# **Oracle® Real-Time Decisions**

Release Notes
Versions 3.0 and 3.0.0.1
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Oracle Real-Time Decisions Release Notes, Versions 3.0 and 3.0.0.1

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# **Preface**

Oracle Real-Time Decisions (Oracle RTD) enables you to develop adaptive enterprise software solutions. These adaptive solutions continuously learn from business process transactions while they execute and optimize each transaction, in real time, by way of rules and predictive models.

These release notes describe known issues and workarounds for Oracle RTD Versions 3.0 and 3.0.0.1.

For information about installing Oracle RTD, consult *Oracle Real-Time Decisions Installation and Administration Guide*, which applies to Version 3.0. It is available on the Oracle RTD DVD ROM and from the Oracle RTD Documentation Web site:

http://www.oracle.com/technology/documentation/rtd.html

## **Audience**

This document is intended for implementors of Oracle Real-Time Decisions.

# **Documentation Accessibility**

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# **Related Documents**

For more information, see the following documents in the Oracle Real-Time Decisions Version 3.0 documentation set:

- Oracle Real-Time Decisions Installation and Administration Guide
- Oracle Real-Time Decisions Platform Developer's Guide
- Oracle Real-Time Decisions Decision Center User's Guide

# **Conventions**

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

# What's New in Oracle Real-Time Decisions, Version 3.0.0.1

Oracle Real-Time Decisions (Oracle RTD), Version 3.0.0.1, introduces the Oracle RTD PHP Client, which offers a convenient way to integrate a Web application with a deployed Inline Service, using PHP client integration classes.

For details of PHP Client, see Oracle Real-Time Decisions Platform Developer's Guide.

# **How to Use These Release Notes**

These release notes are updated periodically as new information becomes available. To ensure that you are reading the latest version of the release notes, check the Oracle RTD Documentation Web site:

http://www.oracle.com/technetwork/middleware/real-time-decisions /documentation/index.html

# **Upgrade Issues**

This chapter describes issues associated with upgrading to Oracle RTD Version 3.0 from previous versions, and consists of the following topics:

- Section 2.1, "Upgrading to Oracle RTD Version 3.0 from Previous Releases"
- Section 2.2, "Upgrading from Oracle RTD Version 3.0 to Oracle RTD Version 3.0.0.1"

# 2.1 Upgrading to Oracle RTD Version 3.0 from Previous Releases

This section consists of the following topic:

- Section 2.1.1, "Considerations for Upgrading Inline Services with Custom Java Code"
- Section 2.1.2, "File sdclient.jar Renamed to rtd-ds-client.jar"
- Section 2.1.3, "During Server Start-up, Error Loading Upgrade of Previously Deployed Inline Services"
- Section 2.1.4, "In Decision Studio, Build Errors in Inline Service Projects Upgraded from Previous Versioned Workspace"
- Section 2.1.5, "Build Errors in Decision Studio Due to Incorrect Compiler Compliance Level"

# 2.1.1 Considerations for Upgrading Inline Services with Custom Java Code

With the release of Oracle RTD 3.0, some java classes, interfaces, constants, and methods have been explicitly designated as public. These public APIs may be found in your Oracle RTD installation at RTD\_HOME/docs/api/. Any custom java code should make use of these APIs in order to guarantee the upgradeability of Inline Services.

#### Logging API Package Change

Logging methods have been moved from com.sigmadynamics.sdo.SDOBase to com.sigmadynamics.sdo.support.Log. Custom code using the old log methods may find them in their new location either by adding this to their imports: import com.sigmadynamics.sdo.support.Log; or by adding this: import static com.sigmadynamics.sdo.support.Log.\*;

#### Deprecations in Public API

com.sigmadynamics.server.SDDataSource.getInstance(String) should use com.sigmadynamics.server.SDDataSource.getDataSource(String). The new method returns an interface instead of a concrete implementation.

#### 2.1.2 File sdclient.jar Renamed to rtd-ds-client.jar

In prior versions of Oracle RTD, the client integration resource bundle sdclient.jar was packaged with the java client example found in RTD\_HOME/client/Client Examples/Java Client Example.

In Oracle RTD 3.0, the resource has been renamed from sdclient.jar to rtd-ds-client.jar. It can now be found along with other dependent jars in RTD\_ HOME/client/DecisionService.

## 2.1.3 During Server Start-up, Error Loading Upgrade of Previously Deployed Inline **Services**

After upgrading a previous version Oracle RTD environment to 3.0, the server-side upgrade of previously deployed Inline Services may fail, resulting in an error found in the Oracle RTD server log, such as:

```
2009-03-03 14:58:55,312 ERROR [AppFactory] Error loading Inline Service DC_Demo in
deployment state Development. Will mark it as invalid in the database.
java.lang.NoClassDefFoundError:
com/sigmadynamics/sdo/interfaces/client/SingletonInterface
at java.lang.Class.getDeclaredMethods0(Native Method)
at java.lang.Class.privateGetDeclaredMethods(Class.java:2427
```

In order to correct the Inline Service's invalid state in the server, perform the following

- Clean and recompile the Inline Service in Oracle RTD 3.0 Decision Studio.
- Redeploy the Inline Service.

# 2.1.4 In Decision Studio, Build Errors in Inline Service Projects Upgraded from **Previous Versioned Workspace**

Using 3.0 Decision Studio, previous version Oracle RTD Inline Services opened from the workspace automatically prompt the user with a request to upgrade metadata to the 3.0 schema. The studio-side upgrade of Inline Services in the workspace may fail, resulting in build problems in the Problems view, such as:

```
com.sigmadynamics.sdo.base.ChoiceModel cannot be resolved to a type
GENAllOffersCG.java DC_Demo221/gensrc/com/sigmadynamics/sdo line 231
com.sigmadynamics.sdo.base.ChoiceModel cannot be resolved to a type
GENAllOffersCGChoice.java DC_Demo221/gensrc/com/sigmadynamics/sdo line 154
ChoiceModel cannot be resolved to a type GENAllOffersCGChoice.java
DC_Demo221/gensrc/com/sigmadynamics/sdo line 200 The constructor
ApplicationBase(String, int, int) is undefined
GENApplication.java DC_Demo221/gensrc/com/sigmadynamics/sdo line 81
ChoiceModel cannot be resolved to a type GENApplication.java
DC_Demo221/gensrc/com/sigmadynamics/sdo line 366 2
ChoiceModel cannot be resolved to a type GENApplication.java
DC_Demo221/gensrc/com/sigmadynamics/sdo line
```

In order to correct the Inline Service's invalid state in the Decision Studio workspace, clean and recompile the Inline Service in RTD 3.0 Decision Studio.

# 2.1.5 Build Errors in Decision Studio Due to Incorrect Compiler Compliance Level

Oracle RTD Decision Studio 3.0 specifies and requires Inline Services to use the correct java compiler compliance level of 5.0. If a lower java compiler compliance level is used for an Inline Service, build errors related to source level may occur repeatedly for the given project, for example:

- Syntax error, static imports are only available if source level is 5.0
- Syntax error, 'for each' statements are only available if source level is 5.0
- Syntax error, parameterized types are only available if source level is 5.0

To correct these build errors, set the java compiler compliance level for an Inline Service to 5.0 in Decision Studio. See Section 11.2.2, "Setting the Java Compiler Compliance Level" of Oracle Real-Time Decisions Platform Developer's Guide for instructions on configuring this property.

# 2.2 Upgrading from Oracle RTD Version 3.0 to Oracle RTD Version 3.0.0.1

This section describes how to upgrade from Oracle RTD Version 3.0 to Oracle RTD Version 3.0.0.1.

The assumptions are:

- Oracle RTD Version 3.0 was installed at C:\OracleBI\RTD.
- The Oracle RTD Version 3.0 database was initialized.
- The Model Snapshots tables, if used, were initialized.
- Your Inline Services were deployed on Oracle RTD Version 3.0.
- The Oracle RTD Version 3.0 Decision Studio workspace is at the default location.
  - On Windows, the default location is <code>%USERPROFILE%\Oracle RTD</code> Studio, for example, C:\Documents and Settings\your user name\Oracle RTD Studio.

This section consists of the following topics, each of which represents a task to perform during the upgrade process:

- Section 2.2.1, "Shutting Down Oracle RTD Version 3.0"
- Section 2.2.2, "Performing a Backup of Existing Data and Configuration Files"
- Section 2.2.3, "Unpacking Oracle RTD Version 3.0.0.1"
- Section 2.2.4, "Upgrading the Oracle RTD Decision Studio Workplace"
- Section 2.2.5, "Upgrading the Oracle RTD Database"
- Section 2.2.6, "Deploying Oracle RTD Version 3.0.0.1 and Restoring Custom Server Settings"
- Section 2.2.7, "Recompiling and Redeploying the Inline Services"

# 2.2.1 Shutting Down Oracle RTD Version 3.0

To shut down Oracle RTD Version 3.0:

- 1. Exit from Oracle RTD Decision Studio.
- Exit from Oracle RTD Load Generator.
- Open your J2EE application server's administration console.
- Stop Oracle RTD.

#### 2.2.2 Performing a Backup of Existing Data and Configuration Files

To back up your existing database and configuration files:

- 1. Rename C:\OracleBI\RTD to C:\OracleBI\RTD.30.
- 2. Copy C:\Documents and Settings\your user name\Oracle RTD Studio to C:\Documents and Settings\your user name\Oracle RTD Studio.30.
- **3.** Back up your Oracle RTD database.

Refer to your database vendor's documentation for information about backing up a database.

- **4.** If you have set up SSL for Loadgen, back up the following file:
  - RTD\_HOME/scripts/sdexec.cmd.
- 5. If your SDDB database is an Oracle database where you customized the tablespaces, back up the following file:
  - RTD\_HOME/scripts/sql/Oracle/SDTablespaceMap.txt.

Depending on the application server you are using, you may need to back up certain files. The rest of this section lists the files to back up:

- "Standalone OC4J and Oracle Application Server Files"
- "JBoss Files"
- "WebLogic Files"
- "WebSphere Files"

#### 2.2.2.1 Standalone OC4J and Oracle Application Server Files

- **1.** Start off in the following directory:
  - For standalone OC4J: OC4J HOME/j2ee/home
  - For Oracle AS: OAS HOME/j2ee/OC4J INSTANCE/
- **2.** For both standalone OC4J and Oracle AS, back up the following file:
  - ./application-deployments/OracleRTD/data-sources.xml
- **3.** For both standalone OC4J and Oracle AS, if you have created custom data sources, custom roles, or model snapshot tables, back up the following files:
  - ./applications/OracleRTD/rtis/WEB-INF/web.xml
  - ./applications/OracleRTD/soap/WEB-INF/web.xml
  - ./applications/OracleRTD/ls/WEB-INF/web.xml
  - ./applications/OracleRTD/ui/WEB-INF/web.xml
  - ./application-deployments/OracleRTD/rtis/orion-web.xml
  - ./application-deployments/OracleRTD/soap/orion-web.xml
  - ./application-deployments/OracleRTD/ls/orion-web.xml
  - ./application-deployments/OracleRTD/ui/orion-web.xml
  - ./applications/OracleRTD/META-INF/orion-application.xml
  - ./application-deployments/OracleRTD/orion-application.xml

#### 2.2.2.2 JBoss Files

- Start off at the following file:
  - RTD\_HOME/package/RTD.ear
- 2. If you have created custom data sources, custom roles, or model snapshot tables, back up the following files:
  - RTD.ear > rtis.war > WEB-INF/web.xml
  - RTD.ear > soap.war > WEB-INF/web.xml
  - RTD.ear > ui.war > WEB-INF/web.xml
  - RTD.ear > ls.war > WEB-INF/web.xml
  - RTD.ear > rtis.war > jboss-web.xml
  - RTD.ear > soap.war > jboss-web.xml
  - RTD.ear > ui.war > jboss-web.xml
  - RTD.ear > ls.war > jboss-web.xml

**Note:** As an illustration of the notation used here, the entry RTD.ear > rtis.war > WEB-INF/web.xml is to be interpreted as follows:

- web.xml is a file in the WEB-INF directory
- The WEB-INF directory is inside the web archive rtis.war
- rtis.war is inside the enterprise archive RTD.ear.

## 2.2.2.3 WebLogic Files

1. Start off in the staging directory where WebLogic placed the expanded RTD.ear file during installation.

The general name for the staging directory, assuming that you chose expanded as the name of the lowest-level directory, is:

MW\_HOME/user\_projects/domains/RTD\_domain\_name/servers/RTD\_ server\_name/stage/OracleRTD/expanded

For example, C:\Oracle\Middleware\user\_ projects\domains\OracleRTD\_domain\servers\OracleRTD\_ Server\stage\OracleRTD\expanded.

- 2. If you have created custom data sources, custom roles, or model snapshot tables, back up the following files:
  - ./rtis.war > WEB-INF/web.xml
  - ./soap.war > WEB-INF/web.xml
  - ./ls.war > WEB-INF/web.xml
  - ./ui.war > WEB-INF/web.xml

**Note:** As an illustration of the notation used here, the entry ./rtis.war > WEB-INF/web.xml is to be interpreted as follows:

- web.xml is a file in the WEB-INF directory
- The WEB-INF directory is inside the web archive rtis.war
- rtis.war is in the directory where WebLogic placed the expanded RTD. ear during installation

#### 2.2.2.4 WebSphere Files

- **1.** Start off in the following directory:
  - WEBSPHERE\_HOME/AppServer/profiles/profile\_ name/config/cells/server\_ name/applications/OracleRTD.ear/deployments/OracleRTD
- **2.** If you have created custom data sources, custom roles, or model snapshot tables, back up the following files:
  - ./rtis.war/WEB-INF/web.xml
  - ./soap.war/WEB-INF/web.xml
  - ./ui.war/WEB-INF/web.xml
  - ./ls.war/WEB-INF/web.xml

## 2.2.3 Unpacking Oracle RTD Version 3.0.0.1

To unpack Oracle RTD Version 3.0.0.1:

1. Expand the Oracle RTD Version 3.0.0.1 distribution archive to the desired location, for example, C:\OracleBI\RTD.

# 2.2.4 Upgrading the Oracle RTD Decision Studio Workplace

To upgrade the Oracle RTD Decision Studio Workplace:

- 1. Start Oracle RTD Decision Studio.
- **2.** If you have any compile errors, select **Project > Clean > Clean all projects**.

# 2.2.5 Upgrading the Oracle RTD Database

If you backed up sdexec.cmd (SSL for Loadgen) or SDTablespaceMap.txt as described in Section 2.2.2, "Performing a Backup of Existing Data and Configuration Files," restore them to the paths specified in that section before you upgrade the Oracle RTD database.

To upgrade your Oracle RTD database:

**1.** Start SDDBTool.

For information about SDDBTool, see Oracle Real-Time Decisions Installation and Administration Guide.

- **2.** When the option to Initialize or Upgrade appears, select **Upgrade**.
- If you had model snapshot tables in version 3.0, then, from the RTD\_ HOME\scripts directory, run the command that creates the model snapshot tables:

sdexec com.sigmadynamics.tools.SDDBTool.SDDBTool -f -u -I InitSnapshotDb.ctl db\_type db\_host db\_port db\_name db\_runtime\_user db\_admin\_user db\_admin\_password

#### 2.2.6 Deploying Oracle RTD Version 3.0.0.1 and Restoring Custom Server Settings

This section describes the operations required to deploy Oracle RTD Version 3.0.0.1, and to restore the custom server settings configured for Version 3.0. The sequence of operations depends on your application server.

The description of the tasks in this section assumes that you backed up XML files to save custom server settings, as described in Section 2.2.2, "Performing a Backup of Existing Data and Configuration Files," and that you now want to restore the configuration settings in those files.

#### Standalone OC4J and Oracle Application Server

- Undeploy Oracle RTD Version 3.0.
- Deploy the Oracle RTD Version 3.0.0.1 RTD.ear.
- Stop Oracle RTD.
- Restore the files that you backed up as described in Section 2.2.2.1, "Standalone OC4J and Oracle Application Server Files." Place them back into the locations from which you copied them.
- Start Oracle RTD.

#### **JBoss**

- **1.** Stop JBoss.
- Upgrade the Version 3.0.0.1 RTD. ear as follows:
  - Extract rtis.war, ls.war, soap.war, ui.war
  - Restore the files that you backed up as described in Section 2.2.2.2, "JBoss Files." Place them back into the locations from which you copied them.
  - Place the .war directories back into RTD.ear
- Deploy the Oracle RTD Version 3.0.0.1 RTD.ear.
- Start JBoss.

#### WebLogic

- Undeploy Oracle RTD Version 3.0.
- Deploy the Oracle RTD Version 3.0.0.1 RTD.ear.
- Stop the WebLogic server.
- Restore the files that you backed up as described in Section 2.2.2.3, "WebLogic Files." Place them back into the locations from which you copied them.
- Start the WebLogic server.

#### WebSphere

- Undeploy Oracle RTD Version 3.0.
- Deploy the Version 3.0.0.1 RTD. ear, using the WebSphere administrative console.

- 3. Restore the files that you backed up as described in Section 2.2.2.4, "WebSphere Files." Place them into the .war directories corresponding to the directories from which they were copied.
- 4. After you update the web.xml files, you must configure the resource references in WebSphere using the Integrated Solutions Console. Before you begin, ensure that WebSphere is started. See Section 8.2.3, "Updating Resource References in WebSphere" in Oracle Real-Time Decisions Installation and Administration Guide.

#### Post-Deployment Steps

In the RTD server log file, check that your existing Inline Services loaded successfully, by examining the [AppFactory] entries.

For example,

```
2007-11-26 17:42:46,725 INFO [AppFactory] Loaded Inline
Service DC_Demo: 4 in deployment state Development.
```

**2.** Alternatively, you can check the status of your Inline Services through JMX. In JConsole, navigate to Mbeans > Oracle RTD > Inline Service Manager > Inline Service Name.

Expand the *Inline Service Name* to show the deployment state of interest, and note the Status of the deployment state. If the Status attribute has a value of **Loadable**, then the Inline Service for that deployment state has been loaded properly and can now accept requests. If the server was unable to upgrade and load your existing Inline Service, the Status attribute will show a value of **Failed**.

In this case, you can deploy a working version of the Inline Service from the Decision Studio. If you no longer have the source code for an Inline Service, you can download the Inline Service, using **Project > Download**.

# 2.2.7 Recompiling and Redeploying the Inline Services

- 1. In Decision Studio, open up all your Inline Services.
- Recompile the Inline Services, using Project > Download, then Clean all projects.
- **3.** Deploy each Inline Service to the RTD Server.

# **General Issues and Workarounds**

This chapter describes general issues and workarounds for Oracle RTD. It contains the following topics:

- Section 3.1, "Certification Information"
- Section 3.2, "Installation Issues"
- Section 3.3, "General Issues"

#### 3.1 Certification Information

For the latest certification information, which supersedes that in the Oracle RTD documentation, refer to System Requirements and Supported Platforms for Oracle Real-Time Decisions for Versions 3.0 and 3.0.0.1, available from the Oracle RTD Documentation Web site at:

http://www.oracle.com/technetwork/middleware/real-time-decisions /documentation/index.html

#### 3.2 Installation Issues

This section provides release notes on installing Oracle RTD. It contains the following topics:

- Section 3.2.1, ""Missing SDDS" Errors Can be Ignored During Deployment of Oracle RTD in OC4J when SDDS is an Oracle Database"
- Section 3.2.2, "Client Examples Available Only in Windows Installation .Zip Files, Not .CPIO"

# 3.2.1 "Missing SDDS" Errors Can be Ignored During Deployment of Oracle RTD in OC4J when SDDS is an Oracle Database

When you follow the instructions as described in Section 3.2.3, "Creating a JDBC Provider for the Oracle RTD Database in Oracle" in Oracle Real-Time Decisions Installation and Administration Guide, you will get some errors indicating that SDDS is missing. You can safely ignore these errors, and proceed with the instructions as described in the rest of that section.

## 3.2.2 Client Examples Available Only in Windows Installation .Zip Files, Not .CPIO

This issue applies to Version 3.0 and Version 3.0.0.1.

Client example files are not available in the .cpio installation files. They may be retrieved from the Windows installation . zip files.

#### 3.3 General Issues

This section contains the following topics:

- Section 3.3.1, "Decisions May Not Contain Expected Performance Goals References"
- Section 3.3.2, "Operating System File Permissions"
- Section 3.3.3, "Save Choice IDs in Inline Services Rather Than Choices"
- Section 3.3.4, "Ensuring Unique Batch Names Across a Cluster"
- Section 3.3.5, "Transient Likelihood Problems"
- Section 3.3.6, "Delayed Learning Not Functioning"
- Section 3.3.7, "Negative Choice and Choice Group Scores Cause Runtime Errors"
- Section 3.3.8, "Model APIs Not Working Correctly With Only One Positive Event"
- Section 3.3.9, "Model Quality APIs Do Not Support Partitions"
- Section 3.3.10, "Model Snapshot Values for Correlation and Predictiveness Incorrect for Completed Time Windows"

## 3.3.1 Decisions May Not Contain Expected Performance Goals References

This issue applies to Version 3.0 only. It is fixed in Version 3.0.0.1.

Inline Service decisions may be ignoring performance goals and returning unexpected results. This is caused by an issue in the metadata generation within Oracle RTD Studio.

The use case is as follows:

- An Inline Service is first created with choices, integration points, a decision D1, data sources, and so on, but with no performance goals initially. At this point, decision D1 does not utilize a performance goal to render results.
- The user now creates one or more performance goals using the Performance Goals editor.
- The decision D1, when it is re-opened in Decision Studio, will appear to now include the performance goals (and equal value weights for each goal) as part of the decision.

Although visually the goals appear to be referenced, the underlying metadata file (\*.sda) does not actually contain the goals information. If no further modifications are made to decision D1 and the Inline Service is now redeployed and run, the response from the decision will be incorrect.

The workaround for the issue is to make a modification to decision D1, for example, to edit the Decision's description field, or to adjust the goal weights slightly. Saving the modified decision will then regenerate the decision's metadata with the correct goals/weights references.

# 3.3.2 Operating System File Permissions

This issue applies to Version 3.0 and Version 3.0.0.1.

Oracle recommends that, after installing Oracle RTD, you add extra protection to the installed files by setting up operating system specific file permissions.

Operating systems vary in how file permissions can be set up. The following recommendations use the principles and terms underlying file permissions in Unix-like systems. Administrators of other system types should use the equivalent options and facilities that are available in their systems.

This section assumes three broad user categories:

- User/Owner
- Group
- Others

The file permissions specified in this section are:

- R Read
- W Write
- X Execute
- None

The sections that follow list the recommended file permissions for each user category and specific Oracle RTD files and directories.

Note that the following directories are in the Windows RTD\_HOME only:

- RTD\_HOME\apps\
- RTD HOME\client\
- RTD\_HOME\deploy\
- RTD\_HOME\docs\
- RTD HOME\eclipse\
- RTD HOME\examples\
- RTD\_HOME\help\
- RTD\_HOME\jdk\
- RTD\_HOME\log\
- RTD\_HOME\schemas\
- RTD HOME\scripts\

#### 3.3.2.1 User/Owner File Permissions

The User/Owner is responsible for installation and for patch accounts during patching. At the operating system level, this user has the equivalent of IT administrator/installer rights.

Table 3–1 shows the recommended file permissions for this user category.

Table 3–1 User/Owner File Permissions

File Type	Permission	
Directories and Executables	RWX	
All other files	RW	

#### 3.3.2.2 Group File Permissions

The Group users are the (non-patching) administrators. These users should have the standard Oracle RTD role RTDAdminUser.

Table 3–2 shows the recommended file permissions for this user category.

Table 3-2 Group File Permissions

File Type	Permission
Administrative tools	X <sup>1</sup>
Administrative configuration files	RW
Documentation and sample files	R
Read-only zip files	
Editable admin tools	RWX
Other files	None

Some operating systems require R and X to be both set for executables, in which case substitute RX for X for Administrative tools.

The specific Oracle RTD files for each general file type category in Table 3–2 are as follows:

#### Administrative tools

- An Oracle RTD Windows client application for initializing or upgrading the Oracle RTD Database: SDDBTOOL (RTD HOME\scripts\SDDBTool.cmd)
- Command line scripts for initializing or upgrading the Oracle RTD Database (RTD\_HOME\scripts\sql and its subdirectories and files)
- RTD\_HOME\jdk and its subdirectories and files
- RTD HOME\lib and its subdirectories and file

#### Administrative configuration files

- Command line scripts for initializing or upgrading the Oracle RTD Database (RTD\_HOME\scripts\sql)
- RTD\_HOME\client\\*.properties

#### Documentation and sample files

- RTD HOME\help and its subdirectories and files
- RTD\_HOME\docs and its subdirectories and files
- RTD HOME\examples and its subdirectories and files
- RTD\_HOME\client\Client Examples and its subdirectories and files

#### Read-only zip files

Command Line Deployer (RTD HOME\OracleBI\RTD\client\CommandLineDeploy and its file rtd-deploytool-3.0.0.1.xxx.zip)

#### Editable admin tools

- RTD HOME\scripts\SetSDParams.cmd
- RTD\_HOME\scripts\sdexec.cmd

#### 3.3.2.3 Other File Permissions

The Other users are the end users. These users should have the standard Oracle RTD role RTDEndUser and, as required, other standard Oracle RTD roles that enable them to perform Inline Service development.

Table 3–3 shows the recommended file permissions for this user category.

Table 3-3 Other File Permissions

File Type	Permission
End user tools	$X^1$
Documentation and sample files	R
Client log files	RW
Client configuration files	RW
Client owned example files	
Other files	None

Some operating systems require R and X to be both set for executables, in which case substitute RX for X for End user tools.

The specific Oracle RTD files for the general file type categories in Table 3–3 are as follows:

#### End user tools

- On Windows only, RTD Load Generator (RTD\_ HOME\scripts\loadgen.cmd)
- Batch (RTD\_HOME\client\Batch and its subdirectories and files)
- DecisionService (RTD\_HOME\client\DecisionService and its subdirectories and files)
- On Windows only, Decision Studio (RTD HOME\eclipse and its subdirectories and files)

#### Documentation and sample files

- RTD HOME\help and its subdirectories and files
- RTD HOME\docs and its subdirectories and files
- RTD\_HOME\examples and its subdirectories and files
- RTD\_HOME\client\Client Examples and its subdirectories and files

#### Client log files

- Client log (RTD\_HOME\log\client.log)
- RTD\_HOME\etc\ds\_perf.xls
- RTD\_HOME\etc\lg\_perf.xls

#### Client configuration files

- RTD\_HOME\eclipse\plugins\com.sigmadynamics.studio\_ 3.0.0\etc\eclipse-log.properties
- RTD\_HOME\etc\log4j.xml

#### Client owned example files

RTD\_HOME\examples and its subdirectories and files

RTD\_HOME\client\Client Examples and its subdirectories and files

#### 3.3.3 Save Choice IDs in Inline Services Rather Than Choices

This issue applies to Version 3.0 and Version 3.0.0.1.

The Getting Started tutorial chapters within Oracle Real-Time Decisions Platform Developer's Guide and the sample Inline Services CrossSell and DC\_Demo store choices in session-tied entities. It is recommended that configurations only save IDs of choices instead of the full choice objects.

#### 3.3.4 Ensuring Unique Batch Names Across a Cluster

It is a standard requirement for Inline Service names and batch names to be unique within a cluster.

After an Inline Service is copied within a cluster, batch names registered in the Inline Service can be changed manually to achieve uniqueness. This manual step is not required if the batch registration code in the Inline Service automatically generates the batch name from the new Inline Service name, as in the following generic examples:

```
batchAgent.registerBatch(
       batchAgent.getInlineService().getName() + ".FeedBackBatchJob",
               "com.<mycompany>.rtd.batch.FeedBackBatchJob",
               FeedBackBatchJob.description,
               FeedBackBatchJob.paramDescriptions,
               FeedBackBatchJob.paramDefaults);
or
batchAgent.registerBatch(
       Application.getApp().getName() + ".FeedBackBatchJob",
               "com.<mycompany>.rtd.batch.FeedBackBatchJob",
               FeedBackBatchJob.description,
               FeedBackBatchJob.paramDescriptions,
               FeedBackBatchJob.paramDefaults);
```

Note that all programs that may call the batch need to be made aware of the new batch name.

#### 3.3.5 Transient Likelihood Problems

This issue applies to Version 3.0 and Version 3.0.0.1.

There are cases where non-mature predictive models will return an actual likelihood rather than NaN during the early life of a model. There are also some cases where mature predictive models will return NaN as opposed to actual likelihoods when the Randomize Likelihood option is enabled for a model. These situations are transient in nature and, in the latter case, do not outweigh the benefits of the Randomize Likelihood feature.

# 3.3.6 Delayed Learning Not Functioning

This issue applies to Version 3.0 and Version 3.0.0.1.

Delayed learning, as specified by selecting options in the Temporary Data Storage tab for a model, is the process whereby a model learns on the session attributes values of the base event when a positive event occurs in a later session; the original session in which the base event occurred has already closed. Delayed learning does not function as described in *Oracle Real-Time Decisions Platform Developer's Guide*.

## 3.3.7 Negative Choice and Choice Group Scores Cause Runtime Errors

This issue applies to Version 3.0 and Version 3.0.0.1.

If choice or choice group scores are negative, Oracle RTD generates the following runtime exception message:

Caused by: java.lang.RuntimeException: Goal Weight can not be negative

This runtime exception will prevent completion of the decision process. Add a constant value to score calculations to prevent negative scores.

## 3.3.8 Model APIs Not Working Correctly With Only One Positive Event

This issue applies to Version 3.0 and Version 3.0.0.1.

If there is only one positive event in a choice event model, certain model APIs do not return correct results. These model APIs include getChoiceEventModelCount(), getChoiceEventLikelihood(), getChoiceEventModelQuality(), and getChoiceEventModelError().

The workaround is to add a positive event, which can have any name, in the model and the corresponding choice group, and to redeploy the Inline Service in which this is defined.

#### 3.3.9 Model Quality APIs Do Not Support Partitions

This issue applies to Version 3.0 and Version 3.0.0.1.

If a choice model has partitions, do not call these methods: getChoiceModelQuality, getChoiceModelCount, getChoiceModelLift, getChoiceModelError.

If a choice event model has partitions, do not call these methods: getChoiceEventModelQuality, getChoiceEventModelCount.

# 3.3.10 Model Snapshot Values for Correlation and Predictiveness Incorrect for Completed Time Windows

This issue applies to Version 3.0 and Version 3.0.0.1.

Model snapshot values for correlation (table RTDCorrelation) and predictiveness (table RTDPredictiveness) are incorrect for completed time windows for model instances marked with state = c.

# **Configuration Issues**

This chapter provides release notes related to Oracle RTD configuration. It contains the following topics:

- Section 4.1, "Oracle RTD Application Must be Deployed Within its Own Managed Server Instance"
- Section 4.2, "Known Issue with Oracle JDBC Driver Packaged with Oracle RTD
- Section 4.3, "Decision Service Only Accepts Requests from the Local Host by Default"
- Section 4.4, "Communication Between Multiple Real-Time Decision Servers Is Restricted by Default"
- Section 4.5, "Import Database Table Box Returns All Tables from All Catalogs for an Oracle BI EE Data Source"
- Section 4.6, "Issue with Some Versions of Sun Java 1.5 on OC4J"

# 4.1 Oracle RTD Application Must be Deployed Within its Own Managed **Server Instance**

This issue applies to Version 3.0 and Version 3.0.0.1.

Other applications may be rendered inoperable if they are deployed within the same java virtual machine as Oracle RTD. If other applications share a JVM with Oracle RTD, you may encounter initialization errors upon application server start-up. In order to work around this issue, deploy Oracle RTD within its own managed server instance.

# 4.2 Known Issue with Oracle JDBC Driver Packaged with Oracle RTD 3.0

This issue applies to Version 3.0 and Version 3.0.0.1.

There is a known issue with the version of the Oracle JDBC driver shipped with Oracle RTD 3.0. This may occur while running the Oracle RTD batch facility or in Oracle RTD's runtime causing unexpected results and ArrayIndexOutOfBoundsExceptions being logged in the Oracle RTD server log file.

To address this issue, the Oracle 10.2.0.4 driver ojdbc14.jar shipped with Oracle RTD, and located in RTD\_HOME/lib/jdbc, should be replaced with the Oracle DB 10.2.0.5 jdbc driver.

# 4.3 Decision Service Only Accepts Requests from the Local Host by Default

This issue applies to Version 3.0 and Version 3.0.0.1.

The Decision Service by default will only accept (integration point) requests from the computer that hosts the Decision Service.

For production environments where Real-Time Decision Server is installed on a separate host, administrators can set up a list of trusted hosts from which the Decision Service can receive requests.

**Note:** Remote Decision Center access (browser access) is not affected by this feature.

To specify a list of trusted hosts for Decision Service requests:

- If you are using OC4J or WebLogic, open JConsole by running JAVA\_ HOME/bin/jconsole.exe. If you are using WebSphere, run the batch script you created during JConsole configuration. See Installation and Administration of Oracle *RTD* for more information about accessing JConsole.
- Click the **Remote** tab. Then, enter the appropriate port number (typically 12345) and the administrator credentials you created during installation and click Connect.
- Click the MBean tab, then go to the OracleRTD > SDClusterPropertyManager > Cluster MBean and ensure the RestrictDSClients attribute is set to true. This attribute ensures that the Decision Service only accepts requests from its own host, or from the list of hosts identified in the **TrustedDSClients** attribute. If **RestrictDSClients** is set to false, any machine can send Decision Service requests to the RTD server.
- In the OracleRTD > SDClusterPropertyManager > Cluster MBean, update the **TrustedDSClients** attribute to include a semicolon-separated list of IP addresses of the hosts from which you want Decision Service to accept requests. You must specify IP addresses; do not specify host names.

# 4.4 Communication Between Multiple Real-Time Decision Servers Is **Restricted by Default**

This issue applies to Version 3.0 and Version 3.0.0.1.

Multiple Real-Time Decision Servers cannot communicate with each other by default.

For production environments where multiple Real-Time Decision Servers are installed, administrators can set up a list of trusted cluster hosts so that the Real-Time Decision Servers can communicate with each other.

To specify a list of trusted cluster hosts for Real-Time Decision Server internal communication:

1. If you are using OC4J or WebLogic, open JConsole by running JAVA\_ HOME/bin/jconsole.exe. If you are using WebSphere, run the batch script you created during JConsole configuration. See Installation and Administration of Oracle *RTD* for more information about accessing JConsole.

- 2. Click the **Remote** tab. Then, enter the appropriate port number (typically 12345) and the administrator credentials you created during installation and click Connect.
- 3. Click the MBean tab, then go to the OracleRTD > SDClusterPropertyManager > **Cluster** MBean and ensure the **RestrictClusterMembers** attribute is set to true. This attribute ensures that the Real-Time Decision Servers can only communicate with the hosts listed in the TrustedClusterMembers attribute.
- **4.** In the **OracleRTD > SDClusterPropertyManager > Cluster** MBean, set the **SDGroupName** attribute to some non-blank value.
- 5. In the **OracleRTD** > **SDClusterPropertyManager** > **Cluster** MBean, update the TrustedClusterMembers attribute to include a semicolon-separated list of IP addresses of the hosts where the Real-Time Decision Servers are installed. You must specify IP addresses; do not specify host names.

# 4.5 Import Database Table Box Returns All Tables from All Catalogs for an Oracle BI EE Data Source

This issue applies to Version 3.0 and Version 3.0.0.1.

When you enter the URL for an Oracle BI EE data source, you can specify a value for the parameter catalog. The intention of the catalog parameter is to enable you to view and select from just the tables in a particular catalog.

The error is that all tables in all catalogs appear in the Import Database Table window, even when you specify a value for the catalog parameter. This situation is undesirable because different catalogs may have tables of the same name.

In the process of creating a data source in Oracle RTD Decision Studio, if you select an incorrect table name, you can either delete the Inline Service data source, or manually alter the column names of the Inline Service data source, by checking table and column names in the Oracle BI EE Administration Tool or Oracle BI Answers.

# 4.6 Issue with Some Versions of Sun Java 1.5 on OC4J

This issue applies to Version 3.0 and Version 3.0.0.1.

When using SUN Java 1.5.0\_17+ on OC4J, OC4J may fail to start unless the following jvm option is added to the OC4J command script (oc4j or oc4j.cmd):

-XX:CompileCommand=exclude,com/evermind/server/http/EvermindHttpServletRequest,ini

For example, if using oc4j.cmd, add the following line after the line marked by ":oc4j":

```
set JVMARGS=%JVMARGS%
-XX:CompileCommand=exclude,com/evermind/server/http/EvermindHttpServletRequest,ini
```

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# **Administration Issues**

This chapter provides release notes on Oracle RTD administration. It contains the following topics:

- Section 5.1, "Warning Messages upon Start-up of Oracle RTD 3.0 Batch Console"
- Section 5.2, ""Failed to Save Study" Error Messages when Stopping Oracle RTD Server in OC4J / Oracle Application Server"
- Section 5.3, "Must Restart OC4J When Database Server Restarts"

# 5.1 Warning Messages upon Start-up of Oracle RTD 3.0 Batch Console

This issue applies to Version 3.0 and Version 3.0.0.1.

When starting the Batch Console, two log4j warnings appear:

```
log4j: WARN No appenders could be found for
logger(org.apache.axis.i18n.ProjectResourceBundle).
log4j: WARN Please initialize the log4j system properly.
```

These warnings can be ignored, they do not hamper functionality.

# 5.2 "Failed to Save Study" Error Messages when Stopping Oracle RTD Server in OC4J / Oracle Application Server

This issue applies to Version 3.0 and Version 3.0.0.1.

When running RTD 3.0 in OC4J/Oracle Application Servers, an error in the way the connection pool is managed may cause a "Failed to save study" error message to appear in the RTD server log upon shutdown of the Oracle RTD application. For example:

```
2009-03-02 19:57:18,187 ERROR [LearningDispatcher] Failed to save study
"CrossSell".
\verb|com.sigmady| namics.server.DataServices.DatabaseProvider.DatabaseProviderException: \\
javax.resource.spi.ApplicationServerInternalException: Unable to create a
connection. Connection factory has been stopped.
```

When this error occurs, some Oracle RTD model data may not have been committed to the database. Data is not lost, however, as the learning records are still saved in the Oracle RTD database and will be processed the next time the Oracle RTD server starts up. Learning records that need to be removed will be removed as appropriate at the end of each model persist period (default is 60 minutes).

Users can safely ignore this error message for routine restarts of the Oracle RTD application within OC4J/Oracle Application Server.

## 5.3 Must Restart OC4J When Database Server Restarts

This issue applies to Version 3.0 and Version 3.0.0.1.

When Oracle RTD is running on standalone OC4J, if the Oracle RTD Database (or any database that Oracle RTD is accessing) goes down for any reason, you must restart OC4J.

This problem occurs because standalone OC4J does not support refreshing stale database connections after a database restart.

# **Integration Issues**

This chapter provides release notes on Oracle RTD integration. It contains the following topics:

Section 6.1, "Oracle RTD Smart Client Does Not Work With Sun Stax Parser in Java

# 6.1 Oracle RTD Smart Client Does Not Work With Sun Stax Parser in Java 6

This issue applies to Version 3.0.0.1 only.

The Oracle RTD Java client is known not to work with the stax implementation included in Sun Java 6.

The standard stax implementation shipped with Oracle RTD is Woodstox (wstx.jar). Users who have replaced Woodstox with the BEA parser (stax-1.2.0.jar) available in Java 6, must add the system property:

-Djavax.xml.stream.XMLInputFactory=com.bea.xml.stream.MXParserF actory

They do not have to change code or retest the client.

Users who continue to use Woodstox do not need to do anything.

# Oracle RTD Decision Studio Issues

This chapter provides release notes for Oracle RTD Decision Studio. It contains the following topics:

- Section 7.1, "Deploying an Inline Service from Decision Studio Causes a Null Pointer Exception in the WebLogic Log"
- Section 7.2, "Explicitly Defining Partitioning Attribute Values Causes Subsequent **Decision Center Report Errors**"
- Section 7.3, "Mapping Array Attributes in a Multi-Level Entity Hierarchy"
- Section 7.4, "Terminate Active Sessions in Cluster Works Only on Decision Server Receiving Deployment Request"
- Section 7.5, "Can Only Use String Datatype for Type Restrictions using List Of Values"

#### 7.1 Deploying an Inline Service from Decision Studio Causes a Null Pointer Exception in the WebLogic Log

This issue applies to Version 3.0 and Version 3.0.0.1.

When Oracle RTD is running on WebLogic, when you deploy an Inline Service from Decision Studio, a null pointer exception appears in the WebLogic log. This error is harmless and can be ignored.

#### 7.2 Explicitly Defining Partitioning Attribute Values Causes Subsequent **Decision Center Report Errors**

This issue applies to Version 3.0 and Version 3.0.0.1.

When an Oracle RTD model is defined with partitions, then at run-time, when each new partitioning attribute value is presented to the learning process, Oracle RTD automatically creates a new partition in the model.

Partitioned models can be defined with values explicitly named in the Value Domain field of a partitioning attribute, or that field can be left blank. If you specify explicit values for any model partitioning attribute in the Value Domain field, this causes problems for some Decision Center reports. For more information, see Section 8.1, "Multiple Rows Appearing for Some Reports Based on Partitioned Model Data."

The workaround for this issue is *not* to fill in the Value Domain field for any partitioning attribute.

#### 7.3 Mapping Array Attributes in a Multi-Level Entity Hierarchy

This issue applies to Version 3.0 and Version 3.0.0.1.

A "parent-child" entity hierarchy is typically defined with the child entity as an attribute of the parent entity. When the child entity is an Array attribute, be careful to map the child Array attribute to its data source in the direct parent entity only.

Assume, for example, a Customer with many Accounts, each of which has many Contracts. In Decision Studio, the Customer entity's Mapping tab may display the complete hierarchy as follows:

- The Customer entity contains the Account entity as an Array attribute
- The Account attribute contains the Contract entity as an Array attribute

The Account entity's Mapping tab contains the Contract entity as an Array attribute.

With this example, only map the Contract attribute in the Account entity's Mapping tab. Do not map the Contract attribute in the Customer entity's Mapping tab.

### 7.4 Terminate Active Sessions in Cluster Works Only on Decision Server **Receiving Deployment Request**

This issue applies to Version 3.0 and Version 3.0.0.1.

Deploying an Inline Service to a cluster with the "Terminate active sessions" option selected will terminate sessions on only the Decision Server that receives the Inline Service deployment request.

#### 7.5 Can Only Use String Datatype for Type Restrictions using List Of Values

This issue applies to Version 3.0 and Version 3.0.0.1.

In Decision Studio, when creating a Type Restriction containing List Of Values, select only String for Data Type. Selecting other Data Types will result in compilation errors.

## Oracle RTD Decision Center Issues

This chapter provides release notes for Oracle RTD Decision Center. It contains the following topic:

- Section 8.1, "Multiple Rows Appearing for Some Reports Based on Partitioned Model Data"
- Section 8.2, "Choice Group Performance Count Rollup Reports Not Available for Dynamic Choice Folder Names"

#### 8.1 Multiple Rows Appearing for Some Reports Based on Partitioned Model Data

This issue applies to Version 3.0 and Version 3.0.0.1.

When an Oracle RTD model is defined with partitions, then at run-time, when each new partitioning attribute value is presented to the learning process, Oracle RTD automatically creates a new partition in the model.

When any partitioning attribute in a model has one or more explicitly defined values in its Value Domain in the Inline Service, this causes the following problems in Decision Center reports that can filter on the partitioning attributes of that model:

- The partitioning attribute does not appear among the filtering parameters in the report header, so users cannot select a particular attribute value to filter on
- Multiple rows appear for other input attributes, instead of one per attribute

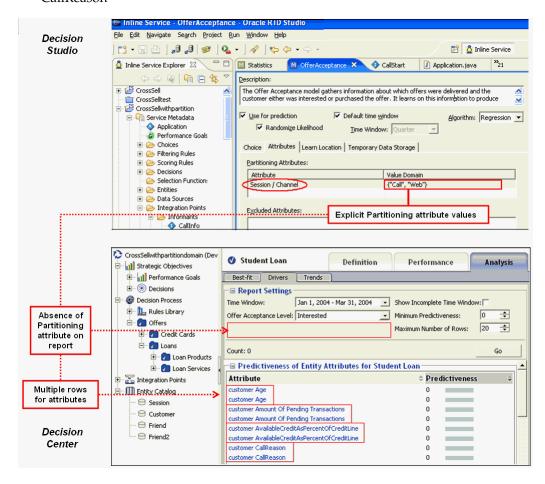
**Note:** This problem does not arise if values are *not* explicitly defined for a partitioning attribute in the Inline Service model. In this case, Decision Center reports display the partitioning attribute field in the report header, enabling users to select a value from the field's drop-down list.

The image that follows shows an example of this issue, as applied to the Inline Service **CrossSellwithpartition**, and to a subsequent Decision Center report. In the Inline Service, the partitioning attribute Session/Channel for the Offer Acceptance model has two explicitly defined attribute values, "Call" and "Web", in its Value Domain.

Assuming both of the attribute values, "Call" and "Web", have been passed to the model learning process, the effects of the explicit attribute definition are shown on an Analysis Drivers report in the Decision Center, as follows:

The filter parameter fields in the report header should include the field "Channel", but that field is not present in the report header

In the report body, two rows appear for each of the customer attributes Age, Amount of Pending Transactions, AvailableCreditAsPercentOfCreditLine, and CallReason



The workaround for this issue is *not* to fill in the Value Domain field for any partitioning attribute in the Inline Service.

## 8.2 Choice Group Performance Count Rollup Reports Not Available for **Dynamic Choice Folder Names**

This issue applies to Version 3.0 and Version 3.0.0.1

For Choice Group Performance Count reports, rollup does not apply to the dynamic choice folder names, whose format is <dynamic\_choice\_1>...<dynamic\_choice\_2>.

# **Externalized Objects Management Issues**

This chapter provides release notes on externalized objects management issues. It contains the following topics:

- Section 9.1, "Known Issues with External Rules"
- Section 9.2, "Unable to Render Long Rules for Editing in DC\_Demo External Rules Helper"

#### 9.1 Known Issues with External Rules

This issue applies to Version 3.0 only. It is fixed in Version 3.0.0.1.

The following are known issues with external rules:

- The quantifiers **There exists** and **For all** cannot be used with external rules
- Choice or choice group attributes cannot be passed as arguments to an Inline Service function called within an external rule

These use cases will raise a validation exception due to an external rule compilation problem. There is no indication given in the External Rule Editor to the fact that these usages do not work in this context.

Static rules or eligibility of static choices are not affected by these limitations.

#### 9.2 Unable to Render Long Rules for Editing in DC\_Demo External Rules Helper

This issue applies to Version 3.0 and Version 3.0.0.1.

Using the DC\_Demo External Rules Helper, you create and edit rules in the External Rules Editor that is rendered in the Graphical View.

After creating a rule in the Graphical View, you generate the metadata, then save the rule to a row in the database, whose columns appear in the Tabular View. To edit the rule, you click Edit in the Rule Metadata column for the appropriate Tabular View row. This action displays the metadata for the rule in the Metadata View, then renders the rule in the Graphical View.

As released, the DC\_Demo External Rules Deployment Helper enables the creating and saving of long rules, but is unable to render the long rule in the External Rule Editor in the Graphical View when you try to edit the rule.

For information on how to fix this issue in the DC\_Demo External Rules Helper and the External Rules Editor in an external application, see Article 1309497.1 in the Knowledge Base at support.oracle.com.

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# **Globalization Issues**

This chapter provides release notes related to Oracle RTD globalization. It contains the following topic:

Section 10.1, "Oracle RTD User Interfaces Only Available in English"

#### 10.1 Oracle RTD User Interfaces Only Available in English

This issue applies to Version 3.0 and Version 3.0.0.1.

Although Oracle RTD is a localized product, its user interfaces are currently only available in English. In addition, there are several known issues relating to locale-sensitive data, including incorrect display format for date, time, and currency. These issues will be addressed in future releases.

# **Documentation Errata**

This chapter provides information about errata in Oracle RTD documentation, in particular, Oracle Real-Time Decisions Installation and Administration Guide.

This section contains the following topic:

Section 11.1, "Oracle RTD Documentation Does Not Provide Information About Setting Up JConsole for SSL"

### 11.1 Oracle RTD Documentation Does Not Provide Information About **Setting Up JConsole for SSL**

This issue applies to Version 3.0 and Version 3.0.0.1.

Oracle Real-Time Decisions Installation and Administration Guide does not provide information about how to set up JMX MBean access in a secure fashion. Refer to the documentation for your J2EE container for information about how to set up JConsole for SSL.

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