



**Rational.** software

## **IBM Rational Build Forge samples** IBM WebSphere deployment

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Level: Intermediate

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This example demonstrates a very basic project library that creates and deploys a Java™ application to IBM® WebSphere® Application Server. Common tools and applications are used throughout the steps of this project. Please note that these examples are not intended to run successfully without modification to match a specific environment.

## Importing the project

Before you begin, import the file named `WebSphereDeploy.xml` by following the instructions in the `README.pdf` file. Be sure to check the boxes marked **Import Selectors** and **Import Filters**.

### Note:

After the file is imported, a project will exist in the Projects section of your IBM® Rational® Build Forge® installation named WebSphere Deployment Sample. You must be logged in as a user with Build Engineer Group Access view the project and its subcomponents.

## Servers

Two new selectors, Java Build Server and WebSphere Server, are created with this project. To view them, navigate to **Servers > Selectors**. Currently, Server Authentications are not imported; therefore, these are merely examples.

Notice that, in the Projects view, the imported project has a selector of Java Build Server. Also notice that when the steps for the WebSphere Deployment Sample project are shown, one of the steps has the WebSphere Servers selector. The rest of the steps inherit the default (Java Build Server) selector from the project definition.

## Environments

This project uses two environments to build and deploy the application to a Web server. The first, called WebSphere Environment, contains many environment variables that are required for WebSphere and IBM Rational ClearCase®.

The second environment, 'WebSphere Ant Environment' contains all of the environment variables that need to be set in order to use ANT executables.

All of the variables specified within the environments are required for the third-party tools to behave correctly. You can find more information about each individual variable in the documentation for the given product.

## Filters

Browsing to **Projects**. Log Filters shows two filters that were imported with the project. Steps employ filters to determine, through the output from the command, if the result is successful or not.

The first filter, called Ant Failure, searches through the output of the Ant commands for the phrase BUILD FAILED. If the phrase is found, the step will be marked as failed. In the second filter, Test Analysis Filter, several conditions are set to determine the outcome of the unit test steps. If the phrases *Exception*, *[F,f]ailure*, or *[E,e]rror* are found, the step is set to failed. However, if the phrases *Hello World!*, *PASS*, or *OK* are **also** found, the failure is overridden or cleared.

**Note:**

The syntax shown in the phrases *[F,f]ailure* and *[E,e]rror* tell the filter that the case of the first letter is unimportant.

**Steps**

You can view the commands for each step by clicking on the step name in the Projects view. The step names are deliberately descriptive to make it easier to see the overall flow of the project. The table that follows provides additional detail about how each step is configured. Familiarity with the tools that are being automated by Build Forge (cleartool, Java, ANT, and WebSphere) is assumed, and these examples are not intended as a tutorial on the tools themselves.

**Note:**

In this example, many steps perform similar operations; therefore, they are grouped by their step numbers and relevance.

**Table 1. Step descriptions**

Step number	Step name	Description
1	Check Out Files	These are the commands to checkout code from Clearcase by using the command line tool, cleartool.  The directory that the code is checked out into is also named the value of the <i>MODULE</i> variable.
2	update version	Looks in the specified directory for a file named banner.html and changes all instances of the string @Version@ to the major and minor revision numbers (stored in the Tags section of the Projects configuration).
3–12	Call Target	Each of these steps calls an Ant target from the build.xml file to clean, create, compile, and bundle the software being built. Each of these steps uses the special WebSphere Ant Environment to access the Ant executable files.  <b>Note:</b> Steps 3–8 are run threaded (simultaneously), but 9–12 must run only after 3–8 are completed and in the order specified.
13	Create Checkpoint	Run in threaded mode with Step 14.  Stores information about the current state of the working directory for the Bill of Materials. For more information on the .scan command, see Build Forge Help documentation.
14	Update ear file	Run in threaded mode with Step 13. Deploys the newly created .ear file to the WebSphere servers.
15	Remove View	Remove the view specified by this Build tag.

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