**WebSphere**® IBM WebSphere Multichannel Bank Transformation Toolkit

IBM

**Version 6.1.2**

**Installation guide**

# Contents

# IBM WebSphere Multichannel Bank Transformation Toolkit installation guide

This installation guide describes the hardware and software requirements of IBM® WebSphere® Multichannel Bank Transformation Toolkit and how to install it into IBM Rational® Application Developer so that you can develop applications. This document is for anyone who is installing IBM WebSphere Multichannel Bank Transformation Toolkit.

IBM WebSphere Multichannel Bank Transformation Toolkit in Version 6.1.2 supports 64-bit AIX® and 64-bit Linux on IBM System z® as runtime environment. For other platforms, it supports 32-bit runtime and development environments.

## Typographic conventions

The installation guide uses the following typographic conventions:

| Convention | Description of convention |
|---|---|
| **Bold** | Used to indicate something you select or click in the GUI |
| *Italics* | Used for emphasis or to refer to another document |
| Monospace font | Used to indicate text that you type yourself or screen messages |
| < > | Used to enclose descriptions of variables that you must type yourself or names of tags within XML files as shown in the following examples:<br>• *<variable name>*<br>• <tag name> |

Keys are identified in this guide just as they appear on the keyboard (for example, **Enter**, **Tab**, **Ctrl**).

## Hardware and software requirements

This section lists the hardware and software requirements for the runtime and development environments of IBM WebSphere Multichannel Bank Transformation Toolkit version 6.1.2.

### Hardware requirements

**Hardware requirements for Server**

**Note:** These memory and disk requirements listed below are for the IBM WebSphere Application Server.

For Microsoft® Windows® XP, Server 2003 and 2008
• Intel Pentium processor at 500MHz or faster

- Intel® EM64T or AMD Opteron.
- Minimum 512 MB physical memory; 1 GB recommended
- Minimum 2 GB RAM
- Minimum 1 GB of free disk space for installation (includes SDK)

For Linux® x86
- Intel Pentium processor at 500 MHz or faster
- Intel EM64T or AMD Opteron
- Minimum 512 MB of physical memory; 1 GB recommended
- Minimum 1 GB of free disk space for installation (includes SDK)

For Linux on IBM System z
- System z processors
- Minimum of 1,119MB available disk space for installation
- Minimum of 512 MB memory; 1 GB recommended
- CD-ROM drive

For IBM AIX (32 bit WebSphere Application Server)
- IBM POWER™ family of processors
- Minimum 512 MB physical memory; 1 GB recommended
- Minimum 1 GB of free disk space for installation

For IBM AIX (64 bit WebSphere Application Server)
- IBM POWER family of processors
- Minimum 1 GB physical memory recommended
- Minimum 1 GB of free disk space for installation

For Solaris SPARC
- Sun Solaris operating environment compatible SPARC workstation at 440MHz, or faster
- Minimum 512 MB physical memory; 1 GB recommended
- Minimum 1 GB of free disk space for installation

For additional software products, for example DB2® or IBM Communications Server, refer to the respective product documentation.

**Hardware requirements for Client**
- x86 processors capable of supporting the supported operating systems
- 512 MB RAM
- 500 MB free disk space
- Display Resolution: Super video graphics array/adapter (SVGA) 1024 x 768 display
- High Contrast Mode: 1152 x 768 display, only default font settings (10pt Sans)

**Hardware requirements for development environment**

**Note:** These memory and disk requirements listed below are for the IBM Rational Application Developer.
- Intel Pentium® III processor at 800 MHz, or higher recommended

- Display, minimum requirements: 1024 x 768
- 1 GB RAM minimum, 2 GB RAM
- Disk space requirements: 3.7 GB minimum for installing Rational Application Developer and additional disk space for development resources (minimum disk space can be reduced if optional features and run times are not installed).

If the development environment requires additional software products, for example DB2 or IBM Communications Server, refer to the specific product documentation.

For the latest hardware requirements, refer to the documentation at http://www.ibm.com/software/.

## Software requirements

**Supported Platform**
- Server
  - Red Hat Enterprise Linux ES/AS 4.0 Update 7 (32 bit)
  - Red Hat Enterprise Linux, Version 5 update 3 (32 bit and 64 bit only on IBM system z)
  - Microsoft Windows Server 2003, Enterprise & Standard with SP1(32-bit)
  - Microsoft Windows Server 2008, Enterprise & Standard (32-bit)
  - AIX 5L™ 5.3 with Service Pack 5300-04-01 (32 and 64 bit kernel support)
  - AIX 6.1 with Recommended Maintenance package 6100-00-01-0748 (32 and 64 bit)
  - Sun Solaris operating environment, Version 10 with the latest Patch Cluster (32 bit kernel support)
- Client and development
  - Windows XP Professional + SP3
  - Windows Vista business + SP1
  - Red Hat Enterprise Linux WS 4.0 Update 7
  - Red Hat Enterprise Linux Desktop with Workstation option 5.0
- Installer
  - Windows XP Professional + SP3
  - Windows Vista business + SP1
  - Red Hat Enterprise Linux WS 4.0 Update 7
  - Red Hat Enterprise Linux Desktop with Workstation option 5.0

**Supported database**
- IBM DB2 UDB Enterprise Server Edition V8.2.8
- IBM DB2 UDB Enterprise Server Edition V9 FP4
- IBM DB2 UDB Enterprise Server Edition V9.5 FP1
- Oracle 10g Standard/Enterprise Release 2 - 10.2.0.3
- Oracle 11g Standard/Enterprise Release 1 - 11.1.0.6
- Microsoft SQL Server Enterprise 2005

**Supported development environment**
- IBM WebSphere Application Server V6.1.0.21
- IBM Rational Application Developer V7.5.1

**Supported browsers**
- Internet Explorer 6.0 SP2 or above
- Firefox 3.0

**Supported JDK**
- Server
  - IBM 32-bit SDK Java™ 2 Technology Edition, V5.0 SR2
  - IBM 64-bit SDK for AIX, Java 2 Technology Edition, V5.0 SR2
  - IBM 64-bit SDK for Linux, Java 2 Technology Edition, V5.0 SR2
- Client and development.
  - IBM 32-bit SDK, Java 2 Technology Edition, V5.0 SR2
  - IBM SDK for multiplatforms, Java Technology Edition, V6.0

**Optional software**
- Lotus® Expeditor V6.2 - Client for Desktop, Windows
- Lotus Expeditor V6.2 - Client for Desktop, Linux on x86
- IBM WebSphere MQ for Windows, V6.0.2.5
- IBM WebSphere MQ for Linux on x86, V6.0.2.5
- IBM WebSphere MQ for AIX, V6.0.2.5
- IBM WebSphere MQ for Solaris SPARC, V6.0.2.5
- IBM Communications Server for Linux, Version 6.2.3
- IBM Communications Server for Windows, Version 6.1.2.3
- IBM Communications Server for AIX, Version 6.3.1
- IBM Tivoli® Directory Server for AIX, V6.1.1.1
- IBM Tivoli Directory Server for Windows, V6.1.1.1
- IBM Tivoli Directory Server for Linux, V6.1.1.1
- IBM Tivoli Directory Server for Solaris, V6.1.1.1
- IBM WebSphere Portal Server for AIX, V6.1.0
- IBM WebSphere Portal Server for Windows, V6.1.0
- IBM WebSphere Portal Server for Linux, V6.1.0
- IBM WebSphere Portal Server for Solaris, V6.1.0

For the latest supported software, see http://www.ibm.com/software/components
.

# Additional requirements

Depending on the framework services you use, you may require other hardware and software to support financial devices. The following additional requirements apply to the type of workstation (client, server, or development) that accesses the financial device.

*Table 1. Additional financial devices requirements*

| Framework component | Additional requirements |
|---|---|
| J/eXtensions for Financial Services | Any financial printer, magnetic stripe reader/encoder, or check reader with a device service that is compliant with the J/XFS specification |

# Setting up a Bank Transformation Toolkit development environment

In this procedure, you will set up a development workstation so that you can develop applications based on the IBM WebSphere Multichannel Bank Transformation Toolkit version 6.1.2. Note that the physical machine must comply with the requirements listed in the Hardware and software requirements section, including having IBM Rational Application Developer.

Note: The following procedure describes how to install Bank Transformation Toolkit on top of IBM Rational Application Developer. Each functional unit is contained in its own JAR file to provide greater flexibility both in the development environment and in runtime. Consider reviewing functional units, packages, and dependencies to decide which functional units you need to develop your application. Note, however, that you can add or remove functional units at any time provided you account for their corequisite functional units (functional units that must also exist on the system at the same time).

## Installation package structure

The Bank Transformation Toolkit installation package mainly contains two groups of components - components for the development environment and components for the runtime environment.

### Development environment

For the development environment, Bank Transformation Toolkit supports IBM Rational Application Developer 7.5.1.

For the development environment, there is a set of plug-ins:

* **Plug-ins for IBM Rational Application Developer 7.5.1**

   The plug-ins include components that have dependencies on features provided by IBM Rational Application Developer 7.5.1.

If you have IBM Rational Application Developer 7.5.1 installed on your system, the toolkit installation wizard will take IBM Rational Application Developer as your development environment. After the installation wizard decides that IBM Rational Application Developer is your development environment, it copies the IBM WebSphere Multichannel Bank Transformation Toolkit plug-ins to the /plugins directory of your IBM Rational Application Developer 7.5.1 automatically during the installation.

If IBM Rational Application Developer 7.5.1 is not installed on your system, you will need to copy the plug-ins to the $D(RAD)/plugins directory manually after you have IBM Rational Application Developer installed later. Plug-ins for IBM Rational Application Developer can be found in the *<tooklit_root>*/plugins directory.

### Runtime environment

For the runtime environment, Bank Transformation Toolkit supports WebSphere Application Server 6.1.0.21.

## Installing the Bank Transformation Toolkit on a development workstation

To set up the development workstation, do the following:

1. Install IBM Rational Application Developer.

2. Insert the Bank Transformation Toolkit CD into CD-ROM and browse the CD. If you want to install Bank Transformation Toolkit for windows, locate and double-click the setup.exe in the Windows platform. If you want to install Bank Transformation Toolkit for Linux, locate and invoke setupLinux.bin in the Linux platform. This starts the Installation Wizard for Bank Transformation Toolkit. The **Introduction** window opens.

3. Click **Next**, and the product license agreement window opens. Check the **I accept the terms in the license agreement** checkbox and click **Next**.

4. The Installation Wizard detects if any version of Bank Transformation Toolkit is already installed on your system. Bank Transformation Toolkit version 6.1.2 can coexist with Branch Transformation Toolkit version 4.3, 5.0, 5.1 or 5.2. However Bank Transformation Toolkit version 6.1.2 cannot coexist with Branch Transformation Toolkit version 5.2.0.1 and 5.2.0.2, Bank Transformation Toolkit version 6.1.0 and version 6.1.1. If you already have version 6.1.2 installed, the Installation Wizard will display an error message showing that you already have version 6.1.2 installed. You need unstall previous version 6.1.2 before you installed new version 6.1.2.

5. The Installation Wizard also checks the IBM Rational Application Developer you installed. If you have installed IBM Rational Application Developer, the Install Wizard will install toolkit components designed for IBM Rational Application Developer.

6. You are prompted to choose if you want to install 32-bit or 64-bit BTT. If you want to run BTT in 64-bit AIX or 64-bit Linux on IBM System z runtime environment, select **Bank Transformation Toolkit 6.1.2.0 64-bit** and click **Next**. Otherwise, select **Bank Transformation Toolkit 6.1.2.0 32-bit** and click **Next**.

7. You are prompted to choose the destination directory for the installation files. If you want to choose a location other than the default location (C:\IBM\WebSphere\Multichannel Bank Transformation Toolkit 6.1.2.0 for Windows, and /opt/IBM/WebSphere/Multichannel Bank Transformation Toolkit 6.1.2.0 for Linux), click **Browse**, and select that folder you want to use.

8. Click **Next**, and the **Pre-Installation Summary** window opens. It displays the product name, install folder and the disk space that the installation takes. Click **Install**.

9. The Bank Transformation Toolkit installation program creates the following set of directories on the target machine.

*Table 2. Directories created by installation*

| Directory name | Description of contents |
|---|---|
| license | Product license files |
| javadoc | Product Java documentation |
| lib | Product runtime libraries |

*Table 2. Directories created by installation (continued)*

| Directory name | Description of contents |
|---|---|
| plugins | • Transaction Editor plug-in<br>• APAR viewer plug-in<br>• Migration tool plug-in<br>• Grammar Validator plug-in<br>• Formatter Simulator plug-in<br>• Application Wizard plug-in<br>• XUI Editor plug-in<br>• Deployment Descriptor Editor plug-in<br>• Outline Viewer plug-in<br>• check with JF |
| samples | Product samples |
| template | Template for Foreign Exchange |
| jre | Install Anywhere bundled JVM |
| Uninstall | Product uninstallation files |
| migration | Migration-related files |

10. Start IBM Rational Application Developer.

11. Set some preferences before you import Bank Transformation Toolkit Java source:

   - To work with complex projects, you should use the source folders as source containers instead of creating packages directly inside the project. To do this, you create source folders as children of the project and create your packages inside these source folders. To automate this, go to **Window → Preferences**. Expand the Java node and select the **New Project** node. Enable the **Folders** check box.

   - To develop with the Bank Transformation Toolkit, add the framework functional units (the JAR files containing the classes) to the application classpath. You can use any approach to do this but you must account for the class loader policies.

   A recommended approach is to add an overall classpath variable named **BTT** to point to the root directory of the Bank Transformation Toolkit installation. To do this:

   a. Go to **Window → Preferences**.

   b. Expand the **Java** node and select **Build Path**.

   c. Expand the **Build Path** node and select **Classpath Variables**.

   d. Click **New** and in the **Name** entry field, type the following:

      BTT

   e. In the **Path** entry field, type the path to where the Bank Transformation Toolkit was installed.

   f. Click **OK**.

   In the same way, add another classpath variable named, for example, **BTT_EXTERNAL** to point to the external dependencies. To make the external classpath variable work, all the required external JARs must be in the directory to which this variable points. The overall classpath variables make it easier for you to select the Bank Transformation Toolkit JAR files for your Java project.

Another approach is to define a classpath variable for each functional unit available in the product. Each classpath variable points to the concrete JAR associated with the functional unit (see the tables in Functional units, packages, and dependencies).

The remainder of this procedure and all the other procedures assume that you are using the recommended approach.

12. Create a Java project for application. To create the project:

   a. Select **File** → **New** → **Project**.

   b. Select **Java** in the left panel and then select **Java Project** in the right panel. Click **Next**.

   c. Type the name of the project, such as HomeBanking, and click **Finish**.

13. When deploying an application, you must embed Bank Transformation Toolkit functional units, along with the required application resources, inside the J2EE EAR file. The Bank Transformation Toolkit uses functional units to provide a coherent structure of JAR files that you use to build an application. The JARs in the functional units contain the required set of classes for a given execution environment.

   To make the functional units available to your project, you can either add the compiled JARs to the project's classpath or you can import the JARs into the workspace. You can choose the second option if you want to embed the JARs and resources into your application when, for example, it is self-contained and independently deployed.

   For either option, you only add or import the JARs and their corequisites needed for the application to optimize the deployment and distribution of the application. Consult Functional units, packages, and dependencies to obtain these corequisites.

Once you have installed the Bank Transformation Toolkit in IBM Rational Application Developer, you can start developing Bank Transformation Toolkit-based solutions.

## Setting up the Application Wizard

The Application Wizard for the Bank Transformation Toolkit is a plugin. It provides a quick way to create BTT applications.

Before you use the Application Wizard:
- If you have installed the toolkit before you install the IBM Rational Application Developer, you should copy the following plugin files to the $D(RAD)/plugins directory manually after you have IBM Rational Application Developer installed later:
  - com.ibm.btt.core_6.1.2
  - com.ibm.btt.tools.aw_6.1.2.jar

Perform the following steps to use the Application Wizard:
1. Start IBM Rational Application Developer.
2. Click **File** → **New** → **Project**, and expand **BTT**.
3. Select **Channel Application Project**. The application wizard is launched.

You can also create BTT sample with the Application Wizard by performing the following steps:
1. Start IBM Rational Application Developer.

2. Click **File** → **New** → **BTT**, and expand HelloWorld Samples or Samples.
3. Select **a wizard item**. The BTT Sample is launched.

## Setting up the Transaction Editor

The Transaction Editor for the Bank Transformation Toolkit is a plug-in. Transaction Editor allows you to validate your definition files with a graphical interface.

Prerequisites to use the Transaction Editor:

If you had installed the toolkit before you installed the IBM Rational Application Developer, you need to copy the following plug-in files to the $D(RAD)/plugins directory manually after you have IBM Rational Application Developer installed later:

- com.ibm.btt.tools.migration_6.1.2
- com.ibm.btt.tools.transaction.diagram_6.1.2
- com.ibm.btt.tools.transaction.dominate_6.1.2
- com.ibm.btt.tools.transaction.edit_6.1.2
- com.ibm.btt.tools.transaction.editor_6.1.2
- com.ibm.btt.tools.transaction_6.1.2
- com.ibm.btt.core_6.1.2
- com.ibm.btt.tools.common_6.1.2

To use the Transaction Editor, follow these steps:

1. Start IBM Rational Application Developer.
2. Create a simple project.
3. Create a folder named transaction in the project.
4. Right-click the folder, and select **New** → **Other...**. Expand **BTT**, and select **Transaction**, and click **Next**.
5. You can choose to create a Transaction directly or using templates.
   - To create a Transaction directly, click **Next**. Select one transaction type and click **Finish**. Then the Transaction Editor is launched.
   - To create a transaction using templates, select the **Create a transaction using templates** checkbox, and click **Next**. Select one of the available templates to generate a transaction and click **Finish**. Then the Transaction Editor is launched.

## Setting up Deployment Descriptor Editor

The Deployment Descriptor Editor for the Bank Transformation Toolkit is a plug-in.

Prerequisites to use the Deployment Descriptor Editor:

- If you had installed the toolkit before you installed the IBM Rational Application Developer, you need to copy the following plug-in files to the $D(RAD)/plugins directory manually after you have IBM Rational Application Developer installed later:
  - com.ibm.btt.core_6.1.2
  - com.ibm.btt.tools.dde_6.1.2

1. Start IBM Rational Application Developer.
2. Deployment Descriptor Editor is designed for editing btt.xml file. Find the btt.xml file in your project and right-click the file, and select **Open with** → **BTT Global Configuration Editor**.
3. The Deployment Description Editor is launched. With this tool, you can edit btt.xml file both in the UI view and in xml source code. And the entire project takes this btt.xml file as the effective central manager for all components.

## Setting up the XUI Editor

The XML UI (XUI) Editor for the Bank Transformation Toolkit is a plugin. It is a WYSWYG tool that creates BTT XML based transaction UI files.

Before you use the XUI Editor:
- If you have installed the toolkit before you install the IBM Rational Application Developer, you should copy the following plug-in files to the $D(RAD)/plugins directory manually after you have IBM Rational Application Developer installed later:
  - com.ibm.btt.core_6.1.2
  - com.ibm.btt.rcp.xui_6.1.2
  - com.ibm.btt.rcp.xui.editor_6.1.2

Perform the following steps to use the XUI Editor:
1. Start IBM Rational Application Developer.
2. Click **File** → **New**, and expand **BTT** folder.
3. Select **Rich Client Page**. The XUI Editor is launched.

## Setting up the Outline Viewer

The Outline Viewer for the Bank Transformation Toolkit is a plug-in. Outline Viewer facilitates the XML based end-to-end programming model.

Prerequisites to use the Outline Viewer:
- If you had installed the toolkit before you installed the IBM Rational Application Developer, you need to copy the following plug-in files to the $D(RAD)/plugins directory manually after you have IBM Rational Application Developer installed later:
  - com.ibm.btt.tools.transaction.editor_6.1.2
  - com.ibm.btt.tools.validation_6.1.2
  - com.ibm.btt.tools.dde_6.1.2

To use the Outline Viewer, follow these steps:
- Add BTT nature to the project:

  Right-click on the project folder, and select **BTT XML Tools** → **Add BTT Nature** in the pop menu. Then click the **Select from workspace** option in **File Import Wizard** window. Select the btt.xml from the newly created folder which contains your definition files.
- Open the Project Explorer View:

  The Outline View works in the Project Explorer view. Click **Window** → **Show View** → **Other...**, expand **General** and select **Project Explorer**.
- Enable BTT content:

In the **Project Explorer** view, select **Filters**. In the **Available Customizations** window, click the **Available Content** tab. Then select **BTT Content** and click **OK** button.

The elements of the definition file are shown in a hierarchical tree.

## Setting up the Grammar Validator

The Grammar Validator for the Bank Transformation Toolkit is a plug-in. Grammar Validator allows you to validate your definition files with a graphical interface.

Prerequisites to use the Grammar Validator:
- If you had installed the toolkit before you installed the IBM Rational Application Developer, you need to copy the following plug-in files to the $D(RAD)/plugins directory manually after you have IBM Rational Application Developer installed later:
  - com.ibm.btt.tools.validation_6.1.2

To use the Grammar Validator, follow these steps:
1. Start IBM Rational Application Developer.
2. Create a simple project.
3. Create a folder to contain the XML files, and copy your XML files to this folder.
4. Click **Window** › **Preferences...**.
5. In the dialog box that pops up, select **BTT** › **Validator** in the left panel.
6. In the right panel, the **Schematron (SCH) files path** are set automatically.
7. Click **OK**.
8. Right-click the XML file, and select **Validate**.
9. The error will be shown in the editor if there are any.

## Setting up the formatter simulator

The formatter simulator for the Bank Transformation Toolkit is a plug-in. It simulates how a string is parsed into a specific data item.

Prerequisites to use the formatter simulator:
- If you had installed the toolkit before you installed the IBM Rational Application Developer, you need to copy the following plug-in files to the $D(RAD)/plugins directory manually after you have IBM Rational Application Developer installed later:
  - com.ibm.btt.core_6.1.2
  - com.ibm.btt.tools.fs.core_6.1.2.jar
  - com.ibm.btt.tools.fs.ui_6.1.2.jar

To use the formatter simulator, follow these steps:
1. Start IBM Rational Application Developer.
2. Click **Window** › **Show View**, expand **Bank Transformation Toolkit**, and then select **Formatter Simulator**.
3. The formatter simulator will be launched.

## Setting up the APAR viewer

The APAR viewer for the Bank Transformation Toolkit is a plug-in. The APAR Viewer Tool allows you to trace the fix changes.

Prerequisites to use the APAR viewer:

- If you had installed the toolkit before you installed the IBM Rational Application Developer, you need to copy the following plug-in file to the `$D(RAD)/plugins` directory manually after you have IBM Rational Application Developer installed later:

  – com.ibm.btt.tools.apar_6.1.2

To use the APAR viewer, follow these steps:

1. Start IBM Rational Application Developer.
2. Click **Window** → **Show View**, expand **Bank Transformation Toolkit**, and then select **APAR Tool View**.
3. The APAR viewer will be launched.

## Setting up the Server Runtime Monitor Tool

The Server Runtime Monitor Tool for Bank Transformation Toolkit allows you to monitor the status of BTT in the server side.

To use the Server Runtime Monitor Tool, you need to import it first. Follow these steps:

1. Add the Server Runtime Monitor Tool in the EAR project.
2. Deploy the EAR project on WAS server. Add the Server Runtime Monitor Tool WAR project into the EAR project.
3. Open your browser, and input the following URL: http://<*host name*>:<*port*>/BTTRuntimeMonitor.

Then you can use the Server Runtime Monitor Tool.

## Setting up Web Transaction Monitor

To set up the Web Transaction Monitor, do the following:

1. Do the global configuration in the btt.xml file. Add the following code in btt.xml file:

```
<kColl id="HTMLClient">
  ... ...
  <field id="monitorState" value="open" />
  <field id="monitorPath" value="RuntimeMonitor/" />
</kColl>
```

2. Do the local configuration in web page. If you want to debug one web page, you need to do the following:

   a. Add the taglib into the page by adding the following code:

   ```
   <%@ taglib uri="/WEB-INF/btt.tld" prefix="btt"%>
   ```

   b. Add a JSP tag into the page by adding the following code:

   ```
   <btt:monitor isplay="in">
   ```

3. Add BTT Web Transaction Monitor related jar bttmonitortag.jar into the application module dependency. bttmonitortag.jar is in *toolkit_root*\lib directory.

4. Unzip bttmonitortagres.zip and copy it into WebContent folder in your web application; otherwise copy it to a subfolder of WebContent and revise the value of the `monitorPath` to the actual path.

5. Deploy the web application, if one web page is monitored, the corresponding monitor information is displayed on the page

## Setting up Rich Client Monitor

The Bank Transformation Toolkit (BTT) Rich Client Monitor helps you to view the tree structure of BTT data model.

To use the Rich Client Monitor, do the following:

1. Start IBM Rational Application Developer.

2. Add the following code to your application in the `start()` method of Activity.java:

   ```
   new MonitorService().showMonitor(0);
   ```

   This code is used to launch the Rich Client Monitor. You need to add it after the BTT initialization code.

3. Add the monitor related jar clientmonitor.jar to your Rich Client Application Runtime Classpath.

4. Launch the monitored Rich Client Application, then the monitor tool is also launched.

# Installing toolkit applications on a runtime platform

Installing Bank Transformation Toolkit applications on a runtime platform consists of deploying EAR files onto WebSphere Application Server. You can do the packaging using IBM Rational Application Developer, or using the Application Assembly Tool in WebSphere Application Server.

# Functional units, packages, and dependencies

This section identifies the external dependencies and framework corequisites for each functional unit. You must load these dependencies and corequisites to have a clean development environment. In addition to the components provided by the required features for the Bank Transformation Toolkit, you may need other external packages. See Obtaining missing prerequisites for a list of these packages.

The tables below include a brief description of the functional unit, and the functional unit's JAR file. Each row shows the direct framework corequisites and the corequisites of these corequisites.

**Note:** For the jars in the external dependency column, core.jar can be found in the \java\jre\lib directory of WebSphere Application Server and other jars can be found in the \lib directory of WebSphere Application Server.

*Table 3. External dependencies and corequisites for functional units-JAR files*

| JAR Name | Functional unit or component | External dependency | Corequisite JAR |
|---|---|---|---|
| bttbcac | Business Component - Access Control | core, j2ee | bttcore, bttbcaccommon.jar, bttbccommon.jar |
| bttbcaccommon | Business Component - Access Control Common | core, j2ee | bttcore |

*Table 3. External dependencies and corequisites for functional units-JAR files  (continued)*

| JAR Name | Functional unit or component | External dependency | Corequisite JAR |
|---|---|---|---|
| bttbccdm | Business Component - Cash Drawer Management | core, j2ee | bttcore |
| bttbccdmcommon | Business Component - Cash Drawer Management Common | core, j2ee | bttcore |
| bttbccdmdb | Business Component - Cash Drawer Management Database | core, j2ee | bttcore |
| bttbccommon | Business Component | org.eclipse.ui, org.eclipse.core.runtime | bttcore, com.ibm.btt.rcp.activity, com.ibm.btt.rcp.workingarea, com.ibm.btt.rcp.theme |
| bttbccounter | Business Component - Counter | core, j2ee | bttcore |
| bttbusinesslogic | Business Logic | core, j2ee, com.ibm.ws.runtime_6.1.0 | bttcore |
| bttchaejb | CHA EJB | core, j2ee | bttcore |
| bttchaejbclient | CHA EJB Client | core, j2ee | bttcore |
| bttchannels | Channels | core, j2ee, struts, commons-digester, commons-logging, commons-beanutils, commons-collections, commons-validator, com.ibm.ws.runtime_6.1.2, com.ibm.ws.webcontainer_2.0.0 | bttcore, bttinvoker |
| bttclientmonitor | Rich Client Monitor | core, j2ee, axis, com.ibm.ws.runtime_6.1.0, | bttcore |
| bttcore | Core Component | core, j2ee, com.ibm.ws.runtime_6.1.0, | |
| bttdbsvc | Database Service | com.ibm.ws.runtime_6.1.0 | bttcore |
| bttej | Business Component ej | org.eclipse.swt, org.eclipse.jface | bttcore, bttbcaccommon.jar, bttbccommon.jar |
| bttinvoker | Invoker | core, j2ee, axis, com.ibm.ws.runtime_6.1.0 | bttcore |
| bttjmsmessage | Business Component Message | com.ibm.ws.bootstrap_6.1.0, com.ibm.ws.emf_2.1.0, com.ibm.ws.runtime_6.1.0, com.ibm.ws.sib.client_2.0.0, com.ibm.ws.sib.utils_2.0.0, com.ibm.ws.wccm_6.1.0, com.ibm.wsspi.extension_6.1.0, org.eclipse.core.runtime_3.1.2, org.eclipse.osgi_3.1.2, j2ee, bootstrap, iwsorbutil | bttmessage |
| bttldapsvc | LDAP Service | core, j2ee | bttcore |
| bttmessage | Business Component Message | | bttcore, bttremote |
| bttmobile | Mobile Adapter | | |
| bttmonitortag | Web Transaction Monitor | core, j2ee | bttcore, bttchannels |
| bttmqsvc | MQ Service | core, j2ee, com.ibm.mq | bttcore |
| bttopsaejb | OpStep Adaptor EJB | core, j2ee, com.ibm.ws.runtime_6.1.0 | bttcore |
| bttoverrideagent | Business Component Override | | bttcore, bttmessage, bttoverrideagent, bttoverridecommon, bttremote |
| bttoverridecommon | Business Component Override | org.eclipse.core.runtime, org.eclipse.swt | bttcore |
| bttoverridecustom | Business Component Override | org.eclipse.ui, org.eclipse.core.runtime | bttcore, bttremote, bttmessage, bttoverridecommon |
| bttremote | Business Component Remote | commons-codec-1.3, commons-httpclient-3.1, commons-logging-1.1.1, commons-logging-api-1.1.1 | bttcore |

*Table 4. External dependencies and corequisites for functional units-RAR files*

| RAR name | Functional unit or component | External dependency | Corequisite JAR |
|---|---|---|---|
| dummysnalu0 | BTTDummySnaLu0Connector | core, j2ee, com.ibm.ws.runtime_6.1.0 | |
| snalu0 | BTTLu0Connector | core, j2ee, com.ibm.ws.runtime_6.1.0 | |
| snalu62 | BTTLu62Connector | core, j2ee, com.ibm.ws.runtime_6.1.0 | |

*Table 5. External dependencies and corequisites for functional units-WAR files*

| WAR name | Functional unit or component | External dependency | Corequisite JAR |
|---|---|---|---|
| BTTRuntimeMonitor | BTT Server Runtime Monitor | core, j2ee | bttcore, bttchannels |

*Table 6. External dependencies and corequisites for functional units-ZIP files*

| ZIP name | Functional unit or component | External dependency | Corequisite JAR |
|---|---|---|---|
| bttmonitortagres | Web Transaction Monitor | | |
| bttweb2 | Web2.0 On-Demand Workplace | | |

*Table 7. External dependencies and corequisites for functional units-plug-ins*

| Plug-in Name | Functional unit or component | External dependency | Corequisite plug-ins |
|---|---|---|---|
| com.ibm.btt.bc.ac.common | Access Control Core Component | | com.ibm.btt.core |
| com.ibm.btt.bc.ac.rcp.nl | Language plug in for Access Control UI Component | | |
| com.ibm.btt.bc.ac.rcp | | org.eclipse.core.runtime | com.ibm.btt.bc.ac.common, com.ibm.btt.rcp.service.manager, com.ibm.btt.rcp.broker, com.ibm.btt.rcp.theme, com.ibm.btt.core, com.ibm.btt.bc.common |
| com.ibm.btt.bc.common | Business Component Common | org.eclipse.ui, org.eclipse.core.runtime | |
| com.ibm.btt.bc.ej.viewer.nl | Resource boundle plugin | | |
| com.ibm.btt.bc.ej.viewer | Business Component EJ Viewer | org.eclipse.swt, org.eclipse.jface | com.ibm.btt.core, com.ibm.btt.bc.ej, com.ibm.btt.bc.common, com.ibm.btt.bc.ej.viewer.nl |
| com.ibm.btt.bc.ej | Business Component Electronic Journal | org.eclipse.swt, org.eclipse.jface | com.ibm.btt.core, com.ibm.btt.bc.common |
| com.ibm.btt.bc.override.common | Business Component Override | org.eclipse.core.runtime, org.eclipse.swt | com.ibm.btt.core |
| com.ibm.btt.bc.override.customization.nl | Business Component Override | | com.ibm.btt.bc.override.customization |

*Table 7. External dependencies and corequisites for functional units-plug-ins (continued)*

| Plug-in Name | Functional unit or component | External dependency | Corequisite plug-ins |
|---|---|---|---|
| com.ibm.btt.bc.override. customization | Business Component Override | org.eclipse.ui, org.eclipse.core.runtime | com.ibm.btt.bc.override.common, com.ibm.btt.bc.override.supervisor, com.ibm.btt.bc.override.teller, com.ibm.btt.core, com.ibm.btt.message, com.ibm.btt.remote |
| com.ibm.btt.bc.override. supervisor.nl | Business Component Override | | com.ibm.btt.bc.override.supervisor |
| com.ibm.btt.bc.override.supervisor | Business Component Override | org.eclipse.ui, org.eclipse.core.runtime | com.ibm.btt.core, com.ibm.btt.bc.override.common, com.ibm.btt.message, com.ibm.btt.remote com.ibm.btt.bc.override.teller |
| com.ibm.btt.bc.override.teller.nl | Business Component Override | | |
| com.ibm.btt.bc.override.teller | Business Component Override | org.eclipse.ui, org.eclipse.core.runtime | com.ibm.btt.bc.override.common, com.ibm.btt.message, com.ibm.btt.remote, com.ibm.btt.core |
| com.ibm.btt.core | Core Component | org.eclipse.core.runtime | |
| com.ibm.btt.csclient.http | HTTP C/S Connector | | com.ibm.btt.core |
| com.ibm.btt.message | Business Component Message | com.ibm.btt.core | com.ibm.btt.remote |
| com.ibm.btt.rcp.activity | RCP Activity Framework | org.eclipse.core.runtime, org.eclipse.ui | com.ibm.btt.core |
| com.ibm.btt.rcp.broker | RCP Property Broker for pure RCP environment | org.eclipse.core.runtime, org.eclipse.ui | com.ibm.btt.core |
| com.ibm.btt.rcp.broker.xpd | RCP Property Broker for Lotus Expeditor environment | org.eclipse.core.runtime, org.eclipse.ui, com.ibm.rcp.propertybroker | com.ibm.btt.core, com.ibm.btt.rcp.broker |
| com.ibm.btt.rcp.navigator | RCP Navigator Framework | org.eclipse.core.runtime, org.eclipse.ui | com.ibm.btt.core, com.ibm.btt.rcp.activity, com.ibm.btt.rcp.theme |
| com.ibm.btt.rcp.perspective | RCP Perspective Framework | org.eclipse.core.runtime, org.eclipse.ui | com.ibm.btt.core, com.ibm.btt.rcp.activity, com.ibm.btt.rcp.navigator |
| com.ibm.btt.rcp.service.manager | RCP Service Manager | org.eclipse.core.runtime | com.ibm.btt.core, com.ibm.btt.rcp.activity, com.ibm.btt.rcp.navigator, com.ibm.btt.rcp.perspective, com.ibm.btt.rcp.workingarea, com.ibm.btt.rcp.broker |
| com.ibm.btt.rcp.theme | RCP Theme Configuration | org.eclipse.core.runtime, org.eclipse.ui | com.ibm.btt.core |

*Table 7. External dependencies and corequisites for functional units-plug-ins (continued)*

| Plug-in Name | Functional unit or component | External dependency | Corequisite plug-ins |
|---|---|---|---|
| com.ibm.btt.rcp.workingarea | RCP Working Area | org.eclipse.core.runtime, org.eclipse.ui | com.ibm.btt.core, com.ibm.btt.rcp.activity, com.ibm.btt.rcp.visualbean.runtime, com.ibm.btt.rcp.broker, com.ibm.btt.rcp.theme |
| com.ibm.btt.rcp.xui.editor | Design and build the XUI File by dragging in graphical tools | org.eclipse.ui, org.eclipse.core.runtime, org.eclipse.gef, org.eclipse.core.resources, org.eclipse.ui.ide, org.eclipse.ui.workbench.texteditor, org.eclipse.ui.editors, org.eclipse.ui.views.properties.tabbed, org.eclipse.jdt.ui org.eclipse.jdt, org.eclipse.jdt.core, org.eclipse.wst.xml.core, org.eclipse.wst.xml.ui, org.eclipse.wst.sse.core, org.eclipse.wst.sse.ui, org.eclipse.wst.common.core, org.eclipse.wst.validation, org.eclipse.wst.validation.ui, org.eclipse.jface.text, org.eclipse.jdt.launching, org.eclipse.debug.core, org.eclipse.debug.ui, org.eclipse.jdt.debug.ui, org.eclipse.core.expressions, org.eclipse.pde.ui | com.ibm.btt.core, com.ibm.btt.rcp.xui |
| com.ibm.btt.rcp.xui | | | |
| com.ibm.btt.bc.cm.common | Cash Drawer Management Core Component | | |
| com.ibm.btt.bc.cm.rcp | Cash Drawer Management UI Component | org.eclipse.jface, org.eclipse.equinox.common, org.eclipse.ui, org.eclipse.core.runtime | com.ibm.btt.core, com.ibm.btt.rcp.broker, com.ibm.btt.rcp.service.manager, com.ibm.btt.bc.cm.common |
| com.ibm.btt.tools.migration | Migration Tool | org.eclipse.ui, org.eclipse.core.runtime, org.eclipse.jdt.core, org.eclipse.core.resources, org.eclipse.jface.text | com.ibm.btt.core |
| com.ibm.btt.tools.transaction.editor | Transaction Editor | org.eclipse.core.runtime, org.eclipse.core.resources, org.eclipse.emf.ecore.xmi, org.eclipse.emf.edit.ui, org.eclipse.ui.ide, org.eclipse.emf.transaction, org.eclipse.ui, org.eclipse.jdt.ui, org.eclipse.jdt, org.eclipse.jdt.core | com.ibm.btt.tools.transaction.edit, com.ibm.btt.tools.transaction.diagram, com.ibm.btt.tools.transaction.dominate, com.ibm.btt.core, com.ibm.btt.tools.common |

*Table 7. External dependencies and corequisites for functional units-plug-ins (continued)*

| Plug-in Name | Functional unit or component | External dependency | Corequisite plug-ins |
|---|---|---|---|
| com.ibm.btt.tools.transaction. diagram | Transaction Editor | org.eclipse.core.runtime, org.eclipse.core.resources, org.eclipse.core.expressions, org.eclipse.jface, org.eclipse.ui.ide, org.eclipse.ui.views, org.eclipse.ui.navigator, org.eclipse.ui.navigator.resources, org.eclipse.emf.ecore, org.eclipse.emf.ecore.xmi, org.eclipse.emf.edit.ui, org.eclipse.gmf.runtime.emf.core, org.eclipse.gmf.runtime.emf. commands.core, org.eclipse.gmf.runtime.emf.ui. properties, org.eclipse.gmf.runtime.diagram.ui, org.eclipse.gmf.runtime.diagram.ui. properties, org.eclipse.gmf.runtime.diagram.ui. providers, org.eclipse.gmf.runtime.diagram.ui. providers.ide, org.eclipse.gmf.runtime.diagram.ui. render, org.eclipse.gmf.runtime.diagram.ui. resources.editor.ide;visibility:=reexport, org.eclipse.gmf.runtime.diagram.ui. resources.editor, org.eclipse.gmf.runtime.draw2d.ui, org.eclipse.gef, org.eclipse.draw2d, org.eclipse.ocl.ecore, org.eclipse.jdt.core, org.eclipse.jdt.launching, org.eclipse.gmf.runtime.diagram.ui. printing, org.eclipse.gmf.runtime.diagram.ui. printing.render | com.ibm.btt.core, com.ibm.btt.tools.transaction, com.ibm.btt.tools.transaction.edit, com.ibm.btt.tools.transaction.dominate |
| com.ibm.btt.tools.transaction. dominate | Transaction Editor | org.eclipse.ui, org.eclipse.core.runtime, org.eclipse.core.resources, org.eclipse.jdt.core, org.eclipse.jdt.launching, org.eclipse.ui.ide, org.eclipse.emf.transaction.ui, org.eclipse.ui.views.properties. tabbed, org.eclipse.jdt.ui, org.eclipse.emf.validation, org.eclipse.emf.validation.ui | com.ibm.btt.core, com.ibm.btt.tools.transaction |
| com.ibm.btt.tools.transaction.edit | Transaction Editor | org.eclipse.core.runtime, org.eclipse.emf.edit, org.eclipse.swt | com.ibm.btt.tools.transaction, com.ibm.btt.tools.transaction.dominate |
| com.ibm.btt.tools.transaction | Transaction Editor | org.eclipse.core.runtime, org.eclipse.emf.ecore | com.ibm.btt.core |

*Table 7. External dependencies and corequisites for functional units-plug-ins  (continued)*

| Plug-in Name | Functional unit or component | External dependency | Corequisite plug-ins |
|---|---|---|---|
| com.ibm.btt.tools.outline | Outline Tool | org.eclipse.ui, org.eclipse.core.runtime, org.eclipse.ui.navigator, org.eclipse.emf.codegen.ecore.ui, org.eclipse.core.resources, org.eclipse.wst.xml.core, org.eclipse.wst.xml.ui, org.eclipse.wst.sse.core, org.eclipse.wst.sse.ui, org.eclipse.jst.j2ee.ui , org.eclipse.jst.j2ee.navigator.ui, org.eclipse.jdt.ui, org.eclipse.core.expressions, org.eclipse.ui.workbench.texteditor, org.eclipse.wst.common.ui, org.eclipse.ui.forms | com.ibm.btt.core, com.ibm.btt.tools.dde, com.ibm.btt.tools.validation |
| com.ibm.btt.tools.dde | Deployment Descriptor Editor | org.eclipse.core.runtime, org.eclipse.core.resources, org.eclipse.ui.ide, org.eclipse.ui.forms, org.eclipse.ui.editors, org.eclipse.ui, org.eclipse.jface.text, org.eclipse.jdt.core, org.eclipse.jdt.launching, org.eclipse.jdt.ui, org.eclipse.wst.xml.core, org.eclipse.wst.sse.core, org.eclipse.wst.xml.ui, org.eclipse.wst.sse.ui | com.ibm.btt.core |
| com.ibm.btt.tools.common | BTT Helper | org.eclipse.ui, org.eclipse.core.runtime | com.ibm.btt.core |
| com.ibm.btt.tools.validation | Grammar Validator | org.eclipse.ui, org.eclipse.core.runtime, org.eclipse.core.resources, org.eclipse.jdt.core, org.eclipse.wst.validation, org.eclipse.help, org.eclipse.jem.util, org.eclipse.wst.common.frameworks, org.eclipse.wst.xml.core, org.eclipse.wst.sse.ui, org.eclipse.wst.sse.core, org.eclipse.wst.common.uriresolver, org.eclipse.wst.common.ui, org.eclipse.pde, org.eclipse.pde.ui, org.eclipse.jst.jsp.core | |
| com.ibm.btt.tools.fs.core | Formatter Simulator Core Component | org.eclipse.core.runtime, org.eclipse.debug.core, org.eclipse.jdt.launching, org.eclipse.jdt.core, org.eclipse.core.resources, org.eclipse.ui | com.ibm.btt.core |

*Table 7. External dependencies and corequisites for functional units-plug-ins (continued)*

| Plug-in Name | Functional unit or component | External dependency | Corequisite plug-ins |
|---|---|---|---|
| com.ibm.btt.tools.fs.ui | Formatter Simulator UI Component | org.eclipse.core.resources, org.eclipse.core.runtime, org.eclipse.jface.text, org.eclipse.ui, org.eclipse.ui.ide, org.eclipse.ui.forms, org.eclipse.debug.ui, org.eclipse.jdt.core | com.ibm.btt.tools.fs.core |
| com.ibm.btt.tools.aw | Application Wizard Tool | org.eclipse.ui org.eclipse.core.runtime, org.eclipse.jst.j2ee.ui, org.eclipse.wst.common.modulecore, org.eclipse.wst.common.frameworks, org.eclipse.wst.common.frameworks. ui, org.eclipse.jem.util, org.eclipse.jst.servlet.ui, org.eclipse.pde.ui, org.eclipse.jdt.core, org.eclipse.wst.common.project.facet. ui, org.eclipse.wst.web, org.eclipse.wst.web.ui, org.eclipse.wst.common.project.facet. core, org.eclipse.jst.j2ee.ejb, org.eclipse.jst.common.frameworks, org.eclipse.jst.server.ui, org.eclipse.jst.j2ee, org.eclipse.jst.j2ee.web, org.eclipse.ui.ide, org.eclipse.core.resources, com.ibm.btt.core | com.ibm.btt.core |
| com.ibm.btt.tools.apar | APAR viewer | org.eclipse.ui, org.eclipse.core.runtime | |

The following table lists the packages included in the product and the JAR or RAR files that contain them. Note that some Java packages are in more than one JAR to optimize the contents of the JAR files.

*Table 8. JAR, RAR or WAR files for packages*

| Package name | JAR/RAR/WAR name |
|---|---|
| com.ibm.btt.automaton | bttcore.jar |
| com.ibm.btt.automaton.ext | bttcore.jar |
| com.ibm.btt.automaton.ext | bttchannels.jar |
| com.ibm.btt.automaton.html | bttchannels.jar |
| com.ibm.btt.bc.counter | bttbccounter.jar |
| com.ibm.btt.base | bttcore.jar |
| com.ibm.btt.base.types | bttcore.jar |
| com.ibm.btt.base.types.ext | bttcore.jar |
| com.ibm.btt.bc.cm | bttbccdm.jar |
| com.ibm.btt.bc.cm | bttbccdmcommon.jar |
| com.ibm.btt.bc.cm.dao | bttbccdm.jar |

*Table 8. JAR, RAR or WAR files for packages  (continued)*

| Package name | JAR/RAR/WAR name |
|---|---|
| com.ibm.btt.bc.cm.dao.mem | bttbccdm.jar |
| com.ibm.btt.bc.cm.dao.exception | bttbccdm.jar |
| com.ibm.btt.bc.cm.facade | bttbccdm.jar |
| com.ibm.btt.bc.cm.model | bttbccdm.jar |
| com.ibm.btt.bc.cm.model | bttbccdmcommon.jar |
| com.ibm.btt.bc.cm.rule | bttbccdm.jar |
| com.ibm.btt.bc.cm.rule.impl | bttbccdm.jar |
| com.ibm.btt.bc.cm.dao.db2 | bttbccdmdb.jar |
| com.ibm.btt.bc.cm.dao.db2.exception | bttbccdmdb.jar |
| com.ibm.btt.cha.ejb | bttchaejb.jar |
| com.ibm.btt.cha.ejb | bttchaejbclient.jar |
| com.ibm.btt.channel | bttchannels.jar |
| com.ibm.btt.clientserver | bttchannels.jar |
| com.ibm.btt.config | bttcore.jar |
| com.ibm.btt.config.impl | bttcore.jar |
| com.ibm.btt.config.exception | bttcore.jar |
| com.ibm.btt.cs.html | bttchannels.jar |
| com.ibm.btt.cs.html.util | bttchannels.jar |
| com.ibm.btt.cs.java | bttchannels.jar |
| com.ibm.btt.cs.servlet | bttchannels.jar |
| com.ibm.btt.cs.sessionpropagation | bttchannels.jar |
| com.ibm.btt.element | bttcore.jar |
| com.ibm.btt.element.exception | bttcore.jar |
| com.ibm.btt.element.impl | bttcore.jar |
| com.ibm.btt.element.scope | bttcore.jar |
| com.ibm.btt.element.simple | bttcore.jar |
| com.ibm.btt.element.simple.impl | bttcore.jar |
| com.ibm.btt.element | bttcore.jar |
| com.ibm.btt.element | bttcore.jar |
| com.ibm.btt.event | bttcore.jar |
| com.ibm.btt.formatter.client | bttchaejb.jar |
| com.ibm.btt.gui.jsptags | bttchannels.jar |
| com.ibm.btt.http | bttchannels.jar |
| com.ibm.btt.invoker | bttinvoker.jar |
| com.ibm.btt.invoker.ejb | bttinvoker.jar |
| com.ibm.btt.invoker.jms | bttinvoker.jar |
| com.ibm.btt.invoker.pojo | bttinvoker.jar |
| com.ibm.btt.invoker.timer | bttinvoker.jar |
| com.ibm.btt.invoker.utils | bttinvoker.jar |
| com.ibm.btt.invoker.ws | bttinvoker.jar |

*Table 8. JAR, RAR or WAR files for packages  (continued)*

| Package name | JAR/RAR/WAR name |
|---|---|
| com.ibm.btt.invoker.ws.dynamic | bttinvoker.jar |
| com.ibm.btt.invoker.ws.dynamic.axis_extension | bttinvoker.jar |
| com.ibm.btt.invoker.ws.dynamic.tool | bttinvoker.jar |
| com.ibm.btt.jsf | bttchannels.jar |
| com.ibm.btt.jsf.el | bttchannels.jar |
| com.ibm.btt.jsf.event | bttchannels.jar |
| com.ibm.btt.rcp.dse.navigation | bttcompat.jar |
| com.ibm.btt.runtimemonitor | BTTRuntimeMonitor.war |
| com.ibm.btt.samples.business.sna.lu0 | sn0dummy.jar |
| com.ibm.btt.samples.business.sna.lu0.exception | sn0dummy.jar |
| com.ibm.btt.samples.business.sna.lu0.host | sn0dummy.jar |
| com.ibm.btt.samples.business.sna.lu0.host.event | sn0dummy.jar |
| com.ibm.btt.samples.business.sna.lu0.trace | sn0dummy.jar |
| com.ibm.btt.samples.business.sna.lu0.resource | sn0dummy.jar |
| com.ibm.btt.server.bean | bttbusinesslogic.jar |
| com.ibm.btt.server.bean.ejb | bttopsaejb.jar |
| com.ibm.btt.services | bttcore.jar |
| com.ibm.btt.services.comms | bttmqsvc.jar |
| com.ibm.btt.services.jdbc | bttdbsvc.jar |
| com.ibm.btt.services.ldap | bttldapsvc.jar |
| com.ibm.btt.services.ldap.model | bttldapsvc.jar |
| com.ibm.btt.services.mq | bttmqsvc.jar |
| com.ibm.btt.struts | bttchannels.jar |
| com.ibm.btt.struts.actions | bttchannels.jar |
| com.ibm.btt.struts.base | bttchannels.jar |
| com.ibm.btt.struts.config | bttchannels.jar |
| com.ibm.btt.struts.exception | bttchannels.jar |
| com.ibm.btt.struts.plugins | bttchannels.jar |
| com.ibm.btt.struts.resource | bttchannels.jar |
| com.ibm.btt.struts.resources | bttchannels.jar |
| com.ibm.btt.struts.session | bttchannels.jar |
| com.ibm.btt.struts.taglib.html | bttchannels.jar |
| com.ibm.btt.struts.utiils | bttchannels.jar |
| com.ibm.connector2.sna.lu0 | snalu0.jar |
| com.ibm.connector2.sna.lu0.exception | snalu0.jar |
| com.ibm.connector2.sna.lu0.host.event | snalu0.jar |
| com.ibm.connector2.sna.lu0.host | snalu0.jar |
| com.ibm.connector2.sna.lu0.resource | snalu0.jar |
| com.ibm.connector2.sna.lu0.util | snalu0.jar |
| com.ibm.connector2.sna.lu62 | snalu62.jar |

*Table 8. JAR, RAR or WAR files for packages (continued)*

| Package name | JAR/RAR/WAR name |
|---|---|
| com.ibm.connector2.sna.lu62.exception | snalu62.jar |
| com.ibm.connector2.sna.lu62.host | snalu62.jar |
| com.ibm.connector2.sna.lu62.host.event | snalu62.jar |
| com.ibm.connector2.sna.lu62.resource | snalu62.jar |
| com.ibm.connector2.sna.lu62.trace | snalu62.jar |
| com.ibm.connector2.sna.lu62.util | snalu62.jar |
| com.ibm.connector2.sna.services | snalu62.jar |
| com.ibm.connector2.sna.util | snalu62.jar |
| com.ibm.connector2.sna.util | snalu0.jar |

# Where to find the missing prerequisites

Use the following table to locate and obtain any missing prerequisites. Some of them can be found in other JAR or ZIP files.

*Table 9. Locations for prerequisites*

| Prerequisite | Resource name | How to get them |
|---|---|---|
| WebSphere MQ | com.ibm.mq.jar | Available from WebSphere MQ |

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