

WebSphere® IBM WebSphere Multichannel Bank Transformation Toolkit
Version 7.0

*Migration guide from BTT version 4.3
to BTT version 7.0*



Note!

Before using this information and the product it supports, be sure to read the general information under “Notices” on page 17.

This edition applies to Version 7, Release 0, Modification 0, of *IBM WebSphere Multichannel Bank Transformation Toolkit* (5724-H82) 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
Bank Transformation Toolkit Product
Diamond Building, ZhongGuanCun Software Park, Dongbeiwang West Road No.8,
ShangDi, Haidian District, Beijing 100193 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.

© Copyright IBM Corporation 1998, 2010.

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

Migration guide from BTT version 4.3 to BTT version 7.0 1

Concepts	1
Migration Overview	1
Benefits gained through the migration	2
Migration tool architecture and support	2
Migration procedures	3
Phase 1: Analysis and preparation	3
Phase 2: Customizing the migration tool	4
Phase 3: Migrating your applications	5
Phase 4: Adding the business logic and fixing errors	5
Using the migration tool	6
Tasks	6
Setting up the migration tool	6
Adding rules	7
Migrating Java code	7
Migrating dse.ini file	8
Migrating XML file	9

Migrating JSP file	9
Migrating externalizer	10
Migrating Channel	11
Migrating exception handling	11
Migrating APIs	11
Migrating Service	12
Migrating the XML files	12
Migrating context	12
Migrating formatter	13
Generating reports	13
References	13
Manual migration	13
Code changes in dse.ini after migration	14
Initializer and extFile	14
Processor definition	15
Operation definition	15

Notices 17

Trademarks	19
----------------------	----

Migration guide from BTT version 4.3 to BTT version 7.0

This migration guide provided by Bank Transformation Toolkit (BTT) version 7.0 helps users of BTT version 4.3 move up to the full power and versatility of IBM® WebSphere® Application Server. It provides the migration path to allow an enterprise to reuse much of its existing toolkit application code base and still take advantage of the WebSphere J2EE environment.

IBM recognizes that an enterprise cannot always upgrade its application software all at once. Because the enterprise can decide how much or how little toolkit functionality to retain, BTT version 7.0 enables the enterprise to upgrade to a full J2EE environment incrementally. With BTT version 7.0, the enterprise can bypass the toolkit functionality and access J2EE components directly upon requests.

BTT version 7.0 provides a migration tool that helps you to migrate your applications. The tool can migrate BTT version 4.3 definitions to BTT version 7.0 definitions and migrate BTT version 4.3 class packages and APIs to the corresponding BTT version 7.0 class packages and APIs.

This migration guide describes the concepts that you need to know before you migrate your applications to BTT version 7.0 and the tasks you need to take to roll out the migrations with the migration tool.

Concepts

Before you can perform the migration tasks, you need to understand the concepts that you might meet during the migration process. In this chapter, you can have an overview of the migration, find out how you can benefit from the migration, and get an understanding of the migration process. For detailed information about concepts in the migration from BTT version 4.3 to BTT version 7.0, see the following sections.

Migration Overview

BTT version 7.0 provides the following functions to help you migrate your applications from BTT version 4.3 to BTT version 7.0:

Definition Transformation

This feature transforms the definition files from BTT version 4.3 to BTT version 7.0. All the existing definition files are converted or migrated to the corresponding BTT version 7.0 definition files. For example, the definition file *dse.ini* is converted to another definition file *btt.xml*.

Java™ Code Migration

Because many components in BTT version 7.0 are different from those in BTT version 4.3, the migration tool in BTT version 7.0 provides a function to make the previous code migrated from the existing BTT version 4.3 program to the BTT version 7.0 base program. This reduces the workload for the application program migration.

Customer Extension Support

This is a key feature of the migration tool. The migration tool is rule-based, which means that the specific migration action depends entirely on the given rules. You can customize your own migration rules to meet the program migration requirements.

Default Migration Rules Provided

BTT version 7.0 provides default migration rules for migration from BTT version 4.3 to BTT version 7.0. You can leverage the default rules directly or extend it to meet your additional requirements.

Exclusions

UI features here refer to the JSP presentation logic and Swing based presentation logic. In BTT version 7.0, Swing based Java client is totally compatible with BTT version 4.3, so no migration is needed. As for JSP presentation logic, you need to migrate it manually.

Constraints

To reduce the complexity of the migration process, the migration tool limits the availability. The migration tool is rule based, so you are not able to migrate the migration scenarios that rules cannot represent.

Benefits gained through the migration

Bank Transformation Toolkit version 7.0 provides support for distributed architecture. The adoption of a distributed architecture brings some immediate benefits to the system planner and developer.

You can benefit from the migration in the following aspects:

- Scalability improves by an order of magnitude. A version 7.0 system can scale from a small or medium enterprise having a single server to large enterprises with server farms distributed across multiple regional data centers.
- Performance can be tuned by balancing hardware and network usage against the expected user base. Rational® Application Developer and WebSphere Integration Developer provide many tools and guides for performing this tuning.
- Industry standards such as JCA, EJB, JMS, and Web services replace many previous architectures and facilities in the toolkit. This adds flexibility to expanding enterprise applications using third-party components that are built with the same industry standard architectures.
- To enhance its flexibility, the toolkit maintains much of its previous external design philosophy. It further adds more configurability to this mix by allowing its deployment information to be configured. Scaling and performance tuning are all performed using configuration settings rather than Java code changes.
- Platform flexibility is provided using this configurability as well. Version 7.0 can execute using Rational Application Developer for small scale deployments or it can make use of the enhanced features of WebSphere Integration Developer to expand the available options to much larger enterprise deployments.

For more information about the benefits brought by BTT version 7.0, see the Solution Architecture Document for BTT version 7.0.

Migration tool architecture and support

Bank Transformation Toolkit version 7.0 provides a migration tool to help you migrate your toolkit applications developed with previous versions of the toolkit to the new version 7.0 architecture.

A high scalability architecture has been applied to this rule based migration tool. Under this architecture, you can easily extend the toolkit to meet your specific requirements. It is much like a generic migration toolkit, because it can be used in most Java application migration cases besides BTT. Therefore, this toolkit is much better than any other similar migration toolkit in BTT history. The following figure

shows the architecture of this rule based migration tool.

Figure 1. Migration tool architecture

The specific functional descriptions of the migration tool are listed as follows:

- Migrate Java code:
From BTT version 4.3 to BTT version 7.0, there are inevitable API changes to the same functions. It is time-consuming to replace the old API calls with the new ones. Java code migration is one major function of the migration tool.
- Migrate *dse.ini* file:
Dse.ini contains most of the configurations for all the BTT components. New components are added in version 5.x and version 6.x. In BTT version 7.0, the definition file *dse.ini* is converted to another definition file *btt.xml*. The migration tool helps you to migrate this file.
- Migrate other XML files:
In BTT, context, formatter, services, data element, and operation are externalized into XML files. The referenced package names and class names of these XML files are different in different versions. Migrating these XML files is another major function of the migration tool.
- Generate migration report:
After you run the migration tool, a report is generated to record the tasks the migration tool performed.

The migration tool is rule-based, which means that the migration depends on the given rules. You can change the rule set according to your needs. You can also use this tool to migrate other Java applications.

Migration procedures

Before you start migrating your applications from BTT version 4.3 to BTT version 7.0, you need to follow the migration procedures.

The whole migration process consists of the following four phases:

- Phase 1: Analysis and preparation
- Phase 2: Customizing the migration tool
- Phase 3: Migrating your applications
- Phase 4: Adding business logic and fixing errors

The phases are iterative and contain tasks that might be refined during the project life cycle.

Phase 1: Analysis and preparation

In this phase, you need to analyze the differences between BTT version 4.3 and BTT version 7.0, especially the application logic layer.

About this task

Based on the documentation of the existing application system, you can identify the parts that can be migrated automatically and the parts that cannot be migrated automatically, and then make necessary preparation for the migration. To get well prepared for the migration, you need to do the following work:

1. Gather all the definition files of the existing application system version 4.3. The migration tool can migrate the definition files on the server side from version 4.3 to version 7.0. The migration tool can process the definition contents based on the given rules. BTT version 7.0 provides default migration rules, but if there are any special tag definitions that are not included in the default rules, the migration tool might not be able to migrate them successfully or properly. In this case, you need to customize the migration tool rules to extend the process to cover those special tag definitions for the application or migrate them manually later.
2. The migration tool can migrate the business logic Java code of the application to BTT version 7.0 directly. BTT version 7.0 uses the processor, operation, and operation step on the server side of BTT, which is the same as in BTT version 4.3. The differences are in package names, class names, and changes of APIs. The migration tool can migrate BTT version 4.3 classes and APIs to the corresponding BTT version 7.0 classes and APIs.
3. BTT version 7.0 provides more powerful Context and Formatter, and the API usage is different with that in BTT version 4.3. The migration tool of BTT version 7.0 can help you migrate the Context, Formatter, and APIs for the migration.
4. Do manual migration to run the BTT version 4.3 event in BTT version 7.0, because the prior event mechanism is changed to fit BTT version 7.0 framework.
5. Migrate BTT version 4.3 services. The supported services of BTT version 7.0 on the server side does not support all of the BTT version 4.3 services, and the SNA LU0/6.2 communication services are changed to JCA connectors. You must find a substitutive solution (or implement a new service based on the new service architecture) for these unsupported services. For example, Lotus Notes[®] support, LDAP support, MQ connector, and the relevant JCA connector. The migration tool can migrate the server side service definitions with customized migration rules, but you must find a substitutive solution for the unsupported services.
6. The event mechanism is changed to fit version 7.0 framework so that it can be distributable and spans different servers. You must check and modify the applications accordingly if the event mechanism is adopted in the server side in the current application system.
7. There are two kinds of client applications in BTT version 4.3. There is no change to the Swing based Java client, so you do not need to migrate it to BTT version 7.0. For JSP/HTML based client, the migration tool does not support its migration, so manual migration is needed.
8. Migrate the BTT trace. BTT version 7.0 enhances the trace features to support more powerful functions and comprehensive APIs. BTT version 7.0 trace is completely compatible with BTT version 4.3 trace. If you do not want to use the new trace framework, the old trace can still work in BTT version 7.0 runtime container. If you want to use the new trace, use the migration tool to achieve the trace by defining specific migration rules.
9. If the future application only runs on WebSphere Application Server, use Rational Application Developer to migrate the application. If the future application runs on WebSphere Process Server, use WebSphere Integration Developer to migrate the application.

Phase 2: Customizing the migration tool

In this phase, you need to customize the migration tool to extend its functionality.

About this task

To customize the migration tool, take the following steps:

1. Customize the Java code migration rules. Because the migration tool is based on migration rules, if you need extend the BTT functionality, you should customize the migration rules to meet your special requirements.
2. Customize the definition file migration rules. Because the migration tool is based on migration rules, if you need to extend the BTT functionality and have some special tags in the definitions, you should customize the migration rules to meet these special requirements.

Phase 3: Migrating your applications

In this phase, you can start migrating your applications with the migration tool.

About this task

To migrate your applications from BTT version 4.3 to BTT version 7.0, take the following steps:

1. Replace the old BTT version 4.3 jar files with BTT version 7.0 jar files, and change the build path of the project to the new jar files.
2. Import the application that you want to migrate to the workspace as a project, and configure the migration tool. The migration tool will migrate the application directly based on the original project.
3. Migrate the configuration file *dse.ini* to *btt.xml*. In BTT version 4.3, the configuration file is *dse.ini*, but in BTT version 7.0, it is renamed as *btt.xml*.
4. Migrate the definition files of the context, the data element, the type data, and the format.
5. Migrate the business logic. BTT version 7.0 uses process, operation, and operation step as channel aware business logic, which is similar with BTT version 4.3. In BTT version 7.0, the architecture is refined, and some components are re-designed, so the package names, class names, and some APIs in BTT version 7.0 are different from those in BTT version 4.3. The migration tool will automatically migrate these differences.
6. Manually migrate the components that cannot be completely migrated by the migration tool.

Phase 4: Adding the business logic and fixing errors

After you have migrated the applications from BTT version 4.3 to BTT version 7.0, you must add the business logic and fix the errors.

About this task

To add the business logic and fix errors, take the following steps:

1. Fix the Java build errors. There might be some API mismatch problems between BTT version 4.3 and BTT version 7.0. The migration tool can handle most of them for manual migration. If not, leverage RAD to fix the problem. For detailed information about API usage, see the related tasks.
2. Build the services that BTT version 7.0 does not support, and change the access to the services.
3. Change the access to the communication services to comply with JCA.

Using the migration tool

About this task

The Bank Transformation Toolkit (BTT) provides a migration tool to help you migrate your toolkit applications from version 4.3 to version 7.0. The migration tool can perform the following tasks to help you migrate your applications:

- Convert the file *dse.ini* from BTT version 4.3 to the file *btt.xml* in BTT version 7.0.
- Migrate the definition files in BTT version 4.3 to the definition files in BTT version 7.0, including context definitions, formatter definitions, and so on.
- Migrate the application Java codes, including package names, class names, APIs, and so on from BTT version 4.3 to BTT version 7.0.
- Migrate the JSP Tablib uri, BTT customized tag, page import, and Java code in JSP file from BTT version 4.3 to BTT version 7.0.

The migration tool is rule-based. It migrates BTT version 4.3 applications to BTT version 7.0 based on the given migration rules. You can customize the migration rules to meet your special requirements.

For information about how to use the migration tool, see Migration Tool.

Tasks

After you get to know the concepts in the migration process, you can use the migration tools to migrate your applications from BTT version 4.3 to BTT version 7.0. In this chapter, you can find information about how to set up the migration tool and how to use the migration tool to perform the migration tasks.

Setting up the migration tool

Before you can migrate your applications from BTT version 4.3 to BTT version 7.0, you need to set up the migration tool.

Before you begin

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

- `com.ibm.btt.tools.migration_7.0`
- `com.ibm.btt.core_7.0`

About this task

To set up the migration tool, take the following steps:

1. Start IBM Rational Application Developer.
2. Import the project that you want to migrate.
3. Click **Window** → **Preferences** on the menu bar of IBM Rational Application Developer.
4. In the dialog box that is displayed, select **BTT Migration** in the left panel.
5. In the right panel of the dialog box, select the migration rule definition file that you want to apply. In the migration tool plug-in, there is a **config** category, and you can find BTT version 4.3 to BTT version 7.0 migration rule definition files under the related category.

6. Click **OK**.
7. In the **Project Explorer** view, right-click the BTT definition file and select **BTT Migration**.

Results

The migration report and migration results will be displayed in the **Project Explorer** view if there are any.

Adding rules

About this task

The migration tool provides different types of migration: Java migration, BTT definition XML file migration, dse.ini file migration, and JSP file migration. The migration is implemented according to the configured migration rules.

Two series of rule sets are provided: version 4.3 to version 7.0 migration rule set and version 5.2 to version 7.0 migration rule set. The rule sets are in the `$D(RAD)\plugins\com.ibm.btt.tools.migration_7.0\config` directory. By default, the 5.2 to 7.0 rule set is applied.

The following files are configuration files for this Rule-based Migration Tool:

- javaRule.xml: rules for Java code migration
- cfgRule.xml: rules for XML and dse.ini file migration
- bttTemplate.xml: btt.xml template.
- jspRule.xml: rules for JSP file migration

If the default rules can not meet your migration needs, you can add new rules and configure them as the migration rules in the Preference setting.

To configure your own migration rules, do the following:

- Click **Window** → **Preferences...** in Rational Application Developer.
- In the left panel of the Preferences dialog box, expand **BTT**, and select **Migration**.
- The migration configuration is displayed in the right panel.
- You have two options for the configuration of the migration rule:
 - Default rule: BTT migration tool provides a default migration rule. If the default rule meets your migration requirements, you can use it directly. If you do not specify any migration rule, the default rule will be used.
 - Self-define rule: If the default rule does not meet your migration requirements, you can define your own migration rule, and then click **Browse** to locate your own migration file.

The migration tool reports error if the migration rule is configured incorrectly or the rule file is not valid.

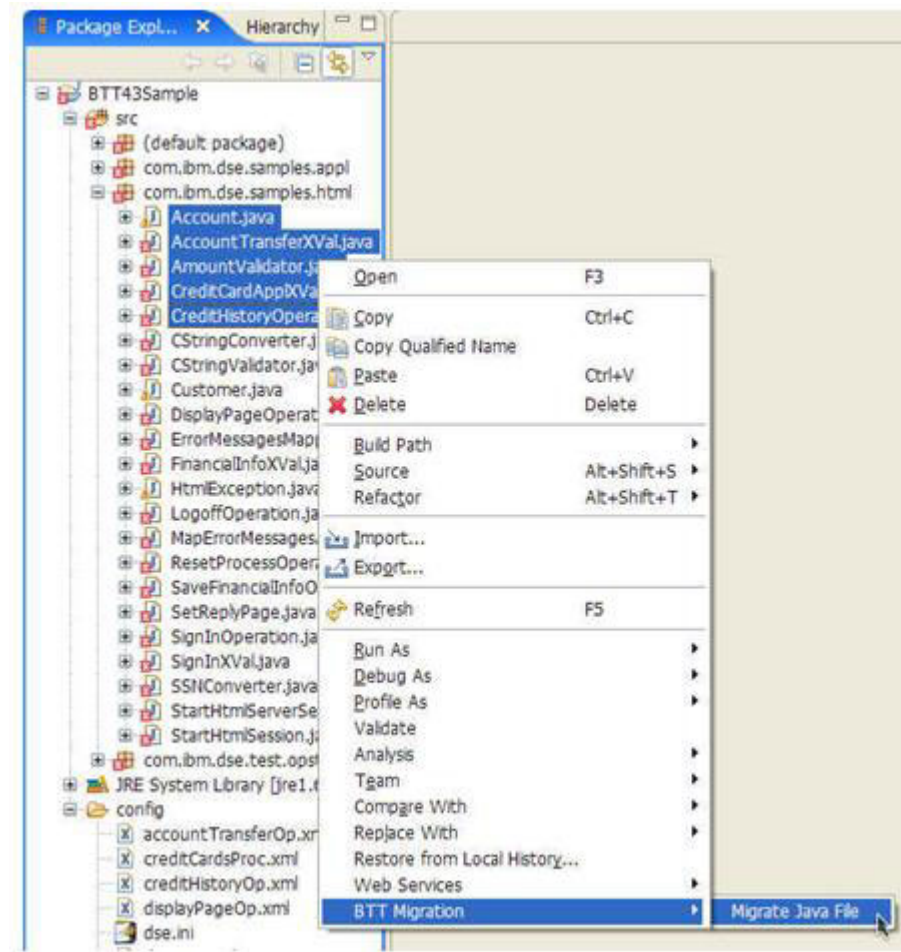
Migrating Java code

About this task

Java code migration can be done in two ways: Java file level migration and package level migration.

To migrate Java code, do the following:

- Select the target Java file or package, and right-click it.
- If you are doing Java file level migration, in the menu that pops up, click **BTT Migration** → **Migrate Java File**:



If you are doing package level migration, click **BTT Migration** → **Migrate Java Files**:

- The Java code is migrated. The migrated Java code will replace the original Java code.

Migrating dse.ini file

About this task

To migrate dse.ini file, do the following:

- Select the dse.ini file and right-click it.
- In the menu that pops up, click **BTT Migration** → **Migrate dse.in**.
- The dse.ini file is migrated into the config.migrated folder.

Migrating XML file

About this task

To migrate XML file, do the following:

- Select the XML file and right-click it.
- In the menu that pops up, click **BTT Migration** → **Migrate XML file**.
- The XML file is migrated into the config.migrated folder.

Batch migration is also supported.

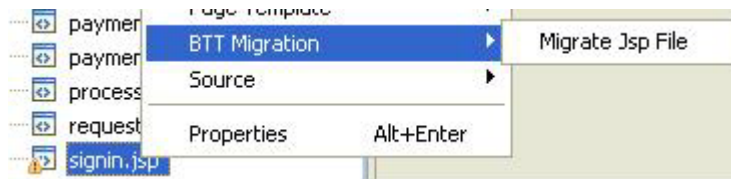
Migrating JSP file

About this task

You can migrate JSP Taglib uri, BTT customized tag, page import, and Java code in JSP file. The migration rules of taglib uri and BTT customized tag are defined in the JSP migration rule file. The migration rules of Java code are defined in Java migration rule file.

To migrate JSP file, perform the following steps:

1. Select the JSP file and right-click it.
2. In the menu that pops up, click **BTT Migration** → **Migrate JSP file** as shown in the following screen capture.



3. The JSP file is then migrated to the jsp.migrated folder.

Results

The tool supports multiple JSP files migration. You can migrate multiple JSP files at one time. Use one of the following ways to do the multiple JSP files migration:

1. Select all the JSP files you want to migrate, and right-click them and then select **BTT Migration** → **Migrate JSP file**. Then all the JSP files are migrated.
2. Select a folder which contains multiple JSP files that you want to migrate, and right-click the folder and then select **BTT Migration** → **Migrate JSP files**. Then all the JSP files in this folder are migrated.

Following are the samples for each migration type:

Table 1. Taglib uri migration

Before migration	Migration rule	After migration
<code><%@ taglib uri="/WEB-INF/dse.tld" prefix="dse" %></code>	<code><taglibRule oldTagUrl="/WEB-INF/ dse.tld" newTagUrl="/WEB-INF/ btt.tld" oldTagPrefix="dse" newTagPrefix="btt"/></code>	<code><%@ taglib uri="/WEB-INF/btt.tld" prefix="btt" %></code>

Table 2. Tag migration

Before migration	Migration rule	After migration
<code><dse:label text="jspMigrationToolTest"/></code>	<code><tagRule oldTitle="dse:label" newTitle="btt:label" oldKey="text" newKey="text_new" oldVal="jspMigrationToolTest" newVal= "jspMigrationToolTest_new"/></code>	<code><btt:label text_new="jsp MigrationToolTest_new"/></code>

Table 3. Page import migration

Before migration	Migration rule	After migration
<code><%@page import="com.ibm.dse" %></code>	<code><pageImport oldPattern="com.ibm.dse" newPattern="com.ibm.btt"/></code>	<code><%@page import="com.ibm.btt"%></code>

Table 4. Java code migration

Before migration	Migration rule	After migration
<code>com.ibm.dse.base. JavaExtensions.getAlphaUniqueCode()</code>	<code><simpleRule oldItem="com.ibm.dse" newItem="com.ibm.btt" /></code>	<code>com.ibm.btt.base. JavaExtensions. getAlphaUniqueCode()</code>

Migrating externalizer

About this task

To migrate externalizer, you need to migrate the `getSetting()` parameter and the `iniFile` path.

- Migrating the `getSetting()` parameter:

In BTT version 7.0, each component has its own initializer. So you need to use the component's initializer to get the parameter.

Following is the code sample before migration:

```
String startupOpName = (String) Settings.getSettings().getValueAt("channelHandlers." +
    channelContext.getDeviceType() + ".startupOp");
```

After you migrate to BTT version 7.0, the code is as follows:

```
String startupOpName = (String) ChannelInitializer.getSettings().
    getValueAt(channelContext.getDeviceType() + ".startupOp");
```

- Migrating `iniFile` path:

BTT version 7.0 supports following kinds of `iniFile`:

- jar path `iniFile`, such as `jar:///package/dse.ini`;
- File path `iniFile`, such as `file:///path/dse.ini`
- URL path `iniFile`, such as `http://127.0.0.1:9080/BankWeb/path/btt.xml`

If you use the file path way, you need to migrate the `iniFile` in `StartServerServlet` class:

```
String res=null;
if (!iniFileParameter.startsWith("/WEB-INF")) {
    File iniFile=new File(iniFileParameter);
    if (iniFile.isAbsolute() && iniFile.exists()) {
        res=iniFile.getAbsolutePath();
    }
}
```

```

    }

    res = "file:\\\\\\" + res;
}

```

Migrating Channel

About this task

The channel component is restructured in BTT version 7.0. Besides `ChannelRequest` and `ChannelResponse`, which help to achieve protocol and channel independency, there are some other changes in structure and code, including:

- In BTT version 4.3, `CSReqServlet` implements `ChannelDriver`. In BTT version 7.0, `CSReqServlet` is only a servlet and does not implement `ChannelDriver` interface.
- BTT version 7.0 introduces a `BTTChannelDriver` class, which implements `ChannelDriver` interface.
- Because `BTTChannelDriver` implements `ChannelDriver` in BTT version 7.0. Some functions and methods in `CSReqServlet` are not in `ChannelDriver`.

To migrate channel code, you only need to move some methods and logic to the classes in BTT version 7.0.

Migrating exception handling

About this task

In BTT version 4.3, APIs such as `context.getKeyedCollection()`, `context.getValue()` do not throw out exceptions; while in BTT version 7.0, these APIs throw exceptions.

As a result, you need to migrate exception handling and you must trace the exceptions.

The following code is the code sample before migration:

```
return utb.getContext().getKeyedCollection().getElements().entrySet();
```

After migration, the code is as follows:

```

try {
return utb.getContext().getKeyedCollection().getElements().entrySet();
} catch (DSEInvalidRequestException e) {
// TODO: Exception handling
//Trace the exception.
}
return null;

```

Migrating APIs

About this task

To migrate APIs, do the following changes:

- Use `Context ctx=(Context)ContextFactory.createContext(name, false)` to create context, where `False` refers to local context.
- Change `Context.reset()` to `ContextFactory.reset()`.
- Change `Context.getRoot()` to `ContextFactory.getRoot()`.
- Change `Context.getTIDForSession(s)` to `CSSessionHandler.getTIDForSession(string)`.

- Change `Context.removeSession(sessionId)` to `CSSessionHandler.removeSession(sessionId)`.
- Change `Context.getCurrentContextForSession(sessionId)` to `CSSessionHandler.getCurrentContextForSession(sessionId)`.
- Change `Context.setTimestampForSession()` to `CSSessionHandler.setTimestampForSession()`.
- Change `Context.setTypeForSession()` to `CSSessionHandler.setTypeForSession()`.
- Change `Context.addSession()` to `CSSessionHandler.addSession()`.

Migrating Service

About this task

BTT version 7.0 supports defining service in context. Following is the code example in *service.xml*:

```
<CSServer id="realCSServer" inactivityClientTimeout="900000" timeBetweenSessionCheck="60000"/>
```

The code example in *context.xml* is as follows:

```
<context id="rootCtx" type="root">
<refKColl refId="rootData"/>
<refService refId="realCSServer" alias="CSServer" type="cs"/>
<refService refId="JDBCIB2ConnectionManager" alias="connectionManager" type="jdbcManager"/>
<refService alias="proximaService" refId="proximaService" type="prx"/>
<refService alias="dummyService" refId="dummyService" type="prx"/>
<refService alias="messageResourcesSrv" refId="realMessageResourcesService" type="multilan"/>
</context>
```

And the following code is the Java code before migration:

```
Service.readObject(getCSServerServiceName());
```

After migration, the code is as follows:

```
((CSServerService)ContextFactory.getCSServer())
```

Migrating the XML files

About this task

To migrate the XML file, take the following steps:

1. Right-click the XML file.
2. In the menu that is displayed, select **BTT Migration** → **Migrate XML file**. Then the XML file is migrated to the **config.migrated** folder.

What to do next

Note: Batch migration is also supported for the migration of XML files.

Migrating context

About this task

This topic introduces how you can migrate BTT version 4.3 Context to BTT version 7.0 Context.

You do not need to change the context, type, and data definitions of BTT version 4.3 when you migrate them to BTT version 7.0, because these definitions are the

same in BTT version 4.3 and BTT version 7.0. In BTT version 7.0, a class table tag for context implementation class and an initializer tag are added in the CHA configuration in the BTT XML definition file, such as the file *btt.xml*.

The APIs in BTT version 4.3 and BTT version 7.0 are almost the same except the way of constructing the context instance. In BTT version 7.0, the context is constructed from ContextFactory. The service reference of BTT version 4.3 is not useful in BTT version 7.0. An example of migrating BTT version 4.3 context to BTT version 7.0 context is as follows:

1. Creating BTT version 4.3 context.

```
Context ctxt = (Context) Context.readObject("myContext");
Context ctxt2 = new com.ibm.dse.base.Context();
ctxt2.setName("myContext2");
```

2. Creating BTT version 7.0 context.

```
Context diiTestCtx = ContextFactory.createContext("myContext");
Context ctxt2 = new com.ibm.btt.base.Context();
ctxt2.setName("myContext2");
```

Migrating formatter

About this task

You need to migrate the configuration that is related to the Formatter in the file *dse.ini* in BTT version 4.3 to the file *btt.xml* in BTT version 7.0 and keep all the other code the same as before.

Generating reports

About this task

After the migration, the reports are generated to record what has been done during the migration process. There are separated reports for Java code migration, JSP file migration and BTT XML definition file migration.

Note: The report files will not be generated in *dse.ini* migration.

All the report files are generated in a folder named *report*. The *changehistory_*.txt* is generated to record all of migrated items during the migration. The *error_*.txt* is generated to record all of error information during the migration. The *summary_*.txt* is generated to summarize all of migrated files and its status.

References

For the references related to migration from BTT version 4.3 to BTT version 7.0, see the following topics in this chapter.

Manual migration

The migration tool cannot migrate everything from BTT version 4.3 to BTT version 7.0 automatically. You must do some manual migration, including:

- Some new features in BTT version 7.0, such as Web 2.0, Rich Client, and so on. The base functionality of the migration tool only migrates the existing applications to BTT version 7.0 and makes sure that they can run in BTT version 7.0. You must re-design your applications and implement them manually.

- The existing services that are out of the scope of BTT version 7.0. These services in BTT version 4.3 application system are not included in the migration tool, so you need to migrate them manually.
- The server side event mechanism of BTT version 7.0 is changed. You can define event related migration rules in BTT version 7.0, but for some complicated cases that migration rules cannot handle, you must migrate them manually.
- The communication service access uses JCA connector in BTT version 7.0. You must modify it manually.
- The BTT version 4.3 invoker. Invoker is a hard coded EJB invocation framework. BTT version 7.0 provides a common invocation framework for POJO, EJB, Web Service, and JMS. These two frameworks are totally different. The API usage and configuration are also totally different. The EJB invocation information that is defined in the resource bundle file can be mapped to the EJB invoker definition in the file *invoker.xml*. BTT version 7.0 invoker is decoupled with BTT context and formatter. The usage of BTT version 7.0 invoker is simple and flexible comparing with the usage of BTT version 4.3 invoker. For detailed information about BTT version 7.0 invoker, see Invoker.

Code changes in dse.ini after migration

This section lists the code changes in dse.ini after you migrate your application from BTT version 4.3 to version 7.0.

You can use the migration tool to migrate dse.ini file, and after migration, the file name is changed from dse.ini to btt.xml.

Initializer and extFile

In BTT version 7.0, the configuration of each component is defined in the component's kColl. And each component has its own initializer.

In the following example, you can see that after the migration, each data's definition kColl has extFile and initializer:

Before migration, the code is as follows:

```
<kColl id="data">
<field id="field" value="com.ibm.btt.base.DataField"/>
<field id="iColl" value="com.fortis.be.rbbaa.common.data.IndexedCollection"
description="compound"/>
<field id="kColl" value="com.ibm.btt.base.KeyedCollection" description="compound"/>
<field id="operDef" value="com.ibm.btt.base.OperField"/>
<field id="refData"/>
<field id="sessionEntry" value="com.ibm.btt.base.SessionEntry"/>
<field id="sessionTable" value="com.ibm.btt.base.SessionTable"/>
<!-- Fortis WSBC Common -->
<field id="finalField" value="com.fortis.be.common.data.FinalDataField"/>
</kColl>
```

After migration, the code is changed to the following:

```
<kColl id="data">
<field id="extFile" value="dsedata.xml" />
<field id="initializer"
value="com.ibm.btt.base.DataInitializer" /><kColl id="classTable">
<field id="field" value="com.ibm.btt.base.DataField"/>
<field id="iColl" value="com.fortis.be.rbbaa.common.data.IndexedCollection"
description="compound"/>
<field id="kColl" value="com.ibm.btt.base.KeyedCollection" description="compound"/>
<field id="operDef" value="com.ibm.btt.base.OperField"/>
<field id="refData"/>
<field id="sessionEntry" value="com.ibm.btt.base.SessionEntry"/>
```

```

<field id="sessionTable" value="com.ibm.btt.base.SessionTable"/>
<!-- Fortis WSBC Common -->
<field id="finalField" value="com.fortis.be.common.data.FinalDataField"/>
</kColl>
</kColl>

```

Processor definition

About this task

In BTT version 4.3, the processor definition is as follows:

```

<kColl id="processors">
  <procDef id=".." value=".." path=".."/>
  ....
</kColl>

```

After you migrate to BTT version 7.0, the processor definition is changed to the following:

```

<kColl id="processors">
  <kColl id="files">
    <procDef id=".." value=".." path=".."/>
    ....
  </kColl>
  ....
</kColl>

```

Operation definition

About this task

In BTT version 4.3, the operation definition is as follows:

```

<kColl id="operation">
  <procDef id=".." value=".." path=".."/>
  ....
</kColl>

```

After you migrate to BTT version 7.0, the operation definition is changed to the following:

```

<kColl id="operation">
  <kColl id="files">
    <operDef id=".." value=".." path=".."/>
    ....
  </kColl>
  ....
</kColl>

```

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
Diamond Building, ZhongGuanCun Software Park, Dongbeiwang West Road No.8,
ShangDi, Haidian District, Beijing 100193 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

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. If these and other IBM trademarked terms are marked on their first occurrence in this information with a trademark symbol ([®] or [™]), these symbols indicate U.S. registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at www.ibm.com/legal/copytrade.shtml

Microsoft and Windows are trademarks of Microsoft 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.

Java is a trademark of Sun Microsystems, Inc. in the United States, other countries, or both.

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