

JBoss ESB 4.0 GA RC1

Getting Started With JBoss ESB

JBESB-GS-12/1/06



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About This Guide

What This Guide Contains

The goal of this document is assist you in getting up and running with test applications on JBossESB as quickly as possible.

Audience

This guide is anyone who is responsible for using JBoss ESB 4.0 GA RC1 installations and wants to know how to install and use it.

Prerequisites

None.

Organization

This guide contains the following chapter:

1. **Chapter 1, Installation:** This chapter reviews prerequisites (software needed to operate JBossESB), downloading JBossESB, and building JBossESB.

Convention	Description
<i>Italic</i>	In paragraph text, italic identifies the titles of documents that are being referenced. When used in conjunction with the Code text described below, italics identify a variable that should be replaced by the user with an actual value.
Bold	Emphasizes items of particular importance.
Code	Text that represents programming code.
Function Function	A path to a function or dialog box within an interface. For example, "Select File Open." indicates that you should select the Open function from the File menu.
() and	<p>Parentheses enclose optional items in command syntax. The vertical bar separates syntax items in a list of choices. For example, any of the following three items can be entered in this syntax:</p> <pre>persistPolicy (Never OnTimer OnUpdate NoMoreOftenThan)</pre>
Note:	A note highlights important supplemental information.
Caution:	A caution highlights procedures or information that is necessary to avoid damage to equipment, damage to software, loss of data, or invalid test results.

Table 1 Formatting Conventions

Additional Documentation

In addition to this guide, the following guides are available in the JBoss ESB 4.0 GA RC1 documentation set:

1. **JBoss ESB 4.0 GA RC1 Programmer's Guide:** Provides guidance for writing applications.
2. **JBoss ESB 4.0 GA RC1 TrailBlazer Guide:** Provides a guide to understanding, configuring, deploying and running the LoanBroker TrailBlazer.
3. **JBoss ESB 4.0 GA RC1 Configuring Hypersonic Guide:** This is necessary for setting up the Hypersonic database if you want to use it within the trailblazer.

Contacting Us

Questions or comments about JBoss ESB 4.0 GA RC1 should be directed to our support team.

Getting Started

After downloading and expanding the JBoss ESB 4.0 Release Candidate distribution, you should have the following file structure.

```

|-- docs
|   |-- config
|   |-- services
|-- install
|   |-- conf
|   |-- data
|   |-- deploy
|   |-- jUDDI-registry
|   |-- message-store
|-- javadocs
|-- lib
|-- samples
|   |-- docs
|   |-- quickstarts
|       |-- helloworld
|       |-- helloworld_action
|       |-- helloworld_embedded_reg
|       |-- more_action
|       |-- simple_cbr
|       |-- simple_transformation
|   |-- trailblazer2
|       |-- banks
|       |-- client
|       |-- docs
|       |-- esb
|       |-- loanbroker
|       |-- template
|-- tools
|   |-- console
|-- xml

```

The quickest way to get started using JBoss ESB is through running one of the quickstarts in the *samples/quickstarts* folder. This will also perform a basic validation of your system. Before doing this however, be sure to check that your system meets the following minimum requirements:

1. JDK 5 (v1.5.0_06 recommended)
2. Ant (v1.6.5 recommended)
3. JBoss Application Server v4.0.4

The Hello World QuickStart

This QuickStart allows you get up and running with JBoss ESB, out of the box. It is located in the distribution under *samples/quickstarts/helloworld_embedded_reg*¹.

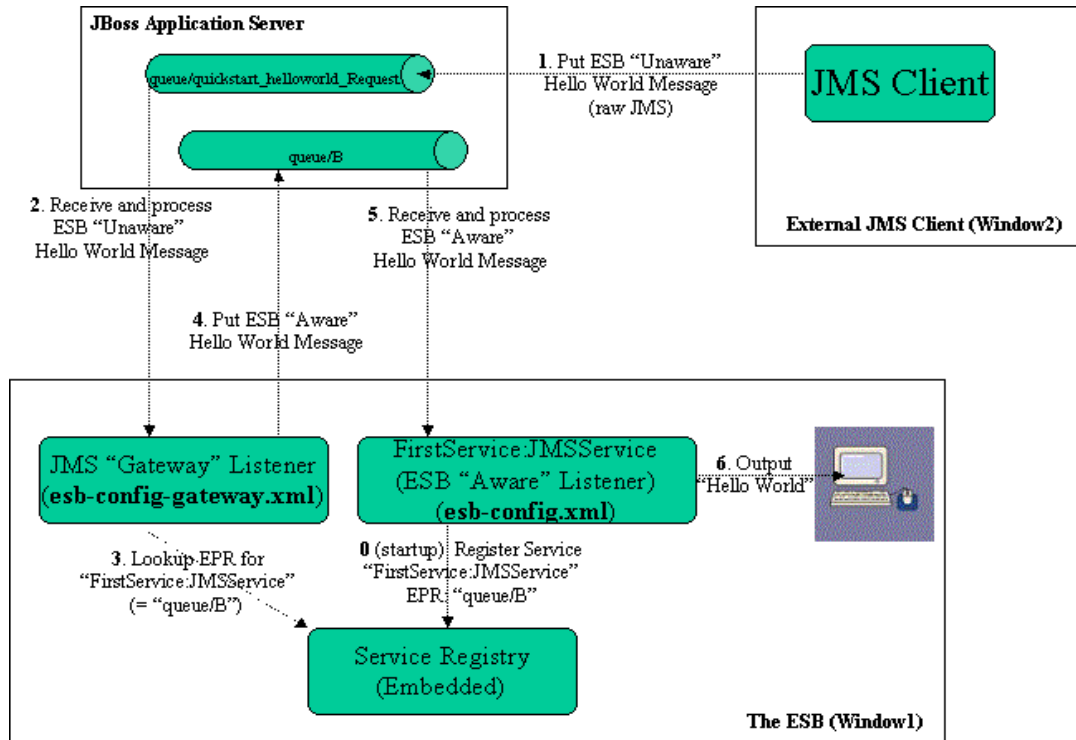
To run this QuickStart:

1. Copy *samples/quickstarts/esb-quickstart-service.xml* to your JBoss Application Server (*jboss-4.0.4.GA/server/default/deploy*).
2. Update the “jboss.home.dir” property setting in *samples/quickstarts/quickstarts.properties* to reference location of your JBoss Application Server.
3. Start you JBoss Application Server.
4. From a command terminal window (“Window1”), change directory into the *samples/quickstarts/helloworld_embedded_reg* directory.
5. In Window1, type “ant”.
6. This will start the ESB Message “Listeners”. Wait for “**Listener Ready**” to appear on the terminal window. The ESB is now running!
7. Open a 2nd command terminal window (“Window2”) and change director to *samples/quickstarts/helloworld_embedded_reg* again.
8. In Window2, type “ant runtest”.
9. Switch back to Window1. You should soon see a “Hello World” message appear in the terminal window.
10. That's it! The QuickStart ran successfully. Your environment is properly configured for JBoss ESB.

¹ All other Quickstarts require a local checkout of the ESB codebase from <http://anonsvn.labs.jboss.com/labs/jbossesb/trunk/> (Subversion Repository). This dependency will be removed for th GA release.

Components of the QuickStart

The following diagram illustrates the sequence of events that take place in this QuickStart. It touches on a number of the key concepts within JBoss ESB¹.



Window1 shows each of the main "ESB" components used in this sample:

1. **Service Registry:** This is a JAXR Registry implementation. In this QuickStart, the registry is using an embedded Datastore as the Service repository (Hypersonic). See *docs/services/RegistryConfiguration.pdf*. For more details on the Registry Service.
2. **JMS Gateway Listener:** A "Gateway Listener" is one of the key architectural components within JBoss ESB. This listener type is, as its name would suggest, the gateway to the ESB from endpoints outside the domain of the ESB. In this case, we're using a JMS Gateway. See the *esb-config-gateway.xml* configuration file in the root of the QuickStart.
3. **The ESB Aware Service Listener:** The "FirstService:SimpleJMSService" ESB Aware Service Listener listens for "ESB Aware" messages on "queue/B". This introduces you further to the concept of ESB "Aware" and "Unaware" messages. We will touch on these next.

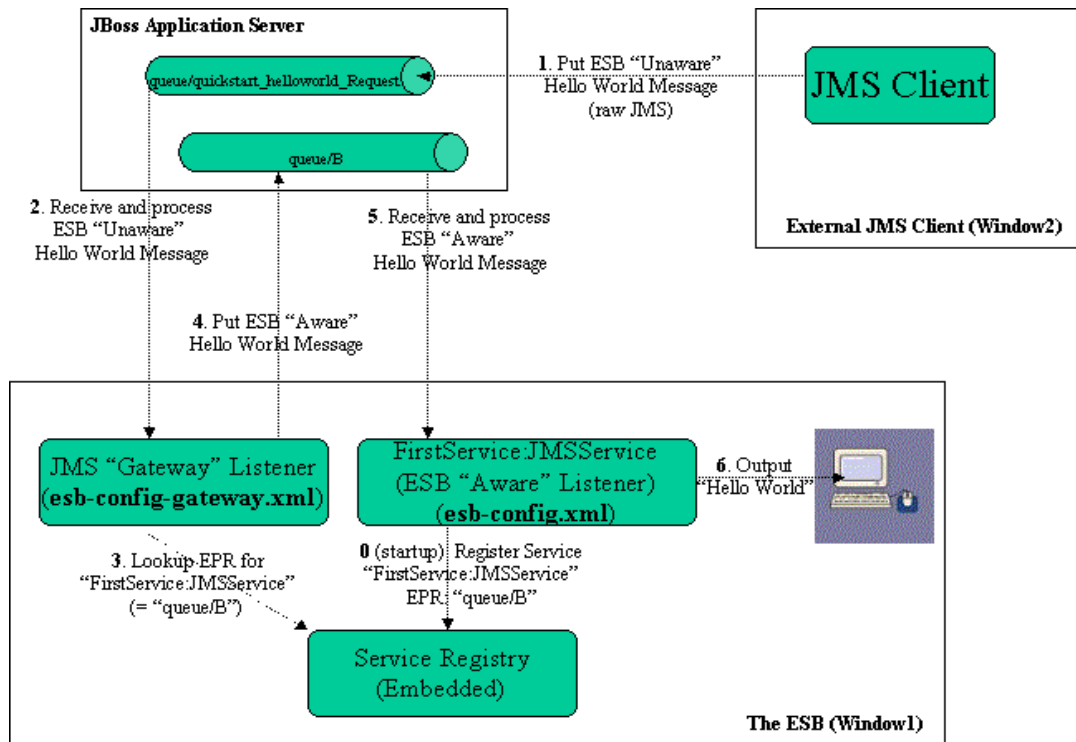
¹ Use the "Zoom" features of your viewer to see the diagram in more detail.

ESB Aware and Unaware Messages

JBoss ESB has a well defined concept of what a message is. This is defined fully in *xml/message.xsd*. This construct makes it possible to pass decorated messages payloads between components of the ESB. The message payload is typically stored in the message “Body” (see the Programmers Guide).

This makes a lot of sense from the point of Services in within the ESB domain being able to collaborate effectively. However, it is not practical to expect endpoints outside the domain of a JBoss ESB deployment to be “aware” of these internal ESB constructs. For this reason, JBoss ESB has the concept of ESB Aware and Unaware Messages and Endpoints, with the Gateway acting as the bridge (adapter) between the two worlds.

QuickStart Sequence of Events



After starting the ESB in Window1 and before any "Hello World" messages are put on the bus, the "FirstService:SimpleJMSService" Service is registered with the Registry Service.

The sequence of events in the Hello World QuickStart are as follows:

1. ESB Unaware JMS Client endpoint puts an ESB Unaware "Hello World" Message (plain String Object) into JMS Queue `"queue/quickstart_helloworld_Request"`.
2. The JMS Gateway Listener receives the ESB Unaware message. The Gateways Job is to adapt this message by making it an ESB Aware Message for consumption by an ESB Aware Endpoint.
3. The JMS Gateway Listener uses the registry to lookup the Endpoint Reference (EPR) for "FirstService:SimpleJMSService" Service. This works out to be JMS Queue `"queue/B"`.
4. The JMS Gateway Listener "adapts" the message into an ESB Aware message and places it into JMS Queue `"queue/B"`.
5. "FirstService:SimpleJMSService" Service receives the message.
6. "FirstService:SimpleJMSService" Service extracts the payload from the message and prints it to the console.

TrailBlazer

Overview

JBoss TrailBlazers and Demo Applications are designed to help you get up and running quickly with JBoss products and technologies. We encourage you to Run them, Download them, and enjoy the learning process!

The Loan Broker TrailBlazer example was developed to verify your JBossESB installation and also to exhibit some of the numerous capabilities of JBossESB. This example was based on information from www.eaipatterns.org, along with the example found at [JavaZone 2005](#).

For details of configuring and running the TrailBlazer, see the accompanying “Trailblazer” document.