IBM Branch Transformation Toolkit
for WebSphere Studio

Release notes

Version 5.1

Note!
Before using this information and the product it supports, be sure to read the general information under "Notices" on page 9.

Eighth Edition (July 2005)

This edition applies to Version 5, Release 1, Modification 0, of *IBM Branch Transformation Toolkit for WebSphere Studio* (5648-D89) and to all subsequent releases and modifications until otherwise indicated in new editions.

IBM welcomes your comments. You can send to the following address:

IBM China Software Development Lab
Information Development
10F Shui On Plaza, 333 Middle Huai Hai Road
Shanghai 200021, P. R. China

Include the title and order number of this book, and the page number or topic related to your comment.

When you send information to IBM, you grant IBM a nonexclusive right to use or distribute the information in any way it believes appropriate without incurring any obligation to you.

Contents

Branch Transformation Toolkit release notes

IBM Branch Transformation Toolkit for WebSphere Studio 5.1

This document describes the contents of version 5.1 of IBM® Branch Transformation Toolkit for WebSphere® Studio (Branch Transformation Toolkit). It provides descriptions of new components or functionality.

New in this release

The following additions and enhancements have been made to this version of the Branch Transformation Toolkit.

Architecture

The Branch Transformation Toolkit version 5.1 is based on the J2EE standard architecture.

The Java™ client side components remain the same as in version 4.3.

The application server tier of the Branch Transformation Toolkit has been split into two layers to separate the presentation from business logic. The application presentation layer, which resides in the Web container of the J2EE environment, now restricts itself to creating requests for business logic hosted within the application logic layer and, for non-Java clients, providing view navigation based on the Apache Struts Framework. The application logic layer performs the business logic requests.

This change enables applications to use more of the capabilities provided by WebSphere Application Server while providing backward compatibility with version 4.3 with minimal migration effort. Version 5.1 of the Branch Transformation Toolkit consists of a set of entirely new components that perform or support a business process or access services and data from the back-end enterprise tier.

Application server components

This section describes the changes to the application server components due to the new architecture.

Many toolkit components that used to run in application server are removed or significantly changed:

Flow processors
The flow processors do not exist in application servers now. Flow processors are replaced by business processes. Through the Client/Server interfaces, toolkit clients passes requests to an invoker or a WSIF Action that calls the Business Process Component or Single Action EJBs in the application logic layer.

Server operations
Operations do not exist in application servers now. Stepped operations are replaced by business processes, and non-stepped operations are replaced by business processes or Single Action EJBs. Through the Client/Server

interfaces, toolkit clients pass requests to an invoker or a WSIF Action that calls the Business Process Component or Single Action EJBs in the application logic layer.

Shared components across containers

This section describes the new components and changes components that can be shared across the Web container and the EJB container. That is, these components can be used both by the application presentation layer and the application logic layer.

Common Hierarchical Area

This component, called the CHA, uses J2EE technology to wrap contexts as EJBs so that they are accessible by any entity running in the EJB container. This enables a business process to get the data it needs. Because the CHA contexts are EJBs, non-toolkit applications can use the CHA to contain general global session information.

CHA contexts

The contexts running in the application server side, which is called CHA contexts, is different from those running in the Java client side. Compared with the contexts running in the Java client side, the CHA contexts have additional wrapping so that they exist as EJBs. There is no connection between the contexts and CHA contexts

Events

The events running in the application server side have a different structure than those running in the Java client side. The application server side events use Java Message Service (JMS) for events propagation.

CHA Formatter Service

This service formats data objects into strings and parses strings into data objects so that data can move into and out of CHA contexts.

Externalizers

Externalizers exist in both layers except that the application logic layer does not contain externalizers for toolkit entities that are purely related to presentation such as flow processors and views.

Application presentation layer components

This section describes the components in the new application presentation layer. These components operate within the Web container in WebSphere Application Server. They call application server components for doing transactions through WSIF messages or through EJB method invocation.

Sessions

The session management component now only exists in the application presentation layer. All session handling are managed by a session handler, and CHA contexts do not provide any session management features.

Bean Invoker Factory

This component creates the invoker that invokes the business logic implementation in the application logic layer. The implementation can be a Single Action EJB or a business process running in Process Choreographer.

Struts Extensions

This component extends the Apache Struts Framework to support an HTML-based graphical user interface (GUI) that is presented in a Web browser using an HTTP connection. The Struts Extensions component replaces the HTML request handler and flow processors to receiving requests from HTML clients and handle the presentation for those clients.

JSPs The JSPs now makes intensive use of the Struts tag library. Branch Transformation Toolkit further extends the tag library to provide more tags for toolkit applications.

Java Client/Server Messaging APIs
The Java Client/Server Messaging APIs contain the Java client request handler and the Java client presentation handler. This component does similar things to Java clients as the Struts Extensions components does to the HTML clients.

Application logic layer components

This section describes the components in the new application logic layer. These components operate within the EJB container in WebSphere Application Server.

Business Process Component
This component prepares the data for a business process running in the Process Choreographer of WebSphere Business Integration Server Foundation and creates the response once the process flow has finished. WebSphere Studio Application Developer Integration Edition provides the Process Editor as a visual tool to facilitate in creating business processes. To reduce migration effort, the Business Process Component provides com.ibm.btt.server.flow.BTTOperActivity and BTTOperStepActivity. These classes replace DSEServerOperation and OperationStep.

Single Action EJBs
These are EJBs that perform business processes. They are functionally equivalent to business processes running in the Process Choreographer except that they can run on any edition on WebSphere Application Server and have better performance.

Startup beans
These do the initialization for the application logic layer components such as the CHA, CHA Formatter Service, and application logic layer services.

Communication services
These services support communication with back-end enterprise systems through the JCA. The toolkit provides the SNA JCA Lu0 and the SNA JCA Lu62 Connector as resource adapters that conform to the JCA standard. The SNA JCA Lu62 Connector is new to the toolkit.

Database services
The database services exist in the application logic layer and follow its architecture. The toolkit provides the Electronic Journal and Database Table Mapping services.

In the Electronic Journal, the JDBCJournal is the service requester and maintains the same API as it did in the previous version. Note that because WebSphere Application Server now handles the connection to the database, JDBCJournal no longer needs to get, set, or load the JDBC driver. The JDBCJournal communicates with the service object JDBCJournalImpl using local Java calls, EJB method calls, WSIF SOAP binding messages, or WSIF EJB binding messages. The service object has the task of accessing the database to perform the request sent to it by the requester.

Because the schema generator JDBCJournalSchemaGenerator and the JDBC driver must be in the same JVM, the Electronic Journal no longer allows an application to call the generator to create the tables. Instead, the database administrator uses the generator to create the tables so that they are available when the application starts.

In the Database Table Mapping service, the JDBCTable is the service requester and maintains the same API as it did in the previous version. Note that because WebSphere Application Server now handles the connection to the database, JDBCTable no longer needs to get, set, or load the JDBC driver. The JDBCTable communicates with the service object JDBCTableImpl using a WSIF interface. The service object has the task of accessing the database to perform the request sent to it by the requester.

With the new implementation, the externalizer for the service ignores the following attributes in the service definition:

- databaseURL
- JDBCDriver
- poolName
- sharedConnection
- statementPoolSize

The JDBCServicesConnectionManager has the following new attributes:

- orphanTimeout - the number of seconds that passes before the JDBCServicesConnectionManager discards an unused or idle connection.
- reapTime - the number of seconds that passes between runs of the pool maintenance thread.

Tools

This section describes the updates to the tools provided by the toolkit.

Graphical Builder

The Graphical Builder is the tool used during toolkit development for creating external definitions and runtime components, maintaining them, and so on. It is a plug-in of WebSphere Studio Application Developer or WebSphere Studio Application Developer Integration Edition. The Graphical Builder provides a development environment throughout the development cycle of toolkit applications. It also acts as a portal from where you can start other tools that the toolkit provides.

CHA Editor

The CHA Editor is the tool used during toolkit development for creating and maintaining the external definition files of CHA (Common Hierarchical Areas) contexts and their data elements and types. It provides a visual representation of the structure and relieves you of the need to deal with XML tags. The CHA Editor is a WebSphere Studio Application Developer plug-in that you can run from the Application Developer.

Format Editor

The Format Editor is the tool used during toolkit development for creating and maintaining the external definition files of formatters and their CHA contexts and data elements. It provides a visual representation of the structure and relieves you of the need to deal with XML tags. The Format Editor is a WebSphere Studio Application Developer plug-in that you can run from the Application Developer.

Business Process BTT Wizard

The Business Process BTT Wizard is the tool used to customize your business processes for taking advantage of toolkit specific entities such as CHA contexts. It provides a graphical user interface that saves you from editing the BPEL files directly.

Struts Tools BTT Extensions

The Struts Tools BTT Extensions provides a GUI to help you extend your Struts configuration files for taking advantage of toolkit specific entities such as CHA. It provides a graphical user interface that saves you from editing the Struts configuration files in XML format directly. The Struts Tools BTT Extensions is an integral part of toolkit development and is documented separately.

Migration tools

The migration tools provides wizards to help you migrate the toolkit configuration files, context definitions, formatter definitions, server operations, flow processors, and screen flows of your version 4.3 application to the corresponding components of your version 5.1 application. The migration tools can also generate Graphical Builder files which enables you to further modify your migrated application with the Graphical Builder.

Product fix history

This section lists the closed APARs in version 5.1 of the Branch Tranformation Toolkit.

Table 1. List of closed APARs against version 4.3

APAR number	Description
JR20101	Long running processors with freq. state changed
JR20106	Deadlock/timeout exceptions thrown from BTT
JR20304	fail to refer keyedCollection in self-defined processor
JR20357	Error in rounding
JR20358	Memory leak
JR20428	JDE Nullpointer exception
JR20470	rounding off , similar to pmr09040,000,818
JR20739	Exception occcurs in SpTable + cell values get copies
JR20916	OutofBounds error in SpTable
JR20947	SpTable throws class cast exception on enter
JR20950	SPTABLE changes column alignment
JR20984	The Scenario Area does not place the focus on the 1st task button of the Scenario
JR21005	SpTable does not display the error msg
JR21120	Dynamic create keyedcollection in indexcollection error
JR21135	BTT Patch - encountered error in CSClient
JR21267	tree tooltip
JR21340	WSBTT DB event mulitcaster cause class cast exception

Hardware and software requirements

For the hardware and software required to set up the Branch Transformation Toolkit development and runtime environments, see Hardware and software requirements in the Installation Guide.

Limitations, known issues, and workaround

This section lists the limitations and known issues for this release. It also provides information on any fixes or workarounds that exist for these limitations and issues.

The following limitations and issues are identified with the following components:

Invokers

- When using JDK 1.4, create the EJB home object of the invokers explicitly. The invoker super class does not provide common EJBHome creation method.

Services

- If the service invoker is called in a non-J2EE environment, the SOAP invocation with nested Hashtable message type works properly, but in J2EE environment (for example, application client, servlet, EJB, and so on), the nested Hashtable message type fails. This affects the services architecture, JDBC Table services and the Electronic Journal.

Business Process BTT Wizard

- Because the Business Process BTT Wizard is to make extension from EMF model of Process Editor and the graphical display of the Process Editor is controlled by the internal mechanism of the EMF/GEF , the Business Process BTT Wizard cannot display well on graphical layout of generated BPEL snippets and content of BPEL variables. Manually adjust the graphical layout to get more clear pictures and re-open the editor to refresh the content of BPEL variables.

CHA Editor and Format Editor

- Only support Motif mode for WebSphere Studio Application Developer or WebSphere Studio Application Developer Integration Edition in Linux®.
- Only support the syntax of tools. If you load an XML file that contains self defined tags or attributes that tools does not support, those tags or attributes will be cleaned out from XML file after save back that XML file.
- Type view does not support synchronization with other views.
- For Typed data, the descriptor does not support adding parameter as a sub-tag with id that is not defined in optional attributes.
- For Typed data, the KCollDescriptor and ICollDescriptor does not support adding a validator into the descriptor.
- For Typed data, the refType descriptor cannot add attributes to override attributes of referenced data.
- When using WebSphere Studio Application Developer Integration Edition version 5.1.1 on Linux in motif mode , using the middle mouse key to drag context node and format definition is not supported.
- When using the Format Editor with WebSphere Studio Application Developer, always close the Format Editor before closing the WebSphere Studio Application Developer. Otherwise, next time when WebSphere Studio Application Developer is started, the Format Editor and CHA Editor that are started automatically might have problems with view synchronization. To solve the synchronization problem, close the automatically started Format Editor and CHA Editor, and then start them again.

Migration tools

- The migration tool does not support the new attributes of the customer extension.

- To import definition files, when using URL instead of local disk, all self-define files have to be specified in the dse.ini file. It is impossible to query how many files under a certain URL.
- If you do the screen flow migration multiple times, the wizard will show duplicate Struts configuration files in the list.

Notices

IBM may not offer the products, services, or features discussed in this document in all countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

IBM World Trade Asia Corporation
Licensing
2-31 Roppongi 3-chome, Minato-ku
Tokyo 106, Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law:

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

Lab Director
IBM China Software Development Lab
2/F Deshi Building, No.9 Shangdi Dong Rd,
Beijing 100085, P.R. China

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement, or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurement may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples may include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrates programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. You may copy, modify, and distribute these sample programs in any form without payment to IBM for the purposes of developing, using, marketing, or distributing application programs conforming to IBM's application programming interfaces.

Trademarks and service marks

The following terms are trademarks of International Business Machines Corporation in the United States, or other countries, or both:

IBM	OS/390
AIX	z/OS
CICS	LANDP
WebSphere	Tivoli
DB2	DB2 Universal Database
Informix	IMS
MQSeries	RS/6000
zSeries	

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

MMX, Pentium, and ProShare are trademarks or registered trademarks of Intel Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Linux is a trademark of Linus Torvalds in the United States, other countries, or both.

Other company, product or service names may be trademarks or service marks of others.