WebSphere® IBM Branch Transformation Toolkit
for WebSphere Studio

Version 5.2

Installation guide

IBM

Contents

IBM Branch Transformation Toolkit for WebSphere Studio: Installation guide

Branch Transformation Toolkit installation guide

This installation guide describes the hardware and software requirements of IBM®
Branch Transformation Toolkit for WebSphere® Studio and how to install it into
IBM Rational® Application Developer or IBM WebSphere Integration Developer so
that you can develop applications. For information on installing the sample
applications provided in the Branch Transformation Toolkit, see the deployment
procedures of the HTML Sample and Java™ Sample.

This document is for anyone who is installing IBM Branch Transformation Toolkit
for WebSphere Studio and describes how to install it into IBM Rational Application
Developer or IBM WebSphere Integration Developer.

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: • *<variable name>* • <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 Branch Transformation Toolkit for WebSphere
Studio (Branch Transformation Toolkit) 5.2.

Hardware requirements

Hardware requirements for Server

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

For Microsoft® Windows® 2003
• Intel® Pentium® III processor at 1 GHz, or faster

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- Minimum 1 GB RAM; 2 GB recommended
- Minimum 1 GB of free disk space for installation (includes SDK)

For Linux® (Intel)
- Intel Pentium processor at 500 MHz, or faster
- Minimum 1 GB RAM; 2 GB recommended
- Minimum 1 GB of free disk space for installation (includes SDK)

For AIX
- IBM pSeries® or iSeries™ system at 375 MHz, or faster
- Minimum 1 GB RAM; 2 GB recommended
- Minimum 1 GB of free disk space for installation (includes SDK)

For Solaris
- SPARC workstation at 440 MHz, or faster
- Minimum 512 MB RAM; 1 GB recommended
- Minimum 1 GB of free disk space for installation (includes SDK)

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

Hardware requirements for Client

For Windows XP
- Minimum 512 MB RAM
- Minimum 100 MB of free disk space for installation
- Minimum display 1024 x 768

For Linux (Intel)
- Minimum 512 MB RAM
- Minimum 100 MB of free disk space for installation
- Minimum display 1024 x 768

Hardware requirements for development environment

Note: These memory and disk requirements listed below are for the IBM Rational Application Developer.

For Windows XP
- Intel Pentium III processor at 1 G MHz, or faster
- Minimum 1 GB RAM; 2 GB recommended
- Minimum 3.7 GB of free disk space for installation
- Minimum display 1024 x 768

For Linux (Intel)
- Intel Pentium III processor at 1 G MHz, or faster
- Minimum 1 GB RAM; 2 GB recommended
- Minimum 3.7 GB of free disk space for installation
- Minimum display 1024 x 768

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

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

Software requirements

Supported operating systems for development and runtime
- AIX® V5.2 with Recommended Maintenance Package 5200-03
- AIX V5.3
- Windows Server 2003, Enterprise and Standard
- Windows XP Professional with Service Pack 2 (Client and Development)
- Red Hat Enterprise Linux WS 3.0 Update 8 (Client and Development)
- Red Hat Enterprise Linux WS 4.0 Update 3 (Client and Development)
- Red Hat Enterprise Linux AS 3.0 Update 8
- Red Hat Enterprise Linux AS 4.0 Update 3
- Solaris 9 with the Recommended Patch Cluster of June 2005
- Solaris 10

Supported application servers

For Windows 2003, Solaris, Linux (Intel) and AIX
- WebSphere Application Server, V6.0.2
- WebSphere Application Server Network Deployment V6.0.2
- WebSphere Process Server V6.0.1 and V6.0.2

Supported development environment
- IBM Rational Application Developer V6.0.1
- WebSphere Integration Developer V6.0.1 and V6.0.2

Supported browsers
- Internet Explorer 6.0 SP1

Supported database
- DB2 UDB Enterprise Server Edition V8.2.7
- Oracle 10g
- Microsoft SQL Server 2000 Enterprise SP3 and Standard Edition

Optional software
- WebSphere MQ V6.0
- Communications Server for AIX V6.3
- Communications Server for Linux V6.0
- Communications Server for Windows V6.1.2
- WebSphere Portal for Multiplatforms V5.1

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
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 Branch Transformation Toolkit development environment

In this procedure, you will set up a development workstation so that you can develop applications based on IBM Branch Transformation Toolkit 5.2 for WebSphere Studio. Note that the physical machine must comply with the requirements listed in the Hardware and software requirements section, including having IBM WebSphere Integration Developer or IBM Rational Application Developer.

Note: The following procedure describes how to install the Branch Transformation Toolkit on top of IBM Rational Application Developer or IBM WebSphere Integration 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 Branch 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, Branch Transformation Toolkit supports IBM Rational Application Developer 6.0.1 and IBM WebSphere Integration Developer 6.0.2.

For the development environment, there are two sets of plug-ins including different files:

- **Plug-ins for IBM Rational Application Developer 6.0.1**

  These plug-ins include components that have dependencies on features provided by IBM Rational Application Developer 6.0.1.

- **Plug-ins for IBM WebSphere Integration Developer 6.0.2**

These plug-ins include components that have dependencies on features provided by IBM WebSphere Integration Developer 6.0.2, such as plug-ins for the Business Process BTT Wizard.

If you have IBM WebSphere Integration Developer 6.0.2 installed on your system, the toolkit installation wizard will take IBM WebSphere Integration Developer as your development environment, regardless of whether you have IBM Rational Application Developer installed as well. After the installation wizard decides that IBM WebSphere Integration Developer is your development environment, it copies the plug-ins for IBM WebSphere Integration Developer to the `wstools/eclipse/plugins` directory of your IBM WebSphere Integration Developer automatically during the installation.

If you have IBM Rational Application Developer 6.0.1 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 plug-ins for IBM Rational Application Developer 6.0.1 to the `eclipse/plugins` directory of your IBM Rational Application Developer 6.0.1 automatically during the installation.

If neither IBM Rational Application Developer 6.0.1 nor IBM WebSphere Integration Developer 6.0.2 is installed on your system, you will need to copy the plug-ins to the `$D(RAD)/eclipse/plugins` or `$D(WID)/wstools/eclipse/plugins` directory manually after you have IBM Rational Application Developer or IBM WebSphere Integration Developer installed later. Plug-ins for IBM Rational Application Developer or IBM WebSphere Integration Developer can be found in the `<tooklit_root>/plugins` directory.

Runtime environment

For the runtime environment, Branch Transformation Toolkit supports WebSphere Application Server 6.0.2 and WebSphere Process Server 6.0.2.

Installing the Branch Transformation Toolkit on a development workstation

To set up the development workstation, do the following:

1. According to your business needs, install IBM Rational Application Developer or IBM WebSphere Integration Developer.
2. Insert the Branch Transformation Toolkit CD into CD-ROM and browse the CD. If you want to install Branch Transformation Toolkit for windows, run C993IML.exe in the Windows platform. If you want to install Branch Transformation Toolkit for Linux, run C993JML.bin in the Linux platform. This starts the Installation Wizard for Branch Transformation Toolkit.
3. During the installation, the Installation Wizard detects if any version of Branch Transformation Toolkit is already installed on your system. Branch Transformation Toolkit version 5.2 can coexist with that of version 4.3, 5.0 or 5.1. If you already have version 5.2 installed, the Installation Wizard will display a warning message showing that you already have version 5.2 installed. If you continue with the installation, your previous installation of version 5.2 will be overridden.
4. 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 and those for WebSphere Application Server. If you have IBM WebSphere Integration Developer installed, the Installation Wizard

will install toolkit components designed for IBM WebSphere Integration Developer, and those for WebSphere Application Server.

The Branch 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
dbtools	Scripts to manage database tables for the CHA component
desktop	Desktop DTD file
doc	The Branch Transformation Toolkit documentation plug-ins to IBM WebSphere Integration Developer and IBM Rational Application Developer.
plugins	- Visual beans plug-in to IBM WebSphere Integration Developer - Eclipse Modeling Framework (EMF) plug-in - Graphical Builder plug-in - Struts Tools BTT Extensions plug-in - CHA Editor plug-in - Format Editor plug-in - Business Process BTT Wizard plug-in to IBM WebSphere Integration Developer - Migration Tool plug-in - Definition File Merging Tool plug-in
ear	EAR file to provide the infrastructure for the CHA component of the toolkit. You can use the EAR to build applications on the Branch Transformation Toolkit
jars	The Branch Transformation Toolkit code separated into various JARs according to the functional unit to which the code belongs. A solution built on the Branch Transformation Toolkit can use the JARs for the functional units that it is using. See Functional units, packages, and dependencies for a listing of the JARs and their contents and corequisites
samples	EAR files to run the sample applications provided by the Branch Transformation Toolkit in the IBM Rational Application Developer workbench. This directory also contains the source code of the samples.
services	Runtime files that are needed by some of the services of the framework
source	Source code of selected Branch Transformation Toolkit components to provide a better understanding of the functional units. This helps in tasks such as extending the framework and reduces the development cycle. The source code must not be modified
javadoc	

5. Start IBM Rational Application Developer or IBM WebSphere Integration Developer.

6. Set some preferences before you import Branch 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 Branch 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 Branch 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 Branch 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 Branch 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.

7. 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**.

8. When deploying an application, you must embed Branch Transformation Toolkit functional units, along with the required application resources, inside the J2EE EAR file. The Branch 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.

If you are unsure of the actual dependencies among the JARs, add the ones that you are not sure about. You can always remove unneeded jars later. For examples of the JARs that you should select, browse the list of jars used by the sample applications shipped in the *<Toolkit root>*/samples folder. If you open, for example, the BTTHtmlSampleWeb.war file that is inside the BBTTHtmlSample.ear file, you can see that the following functional units have been used to build the application:

- BTTBase(bttbase.jar)
- BTTInvoker(bttinvoker.jar)
- BTTJavaClient(bttjavaclient.jar)
- BTTServerBean(bttsvrbean.jar)
- BTTSessionManagement(bttsm.jar)
- BTTStrutsExtension(bttstruts.jar)
- BTTHTMLSampleEJB(BTTHTMLSampleEJB.jar)

To add the required JARs to the project's classpath:

a. Right-click the project and select **Properties**.

b. Select **JavaBuildPath** and then select the **Libraries** tab.

c. Select **Add Variable** and, in the New Variable Classpath Entry window, select the classpath variable (BTT) and click **Extend**.

d. In the Variable Extension window, expand the jars directory and select the BTT JAR that you want to add to your project. Click **OK**.

e. If the JAR you have just added to your project has source code shipped with the Branch Transformation Toolkit (see Functional units, packages, and dependencies), you may want to attach the source code to the JAR to enable source-level stepping and browsing of classes contained in the binary JAR file. To do this:

   1) Click **Attach Source**.

   2) In the Attachments For BTT/jars/*<JAR name>*.jar window, click the **Variable** button next to the Archive variable path text field.

   3) Select the classpath variable (BTT) and click **OK**.

   4) Click **Extension**.

   5) In the JAR/ZIP File Selection window, open the source directory and double click the ZIP file containing the source code corresponding to the JAR file you added to your project. Click **OK**.

f. Repeat this procedure for each JAR file that you want to add. Keep in mind the dependencies that a JAR or functional unit may have. Consult Functional units, packages, and dependencies to obtain these dependencies.

Once you have installed the Branch Transformation Toolkit in IBM Rational Application Developer or IBM WebSphere Integration Developer, you can start developing Branch Transformation Toolkit-based solutions. For a high level overview of the development process and where to get information, see the Creating an application documentation. For examples of Branch Transformation

Toolkit-based applications, including how to install and run them on the various supported platforms, see the Java Sample Application and HTML Sample Application documentation.

Setting up the CHA Editor

The CHA Editor for the Branch Transformation Toolkit is a plug-in. CHA Editor configuration files (or CHA Editor files) allows you to create CHA elements with a graphical user interface.

Prerequisites to use the CHA Editor:
- If you had installed the toolkit before you installed the IBM Rational Application Developer or IBM WebSphere Integration Developer, you need to copy the following plug-in files to the wstools\eclipse\plugins\ folder of your WebSphere Studio installation folder:
  - com.ibm.btt.tools.common_5.2.0
  - com.ibm.btt.tools.chaeditor.model.emf_5.2.0
  - com.ibm.btt.tools.chaeditor_5.2.0

To create a CHA Editor file, follow these steps:
1. Start IBM Rational Application Developer or IBM WebSphere Integration Developer.
2. Create a simple project to contain the CHA Editor files.
3. From the File menu, select **File → New → Other**.
4. In the dialog, select **IBM Branch Transformation Toolkit** in the left panel.
5. In the right panel, select **CHA Editor file**. This starts the CHA Editor Configuration Wizard.
6. Select the project to contain the CHA Editor's files. Usually this is the project file for the application you are creating.
7. In the file name field, type the name of the editor's configuration file. The file must have the .chae extension.
8. Click **Finish**.
9. From the menu bar, select **Window → Show view → Other**.
10. In the window that pops up, expand **IBM Branch Transformation Toolkit**, and select the CHA Editor views that you want to show.

The wizard then creates the configuration file and the dsedata.xml, dsetype.xml, and dsectxt.xml files in the project folder. It then launches the CHA Editor.

Setting up the Format Editor

The Format Editor for the Branch Transformation Toolkit is a WebSphere Studio plug-in. Format Editor configuration files (or Format Editor files) help you create formatters with a graphical user interface.

Prerequisites to use the Format Editor:
- If you had installed the toolkit before you installed the IBM Rational Application Developer or IBM WebSphere Integration Developer, you need to copy the following plug-in files to the wstools\eclipse\plugins\ folder of your WebSphere Studio installation folder:
  - com.ibm.btt.tools.common_5.2.0

- com.ibm.btt.tools.fmteditor_5.2.0
- com.ibm.btt.tools.chaeditor_5.2.0

To create a Format Editor file, follow these steps:

1. Start IBM Rational Application Developer or IBM WebSphere Integration Developer.
2. Create a simple project to contain the Format Editor files.
3. From the File menu, select **File → New → Other**.
4. In the dialog, select **IBM Branch Transformation Toolkit** in the left panel.
5. In the right panel, select **Format Editor file**. This starts the Format Editor Configuration Wizard.
6. Select the project to contain the Format Editor's files. Usually this is the project file for the application you are creating.
7. In the file name field, type the name of the editor's configuration file. The file must have the .fmte extension.

   Note: Each Format Editor file works with a CHA Editor file to provide the formatters for the CHA elements described in the CHA Editor file. You should define the CHA Editor file name in the configuration of the Format Editor file to ensure they can work together.

8. Click **Finish**.
9. From the menu bar, select **Window → Show view → Other**.
10. In the window that pops up, expand **IBM Branch Transformation Toolkit**, and select the Format Editor views that you want to show.

The wizard then creates the configuration file and the dsefmt.xml file in the project folder. It then launches the Format Editor.

Setting up the Business Process BTT Editor

The Business Process BTT Editor for the Branch Transformation Toolkit is a WebSphere Studio plug-in. The Business Process BTT Editor provides a graphical user interface (GUI) to help you extend your business processes for taking advantage of the BTT Abstract Layer.

Prerequisites to use the Business Process BTT Editor:

- If you had installed the toolkit before you installed the IBM WebSphere Integration Developer, you need to copy the following plug-in files to the eclipse\wstools\plugins\ folder of your WebSphere Studio installation folder:
  - com.ibm.btt.tools.bpel.ui_5.2.0
  - com.ibm.btt.tools.bpel.model_5.2.0

Setting up the Struts Tools BTT Extensions

The Struts Tools BTT Extensions for the Branch Transformation Toolkit is a WebSphere Studio plug-in. The Struts Tools BTT Extensions provides a graphical and easier way to work with toolkit extended Struts configuration files.

Prerequisites to use the Struts Tools BTT Extensions:

- If you had installed the toolkit before you installed the IBM Rational Application Developer or IBM WebSphere Integration Developer, you need to copy the following plug-in files to the wstools\eclipse\plugins\ folder of your WebSphere Studio installation folder:
  - com.ibm.btt.tools.common_5.2.0
  - com.ibm.btt.tools.struts_5.2.0
  - com.ibm.btt.tools.webdiagrameditor_5.2.0

Setting up the Graphical Builder

The Graphical Builder for the Branch Transformation Toolkit is a WebSphere Studio plug-in. The Graphical Builder integrates all developing tools and provides a new way of visualization, integrated development, and seamless deployment technique that applies to the full lifecycle of your application development.

Prerequisites to use the Graphical Builder:
- If you had installed the toolkit before you installed the IBM Rational Application Developer or IBM WebSphere Integration Developer, you need to copy the following plug-in files to the wstools\eclipse\plugins\ folder of your WebSphere Studio installation folder:
  - com.ibm.btt.tools.bpel.model_5.2.0
  - com.ibm.btt.tools.bpel.ui_5.2.0
  - com.ibm.btt.tools.chaeditor.model.emf_5.2.0
  - com.ibm.btt.tools.chaeditor_5.2.0
  - com.ibm.btt.tools.common_5.2.0
  - com.ibm.btt.tools.fmteditor.model.emf_5.2.0
  - com.ibm.btt.tools.fmteditor_5.2.0
  - com.ibm.btt.tools.gw.model.emf_5.2.0
  - com.ibm.btt.tools.gw_5.2.0
  - com.ibm.btt.tools.migration_5.2.0
  - com.ibm.btt.tools.selfdefine_5.2.0
  - com.ibm.btt.tools.struts_5.2.0
  - com.ibm.btt.tools.webdiagrameditor_5.2.0
  - com.ibm.dse.guibeans_5.2.0

Setting up the migration tool

The migration tool is an IBM Rational Application Developer plug-in that helps you migrate your toolkit applications to version 5.2 applications.

Prerequisites to use the migration tool:
- If you had installed the toolkit before you installed the IBM Rational Application Developer or IBM WebSphere Integration Developer, you need to copy the following plug-in files to the wstools\eclipse\plugins\ folder of your WebSphere Studio installation folder:
  - com.ibm.btt.tools.common_5.2.0
  - com.ibm.btt.tools.chaeditor.model.emf_5.2.0
  - com.ibm.btt.tools.chaeditor_5.2.0
  - com.ibm.btt.tools.fmteditor_5.2.0

- com.ibm.btt.tools.fmteditor.model.emf_5.2.0
- com.ibm.btt.tools.struts_5.2.0
- com.ibm.btt.tools.webdiagrameditor_5.2.0
- com.ibm.btt.tools.bpel.model_5.2.0
- com.ibm.btt.tools.bpel.ui_5.2.0
- com.ibm.btt.tools.selfdefine_5.2.0
- com.ibm.btt.tools.bpel.model_5.2.0
- com.ibm.btt.tools.bpel.ui_5.2.0
- com.ibm.dse.guibeans_5.2.0
- com.ibm.btt.tools.gw_5.2.0
- com.ibm.btt.tools.gw.model.emf_5.2.0
- com.ibm.btt.tools.migration_5.2.0

Installing toolkit applications on a runtime platform

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

The Branch Transformation Toolkit provides four sample applications that you can immediately deploy on WebSphere Application Server after you make a few customizations to adapt the sample applications to your particular requirements. See the deployment section of Java Sample Application and HTML Sample Application documentation for this information. The sample application documentation will also provide you with guidance on deploying your own applications.

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 Branch 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, whether it also has source code, and the functional unit's ZIP file. Each row shows the direct framework corequisites and the corequisites of these corequisites.

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

JAR Name	Functional unit or component	Source ZIP name	External dependency	Corequisite JAR
bttbase	Basic framework component	BTTBase	J2EE, Activity Session , ras.jar	dseb
BTTCHAEJB	CHA	BTTCHA	J2EE	bttbase
bttevent	BTT Event	BTTEvent	J2EE	dseb, bttbase, bttjavaclient, bttsm, bttinvoker, dsesym
bttinvoker	EJB invocation framework	BTTInvoker	J2EE, webcontainer.jar, ivjejb35.jar, websphere.jar, Work Area, wsdl4j.jar, wsatlib.jar	bttbase, bttevent, bttjavaclient, bttsm, dseb, dsesym

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

JAR Name	Functional unit or component	Source ZIP name	External dependency	Corequisite JAR
bttjavaclient	Java client support	BTTJavaClient	J2EE	bttbase, bttinvoker, bttsm, dseb
bttjdbjsvc	Jdbc Table Service	BTTJdbcJournalService	J2EE, servletevent.jar, ivjejb35.jar, runtime.jar	bttbase, bttfmt, bttjdbtsvc, bttsvcinfra
bttjdbtsvc	Jdbc Journal Service	BTTJdbcTableService	utils.jar	bttbase, bttfmt, bttsvcinfra
bttopstepadaptor	Operation step adaptor	BTTOpStepAdaptor	J2EE	bttbase, bttevent, bttsm
bttsm	session management	BTTSessionManagement	J2EE, activitySession.jar	bttbase
bttstruts	HTML client in BTT5.1	BTTStrutsExtension	Apache Struts 1.1, J2EE, WSDL	bttbase, bttinvoker, bttsm, dseb
bttstrutsportal	Fully Portal support	BTTStrutsPortal	Apache Struts 1.1, Portal Server 5.1, J2EE, WSDL, dynacache.jar	bttbase, bttevent, bttinvoker, bttsm, bttstruts
bttsvrbean	Single Action EJB	BTTServerBean	Work Area	bttbase, bttfmt, bttsvcinfra
bttsvrflow	BTT Business Process	BTTServerFlow	Work Area, QName, ras.jar, Web Services Invocation Framework, WSDL, bpe.jar	bttbase, bttfmt, bttsvcinfra
dseb	Basic framework component	DSEBase	J2EE Java Servlet API (server only)	
dsecsm	Client/Server mechanism	DSEClientServer Mechanism	SSLight.jar	dsecss, dsesym, dseb
dsecss	Client/Server support	DSEClientServer Support	J/XFS	dseb
dsed	Desktop	DSEDesktop	Java Help, J2EE	dseflp, dsegb, dseb
dseflp	Flow processor	DSEFlowProcessor		dseb
dseflpeclt	Flow Processor extensions (client)	DSEFlowProcessor ExtClient		dseb, dsed, dsegb, dseflp
dsegb	GUI Beans	DSEGuiBeans	SWT	dseb
dsejseib	JSSE enabler	DSEJsseEnablerForIbm	Java Secure Sockets Extension	dseb, dsecss
dsejxbsvc	JXFS service base	N/A	J/XFS	dseb
dsejxcsvc	JXFS Check Reader	N/A	J/XFS	dsejxbsvc, dseb
dsejxpsvc	JXFS Print service	N/A	J/XFS	dsejxbsvc, dseb
dsejxmsvc	JXFS MSR/E service	N/A	J/XFS	dsejxbsvc, dseb
dsesci	Common infrastructure for services	N/A		dseb
dsesym	System Management	N/A		
dsetde	Typed data extensions	DSETypedData Extensions		dseb
dsewojxdsi	J/XFS device service infrastructure (WOSA based)	N/A	J/XFS	dsewossvc, dseb
dsewomjxds	J/XFS MSR/E device service (WOSA based)	N/A	J/XFS	dsewojxdsi, dseb
dsewopjxds	J/XFS printer device service (WOSA based)	N/A	J/XFS	dsewojxdsi, dsewossvc, dseb
dsewossvc	WOSA support	N/A		dseb
BTTServicesInfra_51	BTT V5.1 Service Infra	BTTServicesInfra	J2EE Web Services Invocation Framework, WSDL, QName, Xerces Java Parser, commons-logging-api.jar, Xalan, SOAP, Java Mail, activation.jar	bttbase

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

RAR name	Functional unit or component	Source ZIP name	External dependency	Corequisite JAR
dummysnalu0	BTTDummySnaLu0Connector	N/A	J2EE JCA	
snalu0	DSELu0Connector DSELu0ConnectorJcaPlugin	N/A	Communication Server J2EE JCA WSIF	

Table 4. External dependencies and corequisites for functional units-RAR files (continued)

RAR name	Functional unit or component	Source ZIP name	External dependency	Corequisite JAR
snalu62	BTTLu62Connector BTTLu62ConnectorJcaPlugin	N/A	Communication Server J2EE JCA WSIF	

The following samples are only provided in source code contained in ZIP files:

Table 5. Source ZIP files and dependencies for samples

Sample	Source ZIP name	Dependency
Sample of how to use the WOSA service	DSEWosaSample	dseb, dsewossvc
Sample of how to use the BTTServices	BTTSampleServices	bttbase, bttCHA

The following table lists the sample EAR files, their source or compiled code file, and any corequisites.

Table 6. Source ZIP and EAR files and external and corequisites for the Samples

Sample	Source ZIP and EAR files	External Corequisite	Corequisite JAR
HTML Sample Application	BTTHTMLSample.ear		bttbase, bttinvoker, bttfmt, bttjavaclient, bttjdbjsvc, bttjdbtsvc, bttsm, bttstruts, bttsvrbean, bttsvcinfra
HTML Sample BP Application	BTTHTMLSampleBPEAR.ear		bttbase, BTTCHAEJB, bttfmt, BTTFormatterEJB, bttjdbjsvc, bttjdbtsvc, bttsvrbean, bttsvrflow, bttsvcinfra, sn0dummy
Java Sample Application-CHAFMTSeperated	BTTCHAFMTServer.ear, BTTJavaSample.ear		bttbase, bttfmt, bttjdbjsvc, bttjdbtsvc, bttsvcinfra, bttsvrbean, dsecsm, dsecss, dsed, dseflp, dseflpeclt, dsegb, dsejxpsvc, dsesci, dsesym, dsetde, sn0dummy
Java Sample Application-MultiCHA	BTTCHAEAR.ear, BTTJavaSample.ear		
Java Sample Application-StandAlone	BTTJavaSample.ear		
Portal HTML Sample Application	BTTPortalHTMLSample.ear		bttbase, bttfmt, bttjdbjsvc, bttjdbtsvc, bttinvoker, bttjavaclient, bttsvrbean, bttsm, bttstruts, bttsvcinfra
SampleServiceApplication	BTTSampleService.ear		bttbase, BTTCHA
DSEWosaSample	DSEWosaSample.zip	WOSA/XFS manager and the financial device SPI drivers	dseb, dsewossvc

Table 6. Source ZIP and EAR files and external and corequisites for the Samples (continued)

Sample	Source ZIP and EAR files	External Corequisite	Corequisite JAR
JCASNASampleCode	JCASNASampleCode.zip		
BTTHTMLChannelSampleCode	BTTHTMLChannelSampleCode.zip	J2EE	btthtmlchannel, bttbase, bttjavaclient, bttinvoker
BTTOpStepAdaptorSampleCode	BTTOpStepAdaptorSampleCode.zip	J2EE , struts.jar	bttopstepadaptor, bttbase, bttsm, bttsvrbean, bttinvoker

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

Table 7. JAR, RAR or ZIP files for packages

Package name	JAR/RAR/ZIP name
com.ibm.btt.automaton	btthtmlchannel.jar, BTTHTMLChannel.zip
com.ibm.btt.automaton.ext	btthtmlchannel.jar, BTTHTMLChannel.zip
com.ibm.btt.automaton.html	btthtmlchannel.jar, BTTHTMLChannel.zip
com.ibm.btt.base	bttbase.jar, BTTBase.zip, bttopstepadaptor.jar, BTTOpStepAdaptor.zip
com.ibm.btt.base.types	bttbase.jar, BTTBase.zip
com.ibm.btt.base.types.ext	bttbase.jar, BTTBase.zip
com.ibm.btt.cha.ejb	bttbase.jar, BTTBase.zip, BTTCHAEJB.jar, BTTCHA.zip
com.ibm.btt.clientserver	bttjavaclient.jar, BTTJavaClient.zip
com.ibm.btt.cs.html	btthtmlchannel.jar, BTTHTMLChannel.zip
com.ibm.btt.cs.html.util	btthtmlchannel.jar, BTTHTMLChannel.zip
com.ibm.btt.cs.invoker.base	bttinvoker.jar, BTTInvoker.zip
com.ibm.btt.cs.invoker.base.xml	bttinvoker.jar, BTTInvoker.zip
com.ibm.btt.cs.invoker.cache	bttinvoker.jar, BTTInvoker.zip
com.ibm.btt.cs.java	bttjavaclient.jar, BTTJavaClient.zip
com.ibm.btt.cs.servlet	bttjavaclient.jar, BTTJavaClient.zip
com.ibm.btt.cs.sessionpropagation	bttinvoker.jar, BTTInvoker.zi
com.ibm.btt.event	bttevent.jar, BTTEvent.zip
com.ibm.btt.formatter.client	bttbase.jar, BTTBase.zip
com.ibm.btt.gui.jsptags	btthtmlchannel.jar, BTTHTMLChannel.zip
com.ibm.btt.samples.business.sna.lu0	dummysnalu0.rar
com.ibm.btt.samples.business.sna.lu0.exception	dummysnalu0.rar
com.ibm.btt.samples.business.sna.lu0.host	dummysnalu0.rar
com.ibm.btt.samples.business.sna.lu0.host.event	dummysnalu0.rar
com.ibm.btt.samples.business.sna.lu0.resource	dummysnalu0.rar
com.ibm.btt.samples.business.sna.lu0.services	dummysnalu0.rar
com.ibm.btt.samples.business.sna.util	dummysnalu0.rar
com.ibm.btt.server.bean	bttsvrbean.jar, BTTServerBean.zip

Table 7. JAR, RAR or ZIP files for packages (continued)

Package name	JAR/RAR/ZIP name
com.ibm.btt.server.flow	bttsvrflow.jar, BTTServerFlow.zip
com.ibm.btt.services	bttsvcinfra.jar, BTTServicesInfra.zip
com.ibm.btt.services.jdbc	bttjdbtsvc.jar
com.ibm.btt.services.jdbc.journal	bttjdbjsvc.jar
com.ibm.btt.services.jdbc.tablemapping	bttjdbtsvc.jar
com.ibm.btt.sm	bttsm.jar, BTTSessionManagement.zip
com.ibm.btt.sm.as	bttsm.jar, BTTSessionManagement.zip
com.ibm.btt.struts	bttstruts.jar, BTTStrutsExtension.zip
com.ibm.btt.struts.actions	bttstruts.jar, BTTStrutsExtension.zip
com.ibm.btt.struts.base	bttstruts.jar, BTTStrutsExtension.zip
com.ibm.btt.struts.config	bttstruts.jar, BTTStrutsExtension.zip
com.ibm.btt.struts.exception	bttstruts.jar, BTTStrutsExtension.zip
com.ibm.btt.struts.plugins	bttstruts.jar, BTTStrutsExtension.zip
com.ibm.btt.struts.session	bttstruts.jar, BTTStrutsExtension.zip
com.ibm.btt.struts.taglib.html	bttstruts.jar, BTTStrutsExtension.zip
com.ibm.btt.struts.utils	bttstruts.jar, BTTStrutsExtension.zip
com.ibm.btt.strutsportal.actions	bttstrutsportal.jar, BTTStrutsPortal.zip
com.ibm.btt.strutsportal.base	bttstrutsportal.jar, BTTStrutsPortal.zip
com.ibm.btt.strutsportal.taglib.html	bttstrutsportal.jar, BTTStrutsPortal.zip
com.ibm.btt.tools.migration	bttmigration.jar
com.ibm.btt.tools.migration.btttags	bttmigration.jar
com.ibm.btt.tools.migration.chaformat	bttmigration.jar
com.ibm.btt.tools.migration.dialog	bttmigration.jar
com.ibm.btt.tools.migration.dseini	bttmigration.jar
com.ibm.btt.tools.migration.fileimport	bttmigration.jar
com.ibm.btt.tools.migration.gb	bttmigration.jar
com.ibm.btt.tools.migration.generator.bp	bttmigration.jar
com.ibm.btt.tools.migration.generator.ejb	bttmigration.jar
com.ibm.btt.tools.migration.generator.invoker	bttmigration.jar
com.ibm.btt.tools.migration.generator.invoker.gen	bttmigration.jar
com.ibm.btt.tools.migration.generator.opstep	bttmigration.jar
com.ibm.btt.tools.migration.operation	bttmigration.jar
com.ibm.btt.tools.migration.popup.actions	bttmigration.jar
com.ibm.btt.tools.migration.processor	bttmigration.jar
com.ibm.btt.tools.migration.screenflow.module	bttmigration.jar
com.ibm.btt.tools.migration.selfdefine	bttmigration.jar
com.ibm.btt.tools.migration.util	bttmigration.jar
com.ibm.btt.tools.migration.wizard	bttmigration.jar
com.ibm.connector2.sna.lu0	snalu0.rar
com.ibm.connector2.sna.lu0.exception	snalu0.rar

Table 7. JAR, RAR or ZIP files for packages (continued)

Package name	JAR/RAR/ZIP name
com.ibm.connector2.sna.lu0.host	snalu0.rar
com.ibm.connector2.sna.lu0.host. event	snalu0.rar
com.ibm.connector2.sna.lu0.resource	snalu0.rar
com.ibm.connector2.sna.lu0.tools	snalu0.rar
com.ibm.connector2.sna.lu0.tools.resources	snalu0.rar
com.ibm.connector2.sna.lu0.util	snalu0.rar
com.ibm.connector2.sna.lu62	snalu62.rar
com.ibm.connector2.sna.lu62.exception	snalu62.rar
com.ibm.connector2.sna.lu62.host	snalu62.rar
com.ibm.connector2.sna.lu62.host. event	snalu62.rar
com.ibm.connector2.sna.lu62.resource	snalu62.rar
com.ibm.connector2.sna.lu62.util	snalu62.rar
com.ibm.connector2.sna.services	snalu62.rar
com.ibm.connector2.sna.util	snalu62.rar snalu0.rar
com.ibm.dse.automaton	dseflp.jar, DSEFlowprocessor.zip
com.ibm.dse.automaton.ext	dseflpe.jar DSEFlowProcessorExtensions.zip
com.ibm.dse.automaton.ext.client	dseflpeclt.jar, DSEFlowProcessorExtClient.zip
com.ibm.dse.base	dseb.jar, DSEBase.zip
com.ibm.dse.base.types	dseb.jar, DSEBase.zip
com.ibm.dse.base.types.ext	dsetde.jar, DSETypedDataExtensions.zip
com.ibm.dse.clientserver	dseb.jar, DSEBase.zip dsepsi.jar, DSEPresentationServerInfra.zip
com.ibm.dse.cs.servlet	dsecss.jar, DSEClientServerSupport.zip dsecsm.jar, DSEClientServerMechanism.zip dseb.jar, DSEBase.zip
com.ibm.dse.desktop	dsed.jar, DSEDesktop.zip
com.ibm.dse.gui	dsegb.jar, DSEGuiBeans.zip
com.ibm.dse.jxfsds.wosamsd	dsewomjxds.jar
com.ibm.dse.jxfsds. wosaptr	dsewopjxds.jar
com.ibm.dse.services	dsesci.jar
com.ibm.dse.services.jxfs	dsejxbsvc.jar
com.ibm.dse.services.jxfs.chk	dsejxcsvc.jar
com.ibm.dse.services.jxfs.msd	dsejxmsvc.jar
com.ibm.dse.services.jxfs.ptr	dsejxpsvc.jar
com.ibm.dse.services.wosa	dsewossvc.jar
com.ibm.dse.sysmngment	dsesym.jar
com.ibm.dse.wosabean	dsewojxdsi.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 8. Locations for prerequisites

Prerequisite	Resource name	How to get them
IBM DB2	db2java.zip	Available from IBM DB2 Universal Database™
Oracle	classes12.zip	Available from Oracle
SQL Server 2000	msutil.jar mssqlserver.jar msbase.jar	Available from Microsoft SQL Server 2000
J2EE Connector Architecture API	j2ee.jar	Available in WebSphere Application Server
MQSeries	MQSeries.jar	Available from MQSeries
Xerces Java Parser	xerces.jar	Available in WebSphere Application Server
JavaHelp	jh.jar	Available in WebSphere Application Server
SOAP	soap.jar	Available in WebSphere Application Server
EJB Container	ejbcontainer.jar	Available in WebSphere Application Server
RAS/Trace Subsystem	ras.jar	Available in WebSphere Application Server
Runtime Utilities	utils.jar	Available in WebSphere Application Server
External WebSphere APIs	websphere.jar	Available in WebSphere Application Server
Xalan	xalan.jar	Available in WebSphere Application Server
EJB base classes	ivjejb35.jar	Available in WebSphere Application Server
Data converters	vaprt.jar	Available in WebSphere Application Server
QName XML Extension	qname.jar	Available in WebSphere Application Server
WSDL	wsdl4j.jar	Available in WebSphere Application Server
Portal	PortalStruts.jar PortalStrutsBase.jar PortalStrutsCommon.jar PortalStrutsTags.jar portlet-api.jar strutsfilters.jar StrutsUpdateForPortal.jar	Available in WebSphere Portal Server. Version 5.1 required
J2EE Connector Architecture Default Connection Manager	ccf2.jar	Available in WebSphere Application Server
Web Services Invocation Framework	wsif.jar wsif-j2c.jar wsatlib.jar wsif-compat.jar wsif-compatb.jar	Available in WebSphere Application Server

Table 8. Locations for prerequisites (continued)

Prerequisite	Resource name	How to get them
Work Area	acwa.jar distexcep.jar	Available in WebSphere Business Integration Server Foundition
BP Support	bpe.jar	Available in WebSphere Business Integration Server Foundition
Activity Session	activitySession.jar	Available in WebSphere Application Server
Common Log	commons-logging-api.jar	Available in WebSphere Application Server
Eclipse	compatibility.jar console.jar core.jar defaultAdaptor.jar eclipseAdaptor.jar jface.jar osgi.jar resolver.jar runtime.jar services.jar servlet.jar swt.jar ui.jar util.jar workbench.jar xercesImpl.jar xml-apis.jar xmlParserAPIs.jar	Available in Eclipse, version 3.0.0 required.
JavaBeans™ Activation Framework	activation.jar	Available in WebSphere Application Server
JavaMail	mail.jar	Available in WebSphere Application Server
Runtime	runtime.jar	Available in WebSphere Application Server

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