

Oracle® Application Server

Release Notes and New Features

10g Release 3 (10.1.3.5.1)

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Oracle Application Server Release Notes and New Features, 10g Release 3 (10.1.3.5.1)

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Preface

This preface includes the following topics:

- Documentation Accessibility
- Related Documents
- Conventions

Audience

This document is intended for users of Oracle Application Server 10g.

Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible to all users, including users that are disabled. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Accessibility standards will continue to evolve over time, and Oracle is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For more information, visit the Oracle Accessibility Program Web site at <http://www.oracle.com/accessibility/>.

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<http://www.fcc.gov/cgb/consumerfacts/trs.html>, and a list of phone numbers is available at <http://www.fcc.gov/cgb/dro/trsphonebk.html>.

Related Documents

For more information, see these Oracle resources:

- Oracle Application Server Documentation on Oracle Application Server Disk 1
- Oracle Application Server Documentation Library 10g Release 3 (10.1.3.5.1)

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.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
<code>monospace</code>	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 the Release Notes?

This chapter provides a listing of new or updated topics introduced with this version of the *Oracle Application Server Release Notes and New Features*. The new topics are in the following chapters:

- Chapter 3, "Installation Issues"

1.1 Chapter 3, "Installation Issues"

- Section 3.15, "Unable to Start the Managed Server from WebLogic Console (UNIX)"

1.2 Chapter 5, "Oracle BPEL Process Manager"

- Section 5.5.7, "application.xml File Contains ^M Characters"

Introduction

This chapter introduces Oracle Application Server Release Notes and New Features, 10g Release 3 (10.1.3.5.1). It includes the following topics:

- Section 2.1, "Latest Release Information"
- Section 2.2, "Purpose of this Document"
- Section 2.3, "Important Information about the Oracle Application Server 10g Release 3 (10.1.3.5.1) Documentation Library"
- Section 2.4, "Operating System Requirements"
- Section 2.5, "Certification Information"
- Section 2.6, "Licensing Information"

2.1 Latest Release Information

This document is accurate at the time of publication. Oracle updates the release notes periodically after the software release. You can access the latest information and additions to these release notes on the Oracle Technology Network at:

<http://www.oracle.com/technology/documentation/>

2.2 Purpose of this Document

This document contains the release information for Oracle Application Server 10g Release 3 (10.1.3.5.1). It describes differences between Oracle Application Server and its documented functionality.

Oracle recommends you review its contents before installing, or working with the product.

2.3 Important Information about the Oracle Application Server 10g Release 3 (10.1.3.5.1) Documentation Library

The release notes in this document (as well as the books in the Oracle Application Server 10g Release 3 (10.1.3.5.1) documentation library) describe how to install and use the Oracle SOA Suite components on Oracle WebLogic Server and on Oracle Container for Java (OC4J).

If you are installing on OC4J, then obtain the 10.1.3.5.0 software download from MetaLINK (<http://metalink.oracle.com/>) and use the instructions in the Patch Set Notes to install the software.

If you are installing on Oracle WebLogic Server, then you need to download the 10.1.3.5.1 software from OTN and use the installation guide in this documentation library to install the software.

The following 10.1.3.5.1 component release notes apply to Oracle WebLogic Server and OC4J:

- Oracle Business Process Execution Language (BPEL) Manager
- Oracle Enterprise Service Bus (ESB)
- Oracle Web Services Manager (OWSM)
- Oracle Business Rules
- Oracle Application Server Technology Adapters

The following components apply only to 10g Release 3 (10.1.3.5.0) on OC4J:

- Oracle Business Activity Monitoring (BAM)
- Oracle HTTP Server
- Oracle Business to Business (B2B)
- OC4J
- Oracle WebCenter Suite
- Oracle Content Database

Oracle WebLogic Server specific notes for the SOA components are clearly indicated in the text.

2.4 Operating System Requirements

Oracle Application Server installation and configuration will not complete successfully unless users meet the hardware and software pre-requisite requirements before installation. See the *Oracle Application Server Installation Guide* for a complete list of operating system requirements.

2.5 Certification Information

The latest certification information for Oracle Application Server 10g Release 3 (10.1.3.5.1) is available at:

http://www.oracle.com/technology/software/products/ias/files/oracle_soa_certification_101310.html

2.6 Licensing Information

Licensing information for Oracle Application Server is available at:

<http://oraclestore.oracle.com>

Detailed information regarding license compliance for Oracle Application Server is available at:

<http://www.oracle.com/technology/products/ias/index.html>

Installation Issues

This chapter describes issues associated with Installation. It includes the following topics:

- Section 3.1, "Deinstall is not Supported"
- Section 3.2, "IPv6 Not Supported"
- Section 3.3, "DHCP Warning Message with Static IP Addresses (Vista and Windows 2008)"
- Section 3.4, "Installer Hangs When It Tries to Restart OPMN (Vista and Windows 2008)"
- Section 3.5, "Custom Users and Roles are not Ported from 10.1.3.0.0"
- Section 3.6, "Some Languages Not Supported"
- Section 3.7, "Problem During Linking Phase"
- Section 3.8, "Error While Creating Service on Microsoft Windows Platform"
- Section 3.9, "Error Message During Installation"
- Section 3.10, "MDS Set-up"
- Section 3.11, "Support For 32bit JDK (Sun/Jrocket) on 64bit OS"
- Section 3.12, "Error Regarding Display Colors"
- Section 3.13, "Overwritten Shortcuts"
- Section 3.14, "Benign Information in Install Logs"
- Section 3.15, "Unable to Start the Managed Server from WebLogic Console (UNIX)"

3.1 Deinstall is not Supported

Once you install Oracle SOA Suite with Oracle WebLogic Server you cannot uninstall it.

3.2 IPv6 Not Supported

This release of Oracle Application Server is not certified to run on machines that are configured with IPv6. You have to install and run this release of Oracle Application Server on machines that are configured with IPv4.

3.3 DHCP Warning Message with Static IP Addresses (Vista and Windows 2008)

When installing on a Microsoft Vista or Windows 2008 system with a valid, DNS-registered static IP address, you may see the following error:

```
A DHCP configuration was detected on this host. The installer also detected that the local hostname and the network hostname differ. Please resolve the networking issues by referring the "Installing on DHCP Computers" section in the installation guide.
```

This problem occurs if you have multiple network adapters with the same name and one of them is enabled for DHCP.

To work around this issue:

1. Set a dummy static IP address on the network adapter that is enabled for DHCP.
2. Restart the installation.
3. Restore the original network adapter configuration information.

3.4 Installer Hangs When It Tries to Restart OPMN (Vista and Windows 2008)

On Microsoft Vista and Windows 2008 systems, when you perform the basic installation type, the installer may hang when it tries to restart OPMN (right before it runs the configuration assistants).

To work around this issue, check the following:

- Ensure that you are not running IPv6. By default, Vista and Windows 2008 run IPv6, which is not supported by this release of Oracle Application Server. To disable IPv6:
 1. Remove or comment out the following line in the `C:\Windows\System32\drivers\etc\hosts` file:

```
::1 localhost
```
 2. Deselect IPv6 for all your connections and adapters, using the Network Connection Properties page. The page is available from Control Panel.
 3. Open the Registry Editor.
 4. Create the following registry entry as type `DWORD`, and set its value to `0xFF`:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip6\Parameters\DisabledComponents
```
 5. Exit the Registry Editor.
 6. Restart the computer.
- Start up the installer from a command shell that was started with "run as Administrator". To do this, right click `cmd.exe` in Windows Explorer, and select "Run as Administrator".

3.5 Custom Users and Roles are not Ported from 10.1.3.0.0

Bug 7351894

When upgrading from Oracle Application Server version 10.1.3.0.0 to version 10.1.3.5.0, defined users and roles are not automatically migrated from the `jazn-data.xml` configuration file to the `system-jazn-data.xml` configuration file. The result is that the defined users and roles no longer exist after upgrading.

To work around this issue:

1. From the backup of the 10.1.3.0.0 installation, copy the `jazn-data.xml` file from `J2EE_HOME/application-deployments/ascontrol/` to some location.
2. Migrate the users and roles of the `jazn-data.xml` configuration file to the new `system-jazn-data.xml` configuration file using the JAZNMigration Tool:

```
java -cp $ORACLE_HOME/j2ee/home/jazn.jar
oracle.security.jazn.tools.JAZNMigrationTool -st xml -dt xml -sf J2EE_
HOME/application-deployments/ascontrol/jazn-data.xml -df J2EE_
HOME/config/system-jazn-data.xml -sr jazn.com -m all
```

3.6 Some Languages Not Supported

The Configuration Wizard for the Oracle SOA Suite-Oracle WebLogic Server 10.1.3.5.1 installation does not support the German, French, Italian, Spanish, and Portuguese(Brazil) languages.

3.7 Problem During Linking Phase

When you install Oracle SOA Suite-Oracle WebLogic Server 10.1.3.5.1 on Linux x86_64 operating systems, you will receive an error message during the linking phase.

To workaround the issue:

1. Login as root user
2. Move the existing `/usr/bin/gcc` to `/usr/bin/gcc.orig` by using the following command:

```
> $mv /usr/bin/gcc /usr/bin/gcc.orig
```

3. Create a new file called `gcc41` with the following content:

```
$vi /usr/bin/gcc41
#!/bin/sh
exec /usr/bin/gcc.orig -m32 -static-libgcc
-B/usr/lib/gcc/i586-suse-linux/2.95.3/ $*
```

Note: The file `i586-suse-linux/2.95.3` is different for the different versions of the Linux operating system. Verify the exact file name for the Linux operating system in use. Search for the 32bit directory in the `/usr/lib/gcc` directory and obtain the exact file name.

4. Change the file permission for the `gcc41` file using the following command:

```
> $chmod 755 /usr/bin/gcc41
```

5. Create a symbolic link to `gcc` using the following command:

```
> $ln -s -f /usr/bin/gcc41 /usr/bin/gcc
```

3.8 Error While Creating Service on Microsoft Windows Platform

On Microsoft Windows platforms when you install more than one SOA Home, during installation of the second SOA Home, the installer attempts to create an additional service. However, a problem arises because services are already in place due to the previous installation. You will receive an "Error while Creating a Service." message.

To workaroud this issue:

- You can delete the existing service through Windows Services.
- You can continue with the second and other installations; the service will not be created.

3.9 Error Message During Installation

After installation, if you see observe the following error message in the OraInventory/logs/*.err file:

```
"The system cannot find the path specified"
```

This message can be ignored.

3.10 MDS Set-up

Complete the following steps to use MDS:

1. Use Multi Data Source (MDS) if the backend is RAC. The MDS should point to instance specific Data sources in turn. The Data source name and the JNDI name used by the app should be set for the MDS in this case. The individual data source names and jndi name can be anything (a suggestion is to use the base name suffixed with monotonically increasing number)
2. Use Regular data sources if the backend is non-RAC. The Data source name and the JNDI name used by the app should be set for the Data source in this case.
3. For MDS:

```
* test-frequency-seconds should be *5*
* data-source-list should point to a list of comma separated child
* algorithm-type* *should be *Load-Balancing
* data sources ("JDBC Data Source-0,JDBC Data Source-1")
```

3.11 Support For 32bit JDK (Sun/Jrocket) on 64bit OS

You can select 32bit JDK (Sun/Jrocket) on a 64bit Operating System to create the WLS Domain for Oracle SOA Suite during configuration

However, during the Oracle SOA Suite installation you need to perform the work around mentioned in the Section 3.7, "Problem During Linking Phase" and invoke the installer in the same manner as discussed in the *Oracle SOA Suite Installation Guide for Oracle WebLogic Server*.

For the complete list of JDK support, please refer the certification matrix at:

```
http://www.oracle.com/technology/software/products/ias/files/oracle\_soa\_certification\_101310.html
```

3.12 Error Regarding Display Colors

During the installation of Oracle SOA Suite on rh5.0/oel5.0 computers, you may receive an error regarding the check for display colors:

```
Could not execute auto check for display colors using
command/usr/X11R6/bin/xdpyinfo.
Check if the DISPLAY variable is set.
Checking if CPU speed is above 300 MHz.
Actual 3391 MHz Passed.
Some optional pre-requisite checks have failed (see above).
Continue? (y/n)
```

This prerequisite check can be ignored.

3.13 Overwritten Shortcuts

If you successfully install one SOA Home 1 and then install a second SOA Home 2, then all shortcuts created for the first SOA installation are overwritten by the second SOA installation. All of the shortcuts are created with the same names.

To workaroud this problem, before starting the second installation, rename the created shortcuts created by the installer that are pointing to the SOA Home 1.

You can rename the newly created shortcuts to new name by just adding 10.1.3.5.1.

3.14 Benign Information in Install Logs

In the install logs following lines are seen and they can be ignored:

```
*** Select a Product to Install Page***
Unable to read
/scratch/aimel/work/mw886/soa2538/inventory/ContentsXML/comps.xml. Some inventory
information may be lost.
Setting the 'TopLevelComp ( ToplevelComp )' property to 'oracle.as.j2ee.top,
10.1.3.1.2, >0.0.0.0.0, [ 46 ][0H:2]'. Received the value from the default
settings.
Unable to read
/ade/aimel_dadvfa0975/oracle/work/SOA_10136_
INSTAL/oraInventory/ContentsXML/comps.xml. Some inventory information may be lost.
```

3.15 Unable to Start the Managed Server from WebLogic Console (UNIX)

During the configuration phase, classic installation uses node manager to start the managed servers. So, if installation and configuration is done in one step, the configuration tools fail while starting the managed servers from WebLogic console and show the following error:

```
Server failed during startup so will not be restarted
```

It also fails to configure the domain and the node manager start script.

To work around these issues, perform the following steps:

- Change the parameter value for \$BEAHOME/wlserver_10.3/common/nodemanager/nodemanager.properties file from:

```
NativeVersionEnabled=true
```

to

NativeVersionEnabled=*false*

- Set StartScriptEnabled=*true*

General Management and Security Issues

This chapter describes issues associated with general management and security. It includes the following topics:

- Section 4.1, "Windows Shortcut to createASInstance Command Ignores Input"
- Section 4.2, "Clarification on Output to opmnctl status Command"
- Section 4.3, "Starting and Stopping Requires Administrator Privileges (Vista and Windows 2008)"
- Section 4.4, "Anonymous User not Supported"
- Section 4.5, "Cluster Layer is not Capable of Propagating Configuration Properties"
- Section 4.6, "Benign Error when Managed Server Starts for the First Time"
- Section 4.7, "Error Messages When Starting Managed Server"
- Section 4.8, "Error Message Displayed in Managed Server Logs"
- Section 4.9, "Workaround for Three Minute RAC Delay"
- Section 4.10, "Question Marks in Email"
- Section 4.11, "Documentation Errata"

4.1 Windows Shortcut to createASInstance Command Ignores Input

On Windows, if you create a Windows shortcut to the `createASInstance` command and invoke the command through the shortcut, and you have an existing configuration in the `ORACLE_CONFIG_HOME` directory, the `createASInstance` command prompts for the user input. However, your response, `y` or `n`, is ignored.

To work around this problem, you must enter the "Enter" key first, then respond `y` for overriding the existing configuration, or `n` for not overriding the existing configuration.

4.2 Clarification on Output to opmnctl status Command

When you use the `createInstance` command with the `-apacheRoot` option to create an additional Application Server instance, the status displayed by `opmnctl status -l` shows two different ports with the same HTTP protocol.

The port starting with 79** is the Apache listening port. The other port is a diagnostic port. Please check the Apache configuration files, such as `ohs/conf/httpd.conf` and `ohs/conf/dms.conf`, in the instance home for more details.

4.3 Starting and Stopping Requires Administrator Privileges (Vista and Windows 2008)

On Microsoft Vista and Windows 2008 systems, you must have Administrator privileges when starting and stopping Oracle Application Server.

- To start and stop from the command line using `opmnctl`, open a DOS window by running `cmd.exe` as Administrator (right click on `cmd.exe` and select **Run as Administrator**).
- To start and stop using the Oracle Application Server shortcuts on the Start menu, right click on the shortcut and select **Run as Administrator**.

If you do not have Administrator privileges when starting and stopping, you will get an Access Denied error.

4.4 Anonymous User not Supported

The "anonymous" user (i.e. a user who is not authenticated) is not supported as an Oracle Enterprise Manager 10g Application Server Control Console (Application Server Control Console) user. Assigning an administrator role to the anonymous user will result in an unusable Application Server Control Console.

It is possible to assign an Application Server Control Console administrator role (`ascontrol_admin`, `ascontrol_appadmin`, or `ascontrol_monitor`) to the anonymous user either by using the Application Server Control Console user admin pages or by editing the `jazn-data.xml` file. However, neither of these described role assignments are supported by Oracle.

OC4J denotes the anonymous user as the OC4J user when an application is initiated that does not have an authenticated user. The anonymous user may also be used during EJB RMI access.

4.5 Cluster Layer is not Capable of Propagating Configuration Properties

The DB-based polling cluster layer is capable of propagating domain configuration properties and logger settings. However, the cluster layer is not yet capable of propagating server-wide configuration properties (those found from the BPELAdmin console). The server-wide configuration properties are not stored in the database but are kept in a file within the BPEL installation directory.

The main server-wide configuration properties that are of significance to users are `soapServerUrl`, `soapCallbackUrl` and `nonFatalConnectionMaxRetry`.

4.6 Benign Error when Managed Server Starts for the First Time

When you start the managed server starts for the first time you may observe the following error message:

```
log4j:ERROR setFile(C:/WORK/mw351/soa22sep/bpel/system/logs/orabpel.log, false)
call failed. java.io.FileNotFoundException
```

The missing log file `orabpel.log` is created automatically. During additional managed server starting you should not observe the error.

4.7 Error Messages When Starting Managed Server

When starting your managed server you may see error messages similar to the following:

```
<Warning> <EJB> <BEA-010001> <While deploying EJB 'TaskNotificationSender',
class
oracle.bpel.services.workflow.task.notification.MDBTaskNotificationConsumer
was loaded from the system classpath. As a result, this class cannot be
reloaded while
the server is running. To prevent this behavior in the future, make sure the
class is not
located in the server classpath.>
When processing WebService module 'esb_console.war'. Failed to load servlet
Class:
oracle.tip.jbi.servlet.JBIContainerServlet Ignoring: unable to load
class:java.lang.ClassNotFoundException: oracle.tip.jbi.servlet.
JBIContainerServlet at:
weblogic.xml.schema.binding.util.ClassUtil.loadClass(ClassUtil.java:76)
When processing WebService module 'esb_console.war'. Failed to load
servletClass: oracle.tip.jbi.servlet.JBIContainerServlet Ignoring: unable to
load class:java.lang.ClassNotFoundException:
oracle.tip.jbi.servlet.JBIContainerServlet
at:weblogic.xml.schema.binding.util.ClassUtil.loadClass(ClassUtil.java:76)
<Sep 9, 2009 8:53:42 AM UTC> <Warning> <Connector> <BEA-190155> <Compliance
checking/validation of the resource adapter
/scratch/aim1/work/mw5764/user_projects/domains/single_managed/servers/soa10g
_server1/tmp/_WL_user/esbservices/lgingqd/esb-jca-dt.rar resulted in the
following warnings:
The ra.xml <resourceadapter-class> class
'oracle.tip.esb.server.bootstrap.DesignTimeWLResourceAdapter' should
implement java.io.Serializable but does not.>

When processing WebService module 'worklistxpress.war'. Failed to load
servlet Class: WorklistServlets.TaskSearch
Ignoring: unable to load class:java.lang.ClassNotFoundException:
WorklistServlets.TaskSearch at:
weblogic.xml.schema.binding.util.ClassUtil.loadClass(ClassUtil.java:76)
When processing WebService module 'worklistxpress.war'. Failed to load
servlet Class: WorklistServlets.TaskSearch
Ignoring: unable to load class:java.lang.ClassNotFoundException:
WorklistServlets.TaskSearch at:
weblogic.xml.schema.binding.util.ClassUtil.loadClass(ClassUtil.java:76)
When processing WebService module 'worklistapp.war'. Failed to load servlet
Class: worklistapp.servlets.TaskAttachment
Ignoring: unable to load class:java.lang.ClassNotFoundException:
```

These error messages can be ignored.

4.8 Error Message Displayed in Managed Server Logs

WS data binding error messages are displayed in the managed server logs during startup.

These error messages are due to a additional `java-wsdl` type mappings to Oracle WebLogic Server in the JAXRPC mapping file for the HWF Webservices applications in the `soabpel.ear` file.

These error messages are benign and cause no functional impact. The JAXRPC mapping file is not changed for SOA Oracle WebLogic Server. These same mapping files are used for SOA OC4J and SOA Oracle WebLogic Server.

4.9 Workaround for Three Minute RAC Delay

Using the default values for XA datasources in a multi-datasource real application cluster (RAC) setup, there can be up to a 5 min delay observed in processing requests if one of the RAC nodes is brought down.

When running with a RAC database, for each XA Data Source on your system, change the XA Retry Duration variable from the default of 300 seconds to 120 seconds.

4.10 Question Marks in Email

When your Oracle SOA Suite-Oracle WebLogic Server 10.1.3.5.1 installation is running on a native environment, multibyte characters in the email notification subject line are displayed as question marks.

To workaroud this issue, change your locale to UTF8 (such as `en_US.utf8`) and restart the SOA server.

4.11 Documentation Errata

This section describes documentation errata in general management and security documentation. It includes the following topic:

- Section 4.11.1, "Configuring Service Failover"
- Section 4.11.2, "Incorrect Operating System Configuration"

4.11.1 Configuring Service Failover

In the *Oracle Application Server Enterprise Deployment Guide 10g for Release 3 (10.1.3.3.0)*, in Section 3.20, "Configuring Service Failover for the OC4J_ESBDT Instances", Step 4 is incorrect.

For Step 4 run the following `opmnctl` commands:

```
> opmnctl stopall
> opmnctl start
> opmnctl startproc ias-component="<group_name>" process-type=OC4J_ESBDT"
```

By running these `opmnctl` commands in order service-failover is configured correctly.

Additionally, use the following `opmnctl` commands to stop and start an OC4J container using service-failover:

```
> opmnctl startproc ias-component="<group_name>" process-type=OC4J_ESBDT
> opmnctl stopproc ias-component="<group_name>" process-type=OC4J_ESBDT
```

If you use either of the following `opmnctl` commands:

```
> opmnctl startproc process-type=OC4J_ESBDT
> opmnctl stopproc process-type=OC4J_ESBDT
```

listed in the documentation, service-failover will not work as expected.

4.11.2 Incorrect Operating System Configuration

In Section 7.6, "Generic Apache ", of the *Oracle Process Manager and Notification Server Administrator's Guide* the listed applicable operating systems is incorrect. The listed configuration for the Oracle HTTP Server process module to manage generic Apache processes is valid for Linux operating systems only.

Oracle BPEL Process Manager

This chapter describes issues associated with Oracle BPEL Process Manager. It includes the following topics:

- Section 5.1, "Installation, Deinstallation, and Upgrade Issues and Workarounds"
- Section 5.2, "Modeling and Design-Time Issues and Workarounds"
- Section 5.3, "WSIF Issues and Workarounds"
- Section 5.4, "Workflow and Worklist Issues and Workarounds"
- Section 5.5, "Transformation Issues and Workarounds"
- Section 5.6, "Deployment and Runtime Issues and Workarounds"
- Section 5.7, "Documentation Errata"
- Section 5.8, "New Features and Bug Fixes"
- Section 5.9, "10.1.3.5.1 Oracle WebLogic Server Issues and Workarounds"

5.1 Installation, Deinstallation, and Upgrade Issues and Workarounds

This section describes the following issues and workarounds:

- Section 5.1.1, "E-mail Body Appears as an Attachment for Notification Samples Migrated from 10.1.3.4 to 10.1.3.5"
- Section 5.1.2, "Manually Add Notification Loggers"

5.1.1 E-mail Body Appears as an Attachment for Notification Samples Migrated from 10.1.3.4 to 10.1.3.5

If you migrate a 10.1.3.4 sample that uses e-mail attachments to 10.1.3.5, the following copy rule appears in the `.bpel` file. If this sample is deployed as is to Oracle BPEL Server, the e-mail body appears as an attachment only, and not as an inline message. You must manually remove this copy rule.

```
<copy>
  <from expression="string('NotificationAttachment1.html')"/>
  <to variable="varNotificationReq" part="EmailPayload"
  query="/EmailPayload/ns1:Content/ns1:ContentBody/ns1:MultiPart/
  ns1:BodyPart[2]
/ns1:BodyPartName"/>
</copy>
```

5.1.2 Manually Add Notification Loggers

After applying the 10.1.3.5 patch to existing Oracle SOA Suite 10.1.3.1/10.1.3.3/10.1.3.4 installations, the `log4j-config.xml` file may not contain entries for notifications.

As a workaround, you must manually add the notification logger entries. For example:

```
<logger name="default.collaxa.bpel.services.notification" additivity="false">
  <level value="INFO" />
  <appender-ref ref="A1" />
  <appender-ref ref="A2" />
</logger>
```

Where `default` is the domain name.

5.2 Modeling and Design-Time Issues and Workarounds

This section describes the following issues and workarounds:

- Section 5.2.1, "Renaming WSDL File Service Endpoints Is Not Supported in Oracle JDeveloper"
- Section 5.2.2, "Imported WSDL and XSD Files Must Be Under the `bpel` Folder"
- Section 5.2.3, "Passing Values to Security Headers"
- Section 5.2.4, "Availability of `getFaultName` and `getFaultAsString` XPath Functions in a Catch Branch"

5.2.1 Renaming WSDL File Service Endpoints Is Not Supported in Oracle JDeveloper

The renaming of service endpoints defined inside WSDL files in BPEL projects is not currently supported in Oracle JDeveloper. However, the Rename dialog in Oracle JDeveloper does enable you to rename a BPEL project and all artifacts (BPEL, XSD, XML, and WSDL files). In addition, all references to these artifacts are automatically updated. You access this dialog by selecting the BPEL project in the **Application Navigator**, then selecting **Rename** from the **File** main menu.

5.2.2 Imported WSDL and XSD Files Must Be Under the `bpel` Folder

When the BPEL process archive and its components are compiled and packaged into a BPEL suitcase JAR file, all XSD and WSDL files should be under the `bpel` folder.

If you use any imported XSD and WSDL files that are outside of the `bpel` folder, you must ensure that these shared files are either:

- Placed under the `bpel` folder in the JAR file
- Available on the deployed server under the `bpel` folder of the deployed BPEL process

Otherwise, you receive an error message similar to the following when initiating a process from Oracle BPEL Control.

```
"java.io.IOException: WSDLException:
....../public_html/CommonCustomer.xsd:WSDL not found"
```

5.2.3 Passing Values to Security Headers

Perform the following steps to pass values to security headers.

1. Import the schema file.

<http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0>

2. Create three variables based on the imported schema:

```
<variable name="securityContext" element="ns2:Security"/>
<variable name="userNameToken" element="ns2:UsernameToken"/>
<variable name="pswd" element="ns2:Password"/>
```

3. Copy values into these newly-created variables.

4. Insert the password after the user name (this occurs in the assign activity).

5. Append the user name to the security context header variable (this occurs in the assign activity).

This results in the following outcome in the assign activity.

```
<assign>
  <copy>
    <from variable="inputVariable" part="payload"
      query="/client:SampleRequest/client:pswd"/>
    <to variable="pswd" query="/wsse:Password"/>
  </copy>
  <copy>
    <from variable="inputVariable" part="payload"
      query="/client:SampleRequest/client:user"/>
    <to variable="userNameToken"
      query="/wsse:UsernameToken/wsse:Username"/>
  </copy>
  <bpelx:insertAfter>
    <bpelx:from variable="pswd" query="/wsse:Password"/>
    <bpelx:to variable="userNameToken"
      query="/wsse:UsernameToken/wsse:Username"/>
  </bpelx:insertAfter>
  <bpelx:append>
    <bpelx:from variable="userNameToken" query="/wsse:UsernameToken"/>
    <bpelx:to variable="securityContext" query="/wsse:Security"/>
  </bpelx:append>
</assign>
```

6. Open the partner link activity.

7. Click the **Property** tab.

8. Click the **Add** button.

9. Select **wsseheaders** and assign it the value of **propagate**.

10. Complete design of your BPEL process.

11. Deploy and test your BPEL process.

5.2.4 Availability of getFaultName and getFaultAsString XPath Functions in a Catch Branch

The XPath functions `getFaultName` and `getFaultAsString` are now available in a catch branch. In previous releases, these only worked in a catchAll branch.

5.3 WSIF Issues and Workarounds

This section describes the following issues and workarounds:

- Section 5.3.1, "WSIF ant Tool Does Not Support WSDL Generation for EJB 3.0-Based JARs"
- Section 5.3.2, "BeanDefinitionGenerator ant Task Does Not Work with Directory Paths that Include Spaces"
- Section 5.3.3, "WSDL Generation Failure with the Concurrentmap Collection Class"
- Section 5.3.4, "JDK 1.5 Enums are Not Supported by the 10.1.3 JAX RPC"
- Section 5.3.5, "Throwable Class as a Bean Property is Not Supported by JAX-RPC"

5.3.1 WSIF ant Tool Does Not Support WSDL Generation for EJB 3.0-Based JARs

The WSIF ant tool does not support WSDL generation for EJB 3.0-based JARs.

5.3.2 BeanDefinitionGenerator ant Task Does Not Work with Directory Paths that Include Spaces

The bean definition ant task cannot work with a directory path that includes spaces (for example, `c:\Document and Settings\jsmith`).

For example, assume a `build.xml` file includes the following entry:

```
<property name="beanDefinitionLocation" value="C:\Documents and  
Settings\jsmith\Desktop\EJB_test\DataBindingTestEJB\deploy" />
```

An ant task using this file fails with a message similar to the following:

```
cannot find file "C:\Documents"
```

5.3.3 WSDL Generation Failure with the Concurrentmap Collection Class

The `java.util.concurrent.ConcurrentMap` collection class is not a supported type in the 10.1.3 JAX RPC. As a workaround, have the method signatures use `java.util.Map`.

5.3.4 JDK 1.5 Enums are Not Supported by the 10.1.3 JAX RPC

JDK 1.5 enums are not supported by the 10.1.3 JAX RPC.

5.3.5 Throwable Class as a Bean Property is Not Supported by JAX-RPC

The `Throwable` class as a bean property is not supported by JAX RPC. For example, the following is invalid:

```
/**  
 * Returns the cause.  
 * @return Throwable  
 */  
public Throwable getCause()  
{  
    return cause;  
}  
  
/**  
 * Sets the cause.  
 * @param cause The cause to set  
 */  
public void setCause(Throwable cause)
```

```
{
this.cause = cause;
}
```

5.4 Workflow and Worklist Issues and Workarounds

This section describes the following issues and workarounds:

- Section 5.4.1, "Cannot Create a Simple Task Form By Right-Clicking the .task File"
- Section 5.4.2, "Tasks Attachments Cannot Be Added from Actionable E-mails"
- Section 5.4.3, "Error Notification is Not Sent when a Task is Assigned to an Invalid User and No Error Assignee is Defined"
- Section 5.4.4, "Changes to Task and Routing Customizations Require Regeneration of the Scope"
- Section 5.4.5, "Configuring Active Directory"

5.4.1 Cannot Create a Simple Task Form By Right-Clicking the .task File

Do not right-click the `.task` file and select **Auto Generate Simple Task Form**. Doing so results in creation of an empty `payload-body.jsp` file. If you then right-click the project folder and select **Auto Generate Simple Task Form**, the same error results.

Instead, only right-click the project folder and select **Auto Generate Simple Task Form** to generate the form, as is documented in the *Oracle BPEL Process Manager Developer's Guide*.

If you receive an empty `payload-body.jsp` file, perform the following steps to delete the file:

1. Right-click the human task folder.
2. Select **Delete Task Form Files**.
3. Generate the new task form.

5.4.2 Tasks Attachments Cannot Be Added from Actionable E-mails

You cannot add attachments while taking actions from actionable e-mails. For example, if you add an attachment to an actionable e-mail response message, the task does not get approved.

As a workaround, add attachments from the Oracle BPEL Worklist Application.

5.4.3 Error Notification is Not Sent when a Task is Assigned to an Invalid User and No Error Assignee is Defined

If a task is assigned to a single invalid user and no error assignee is defined for the task, then the task goes directly to the `ERRORED` state. In addition, no error notification is sent, even when an error state recipient has been configured in the task settings.

This issue does not occur under either of the following circumstances:

- The error assignee is defined
- The invalid user is not the first assignee

5.4.4 Changes to Task and Routing Customizations Require Regeneration of the Scope

Customizations to the human task scope are preserved, except when the human task scope is regenerated. The scope is regenerated when you change the selections on the following two check boxes in the **Advanced** tab on the human task activity.

- **Allow task and routing customization in BPEL callbacks**
- **Include Task History From**

5.4.5 Configuring Active Directory

For Active Directory configuration to work, you must add `<property name="nicknameAttribute" value="sAMAccountName"/>` to the `<userControls>` section of the `$SOA_HOME/bpel/system/services/config/ldap/is_config.ActiveDirectory.xml` file.

```
<?xml version = '1.0' encoding = 'UTF-8'?>
<ISConfiguration
xmlns="http://www.oracle.com/pcbpel/identityservice/isconfig" >

<configurations>
<!-- Active Directory EXAMPLE -->
<configuration>
<provider providerType="LDAP" name="Active Directory" >
  <connection url="ldap://host:port"
    binddn="cn=administrator,cn=Users,DC=us,DC=oracle,DC=com"
    password="CHANGE_ME" encrypted="false">
    <pool initsize="2" maxsize="25" prefsize="10" timeout="60"/>
  </connection>

  <userControls>
    <property name="nameattribute" value="cn"/>
    <property name="objectclass" value="user"/>
    <property name="nicknameAttribute" value="sAMAccountName"/>
    <search searchbase="cn=Users,DC=us,DC=oracle,DC=com"
      maxSizeLimit="1000" maxTimeLimit="120" scope="subtree" />
  </userControls>

  <roleControls>
    <property name="nameattribute" value="cn"/>
    <property name="objectclass" value="group"/>
    <property name="membershipsearchscope" value="onelevel"/>
    <property name="memberattribute" value="member"/>
    <search searchbase="cn=Users,DC=us,DC=oracle,DC=com"
      maxSizeLimit="1000" maxTimeLimit="120" scope="onelevel" />
  </roleControls>
</provider>
</configuration>
</configurations>
</ISConfiguration>
```

5.5 Transformation Issues and Workarounds

This section describes the following issues and workarounds:

- Section 5.5.1, "No Warning on Mapping Recursive Nodes that Exist in Source and Target Schemas"

- Section 5.5.2, "Empty XSL Map Generated when Automapping a Recursive Schema with Restrictions"
- Section 5.5.3, "XML Schema Expansion Depth is Not Obeyed When Resolving a Recursive Schema"
- Section 5.5.4, "XSL Does Not Recognize Remote Source and Target XSD Files"
- Section 5.5.5, "Target XML Created from Mapping Choice Elements in XSD Gives Incorrect Error Message"
- Section 5.5.6, "SampleExtensionFunction.jar File Must Be Copied to a Different Location"
- Section 5.5.7, "application.xml File Contains ^M Characters"

5.5.1 No Warning on Mapping Recursive Nodes that Exist in Source and Target Schemas

When you automap schemas with recursive nodes, there is no warning message to indicate that recursive nodes have been encountered and remain unexpanded beyond a certain level. These unexpanded nodes are not mapped.

In these situations, you must manually map the schema to the depth that you want.

5.5.2 Empty XSL Map Generated when Automapping a Recursive Schema with Restrictions

Setting the map generation type to REQ (`<mapGenType type="REQ" />`) indicates that you want all required nodes to be generated. The mapper tries to create empty required nodes for those that do not exist. If the XSD has a recursive element that is required, the document is infinite if it is generated according to the XSD.

5.5.3 XML Schema Expansion Depth is Not Obeyed When Resolving a Recursive Schema

The XML schema expansion depth is not obeyed when resolving a recursive schema. For example, perform the following steps.

1. From the **Tools** main menu, select **Preferences > XSL Maps**.
2. In the **Expansion Depth** field, enter a high value (for example, 20).
3. In the **Number of Repeating Elements** field, enter 20.
4. In the **Maximum Depth** field, enter 20.
5. Attempt to map the recursive schema from source to target.
6. Right-click the source root node and select **Expand All**. The schema expands until only the default level (six nodes).
7. Close and reopen the XSL map in **Design** view. Only the default level appears.
8. Restart Oracle JDeveloper. Only the default level appears.
9. Manually expand the schema to ten levels and automap from the source to target root nodes.
10. Right-click the map and test the schema. The source XML is not generated to 20 levels, even though the number of repeating elements was set to 20 in Step 3.

5.5.4 XSL Does Not Recognize Remote Source and Target XSD Files

If the source and target files in an XSL file are coming from a remote XSD file (for example, an XSD available on a network), the XSL does not recognize the source and target.

As a workaround, when importing a remote XSD, check the **Copy to Project** check box to make a local copy of the XSD file in the project.

5.5.5 Target XML Created from Mapping Choice Elements in XSD Gives Incorrect Error Message

When you generate a target XML file in the Test XSL Map dialog of the XSLT Mapper, the target XML file is correctly generated. However, the target XML file provides an incorrect error message stating that there are missing elements from a set of choice elements that are not mapped. This message can be ignored.

5.5.6 SampleExtensionFunction.jar File Must Be Copied to a Different Location

For XSL sample extension functions to work at design time, you must copy the `SampleExtensionFunction.jar` file to the `jdev/lib/patches` directory instead of to the directory mentioned in the readme file (`jdev/extensions`).

5.5.7 application.xml File Contains ^M Characters

The files listed below may contain extra carriage return (^M) characters:

- `samples/tutorials/127.OrderBookingTutorial/OrderApproval/public_html/OrderApproval/form/ear/META-INF/application.xml`
- `samples/tutorials/127.OrderBookingTutorial/PriceQuote/SelectManufacturing/public_html/Approval/form/ear/META-INF/application.xml`

To workaroud this issue you can use the `dos2unix` utility to remove the extra ^M characters, as follows:

```
> $ dos2unix <MyFile>
```

The `dos2unix` utility converts the file to UNIX format, removing any extra ^M characters, and overwrites the file to itself. Typically, the `dos2unix` executable is located in either the `/usr/bin` or `/usr/local/bin` directory.

5.6 Deployment and Runtime Issues and Workarounds

This section describes the following issues and workarounds:

- Section 5.6.1, "Processes Are Not Loaded If the orabpel Application is Stopped and Started"
- Section 5.6.2, "Cannot Redeploy the Same BPEL Process Revision to a Production Server from Oracle JDeveloper"
- Section 5.6.3, "Quick Deployment Option Overwrites an Existing Revision if Server is Running in Development Mode"
- Section 5.6.4, "Calculating Settings for Automatic Recovery Parameters"
- Section 5.6.5, "Deployment with ant Fails when Default oc4jadmin User Password Is Not Used"
- Section 5.6.6, "PermGen Out-of-Memory Error During Deployment"

- Section 5.6.7, "Flow Tab of Stale Instances is Disabled"
- Section 5.6.8, "Flow Trace Is Empty When a Fault Is Not Captured"
- Section 5.6.9, "Recovery (Activity) Tab in Oracle BPEL Control is Disabled"
- Section 5.6.10, "Optimized Assign Nodes Collapse Feature Is Not Supported in Oracle BPEL Control"

5.6.1 Processes Are Not Loaded If the orabpel Application is Stopped and Started

Processes are not loaded if the `orabpel` application is stopped and started as follows:

```
opmnctl stopproc application=orabpel
```

```
opmnctl startproc application=orabpel
```

As a workaround, use `opmnctl startall` and `opmnctl stopall`. However, this means you have to stop and start all J2EE applications and Oracle Enterprise Service Bus if you want to stop and start the `orabpel` application.

5.6.2 Cannot Redeploy the Same BPEL Process Revision to a Production Server from Oracle JDeveloper

Redeployment of the same BPEL process revision (for example, redeploying HelloWorld revision 1.0 to revision 1.0) from Oracle JDeveloper to an Oracle BPEL Server running in production mode displays as an error in the Oracle Process Manager and Notification Server (OPMN) logs. This is the expected behavior.

However, the same deployment displays as successful in Oracle JDeveloper. This message can be ignored.

5.6.3 Quick Deployment Option Overwrites an Existing Revision if Server is Running in Development Mode

You can always deploy a BPEL process with a new revision by right-clicking the BPEL project and selecting **Deploy > BPEL Process Deployer**. The BPEL Process Deployer dialog that is displayed provides an option for entering a different revision value. This option is available regardless of whether Oracle BPEL Server is running in production or development mode.

However, if you select to perform a quick deployment by right-clicking the BPEL project and selecting **Deploy > *server_connection_name* > *domain_name***, the process revision is overwritten and redeployed if the server is running in development mode.

5.6.4 Calculating Settings for Automatic Recovery Parameters

This section provides recommendations for setting the automatic recovery parameters to values appropriate to your environment.

In any scenario, `dspInvokeThreads` can be set to 40. Therefore, a maximum of 40 threads are allocated to process invocation messages in the dispatcher layer. This should be sufficient and may not require changing. For example, assume a call to the external web service takes up to 120 seconds to respond and the instance creation takes about 5 seconds. Therefore, the maximum call duration (including the web service invocation) is at least 125 seconds.

If you plan for a worst-case scenario, `subsequentTriggerDelay` must be changed to about 150 - 200 seconds. This is a safer measure for removing an instance from

being invoked and recovered more than once. The subsequent `TriggerDelay` property is the delay between two consecutive recovery attempts. Setting this property to a lower value does not mean that recovery is faster. If you want pending messages to be recovered without any delays, change the `maxMessageRaiseSize` parameter to a higher value (for example, less than or equal to 40 (`dspInvokeThreads`)). Therefore, at least 40 invoke instance messages can be recovered in a recovery attempt. This value can also be set to -1 to allow all pending messages to be processed during the first recovery attempt.

If you expect the rate of arrival for new messages while recovery is under way to be higher, set `startupRecoveryDuration` to 400 seconds. This ensures that at least two recovery attempts are made. This ensures that none of the messages are waiting to be recovered during server startup. You can decrease the `startupRecoveryDuration` value if a single recovery attempt itself is feasible. This removes messages waiting for some time from being recovered. This also depends upon your expectations for the number of messages to be recovered during server startup.

5.6.5 Deployment with ant Fails when Default oc4jadmin User Password Is Not Used

1. Install Oracle SOA Suite 10.1.3.1. During installation, specify the `oc4jadmin` password as anything other than `welcome1`.
2. Apply patch set 10.1.3.5.
3. Attempt to deploy the prebuilt samples using `ant`. Deployment fails with an authentication error.

As a workaround, manually replace this password in the `ant-orabpel.properties` file.

5.6.6 PermGen Out-of-Memory Error During Deployment

You can receive a PermGen out-of-memory error similar to the following during deployment:

```
. . .
. . .
<2009-06-17 08:39:55,845> <ERROR> <default.collaxa.cube.engine.deployment>
java.lang.OutOfMemoryError: PermGen space
<2009-06-17 08:40:41,030> <ERROR> <default.collaxa.cube.engine.deployment>
<DeploymentManager::deploySuitcase>
java.lang.OutOfMemoryError: PermGen space
<2009-06-17 08:44:20,187> <ERROR> <default.collaxa.cube.engine.agents>
<SimpleTrigger::executionComplete> Error while rescheduling agent
java.lang.OutOfMemoryError: PermGen space
. . .
. . .
```

This error can occur under circumstances such as the following:

- You have many components installed (for example, 10.1.3 Oracle Application Server, 10.1.3.1 Oracle BPEL Process Manager, 10.1.3.1 Oracle Enterprise Service Bus, 10.1.3.1 Oracle Web Services Manager, and the 10.1.3.5 patch set). This installation implies more class definitions, all of which reside in PermGen space.
- Your BPEL process is quite large.

Increase PermGen space by performing the following steps:

1. Open the `$ORACLE_HOME/opmn/conf/opmn.xml` file for UNIX or the `ORACLE_HOME\opmn\conf\opmn.xml` file for Windows.
2. Change the PermGen value for OC4J:

```
-Doc4j.formauth.redirect=true -XX:MaxPermSize=128M -Xms2048M -Xmx2048M
-Xmn1228M
```

Note that when deploying a large number of processes, it is not unusual to increase the PermGen value to 256M.

5.6.7 Flow Tab of Stale Instances is Disabled

When you access a stale instance in Oracle BPEL Control, only the **Audit** tab is enabled. The **Flow** tab is disabled because it requires the process definition, which is not available for stale instances.

5.6.8 Flow Trace Is Empty When a Fault Is Not Captured

Create an instance for a BPEL process that invokes, but does not catch, a fault. Click the faulted instance in Oracle BPEL Control and note that the audit trail displays the proper payload information and activities, but the flow trace is empty.

This is the expected behavior. The flow trace requires instance data. Since the fault is not handled, the instance gets rolled back and only the audit data is saved asynchronously.

5.6.9 Recovery (Activity) Tab in Oracle BPEL Control is Disabled

The **Recovery (Activity)** tab that displayed in previous releases under the **Administration** tab in Oracle BPEL Control has been disabled. However, all main activity recovery cases are covered through other actions:

- Receive/onMessage activities are recoverable through a callback recovery.
- Wait/onAlarm activities are recoverable through a refresh alarm table.

The only cases that cannot be recovered are when you use `bpelx:checkpoint` or `dspMaxRequestDepth`, and these scenarios are not commonly used.

5.6.10 Optimized Assign Nodes Collapse Feature Is Not Supported in Oracle BPEL Control

The optimized assign nodes collapse feature in Oracle BPEL Control instance tracking has been removed in this release.

5.7 Documentation Errata

This section describes the following issues and workarounds:

- Section 5.7.1, "Regenerating the Task Switch Activity"
- Section 5.7.2, "Searching String Flex Fields"
- Section 5.7.3, "Removing Samples Installed in Releases Prior to 10.1.3.5"
- Section 5.7.4, "BPEL LDAP XPath Functions"
- Section 5.7.5, "parseXML XPath Function"
- Section 5.7.6, "Displaying the Fields in a Simple Task Form as a List of Values"

5.7.1 Regenerating the Task Switch Activity

Section “Displaying Custom Outcomes in a Human Task Activity” of Chapter 15, “Oracle BPEL Process Manager Workflow Services” of *Oracle BPEL Process Manager Developer’s Guide* describes how to display custom outcomes in the switch activity of a human task activity.

Regardless of whether your task outcomes are custom or predefined (such as **APPROVE** and **REJECT**), you must perform the following steps to refresh the task switch in Oracle JDeveloper.

1. Click **Source** to display the source view of the BPEL process.
2. Click **Design** to return to the design view of the BPEL process.

If you do not refresh, there is no loss of functionality. The correct BPEL process (with the new outcomes) is correctly deployed. Only the design view in Oracle JDeveloper does not reflect the correct task outcomes in the switch activity.

5.7.2 Searching String Flex Fields

In Table 16-2, “Contents of the Worklist Application My Tasks Page” of Chapter 16, “Worklist Application” of the *Oracle BPEL Process Manager Developer’s Guide*, the following definition for the Search Keyword field appears:

Enter a keyword to search task titles, comments, identification keys, and the flex string fields of tasks that qualify for the specified filter criterion.

However, only the text attribute fields are searchable (textAttribute1 - textAttribute10). Other string flex fields such as formAttribute(1-5) and urlAttribute(1-5) are not searchable using the basic search keyword on the My Tasks page. These fields can be searched using the advanced search functionality.

5.7.3 Removing Samples Installed in Releases Prior to 10.1.3.5

In releases prior to 10.1.3.5, samples were installed under the `SOA_HOME/bpel/samples` directory.

If you are not using these samples, Oracle recommends that you remove them. For example, change directories at the command prompt to `SOA_HOME/bpel/samples` and enter `rm -rf` on Linux systems.

5.7.4 BPEL LDAP XPath Functions

There are four lightweight directory access protocol (LDAP) XPath functions in BPEL:

- `authenticate`
- `listUsers`
- `lookupUser`
- `search`

These XPath functions provide the lookup and search capabilities to obtain information from an LDAP server, typically the LDAP user information.

These XPath functions use a configuration file named `directories.xml` to obtain server access information for JNDI (for example, context factory, LDAP server provider URL, authenticate type, and so on). You must create and place the `directories.xml` file in the same directory in which the `.bpel` file is located.

5.7.4.1 LDAP functions in 10.1.3.x

In 10.1.3.x releases, these XPath functions are defined in the `xpath-functions.xml` file.

The namespace URL for the XPath functions is `http://schemas.oracle.com/xpath/extension/ldap`.

5.7.4.2 Configuration File

Format the `directories.xml` file as follows:

```
<?xml version="1.0" ?>
<directories>
  <directory name='people'>
    <property name="java.naming.provider.url">ldap://servername:port</property>
    <property name="java.naming.factory.initial">com.sun.jndi.ldap.LdapCtxFactory
      </property>
    <property name="java.naming.security.principal">username</property>
    <property name="java.naming.security.authentication">simple</property>
    <property name="java.naming.security.credentials">passord</property>
    <property name="entryDN">[entry dn]</property>
  </directory>
</directories>
```

For example:

```
<?xml version="1.0" ?>
<directories>
  <directory name='people'>
    <property name="java.naming.provider.url">ldap://sta0018.us.mycompany.com:7001
      </property>
    <property name="java.naming.factory.initial">com.sun.jndi.ldap.LdapCtxFactory
      </property>
    <property name="java.naming.security.principal">cn=admin</property>
    <property name="java.naming.security.credentials">weblogic</property>
    <property name="java.naming.security.authentication">simple</property>
    <property name="entryDN">ou=people,ou=myrealm,dc=soainfra</property>
  </directory>
</directories>
```

To call the LDAP functions, you must use `directories.xml`.

5.7.4.3 authenticate

This function authenticates an LDAP user and returns `true` or `false`.

Signature:

```
ldap:authenticate('directoryName', 'userId', 'password')
```

Parameters:

- `directoryName` — The directory name specified in `directories.xml`.
- `userId` — The LDAP server login user ID.
- `password` — The LDAP server login password.

Return:

`true` or `false`

Example:

```
ldap:authenticate('people','weblogic','weblogic')
```

For this XPath function, you only specify two properties in the `directories.xml` file:

- `java.naming.provider.url`
- `java.naming.factory.initial`

5.7.4.4 listUsers

This function returns a list of LDAP users.

Signature:

```
ldap:listUsers('directoryName','filter')
```

Parameters:

- `directoryName` — The directory name specified in `directories.xml`.
- `filter` — The filter expression to use for the search; this value may not be null.

Return:

An XML element that contains a list of users.

For this XPath function, all properties must be specified in the `directories.xml` file.

Example:

```
ldap:listUser('people','cn=weblogic');
```

Example Output:

```
<users xmlns="http://schemas.oracle.com/bpel/ldap">
  <user dn="uid=weblogic">
    <uid>weblogic</uid>
    <userpassword>{sha}bHDVJRfWVt/Uwlzb4TKU+QTOLB4FLyS0</userpassword>
    <objectclass>inetOrgPerson</objectclass>
    <objectclass>organizationalPerson</objectclass>
    <objectclass>person</objectclass>
    <objectclass>top</objectclass>
    <objectclass>wlsUser</objectclass>
    <description>This user is the default administrator.</description>

    <wlsMemberOf>cn=Administrators,ou=groups,ou=myrealm,dc=soainfra</wlsMemberOf>
    <orclguid>8AC1B6206FDD11DEBF9A7F3D47003274</orclguid>
    <sn>weblogic</sn>
    <cn>weblogic</cn>
  </user>
</users>
```

5.7.4.5 lookupUser

This function returns LDAP user information.

Signature:

```
ldap:lookupUser('directoryName','userId','password')
```

Parameters:

- `directoryName` — The directory name specified in `directories.xml`.

- `userid` — The user ID to be searched.

Return:

An XML element that contains the user information.

For this XPath function, all properties must be specified in the `directories.xml` file.

Example:

```
ldap:lookupUser('people','cn=weblogic');
```

Example of Output:

```
<user dn="" xmlns="http://schemas.oracle.com/bpel/ldap">
  <ou>people</ou>
  <objectclass>organizationalUnit</objectclass>
  <objectclass>top</objectclass>
  <orclguid>8ABB9BA06FDD11DEBF9A7F3D47003274</orclguid>
</user>
```

5.7.4.6 search

This function returns a list of LDAP entries.

Signature:

```
ldap:search('directoryName','filter','scope')
```

Parameters:

- `directoryName` — The directory name specified in `directories.xml`.
- `filter` — The filter expression to use for the search; this may not be null.
- `scope` — The scope of the search. It must be one of the following values:
 - 0 — Named object
 - 1 — One level
 - 2 — Subtree

This parameter is optional. By default, its value is 2.

Return:

An XML element that contains the list of entries.

For this XPath function, all properties must be specified in the `directories.xml` file.

Example:

```
ldap:search('people','cn=weblogic');
```

Example of Output:

```
<searchResult xmlns="http://schemas.oracle.com/bpel/ldap">
  <searchResultEntry dn="uid=weblogic" xmlns="urn:oasis:names:tc:DSML:2:0:core">
    <attr name="uid">
      <value>weblogic</value>
    </attr>
    <attr name="userpassword">
      <value>{sha}bHDVJRfWVt/Uw1zb4TKU+QTOLB4FLySO</value>
    </attr>
    <attr name="objectclass">
```

```

        <value>inetOrgPerson</value>
        <value>organizationalPerson</value>
        <value>person</value>
        <value>top</value>
        <value>wlsUser</value>
    </attr>
    <attr name="description">
        <value>This user is the default administrator.</value>
    </attr>
    <attr name="wlsMemberOf">
        <value>cn=Administrators,ou=groups,ou=myrealm,dc=soainfra</value>
    </attr>
    <attr name="orclguid">
        <value>8AC1B6206FDD11DEBF9A7F3D47003274</value>
    </attr>
    <attr name="sn">
        <value>weblogic</value>
    </attr>
    <attr name="cn">
        <value>weblogic</value>
    </attr>
</searchResultEntry>
<searchResultEntry xmlns="urn:oasis:names:tc:DSML:2:0:core"/>
</searchResult>

```

5.7.5 parseXML XPath Function

The `parseXML` XPath function is available for use with Oracle BPEL Process Manager. This function parses a string to a DOM element.

Signature:

```
ora:parseXML(contentString)
```

Arguments:

- `contentString` — The string that this function parses to a DOM element.

Property IDs:

- `namespace-uri: http://schemas.oracle.com/xpath/extension`
- `namespace-prefix: ora`

5.7.6 Displaying the Fields in a Simple Task Form as a List of Values

Section “Automatically Generating a Simple Task Display Form” of Chapter 15, “Oracle BPEL Process Manager Workflow Services” of the *Oracle BPEL Process Manager Developer’s Guide* describes how when a simple task form is generated, the body of that form is created based on the task parameters. Depending on the XSD definition, the fields contained in the body form can be displayed as a list of values.

The list of values in the body form that you receive is described as follows.

When the XSD contains elements that are unbounded in cardinality, a list type of `ui` construct is generated. For example, if the XSD is as follows, the user interface contains multiple `param` rows.

```

<element name="payload">
    <complexType>
        <sequence>
            <element name="param" type="string" maxOccurs="unbounded"/>
        </sequence>
    </complexType>
</element>

```

```

</complexType>
</element>

```

5.8 New Features and Bug Fixes

This section describes the following new features and bug fixes:

- Section 5.8.1, "Extending Response Header Handler Functionality to Throw Faults"
- Section 5.8.2, "Caching of a Partner Link Endpoint URL that Uses UDDI"
- Section 5.8.3, "Binding a Fault Policy to a Process Name"
- Section 5.8.4, "Debugging BPEL Processes and Instances from Oracle BPEL Control"
- Section 5.8.5, "How to Enable BPEL Notifications"
- Section 5.8.6, "Disabling the OK and Apply Buttons While Loading Remote XSD Files"
- Section 5.8.7, "Specifying a Newly Deployed Process as the Default Revision"
- Section 5.8.8, "Interoperability Support Between Oracle SOA Suites 10.1.3.5 and 11g"
- Section 5.8.9, "Detecting Infinitely Recursive Schemas"
- Section 5.8.10, "Transformation Updates Correctly Reflected at Runtime"
- Section 5.8.11, "Using ant to Generate a WSDL from an EJB"
- Section 5.8.12, "Support for Oracle BPEL Process Manager Communication with Oracle Service Bus 3.1 Through T3 Protocol"
- Section 5.8.13, "Migrating In-flight Instances for Changed BPEL Processes"
- Section 5.8.14, "Preventing Duplicate Recovery of Instances"
- Section 5.8.15, "serverMode Redeployment Property"

5.8.1 Extending Response Header Handler Functionality to Throw Faults

In previous releases, header handlers only stored information about the partner link between invocation requests. With this release, a partner link property named `faultableResponseHeaderHandler` is introduced that enables header handlers to throw faults. This property extends fault handlers to provide the following features:

- Access to the response payload coming back from an invocation
- Enables BPEL faults to be thrown back to the caller

This enables you to implement a routing filter based on the response payload, and either return or throw a BPEL fault that is captured in the process through standard means of fault handling (for example, through a catch block or a fault policy). The `faultableResponseHeaderHandler` property must point to the Java class that implements the interface `com.collaxa.cube.ws.FaultableHeaderHandler`. This class can now throw BPEL faults based on the contents of the response header. For example, set this property as follows in `bpel.xml`:

```

<partnerLinkBinding name="CallMyTestFunc">
<property name="wsdlLocation">CallMyTestFunc.wsdl</property>
....
<propertyname="faultableResponseHeaderHandler">
com.collaxa.cube.ws.FaultHeaderHandlerImpl

```

```

</property>
</partnerLinkBinding>

```

5.8.2 Caching of a Partner Link Endpoint URL that Uses UDDI

You can now cache a partner link endpoint URL that uses UDDI. To use this feature, perform the following steps.

1. Add the `partnerLinkBinding` property `useRegistryCache` to the `bpel.xml` file and set it to `true` for the partner link using the UDDI registry. For example:

```

<partnerLinkBinding name="UDDIBPEL">
  <property name="wsdlLocation">http://host:port/
    orabpel/default/UDDIBPEL/1.0/UDDIBPEL?wsdl</property>
  <property name="registryServiceKey">
    uddi:c6e19e10-6289-11de-9560-e4d914b0955f</property>
  <property name="useRegistryCache">true</property>
</partnerLinkBinding>

```

For partner links whose WSDL location is obtained through the UDDI registry, the WSDL location is cached after the first invocation.

2. In Oracle BPEL Control, select **Configuration > Domain**.

Set the `uddiRefreshInterval` property to the periodic time interval in seconds after which to refresh the UDDI cache. The default value is 86400 (one day).

All current entries in the cache are deleted when it is refreshed.

5.8.3 Binding a Fault Policy to a Process Name

In releases prior to 10.1.3.5, you bound a fault policy to a partner link or `portType`. Starting with this release, you can also bind a fault policy to a process name. This enables all fault policy features to apply at the process level.

The following example defines a policy in the `fault-bindings.xml` file.

```

<process faultPolicy="TerminatePolicy">
  <name>LoanFlow</name>
</process>
<process faultPolicy="RetryPolicy">
  <name>AutoLoanFlow</name>
</process>
<!--this is default policy for all processes -->
<process faultPolicy="RethrowPolicy"/>
<!--partnerlink policy -->
<partnerLink faultPolicy="RetryPolicy">
  <name>creditRatingService</name>
</partnerLink>

```

You can define fault policies for each process (for example, `LoanFlow`, `AutoLoanFlow`, and so on) and a default policy for all other processes. A partner link always takes the highest precedence, followed by process name policies. In the preceding sample code, the order of precedence is as follows:

1. The `creditRatingService` partner link policy is applied first.
2. If a policy is not defined for that particular partner link, the process name policy takes effect (`LoanFlow` and `AutoLoanFlow` in the preceding sample).
3. If a policy is not defined for specific processes, then the default process name policy (`RethrowPolicy` in the preceding sample) takes effect.

In the `fault-bindings.xml` file, you must define the policy in the following order.

- Process name policies
- Default process policies
- Partner link policies

For more information about fault policies, see the Oracle BPEL Process Manager 10.1.3.4 release notes, available on the Oracle Technology Network:

<http://www.oracle.com/technology/documentation/appserver10131.html>

5.8.4 Debugging BPEL Processes and Instances from Oracle BPEL Control

You can debug BPEL processes and instances from Oracle BPEL Control with the BPEL debugger. The BPEL debugger enables you to perform the following tasks.

- Set and clear breakpoints at the BPEL process level.
- Specify how many newly-created process instances to trap at the process level.
- Set and clear breakpoints on a specific instance of a BPEL process. Breakpoints defined at the instance level enable you to debug the instance until completion. You can perform additional instance debugging actions such as the following:
 - View and edit variables.
 - View the audit trail.
 - Perform step operations by resuming instance execution one activity at a time.
 - Perform resume operations by resuming instance execution one structured activity at a time.
 - Clear all breakpoints and run an instance to completion.

5.8.4.1 Enabling Debugging for a Specific Domain

The BPEL debugger is available in preview mode only for release 10.1.3.5. For information on how to enable the BPEL debugger, contact Oracle Support Services.

After enabling the BPEL debugger, perform the following steps:

1. Log in to Oracle BPEL Control.
2. Select the **Configuration** tab.

A **Debug** subtab now appears under both the **Instances** tab and the **Processes** tab in Oracle BPEL Control.

5.8.4.2 Process Level Debugging

You can perform the following debugging tasks at the process level:

- View a process map for a BPEL process.
- Set and clear process breakpoints on selected BPEL activities.

When a breakpoint is reached, execution pauses and waits for you to perform debugging actions.

- Define traps on a process.

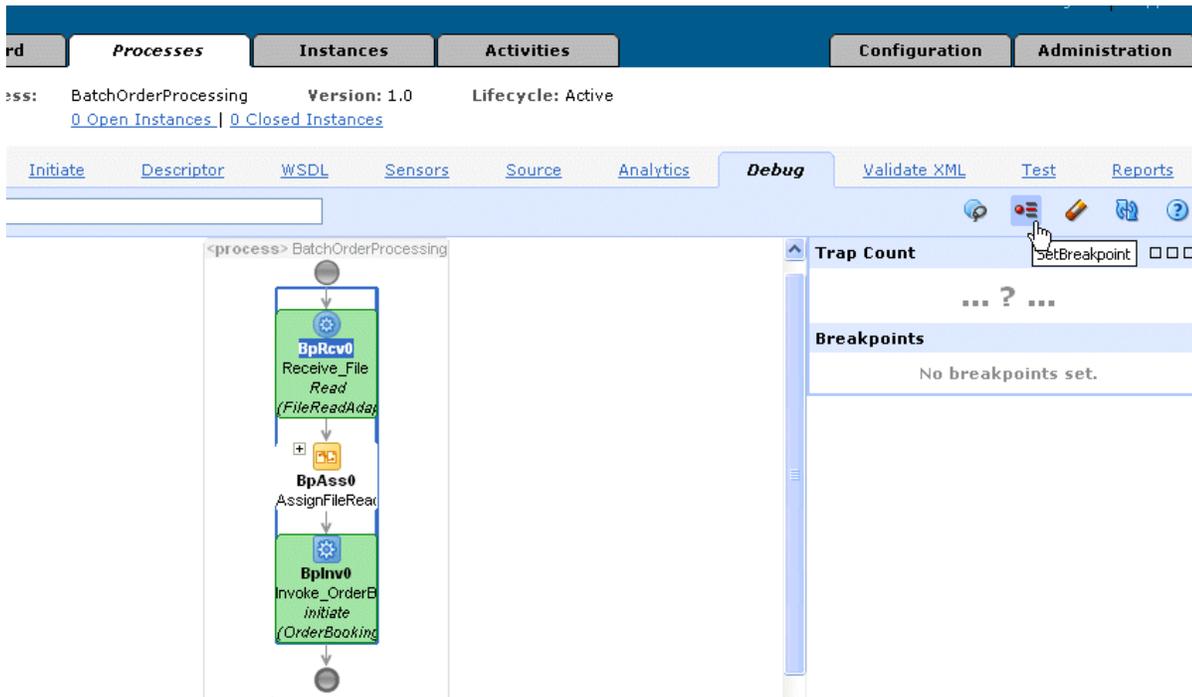
A process trap allows control on BPEL process instances that are trapped for debugging. The process trap supports both unconditional and conditional traps

with a count. You specify the number of process instances to trap for debugging. By default, the process trap is disabled for a process.

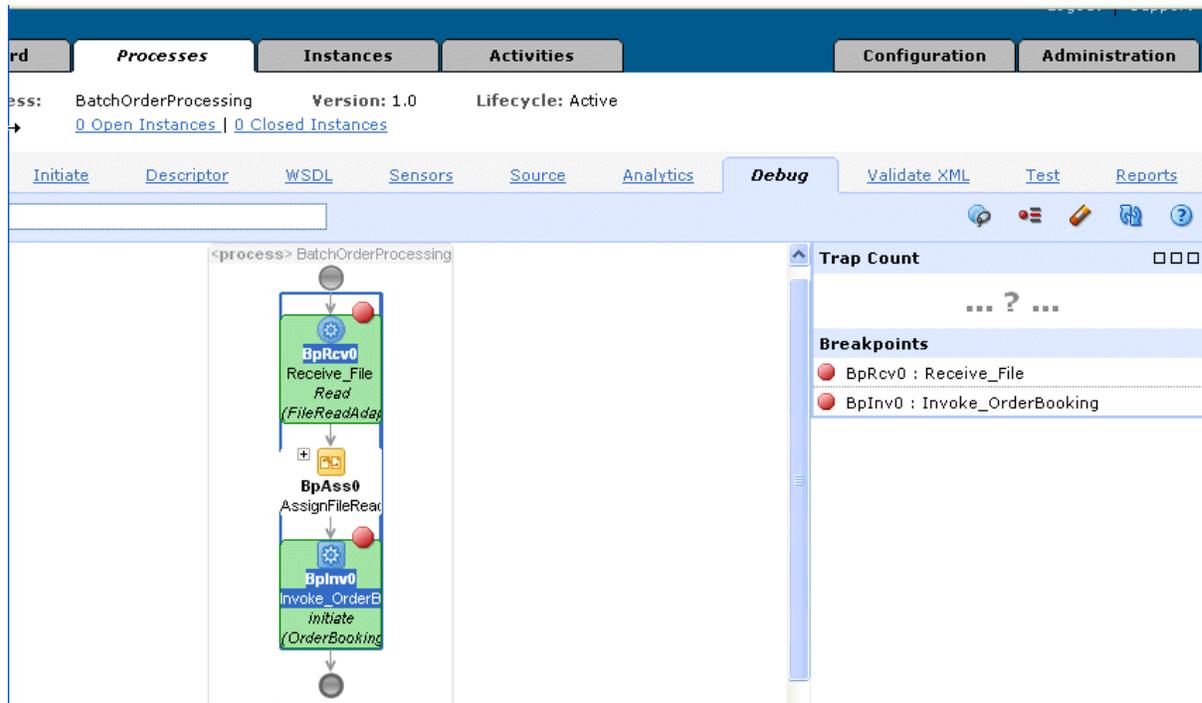
The debug state for all processes (including process traps and breakpoints) is persisted to the dehydration store. Similarly, when a domain is initialized during Oracle BPEL Server startup, the BPEL debugger loads the debug state for all processes in the domain from the dehydration store.

Note: You do not need to recompile and redeploy BPEL processes following the upgrade to release 10.1.3.5 in order to use the BPEL debugger.

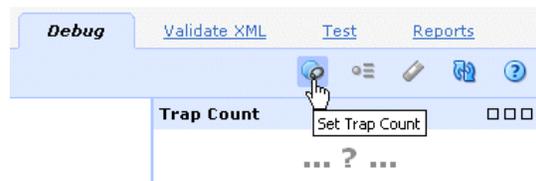
1. Log in to Oracle BPEL Control.
2. Click the **Processes** tab.
3. In the **BPEL Process** column, click a specific deployed process. You can only debug processes that have a life cycle setting of **Active** and a state setting of **On**.
4. Click the **Debug** subtab.
5. Select BPEL activities on which to set breakpoints. You can select multiple activities by pressing the **Ctrl** key and making additional selections.
6. In the **Debugger** control panel on the right side, click the **Set Breakpoint** icon (second icon) to set breakpoints on activities.



The selected breakpoints display in the **Breakpoints** section of the **Debugger** control panel. All breakpoints defined at the process level are copied to each of the instances of the process for debugging at the time of instance creation. At the instance level, you can perform debug actions (step, resume, update variable values, and so on) that only impact that specific instance.



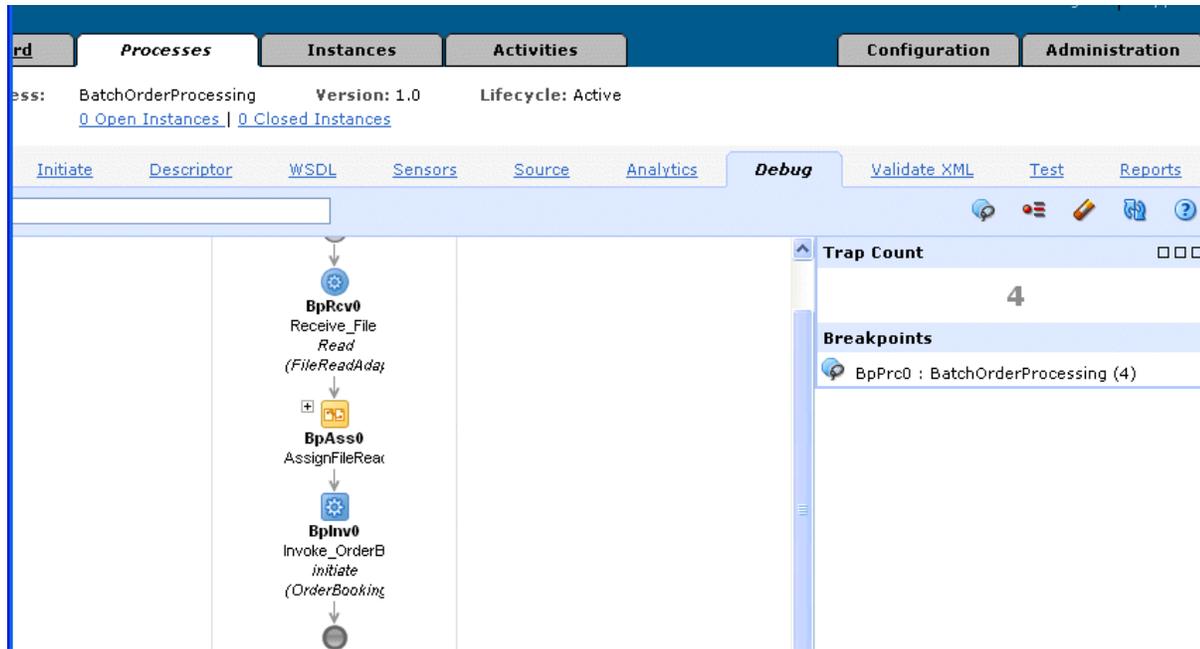
7. Remove a breakpoint by selecting it in the **Breakpoints** section and clicking the **Clear Breakpoint** icon (third icon).
8. In the **Debugger** control panel, click the **Set Trap Count** icon (first icon) to set a trap count value.



A dialog for entering a process trap value is displayed. If you want to trap all further process instances, then enter a value of -1 , which shows the trap count as ALL. A trap count value of 0 implies that the trap is disabled.

9. Enter a value for the number of newly-created process instances to trap, and click **OK**.

The process instance trap value displays in the **Trap Count** section and **Breakpoints** section of the **Debugger** control panel.



10. Remove a breakpoint by selecting it in the **Breakpoints** section and clicking the **Clear Breakpoint** icon (third icon).
11. Click the **Refresh Process Debug State** icon (fourth icon) to refresh the debugger state. For additional information about this icon, see the description for the Refresh Instance Debug State icon in the table on page 5-26.
12. Click the ? icon (fifth icon) to display online Help for the tasks that you can perform on this page.

5.8.4.3 Instance Level Debugging

You can perform the following debugging tasks at the instance level:

- Debug open BPEL instances paused on an initial breakpoint (defined at process level).
- Bring up a dehydrated instance and debug it (set a breakpoint on an activity past the dehydration point and wait for the instance to hit the breakpoint).
- Debug only one instance at a time.

When a process instance hits a breakpoint, the process map for the instance appears in the **Debug** tab, identifying the activity at which instance execution has paused. If there are multiple instances paused in debug state, you can selectively load specific instances and debug them.

BPEL instances on creation inherit the breakpoints defined at the corresponding process level. Post creation, instance breakpoints are independent of process breakpoints. Debug operations such as set and clear breakpoints on an instance do not impact the breakpoints defined at the process level, and vice versa.

When an instance is dehydrated, the debug state for the instance is persisted to the dehydration store. Similarly, when an instance is rehydrated, the instance debug state is also restored to enable you to continue debugging operations on the instance.

1. Log in to Oracle BPEL Control.
2. Click the **Instances** tab.

3. In the **Instance** column, click one or more specific instances. When debugging is enabled, debuggable instances are identified by a red stop sign icon. You can select one or more debuggable instances and click the **Resume** button to perform a bulk resume operation. Instance level debugging is only permitted for BPEL instances in a state of **open.running**.
4. Click the **Debug** subtab.

A process map for the BPEL instance is displayed.

The process map visually identifies BPEL activities that have a breakpoint or a current position. A current position is defined as an activity where execution is paused (immediately prior to the activity). Therefore, the initial current position gets defined when an instance hits the first breakpoint postinitiation. The breakpoint associated with a current position can be explicit (a user-defined breakpoint) or implicit (internal breakpoint; for example, when you perform a single-step operation and the following activity does not have a user breakpoint).

An activity that has a user breakpoint may not be executed and therefore may not become a current position. This occurs when the instance being executed takes a different execution path that does not encounter the activity. Therefore, it may not encounter the breakpoint.

The screenshot shows the Oracle BPEL Process Manager interface in the **Debug** subtab. The top navigation bar includes **Dashboard**, **Processes**, **Instances** (selected), **Activities**, **Configuration**, and **Administration**. Below the navigation bar, instance details are shown: **Title:** Instance #50004 of soa10135b, **Reference Id:** 50004 (Tree Finder), **BPEL Process:** soa10135b (v. 1.0), **Last Modified:** 7/7/09 12:08:06 PM, **State:** open.running, and **Priority:** 0. A **more** link is available for the priority.

The **Debug** subtab is active, showing a **Finder:** input field and a toolbar with icons for search, refresh, and other actions. The main area displays a process map for the instance. The process starts with **BpRcv0** (receiveInput), followed by a **regressionTask_1** scope containing **BpAss0** and **BpAss1** (regressionTask). This is followed by **BpInV0** (initiateTask_re), a **WIIP** (Wait for In-Process) activity, and finally **BpRcv1** (receiveComple). The **BpRcv1** activity is currently selected, and its details are shown in the right-hand pane.

The right-hand pane shows the **Activities** list with **BpRcv1 : receiveCompletedTask_regressionTask_1** selected. Below this, the **Breakpoints** section indicates "No breakpoints set." The **Variables** section lists several variables: `initiateTaskInput{payload}`, `initiateTaskResponseMessage{payload}`, `inputVariable{payload}`, `outputVariable{payload}`, and `regressionTask_1_globalVariable{payload}`. A **Variable:** section is also present at the bottom of the pane.

5. Right-click an activity to display a list of debug operations permissible on the activity. Note that many of these operations are context sensitive and display only when relevant.
 - **View Source**
Displays the BPEL source code.

- **Set Breakpoint**
Sets a breakpoint on this activity. Only one of the **Set Breakpoint** or **Clear Breakpoint** options appears on any activity as a right-click option.
 - **Clear Breakpoint**
Clears a breakpoint on this activity.
 - **Forced Completion**
When an instance being debugged shows one or more asynchronous activities as *being performed*, you can force completion or skip the *being performed* activity. Execution then continues with the next activity.

Activities identified as being performed are different from current position activities. BPEL activities such as a receive, OnAlarm branch of a pick, and wait complete asynchronously. For example, a midprocess receive activity completes when it receives a message from the associated partner link. Similarly, a wait activity completes when the timer associated with the activity expires.

Only such asynchronous activities that have been initiated, but which are waiting on some event for completion, are marked as being performed. You can skip or force completion on such activities if you do not want to wait for the activity to complete normally.
 - **Select Current Position**
If there is more than one current position, you can switch the selected one to another. This operation is only enabled when a BPEL instance is in debug mode with more than one current position. This option only appears for selection when there is more than one current position for the instance, and the selected activity is one of them, but not the selected current position.
 - **Single Step**
Performs the next operation. This option displays when right-clicking a current position activity.
 - **Step Block**
Performs the next structured activity. This option displays when right-clicking a current position activity that is a structured BPEL activity.
 - **Resume**
Resumes execution until the next breakpoint. This option displays when right-clicking a current position activity.
 - **Clear All and Run**
Resumes execution after removing all breakpoints. This option displays when right-clicking a current position activity.
6. View the list of breakpoints in the **Breakpoints** section of the **Debugger** control panel on the right side. BPEL instance execution pauses before a BPEL activity that has an active breakpoint.

Icons at the top provide access to debugging tasks.



The icons that display left to right are described in the following table.

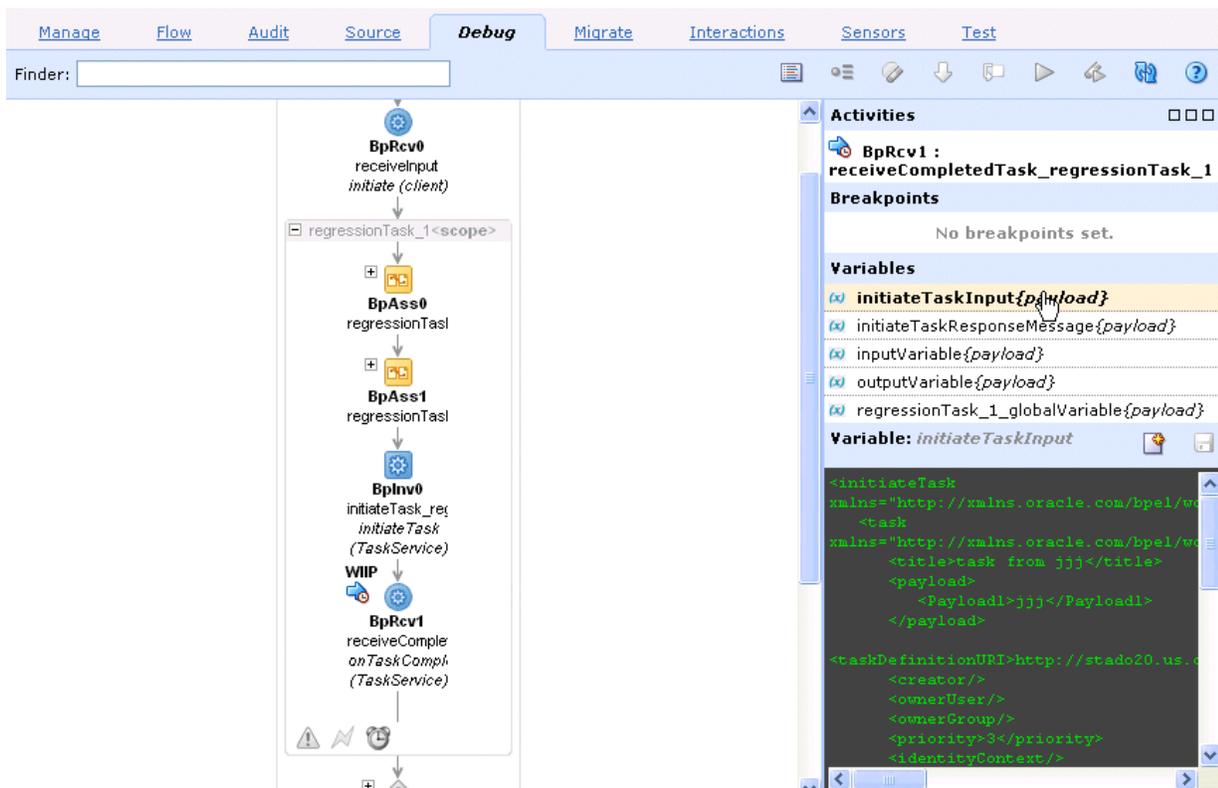
Icon	Icon Name	Description
1	Show and Follow Audit Trail	<p>Displays the audit trail associated with the instance being debugged.</p> <p>When you debug an instance, the audit trail for the instance shows debugger actions and interventions. Specifically, the following debugger actions are displayed in the audit trail:</p> <ul style="list-style-type: none"> ■ When an instance hits a breakpoint ■ When an instance is resumed past a breakpoint ■ When an instance variable is edited ■ When an activity is force-completed
2	Set Breakpoint	Sets a breakpoint on an instance.
3	Clear Breakpoint	Clears a breakpoint on an instance.
4	Step	<p>Performs the next operation.</p> <p>You can resume execution of the instance one activity at a time by performing a single-step operation. Upon resumption, the instance completes the current activity, encounters an implicitly set breakpoint on the following activity, and pauses execution.</p> <p>As with the resume operation, a single-step operation must (implicitly or explicitly) identify a specific BPEL activity at which execution must be resumed. A single-step operation is permitted only on an activity that has a current position on it.</p>
5	Step Block	<p>Performs the next structured activity.</p> <p>When execution has paused at a BPEL structured activity, you can perform a step-block operation on it. The step-block operation resumes execution from the identified structured activity that has a current position on it, encounters an implicitly set breakpoint on the activity following the structured activity, and pauses execution.</p> <p>A step-block operation must (implicitly or explicitly) identify a BPEL activity at which execution must be resumed. A step-block operation is permitted only on a structured BPEL activity that has a current position on it.</p>
6	Resume	<p>Resumes execution until the next breakpoint.</p> <p>You can resume execution of the instance by doing a resume operation. Upon resumption, the instance execution proceeds until it encounters another breakpoint or runs its normal course to completion.</p> <p>A resume operation must (implicitly or explicitly) identify a specific BPEL activity at which execution must be resumed. A resume operation is permitted only on an activity that has a current position on it.</p>
7	Clear All Breakpoints and Run	<p>Resumes execution after removing all breakpoints.</p> <p>When a BPEL instance is in debug mode, you can clear all breakpoints and resume execution of the instance. Upon resumption, all breakpoints on the instance are cleared and the instance execution runs its normal course to completion.</p> <p>This option is only permitted when there is at least one BPEL activity that has a current position on it.</p>

Icon	Icon Name	Description
8	Refresh Instance Debug State	<p>Refreshes the debugger state.</p> <p>When the BPEL instance being debugged is open, running, and not in debug mode (that is, it has not encountered any breakpoints), the Debugger control panel indicates that the instance is freely running and has not encountered any breakpoint. You can perform this operation to do the following:</p> <ul style="list-style-type: none"> Force a refresh of the instance debug state and update the debug state of the instance from the server Check if the instance has hit any breakpoints <p>This operation is also supported on the Debug subtab of the Processes tab to refresh breakpoints defined at the process level.</p>
9	Help	Displays online Help for the tasks that you can perform on this page.

7. Select options appropriate to your environment.

The **Debugger** control panel displays the list of BPEL variables for the instance. You can view and edit BPEL process variables associated with the instance when execution is paused at a breakpoint.

8. Click the variable name in the list to display its contents.



9. Edit the contents of the selected variable:

- Click the first icon above the variable content to create an XML skeleton of the variable or to create its content in the editor. This enables you to initialize a variable with an empty skeleton based on its XML schema type.

- Click the second icon above the variable content to save that variable to the process instance.

If you do not click **Save** after you edit the variable contents, the changes are discarded. The BPEL Debugger enforces XML schema validation for the updated variable content.

5.8.5 How to Enable BPEL Notifications

You can send e-mail notifications to a configured user when the following events occur:

- Oracle BPEL Server is started or shut down.
- A process's state changes from on to off and the life cycle changes from active to retired.
- The state of an instance changes to one of the following:
 - Started (open.running)
 - Completed (closed.completed)
 - Faulted (closed.faulted)
 - Cancelled (closed.cancelled)
- The automatic recovery agent fails to recover the instance.
- An invoke message, callback message, or activity moves to the recovery phase.

Note: E-mail is the only supported channel for sending event notifications.

5.8.5.1 Notification Event Types and Notification Variables

Table 5–1 shows the notification event types you can configure through use of predefined templates in Oracle BPEL Control.

Table 5–1 *Event Types for Notifications*

Event Type	Event Name	Event Description
Oracle BPEL Server	■ engine.start	■ Server startup
	■ engine.shutdown	■ Server shutdown
	■ engine.all	■ All server events
Process	■ process.lifecycleChange	■ Process lifecycle change
	■ process.stateChange	■ Process state change
	■ process.all	■ All process events
Instance	■ instance.start	■ Started instance
	■ instance.complete	■ Completed instance
	■ instance.cancel	■ Cancelled Instance
	■ instance.fault	■ Faulted instance
	■ instance.recoverInvoke	■ Recover invoke messages
	■ instance.recoverCallback	■ Recover callback messages
	■ instance.recoverActivity	■ Recover activities
■ instance.all	■ All instance events	

Table 5–1 (Cont.) Event Types for Notifications

Event Type	Event Name	Event Description
Recovery	■ recovery.invokeFailure	■ Automatic invoke recovery failure
	■ recovery.callbackFailure	■ Automatic callback recovery failure
	■ recovery.activityFailure	■ Automatic activity recovery failure
	■ recovery.all	■ All recovery events

As you create the notification message content in the templates, there are specific predefined variables to use in the message subject and body. These variables are replaced with actual values at runtime. Table 5–2 provides details.

Table 5–2 Predefined Notification Variable Templates

Type	Variable Name	Velocity Representation
Environment variables (environment)	■ serverHost	■ \$env.serverHost
	■ serverInstance	■ \$env.serverInstance
	■ domainName	■ \$env.domainName
	■ domainNameLink	■ \$env.domainNameLink
Engine notification variables (engine)	■ serverStatus	■ \$engine.serverStatus
	■ eventTime	■ \$engine.eventTime
Process notification variables (process)	■ processName	■ \$process.processName
	■ processNameLink	■ \$process.processNameLink
	■ processRevision	■ \$process.processRevision
	■ processStatus	■ \$process.Status
	■ prevStatus	■ \$process.prevStatus
	■ currentState	■ \$process.currentState
	■ eventTime	■ \$process.eventTime
Instance notification variables (instance)	■ processName	■ \$instance.processName
	■ processNameLink	■ \$instance.processNameLink
	■ processRevision	■ \$instance.processRevision
	■ instanceId	■ \$instance.instanceId
	■ instanceIdLink	■ \$instance.instanceIdLink
	■ conversationId	■ \$instance.conversationId
	■ status	■ \$instance.status
	■ eventTime	■ \$instance.eventTime
	■ messageType	■ \$instance.messageType
	■ activityLabel	■ \$instance.activityLabel
■ receiveDate	■ \$instance.receiveDate	

Table 5–2 (Cont.) Predefined Notification Variable Templates

Type	Variable Name	Velocity Representation
Automatic recovery agent variables (recovery)	processName	<code>\$recovery.processName</code>
	processNameLink	<code>\$recovery.processNameLink</code>
	processRevision	<code>\$recovery.processRevision</code>
	instanceId	<code>\$recovery.instanceId</code>
	instanceIdLink	<code>\$recovery.instanceIdLink</code>
	activityLabel	<code>\$recovery.activityLabel</code>
	scopeLabel	<code>\$recovery.scopeLabel</code>
	conversationId	<code>\$recovery.conversationId</code>
	receiveDate	<code>\$recovery.receiveDate</code>
	eventTime	<code>\$recovery.eventTime</code>
	status	<code>\$recovery.status</code>
	errorCode	<code>\$recovery.errorCode</code>
	exceptionMessage	<code>\$recovery.exceptionMessage</code>
recoveryType	<code>\$recovery.recoveryType</code>	

The XSD file (`bpel_notification.xsd`) is located in `SOA_Home/bpel/system/xmllib`.

5.8.5.2 Prerequisite: Downloading the Velocity JAR File

The e-mails generated for notifications are as per the templates configured. These templates contain predefined variables that are replaced with the actual values at runtime. To follow a standard and provide an easier format for these variables, velocity templates are used with the BPEL notification feature. Therefore, the `velocity-dep-1.5.jar` file is required for the notification feature to work.

The `velocity-dep-1.5.jar` file is not shipped with Oracle SOA Suite. Therefore, the BPEL notification feature is *disabled* by default. To enable the BPEL notification feature, you must explicitly download this JAR file after accepting the Apache license agreement.

Perform the following steps to download the `velocity-dep-1.5.jar` file.

1. Access the following URL:
`http://archive.apache.org/dist/velocity/engine/1.5/`
2. Download `velocity-dep-1.5.jar`.
3. Accept the Apache licensing agreement to use the BPEL notification feature.
4. Place the JAR file in `$Oracle_Home/bpel/lib` for UNIX or `Oracle_Home\bpel\lib` for Windows.
5. Restart Oracle BPEL Server.

This enables the BPEL notification feature to display in Oracle BPEL Control.

5.8.5.3 Creating BPEL Notifications

1. Log in to Oracle BPEL Control.
2. Click the **Configuration** tab.
3. Click the **Notifications** tab.

The upper part of the page enables you to perform the following tasks:

- Select the event types and templates to enable or disable. An event type can be configured to have two or more templates. However, an event type cannot have the same template twice.
- Specify notification recipients. If you specify multiple recipients, separate each recipient with a comma.

Notification configurations for this BPEL Domain					
Events					
List of notification events configured for this BPEL domain. You can add, modify, delete events +					
Event Type	Template	Recipients	<input checked="" type="checkbox"/> Enable	Description	<input type="checkbox"/> Delete
engine.start	engineTemplateHtml	abc.def@acme.com	<input checked="" type="checkbox"/>	Engine startup event	<input type="checkbox"/>
engine.shutdown	engineTemplateHtml	abc.def@acme.com	<input checked="" type="checkbox"/>	Engine shutdown event	<input type="checkbox"/>
process.all	processTemplateHtml	abc.def@acme.com	<input checked="" type="checkbox"/>	All process events	<input type="checkbox"/>
instance.all	instanceTemplateHtml	abc.def@acme.com	<input checked="" type="checkbox"/>	All instance events	<input type="checkbox"/>
instance.recoverInvoke	instanceRecoverableTemplat	abc.def@acme.com	<input checked="" type="checkbox"/>	Event for invoke messages moving to recovery	<input type="checkbox"/>
instance.recoverCallback	instanceRecoverableTemplat	abc.def@acme.com	<input checked="" type="checkbox"/>	Event for callback messages moving to recovery	<input type="checkbox"/>
instance.recoverActivity	instanceRecoverableTemplat	abc.def@acme.com	<input checked="" type="checkbox"/>	Event for activities moving to recovery	<input type="checkbox"/>
recovery.invokeFailure	recoveryTemplateHtml	abc.def@acme.com	<input checked="" type="checkbox"/>	Auto-recovery failure event for invoke messages	<input type="checkbox"/>
recovery.callbackFailure	recoveryTemplateHtml	abc.def@acme.com	<input checked="" type="checkbox"/>	Auto-recovery failure event for callback messages	<input type="checkbox"/>
recovery.activityFailure	recoveryTemplateHtml	abc.def@acme.com	<input checked="" type="checkbox"/>	Auto-recovery failure event for activities	<input type="checkbox"/>

4. Click **Apply** to apply any changes.
5. Scroll down to the lower part of the page.

The lower part of the page enables you to perform the following tasks:

- Select a template to use in the **Current Templates** section. This action causes the template to display in the **Template Details** section. All velocity template variables are automatically replaced with the actual values from BPEL runtime by the notification service. These values are sent as e-mail content. You do not need to enter any values in these templates.
- Click the **Add** or **Delete** icon to add or delete a template.

Message Templates

List of notification templates configured for this BPEL domain. You can add, modify, delete templates + X

Current Templates	Template Details
<ul style="list-style-type: none"> engineTemplatePlain processTemplatePlain instanceTemplatePlain recoveryTemplatePlain instanceRecoverableTemplatePlain engineTemplateHtml processTemplateHtml instanceTemplateHtml recoveryTemplateHtml instanceRecoverableTemplateHtml 	<p>Name: engineTemplatePlain</p> <p>Type: <input checked="" type="radio"/> Plain <input type="radio"/> HTML</p> <p>Subject: Engine Notification : \$engine.currentState</p> <p>Content: Server host \$env.serverHost Server instance \$env.serverInstance Domain name \$env.domainName Server status \$engine.serverStatus Timestamp \$engine.eventTime</p> <p style="text-align: right;">Help: Predefined template variables</p> <p style="text-align: right;"><input type="button" value="Apply"/></p>

6. Click the online Help link **Predefined template variables** for descriptions of variables and examples of values.
7. Click **Apply** when complete.
8. Click the **Configuration** tab.
9. Scroll down and configure the SMTP server with values appropriate to your environment.

notificationFromAddress	<input type="text" value="bpep_admin@oracle.com"/>	Mail address to use as the "from address"
notificationStoreMaxMessagesSize	<input type="text" value="150"/>	Maximum number of messages to store in notification store
processCheckSecs	<input type="text" value="1"/>	BPEL Process stale check interval
secureConnectionProtocol	<input type="text" value="SSL"/>	Protocol to use for secure connection with mail server
smtpLoginAccountPassword	<input type="text" value="CRYPT{w+jawwEf09c=}"/>	Password to use for authentication
smtpLoginAccountUserName	<input type="text" value="None"/>	Valid user name to use while authenticating with the mail server
smtpServerAuthentication	<input type="text" value="false"/>	Authenticate connections to the mail server
smtpServerHost	<input type="text" value="server.acme.com"/>	Host name or IpAddress of SMTP server
smtpServerPort	<input type="text" value="25"/>	Port number of SMTP server

10. Click **Apply** when complete.

The notification feature uses in-memory storage to collect the messages between two processing cycles (5 minutes by default) and process them periodically. The maximum number of notification messages to process is configured with the property **notificationStoreMaxMessagesSize** on this page. The default value is 150. In a high volume environment, a larger number of notification messages must be collected and processed. In this scenario, you must increase the value for this property to avoid messages not being collected and processed. If the default value of 150 is exceeded, the following null pointer exception may appear in the logs, which causes the BPEL notification service to become disabled.

```
<NotificationAgent::execute> Domain :default NotificationJob: Number of
notification messages to be processed : 150
<NotificationAgent::processNotification> Domain :default, Processing
@ instance.complete notification for channel: email
Unable to handle email notifications for the domain default
java.lang.NullPointerException
at
com.collaxa.bpel.services.notification.channel.ChannelHandler.constructMessage
. . .
```

. . .

If this occurs, perform either of the following workarounds:

- a. Go to **Configuration > Notification** in Oracle BPEL Control.
- b. Disable notifications, and click **Apply**.
- c. Enable notifications, and click **Apply**.

or

1. Restart Oracle BPEL Server.

5.8.5.4 Consolidated Notifications

Notification events are triggered whenever a significant change occurs in BPEL instances, dispatcher messages, BPEL processes, and so on. These accumulated events are processed periodically (five minutes by default) and e-mails are dispatched one per notification event type. During this execution, a set of identical notification messages collected between any two notification periodic cycles are processed and sent as a single mail. For example, in a domain, the set of BPEL instances that faulted is consolidated and sent as a single e-mail.

5.8.5.5 Periodic Processing of Notifications

Processing of notification messages is performed periodically. The default duration is 5 minutes. You can change this value to reflect the requirements of your environment. Perform the following steps to change this property.

1. Open the `SOA_HOME\bpel\domains\domain_name\config\domain.xml` file for the domain in which to change this property.
2. Manually add the `notificationScheduleDuration` property and set it to an appropriate integer value.

```
<property id="notificationScheduleDuration">
  <name>Notification schedule duration property</name>
  <value>5</value>
  <comment/>
</property>
```

3. Save and close the file.
4. Restart Oracle BPEL Server.

The property now displays under **Configuration > Domain** in Oracle BPEL Control. Subsequent changes to this value do not require a restart of Oracle BPEL Server.

5.8.5.6 Event Notification Samples

This section provides samples of event notification messages.

Example 5–1 provides an example of message content sent during an engine (Oracle BPEL Server) notification.

Example 5–1 Engine (Oracle BPEL Server) Notification Message Content

E-mail Subject Engine Notification: Started

```
Email Content Server host      : myhost.us.oracle.com:9999
                  Server instance : oc4j_soa
                  Domain name     : tests
```

```

Server status      : Stopped
Timestamp         : Wed April 08 00:42:23 PDT 2009

```

Example 5–2 provides an example of message content sent during a process notification. Note that in this example, notifications with similar content can be combined into a single notification.

Example 5–2 Process Notification Message Content

E-mail Subject Process Notification: Retired

```

Email Content Server host      : myhost.us.oracle.com:9999
              Server instance  : oc4j_soa
              Domain name     : tests

              Process name    : SyncEmbedProcess
              Revision tag    : 1.0
              Process Status  : Retired
              Timestamp      : Wed April 08 10:42:23 PDT 2009

              Process name    : SyncXPathProcess
              Revision tag    : 1.0
              Process Status  : Retired
              Timestamp      : Wed April 08 05:12:24 PDT 2009

```

Example 5–3 provides an example of message content sent during an instance notification.

Example 5–3 Instance Notification Message Content

E-mail Subject Instance Notification: Faulted

```

Email Content Server host      : myhost.us.oracle.com:9999
              Server instance  : oc4j_soa
              Domain name     : tests

              Process name    : SyncEmbedProcess
              Revision tag    : 1.0
              Instance ID    : Retired
              Conversation ID : bpel://localhost/tests/Tests-1.0/6567403-BpSeq1.3
              Instance status : Faulted
              Timestamp      : Wed April 08 04:22:29 PDT 2009

```

Example 5–4 provides an example of message content sent during a recovery notification. Note that in this example, notifications with similar content can be combined into a single notification.

Example 5–4 Recovery Notification Message Content

E-mail Subject Attempted Invoke messages recovery and faulted

```

Email Content Server host      : myhost.us.oracle.com:9999
              Server instance  : oc4j_soa
              Domain name     : tests

              Process name    : SyncEmbedProcess
              Revision tag    : N/A
              Instance ID    : N/A
              Activity name   :

```

```
Conversation ID : bpel://localhost/tests/Tests-1.0/6567402-BpSeq1.3
Receive date   : 03/11/09 06:37:51 AM
Recovery status : Pending recovery
Timestamp     : Wed April 08 01:26:34 PDT 2009
Error code    : ORABPEL-92181
Exception     : Failed due to unhandled BPEL fault

Process name   : SyncJavaEmbed
Revision tag   : N/A
Instance ID    : N/A
Activity name  :
Conversation ID : bpel://localhost/tests/Tests-1.0/6567434-BpSeq1.3
Receive date   : 03/11/09 06:37:51 AM
Recovery status : Pending recovery
Timestamp     : Wed April 08 07:21:03 PDT 2009
Error code    : ORABPEL-92181
Exception     : Failed due to unhandled BPEL fault
```

Example 5–5 provides an example of message content sent during an instance recovery notification. This notification is triggered when a message or activity moves to recovery.

Example 5–5 Instance Recovery Notification Message Content

E-mail Subject Invoke message fail and move to recovery

```
Email Content Server host      : myhost.us.oracle.com:9999
               Server instance  : oc4j_soa
               Domain name     : tests

               Process name    : SyncJavaEmbed
               Revision tag     : 1.0
               Instance ID     : N/A
               Activity name    : N/A
               Conversation ID  : bpel://localhost/tests/Tests-1.0/6567433-BpSeq1.3
               Receive date    : 03/11/09 06:37:51 AM
               Timestamp       : Wed April 08 12:00:23 PDT 2009
```

Example 5–6 provides an example of message content sent during an instance recovery notification. This notification is triggered when a message or activity moves to recovery.

Example 5–6 Instance Recovery Notification Message Content

E-mail Subject Callback messages fail and move to recovery

```
Email Content Server host      : myhost.us.oracle.com:9999
               Server instance  : oc4j_soa
               Domain name     : tests

               Process name    : SyncJavaEmbed
               Revision tag     : 1.0
               Instance ID     : N/A
               Activity name    : N/A
               Conversation ID  : bpel://localhost/tests/Tests-1.0/6567913-BpSeq1.3
               Receive date    : 03/11/09 04:33:51 AM
               Timestamp       : Wed April 08 09:42:03 PDT 2009
```

5.8.6 Disabling the OK and Apply Buttons While Loading Remote XSD Files

In releases prior to 10.1.3.5, the **OK** and **Apply** buttons of the Transform dialog remained enabled while Oracle JDeveloper loaded a remote XSD file (for example, a file containing type declarations for use by variables of a BPEL process). If you did not realize that Oracle JDeveloper was still loading the file, and clicked **OK** or **Apply**, part of the message variable was not correctly set, which caused the transform activity to become corrupted. user name

Starting with this release, when loading XSD files, the **OK** and **Apply** buttons remain disabled until Oracle JDeveloper has completed loading the files.

5.8.7 Specifying a Newly Deployed Process as the Default Revision

In releases prior to 10.1.3.5, when you deployed a BPEL process and wanted to make it the default revision (that is, identified with an asterisk in Oracle BPEL Control), you had to set it manually.

With this release, `bpelc` includes the `defaultRevision` parameter. Setting this parameter to `true` causes the process revision being deployed to be set as the default revision.

For example, perform the following steps:

1. Add the configuration property `processDeployAsDefault=false` in the `domain.xml` file.
2. Restart Oracle BPEL Server.
3. Deploy the process for `SOA_HOME/bpel/samples/tutorials/101.HelloWorld` by entering the following command:

```
ant -Drev 1.0
```

This process becomes the default revision.

4. Enter the following command:

```
ant -Drev 2.0
```

Revision 1.0 remains the default revision.

5. Enter the following command:

```
ant -Drev 3.0 -DdefaultRevision true
```

Revision 3.0 becomes the default revision.

5.8.8 Interoperability Support Between Oracle SOA Suites 10.1.3.5 and 11g

The following interoperability scenarios are supported:

- An Oracle SOA Suite 11g service asynchronously calling an Oracle SOA Suite 10.1.3.5 service.
- An Oracle SOA Suite 10.1.3.5 service asynchronously calling an Oracle SOA Suite 11g service.

5.8.9 Detecting Infinitely Recursive Schemas

In releases prior to 10.1.3.5, if an XSD schema was recursive (for example, `order > customer > order` repeating in the XSD where `order` and `customer` were both

required nodes), transformation problems occurred. This was because this type of recursion was infinite, and no valid document could be created. The XML code generator for the XSLT Mapper test tool ran infinitely through these recursive nodes and eventually ran out of memory.

In this release, XML generation detects the required recursion and stops at the first repetition. Since no valid XML document can be created for the XSD as it is defined, an error displays in the XML editor indicating the problem. You can then choose to ignore the error and continue or you can modify the XSD.

5.8.10 Transformation Updates Correctly Reflected at Runtime

In releases prior to 10.1.3.5, if you designed, deployed, and created an instance of a BPEL process that included a transformation mapping, then returned to the BPEL process, performed additional transformation mapping, redeployed the process, and recreated the instance, the additional mapping was not reflected in the instance at runtime.

In this release, the additional mapping is correctly reflected in the instance at runtime.

5.8.11 Using ant to Generate a WSDL from an EJB

A new ant-based tool is provided for generating a WSDL file with WSIF-EJB bindings and XML/Java object mapping metadata. A new data binding runtime is also provided for performing Java - XML conversions based on the mapping metadata currently generated by the design tool. The current WSIF-EJB provider is enhanced to incorporate the new data binding runtime along with any changes required to operate with the Web Services Assembler (WSA)-generated artifacts.

This section describes how to generate the WSDL with WSIF-EJB bindings and related artifacts required for invoking the EJB from BPEL. Specifically, this section describes how to perform the following steps:

- Create two XML files (`wsif-ejb-tool.xml` and `build.xml`) for use with ant.
- Run the `GenerateBeanDefinition` ant target to generate intermediate type definition files.
- Replace the `XXXXXX` values shown in the code samples below with valid values in the type definition file.
- Run the `GenerateWSDL` ant target to generate the WSDL file.

Note: When creating ant scripts for bean definitions and WSDL file generation, ensure that you use the correct path separators for Linux (: and /) and Windows operating systems (; and \).

See Also: Section 5.3, "WSIF Issues and Workarounds" for issues and workarounds related to WSIF and ant

5.8.11.1 Prerequisites

1. Create a new file named `wsif-ejb-tool.xml` in the `SOA_HOME\bpel\system` directory.
2. Copy and paste the following XML content into the file. This XML file sets up the class path variable.

```
<?xml version="1.0"?>
```

```

<project name="wsif-ejb-binding" default="" basedir=".">
  <property name="classpath"
value="..\lib\xmlparserv2.jar;..\lib\webservicess\lib\saaj-api.jar;..\lib\webservicess\lib\wsa.jar;..\lib\webservicess\lib\wsclient.jar;..\lib\webservicess\lib\wssserver.jar;..\lib\webservicess\lib\jaxrpc-api.jar;..\lib\webservicess\lib\orasaa.jar;..\lib\webservicess\lib\orawsdl.jar;..\lib\webservicess\lib\orawsmetadata.jar;..\lib\j2ee\home\lib\ejb30.jar;..\lib\j2ee\home\lib\ejb.jar;..\lib\j2ee\home\lib\mail.jar;..\lib\j2ee\home\lib\http_client.jar;..\lib\wsif-ejb-design.jar"/>
  <taskdef name="BeanDefinitionGenerator"
classname="oracle.tip.wsif.ejb.wsdngen.tool.AntBDFGenerator"
classpath="${classpath}"/>
  <taskdef name="WSDLGenerator"
classname="oracle.tip.wsif.ejb.wsdngen.tool.AntGenerateArtifacts"
classpath="${classpath}"/>
</project>

```

3. Create an ant file to generate the WSDL file under *SOA_HOME\bpel\bin*. The following build.xml file shows the contents for WSDL file generation.

```

<project name="wsif-ejb-binding-design-time" default="" basedir=".">
  <import file="..\system\wsif-ejb-tool.xml"/>
  <property name="jarLocation"
value="C:\Temp\wsif\DataBindingTestEJB\deploy\ejb1.jar"/>
  <property name="beanDefinitionLocation"
value="C:\Temp\wsif\beanDefinition\"/>

  <target name="GenerateBeanDefinition" depends="">
    <BeanDefinitionGenerator
      jarLocation="${jarLocation}"
      beanDefinitionLocation="${beanDefinitionLocation}"
      pkg="test.*, databindingtestejb.*"
      logLevel="info"
      jvmArgs="-Dhttp.proxyHost=PROXY_HOST -Dhttp.proxyPort=PROXY_PORT
-DproxySet=true"
      failOnError="true">
    </BeanDefinitionGenerator>
  </target>

  <target name="GenerateWSDL" depends="">
    <WSDLGenerator
      jarLocation="${jarLocation}"
      beanDefinitionLocation="${beanDefinitionLocation}"
      artifactsLocation="C:\Temp\wsif\artifacts\"
      schemaLocation=""
      customTypeMappingLocation=""
      jndiName="CustomerEJB"
      initialContextFactory="oracle.j2ee.rmi.RMIInitialContextFactory"
      jndiProviderURL="ormi://myhost-pc.idc.oracle.com:12402/ejb1"
      logLevel="info"
      jvmArgs="-Dhttp.proxyHost=PROXY_HOST -Dhttp.proxyPort=PROXY_PORT
-DproxySet=true"
      strictJaxrpcValidation="true"
      failOnError="true">
    </WSDLGenerator>
  </target>
</project>

```

5.8.11.2 Bean Definition Generation

Note: If you want to generate a bean definition with Oracle WebLogic Server, you must add an additional system property to specify the XDK parser for the `GenerateBeanDefinition` and `GenerateWSDL` tasks. For instructions, see Section 5.9.9, "ant Bean Definition Generation Error Occurs If the EJB Has a Collection Class."

1. Create and run an ant target that generates the intermediate type definition file using the `BeanDefinitionGenerator` task. This target must provide all the attributes needed for the `BeanDefinitionGenerator` task.

Here are definitions for the following attributes:

- `jarLocation` — The location of the EJB client JAR file. The value for this attribute is already defined at the top level property `jarLocation`.
- `beanDefinitionLocation` — The location of the directory in which the intermediate type definition file goes. The value for this attribute is already defined at the top level property `beanDefinitionLocation`.
- `pkg` — A comma-separated list of packages for which type definition files must be generated. For example, `test.* , databindingtestejb.*`. Currently, the task does not support `*.*`.

When you generate a bean definition with the ant task `GenerateBeanDefinition`, the bean definition file is generated for the class you specify and for all classes dependent on this class file; nothing is filtered. The package filter mechanism is provided primarily to include other dependent classes that have different package structures.

- `logLevel` — The logging level required. Permitted values are `DEBUG`, `INFO`, `WARNING`, and `ERROR`.
- `jvmArgs` — This attribute is not required for the EJB 2.1 JAR file. However, if you are using the EJB 2.0 JAR file and use a proxy server, you must add this attribute and specify a value for your `PROXY_HOST` (for example, `www-proxy.us.mycompany.com`) and `PROXY_PORT` (for example, `80`). If you do not use a proxy server, then the `jvmArgs` attribute and `PROXY_HOST` and `PROXY_PORT` properties are not required. The tool automatically uses `http://java.sun.com/dtd/ejb-jar_2_0.dtd`.
- `failonerror` — This must be set to `true`.

Here is an example:

```
<target name="GenerateBeanDefinition" depends="">
  <BeanDefinitionGenerator
    jarLocation="{jarLocation}"
    beanDefinitionLocation="{beanDefinitionLocation}"
    pkg="test.* , databindingtestejb.*"
    logLevel="info"
    jvmArgs="-Dhttp.proxyHost=PROXY_HOST -Dhttp.proxyPort=PROXY_PORT
    -DproxySet=true"
    failonerror="true">
  </BeanDefinitionGenerator>
</target>
```

5.8.11.3 Modifying the Bean Definition File

The output of this target is the type definition files in the `beanDefinitionLocation` directory. The type definition files correspond to classes for the selected package. Note that type definition files are generated for classes having the following:

- A collection class as member variables
- A service endpoint/remote/local interface in the `ejb-jar.xml` file that uses the collection class as parameters/return type

The type definition file name is the same as that of a fully qualified class where a dot (.) is replaced with an underscore (_). For example, for a class with name `databindingtestejb.CustomerEJBWebService`, the corresponding type definition file name is `databindingtestejb_CustomerEJBWebService.xml`.

You must provide the missing information for all the type definition files in the `beanDefinitionLocation` directory. The required information is the contained type for the collection classes.

For example, the following type definition file snippet is generated at design time.

```
<?xml version = '1.0' ?>
<Bean-definition xmlns="http://java.wsif.ejb.binding">
  <Class name="test.databinding.dto.customer.profile.FiledCreditCards"
    serialVersionUID="-8027792423900150501">
    <Fields>
      <Field name="customerCreditCards" type="java.util.Collection">
        <Value>XXXXXX</Value>
      </Field>
      <Field name="merchants" type="java.util.TreeSet">
        <Value>XXXXXX</Value>
      </Field>
      <Field name="creditCardByMerchant" type="java.util.Hashtable">
        <Key>XXXXXX</Key>
        <Value>XXXXXX</Value>
      </Field>
    </Fields>
  </Class>
</Bean-definition>
```

1. Replace the XXXXX values in this example with the collection content classes.

The following example shows the modified version of the preceding type definition file:

```
<?xml version = '1.0' ?>
<Bean-definition xmlns="http://java.wsif.ejb.binding">
  <Class name="test.databinding.dto.customer.profile.FiledCreditCards"
    serialVersionUID="-8027792423900150501">
    <Fields>
      <Field name="customerCreditCards" type="java.util.Collection">
        <Value>test.databinding.dto.customer.profile.CustomerCreditCard
        </Value>
      </Field>
      <Field name="merchants" type="java.util.TreeSet">
        <Value>test.databinding.dto.customer.profile.Merchant</Value>
      </Field>
      <Field name="creditCardByMerchant" type="java.util.Hashtable">
        <Key>test.databinding.dto.customer.profile.Merchant</Key>
        <Value>test.databinding.dto.customer.profile.CustomerCreditCard
        </Value>
      </Field>
    </Fields>
  </Class>
</Bean-definition>
```

```
        </Fields>
    </Class>
</Bean-definition>
```

5.8.11.4 WSDL File Generation

1. Create and run an ant target that generates the WSDL file using the WSDLGenerator task. This target must provide all the attributes needed for the WSDLGenerator task. See Step 3 on page 5-37 for WSDLGenerator syntax.

Here are definitions for the following attributes:

- `jarLocation` — The location of the EJB client JAR file. The value for this attribute is already defined with the top level property `jarLocation`.
- `beanDefinitionLocation` — The directory location for the intermediate type definition file. The value for this attribute is already defined with the top level property `beanDefinitionLocation`.
- `artifactsLocation` — The directory location for the WSDL and JAX-RPC mapping file.
- `schemaLocation` — The comma-separated list (without blank spaces) of all schema files you want to import in the WSDL file. This attribute is optional.
- `customTypeMappingLocation` — The location of the custom type mapping file. This attribute is optional.
- `jndiName` — The JNDI name for the EJB.
- `initialContextFactory` — The initial context factory for the EJB.
- `jndiProviderURL` — The JNDI provider URL for the EJB.
- `logLevel` — The logging level required. Permitted values are `DEBUG`, `INFO`, `WARNING`, and `ERROR`.
- `jvmArgs` — See Section 5.8.11.2, "Bean Definition Generation" for a description.
- `strictJaxrpcValidation` — Determines whether the service endpoint interface, exceptions, and value types are validated according to all of the JAX-RPC validation rules. While the permitted values are `true` (the default) or `false`, this attribute must be set to `true`. If set to `false`, WSDL file generation still works, but problems occur during runtime.
- `failonerror` — Must be set to `true`.

Here is an example:

```
<target name="GenerateWSDL" depends="">
  <WSDLGenerator
    jarLocation="${jarLocation}"
    beanDefinitionLocation="${beanDefinitionLocation}"
    artifactsLocation="C:\Temp\wsif\artifacts\"
    schemaLocation=""
    customTypeMappingLocation=""
    jndiName="CustomerEJB"
    initialContextFactory="oracle.j2ee.rmi.RMIInitialContextFactory"
    jndiProviderURL="ormi://myhost-pc.idc.oracle.com:12402/ejb1"
    logLevel="info"
    jvmArgs="-Dhttp.proxyHost=PROXY_HOST -Dhttp.proxyPort=PROXY_PORT
-DproxySet=true"
    strictJaxrpcValidation="true"
    failonerror="true">
```

```
</WSDLGenerator>
</target>
```

5.8.12 Support for Oracle BPEL Process Manager Communication with Oracle Service Bus 3.1 Through T3 Protocol

Support is provided for Oracle BPEL Process Manager communication with Oracle Service Bus 3.1 through the T3 protocol (known as optimized binding). After installing patch 10.1.3.5, note the following additional details:

- You must apply Oracle's XDK one-off patch for bug 5507491. Contact Oracle Support Services for details.
- If you are using a JMS adapter that connects to a JMS queue present on Oracle WebLogic Server version 9.2 and the `weblogic.jar` file has been added in your environment using MetaLink note 549016.1, no `server.xml` file change is needed. Otherwise, you must perform the following steps:

1. Open the `$ORACLE_HOME/j2ee/container_name/config/server.xml` file with a text editor.

where `container_name` is the name of the container where Oracle BPEL Process Manager is deployed (For example, `oc4j_soa`).

2. Search for `<shared-library name="oracle.bpel.common" version="10.1.3">`.

3. Inside the `oracle.bpel.common` shared library, add one more `<code-source path/>` as shown below:

```
<code-source path="$ORACLE_HOME/bpel/lib/wlclient_oc4jinterop.jar"/>
```

Ensure that `$ORACLE_HOME` is expanded to its actual path (for an example, look at the entry for `orabpel.jar` in the same file).

4. Note the following capabilities of optimized binding.

Use Case	Protocol Options	Transaction Propagation
From Oracle BPEL Process Manager on OC4J to Oracle Service Bus on Oracle WebLogic Server:	T3	No
From Oracle Service Bus on Oracle WebLogic Server to Oracle BPEL Process Manager on OC4J	ORMI/OPMN	No
From Oracle BPEL Process Manager on Oracle WebLogic Server to Oracle Service Bus on Oracle WebLogic Server	T3	Yes
From Oracle Service Bus on Oracle WebLogic Server to Oracle BPEL Process Manager on Oracle WebLogic Server	T3, IIOP, and RMI over HTTP (that is, HTTP tunneling)	Yes

5.8.13 Migrating In-flight Instances for Changed BPEL Processes

You can migrate in-flight instances for changed BPEL processes. This migration typically involves migrating a running instance created from an older process definition to a newer process definition. Instance execution then runs to completion in the newer definition. After migration is complete, the older process instance is marked as closed and cancelled. For example, you migrate instance number 1234 of

HelloWorld revision 1.0 to process HelloWorld revision 2.0, where execution then runs to completion.

5.8.13.1 Migration Guidelines

Before performing a migration, you must review the following guidelines to understand how instance migration works.

- Migration is *only* permitted between revisions of the *same* process name (for example, HelloWorld 1.0 to HelloWorld 2.0 or OrderBooking 3.0 to OrderBooking 7.0).
- Any two revisions should have compatible interfaces. However, no tool currently enforces this requirement. Therefore, ensure that you maintain this compatibility. For example, ensure that:
 - Changes are incremental and do not contradict definitions from earlier revisions.
 - Interfaces used for communication with external services, such as partner links, messages, types, and bindings are not changed in an incompatible way.
 - Variables have compatible types and names.
 - Partner links have compatible definitions, such as partner link names and operations.

For example, if a partner link name has changed between the older source revision and the newer destination revision, the state from the source revision instance is not copied to the destination revision instance. Therefore, the receive activity does not know how to handle the callback message that it receives.

- You can only migrate asynchronous processes. Asynchronous processes, which are typically long running, have pauses at the dehydration points. Synchronous processes cannot be migrated because there are no dehydration points.
- Migration mapping is permitted from certain activities with dehydration points. There are two types of activities involved in migration.
 - Container activities
Examples of containers are scopes, flows, sequences, flowNs, and so on.
 - All other activities, such as assigns, throws, receives, and so on.

Migration mapping is subject to thread constraints that govern several activities. Oracle BPEL Server permits only one thread per activity and up to N threads per container. Containers such as scopes and sequences permit only one thread of execution at any time. Table 5-3 provides details about supported migrations of activities.

Table 5–3 Supported Activity Migrations

You Can Migrate From This Source Definition...	To This Target Definition...	Description
Receive activity	Any activity except for those belonging to a flowN. Note: You can migrate to a flowN, but not <i>inside</i> it.	If the migrated item is inside a flow, only that branch of the flow is executed in the destination. In this case, there is only one source thread and therefore at most one thread/work item is created in the destination process. A work item is a task for Oracle BPEL Server to perform. Threads are represented by work items and governed by container activities.
Wait activity	Any activity except for those belonging to a flowN.	The same behavior occurs as described for the receive activity.
Pick activity	Any activity except for those belonging to a flowN.	The pick is divided into a list of onMessage and onAlarm constructs. There are <i>N</i> work items created in the parent process and therefore potentially <i>N</i> different execution points in the destination. In most cases, only the one source work item is migrated (either the first onMessage or the first onAlarm).
Any dehydration point (receive, wait, pick, onAlarm, and onMessage)	Any activity except for those belonging to a flowN.	<p>The <i>N</i> active work items in the source process can be migrated to create <i>M</i> active work items in the destination process. The only requirements are the following:</p> <ul style="list-style-type: none"> ■ $M \leq N$ <p>where <i>M</i> represents the number of possible work items in the destination. In this example, this is $M=1$. However, if you migrate into another flow, potentially >1 work items can be created in each of the branches.</p> ■ If a container permits only one thread of execution (scope, process, sequence, and so on), you cannot migrate work items that cause a <i>chase</i> in that container. A chase is when you have more than the maximum number of work items allowed in a container.
Any dehydration point (receive, wait, pick, onAlarm, and onMessage)	To a pick activity	Migration to a pick means that the pick becomes the execution point. Oracle BPEL Server simply runs the pick.
Any dehydration point (receive, wait, pick, onAlarm, and onMessage)	Into a pick activity	Migration <i>into</i> a pick activity means migration into any of the onMessage or onAlarm elementary activities that comprise a pick. You can migrate to one of these.
Any dehydration point (receive, wait, pick, onAlarm, and onMessage)	To a flow activity	Migration to a flow means that the flow becomes the execution point. Oracle BPEL Server simply runs the flow.
Any dehydration point (receive, wait, pick, onAlarm, and onMessage)	Into a flow activity	Migration <i>into</i> a flow activity means that if, for example, you migrate two branches into a flow activity that has three branches, only two are run.

Table 5–3 (Cont.) Supported Activity Migrations

You Can Migrate From This Source Definition...	To This Target Definition...	Description
Activities inside a flow activity	Into another flow activity	This migration type is supported, Several branches can be migrated.

- An instance can be migrated *from* inside a source while loop and also *into* a destination while loop. The loop counter variable is copied and the state is maintained.
- Activities inside an exception handler can be a migration source and destination. After the handler is complete, execution starts after the block in which the exception handler is defined.
- When migrating to a scope container activity, Oracle BPEL Server opens the scope and executes the first activity in the scope that is not a container.
- When migrating an instance, the new execution points can be any activity in the destination process except for an activity that belongs to a flowN activity.
- Migrating to a flow activity causes Oracle BPEL Server to open the flow and run parallel threads in it.
- Variables are automatically copied to a new process instance. Variable mapping is done by variable name and the location in the lexical scope chain. The one exception is the process scope. In that location, variables are copied between the processes regardless of how they are lexically hidden by scopes (if any).

Note the following details about variable migration:

- Variables are copied from process scope to process scope.
- Variables are copied from each source stack frame according to visibility and lexical rules.
- If a variable does not exist in the destination process, it is not copied and a warning message is issued.
- If the destination process contains new variables, a message similar to the following appears in the log files:

```
<2009-07-15 03:06:25,381> <WARN> <default.collaxa.cube.engine.migrate>
<CubeEngine::migrateVariables> Scope "rootScope@6" has a variable
"newPickService_InputVariable" which is NOT defined in the source scope(s).
```

Note that new variables such as this are not initialized.

- If a variable does exist in the destination process, it must be compatible for the copy to succeed.
- Variables present in the destination process are only instantiated and initialized.
- Endpoints can be migrated. After migrating a process instance, all the pending callbacks to that instance are routed to the new, migrated instance.

5.8.13.2 Migrating Instances

This section describes how to perform instance migration from Oracle BPEL Control.

Note: You typically require multiple revisions of a process already deployed in order to migrate. Otherwise, when you perform a migration, it is to the same revision. Note that migrating to the same revision can be useful during the development and testing phases.

1. Log in to Oracle BPEL Control.
2. Select one of the following methods to migrate. If necessary, initiate the instance from which to migrate.

From the **Processes** tab:

This option enables you to migrate *all* instances of a process revision.

- a. Click the **Processes** tab.
- b. Select the process revision from which to migrate (for example, select **MigrationTestReceive2Assign (v. 1.0)**). You select the destination definition on the Migration page.

Note: The user interface does not restrict you from selecting multiple processes of different names (for example, OrderBooking (v. 1.0) and LoanFlow (v. 1.0)). However, this type of selection is not supported.

- c. Click **Migrate Process Instances** at the bottom of the page.
- d. Go to Step 3.

From the **Instances** tab:

This option enables you to migrate a single instance of a process revision or multiple instances provided that all the instances belong to the same BPEL process.

- a. Click the **Instances** tab.
- b. Select the instance from which to migrate. You select the destination definition on the Migration page.

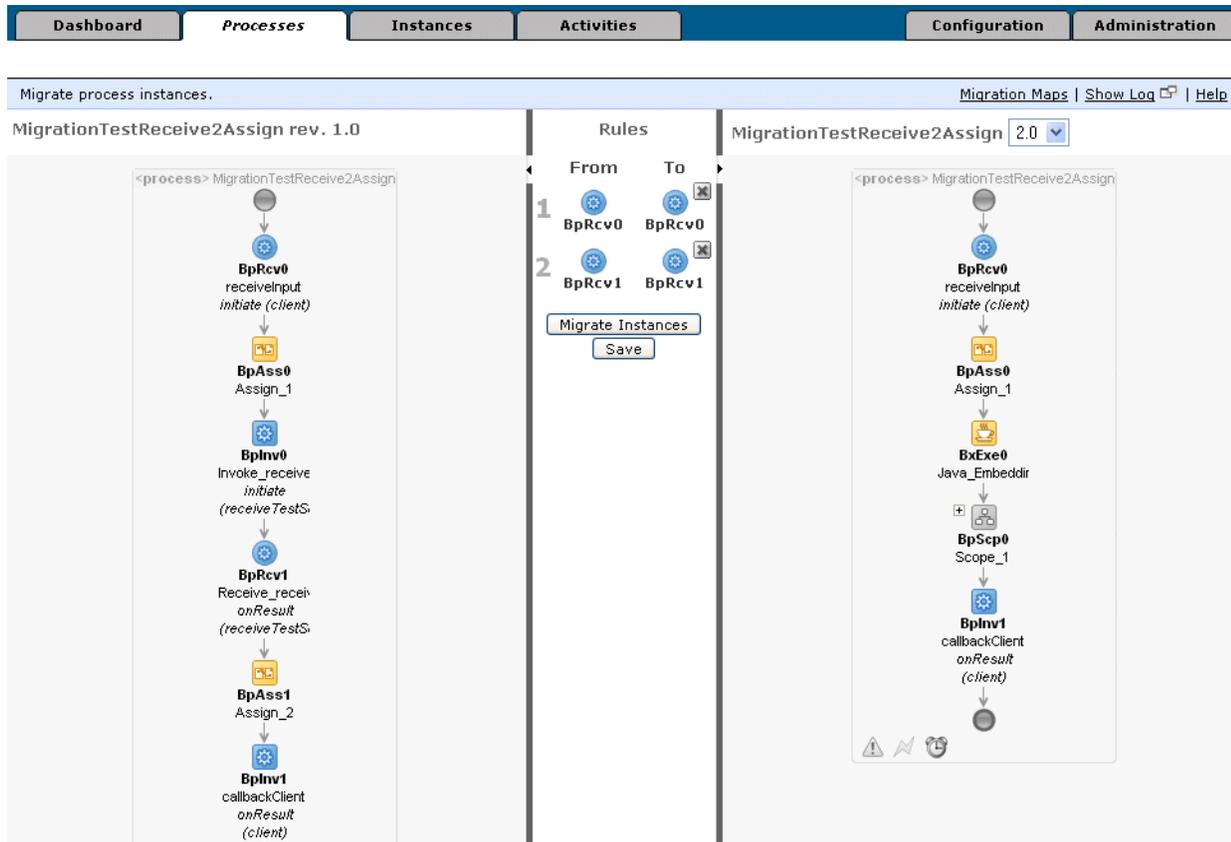
Note: The user interface does not restrict you from selecting multiple instances of different names (for example, instance **1001** of OrderBooking (v. 1.0) and instance **275** of LoanFlow (v. 1.0)). However, this type of selection is not supported.

- c. Click **Migrate** at the bottom of the page.
- d. Go to Step 3.

From the **Audit** or **Flow** tab of a specific BPEL instance:

- a. Click **Migrate**.
- b. Go to Step 3.

3. View the Migration page.



The source process definition displays on the left side of the page. This is the older revision. The destination process definition displays on the right side of the page. The column in the middle represents mappings from the source process to the destination process.

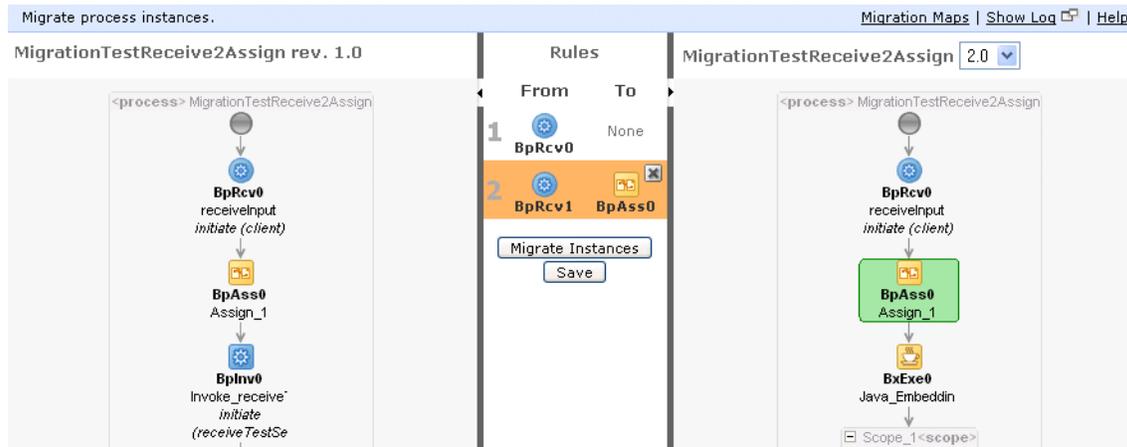
The mappings represent how work items are migrated to run in the new process definition. Since processes only dehydrate in certain types of activities, only these activities are shown in the left column of the rules mappings.

You execute the mapping to migrate the specified process instances. Upon successful migration, the source process instance is ended and the new process instance proceeds at the specified migration points. All variables, partner link states, and so on are copied (if compatible) to the new process instances.

Note: When expanding branching activities such as picks, switches, and flows with Internet Explorer 7, an additional closed branch displays off to the side. This additional branch can be ignored.

4. From the dropdown list in the destination tree, select the version to which to migrate. For this example, revision 2.0 is selected.
5. From the source process definition, select activities from which to migrate. For example, select a receive activity.
6. From the destination process definition, select activities to which to migrate. For example, select an assign activity. This causes the assign activity to display in the middle column.

- To disable activities for migration, select the plus icon for the activity in the middle column.



Note: You must manually select activities to migrate (for example, select to migrate a receive activity or a wait activity to an assign activity). This creates mapping rules for dehydration points in order for activities to be moved to the new revision. If you do not create mapping rules for the dehydration points, no migration is performed when you click **Migrate Instances**.

- If you want to save your mapping into a migration map that can be reused at a later time, click **Save**. Otherwise, go to Step 9.

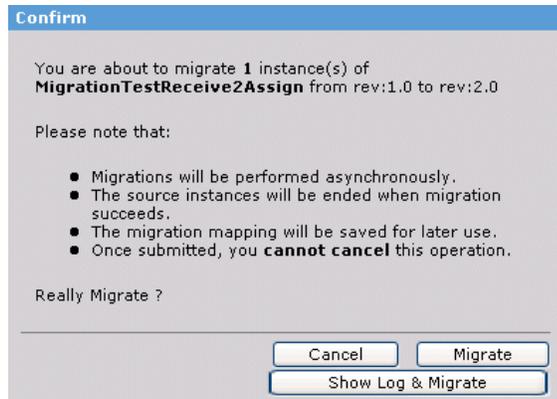
The migration map defines how the threads are created in the new destination process from the old process. Each rule contains the source activity ID and a destination activity ID. The source process name, the destination process name, and an embedded list of instance IDs to migrate are also included in the migration map.

- Enter a name for the file to which to save the mappings, and click **OK**.
- Click **OK** when prompted to confirm the name and location of the template.
- Click **Migration Maps**.

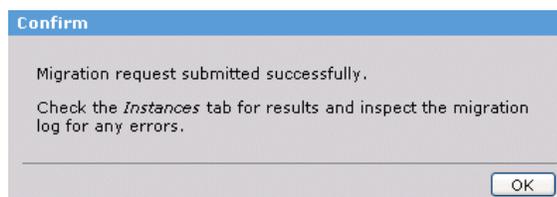
A list of saved maps is displayed.



- Select the map to use.
- Click **Migrate Instances** to create the destination instance.
 - Review the message that displays and click **Migrate**. The migration mapping is saved for later use.



The following message is displayed.



11. Click **OK**.
12. If you want to view specific details about the migration, click **Show Log**.
13. Click the **Instances** tab.
14. Click the destination instance to which you migrated.
15. Click **Flow**.

Note that the destination revision includes a link to the flow trace of the old revision.

16. Click the link.

The flow trace of the old revision is displayed. A link to the new revision is displayed at the bottom of the flow. The older process instance is marked as closed and cancelled.

5.8.13.3 Viewing Logs

You can view migration logs in either of two ways:

- Clicking **Show Log & Migrate** in the Confirm dialog.
- Clicking the **Show Log** link in the upper right section of the Migration page.

If you are attempting to migrate a single BPEL process instance or bulk instances deployed to a middle tier Oracle SOA Suite installation and attempt to view the migration logs, the log window that displays may be empty. Perform the following steps to set the `Oc4jSet` parameter. This enables you to receive the correct log file output. Oracle recommends that you always set the `Oc4jSet` parameter.

1. Open the `$ORACLE_HOME/Oracle/Oracle/conf/mod_oc4j.conf` file.
2. Add `Oc4jSet flush true` inside the tag `IfModule mod_oc4j.c`.

```
<IfModule mod_oc4j.c>
    Oc4jSet flush true
</IfModule>
```

3. Restart Oracle HTTP Server to enable the configuration change.

5.8.14 Preventing Duplicate Recovery of Instances

In releases prior to 10.1.3.5, if automatic recovery of BPEL processes was permanently enabled in Oracle BPEL Control, it potentially caused a duplicate recovery of instances.

For example, Oracle BPEL Server temporarily puts working process instances in the recovery queue. If auto recovery runs when these instances are in the recovery queue, the instances are picked up and recovered. A short time later, BPEL proceeds with recovery of the original instance, resulting in two identical instances and duplicate output.

With this release, a new property named **threshHoldTimeInMinutes** is provided in Oracle BPEL Control that enables you to set a time threshold that prevents recently received messages from resubmission to automatic recovery until the threshold is exceeded.

The default value is 10 minutes. To access this property, select **Configuration > Auto-Recovery** in Oracle BPEL Control.

5.8.15 serverMode Redeployment Property

With this release, a new property named **serverMode** has been added to Oracle BPEL Admin Console. You can set this property to the following values:

- **production** — Redeployment of the process with the same revision is not allowed.
- **development** — Redeployment of the process with the same revision marks the existing instance as stale.
- **promiscuous** - Redeployment of the process with the same revision does not make the instance stale. Work items are migrated.

5.9 10.1.3.5.1 Oracle WebLogic Server Issues and Workarounds

This section describes issues and workarounds specific to using Oracle SOA Suite with Oracle WebLogic Server:

- Section 5.9.1, "Recompiling Invalid Objects After Applying the Upgrade Script"
- Section 5.9.2, "OC4J Configuration File Described in the BPEL Sample Files"
- Section 5.9.3, "Configuring Oracle Internet Directory to Connect to the Oracle BPEL Worklist Application"
- Section 5.9.4, "Configuring the File Adapter for Clustered Environments"
- Section 5.9.5, "Configuring the Auto Loan Demo Process"
- Section 5.9.6, "Auto Loan Demo Deployment Errors"
- Section 5.9.7, "OrderBooking Tutorial Deployment Fails with ant"
- Section 5.9.8, "Oracle WebLogic Server-Specific JAR Files Cannot Be Used to Generate Bean Definition Files"
- Section 5.9.9, "ant Bean Definition Generation Error Occurs If the EJB Has a Collection Class"

- Section 5.9.10, "TaskManager Not Displaying as a Deployed Process in Oracle BPEL Control"
- Section 5.9.11, "Domain Picker Page is Displayed Even When Only One Domain is Available"

5.9.1 Recompiling Invalid Objects After Applying the Upgrade Script

After running the upgrade script to upgrade the `orabpel` and `oraesb` schemas from version 10.1.3.x to higher versions, some objects in the schema become invalid.

1. Run the following SQL command as the `orabpel` user to display all invalid objects in the `orabpel` schema:

```
select object_name from user_objects where status like '%INVALID%';
```

2. Run the same command as the `oraesb` user to display all invalid objects in the `oraesb` schema.
3. Recompile invalid `orabpel` objects by executing the `UTL_RECOMP` package function.

```
EXEC UTL_RECOMP.recomp_serial('ORABPEL');
```

This recompiles all invalid `orabpel` objects in the `orabpel` schema.

4. Recompile invalid `oraesb` objects by executing the `UTL_RECOMP` package function.

```
EXEC UTL_RECOMP.recomp_serial('ORAESB');
```

This recompiles all invalid `oraesb` objects in the `oraesb` schema.

Note: The `UTL_RECOMP` package may not be available to the `orabpel` or `oraesb` user. You may need to run this script as the `sys` user.

5.9.2 OC4J Configuration File Described in the BPEL Sample Files

The samples included in the `$ORACLE_HOME/bpel/samples` directory contain numerous references to configuring the `oc4j-ra.xml` file. This file is not relevant to JCA adapter - Oracle WebLogic Server configuration in release 10.1.3.5.1. For instructions on configuring JCA adapters to work with Oracle WebLogic Server, see the following sections of *Oracle SOA Suite Installation Guide for WebLogic Server*:

- Section 1.6.5, "Running Adapter Samples"
- Section 1.6.5.1, "Configuring Outbound Connection Pool for Adapters in Weblogic"

This guide is available at the following location on the Oracle Technology Network:

http://download.oracle.com/docs/cd/E12524_01/nav/portal_booklist.htm

5.9.3 Configuring Oracle Internet Directory to Connect to the Oracle BPEL Worklist Application

Perform the following steps to connect Oracle Internet Directory 10.1.4.3 to the Oracle BPEL Worklist Application. Not doing so results in login failure errors when attempting to connect to Oracle BPEL Worklist Application.

1. Stop the managed Oracle WebLogic Server.
2. Back up the existing `$ORACLE_HOME/bpel/system/services/config/is_config.xml` file.
3. Copy `$ORACLE_HOME/bpel/system/services/config/ldap/is_config_for_OID.xml` to `$ORACLE_HOME/bpel/system/services/config/is_config.xml`.
4. Update `is_config.xml` to point to a valid Oracle Internet Directory repository.
5. Back up the existing `$ORACLE_HOME/j2ee/home/config/jazn.xml` file to `jazn.xml.orig` in the same location.
6. Open `$ORACLE_HOME/j2ee/home/config/jazn.xml`.
7. Comment out the section that uses the XML provider.
8. Uncomment the section using LDAP, and provide Oracle Internet Directory provider details similar to the following.

```
<jazn provider="LDAP" location="ldap://myhost-4.us.oracle.com:40864"
  default-realm="us">
  <property name="ldap.user" value="cn=orcladmin"/>
  <property name="ldap.password" value="!welcome1"/>
  <property name="ldap.protocol" value="no-ssl"/>
</jazn>
```

9. Restart the managed Oracle WebLogic Server.

5.9.4 Configuring the File Adapter for Clustered Environments

If using the file adapter in a clustered environment, ensure that you perform the following steps to ensure that message processing is successful during a failover.

1. Open the `$ORACLE_HOME/soa/connectors/FileAdapter/META-INF/weblogic-ra.xml` file.
2. Update the file with the following values.

```
<pool-params>
  <initial-capacity>50</initial-capacity>
  <max-capacity>2147483647</max-capacity>
  <capacity-increment>100</capacity-increment>
  <shrinking-enabled>true</shrinking-enabled>
  <match-connections-supported>false</match-connections-supported>
  <shrink-frequency-seconds>60</shrink-frequency-seconds>
  <connection-creation-retry-frequency-seconds>2</connection-creation-retry-frequency-seconds>
  <connection-reserve-timeout-seconds>5</connection-reserve-timeout-seconds>
  <use-first-available>true</use-first-available>
</pool-params>
```

5.9.5 Configuring the Auto Loan Demo Process

For the auto loan BPEL sample to work correctly, you must perform the following updates to the `bpel.xml` file. Not doing so results in an exception error.

1. Open the `bpel.xml` file for the project.
2. Under the `<partnerLinkBinding name="LoanAdvisorAgentPL">` section, change the following syntax:

```
<property
```

```
name="wsdlRuntimeLocation">http://{hostname}:{http_port}/rules/{domain_id}/
${process_id}/${process_revision}/ LoanAdvisorAgent
/LoanAdvisorAgent?WSDL</property>
```

to:

```
<property
name="wsdlRuntimeLocation">http://{hostname}:{http_port}/rules/{domain_id}/
${process_id}/${process_revision}/LoanAdvisorAgent?WSDL</property>
```

3. Open the following files:

- AutoLoanFlow\decisionServices\CreditRatingAgent\ear\META-INF\application.xml
- AutoLoanFlow\decisionServices\LoanAdvisorAgent\ear\META-INF\application.xml

4. Change the following syntax in both files:

```
< application version="1.4" xmlns="http://java.sun.com/xmlns/j2ee"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://java.sun.com/xml/ns/j2ee
http://java.sun.com/xml/ns/j2ee/application_1_4.xsd">
```

to:

```
<!DOCTYPE application PUBLIC "-//Sun Microsystems, Inc.//DTD J2EE Application
1.3//EN" "http://java.sun.com/j2ee/dtds/application_1_3.dtd">
<application>
```

5.9.6 Auto Loan Demo Deployment Errors

Deployment of the auto loan demo can cause errors in the `deployDecisionServices` target.

As a workaround, perform the following steps:

1. Set `JAVA_HOME` to `$ORACLE_HOME/jdk` at the developer's prompt.

The `deployDecisionService` target uses the system classpath for compilation and does not use the `client_classpath` like other obant tasks.

2. Deploy the auto loan demo with `ant` instead of `obant.sh`.

5.9.7 OrderBooking Tutorial Deployment Fails with ant

The `127.OrderBookingTutorial` in the `$ORACLE_HOME/bpel/samples/tutorials` directory does not deploy successfully with `ant`, even though a `BUILD SUCCESSFULL` message is displayed.

This is because tutorials such as `127.OrderBookingTutorial` include EAR/WAR file deployments that require manual, postdeployment steps. The following EAR/WAR files are generated and available in the `$ORACLE_HOME/j2ee/home/applications` directory, and must be manually deployed using the Oracle WebLogic Server Administration Console:

- `CreateOrderBookingUI.war`
- `SelectManufacturingUI.war`
- `default_OrderApproval_1_0_OrderApproval.ear`
- `default_SelectManufacturing_1_0_Approval.ear`

Note that the BPEL and ESB components included with 127. OrderBookingTutorial are automatically deployed to Oracle WebLogic Server Administration Console with ant.

5.9.8 Oracle WebLogic Server-Specific JAR Files Cannot Be Used to Generate Bean Definition Files

The `GenerateBeanDefinition` and `GenerateWSDL` tasks cannot be executed for old Weblogic EJB projects. Use Weblogic Workshop 10.3 or higher to generate the EJB projects for use with the WSIF-EJB binding ant tool.

5.9.9 ant Bean Definition Generation Error Occurs If the EJB Has a Collection Class

If you want to generate the bean definition file for an EJB class that has a collection class in the method description, you must add the following system property to specify the XDK parser. Not doing so causes an exception error to occur during bean definition generation.

1. Update the `GenerateBeanDefinition` task to include the property shown in bold.

```
<target name="GenerateBeanDefinition" depends="">
  <BeanDefinitionGenerator
    jarLocation="{jarLocation}"
    beanDefinitionLocation="{beanDefinitionLocation}"
    pkg="hello. *, databindingtestejb. *, com.otn.samples.sessionbean. *"
    logLevel="debug"
    jvmArgs="-Dhttp.proxyHost=www-proxy.us.oracle.com
-Dhttp.proxyPort=80 -DproxySet=true
-Djavax.xml.parsers.DocumentBuilderFactory=oracle.xml.jaxp.JXDocumentBuilderFactory"
    failOnError="true">
  </BeanDefinitionGenerator>
</target>
```

2. Make similar updates to the `GenerateWSDL` task.

For information about bean file and WSDL file generation, see Section 5.8.11.2, "Bean Definition Generation."

5.9.10 TaskManager Not Displaying as a Deployed Process in Oracle BPEL Control

When you deploy an application that includes human workflow, the `TaskActionHandler` and `TaskManager` should also display as deployed processes in Oracle BPEL Control. If the `TaskManager` does not display, perform the following workaround:

1. Stop Oracle BPEL Control.
2. Copy `bpel_TaskActionHandler.jar` from:

SOA_Oracle_Home/bpel/install/extensions

to:

SOA_Oracle_Home/bpel/domains/*domain_name*/deploy

where *domain_name* is the name of the domain in which the human workflow application is deployed.

3. Update the `wsif-ejb-tool.xml` file.

Add `.\..\..\..\wls_server_10.3\server\lib\weblogic.jar` to the property name `classpath`.

```
<?xml version="1.0"?>
<project name="wsif-ejb-binding" default="" basedir=".">
<property name="classpath" value=".\..\..\..\wls_server_
10.3\server\lib\weblogic.jar;
.\..\lib\xmlparserv2.jar;.\..\..\webservicelib\saaj-api.jar;.\..\..\
webservicelib\wsa.jar;.\..\..\webservicelib\wsclient.jar;.\..\..\
webservicelib\wsserver.jar;.\..\..\webservicelib\jaxrpc-api.jar;.\..\..\
webservicelib\orasaa.jar;.\..\..\webservicelib\orawsdl.jar;.\..\..\
webservicelib\orawsmetadata.jar;.\..\..\j2ee\home\lib\ejb30.jar;.\..\..\
j2ee\home\lib\ejb.jar;.\..\..\j2ee\home\lib\mail.jar;.\..\..\j2ee\home\lib\
http_client.jar;.\..\lib\wsif-ejb-design.jar"/>
```

4. Restart Oracle BPEL Control.

5.9.11 Domain Picker Page is Displayed Even When Only One Domain is Available

When you log in to Oracle BPEL Control, the Domain Picker page is displayed each time, even when only one domain is available for selection. Select the available domain and proceed.

Oracle Enterprise Service Bus

This chapter describes issues associated with Oracle Enterprise Service Bus (ESB). It includes the following topics:

- Section 6.1, "Deploying BPEL Service Endpoint Properties"
- Section 6.2, "portType Mismatch Error Due to Differences Between the targetNamespace and Import Namespace in a Concrete WSDL"
- Section 6.3, "No Details Available in the ESB Console for Services Named with a Multi-Byte Character Set"
- Section 6.4, "Renaming Files Using Oracle JDeveloper's Renaming Feature"
- Section 6.5, "Deleting Outbound Services in Oracle JDeveloper"
- Section 6.6, "Rejected Message Location"
- Section 6.7, "Incomplete Resequencing After Server Shutdown"
- Section 6.8, "Resequencer Locks Groups When ResequencerTimeout Is Reached"
- Section 6.9, "Resequencer Behavior in High Availability Environments"
- Section 6.10, "Advanced Search Exception"
- Section 6.11, "Deleting WebDAV Repository Artifacts and Oracle ESB Services"
- Section 6.12, "DVM Functions Do Not Include the ORCL Namespace"
- Section 6.13, "Graceful Shutdown of OPMN Services Fails"
- Section 6.14, "Documentation Errata"
- Section 6.15, "Oracle WebLogic Server Issues and Workarounds"

6.1 Deploying BPEL Service Endpoint Properties

When you use a routing service in an ESB flow to invoke a BPEL process using specific properties, such as `InvocationMode=local`, you must add those properties to the BPEL process deployment descriptor.

For example, to ensure that the routing service can call a BPEL process using `InvocationMode=local`, you must make sure that property is available by adding the `InvocationMode` property to the BPEL process `bpel.xml` deployment descriptor, as shown in the following example.

```
<?xml version = '1.0' encoding = 'UTF-8'?>
<BPELSuitcase>
  <BPELProcess id="BPELProcess1" src="BPELProcess1.bpel">
    <partnerLinkBindings>
```

```
<partnerLinkBinding name="client">
  <property name="wsdlLocation">BPELProcess1.wsdl</property>
</partnerLinkBinding>
</partnerLinkBindings>
<configurations>
  <property name="InvocationMode">local</property>
</configurations>
</BPELProcess>
</BPELSuitcase>
```

For more information about this issue, refer to Oracle bug 7294273.

6.2 portType Mismatch Error Due to Differences Between the targetNamespace and Import Namespace in a Concrete WSDL

If you receive a portType mismatch error for a WSDL in the server log, or if you are configuring an ESB service and no options are available in the Partner Role or My Role drop-down lists, the likely cause is an ESB service concrete WSDL that has different URIs for the targetNamespace and import namespace.

To address this issue, add the following parameter to the *ORACLE_HOME/integration/esb/esb_config.ini* file:

```
isConcreteSuffixRequired = true
```

Restart the server after you make the change.

For more information about this issue, refer to Oracle bug 8573592.

6.3 No Details Available in the ESB Console for Services Named with a Multi-Byte Character Set

If you create and deploy a service with a multi-byte character set name, you see the service listed but receive an error when trying to view the service details.

Name ESB services using supported US-ASCII characters.

For more information about this issue, refer to Oracle bug 5411159.

6.4 Renaming Files Using Oracle JDeveloper's Renaming Feature

If you rename an ESB resource file using Oracle JDeveloper's **File > Rename** or right-click rename functionality, references to that file are not updated in other resource files. After renaming an ESB resource file, you must manually change the references to that file wherever those references occur.

For more information about this issue, refer to Oracle bug 8605755.

6.5 Deleting Outbound Services in Oracle JDeveloper

When you delete an outbound service from an ESB project in Oracle JDeveloper and the service is also deployed on the ESB server, redeploying the project from Oracle JDeveloper does not removed the deleted service from the server.

When you delete a service in Oracle JDeveloper, make sure you also do the following:

- Before you redeploy the project, delete routing rules to that service in your ESB flows.

- Before you redeploy the project, delete the WSDL for that service in JDeveloper.
- In the ESB Console, manually delete the service you deleted in JDeveloper.

For more information about this issue, refer to Oracle bug 8610058.

6.6 Rejected Message Location

ESB sends rejected messages to the following directory: `ORACLE_HOME/j2ee/home/jca/DefaultSystem.ReadS_RS.receive/rejectedMessages/`.

For more information about this issue, refer to Oracle bug 8632308.

6.7 Incomplete Resequencing After Server Shutdown

After a Resequencer operation begins, an abrupt server shutdown causes incomplete resequencing. Only a portion of the records are resequenced. Because of this abrupt failure, the group remains locked by a container, which has gone down. In a cluster environment, the Resequencer infrastructure on the other running nodes identifies the shutdown servers, automatically unlocks the group by pinning it to a live node, and, if the group is healthy, resumes processing. The state of the group is maintained. Resumed processing takes some time, which can be equal to or greater than value specified in `ResequencerContainerIdLeaseTimeout` property in `esb_config.ini`.

If a group goes into error state, it remains in error state until you unlock it. To unlock groups in an error state, execute the `resequencer_restart_processing_group.sql` script in `<ORACLE_HOME>/integration/esb/sql/oracle` folder.

For more information about this issue, refer to Oracle bug 8665217.

6.8 Resequencer Locks Groups When ResequencerTimeout Is Reached

When you use the ESB Resequencer, you can specify a `ResequencerTimeout` endpoint property value (the default value is no limit). `ResequencerTimeout` lets you lock the groups for which a "next in sequence" message is not received after a specified time. When running heavy loads with a relatively small `ResequencerTimeout` set, groups yet to be processed can be prematurely locked and cannot be processed.

To avoid group locking based on a `ResequencerTimeout`, either increase the time of the timeout or do not specify a time value (default) so that no timeout occurs.

To unlock groups that were locked due to a `ResequencerTimeout`, execute the `resequencer_restart_processing_group.sql` script in `<ORACLE_HOME>/integration/esb/sql/oracle` folder.

For more information about this issue, refer to Oracle bug 8673539.

6.9 Resequencer Behavior in High Availability Environments

In a high availability environment, including an environment with multiple OC4J containers (or nodes), if an OC4J container crashes, any Resequencer groups being processed by that container continue to be processed by the surviving container. The groups continue to be processed on the surviving container even after the crashed container is restarted. Resequencer messages with new groups that arrive after the crashed container is restarted can be processed by either container.

For more information about this issue, refer to Oracle bug 8764008.

6.10 Advanced Search Exception

In advanced search, ESB throws an exception when you try to search for activity that occurred a certain number of seconds ago. To work around this issue, perform an activity search using a larger unit of time, such as minutes or hours.

For more information about this issue, refer to Oracle bug 8639976.

6.11 Deleting WebDAV Repository Artifacts and Oracle ESB Services

In prior releases, artifacts in the Web-based Distributed Authoring and Versioning (WebDAV) slide repository were not deleted when a project or service was deleted.

With this release, you can set the `webDAV_delete` property to `true` in the `esb_config.ini` file (the default setting is `false`). Then, restart the ESB server. These actions delete the artifacts directory whenever you redeploy an Oracle Enterprise Service Bus project from Oracle JDeveloper or `ant`. The unused artifacts are removed, leaving you with only up-to-date artifacts.

If you do not set this parameter to `true`, some artifacts present in the redeployed projects are updated and other artifacts are left untouched.

Note that artifacts are *not* deleted from the slide repository when you delete the service from Oracle ESB Control, because these artifacts may be referred to by other services.

When you delete an outbound service from an ESB project in Oracle JDeveloper and the service is also deployed on the ESB server, redeploying the project from Oracle JDeveloper does not remove the deleted service from the server.

When you delete a service in Oracle JDeveloper, make sure you also do the following:

- Before you redeploy the project, delete routing rules to that service in your ESB flows.
- Before you redeploy the project, delete the WSDL for that service in Oracle JDeveloper.
- In Oracle ESB Control, manually delete the service you deleted in Oracle JDeveloper.

For more information about this issue, refer to Oracle bug 8669306.

6.12 DVM Functions Do Not Include the ORCL Namespace

When using the `lookup-dvm` function in Oracle JDeveloper to perform a domain-value map (DVM) lookup, the function does not automatically provide the `orcl` namespace. You must manually add the `orcl` namespace to the function.

For example, in the following `lookup-dvm` function, you must manually insert the highlighted namespace:

```
{orcl:lookup-dvm('myDVM', 'ShortName', /top:T3Collection/top:T3/top:op, 'LongName', 'NotFound') = 'Karnataka'};{ namespace
top=http://xmlns.oracle.com/pcbpel/adapter/db/top/insLongName namespace
orcl=http://www.oracle.com/XSL/Transform/java/oracle.tip.pc.services.functions.ExtFunc }
```

For more information about this issue, refer to Oracle bug 8722231.

6.13 Graceful Shutdown of OPMN Services Fails

When attempting to perform a graceful shutdown of OPMN services using the `opmnctl stopall` command, a forceful shutdown occurs instead.

The recommended workaround is to increase the stop timeout in `opmn.xml`. You can also use the `opmnctl shutdown` command to gracefully shut down OPMN services.

For more information about this issue, refer to Oracle bug 8682471.

6.14 Documentation Errata

This section describes ESB documentation issues and workarounds.

6.14.1 ESB Logging Enhancement Classpath

The 10.1.3.4 *Oracle Application Server Release Notes* section on "ESB Logging Enhancement" uses the following incorrect example for adding the implementation class to the ESB classpath: `server.xml/esb.common`.

The correct classpath example should be: `server.xml/oracle.bpel.common`.

For more information about this issue, refer to Oracle bug 8230137.

6.15 Oracle WebLogic Server Issues and Workarounds

This section describes issues and workarounds specific to using Oracle SOA Suite with Oracle WebLogic Server:

- Section 6.15.1, "WebLogic Server Throws Stuck Thread Warning"
- Section 6.15.2, "BPEL Process Fails When Invoked from ESB"
- Section 6.15.3, "WebLogic Server Does Not Set MIME Content-Type"

6.15.1 WebLogic Server Throws Stuck Thread Warning

ESB gets threads from WorkManager for polling incoming messages. These threads are daemon threads and once started, they are never returned back to the WorkManager. For ESB running on WebLogic Server, these threads are considered as stuck threads if they are not returned back for a period exceeding the default value of the `StuckThreadMaxTime` parameter of WebLogic Server, that is, 600 seconds and the Server starts showing warning messages about the stuck threads.

You can work around this issue by setting the value of the `StuckThreadMaxTime` parameter of WebLogic Server to a higher value, such as 14400 seconds, to delay the terming of these threads as stuck threads.

6.15.2 BPEL Process Fails When Invoked from ESB

When an ESB process invokes a BPEL process through routing services, the BPEL process fails with the following errors displayed in the log file:

```
...
"java.lang.Exception: Failed to create "ejb/collaxa/system/DeliveryBean" bean;
exception reported is:
"javax.naming.AuthenticationException [Root exception is
javax.security.auth.login.FailedLoginException: [Security:090304]Authentication
Failed: User soadmin
javax.security.auth.login.LoginException: [Security:090301>Password Not Supplied]
```

```
weblogic.jndi.internal.ExceptionTranslator.toNamingException#44"
```

This is because ESB at runtime tries to fetch an encrypted password from the `admin.encrypted.password` property available in the `ant-orabpel.properties` file and this property is not present in the file by default.

You can fix this issue by performing the following steps:

1. Encrypt the password for the `admin.encrypted.password` property by using the command prompt. For example, for setting the password to *oracle*, use the following commands:

```
[SOA:~/product/mw_home/OracleAS_1/bpel/bin]$ ./devprompt.sh
[SOA:~/product/mw_home/OracleAS_1/bpel/bin]$ $JAVA_HOME/bin/java
com.collaxa.cube.util.EncryptPassword oracle
```

This will generate the encrypted password like the following:

```
WCRx6zgvshH9yCswMh6hgQ==
```

2. Locate the `SOA_HOME/bpel/utilities/ant-orabpel.properties` file and perform a backup of the file.
3. Open the `ant-orabpel.properties` file and update it in the following way:
 - Comment out the `admin.password` property by placing a number sign (#) before it, if an entry for the property is available.
 - Add an entry for the `admin.encrypted.password` property with the value obtained on step 1. For example,


```
admin.encrypted.password = WCRx6zgvshH9yCswMh6hgQ==
```
4. Restart the managed server from the WebLogic Server console.

6.15.3 WebLogic Server Does Not Set MIME Content-Type

WebLogic Server does not set content-type for files with `.js` and `.xml` extensions.

To work around this issue, you have to configure these mime types in your environment using one of the following two methods:

Method 1

Add these mime types in the `web.xml` file of the ESB Web Application.

Method 2

Set the mime type for the entire domain in the `config/mimemapping.properties` file by performing the following steps:

1. Login to the WebLogic Server console at


```
http://hostname:port/console
```
2. Click **Domain**, then **Configuration**, and then **Web Applications**.
3. Search for the `Mime` parameter.

The value of this parameter shows the location of the `mimemappings.properties` file.
4. Create the `mimemappings.properties` file if the file is not present already.
5. Add the following entries in the `mimemappings.properties` file:

```
xml=text/xml  
js=text/javascript
```

6. Restart the SOA Managed Servers.

Oracle Web Services Manager

This chapter describes issues associated with *Oracle Web Services Manager*. It includes the following topics:

- Section 7.1, "Prevention of Messages Being Lost When Database Goes Down Intermittently"
- Section 7.2, "Requests Without Security Header Allowed When Signing/Encryption Is Not Enforced"
- Section 7.3, "Best Practices for Secure Use of Keytool"
- Section 7.4, "WSE 3.0 Interoperability for Oracle WSM Signed Messages"
- Section 7.5, "Alarm Rule Name Limited to 35 Characters"
- Section 7.6, "Service Registration Page Now Handles WSDLs With Multiple Endpoints Properly"
- Section 7.7, "BPEL Web Service Names Shown Correctly On Statistic Pages For Server Agent"
- Section 7.8, "Workaround for Oracle WSM Hanging When Firewall With Time-out Configured Between IAS and the Database"
- Section 7.9, "Passing an Encrypted oc4j Password In the topology.properties File"
- Section 7.10, "The wsmadmin Script Requests Passwords As Input Only and Not On the Command-line"
- Section 7.11, "Oracle WSM Service Detail Pages Do Not Show Links For Downloading WSDLs"
- Section 7.12, "Option To Remove Oracle WSM Samples From Installation"
- Section 7.13, "ExportDBData Backup Works With Oracle Lite DB"
- Section 7.14, "REST POST/GET Support Added to Test Web Service Page"
- Section 7.15, "Migrating Oracle Web Service Objects"
- Section 7.16, "Using the Oracle WSM Horizontal Migration Wizard"
- Section 7.17, "SAML Signature Verification Also Removes Security Token Reference That Refers to the SAML Assertion From the WS-Security Header"
- Section 7.18, "Documentation Errata: Missing Step In "Configuring an Oracle J2SE Web Service Client Agent" Procedure"
- Section 7.19, "Workaround For Using Groups"
- Section 7.20, "30-Character Service Name Limitation In Web Services Database"

- Section 7.21, "Supported wsmadmin Utility Commands on WebLogic Server"
- Section 7.22, "The Configuration Wizard Must Be Used to Deploy Some Applications on WebLogic Server"
- Section 7.23, "Creating and Saving a New Test For Future Use"
- Section 7.24, "Applications Deployed Using the WebLogic Server Administration Console May Throw an "Service Unavailable" Error"
- Section 7.25, "Duplicity of Service Name In Ping Scheduler Now Shows an Error Message"
- Section 7.26, "Ping Scheduler Now Alerts for Negative Delay Value"
- Section 7.27, "utl_dbws Does Not Support WS-Security"
- Section 7.28, "Removal of Extra ^M Characters from Installation Properties Files"
- Section 7.29, "After Installation Run wsmadmin Script to Update Schema"

7.1 Prevention of Messages Being Lost When Database Goes Down Intermittently

Previously, there were no retry attempts for database message logging when logging was configured in asynchronous mode and the database failed or was restarted.

This was resolved by implementing retry logic at the time of database failure or restart when the `DBMessageLogWriter` parameter is in asynchronous mode. There are also new configurable parameters for tuning the retry attempts:

- `cfluent.log.retry.maxRetryAttempts` - maximum retry attempts.
- `cfluent.log.retry.retryInterval` - interval, in seconds, between two retries.

7.2 Requests Without Security Header Allowed When Signing/Encryption Is Not Enforced

Previously, users received errors about a "Missing Security Header" even when the `enforceSigning` and `enforceEncryption` parameters were not enabled. A code change was implemented so that if neither the `enforceSigning` nor `enforceEncryption` parameter is set, then requests without security headers can still pass without throwing this error message.

7.3 Best Practices for Secure Use of Keytool

In "Administering Web Services Security" in *Oracle Application Server Web Services Security Guide 10g*, the examples provide for the keytool should be updated so that the password is not specified on the command line. This is a security vulnerability.

If you do not specify the password on the command line, then the keytool prompts you to input the password.

7.4 WSE 3.0 Interoperability for Oracle WSM Signed Messages

A *Transform* step has been added after the "Sign Message" step to correct the order of the Binary Security Token (BST) and the Security Token Reference (STR) elements in

the WS-Security element, per the WS-Security specification, for WSE 3.0 (Microsoft.NET) clients.

7.5 Alarm Rule Name Limited to 35 Characters

Alarm rule processing creation no longer fails silently for component names with more than 35 characters. The 35-character limit is now enforced by the Oracle WSM UI.

7.6 Service Registration Page Now Handles WSDLs With Multiple Endpoints Properly

When entering a WSDL with more than one endpoint on the Add New Service page, the ensuing page now populates the correct service URL.

7.7 BPEL Web Service Names Shown Correctly On Statistic Pages For Server Agent

On Oracle WSM statistic pages for a server agent, the service name for BPEL Web Services now correctly shows all the file parts of the BPEL URL. For example:
/orabpel/default/HelloWilli2/v2008_07_18__35620.

7.8 Workaround for Oracle WSM Hanging When Firewall With Time-out Configured Between IAS and the Database

Oracle WSM would hang when there was a firewall with a time-out configured between IAS and the database. This occurred because the database connection was closed by the firewall and the application hangs until the socket time-out.

As a workaround for this issue, follow these steps:

1. The following properties for handling the eviction pool mechanism:

```
cfluent.db.minEvictableIdleTimeMillis=1800000
cfluent.db.timeBetweenEvictionRunsMillis=-1
```

Must be added to these files:

```
$ORACLE_HOME/owsm/config/ccore/policyui-config-installer.properties
$ORACLE_HOME/owsm/templates/ccore/ui-config-installer.properties
$ORACLE_HOME/owsm/config/clientagent/clientagent-config-installer.properties
$ORACLE_HOME/owsm/config/coreman/monitor-config-installer.properties
$ORACLE_HOME/owsm/config/gateway/gateway-config-installer.properties
$ORACLE_
HOME/owsm/config/policymanager/policymanager-config-installer.properties
$ORACLE_HOME/owsm/config/serveragent/serveragent-config-installer.properties
```

2. Then all OWSM components must be redeployed, as follows:

```
cd $ORACLE_HOME/owsm/bin
wsmadmin undeploy all
wsmadmin deploy all
```

3. If a firewall is configured between IAS and a database, then the `cfluent.db.timeBetweenEvictionRunsMillis` parameter should be smaller than the time-out of the firewall in milliseconds.

7.9 Passing an Encrypted oc4j Password In the topology.properties File

When cloning an Oracle WSM application at the destination, run the `wsmadmin.sh applyTopology` command with the encrypted `oc4jAdminPassword` property added in the `topology.properties` file.

7.10 The wsmadmin Script Requests Passwords As Input Only and Not On the Command-line

The `wsmadmin` script now requests passwords as input, not via the command-line. This prevents passwords from being stored in plaintext in a log file, which might then be available to local users via the `ps` command, etc.

7.11 Oracle WSM Service Detail Pages Do Not Show Links For Downloading WSDLs

Oracle WSM has four Web Services: `application ccore`, `coreman`, `policymanager`, and `gateway`. Details of these services can be viewed using following URL:

```
http://<host>:<port>/<application name>/services
```

Previously, all service detail pages were showing links to download WSDLs, and clicking those links would result in an exception with system directory information. The WSDL links are no longer displayed.

7.12 Option To Remove Oracle WSM Samples From Installation

A command-line interface, `wsmadmin deleteSamples`, allows users to delete samples that were installed during 10.1.3.5.1 installation.

7.13 ExportDBData Backup Works With Oracle Lite DB

The `ExportDBData` utility can be used to back up Oracle WSM data on an Oracle Lite database.

7.14 REST POST/GET Support Added to Test Web Service Page

The `Invoke REST POST` and `Invoke REST GET` buttons have been added to the `Test Web Service` page of Oracle WSM Control.

7.15 Migrating Oracle Web Service Objects

When migrating Oracle Web services objects, as described in "Migrating Oracle Web Services Objects" in *Oracle Web Services Manager Administrator's Guide 10g (10.1.3.4)*, please note the following:

- If you are migrating custom steps, copy the relevant JAR files from the source machine under the `ORACLE_HOME\owsm\lib\custom` directory to the destination machine under the `ORACLE_HOME\owsm\lib\custom` directory.
- Update the `coresv.properties` file to configure the location of the log file to capture all steps and errors related to the migration.

See also Section 7.16, "Using the Oracle WSM Horizontal Migration Wizard".

7.16 Using the Oracle WSM Horizontal Migration Wizard

Note: The following section should be appended as a subsection to "Migrating Oracle Web Services Objects" in *Oracle Web Services Manager Administrator's Guide 10g (10.1.3.4)*. The section describes how to use the Oracle WSM Horizontal Migration wizard to generate the `LMTInstructions.xml` files and migrate Oracle WSM objects quickly and easily.

You can continue to develop the `LMTInstruction.xml` files manually, if you prefer. The wizard provides you with another, simpler option.

The Oracle WSM Horizontal Migration wizard facilitates the horizontal migration of the following objects:

- Single or multiple policies access testing, staging, and production environments.
- Oracle WSM components such as Gateways, Server Agents, and Client Agents.
- Services registered to an Oracle WSM Gateway.
- Custom step templates.

You can migrate one or more of the objects simultaneously between your development, test, and production environments using the Oracle WSM Horizontal Migration wizard by performing the following steps.

1. Generate the export file.

This file defines the Oracle WSM objects that you might want to migrate to the destination environment. It serves as a template to use when you are generating the import file in the next step.

The file is named `LMTExportInstructions<timestamp>.xml` and is saved to your local directory on the source machine from where you want to export objects in a location that you specify.

For more information, see Section 7.16.3, "Step 1: Generate the Export File".

2. Generate the import file.

You select the specific objects that will be migrated and configure properties, as required, in this step. The list of objects from which you can select are defined by the export file, created in Step 1. Before generating this file, you need to copy the export file, created in Step 1, to the destination machine.

The file is named `LMTImportInstructions<timestamp>.xml` and is saved to your local directory on the destination machine from where you want to import objects in a location that you specify. The wizard uses the destination machine configuration details during the import file generation.

For more information, see Section 7.16.4, "Step 2: Generate the Import File".

3. Export the objects from the source environment using the export file created in Step 1.

For more information, see Section 7.16.5, "Step 3: Export the Oracle WSM Objects".

4. Import the objects to the destination environment using the import file created in Step 2.

For more information, see Section 7.16.6, "Step 4: Import the Oracle WSM Objects".

5. If you are migrating custom steps, copy the relevant JAR files from the source to the destination machine.

For more information, see Section 7.16.7, "Step 5: Copy Custom Step JAR Files to Destination Machine (Optional)".

To save time if you are migrating to multiple environments, you can export all objects to generate one export XML file (in Step 1), and then *selectively* import the objects required to each destination machine. This way, a single export file can meet the requirements of multiple machines.

Note: If you want to migrate all Oracle WSM objects and all data in the Oracle WSM Database, then use the Oracle WSM cloning feature described in "Cloning Oracle Web Services Manager".

7.16.1 Before You Migrate Oracle WSM Objects

Before you migrate Oracle WSM objects, verify that you have installed Oracle Application Server 10g Release 3 (10.1.3.5.1) on both the source and destination machines.

The Oracle WSM Horizontal Migration wizard is configured using the `coresv.properties` file located in the `ORACLE_HOME/owsm/bin` directory, where `ORACLE_HOME` indicates the location where Oracle Application Server 10g is installed.

In this release, the following property has been added to the `coresv.properties` file to enable you configure the location of the log file to capture all steps and errors related to running the wizard:

```
lmt.logfile.directory = C:/LMT.log
```

7.16.2 Invoking the Oracle WSM Horizontal Migration Wizard

To invoke the Oracle WSM Horizontal Migration wizard:

1. Open a command line interface.
2. Navigate to the `ORACLE_HOME/owsm/bin` directory, where `ORACLE_HOME` indicates the location where Oracle Application Server 10g is installed.
3. Enter one of the following commands:

On Windows: **wsmadmin.bat startHorizontalMigrationTool**

On Linux: **wsmadmin.sh startHorizontalMigrationTool**

7.16.3 Step 1: Generate the Export File

The Oracle WSM Horizontal Migration wizard enables you to generate quickly and easily the export file that defines the Oracle WSM objects that you want to migrate to another environment.

The file is saved to your local directory in a location that you specify, and is named as follows: `LMTExportInstructions<timestamp>.xml`. For example: `LMTExportInstructions17Jul2009-08-50-07AM.xml`.

For an example of the XML file format, see Example 10-1 "Example LMTInstructions.xml File Used to Export Objects" in "Migrating Oracle Web Services Objects" in *Oracle Web Services Manager Administrator's Guide 10g (10.1.3.4)*.

To generate the export file:

1. Start the Oracle WSM Horizontal Migration wizard on the source machine, as described in Section 7.16.2, "Invoking the Oracle WSM Horizontal Migration Wizard".
2. Choose **Generate export transferable objects xml** and click **Next**.
The ID and name of the components—Oracle WSM Gateways and Agents—that exist in the source environment are displayed.
3. Click the check box next to each component that you want to export and click **Next**.
The ID and description for the services that are active in the source environment are displayed.
4. Click the check box next to each service that you want to export, if applicable, and click **Next**.
The ID and name of each custom step defined in the source environment are displayed.
5. Click the check box next to each custom step that you want to export, if applicable, and click **Next**.
You are prompted to specify a location to save the export file.
6. Click **Include pipeline parameters with display name only** flag if you want to show the display name only.
7. Click **Browse**, navigate to the location where you want to save the export file, and click **OK**.
8. Click **Finish**.
The export file is generated and a message displays in the wizard to indicate where the file has been saved.
9. Click **Close** to close the wizard.

7.16.4 Step 2: Generate the Import File

The Oracle WSM Horizontal Migration wizard enables you to generate quickly and easily the import file that defines the Oracle WSM objects that you want to migrate to the destination environment.

The file is saved to your local directory in a location that you specify, and is named as follows: LMTImportInstructions<*timestamp*>.xml. For example:
LMTImportInstructions17Jul2009-09-14-59AM.xml.

For an example of the XML format, see Example 10-2 "Example LMTInstructions.xml File Used to Import Objects" in "Migrating Oracle Web Services Objects" in *Oracle Web Services Manager Administrator's Guide 10g (10.1.3.4)*.

To generate the import file:

1. Copy the export file (created in Section 7.16.3, "Step 1: Generate the Export File") from the source machine to the destination machine.
2. Start the Oracle WSM Horizontal Migration wizard on the destination machine, as described in Section 7.16.2, "Invoking the Oracle WSM Horizontal Migration Wizard".
3. Choose **Generate import transferable objects xml** and click **Next**.

4. Click **Browse**, navigate to the location of the export file that you copied in Step 1, and click **OK**.
5. Click **Next**.

The ID and name of the components—Oracle WSM Gateways and Agents—and the properties that can be set for each are displayed.

For an Oracle WSM Gateway, you can edit the following properties:

- **Import name**—Name of the Gateway. The value defaults to the name of the Gateway originally specified in the export file.
- **Import URL**—URL of the Gateway. The value defaults to the URL of the Gateway originally specified in the export file.
- **Create new**—Flag that specifies whether to generate a new Gateway. This value defaults to true.
- **ID**—This field is valid only if "Create new" is set to false. ID of the Gateway on the target machine to which the selected Gateway will be mapped. Select a value from the drop-down list.

For an Oracle WSM Agent, you can set the following property:

- **Import name**—Edit the name of the Agent, as required. The value defaults to the name of the Agent originally specified in the export file.

6. Click the check box next to each component that you want to import, set the properties as required, and click **Next**.

The ID and description of the services and the properties that can be set for each are displayed (if applicable).

If a WSDL is defined for the service, you can set the following properties:

- **Import name**—Name of the service. The value defaults to the name of the service originally specified in the export file.
- **Import URL**—URL of the service. The value defaults to the URL of the service specified in the WSDL.
- **WSDL URL**—URL of the WSDL file.

For a WSDL is not defined for the service, you can set the following properties:

- **Import name**—Name of the service. The value defaults to the name of the Agent originally specified in the export file.
- **Import URL**—URL of the service. The value defaults to the URL of the service specified in the service pipeline property file.

7. Click the check box next to each service that you want to import, set the properties as required, and click **Next**.

The pipeline properties corresponding to the selected components and services are displayed (if applicable).

8. Click the check box next to each property that you want to edit, modify the value as required, and click **Next**.

The ID and name of the custom steps and the properties that can be set for each are displayed (if applicable).

For a custom step, you can edit the following properties:

- Import name—Name of the custom step. The value defaults to the name of the custom step originally specified in the export file.
 - Import ID—ID of the custom step. The value defaults to the ID of the custom step originally specified in the export file. During the import, all IDs are automatically generated except the custom step Import ID. If the custom step Import ID already exists on the destination machine, the import operation will fail. You must specify a custom step Import ID that is unique on the destination machine.
9. Click the check box next to each custom step that you want to import, set the properties as required, and click **Next**.
 10. Click **Browse**, navigate to the location where you want to save the import file, and click **OK**.
 11. Click **Finish**.
The import file is generated and a message displays in the wizard to indicate where the file has been saved.
 12. Click **Close** to close the wizard.

7.16.5 Step 3: Export the Oracle WSM Objects

After you generate the export file in Section 7.16.3, "Step 1: Generate the Export File", you can use it to export the Oracle WSM objects.

To export the Oracle WSM objects:

1. Start the Oracle WSM Horizontal Migration wizard on the source machine, as described in Section 7.16.2, "Invoking the Oracle WSM Horizontal Migration Wizard".
2. Choose **Export objects** and click **Next**.
You are prompted to specify the location of the export file and the location where you want to export the objects.
3. Click **Browse**, navigate to the location of the export file (created in Section 7.16.3, "Step 1: Generate the Export File"), and click **OK**.
4. Click **Browse**, navigate to the location where you want to export the data, and click **OK**.
5. Click **Finish**.
The Oracle WSM objects are exported and a message displays in the wizard to indicate where data has been exported and where to access the log files.
6. Click **Close** to close the wizard.

7.16.6 Step 4: Import the Oracle WSM Objects

After you generate the import file in Section 7.16.4, "Step 2: Generate the Import File", you can use it to import the Oracle WSM objects to the destination environment.

To import the Oracle WSM objects:

1. Copy the exported data (created in Section 7.16.5, "Step 3: Export the Oracle WSM Objects") from the source machine to the destination machine.
2. Start the Oracle WSM Horizontal Migration wizard, as described in Section 7.16.2, "Invoking the Oracle WSM Horizontal Migration Wizard".

3. Choose **Import objects** and click **Next**.

You are prompted to specify the location of the import file and the location where you want to import the objects.

4. Click **Browse**, navigate to the location of the import file (created in Section 7.16.4, "Step 2: Generate the Import File"), and click **OK**.
5. Click **Browse**, navigate to the location where you copied the exported data (in Step 1), and click **OK**.
6. Click **Finish**.

The Oracle WSM objects are imported and a message displays in the wizard to indicate where data has been imported and where to access the log files.

7. Click **Close** to close the wizard.

7.16.7 Step 5: Copy Custom Step JAR Files to Destination Machine (Optional)

If you are migrating custom steps, copy the relevant JAR files into the `ccore.ear` and `gateway.ear` files under the `ORACLE_HOME\owsm\ears\` directory on the destination machine.

To copy the source JAR files to the destination machine:

1. On the destination machine (e.g., a Managed Server), extract the `ccore.war` file from the `ccore.ear` file.
2. Add the source JAR files to `web-inf\lib` directory of the `ccore.war` file.
3. Add the modified `ccore.war` file back inside the `ccore.ear` file.
4. Repeats steps 1–3 for the `gateway.ear` file.
5. Restart the destination Managed Server for the changes to take effect.

7.17 SAML Signature Verification Also Removes Security Token Reference That Refers to the SAML Assertion From the WS-Security Header

Previously, SAML signature verification could fail because the verification would remove the SAML assertion while leaving the security token reference in the message's WS-Security header. A code fix was implemented so that during SAML verification, SAML always removes the security token references of type `SAMLSecurityTokenReference`, even if the message does not have any signatures.

7.18 Documentation Errata: Missing Step In "Configuring an Oracle J2SE Web Service Client Agent" Procedure

The procedure entitled "Configuring the Client Agent with the Oracle J2SE Web Service Client" in Chapter 6, "Installing Oracle WSM Agents" of the *Oracle Web Services Manager Deployment Guide* is missing the following final step:

- After adding the JAR files to your `CLASSPATH`, add the shared library tagging structure for the `oracle.wsm.agent` shared library, and then restart the container.

7.19 Workaround For Using Groups

Since *group* is not supported in Oracle Web Services (10.1.3.5), you can use the following workaround.

If your schema contains the following *group* stanzas:

```
<xs:complexType name="Scope">
  <xs:sequence>
    <xs:group ref="ScopeAttributes"/>
    <xs:element ref="ScopeInformation" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>
<xs:group name="ScopeAttributes">
  <xs:sequence>
    <xs:element name="Type" type="xs:string"/>
    <xs:element name="InstanceIdentifier" type="xs:string"/>
    <xs:element name="Identifier" type="xs:string" minOccurs="0"/>
  </xs:sequence>
</xs:group>
```

Then change your schema to match the following:

```
<xs:complexType name="Scope">
  <xs:sequence>
    <xs:element name="ScopeAttributes"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="ScopeAttributes">
  <xs:sequence>
    <xs:element name="Type" type="xs:string"/>
    <xs:element name="InstanceIdentifier" type="xs:string"/>
    <xs:element name="Identifier" type="xs:string" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

7.20 30-Character Service Name Limitation In Web Services Database

The Oracle Web Services database supports a maximum of thirty characters for service names. Therefore, when Oracle Web Services imports a service from UDDI, it truncates the service name to thirty characters.

7.21 Supported wsmadmin Utility Commands on WebLogic Server

The Oracle Web Services command-line tool supports the following *wsmadmin* commands for deploying the CCORE, GATEWAY, POLICYMANAGER, COREMAN applications on WebLogic Server, as well as supporting the following WebLogic Server administrative commands.

- buildApps
- configApps
- copyDBConfig
- dataload
- dataloadConfigure
- encodePasswords

- `exportDBData`
- `importDBData`
- `initialize`
- `install -`

Note: Update the `install.appserver.type=weblogic-10` in the `OH/owsm/bin/install.properties` file before running the `install` command.

- `installAgent -`

Note: Update the `agent.componentType=serveragent` and `agent.containerType =WEBLOGIC` in the `OH/owsm/bin/install.properties` file before running the `installAgent` command. The other `componentType` options mentioned in the `agent.properties` file are specific to OC4J.

- `manageUserGroups`
- `md5encode`
- `purgePolicies`
- `exportPolicySet`
- `deleteSamples`

7.22 The Configuration Wizard Must Be Used to Deploy Some Applications on WebLogic Server

The deployment of `CCORE`, `COREMAN`, `GATEWAY`, and `POLICYMANAGER` applications on WebLogic Server SOA platforms must be performed using the Configuration Wizard or the Domain Template Builder tools. The `wsmadmin` utility should not be used to deploy these applications on WebLogic Server SOA platforms.

7.23 Creating and Saving a New Test For Future Use

The following steps describe how to create a new test and save it for future use.

1. From the Saved Tests page, click **Create New Test** to open the Test Page.
2. Specify the **WSDL URL** and click **Submit Query**.
3. On the ensuing page, specify the parameters and click **Save** to save the new test.

7.24 Applications Deployed Using the WebLogic Server Administration Console May Throw an "Service Unavailable" Error

On occasion, applications started from the WebLogic Server Administration Console may throw an `Error 503--Service Unavailable` error. If this should occur, the applications should be restarted from the Administration Console to make them available again.

7.25 Duplicity of Service Name In Ping Scheduler Now Shows an Error Message

Previously, when a user attempted to add a duplicate service to the Ping Scheduler, it would throw an exception with a stacktrace, and would also enter error messages with a stacktrace in the log file. A code fix was implemented so that the Ping Scheduler displays a "duplicate service" error, but no stack trace is logged.

7.26 Ping Scheduler Now Alerts for Negative Delay Value

Previously, users were not alerted if they entered a negative delay value in the Ping Scheduler for a registered service. A code fix was implemented so that the following message is displayed if a negative value is entered in the Change Delay to field:

```
Delay value should be a positive integer from 0 to 9223372036854775807
```

7.27 utl_dbws Does Not Support WS-Security

A PL/SQL user can invoke Web services using the PL/SQL package `SYS.UTL_DBWS`. However, WS-Security security is not supported for Web services where `UTL_DBWS` is being used.

7.28 Removal of Extra ^M Characters from Installation Properties Files

The following installation properties files may contain extra carriage return (^M) characters:

- `GATEWAY-CONFIG-INSTALLER.PROPERTIES`
- `MONITOR-CONFIG-INSTALLER.PROPERTIES`
- `UI-CONFIG-INSTALLER.PROPERTIES`
- `POLICYMANAGER-CONFIG-INSTALLER.PROPERTIES`

As a workaround, you can use the `dos2unix` utility from a command-prompt to remove the extra ^M characters, as follows:

```
dos2unix <MyFile>
```

The `dos2unix` utility converts the file to UNIX format, removing any extra ^M characters, and overwrites the file to itself. Generally, the `dos2unix` executable is located in either the `/usr/bin` or `/usr/local/bin` directory.

7.29 After Installation Run wsmadmin Script to Update Schema

After installing Oracle Web Services Manager on Linux or Microsoft Windows, you must run the `wsmadmin` script in order to update the Oracle Web Services Manager schema, as follows:

- **Linux:**

```
ORACLE_HOME/owsm/bin/wsmadmin.sh updateDbData -DDBPassword=<${owsmPassword}>
```
- **Windows:**

```
ORACLE_HOME/owsm/bin/wsmadmin.bat updateDbData -DDBPassword=<${owsmPassword}>
```

Oracle Business Activity Monitoring

This chapter describes issues associated with Oracle Business Activity Monitoring (Oracle BAM). It includes the following topics:

- Section 8.1, "Supported Platforms"
- Section 8.2, "Uninstalling Oracle BAM"
- Section 8.3, "Installing Against an 11g Database is Not Supported"
- Section 8.4, "Configuring IIS on Vista to Send Report Links or Pages"
- Section 8.5, "Click Apply and OK More Than Once in Surface Prompt Tab"
- Section 8.6, "Warning During Installation on Microsoft Windows 2008"
- Section 8.7, "Compilation Error on Launching Start Page After Successful Patch Install"
- Section 8.8, "Possible Error in Summary Crosstab View"
- Section 8.9, "New Features"
- Section 8.10, "Documentation Errata"

8.1 Supported Platforms

This section describes the server and client platforms supported by this Oracle BAM release.

- Section 8.1.1, "Server Platforms Supported"
- Section 8.1.2, "Client Platforms Supported"

8.1.1 Server Platforms Supported

All machines on which Oracle Application Server 10g server components are installed require the following software:

- Microsoft Windows Server Intel x86 versions supported:
 - Microsoft Windows 2000 (SP4 or higher) Server, Advanced Server, and Datacenter Server Editions
 - Microsoft Windows Server 2003 Standard, Enterprise, and Datacenter Editions
 - Microsoft Windows Server 2003 R2, Standard, Enterprise, and Datacenter Editions
 - Microsoft Windows Server 2008, Standard, Enterprise, and Datacenter Editions

Notes: Enterprise Link is not supported on Microsoft Windows Server 2003 R2 and later platforms.

If you are installing on a Microsoft Windows 2000 or 2003 platform running Terminal Services, Terminal Services must be in Administration Mode, not Application Server Mode. See the article, HOW TO: Install Terminal Services in Remote Administration Mode in Windows 2000:

<http://support.microsoft.com/?id=306624>

How to enable and to configure Remote Desktop for Administration in Windows Server 2003:

<http://support.microsoft.com/kb/814590>

- Microsoft .NET Framework 1.1, Service Pack 1 is required on all servers except for the Oracle Database Server. This component will be installed on your system automatically if it is not already present. See the *Oracle Business Activity Monitoring Installation Guide* for more information.

8.1.2 Client Platforms Supported

The Oracle BAM client is supported on the following platforms:

- Microsoft Windows Intel x86 versions supported:
 - Windows XP Professional, Service Pack 1 or higher
 - Microsoft Windows 2000, Service Pack 4
 - Microsoft Windows Vista
- Web browsers supported:
 - Microsoft Internet Explorer 6, Service Pack 1 or higher
 - Microsoft Internet Explorer 7
 - Microsoft Internet Explorer 8

Notes:

- If you are using Windows XP with Service Pack 2 or higher, or other pop-up blockers, you must allow pop-ups when using the Oracle Application Server 10g Web applications. You must turn off popup blockers in Internet Explorer for the URL on which the Web applications are hosted.
 - The Internet Explorer installation on client systems must be a standard version and must not include customizations such as add-in tool bars or hot bars for other Web sites.
-
-

8.2 Uninstalling Oracle BAM

The installation method for Oracle BAM 10.1.3.3 (requirement for any Oracle BAM patch installer, including 10.1.3.5), uses InstallShield, which adds Oracle BAM to the

Microsoft Windows Control Panel Add or Remove Programs list, and the Oracle BAM Patch Installer can only be deinstalled using Oracle Universal Installer.

In the event user may need to reinstall Oracle BAM to which patches have been applied, the following steps must be performed in the order listed:

1. Before deinstalling any 10.1.3.x patch, use the **Stop Oracle BAM** script from **Start Menu >All Programs** in order to stop all of the Oracle BAM services.
2. Use Oracle Universal Installer first to deinstall oraclebam10133 (the name of your Oracle Home).
3. Use Add or Remove Programs in the Microsoft Windows Control Panel to remove Oracle BAM 10.1.3.3 and any Oracle BAM Enterprise Link components.
4. Reinstall Oracle BAM 10.1.3.3 using the instructions provided in *Oracle Business Activity Monitoring Installation Guide*.
5. Reinstall the Oracle BAM patch.

Note: You can also use database tools to backup and restore, or retain your current Oracle BAM schemas as they are (default orabam and orasagent), and during reinstall keep these schema names, skip to build schema if prompted, and Oracle BAM will use them upon startup.

8.3 Installing Against an 11g Database is Not Supported

Installing Oracle BAM against an 11g database is not supported; however, Oracle BAM does support running against an 11g database.

To work around this issue, install Oracle BAM against a 10g database and then upgrade the database to 11g.

Note: Refer to the *Oracle Business Activity Monitoring Installation Guide* for the list of Oracle 10g database versions that are supported by Oracle BAM.

8.4 Configuring IIS on Vista to Send Report Links or Pages

Microsoft Windows Vista is not supported for the Oracle BAM server components. However, if you are using Microsoft Windows Vista for demonstration or evaluation purposes you can use the following workaround.

When using Microsoft Internet Information Server (IIS) on Microsoft Windows Vista, Oracle BAM cannot send report links or pages (attachments). The Event Engine log reports the following error with `ReportMailer.asmx`:

```
Exception: The request failed with HTTP status 401:Unauthorized.
```

You can work around this problem in the following ways:

- Use one of the supported versions of Microsoft Windows to run Oracle BAM Web Applications and Event Engine.

- If you do not require Basic Authentication for Web Services, you can follow these steps to disable Basic Authentication through IIS in the Services directory. Note that if you do this, you cannot use the Oracle BPEL-BAM integration feature.

1. Open a command-line window and change to the following directory:

```
C:\inetpub\AdminScripts
```

2. Run the following command:

```
cscript.exe adsutil.vbs GET /w3svc/1/root/OracleBAM/NTAuthenticationProviders
```

The command may return the following:

```
NTAuthenticationProviders      : (STRING) "Negotiate,NTLM"
```

3. This needs to be set only to NTLM. Run this command to do so:

```
cscript.exe adsutil.vbs SET /w3svc/1/root/OracleBAM/NTAuthenticationProviders  
"NTLM"
```

4. Run the command in step 2 again and verify that it returns the following:

```
NTAuthenticationProviders      : (STRING) "NTLM"
```

5. Open the IIS console.
6. Click Web Site > Default Web Site > OracleBAM > 6500 virtual directory.
 - a. Select the **Services** folder.
 - b. Select **Authentication** to change its properties.
 - c. Disable Basic Authentication. (Windows Authentication should be the only option enabled.)
7. Click Web Sites > Default Web Site > OracleBAM virtual directory.
 - a. Select the **Services** folder.
 - b. Select **Authentication** to change its properties.
 - c. Disable Basic Authentication. (Windows Authentication should be the only option enabled.)
8. Close the IIS Console and test sending a report link or report page via an alert.

8.5 Click Apply and OK More Than Once in Surface Prompt Tab

In the View Editor, the Apply and OK buttons for the Surface Prompt tab do not apply changes the first time they are clicked.

To work around this issue click Apply or OK a second time before closing the View Editor, or reopen the view in the View Editor to click Apply or OK again in the Surface Prompt tab.

8.6 Warning During Installation on Microsoft Windows 2008

Oracle BAM 10.1.3.3.0 is not certified, and will show a warning, but the installation will succeed on Microsoft Windows 2008 Server. The user can then apply the 10.1.3.5.0 patch on the 10.1.3.3.0 installation to obtain full support on Microsoft Windows 2008 Server Standard, Enterprise, and Datacenter editions.

8.7 Compilation Error on Launching Start Page After Successful Patch Install

This is an intermittent issue. An error may occur during the compilation of a resource required to service the Oracle BAM Start Page launch request.

If you encounter this issue, use the following workaround:

Restart the World Wide Web Publishing service using either IISAdmin or the Services Control Panel.

If that does not resolve the issue, use the following workaround.

1. Stop the Oracle BAM and IIS services.

You can use the Stop BAM shortcut, and then stop IIS using a command prompt with the following command:

```
net stop iisadmin /y
```

Alternatively, you can use the Services Control Panel to stop the Oracle BAM and IIS services.

2. From a command prompt, delete the `c:\windows\microsoft.net\framework\v1.1.4322\temporary asp.net files` directory.

3. Restart the Oracle BAM and the IIS services.

You can start IIS via a command prompt with the following command:

```
net start w3svc
```

Then use the Start BAM shortcut.

Alternatively, you can use the Services Control Panel to restart the Oracle BAM and IIS services.

8.8 Possible Error in Summary Crosstab View

The following error may be encountered after the successful completion of Summary Crosstab view containing multiple time groups:

```
Input string was not in a correct format.
```

In the time groups section, the quantity for the second time group is undefined.

To work around this issue:

1. Deselect the time groups until only one time group is displayed, then click **Apply**.
2. Reconfigure the time groups entering 1 for quantity if `undefined` appears.

8.9 New Features

This section describes the 10.1.3.5 new features for Oracle BAM. This section includes the following topics:

- Section 8.9.1, "Microsoft Excel 2007 Supported"
- Section 8.9.2, "Now Mode Supported in Datetime Parameters"

8.9.1 Microsoft Excel 2007 Supported

Support for Microsoft Excel 2007 is added in Oracle Business Activity Monitoring 10g Release 5 (10.1.3.5) in the Excel view user interface in Oracle BAM Active Studio View Editor.

A **Save in Excel 97-2003 format** check box is located on the View Editor Properties General tab, which is only available when using Microsoft Excel 2007.

If the user has Microsoft Excel 2007, the check box is enabled. Due to a known issue, the check box must remain selected. Microsoft Excel 2007 will still work when saving to Microsoft Excel 97-2003 format.

If the user has Microsoft Excel XP/2002 or Microsoft Excel 2003 (the only other versions supported by Oracle BAM), the check box will be pre-selected and disabled, because the only option in this case is to save the view in Microsoft Excel 97-2003 format.

8.9.2 Now Mode Supported in Datetime Parameters

When parameters of type datetime are configured, the user is presented with the option to configure a time window (that is, you can filter the data by a changing time interval) within which data is to be displayed by selecting **Now Mode**. For more information about using Active Now, see the section titled "Using Active Now" in Chapter 4 of *Oracle Business Activity Monitoring Active Studio User's Guide*.

When using **Now Mode** in prompts and parameters, you can enter negative values for the **Offset** to select an interval in past.

8.10 Documentation Errata

This section describes documentation errata. It includes the following topics:

- Section 8.10.1, "Replace Tibco Rendezvous with Tibco EMS"
- Section 8.10.2, "BAM Update Transform Options"

8.10.1 Replace Tibco Rendezvous with Tibco EMS

In the *Oracle Business Activity Monitoring Architect User's Guide*, Chapter 3 "Enterprise Message Sources," the instructions and example settings given are for Tibco Rendezvous are actually for Tibco EMS.

8.10.2 BAM Update Transform Options

Add and **Subtract** add or subtract the value for the field in the data flow record to/from the value of the field in the matching rows in the data object based on the selection criteria. For strings, **Add** means concatenate and **Subtract** means replace. For boolean types, **Add** results in a value of `true` if either the data flow field or the data object field is `true`, `false` otherwise, and **Subtract** results in `false` if the data flow field and the data object field are either both `true` or both `false`, `true` otherwise.

Oracle HTTP Server

This chapter describes issues associated with Oracle HTTP Server. It includes the following topics:

- Section 9.1, "Using Oracle Containers for J2EE Plug-in with iPlanet Web Server"
- Section 9.3, "Documentation Errata"

9.1 Using Oracle Containers for J2EE Plug-in with iPlanet Web Server

This section describes how to install and configure the Oracle Containers for J2EE Plug-in to work with an iPlanet Web server. It includes the following tasks:

- Install a Standalone Oracle HTTP Server Instance
- Configure Oracle Process Manager and Notification Server to Work with Oracle Containers for J2EE Plug-in
- Install Oracle Containers for J2EE Plug-in for iPlanet Web Server
- Configure Oracle Containers for J2EE Plug-in
- Create the opii.conf File

9.1.1 Install a Standalone Oracle HTTP Server Instance

If the Oracle HTTP Server component is not installed as part of an Oracle Containers for J2EE cluster, then you will need to install it as standalone instance. Follow the instructions in *Administering a Standalone Deployment Based on Apache 2.0 10g (10.1.3.1.0)*.

9.1.2 Configure Oracle Process Manager and Notification Server to Work with Oracle Containers for J2EE Plug-in

The following procedure describes how to configure Oracle Process Manager and Notification Server (OPMN) to work with Oracle Containers for J2EE Plug-in:

1. Stop Oracle HTTP Server using the following command:

```
$ORACLE_HOME/opmn/bin/opmnctl stopproc process-type=HTTP_Server
```

2. Make a backup copy of the opmn.xml file.
3. Edit the opmn.xml to include the cluster topology and disable the Oracle HTTP Server process, as shown in bold in the following:

```
<?xml version="1.0" encoding="UTF-8"?>  
<opmn xmlns="http://www.oracle.com/ias-instance">
```

```

<log path="$ORACLE_HOME/opmn/logs/opmn.log" comp="internal;ons;pm"
  rotation-size="1500000"/>
<debug path="$ORACLE_HOME/opmn/logs/opmn.dbg" comp=""
  rotation-size="1500000"/>
<notification-server interface="ipv4">
<port local="6101"
  remote="6201"
  request="6004"/>
  <ssl enabled="true" wallet-file="$ORACLE_HOME/opmn/conf/ssl.wlt/default"/>
<!--example using a static list-->
  <topology>
    <discover list="node1:6200,node2:6200"/>
  </topology>
</notification-server>
<process-manager>
  <process-modules>
    <module path="$ORACLE_HOME/opmn/lib/libopmnohs">
      <module-id id="OHS"/>
      <module-id id="GENERIC_APACHE"/>
      <module-id id="OHS2"/>
    </module>
  </process-modules>
  <ias-instance id="IAS-1"
  name="IAS-1">
    <environment>
      <variable id="TMP" value="/tmp"/>
    </environment>
    <module-data>
      <category id="start-parameters">
        <data id="routing-id" value="g_rt_id"/>
      </category>
    </module-data>
  <!--disable http server process-->
    <ias-component id="HTTP_Server" status="disabled">
      <process-type id="HTTP_Server" module-id="OHS2">
        <module-data>
          <category id="start-parameters">
            <data id="start-mode" value="ssl-enabled"/>
          </category>
        </module-data>
        <process-set id="HTTP_Server" numprocs="1"/>
      </process-type>
    </ias-component>
  </ias-instance>
</process-manager>
</opmn>

```

4. Restart OPMN using the following commands:

```

$ORACLE_HOME/opmn/bin/opmnctl stopall
$ORACLE_HOME/opmn/bin/opmnctl startall

```

5. Check the status using the following command:

```

$ORACLE_HOME/opmn/bin/opmnctl status

```

The following message should be returned:

```

No processes running...

```

9.1.3 Install Oracle Containers for J2EE Plug-in for iPlanet Web Server

To install the Oracle Containers for J2EE Plug-in, copy the shared library from the OracleAS Companion CD as described in the following table:

Table 9–1 OC4J Plug-in Shared Libraries

Platform	File Name	Location and Description	Instructions
UNIX	opii.so	opii.so is the OC4J plug-in for iPlanet Web listener. It is located in the /plugins/solaris/sunone directory	To install the plug-in into the listener, place opii.so in a directory to which the listener has read and execute privileges.
Windows	opii.dll	opii.dll is the OC4J plug-in file for the iPlanet Web listener. It is located in the /plugins/win32/iis directory.	To install the plug-in into the listener, copy opii.dll to a directory the listener can access.

9.1.4 Configure Oracle Containers for J2EE Plug-in

Configure the Oracle Containers for J2EE Plug-in using the instructions in Appendix C, "Configuring OC4J Plug-in on Sun ONE" of *Oracle HTTP Server Administrator's Guide*.

9.1.5 Create the opii.conf File

The opii.conf file controls the directives for Oracle Containers for J2EE Plug-in, and supports all the directives supported by the mod_oc4j module. The basic file should look as follows:

```
Oc4jOracleHome path_to_ORACLE_HOME_OPMN_installation
#this is the default oc4j routing id
Oc4jRoutingID g_rt_id
Oc4jRoutingMode Dynamic
```

For example, you might have the following for your installation:

```
Oc4jOracleHome /opt/oracle/product/10.1.3/OracleAS_2
#this is the default oc4j routing id
Oc4jRoutingID g_rt_id
Oc4jRoutingMode Dynamic
```

To use static routing for group names, the file should look similar to the following:

```
Oc4jOracleHome /opt/oracle/product/10.1.3/OracleAS_2
Oc4jRoutingMode Static
Oc4jRoutingID g_rt_id
Oc4jMount /em/* mygroup
```

9.2 New Features

This section describes the 10.1.3.5 new features for Oracle HTTP server. This section includes the following topics:

- Section 9.2.1, "mod_weblogic Support"

9.2.1 mod_weblogic Support

OHS 2.0 is now certified as one of the listeners supported by mod_weblogic.

9.3 Documentation Errata

The following errors appear in the Oracle HTTP Server guide:

- Section 9.3.1, "mod_ossll Directives"
- Section 9.3.2, "Module Values"
- Section 9.3.3, "OPMN Integration"

9.3.1 mod_ossll Directives

The `mod_ossll` directives, `SSLLog` and `SSLLogLevel`, are listed in the guide. These directives have been removed by Apache. Use the `ErrorLog` and `LogLevel` directives instead of `SLLLog` and `SSLLogLevel`, respectively.

9.3.2 Module Values

The "Understanding Modules" chapter of the *Oracle HTTP Server Administrator's Guide* contains default values for `Oc4jCacheSize` that are 1 for UNIX and 32 for Microsoft Windows.

The default value for `Oc4jCacheSize` should be 1 on Unix and 75% of `MaxThreadsPerChild` on Microsoft Windows.

9.3.3 OPMN Integration

In C.7.5, "Integrating with Oracle Process Manager and Notification Server", of the *Oracle HTTP Server Administrator's Guide* the applicable operating systems are not listed. This procedure is valid for Linux operating systems only.

This chapter describes issues associated with Oracle B2B. It includes the following topics:

- Section 10.1, "B2B–BPEL Integration: 10.1.3.5 Patch Is Available"

10.1 B2B–BPEL Integration: 10.1.3.5 Patch Is Available

The B2B WSIL patch enables B2B-BPEL interoperability. The patch is available from

http://aru.us.oracle.com:8030/ARU/ViewPatchRequest/process_form?aru=11600727

Oracle Application Server Technology Adapter

This chapter describes issues associated with Oracle Application Server Technology adapters and Oracle Adapter for Oracle Applications, and new features. It includes the following topics:

- Section 11.1, "AQORACLESQLEXCEPTION Encountered If Both Correlation and Dequeue Condition Are Specified in the Inbound Oracle AQ Adapter"
- Section 11.2, "Unique Value for the connectionFactoryLocation Property Required in Oracle MQ Series Adapter"
- Section 11.3, "Oracle MQ Series Adapter Does Not Support Working on Both XA and Non-XA Modes Simultaneously"
- Section 11.4, "xaTransaction Property Has to Be Set to TRUE for Oracle MQ Series Adapter"
- Section 11.5, "Different Queues Must Be Used for Request and Reply in an Outbound Synchronous Request/Reply Scenario for MQ Series Adapter"
- Section 11.6, "The MQAdapterOutboundHeader.wsdl file Must Be Manually Edited to Accommodate RFH2 Headers"
- Section 11.7, "Message in a Remote Reply Queue Must Include Queue Manager Name for an Inbound Synchronous Request/Reply Scenario"
- Section 11.8, "Workaround Required for Running the File2StoredProcedure Sample for Database Adapter"
- Section 11.9, "Post-Update Requirement for the oc4j-ra.xml File"
- Section 11.10, "New Features"
- Section 11.11, "Documentation Errata"

11.1 AQORACLESQLEXCEPTION Encountered If Both Correlation and Dequeue Condition Are Specified in the Inbound Oracle AQ Adapter

When modeling a dequeue operation with AQ Adapter Wizard, the Adapter Configuration Wizard allows specifying both dequeue condition and the correlation ID. This is incorrect. The dequeue operation should specify only a dequeue condition or a correlation ID, and not both.

If both dequeue condition and the correlation ID are specified, then the dequeue operation will fail with an ORA-25240 error, as shown in the following example:

```
oracle.AQ.AQOracleSQLException: ORA-25240: message ID and dequeue
```

condition/correlation ID specified in dequeue options

11.2 Unique Value for the connectionFactoryLocation Property Required in Oracle MQ Series Adapter

If you request a JNDI connection for MQ Series adapter, then you must specify a unique value in the `connectionFactoryLocation` property.

11.3 Oracle MQ Series Adapter Does Not Support Working on Both XA and Non-XA Modes Simultaneously

Oracle MQ Series Adapter works in either the XA mode or the non XA mode. If you have set the configurations for XA mode, then the adapter expects that all the future deployments are related to XA only. If you are working in the XA mode, and you set the `xATransaction` property as "false" in the JNDI connection setting, then the adapter throws an exception in the outbound operation.

11.4 xATransaction Property Has to Be Set to TRUE for Oracle MQ Series Adapter

In an XA transaction, the outbound JNDI must have the `xATransaction` property set to true in the `oc4j.xml` file, as shown in the following example:

```
<config-property name="xATransaction" value="true"/>
```

If the `xATransaction` property value is set to false, then the process throws the `java.lang.NullPointerException` exception.

11.5 Different Queues Must Be Used for Request and Reply in an Outbound Synchronous Request/Reply Scenario for MQ Series Adapter

In an outbound synchronous request/reply scenario, ensure that the request and reply parameters, `QueueName` and `ReplyToQueueName` are different. Using the same queue for both request and reply operations results in the process from being timed out.

11.6 The MQAdapterOutboundHeader.wsdl file Must Be Manually Edited to Accommodate RFH2 Headers

In 10.1.3.5, there is no UI support to accommodate RFH2 headers in the `MQAdapterOutboundHeader.wsdl` file.

You must manually edit the `MQAdapterOutboundHeader.wsdl` file as described in the following steps:

1. In the `MQOutboundHeader` element, add the following element

```
<element name="MQHeaderExtended" type="mq:MQHeaderExtended" minOccurs="0" />
```

2. Next, add the following code to the `MQAdapterOutboundHeader.wsdl` file:

```
<complexType name="MQHeaderExtended">  
  <sequence>
```

```

        <element name="StrucId" type="mq:asd" minOccurs="1"/>
        <element name="Version" type="mq:asd" minOccurs="1"/>
        <element name="Encoding" type="mq:asd" minOccurs="1"/>
        <element name="CodedCharSetId" type="mq:asd" minOccurs="1"/>
        <element name="Format" type="mq:asd" minOccurs="1"/>
        <element name="Flags" type="mq:asd" minOccurs="1"/>
        <element name="NameValueCCSID" type="mq:asd" minOccurs="1"/>
        <element name="JMSFolder" type="mq:asd" minOccurs="0"/>
        <element name="USRFolder" type="mq:asd" minOccurs="0"/>
    </sequence>
</complexType>
<complexType name="asd">
    <simpleContent>
        <extension base="string">
            <attribute name="dataType" use="required"
type="mq:PropTypeEnum"/>
            <attribute name="value" use="required" type="string"/>
        </extension>
    </simpleContent>
</complexType>

```

11.7 Message in a Remote Reply Queue Must Include Queue Manager Name for an Inbound Synchronous Request/Reply Scenario

When you insert a message with a `replyToQueueName` as some remote queue definition, and if the `replyToQueueManager` is not specified, then the queue manager resolves the destination queue name and queue manager name from the remote queue definition and populates the `replyToQueueName` and `replyToQueueManagerName` appropriately.

For example, consider a scenario in which the destination queue manager is QM2, queue name is QB, and R is the remote definition of this queue on queue manager QM1.

If you insert a message M with `M.replyToQueueName="R"` and do not specify the queue manager name, then MQSeries internally resolves the appropriate values as `M.replyToQueueName="B"` and `M.replyToQueueManagerName="QM2"`. However, if you specify `M.replyToQueueManagerName="QM1"` along with `M.replyToQueueName="R"`, then this auto-resolution is prevented and the operation works as expected.

This is because the destination queue manager and queue name resolved by a queue manager may not be accessible from the queue manager connection, which leads to MQ 2087 reason `MQRC_UNKNOWN_REMOTE_Q_MGR`.

11.8 Workaround Required for Running the File2StoredProcedure Sample for Database Adapter

To run the File2StoredProcedure sample located in `bpel\samples\tutorials\122.DBAdapter`, you must perform the following steps:

1. Add the following clause to the XSD file:

```
elementFormDefault="qualified"
```
2. Change the instance XML by removing "db:" and add the following namespace:

```
<InputParameters
  xmlns="http://xmlns.oracle.com/pcbpel/adapter/db/SCOTT/ADDEMPLOYEES/">
  ...
</InputParameters>
```

3. Redeploy the sample with the new XSD file and invoke it with the updated instance XML.

11.9 Post-Update Requirement for the oc4j-ra.xml File

Whenever you modify the `oc4j-ra.xml` file, you must restart the server for the changes to take effect.

11.10 New Features

This section describes the new features for Oracle Application Server 10g release 10.1.3.5 for the following adapters:

- Section 11.10.1, "Oracle Adapter for Oracle Applications Features"
- Section 11.10.2, "MQ Adapter Features"
- Section 11.10.3, "Oracle File and FTP Adapter Features"

11.10.1 Oracle Adapter for Oracle Applications Features

Oracle Application Server 10g release 10.1.3.5 includes the following new feature for the Oracle Adapter for Oracle Applications:

11.10.1.1 Additional Support for Header Variables

Header variables are used to provide applications context information required in the SOA Suite to process Concurrent Programs and PL/SQL APIs. To provide additional header support, Oracle Adapter for Oracle Applications can now accept the following three new header parameters along with the existing `Username`, `Responsibility`, and `Org_ID` parameters for setting applications context:

- `RespApplication`: Responsibility Application Key which needs to be used to set the context.
- `SecurityGroup`: Security Group Key which defaults to 'Standard' if not passed.
- `NLSLanguage`: It is the language code for the request. NLS context would be set to the language code that is passed, if valid. It would default to 'US' if not passed.

Note: Existing header parameter `Responsibility` used in earlier releases can now take `Responsibility Key` as well as `Responsibility Name` as input. If the header parameter `NLSLanguage` is set, and `Responsibility Name` is passed, the value passed for `Responsibility` is expected to be in the same language. However, `Responsibility Key` and all other header parameters are language independent.

All these header parameters would be used together to set the applications context. Alternatively, passing just the `Username` and `Responsibility` would work as it did in the earlier releases.

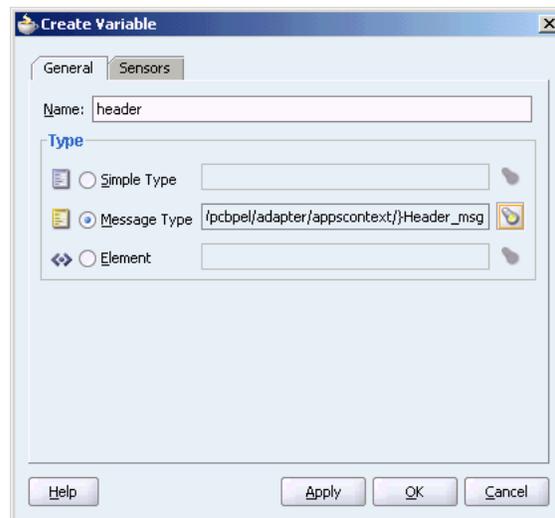
In the case of a null or empty value, the following are the default values for the parameters:

- Username: SYSADMIN
- Responsibility: System Administrator
- SecurityGroup: Standard
- NLSLanguage: US

Design-Time Tasks for Assigning Header Variables

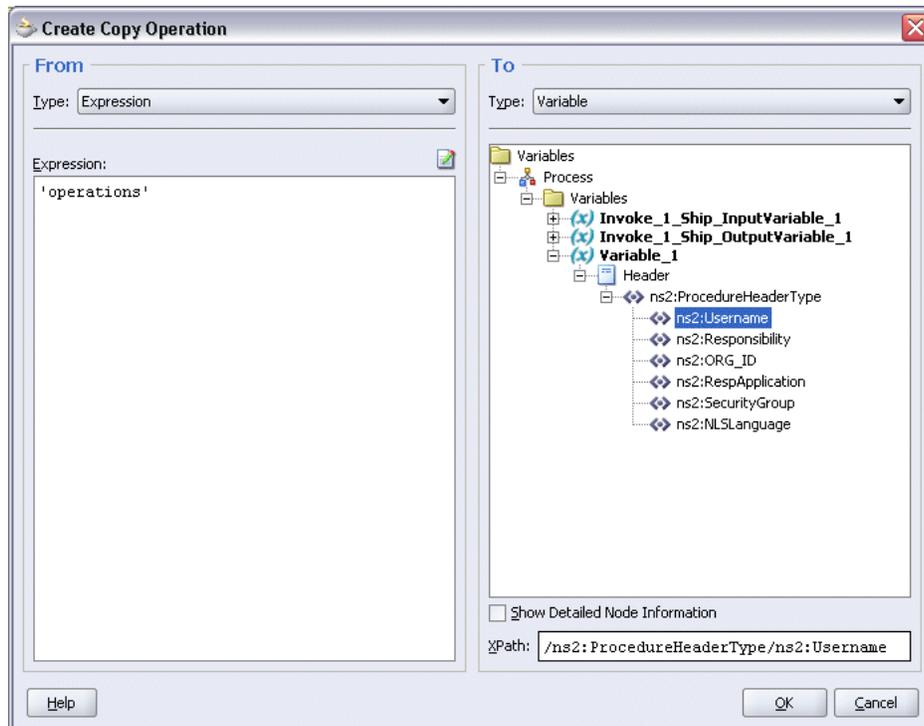
1. Create a new BPEL project.
2. Add a Partner Link.
3. Configure an Invoke activity:
 - a. Configure the basic information in the **General** tab including creating input and output variables for the **Invoke** activity.
 - b. Create a header variable in the **Adapters** tab and configure it with the `Header_msg` message type from the `AppsContextHeader.wsdl` file, as shown in Figure 11–1.

Figure 11–1 The Create Variable Dialog



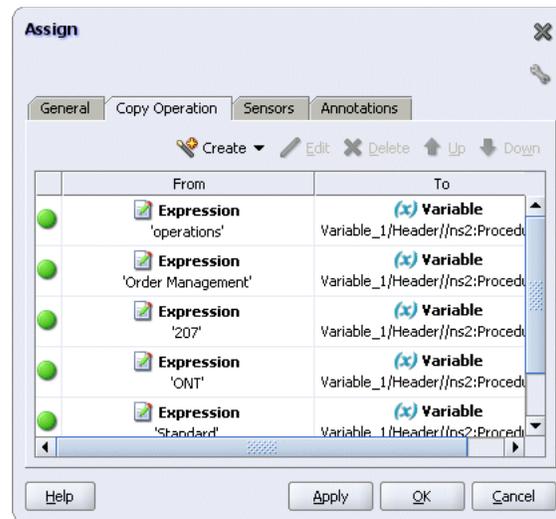
4. Add an **Assign** activity before the **Invoke** activity to assign header variables:
 - a. Select **Copy Operation** tab in the Assign dialog box and select **Copy Operation...** from the Create drop-down list.
 - b. To enter the header variable values in the Assign activity, in the **From** group, select **Expression** as the type and enter a username variable value such as 'operations'.
 - c. In the To group, navigate to **Variables > Process > Variables > Variable_1 > Header > ns2:ProcedureHeaderType** and select **ns2:Username**. The XPath field should contain your selected entry, as shown in Figure 11–2.

Figure 11–2 The Create Copy Operation Dialog



- d. Click **OK**.
5. Use the same method to assign additional header variable values. For example, enter the following parameter values, as shown in Figure 11–3.
 - 'Order Management' for Responsibility
 - '207' for ORG_ID
 - 'ONT' for RespApplication
 - 'Standard' for SecurityGroup
 - 'US' for NLSLanguage

Figure 11-3 The Assign Dialog



11.10.2 MQ Adapter Features

The following section describes the new feature for the MQ Series Adapter:

11.10.2.1 New Properties in MQ Adapter to Copy Headers to the Reply Message Headers in Inbound Request-Reply (Synchronous) Scenario

MQ Adapter must pass the persistence and expiry interval from inbound request message to the reply message in synchronous-request-response (inbound) scenario. You must set the `CopyPersistenceFromInbound`, and `PropagateExpiryInterval` properties to true so that the two inbound headers are copied to the Reply message headers.

11.10.3 Oracle File and FTP Adapter Features

The following sections describe the new features for the File and FTP Adapters:

- Section 11.10.3.1, "LIST Command Supported by FTP Adapter"
- Section 11.10.3.2, "Sorting in Oracle File and FTP Adapters"

11.10.3.1 LIST Command Supported by FTP Adapter

In order for FTP Adapter to sort files by their time stamps, the support for `LIST` command has been added.

You can configure the FTP Adapter to use the `LIST` command for listing by setting the `UseNlst` property to `false` (`UseNlst="false"`) in the inbound WSDL. If this property is set, then the adapter uses `LIST` as opposed to `NLST`.

11.10.3.2 Sorting in Oracle File and FTP Adapters

You can configure the inbound Oracle File or FTP Adapter to sort files in a particular order. For example, you can configure the sorting parameters for Oracle File and FTP Adapters to process files in ascending or descending order by time stamps.

You must meet the following prerequisites for sorting scenarios of Oracle File and FTP Adapters:

1. Use a synchronous operation.

2. If you are using FTP Adapter, then set the `UseNlst="false"` property in the inbound WSDL.
3. Add the following property to the inbound WSDL:
 - To sort the file names by their modified time stamps in ascending order, you must use:

```
Sorter="oracle.tip.adapter.file.sorter.TimestampSorterAscending
```
 - To sort the file names by their modified time stamps in descending order, you must use:

```
Sorter="oracle.tip.adapter.file.sorter.TimestampSorterDescending
```
4. On the 10.1.3.5 installation, in `$ORACLE_HOME/bpel/system/services/config/pc.properties`, you must set the following parameter:

```
oracle.tip.adapter.file.numProcessorThreads=1
```
5. Restart the server.

11.11 Documentation Errata

This section describes documentation errata. It includes the following topic:

- Section 11.11.1, "Incorrect Help for Logical Delete"

11.11.1 Incorrect Help for Logical Delete

In the Database Adapter, help for the `Unread Value` field in the Adapter Configuration Wizard - Logical Delete page is incorrect.

The correct help for the `Unread Value` field must read as follows:

(Optional) Enter an explicit value to indicate that the row must be read.

Oracle Containers for J2EE

This chapter describes issues and new features associated with Oracle Containers for J2EE. It includes the following topics:

- Section 12.1, "Accessing WebLogic Server Resources"
- Section 12.2, "JMS Interoperability with WLS"
- Section 12.3, "Deploying Custom Login Modules With Multiple JVMs"
- Section 12.4, "Applications Share HTTP Client Static Memory"
- Section 12.5, "Exception When Using the In-Database Coordinator"
- Section 12.6, "JAZNMigration Tool Does Not Migrate ADFPrincipal Type Correctly"
- Section 12.7, "Configuration Issues When Using an External LDAP Provider"
- Section 12.8, "For AIX and Linux on POWER: Process Does Not Start With JDK 1.4.2"
- Section 12.9, "For HP-UX and Solaris Operating System (x86) Only: OC4J Process Does Not Start With JDK 1.4.2 or JDK 1.6"
- Section 12.10, "For HP-UX PA-RISC (64-Bit): Attempts to Run JAZN Migration Tool with JDK 1.6 Fails"
- Section 12.11, "New Features"
- Section 12.12, "Documentation Errata"

12.1 Accessing WebLogic Server Resources

OC4J server clients or remote clients can connect to a WebLogic server in order to access resources such as EJBs. These types of scenarios require the `wlthint3client.jar` library. The JAR is available for download from <https://metalink.oracle.com> (My Oracle Support). The JAR must be included on the classpath of your client. For detailed instructions on how to access WebLogic server resources, see "Accessing WebLogic Server Resources" in the *Oracle Containers for J2EE Services Guide*.

12.2 JMS Interoperability with WLS

Performance and/or classpath issues may arise when OC4J server clients use the `ContextScanningResourceProvider` resource provider to access WebLogic server JMS destinations. To work around this issue, use the `resource.names` property to explicitly set a comma-separated list (without spaces) of JNDI names for the JMS

resources that are required from the external server. If the property is not set, the `ContextScanningResourceProvider` resource provider's default behavior is to scan the entire JNDI tree of a given external server in order to detect all Java EE resources that can be mapped into an OC4J instance.

The following example demonstrates setting the `resource.names` property in the `orion-application.xml` file. The `resource.names` property is set to `TopicOne, QueueOne, TopicTwo`. This value represents a list of JNDI names for JMS destinations that the `ContextScanningResourceProvider` resource provider attempts to lookup from the external WebLogic server.

Note: Spaces between JNDI names result in a null pointer exception.

```
<resource-provider
  class="com.evermind.server.deployment.ContextScanningResourceProvider"
  name="WebLogicRP">
  <property name="java.naming.factory.initial"
    value="weblogic.jndi.WLInitialContextFactory"/>
  <property name="java.naming.provider.url" value="t3://localhost:7001/" />
  <property name="java.naming.security.principal" value="user_name"/>
  <property name="java.naming.security.credentials" value="user_password"/>
  ...

  <!-- configure the set of known JMS destinations that are required for
  this application -->

  <property name="resource.names" value="TopicOne,QueueOne,TopicTwo" />
  ...
</resource-provider>
```

For more information on using the `ContextScanningResourceProvider` resource provider to access third-party JMS destinations, see the *Oracle Containers for J2EE Services Guide*.

12.3 Deploying Custom Login Modules With Multiple JVMs

When deploying a custom login module and multiple JVMs are configured, the login module is only configured and recognized for one of the JVMs during deployment. This results in an authentication error for any requests that are routed to the other JVMs.

To workaroud this issue, restart the OC4J instance after deployment in order for the JVMs to pick up the correct configuration.

12.4 Applications Share HTTP Client Static Memory

The HTTP Client library is loaded by the OC4J system class loader and is therefore inherited by all applications deployed in the OC4J instance. As a result, the HTTP Client's static memory is shared across all applications. An application that modifies default values that are stored in the HTTP Client's static memory may affect other applications that also rely on the HTTP Client library.

The work around for this issue is to have each application import a local copy of the HTTP Client library. The HTTP Client's static memory is then private to the application and cannot be modified by another application.

The following example demonstrates how to configure an application to import a local copy of the HTTP Client library and not inherit the HTTP Client library loaded by the OC4J system class loader. The change must be made in an application's `orion-application.xml` file.

```
<orion-application>
  ...
  <imported-shared-libraries>
    <remove-inherited name="oracle.http.client">
  </imported-shared-libraries>
  ...
  <library path="ORACLE_HOME/j2ee/home/lib/http_client.jar"/>
  ...
</orion-application>
```

12.5 Exception When Using the In-Database Coordinator

A null pointer exception occurs when a resource is enlisted in a transaction and the transaction manager is configured to use the in-database coordinator.

Note: The use of the in-database two-phase commit coordinator by OC4J is deprecated. Oracle recommends that the middle tier coordinator be used going forward.

12.6 JAZNMigration Tool Does Not Migrate ADFPrincipal Type Correctly

Be aware of the following issue when you use the OracleAS JAAS Provider migration tool to migrate policies from the file-based provider to the Oracle Identity Management (essentially, Oracle Internet Directory) security provider, either in `policy` mode or `all` mode: The migration tool prepends the Oracle Internet Directory realm name to custom or nonrealm principal names in grantee entries in the policy configuration. (A custom principal may come into play when authenticating through a custom login module, for example.)

In the migrated configuration, a custom principal name in a grantee entry becomes, for example, `us/anyone` instead of just `anyone`, assuming `us` is the realm name. This results in permission issues. For ADF applications, for example, this results in public pages not working after migration to Oracle Internet Directory as the security provider.

The following workarounds are available for this issue:

- Manually remove the `us/` prefix from the LDIF file that the migration tool creates, prior to importing it into Oracle Internet Directory.
- Manually remove the `us/` prefix from relevant grantee entries after the migration, using Oracle Internet Directory administration tools.

12.7 Configuration Issues When Using an External LDAP Provider

If you plan to use an external LDAP provider for an application, it is recommended that you use a middle tier installation that is configured with the default XML security provider.

If you have a middle tier installation that is associated with an infrastructure installation (such as OID) and you want to use an external LDAP provider, you need

to manually edit the `jazn.xml` file. Change the provider and location attributes of the `<jazn>` element as follows:

```
<jazn provider="XML" location="./system-jazn-data.xml" ... >
```

12.8 For AIX and Linux on POWER: Process Does Not Start With JDK 1.4.2

When you replace JDK 1.5 with JDK 1.4.2, OC4J does not start and the OPMN log (`ORACLE_HOME/opmn/logs//default_group~home~default_group~1.log`) gives an error similar to the following:

```
-----
Start process
-----
***** WARNING *****
You are currently running with data limits not set to unlimited.
You may experience out of memory(OOM) conditions.
In the event of an OOM error, please increase the data limit value.
You may use "ulimit -d unlimited" to set data limit as unlimited.
*****

[ Unrecognized option:
-Xjit:exclude={oracle/sysman/emSDK/em1/util/iAS/IASLogConfig.getViewLogsURL(Ljav
ax/servlet/ServletContext;Ljavax/servlet/http/HttpServletRequest;Ljavax/servlet/
http/HttpServletResponse;)Ljava/lang/String;},
exclude={oracle/security/jazn/util/OHSH.update([B)V},
exclude={com/phaos/ASN1/ASN1Sequence.<init>(Ljava/io/InputStream;)V},
exclude={com/phaos/crypto/DES.1([B[IZ)V] }
[ JVMCI123: Unable to parse 1.2 format supplied options - rc=-6 ]
Could not create JVM.
```

Use the following workaround to ensure that OC4J starts with JDK 1.4.2:

1. Remove the following lines from `opmn.xml` (`$ORACLE_HOME/opmn/conf/opmn.xml`):

```
-Xjit:exclude={oracle/sysman/emSDK/em1/util/iAS/IASLogConfig.getViewLogsURL(
Ljavax/servlet/ServletContext;Ljavax/servlet/http/HttpServletRequest;Ljavax/s
ervlet/http/HttpServletResponse;)Ljava/lang/String;},
exclude={oracle/security/jazn/util/OHSH.update([B)V},
exclude={com/phaos/ASN1/ASN1Sequence.&lt;init>(Ljava/io/InputStream;)V},
exclude={com/phaos/crypto/DES.1([B[IZ)V}
```

2. Start the OC4J instance by using the following command:

```
opmnctl startall
```

12.9 For HP-UX and Solaris Operating System (x86) Only: OC4J Process Does Not Start With JDK 1.4.2 or JDK 1.6

When you replace JDK 1.5 with JDK 1.4.2 or JDK 1.6, OC4J does not start and the OPMN log (`ORACLE_HOME/opmn/logs//default_group~home~default_group~1.log`) gives an error similar to the following:

```
-----
Start process
```

```
-----
Unrecognized VM option 'AppendRatio=3'
Could not create the Java virtual machine.
```

Use the following workaround to ensure that OC4J starts:

1. Shut down the OC4J instance by using the following command:

```
opmnctl stopall
```

2. Remove the following lines from `opmn.xml` (`$ORACLE_HOME/opmn/conf/opmn.xml`):

```
AppendRatio=3
```

3. Start the OC4J instance by using the following command:

```
opmnctl startall
```

12.10 For HP-UX PA-RISC (64-Bit): Attempts to Run JAZN Migration Tool with JDK 1.6 Fails

While using JDK 1.6 with Oracle Application Server 10g Release (10.1.3.5), JAZN Migration Tool fails.

Before running JAZN Migration Tool on JDK 1.6, you must set the environment variable, `SHLIB_PATH`, by using the following command:

```
export SHLIB_PATH=$ORACLE_HOME/jdk/jre/lib/PA_RISC2.0/jli
```

12.11 New Features

This section describes the new features for Oracle Containers for J2EE. This section includes the following topics:

- Section 12.11.1, "Peek OC4J Runtime Inspector Utility"
- Section 12.11.2, "New Administration Commands"
- Section 12.11.3, "Exploded-Directory Deployment"
- Section 12.11.4, "MBean Support For the oracle.j2ee.jms Implementation"
- Section 12.11.5, "Documentation Updates"

12.11.1 Peek OC4J Runtime Inspector Utility

Peek OC4J Runtime Inspector (Peek) enables you to search shared libraries and code sources, view the OC4J class-loader tree, and execute predefined queries to examine various aspects of the OC4J Runtime. Peek is part of the `default` Web application of an OC4J instance and is accessible through the following URIs:

- OC4J Standalone (`oc4j_extended.zip`):

```
http://localhost:8888/peek/
```

- Oracle Application Server

```
http://localhost:instance_port/j2ee/peek
```

To logon to Peek, use the `oc4jadmin` username and the password that was set during the first initialization of OC4J. For additional documentation about Peek, see the *Oracle Containers for J2EE Developer's Guide*.

12.11.2 New Administration Commands

New administrative commands are available with the command line tool (`admin_client.jar`) and are also available as Ant tasks. The new commands include:

- `listApplications`: displays the status of applications that are currently deployed in an OC4J instance or in a group of OC4J instances that are part of a cluster.
- `listWebBindings`: displays the Web site bindings for each Web module in an OC4J instance or in a group of OC4J instances that are part of a cluster.
- `unbindAllWebApps` and `unbindWebApp`: removes Web module bindings from a Web site in an OC4J instance or in a group of OC4J instances that are part of a cluster.
- `redeploy`: redeploys a previously deployed archive. The command also includes failed deployment recovery as well as the option to use the deployment plan from the previous deployment.
- Application-level shared library commands: `publishSharedLibrary`, `modifySharedLibrary`, `describeSharedLibrary`, `listSharedLibraries`, `removeSharedLibrary`, `addImportSharedLibrary`, `deleteImportSharedLibrary`, `addRemoveInheritedSharedLibrary`, `deleteRemoveInheritedSharedLibrary`
- `restartApp`: stops and then starts an application and its child applications on target OC4J instances.
- `listDataSources` and `listDataSourceConnectionPools`: lists data sources and data source connection pools that are configured for an application.

For more information, see the *Oracle Containers for J2EE Configuration and Administration Guide*.

12.11.3 Exploded-Directory Deployment

The `deploy` administrative command and Ant task supports the deployment of a J2EE application that is in the standard enterprise application directory structure. A J2EE application's modules can be packaged or left in their directory structure as well. For more information, see the *Oracle Containers for J2EE Deployment Guide*.

12.11.4 MBean Support For the `oracle.j2ee.jms` Implementation

The `oracle.j2ee.jms` provider includes MBean support for configuring and interacting with the provider. The MBeans include the `JmsConfigResource` MBean and the `JmsOperationsResource` MBean. For complete documentation on the `oracle.j2ee.jms` implementation, see the *Oracle Containers for J2EE Services Guide*.

12.11.5 Documentation Updates

In addition to documenting new features, the documentation was updated to include the following items:

- Instructions were added for using the System MBean Browser, the Cluster MBean Browser, and client code to access OC4J MBeans. In addition, examples were created to demonstrate all three areas.

For more information, see the *Oracle Containers for J2EE Developer's Guide*.

- Instructions were added for using the oracle.j2ee.jms implementation. For more information, see the *Oracle Containers for J2EE Services Guide*.
- Descriptions were added that explain what happens during server startup and shutdown. For more information, see the *Oracle Containers for J2EE Configuration and Administration Guide*.
- Instructions were added for using JNDI/RMI to access WebLogic server resources from OC4J server clients and remote clients. For more information, see the *Oracle Containers for J2EE Services Guide*.
- Instructions were added for configuring a TCPS data source. For more information, see the *Oracle Containers for J2EE Services Guide*.
- Example data source configurations were added for more third-party vendors. For more information, see the *Oracle Containers for J2EE Services Guide*.

12.12 Documentation Errata

The following errors appear in the OC4J Documentation:

- Wrong WebLogic Server Interoperability JAR Name

12.12.1 Wrong WebLogic Server Interoperability JAR Name

The "Accessing WebLogic Server Resources" section in the *Oracle Containers for J2EE Services Guide* refers to the WebLogic server interoperability JAR using an incorrect JAR name. The correct name of the WebLogic server interoperability JAR that is available for download from <https://metalink.oracle.com> (My Oracle Support) is called `wlthint3client.jar`.

Oracle Business Rules

This chapter describes issues associated with Oracle Business Rules. It includes the following topics:

- Section 13.1, "Oracle Rules SDK StoreException Thrown: Error Accessing File"
- Section 13.2, "MultipleInheritance Exceptions with Imported XML Schemas"
- Section 13.3, "Using Safari Browser with Rule Author"
- Section 13.4, "Accessing Rule Author Help Gives an Error 404-Not Found"
- Section 13.5, "New Features"

13.1 Oracle Rules SDK StoreException Thrown: Error Accessing File

This is a known issue: If a file-based repository cannot be accessed by the OC4J user, a StoreException is thrown when attempting to connect in Rule Author. For example,

```
oracle.rules.sdk.store.StoreException: Error accessing file
'/scratch/how-to-rules-java/dict/CarRepository'. at
oracle.rules.sdk.store.RepositoryConnectionFactory.getRepositoryConnection(Rep
ositoryConnectionFactory.java:129) at
oracle.rules.sdk.repository.impl.RuleRepositoryImpl.init(RuleRepositoryImpl.java:6
5) at
java.util.zip.ZipException: error in opening zip file at
java.util.zip.ZipFile.open(Native Method) at
java.util.zip.ZipFile.<init>(ZipFile.java:114) at
java.util.jar.JarFile.<init>(JarFile.java:133) at
java.util.jar.JarFile.<init>(JarFile.java:70)
```

You can work around this issue by modifying file permissions such that the OC4J user can both read and write the file.

13.2 MultipleInheritance Exceptions with Imported XML Schemas

By default when an XML Schema is imported into the data model, the fact type created from the ObjectFactory has the property "Supports XPath" set to **false**. This prevents a MultipleInheritanceException from being thrown should the ObjectFactory class be "fact classed" in the generated RL before the classes referenced in it are "fact classed".

When multiple XML Schemas are imported into the datamodel, only the first instance of ObjectFactory will have the property "Supports XPath" set to **false**. Additional instances of fact types named ObjectFactory in other packages must have this value set explicitly by the user to prevent MultipleInheritanceExceptions.

13.3 Using Safari Browser with Rule Author

The Safari web browser has a pop-up blocker enabled by default. If the pop-up blocker is left enabled, Rule Author cannot display the window for creating a new rule action. When you disable the pop-up blocker, Rule Author works correctly.

Thus, when using Safari browser with Rule Author, the default pop-up blocker must be disabled for Rule Author to work correctly.

13.4 Accessing Rule Author Help Gives an Error 404-Not Found

Accessing the Rule Author Help at the following address can give an error:

`http://<hostname>:<port>/ruleauthor/help`

Error 404--Not Found
From RFC 2068 Hypertext Transfer Protocol -- HTTP/1.1:10.4.5 404 Not Found

The workaround for this issue is to access the help from the following link:

`http://<host>:<port>/ruleauthor/help/help/state?navSetId=_&navId=0`

13.5 New Features

This section describes the 10.1.3.4 new features for Oracle Business Rules Rule Author.

The following are changes to the functionality of Oracle Business Rules after applying the patch:

- Section 13.5.1, "Variable Summary Page with Updated Value Field"
- Section 13.5.2, "Definitions Tab with Schema File Browser Button Added"
- Section 13.5.3, "Supports XPATH Set to FALSE by Default for XML Schema Imported with JAXB"
- Section 13.5.4, "Support for Inline Editing for Variable Values"

13.5.1 Variable Summary Page with Updated Value Field

Rule Author has been updated so that on the Variable Summary page you can use the Value field to edit the value of a variable.

13.5.2 Definitions Tab with Schema File Browser Button Added

Oracle Business Rules Rule Author has a file browser button that allows you to browse for a schema .xsd file to import XML fact types. From the Definitions tab, you can now import XML schema by either entering the path name for the schema, or by using the browser to select the schema file.

13.5.3 Supports XPATH Set to FALSE by Default for XML Schema Imported with JAXB

The default for "supports xpath" is set to false for ObjectFactory and the JAXB classes generated for elements of JAXB generated classes when a schema is imported.

13.5.4 Support for Inline Editing for Variable Values

In the 10.1.3.4 release of Oracle Business Rules Rule Author, the Variable Summary page supports inline editing for variable values, as shown in Figure 13–1.

Figure 13–1 Variable Summary Page with Editable Value

Variable Summary

Delete | Update | Create

Select All | Select None

Select	Name	Alias	Type	Value	Edit
<input type="checkbox"/>	DM.standardisationExaminers	standardisationExaminers	long	33626	
<input type="checkbox"/>	DM.financeDept	financeDept	String	"Finance"	
<input type="checkbox"/>	DM.subjectAdminDept	subjectAdminDept	String	"Subj Admin"	
<input type="checkbox"/>	DM.processingDept	processingDept	String	"Processing"	
<input type="checkbox"/>	DM.authorisedMsg	authorisedMsg	String	"Authorised"	
<input type="checkbox"/>	DM.standardisationModerators	standardisationModerators	long	33621	
<input type="checkbox"/>	DM.Senior	Senior	String	"Seniora"	

Oracle WebCenter Suite

This chapter describes issues associated with Oracle WebCenter Suite. It includes the following topics:

- Section 14.1, "Rerunning a Page that Uses Oracle WebCenter Adapter for EMC Documentum"
- Section 14.2, "Running the Predeployment Tool from a Root Directory"
- Section 14.3, "Upgrading a Custom OC4J"
- Section 14.4, "New Features"

14.1 Rerunning a Page that Uses Oracle WebCenter Adapter for EMC Documentum

Without stopping the embedded OC4J, if you rerun a page that uses the Oracle WebCenter adapter for EMC Documentum, then the **JBO-29000: Unexpected exception caught: java.lang.UnsatisfiedLinkError, msg=Native Library exception** occurs.

This is a known issue.

As a workaround, stop the embedded OC4J before rerunning such a page within Oracle JDeveloper.

14.2 Running the Predeployment Tool from a Root Directory

On Windows, the predeployment might fail with the following error:

```
Processing connections.xml
javax.naming.NamingException [Root exception is
oracle.adf.share.security.CredentialNotFoundException: Unable to locate the
credential for key ...
```

This is a known issue.

As a workaround, ensure that when you run the predeployment tool your current directory is not a root directory, such as C:\ or D:\. Invoke the predeployment tool from a non-root directory, such as C:\TEMP, and rerun the predeployment tool.

14.3 Upgrading a Custom OC4J

Documents are missing `oracle.ws.jaxrpc` in custom OC4J implementations.

This is a known issue.

As a workaround, after the `adfinstaller` has been run, edit the `server.xml` file of the custom OC4J and add the following line in the `adf.oracle.domain` definition.

```
<import-shared-library name="oracle.ws.jaxrpc"/> to adf.oracle.domain
```

14.4 New Features

This section describes the 10.1.3.4 new features documented in the *Oracle WebCenter Framework Developer's Guide*. This section includes the following topics:

- Section 14.4.1, "Oracle Content Server-Based Data Control"
- Section 14.4.2, "Discussion Forums"

14.4.1 Oracle Content Server-Based Data Control

Oracle WebCenter Framework now lets you integrate content from the Oracle Content Server repository. For information, see Section 5.2.6, "Configuring a Content Data Control Based on Oracle Content Server".

14.4.2 Discussion Forums

The "Integrating Oracle WebCenter Discussions" chapter has been rewritten, in particular, section 7.2.2, "How to Configure SSO with Your Oracle WebCenter Discussions Application and Portlet".

Oracle Content DB Issues

This chapter describes issues associated with Oracle Content DB. It includes the following topics:

- Section 15.1, "Oracle Content DB Web Folders not Supported (Vista and Windows 2008)"

15.1 Oracle Content DB Web Folders not Supported (Vista and Windows 2008)

The Web Folders feature in Oracle Content DB is not supported on Microsoft Vista and Windows 2008 systems.

