undeployall` command.

6.7 Launching WDeploy GUI on Red Hat Linux Enterprise servers

Starting WDeploy GUI on Red Hat Linux Enterprise Server 5.1 or Red Hat Linux Advanced Server 5.x with SE Linux enabled may result in the following error message:

```
Can't load 'perl/lib/site_perl/auto/XML/LibXML/Common/Common.so' for module
XML::LibXML::Common:
[...]/perl/extlibs/libz.so.1: cannot restore segment prot after reloc
```

To work around this problem, disable SE Linux:

1. Run `/usr/sbin/setenforce 0` with root privileges.

   For example:

   ```
   sudo /usr/bin/setenforce 0
   ```

2. Update the configuration file `/etc/sysconfig/selinux` so that the `SELINUX` parameter is set to `disabled`.

   For example:

   ```
   SELINUX=disabled
   ```

3. Reboot the system.

The WDeploy GUI is now able to start normally.

6.8 Copy MobileOTA14.properties after performing Web Tier installation

If you plan to use BI platform Mobile support, and you have performed a Web Tier installation, you must copy the `MobileOTA14.properties` file to the host that received the Web Tier installation (mostly likely, the web application server).

To copy `MobileOTA14.properties` to the host that received the Web Tier installation, use the following steps.

1. Locate `MobileOTA14.properties` on a host that received a *Full* or *Custom / Expand* installation of the BI platform.

   The file `MobileOTA14.properties` is located in:

   `<BIP_INSTALL_DIR>/enterprise_xi40/wdeploy/conf/apps`

2. Copy `MobileOTA14.properties` to the corresponding path on the host that received the Web Tier installation.

6.9 Cancel button in WDeploy GUI tool

Pressing the WDeploy *Cancel* button during the deployment of web applications to a web application server may not remove web applications or supporting files that have already been copied to the web application server.

To work around this problem, manually undeploy or delete the files from the web application server. With some web application servers, the *Cancel* button may be disabled. This is a known limitation of the JDK being used for deployment.

6.10 JBoss

6.10.1 Security exception when deploying AdminTools, dswsbobje, or BusinessProcessBI to JBoss 7.1

When deploying the `AdminTools`, `dswsbobje`, or `BusinessProcessBI` web applications to JBoss 7.1, you may encounter the following error:

```
java.lang.SecurityException: Toolkit not encapsulated by a jar.
```

This error is thrown by an RSA library. To resolve the issue, you must make changes to the web application source files and to your JBoss application server before predeploying and deploying the web application. The following example uses the `AdminTools` application. Follow the same steps for the `dswsbobje` and `BusinessProcessBI` applications:

1. Copy all files from the following WDeploy RSA module directory:
   `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/rsa_module`
2. On your JBoss application server, create an `rsa\main` directory under `modules\com` and paste all files copied in Step 1:
   `<JBOSS_INSTALL_DIR>/modules/com/rsa/main`
3. Move the `jboss-deployment-structure.xml` file from:
   `<JBOSS_INSTALL_DIR>/modules/com/rsa/main`
   and place the file in the following `AdminTools` source file directory:
   `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/warfiles/webapps/AdminTools/WEB-INF`
4. Remove the RSA JAR files `certjFIPS.jar`, `cryptojFIPS.jar`, and `ssljFIPS.jar` from the `AdminTools` source files:
   `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/warfiles/webapps/AdminTools/WEB-INF/lib`
5. Predeploy the modified `AdminTools` web application using the WDeploy tool. For example:

   ```
   wdeploy jboss7 predeploy -DAPP=AdminTools
   ```

6. Deploy the modified `AdminTools` WAR file using the JBoss Command Line Interface (CLI). See JBoss 7.1 administrative console manual deployment [page 75] for examples on using CLI.

6.11 SAP NetWeaver Technology Platform

6.11.1 Incorrect service level, patch level and name parameters displayed when deploying to SAP NetWeaver Technology Platform using SUM

When deploying BI platform 4.0 Support Package 1 or later web applications to your SAP NetWeaver application server component using SAP Software Update Manager (SUM), the `servicelevel`, `patchlevel` and `scn` parameters may display incorrect values and need correcting. To resolve the issue, ensure that each web application bundle's `SAP_metadata.Properties` file has their parameters set to the following values:

- The `servicelevel` and `patchlevel` parameters must match the actual Support Pack and Patch release you are applying. For example:
  - For Support Package 1, set `servicelevel` to 1 and `patchlevel` to 0.
  - For Support Package 2 Patch 1, set `servicelevel` to 2 and `patchlevel` to 1.
- The `scn` and `name` parameters must have identical values. For example, if the `name` property is set to a value of `BOEWEBAPPJAVA` then `scn` property must also be set to `BOEWEBAPPJAVA`.

The `SAP_metadata.Properties` files for different web application bundles can be found in the following locations:

- `BOE.sca`: `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/SLDSupport/NWSLD/BOE`
- `dswsbobje.sca`: `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/SLDSupport/NWSLD/dswsbobje`
- `BusinessProcessBI.sca` (deprecated): `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/SLDSupport/NWSLD/BusinessProcessBI`
- `MobileOTA14.sca`: `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/SLDSupport/NWSLD/MobileOTA14`
- `OpenSearch.sca`: `<BIP_INSTALL_DIR>/sap_bobj/enterprise_xi40/wdeploy/SLDSupport/NWSLD/OpenSearch`

6.11.2 The WDeploy tool does not support deployment to or undeployment from SAP NetWeaver Technology Platform

The WDeploy tool does not support deployment to or undeployment from SAP NetWeaver technology platform. You must use the `predeploy` or `predeployall` commands of the WDeploy tool to create SCA files and deploy manually using SAP Software Update Manager (SUM). For detailed instructions on how to perform a manual deployment to SAP NetWeaver technology platform, see SAP NetWeaver Technology Platform Deployment with SAP Software Update Manager (SUM) [page 78].

6.12 Tomcat

6.12.1 Undeploy web applications from Tomcat using WDeploy

The `wdeploy undeploy` command on a Tomcat web application server may encounter an error if the web application server is not shut down and still in use. Work around this issue by shutting down the Tomcat web application server before attempting to run the `wdeploy undeploy` command.

6.12.2 Tomcat may not initially load web applications after running WDeploy

Web applications newly deployed on Tomcat with the WDeploy tool may not initially load if a non-default context path is used. Restart Tomcat for the changes to take effect.

6.12.3 HTTP 404 error is displayed when explorer url is launched after an update installation

If you deploy SAP BusinessObjects Business Intelligence (BI) web applications to Tomcat 8 after you update SAP BusinessObjects Business Intelligence (BI) from 4.0 SP8 and onwards to 4.1 SP6 onwards, and if you launch explorer url, the following error is displayed: HTTP Status 404 - / explorer.

For Example: If you deploy BI web applications to Tomcat 8, after you update BI from from 4.0 SP8 to 4.2 or 4.0 SP10 to 4.2, and if you launch explorer the following error is displayed: HTTP Status 404 - / explorer.

To workaround this issue, perform the following steps:

1. Navigate to *Start* > *Central Configuration Manager*.
2. In the *Central Configuration Manager* window, select *Apache Tomcat 8*.
3. Choose *stop* at the top of the window to stop the *Apache Tomcat 8*.
4. . Navigate to `<BOE_Install_Dir>SAP BusinessObjects\SAP BusinessObjects Enterprise XI 4".0\warfiles\webapps\explorer\WEB-INF`.
5. In the Web.XML file replace `com.businessobjects.webutil.internal.filters.StrutsParamFilter` with `com.businessobjects.bip.core.web.filters.StrutsParamFilter` and save the file.
6. Redeploy the BOE and explorer web applications to tomcat 8 using Wdeploy.
7. In the *Central Configuration Manager* window, Select *Apache Tomcat 8* and choose *start*.

6.13 WebLogic

6.13.1 Undeploy Web Services from WebLogic

The `wdeploy undeploy` or `wdeploy undeployall` commands may not remove the BusinessProcessBI and dswsbobje Web Services web applications from a WebLogic 10.3.x web application server.

To work around this problem, stop the BusinessProcessBI and dswsbobje web applications with the WebLogic administrative console and restart the web application server. When the web application server has restarted, use the `wdeploy undeploy` or `wdeploy undeployall` commands to remove `BusinessProcessBI` and `dswsbobje`.

6.14 WebSphere

6.14.1 Deployment to WebSphere in secured mode

A validation error may be generated when using WDeploy with a WebSphere installation that uses Secure Socket Layer (SSL) encryption. To work around this issue, use the `wsadmin` command to manually accept the SSL certificate before attempting to deploy with WDeploy.

For example, change directories to `<WEBSPHERE_INSTALL_DIR>/AppServer/bin` and run the following command:

```
./wsadmin -conntype SOAP -port <SOAP_admin_port> -user <as_admin_username> -
password <as_admin_password>
```

Replace `<SOAP_admin_port>` with the port number used by WebSphere (e.g. 8880), `<as_admin_username>` with the username for your administrator account (e.g. `admin`), and `<as_admin_password>` with the password for the account you specified for `<as_admin_username>`.

Press **Y** to accept the certificate, then proceed with the web application deployment using WDeploy.

6.14.2 Internal server error after deploying Web Services to WebSphere 7.0

You may encounter an internal server error after deploying the Web Services provider (`dswsbobje.war`) to WebSphere 7.0 with the Axis2 WS-addressing module enabled. The web services provider application (dswsbobje.war) is built on the Apache Axis2 web service framework which contains this module.

To workaround this issue, the addressing module is disabled in a default installation of the BI platform.

If you are deploying to a web application server other than WebSphere 7.0, and want to enable the Axis2 WS-addressing module, edit the `axis2.xml` file and uncomment the line `<!--<module ref="addressing"/>-->`.

The `axis2.xml` file is located at `/WEB-INF/conf` in your Web Service provider WAR file. Restart your web application server for the changes to take effect.

6.14.3 WASX7017E: Exception deploying in WebSphere

You may encounter the following exception while using WebSphere:

```
com.ibm.websphere.management.exception.ConfigServiceException

com.ibm.websphere.management.exception.ConnectorException

org.apache.soap.SOAPException: [SOAPException: faultCode=SOAP-ENV:Client;

msg=Read timed out; targetException=java.net.SocketTimeoutException: Read timed out]
```

To workaround this issue, try modifying the timeout values in the following locations:

- Open the `soap.client.props` file and increase or remove the SOAP connection timeout set by the property:

  ```
  com.ibm.SOAP.requestTimeout=0
  ```

  `soap.client.props` is located at:
  `<WAS_INSTALL_DIR>/profiles/<PROFILE>/properties/soap.client.props`
- In the WebSphere *Integrated Solutions Console*, increase the value of the `requestTimeout` property on the JMX SOAP connector for the application server:

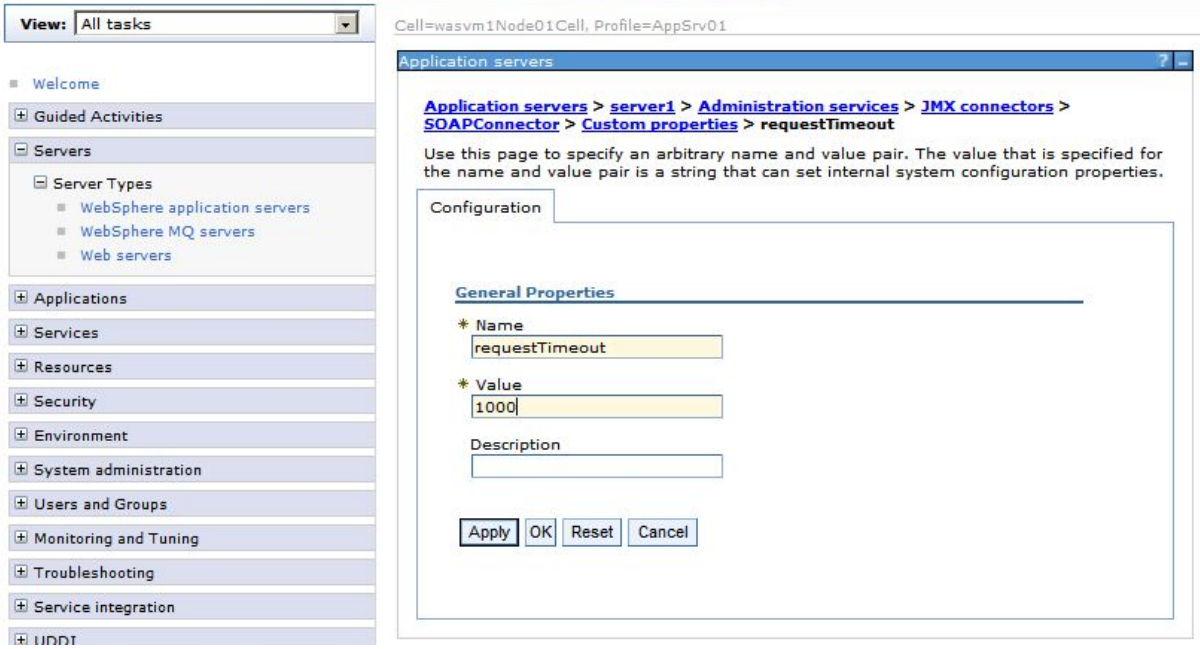


Figure 1:

> **Note**
>
> Images created using the third party tools are available in English language only.

> **Note**
>
> Access the WebSphere console at `http://<WAS_HOSTNAME>:<PORT>/ibm/console`. The default port number is 9060.

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