Oracle® Waveset 8.1.1 Release Notes

ORACLE®

100730@24661

Contents

1

Preface

These Release Notes contain important information that describes the new features and enhancements provided in Oracle Waveset 8.1.1 (Waveset). Read this document before you begin using Oracle Waveset 8.1.1.

Oracle Waveset was formerly known as Sun Identity Manager. This release of Oracle Waveset follows Oracle's acquisition of Sun Microsystems. Some parts of the product and documentation may still refer to the original Sun Identity Manager product name.

Related Books

The Oracle Waveset 8.1.1 documentation set includes the following books.

Primary Audience	Title	Description
All Audiences	*Oracle Waveset 8.1.1 Overview*	Provides an overview of Oracle Waveset features and functionality and provides product architecture information.
	Oracle Waveset 8.1.1 Release Notes	Describes known issues, fixed issues, and late-breaking information not already provided in the Oracle Waveset documentation set.

Primary Audience	Title	Description
System Administrators	*Oracle Waveset Installation*	Describes how to install Oracle Waveset and optional components such as the Oracle Waveset Gateway and PasswordSync.
	Oracle Waveset 8.1.1 Upgrade	Provides instructions on how to upgrade from an older version of Sun Identity Manager to Oracle Waveset.
	Oracle Waveset 8.1.1 System Administrator's Guide	Contains information and instructions to help system administrators manage, tune, and troubleshoot their Oracle Waveset installation.
Business Administrators	*Oracle Waveset 8.1.1 Business Administrator's Guide*	Describes how to use Oracle Waveset provisioning and auditing features. Contains information about the user interfaces, user and account management, reporting, and more.
System Integrators	*Oracle Waveset 8.1.1 Deployment Guide*	Describes how to deploy Oracle Waveset in complex IT environments. Topics covered include working with identity attributes, data loading and synchronization, configuring user actions, applying custom branding, and so on.
	Oracle Waveset 8.1.1 Deployment Reference	Contains information about workflows, forms, views, and rules, as well as the XPRESS language.
	Oracle Waveset 8.1.1 Resources Reference	Provides information about installing, configuring, and using resource adapters.
	Oracle Waveset Service Provider 8.1.1 Deployment	Describes how to deploy Oracle Waveset Service Provider, and how views, forms, and resources differ from the standard Oracle Waveset product.
	Oracle Waveset 8.1.1 Web Services	Describes how to configure SPML support, which SPML features are supported (and why), and how to extend support in the field.

Documentation Updates

Corrections and updates to this and other Oracle Waveset and Sun Identity Manager publications are posted to a documentation updates website:

http://blogs.sun.com/idmdocupdates/

An RSS feed reader can be used to periodically check the website and notify you when updates are available. To subscribe, download a feed reader and click a link under Feeds on the right side of the page. Starting with version 8.0, separate feeds are available for each major release.

Related Third-Party Web Site References

Third-party URLs are referenced in this document and provide additional, related information.

Note – Oracle is not responsible for the availability of third-party web sites mentioned in this document. Oracle does not endorse and is not responsible or liable for any content, advertising, products, or other materials that are available on or through such sites or resources. Oracle will not be responsible or liable for any actual or alleged damage or loss caused or alleged to be caused by or in connection with use of or reliance on any such content, goods, or services that are available on or through such sites or resources.

Documentation, Support, and Training

See the following web sites for additional resources:

- Documentation (http://docs.sun.com)
- Support (http://www.oracle.com/us/support/systems/index.html)
- Training (http://education.oracle.com) – Click the Sun link in the left navigation bar.

Oracle Welcomes Your Comments

Oracle welcomes your comments and suggestions on the quality and usefulness of its documentation. If you find any errors or have any other suggestions for improvement, go to http://docs.sun.com and click Feedback. Indicate the title and part number of the documentation along with the chapter, section, and page number, if available. Please let us know if you want a reply.

Oracle Technology Network (`http://www.oracle.com/technetwork/index.html`) offers a range of resources related to Oracle software:

- Discuss technical problems and solutions on the Discussion Forums (`http://forums.oracle.com`).
- Get hands-on step-by-step tutorials with Oracle By Example (`http://www.oracle.com/technology/obe/start/index.html`).
- Download Sample Code (`http://www.oracle.com/technology/sample_code/index.html`).

2

Introduction

This section of the *Oracle Waveset 8.1.1 Release Notes* is organized as follows:

- "Announcements" on page 11
- "Supported Software and Environments" on page 11
- "Software Support and Software Deprecation Policies" on page 26
- "Redistributable Files" on page 27
- "Documentation Policy" on page 28
- "Oracle Waveset Patch Process" on page 28
- "How to Report Problems and Provide Feedback" on page 29

Announcements

- For information about Sun Identity Manager and Oracle Waveset upgrade paths, see "Oracle Waveset Upgrade Paths" on page 59.

- The end-of-life for Sun Java System Identity Manager 7.0, 7.1, and 7.1.1 was May 15, 2010. The last ship date was May 15, 2009.

  For more information, see "End of Service Life for Software Support" on page 26.

Supported Software and Environments

This section lists software and environments that are compatible with the Oracle Waveset software:

- "Operating Systems" on page 12
- "Java Support" on page 12
- "System Virtualization Support" on page 13
- "Application Servers" on page 13
- "Repository Database Servers" on page 14
- "Oracle Waveset Gateway" on page 16

Note – Because software product developers frequently ship new versions, updates, and fixes to their software, the information published here changes often. Review the release notes for updates before proceeding with installation.

Operating Systems

This release of Oracle Waveset runs on the following operating systems:

- AIX 5.2, 5L v5.3, 6.1

- HP-UX 11i v1, 11i v2, 11i v3 with Itanium support

- Microsoft Windows 2000 SP3, 2000 SP4

- Microsoft Windows Server 2003, 2008, 2008 R2

  Note – If you are running a 64–bit version of Windows 2008, you must use JDK Version 6 Update 12 and later.

- OpenSolaris 2008.5, 2008.11, 2009.6, 2010.02

- Oracle Enterprise Linux 4, 5 (32–bit)

- Solaris 9, 10 SPARC and x86

- Red Hat Linux Advanced Server 2.1

- Red Hat Linux Enterprise Server 3.x, 4.x, 5

- Novell SuSE Linux Enterprise Server 9 SP1, 10, 11 (32/64 bit)

Java Support

Oracle Waveset requires Java Platform, Standard Edition (SE) 5 or higher.

System Virtualization Support

System virtualization is a technology that enables multiple operating system (OS) instances to execute independently on shared hardware. Functionally, software deployed to an OS hosted in a virtualized environment is generally unaware that the underlying platform has been virtualized. Oracle performs testing of its Sun Java System products on select system virtualization and OS combinations to help validate that the Sun Java System products continue to function on properly sized and configured virtualized environments as they do on non-virtualized systems. For information about Oracle support for Sun products in virtualized environments, see "System Virtualization Support in Sun Java System Products."

Caution – Do not host the Oracle Waveset repository on a virtual system because performance (transactions per second) will be hindered significantly.

Application Servers

The application server you use with Oracle Waveset must be Servlet 2.2-compliant and installed with the included Java platform (unless noted as follows). Oracle Waveset requires Java SE Development Kit (JDK) 5 or 6 on the following application servers, if the application server supports these versions.

- Apache Tomcat 5.5.x, 6.0.x
- BEA WebLogic Server 9.1, 9.2, 10, 10.3
- BEA Weblogic Server Clusters 10
- IBM WebSphere 6.1, 7
- JBoss Application Server 4.2, 5.1
- Oracle Application Server Enterprise Edition 10g Release 3 (10.1.3)
- Oracle Application Server Standard Edition 10g Release 3 (10.1.3)
- Sun Java System Application Server 9.1 (GlassFish v2 UR1, v2 UR2, v2.1 32-bit and 64-bit, v3 32-bit and 64-bit)
- Sun Java System Application Server Platform Edition 8.1, 8.2, 9.0, 9.1
- Sun Java System Application Server Enterprise Edition 8.1, 8.2
- Sun Java System Application Server Standard Edition 8.2

Note –

- If your current application server does not support JDK 5, please check with your vendor to examine the implications of upgrading to one that does before installing Oracle Waveset.

- Oracle Waveset requires a JDK that correctly handles the 2007 adjustments to U.S. Daylight Savings Time (DST). You must install any relevant DST patches for the JDK version you are using. For Sun JDK 5, Update 15 contains the necessary DST fixes. All versions of Sun JDK 6 contain the necessary DST fixes.

- You can run Oracle Waveset on BEA WebLogic application servers with all WebLogic-supported 5 JDKs.

Repository Database Servers

Oracle Waveset supports the following repository database servers:

- IBM DB2 Universal Database for Linux, UNIX, and Windows (Version 8.1, 8.2, 9.1, 9.5 using a type 4 driver)

Note – IBM DB2 9.0 is no longer available for download.

- Microsoft SQL Server 2005, 2008
- MySQL Enterprise Server 5.0.60 SP1, 5.1.30

Note –

- If you use MySQL Enterprise Server 5.1.30 as your Oracle Waveset repository, you might need to change to your `my.cnf` file. Due to recent changes in MySQL's InnoDB code, the default binary logging format is now `STATEMENT`. Oracle Waveset uses a `READ-COMMITTED` transaction isolation level, so binary logging in `STATEMENT` mode produces an error similar to the following: (ID-20460).

  ```
  com.waveset.util.IOException:
  java.sql.SQLException: Binary logging not possible. Message: Transaction level
  'READ-COMMITTED' in InnoDB is not safe for binlog mode 'STATEMENT'
  ```

  If you enable binary logging, set the mode to `MIXED` by adding the following line to your `my.cnf` file:

  ```
  binlog_format=mixed
  ```

  With this configuration change, you can use 5.1.30 as your repository without the binary logging exception. For more details, see MySQL bug #40360.

- Oracle Waveset supports MySQL Enterprise Server 5.0.60 SP1 and 5.1.30 as a repository database in both development and production deployments. All other MySQL versions are only supported in a development deployment.

- Oracle Waveset only supports SQL Server 2008 using SQL Server 2005 JDBC (version 1.2 and 2.0) drivers. SQL Server 2008 *does not* work with SQL Server 2000 drivers.

- Microsoft JDBC Version 1.2 drivers have Java assertions in the methods that connect to different database servers. These drivers assert Java when connecting to SQL Server 2000 if you enable Java assertions in the `com.microsoft.sqlserver.jdbc` package.

- Oracle Database 9i, 10g Release 1, 10g Release 2 11g Release 1, and 11g Release 2

Note – Oracle RAC (Real Application Cluster) is supported in a two-node active-passive configuration. That is, a configuration where the `active_instance_count` parameter is set to 1. Used in conjunction with connection failover for the JDBC driver, this configuration provides failover capability for the repository. (Refer to the Oracle documentation for instructions about how to configure this database server in your environment)

Oracle RAC is not currently supported in any other configuration.

⚠️ **Caution** – If you are using an Oracle repository, the Oracle Waveset 8.0 repository DDL uses data types that are not properly handled by older Oracle JDBC drivers. The JDBC drivers in `ojdbc14.jar` do not properly read all of the columns in the log table.

You must upgrade to the Oracle JDBC drivers for JDK 5 drivers for Oracle Waveset to work properly.

Oracle Waveset Gateway

If you plan to set up Windows Active Directory, Novell NetWare, Remedy, Lotus Notes (Domino) or RSA ACE/Server resources, you must install the Oracle Waveset Gateway.

Supported Resources

Oracle Waveset software supports these resources:

Customer Relationship Management (CRM)

- Siebel version 7.0.4, 7.7, 7.8, 8.0 CRM software

Databases

- Generic database table
- IBM DB2 Universal Database for Linux, UNIX, and Windows 8.1, 8.2, 9.1 using a type 4 driver, 9.5 using a type 4 driver

Note – IBM DB2 9.0 is no longer available for download.

- Microsoft Identity Integration Server (MIIS) 2003

- Microsoft SQL Server 2000, 2005, 2008

Note –

- Oracle Waveset only supports SQL Server 2008 using SQL Server 2005 JDBC drivers. SQL Server 2008 *does not* work with SQL Server 2000 drivers.

- Microsoft JDBC Version 1.2 drivers have Java assertions in the methods that connect to different database servers. These drivers assert Java when connecting to SQL Server 2000 if you enable Java assertions in the `com.microsoft.sqlserver.jdbc` package.

- MySQL 4.x, 5.0, 5.1

Note – Oracle Waveset supports MySQL as a development and production database.

- Oracle Database 9i, 10g Release 1, 10g Release 2, 11g Release 1, 11g Release 2
- Sybase Adaptive Server 12.*x*
- Scripted JDBC (manages resources using JDBC 3.0 drivers or later)

Directories

- LDAP v3
- RACF LDAP
- Microsoft Active Directory 2000, 2003, 2008, 2008R2
- Microsoft Active Directory Application Mode (ADAM) Windows 2003 SP1 and later
- Novell eDirectory 8.7.1, 8.8
- Novell NetWare 6.5
- Open LDAP
- Sun ONE Directory Server 4.*x*
- Sun Java System Directory Server 5 (2004Q2, 2005Q1), 6.3, 7

Note –

- While Oracle Waveset is tested on Open LDAP and Sun Java System Directory Server, LDAP servers that are v3-compliant may work without any changes to the resource adapter.

- Sun Java System Directory Server 5 2005Q1 requires a patch to the Directory Server retro changelog plugin if you are using Active Sync. This patch is required for "regular" replication only (not for MMR replication).

Enterprise Resource Planning (ERP)

- MySAP ERP 2005 (ECC 6.0) Kernel version 7.00
- Oracle E-Business Suite on Oracle Applications 11.5.9, 11.5.10, 12
- Peoplesoft PeopleTools 8.1 through 8.4.2
- Peoplesoft PeopleTools HRMS 8.0 through 8.8, 9.0
- SAP R/3 Enterprise 4.7 (SAP BASIS 6.20)
- SAP NetWeaver Enterprise Portal 2004 (SAP BASIS 6.40), 2004s (SAP BASIS 7.00)
- SAP Governance, Risk, and Compliance (GRC) Access Enforcer 5.1, 5.2, 5.3

Help Desk

- BMC Remedy Action Request System Server 6.0, 6.3, 7.0
- BMC Remedy Service Desk Application 7.0
- Remedy Help Desk 6.0
- Entrust Authority Security Manager 7.1SP3

Note – Many substantial differences between Remedy Help Desk 6.0 and Service Desk 7.0 exist in terms of their sample data, defaults, and out-of-the-box configuration. For example, the name of the "ticket" schema in Help Desk 6.0 is *HPD:HelpDesk*, while in Service Desk 7.0 it has been changed to *HPD:Help Desk*. Developers should consult the Remedy product documentation for details when upgrading.

Message Platforms

- Sun Java System Messaging and Calender Service Java Enterprise System 2005Q1 and later

- Lotus Notes (Domino) 6.5, 7.0, 8.0, 8.5

- Microsoft Exchange 2000, 2003, 2007

Note –

- Microsoft Exchange 2000, 2003, and 2007 are managed through the Active Directory resource adapter.

- Microsoft Exchange 2007 is supported on Windows 2003 only.

- Novell GroupWise 7.0 (using the Novell NDS adapter)

Miscellaneous

- Flat files
- JMS Message Queue Listener (manages any JMS 1.0b or later compliant queue)
- Generic UNIX Shell Script

Note – The Generic UNIX Shell Script adapter runs scripts in supported shell types on supported UNIX operating systems.

- Generic Windows Script Adapter

Note – The Generic Windows Script adapter runs scripts in the `cmd` shell on supported Windows operating systems that host the Oracle Waveset Gateway.

- Microsoft Identity Integration Server (MIIS) 2003

Operating Systems

- HP OpenVMS 7.2, 8.3
- HP-UX 11.0, 11i v1, 11i v2
- IBM AIX 4.3.3, 5.2, 5L, 5.3, 6.0
- IBM OS/400 V4r3, V4r5, V5r1, V5r2, V5r3, V5r4
- Microsoft Windows 2000, 2003, 2008, 2008 Release 2
- Red Hat Linux 9.0
- Red Hat Linux Advanced Server 2.1
- Red Hat Linux Enterprise Server 3.x, 4.x, 5
- Sun Solaris 9, 10

Note – If you manage NIS accounts on Solaris, install patch 126632-01 on the resource to improve the performance of the logins command and the Solaris adapter.

- OpenSolaris 2008.5, 2008.11
- SuSE Enterprise 9, 10

Role Management System

- BridgeStream SmartRoles 2.7

Security Managers

- eTrust CA-ACF2 Security
- eTrust CA-Top Secret Security
- IBM RACF

- INISafe Nexess 1.1.5
- RSA ClearTrust 5.5.2, 5.5.3
- RSA SecurID 5.0, 6.0, 6.1.2, 7.1
- RSA SecurID for UNIX 5.1, 6.0, 6.1.2
- Scripted Host

Web Access Control

- IBM Tivoli Access Manager 4.*x*, 5.1, 6.0.0 FP09, 6.1

- Netegrity Siteminder 5.5, 6.0

- RSA ClearTrust, 5.5.2, 5.5.3

- Sun ONE Identity Server 6.1, 6.2

- Sun Java System Identity Server 2004Q2

- Sun Java System Access Manager 6 2005Q1, 7 2005Q4 (Realms supported as of 2005Q4), 7.1

- Sun OpenSSO Enterprise 8.0 using Sun Access Manager Realm resource adapter

Browsers

Oracle Waveset supports the following browsers:

- Microsoft Internet Explorer 6.*x*, 7.*x*, 8.0
- Safari 2.0 and later for Mac OS X 10.3.3 and later, 3.0.*x*
- Firefox 1.04, 1.05, 1.06, 1.5, 2.0.0.4, 3.0, 3.6
- Mozilla 1.78s

Deprecated Oracle Waveset Features

The following Sun Identity Manager and Oracle Waveset features are deprecated. Support for these features will continue until the next major release of Oracle Waveset. Please contact your Customer Care representative or Customer Support if you have questions.

- **Business Process Editor** (BPE) is deprecated, and will be removed in the next major release ofOracle Waveset. Please use the Identity Manager Integrated Development Environment(Identity Manager IDE) instead. (ID-17693)

- **MetaView** has been removed from new installations of Identity Manager and Oracle Waveset. Customers who are using MetaView in a pre-8.0 version of Identity Manager will be able to continue using it. Please contact your Customer Care representative or Customer Support if you have questions. (ID-17244)

- **Request Resource type** is deprecated, in favor of External Resources. You can no longer create new connections using the Request adapter. Use the External Resource adapter instead. For information about using the new External Resources feature, see "Understanding and Managing External Resources" in *Oracle Waveset 8.1.1 Business Administrator's Guide*. (ID-20080)

- **SAPResourceAdapter** built with JC0 2.1.8 was deprecated with the Identity Manager Version 8.1 release. SAP announced a new SAP Java Connector, (SAP JCo), API, JCo 3.0.

Note – See SAP note 1077727: SAP JCo 3.0 release and support strategy.
(Note date: 2008/11/18). Reason and Prerequisites: SAP JCo 3.0 is replacing SAP JCo 2.0 and SAP JCo 2.1 and is released for Java 5. Note that SAP JCo 3.0 is incompatible with former versions of SAP JCo. For details and migration instructions read the SAP JCo 3.0 documentation.

The JCo 3.0 adapter is incompatible with former versions of SAP JCo and requires a minimum JVM version of 1.5. JCo 2.1.8 is only supported for use with JVM 1.4.2, and SAP has not officially announced support for JCo 2.1.8/JVM 1.5. Due to this constraint, the default SAPResourceAdapter that was built using JCo 2.1.8, is deprecated with this Oracle Waveset Version 8.1.1 release.

A new default SAPResourceAdapter is planned for the Oracle Waveset Version 9.0 release. This new adapter will be built against SAP JCo 3.0 or higher and will adhere to Oracle Waveset's minimum JVM requirements, such as JVM 1.5. In addition, this new SAP JCo 3.0 adapter will be added to upcoming patch releases for both Identity Manager 8.0 and Identity Manager 8.1. Identity Manager 8.0 and Identity Manager 8.1 patches will continue to ship the default SAP JCo 2.1.8 adapter (SAPResourceAdapter).

Discontinued Software

The operating systems, application servers, database repositories and managed resources included in the following tables are deprecated in Oracle Waveset.

Next Major Oracle Waveset Release

Oracle Waveset will continue support of deprecated software in the following table until the next major Oracle Waveset release. Please contact your Customer Care representative or Customer Support if you have questions about moving to newer versions of these software packages.

TABLE 2–1 Deprecated Software and Environments

Software Category	Software Package
Operating Systems	■ Red Hat Linux Advanced Server 2.1, 3.0 ■ Red Hat Linux Enterprise Server ■ Solaris 8 ■ Windows 2000 SP3, 2000 SP4
Application Servers	■ JBoss Application Server 4.0.*x* ■ Sun Java System Application Server Platform Edition 8.0
Repository Database Servers	■ Oracle 9i
Resources	■ BridgeStream SmartRoles ■ HP OpenVMS 7.2 ■ IBM AIX 4.3.3 ■ IBM Tivoli Access Manager 4.x ■ INISafe Nexess ■ Microsoft Active Directory 2000 ■ Microsoft Exchange 2000 ■ Microsoft SQL Server 2000 ■ Microsoft Windows Server 2000 ■ MySQL 4.x ■ Lotus Notes 6.5 ■ Oracle 9i ■ Red Hat Linux Enterprise Server ■ SAP Governance, Risk and Compliance Access Enforcer 5.1 ■ SAPResourceAdapter built with SAP JCo 2.1.8 ■ SecurID 5.0, 5.1 ■ Siebel 7.0.4 ■ Solaris 8 ■ Sun Access Manager 6 (2005Q1) ■ Sun Java System Identity Server 2004Q2 ■ Sun ONE Identity Server 6.1, 6.2 ■ Sun ONE Directory Server 4.x ■ Windows 2000 SP3, 2000 SP4
Browsers	■ Firefox 1.0.x ■ Mozilla

Oracle Waveset 8.1.1

Oracle Waveset 8.1.1 does not support the discontinued software packages listed in this section.

TABLE 2–2   Software and Environments Discontinued in Oracle Waveset 8.1.1

Software Category	Software Package
Operating Systems	■ IBM AIX 4.3.3 ■ Solaris 7
Application Servers	■ Apache Tomcat 4.1.x, 5.0.x ■ BEA Weblogic Express 7, 8.1 ■ BEA Weblogic Server 7, 8.1 ■ IBM Websphere Application Server - Express Version 5.1.1 ■ IBM Websphere 4, 4.5, 5, 6.0 ■ iPlanet 6.5 ■ Sun ONE Application Server 7
Repository Database Servers	■ IBM DB2 Universal Database for Linux, UNIX, and Windows 7.x ■ Microsoft SQL 2000 ■ MySQL 4.1 ■ Oracle 8i ■ SQL Server 2000
Resources	■ ActivCard 5.0 ■ Blackberry RIM Enterprise Server 4+ (uses generic Windows script adapter) and Blackberry Enterprise Server scripts ■ IBM DB2 7.x ■ Lotus Notes (Domino) 5.0, 6.0.x ■ Microsoft Exchange 5.5 ■ Microsoft Windows NT 4.0 ■ MySQL 4.1 ■ Natural ■ Novell GroupWise 5.x, 6.0, 6.5 ■ Novell eDirectory on Novell NetWare 5.1, 6.0 ■ Oracle 8i (through the Oracle resource adapter) ■ Red Hat Linux 8.0 ■ Remedy Help Desk 4.5, 5.0 ■ SAP R/3 v4.5, v4.6 ■ Siebel 6.2 ■ Oracle Waveset Gateway running on Microsoft Windows NT 4.0 ■ Sun ONE Identity Server 6.0

TABLE 2–2   Software and Environments Discontinued in Oracle Waveset 8.1.1   *(Continued)*

Software Category	Software Package
Browsers	■ Internet Explorer 5.x ■ Safari 1.2.1+

API Support

The Oracle Waveset 8.1.1 Application Programming Interface (API) includes any public class (and any public or protected method or field of a public class) listed in the following table.

Note – The `com.waveset.object.RepositoryProxy` is intended for internal use only.

API Type	Class Names
Session	com.waveset.msgcat.*
	com.waveset.util.*
	com.waveset.object.*
	com.waveset.exception.*
	com.waveset.expression.*
	com.waveset.config.*
	com.waveset.session.SessionUtil
	com.waveset.session.ScriptSession
	com.waveset.session.SessionFactory
	com.waveset.session.Session
	com.waveset.session.UserViewConstants
Adapter	com.waveset.adapter.*
	com.waveset.util.Trace
Policy	com.waveset.policy.PolicyImplementation
	com.waveset.policy.StringQualityPolicy
Report	com.waveset.report.BaseReportTask
Task	com.waveset.task.Executor
	com.waveset.task.TaskContext

API Type	Class Names
UI	com.waveset.ui.FormUtil
	com.waveset.ui.util.RequestState
	com.waveset.ui.util.html.*
Workflow	com.waveset.provision.WorkflowServices
	com.waveset.session.WorkflowServices
	com.waveset.workflow.WorkflowApplication
	com.waveset.workflow.WorkflowContext

Oracle Waveset Service Provider additionally includes the public classes listed in the following table.

API Type	Class Names
SPE	com.sun.idm.idmx.api.*
	com.sun.idm.idmx.txn.TransactionPersistentStore
	com.sun.idm.idmx.txn.TransactionQuery
	com.sun.idm.idmx.txn.TransactionSummary

These classes are the only classes that are officially supported. If you are using classes that do not appear in these tables, contact Customer Support to determine whether you will be required to migrate to a supported class.

Deprecated APIs

The Chapter 6, "Deprecated APIs," section in these Release Notes lists all Oracle Waveset Application Programming Interfaces (APIs) deprecated in this release and their replacements (if available).

Software Support and Software Deprecation Policies

End of Service Life for Software Support

During the End of Service Life (EOSL) period, Oracle Waveset software support is offered in two phases:

- *Phase 1: Full Support*
- *Phase 2: Limited Support*

Note – The length of the Full Support Phase varies by product.

Full Support Phase

During the Full Support Phase (Phase 1), Oracle provides software support in accordance with the customer's support contract with Sun (including the applicable Service Listing) as set forth at:

http://www.sun.com/servicelist/

However, when a software product's EOL date is announced, customers will no longer have access to software updates and upgrades for that software product.

Limited Support Phase

During the Limited Support Phase (Phase 2), Oracle. provides software support in accordance with the customer's support contract with Sun (including the applicable Service Listing) as set forth at:

http://www.sun.com/servicelist/

However, customers are not entitled to submit bugs or to receive new patches from Oracle. As with Full Support Phase, after the software product's announced EOL date, customers will no longer have access to software updates and upgrades for that software product.

The following table provides information about the Phase 1 and Phase 2 (EOSL) end dates for older versions of Oracle Waveset.

Product Name	Product Status	Last Ship Date	Phase 1 (Full Support) End Date	Phase 2 (Limited Support) End Date	EOL Announcement
Sun Java System Identity Manager 7.1.1	Post RR	May 15, 2009	May 15, 2010	May 2014	Nov. 11, 2008

Product Name	Product Status	Last Ship Date	Phase 1 (Full Support) End Date	Phase 2 (Limited Support) End Date	EOL Announcement
Sun Java System Identity Manager 7.1	Post RR	May 15, 2009	May 15, 2010	May 2014	Nov. 11, 2008
Sun Java System Identity Manager 7.0	Post RR	May 15, 2009	May 15, 2010	May 2014	Nov. 11, 2008
Sun Java System Identity Manager 6.0 2005Q4	EOL	May 25, 2007	May 25, 2008	May 2012	Nov. 20, 2006
Sun Java System Identity Auditor 1.0 2005Q1	EOL	Feb. 2, 2007	Feb. 2008	Feb. 2012	Aug. 1, 2006
Sun Java System Identity Manager Service Provider Edition 1.0 2005Q3	EOL	Feb. 2, 2007	Feb. 2008	Feb. 2012	Aug. 1, 2006
Sun Java System Identity Manager 5.0 2004Q3	EOL	Aug. 11, 2006	Aug. 2007	Aug. 2011	Feb. 7, 2006
Sun Java System Identity Manager 5.0 SP*x* 2004Q3	EOL	Aug. 11, 2006	Aug. 2007	Aug. 2011	Feb. 7, 2006
Sun Java System Identity Manager 5.5	EOL	Aug. 11, 2006	Aug. 2007	Aug. 2011	Feb. 7, 2006
Waveset Lighthouse 4.1			March 2006	March 2010	

Oracle Waveset Deprecation Policy

See "Waveset Deprecation Policy" in *Oracle Waveset 8.1.1 Upgrade* for a complete description of the Oracle Waveset deprecation policy for removing interfaces or changing behaviors.

Redistributable Files

Oracle Waveset 8.1.1 does not contain any files that you can redistribute.

Documentation Policy

Updates to the Oracle Waveset documentation are provided as follows:

- **For Every release** (including patches): Release Notes are provided to describe bug fixes, product enhancements, new functionality, and other important information.
- **For Major releases** (*x*.0): The complete Oracle Waveset documentation set is updated and republished.
- **For Minor releases and updates**: Individual publications are updated and republished or Documentation Addendum are provided.

Oracle Waveset Patch Process

Beginning with the release of Sun Identity Manager 7.1 Update 1, updates containing major and critical customer-reported bug fixes are now delivered through a patch process, which replaces the older hot-fix process.

Patches are developed, tested, and released in six-week intervals. These patches have a GUI installer as well as a manual installation option, and they update the files in `/WEB-INF/lib`. Instructions for installing the patch will be included in the patch Release Notes, which are distributed in PDF format. Any fixes to the Gateway or to Password Sync will be described in the Release Notes and will require updating with the installation of the patch.

Oracle Waveset and Sun Identity Manager patches are cumulative, so you can expect fewer problems with unique fixes. You should plan to update to the latest patch level when installing or upgrading to a major or minor release. For example, if patch 3 is available when you install or upgrade to 8.1.1, you should apply patch 3 after installing or upgrading to 8.1.1. You would not be required to install patches 1 and 2 because patch 3 contains all the functionality in the previous patches.

The patch process also makes it easier for you to track a fix by its actual bug number. However, it is still possible that a fix made against an older version may not yet be available in a newer version. Regardless of which process your current version of Sun Identity Manager or Oracle Waveset follows, you must confirm that the new, target Oracle Waveset version contains all of the bug fixes that you need.

When a new patch is released, an announcement is sent to all of customer support. Patches are available through customer support. Please contact customer support at http://sunsolve.sun.com for the latest patch available.

How to Report Problems and Provide Feedback

If you have problems with Oracle Waveset, contact Oracle customer support using one of the following mechanisms:

- Oracle Software Support services online at http://www.sun.com/support (http://www.sun.com/support)

  This site has links to the Knowledge Base, Online Support Center, and ProductTracker, as well as to maintenance programs and support contact numbers.

- The telephone dispatch number associated with your maintenance contract

So that we can best assist you in resolving problems, please have the following information available when you contact support:

- Description of the problem, including the situation where the problem occurs and its impact on your operation

- Machine type, operating system version, and product version, including any patches and other software that might be affecting the problem

- Detailed steps on the methods you have used to reproduce the problem

- Any error logs or core dumps

You must also collect the information described in the following table:

Information to Collect	How to Get this Information
Product version, including ■ A list of all installed patches, hotfixes, and e-fixes ■ A list of customizations	Use the following commands from the Oracle WavesetConsole: ■ `installed` ■ `inventory`
Oracle Waveset topography, including: ■ How your Oracle Waveset cluster is configured ■ Environment localization of the issue and any extra information about your environment ■ A list of servers	The information ■ Must be manually determined ■ Must be manually determined ■ Can be obtained by selecting Configure → Servers from the Oracle Waveset Administrator interface on a running Oracle Waveset server
Recent changes to your environment	Must be manually determined
Java version and type	Use the following Java command: `java -version`
Application server version and type	Depends on the Application Server being used, but must be manually determined

Information to Collect	How to Get this Information
Operating system level and information	Must be manually determined
Default XML output, which is a list of all repository objects	Use the `export default.xml default` command from the Console
Task instance data, including ■ A list of all running tasks ■ The size of all current task instances	Use the following commands from the Console: ■ `listTasks` ■ `showSizes TaskInstance`
System Logs	**Note –** You might be asked to provide additional system logs based on the type of issue you are reporting.

Note – You might be asked to provide additional information for specific problems, such as installation or performance issues. See "Before Calling Support" in *Oracle Waveset 8.1.1 System Administrator's Guide* for more information.

3

Oracle Waveset 8.1.1 Features

This section of the Oracle Waveset 8.1.1 Release Notes provides information about

- "Major Features" on page 31
- "What's New in This Release" on page 32
- "Bugs Fixed in this Release" on page 38

Major Features

Oracle Waveset 8.1.1 provides the following major new features:

- Optimistic checkout. This feature allows more than one workflow to operate on a User object. See *Oracle Waveset 8.1.1 Deployment Guide* for more information.

- Performance and scaling enhancements

- Security enhancements

Connectors

The Connector Framework provides a way to connect Oracle Waveset to target applications through the use of a connector. Identity Connectors and the Framework are part of an open source initiative that offers a generic and consistent way to provision resources with Oracle Waveset. Connectors have been decoupled from the core Oracle Waveset server, enabling them to be released independently of Oracle Waveset builds. In addition to the open source project website where additional connectors will be available for download, Oracle Waveset supports the following supported connectors:

- Active Directory
- Database Table
- DB2
- Domino

- Exchange
- LDAP
- MySQL
- Oracle
- Oracle ERP
- RSA Authentication
- SAP
- SPML v2

See the open-source project website, `https://identityconnectors.dev.java.net/` for more information.

Additional connectors will be added in the near future.

What's New in This Release

This section provides additional information about the new features provided in Oracle Waveset 8.1.1. This information is organized into the following sections:

- "Administrator and User Interfaces" on page 32
- "Connectors" on page 33
- "Delegations" on page 33
- "Gateway" on page 33
- "JMX MBeans" on page 33
- "Oracle Identity Analytics / Oracle Waveset Integration" on page 33
- "Password Synchronization" on page 34
- "Performance" on page 34
- "Organizations" on page 34
- "Policy" on page 34
- "Reconciliation" on page 35
- "Reports" on page 35
- "Repository" on page 35
- "Resource Adapters" on page 36
- "Security" on page 37
- "SPML" on page 38
- "Views" on page 38
- "Workflows" on page 38

Administrator and User Interfaces

- Blind copies (BCC) are now supported for email notifications. (ID-12699)

Connectors

- The SAP connector now handles schema-added Date values and null return values. (ID-22260)
- The SAP connector populates multi-valued attribute tables correctly. (ID-22417)

Delegations

- Delegations to multiple users is no longer supported. For existing multi-user delegations, only the first user in the delegation will be used for delegation purposes. (ID-16644)

Gateway

- Logging of message details during encryption and decryption has been turned off in the Oracle Waveset Gateway. If you want this to be turned on, you must add the registry setting traceEncryptedInfo to the gateway registry key. See the *Oracle Waveset 8.1.1 System Administrator's Guide* for more information. (ID-20491)
- The gateway can now store date attributes in either UTC or local time. To use the UTC setting, set the Windows registry key storeDateInUTC to a value of 1. The default value of 0 configures the gateway to store date attributes using local time. (ID-22335)

JMX MBeans

- Oracle Waveset now provides several JMX MBeans that are appropriate for diagnosing performance problems on test or production servers. These MBeans are now located in the Performance group of JConsole.

Oracle Identity Analytics / Oracle Waveset Integration

- If you are running Oracle Waveset on the WebLogic application server, the Metro web services libraries need to be installed so that the Waveset / Oracle Identity Analytics integration will work properly. For details, see "Step 5: Install the Metro Libraries (optional)" in *Oracle Waveset Installation*. (ID-22628)
- Do not use the sample Oracle Identity Analytics (Sun Role Manager) integration workflows included with Oracle Waveset 8.1.1. These workflows, located in the sample/wfrolemanager.xml file, are no longer current. Instead, use the sample workflows available from the Oracle Identity Analytics 11gR1 Documentation Wiki, located here: http://wikis.sun.com/x/L4NbD (ID-22627)

- See "Workflows" on page 38 regarding an update to the Create User workflow that impacts customers who have integrated Oracle Waveset with Oracle Identity Analytics (Sun Role Manager). (ID-22104)

Password Synchronization

- Password Sync no longer uses registry entries under the "WOW64" reflected registry entries when it is installed on 64–bit versions of Microsoft Windows. The minimum version of the .NET framework has also changed to .NET 2.0 to make this possible. (ID-19550)

- Updated the Synchronize User Password workflow to execute on behalf of a user whose password is updated so that PasswordExpiration and PasswordHistory properties are properly updated. (ID-22280)

- The Oracle Waveset PasswordSync feature is now supported on Windows 2008 R2. (ID-22648)

Performance

- The admin cache initializes faster when the server is started and you have hundreds of thousands of users. See "Tuning Admin Cache Initialization" in *Oracle Waveset 8.1.1 System Administrator's Guide* for more information. (ID-22523)

- Processing and performance are now considerably improved when you assign a controlled organization rule to an AdminRole or an AdminGroup, or an End User controlled organization rule is defined and the rule only requires a single waveset.accountId argument. Oracle Waveset no longer has to load the user view prior to evaluating the rule. (ID-22566)

- Many operations will perform better under a large concurrent load. Response time improvements of 30% are common under heavy concurrent loads.

- Reconciliation performance has been improved by as much as 50%.

Organizations

- Corrected a problem that caused the Update User capabilities to be lost when an administrator is assigned control of an organization dynamically. (ID-21202)

Policy

- Added a default password policy for the default system accounts. Prior to this change, configurator (and several other system accounts, such as reset and startup, but not administrator) were exempt from having their account locked. This is no longer true.

Customers should either ensure their policy does NOT allow `configurator` to be locked, or have alternative administrative accounts, preferably other than the default `administrator`, for such circumstances. (ID-22479)

Reconciliation

- The Oracle Waveset reconciler can now generate account identities calculated through a form. (ID-12456)
- When a full reconciliation is canceled, the error message now states "Canceled the full reconciliation of [resource] running on [server]". (ID-14554)

Reports

- You can now configure how the Organizational Scope is displayed in an AuditLog report by using a new `Configuration:ReportsConfig` attribute named `orgListFormat`. (ID-22224)

  where:

  - `fullOrgList` (default value) uses the original orgList format.
  - `noOrgList` completely suppresses the orgList in the report header.
  - `shortOrgList` uses the `orgList` format introduced in a previous release.

  For example:

```
<Configuration authType='reportsConfig' id='#ID#Configuration:ReportsConfig'
    name='Reports Configuration' ...>
  <Extension>
    <Object>
      ...
      <Attribute name='orgListFormat' value='noOrgList'/>
      <Attribute name='orgListFormat' value='shortOrgList'/>
      <Attribute name='orgListFormat' value='fullOrgList'/>
    </Object>
  </Extension>
  ...
</Configuration>
```

  The `orgListFormat` attribute was also added to the Task Definition for AuditReportTask to override the value specified in the configuration. You can specify any of the preceding attribute values or, if no value is specified, the report uses the value from the configuration.

Repository

- Added the `preferPreparedStatements` attribute to the `RepositoryConfiguration` Configuration object. When set to true, Oracle Waveset uses PreparedStatements whereever possible. By default this attribute is false. (ID-10968)

This attribute can improve repository performance under certain conditions.

- The repository must use pooled connections.
- The connections must support implicit statement caching.

Otherwise, this attribute may degrade performance. Oracle Waveset does not explicitly cache prepared statements from the client side of the JDBC call. It depends on the JDBC drivers to do that. Since statements are cached on the actual JDBC connection, if connection pooling is not used, there is no opportunity for the cached statements to be re-used. Normally this means Oracle Waveset must be configured to use an application server DataSource, and the DataSource must use JDBC drivers that support implicit connection pooling.

Resource Adapters

- The following attributes are now supported when 5.3 SP9 is set for the version resource attribute for a SAP Access Control 5.3 resource. (ID-21863)

  - `functionalArea`
  - `managerTelephone`
  - `requestorTelephone`
  - `sNCName`
  - `unsecureLogon`
  - `validFrom`
  - `validTo`

- Oracle Waveset has long had AttributeDefinitions associated with AccountAttributes on a resource. However, these were not always enforced. The ResourceViewer now enforces that if an AttributeDefinition exists with the same name as an AccountAttribute, then the properties of the AccountAttribute (such as its type) must match those of the AttributeDefinition. (ID-21267)

- Added the Use ASUSPEND resource parameter to the Top Secret resource adapter. When selected, only the ASUSPEND command will be used to disable users. (ID-21290).

- Added the resource parameter Account Iterator Privileges for the ACF2 resource adapter to provide filtering for account iteration. This resource attribute is multi-valued and the entries will be formatted into one IF(...) statement to be issued as part of the ACF LIST command. (ID-22307)

- If you are running Oracle Waveset on the WebLogic application server *and* you are using the SAP Web Services resource adapter, the Metro web services libraries need to be installed. For details, see "Step 5: Install the Metro Libraries (optional)" in *Oracle Waveset Installation*. (ID-22628)

- See "Workflows" on page 38 regarding an update to the Create User workflow that impacts customers with SAP GRC integrations. (ID-22104)

Security

- Various directories at the web application context root that are not part of the web interface are accessible using HTTP GET. In particular, the file `/config/Waveset.properties` is accessible, and might contain sensitive data. The fix for this bug adds a security-constraint to the web application deployment descriptor (`web.xml`) to block HTTP access. (ID-20070)

  New installations of Oracle Waveset version 8.1.1 will include this fix. However, any existing deployments, including those upgraded to version 8.1.1 need the following added to the deployment descriptor:

  ```
  <security-constraint>
        <web-resource-collection>
          <web-resource-name>Unpublished Files</web-resource-name>
          <url-pattern>/bin/*</url-pattern>
          <url-pattern>/config/*</url-pattern>
          <url-pattern>/doc/*</url-pattern>
          <url-pattern>/exporter/*</url-pattern>
          <url-pattern>/patches/*</url-pattern>
          <url-pattern>/sample/*</url-pattern>
        </web-resource-collection>
        <auth-constraint/>
      </security-constraint>
  ```

- When accessing a WorkItem or TaskInstance instance through the anonymous end-user interface (for example, `user/anonWorkItemEdit.jsp`), the URL is based on the repository ID of the instance. Authorization now requires the `anonymousUser` value set in the `anonLogin.jsp` page to match the owner field of the repository object. (ID-21434)

- Oracle Waveset can be displayed in a frameset, leaving it vulnerable to a "clickjacking" attack. This is fixed by adding frame-detection logic in the HTML rendered for every page. (ID-22406)

- Added a property to the `Waveset.properties` file that prevents stack trace information from being displayed. (ID-22409)

  By default, Oracle Waveset returns stack trace information as HTML comments when some errors occur. The stack trace is not normally visible to the end-user, but can be revealed by showing the source of the page. This stack information is very useful when diagnosing a problem, but exposes information about the execution of the web application that could be considered a security risk. It is therefore suggested that production deployments turn off the rendering of stack information with the following setting in `Waveset.properties`.

  `ui.web.disableStackTraceComments=true`

  This change must be done manually on each Oracle Waveset server.

- By default, Oracle Waveset gives specific error messages when a login attempt fails, allowing an attacker to determine whether an account name is valid. To provide only a generic 'login failed' message, change the settings under Security -> Login -> Login Application. (ID-22574)

SPML

- The `openspml2-toolkit.jar` was updated to version 192-20100413 from `openspml.dev.java.net`, and includes several bug fixes. (ID-21987)

Views

- UserViewer can now build attributes from the accounts[Resource|AccountType] namespace. (ID-19082)

Workflows

- Previously, in the Create User workflow, when a policy violation check was executed, a temporary user object was created in the Top organization so that a Deferred Task could be associated with it. This behavior has changed. Going forward, the transient user object is now created in the same organization as the user. This change has been made to `wfexternalpolicy.xml`. Customers who use a custom workflow for external policy checks may need to merge this change with their workflow. (ID-22104)

Bugs Fixed in this Release

This section describes the bugs fixed in Oracle Waveset 8.1.1, and the information is organized as follows:

Administrator and User Interfaces

- When you are viewing a task results page and you change the sort column, the system now stays on the same page. (ID-19312)
- Fixed an issue in which clicking Work Items and then attempting to edit a user from Find User results would result in the wrong form being displayed. (ID-20485)
- The `ActivityStatusPoller` component no longer hangs when displaying the status of resource reconciliation tasks on the Reconciliation Status page. (ID-21800)
- The Add button on the Audited Attribute Report page now works correctly. (ID-22040)
- Previously, an approval would not be successful if the user data contained non-ASCII characters and the approval was signed with an XML digital signature. This condition has been fixed. (ID-22276)
- The Transaction Signer applet now contains an `Alt` attribute. (ID-22308)
- The Applet component now properly implements `Alt` attribute. (ID-22318)

- Corrected the UI_IDMX_TXNCONFIG_FORM_FIELD_ENABLE_ASYNC message key in the `WPMessages.properties` file. (ID-22320)

- Dashboard graph images are now properly loaded when Waveset is deployed on Websphere 6.x or 7.x. (ID-22385)

- Some pages allow you to use optional attributes such as email or fullname instead of accountId to display a user name. The Approvals page now displays these optional attributes correctly. This bug corrects a regression introduced by bug 15935. (ID-22372)

Logging

- Corrected a condition in the `AsynchronousPublisher` method that caused the application server to hang at shutdown. (ID 22330)

- Oracle Waveset will now automatically reset the value of `maxFileSizeKB` to a smaller value if the configured value exceeds 2,147,483,647 bytes. Previously, if `maxFileSizeKB` was set too high, it prevented the application server from starting, and the problem could only be fixed by manually editing the value in the repository. (ID-22341).

Password Synchronization

- Failure notification emails sent by Password Sync no longer contain the place holder text if no substitution information is available. The place holders `$(accountId)`, `$(errorMessage)` and `$(sourceEndpoint)` will be replaced with default text if no values are available. (ID-21809)

- Failure notification emails sent by Password Sync no longer contain the place holder text "n" Each occurrence of the "n"combination in the body text will be replaced with a proper new line character before sending the email. (ID-21810)

- Previously, Password Sync in direct mode could throw a null pointer exception on the Oracle Waveset server side if no sync action was performed. This in turn could lead to sending an incorrect failure email by the DLL. This exception is no longer thrown, and a informational message is logged in the trace log on the server. (ID-22221)

- Password Sync no longer throws an exception due to invalid certificates when the "llow invalid certificates"option is set. (ID 22532).

Provisioning

- Oracle Waveset now updates the account index correctly when a user is moved across organizations on a resource using native tools. This functionality works correctly whether you use bulk operations or edit the user in Oracle Waveset, assuming the identity template uses a variable to specify the organization. (ID-21211)

Reports

- When running an Access Review Detail Report that includes results with Entitlement Status of "ending" Oracle Waveset no longer allows specifying a specific attestor. This is because pending attestations are not associated with an attestor until the attestations are approved, rejected, remediated or canceled. (ID-21782)

- The Task Report template no longer throws a `NoSuchElementException` when enabling the "eport only tasks pending approval by" check box and selecting one user. (ID-22315)

- Usage reports now display charts correctly when the `ui.web.relativeURL=true` property is set in the `Waveset.properties` file. (ID-22324)

- User Summary Reports now display the Title and Description fields correctly. (ID-22376)

- User Question Report now displays the correct Minimum Number of Questions Not Answered values. (ID-22434)

Resource Adapters

- The RACF adapter now tests each connection only once when you select the Test Connection button. (ID-19245)

- The Shell Script resource adapter now correctly performs the Change Password resource action. (ID-19579)

- When tracing is enabled at level 4 for the LDAP resource adapter (class `com.waveset.adapter.LDAPResourceAdapter`), and a user account is added or the password is modified, the user's password is no longer revealed in the trace log. (ID-20509)

- Oracle Waveset now allows non-conflicting further updates on accounts with pending changes on external resources. (ID-20846)

- The search subdomains feature of the Active Directory resource adapter now works properly. (ID-21028)

- The SAP connector correctly parses role names and profile names that contain a : (colon) or a | (vertical bar). (ID–21803)

- Oracle Waveset now displays and creates resource objects when an LDAP resource adapter has multiple base contexts defined. (ID-21944)

- The RACF LDAP resource adapter no longer automatically retries user searches that return zero results. (ID-22269)

- Domino attributes that are mapped to Oracle Waveset data type INT can now be updated. Previously, removing attribute values of type INT in the resource attribute schema had no effect. (ID-22338)

- During Active Sync, the LDAP resource adapter no longer throws a `ClassCastException` when the `modifiersname` value contains a non-ASCII character or is Binary (Base64 encoded). (ID-22354)

- Provisioning requests will no longer timeout if the list of provisioners has been exhausted while waiting for the request to be completed. If the list of provisioners is exhausted, the last provisioner will be used and timeouts will be set to 0, indicating no timeout. This change of behavior will only apply to external resource requests configured with web services based resources. (ID-22410)

- The Oracle ERP adapter now creates accounts that have a future start date correctly. (ID-22520)

Roles

- The `waveset.roleInfos` attribute in the User view has been modified so that the `assignmentType`, `assignedBy`, and `assignedByAuthoritativeSource` attributes are removed from the view if the role is directly assigned. Before this change, roleInfos was constantly updated, and this could cause a resource account to be improperly provisioned or deprovisioned. (ID-22188)

- Previously, searching for user in a dynamic organization with at least two directly assigned roles, Oracle Waveset would display only one role in a result table. This condition has been fixed. (ID-22458)

SPML

- Corrected an error that prevented sessions from being properly updated with a last use time. As a result, sessions could time out, although they were continuously used. (ID-21617)

- Previously, when a WavesetResult was requested with `req.setAttribute("returnWavesetResult", "true");` the WavesetResult was not converted to XML, which meant it was not properly serialized. This condition has been corrected. (ID-22433)

Workflow

- Previously, you might see an increase in repository lock contention when concurrently executing the out-of-the-box "Rename Task" workflow in environments using multiple clustered Oracle Waveset servers. This contention caused some tasks to fail, but they continued to display their status as executing. These tasks no longer fail. (ID-14902)

Additional Bugs Fixed

224452

4

Known Issues

This section of the Release Notes lists known issues and workarounds for Oracle Waveset 8.1.1.

This information is organized into the following sections:

General

- No checking is done on organization name, administrator name, account name, user attribute name (left hand side of schema map), or task names for invalid characters (ID-1145, 1206, 1679, 1734, 1767, 2413, 3331). You cannot use a dollar ($), a comma (,), a period (.), an apostrophe ('), an ampersand (&), a left bracket ([ ), a right bracket ( ]), or a colon (:) in the name for these types of objects.

- The calendar object is not fully viewable if the browser is using large fonts. (ID-2120).

- The Select All checkbox on the Find Results page and the List Task page does not become un-selected if one of the items in the list is un-selected (ID-5090). The selectAll checkbox is ignored during the resulting action if not all of the members in the list have their checkbox selected.

- If you make a change to a custom message catalog, it is necessary to restart the server in order to see your changes. (ID-6792)

- The current mechanism for detecting a failed Server assumes that all the systems in an Oracle Waveset cluster are synchronized with respect to time. (ID-7064) With the default failure interval of five minutes, if one server is five minutes out of sync with another, the server that is ahead will declare the server that is behind to be dead, causing unpredictable results.

  Workaround: Maintain better time synchronization or increase the failover interval.

- On Windows, if you are logging in as a user whose name contains double-byte characters and the default encoding for the machine only supports single-byte characters, you must set the USER_JPI_PROFILE environment variable to an existing directory whose name contains only single byte characters. (ID-8540)

- If you extract a resource to an XML file using the File Format as XML option, and then select CSV File Format from the drop-down list, the following message dialog is displayed: (ID-10847)

```
The form has already been submitted.
```

  Workaround: To avoid this message, click Accounts → Extract to File → Choose a Resource → Choose CSV File Format. Click Download to download the resource account details in .csv file format.

- If an expanded node contains less than one page of data and you insert a new child of that node (for example, if you are creating a User in the organization) *before* the first record on the page, Oracle Waveset will insert a page with one item before the current page on the subsequent refresh. (ID-12151)

  Workaround: To realign the pages, click the First Page button.

- If you modify a Role form to change the showSuperAndSubRoles variable from 0 to 1, and then import a super role object definition file containing existing subroles from the Configure tab, those subroles will not be modified to include the <SuperRoles> section. However, if you use the Oracle Waveset graphic user interface to create a super role, the subroles referenced by that super role will be updated. (ID-15053)

  This issue can occur with roles created outside Oracle Waveset that have references to existing roles (either subroles or super roles) already in the system.

  When importing these roles, the roles that already exist in the system are not updated to reflect the new relationships; for example, referential integrity is not maintained. Use the RoleUpdater to check and correct the referential integrity if roles are imported in this way.

Workaround: You can update roles outside the upgrade process by importing a new RoleUpdater.xml file found in sample/forms/RoleUpdater.xml. By default, Oracle Waveset adds the subrole links during upgrade or when you import RoleUpdater.xml.

To disable this new functionality, set the RoleUpdater attribute nofixsubrolelinks to **true**. For example,

```
<MapEntry key='nofixsubrolelinks' value='true' />
```

- If you modify settings (such as adding additional column attributes) on an existing changelog, these modifications might not appear in a pre-existing changelog CSV file. (ID-15973)

- The Repository Configuration object has an attribute named maxAttrValLength. The value of this attribute is ignored, and is always 255. (ID-16261)

- While in a localized Oracle Waveset session, users might encounter partial localization (a mix of English and the selected language) in Process Diagram applets. (ID-16139)

- Direct-mode password synchronization requires SimpleRpcHandler to be configured in the web.xml file. By default, this handler is not provided as a handler for the rpcrouter2 servlet. (ID-16469) To use direct-mode password synchronization, set the handlers initialization parameter in the following way:

```
<init-param>
   <param-name>handlers</param-name>
   <param-value>com.waveset.rpc.SimpleRpcHandler,
       com.waveset.rpc.PasswordSyncHandler</param-value>
</init-param>
```

Note that SimpleRpcHandler is known to interfere with certain RemoteSession calls. If you plan on using RemoteSession as well as direct-mode password synchronization, configure a separate servlet for handling RemoteSession calls.

- Accounts > Extract to File saves XML and CSV file formats as .dat extensions, rather than the expected .xml and .csv extensions. (ID-17521)

   Workaround: The saved files can be manually renamed with the appropriate file extensions.

- The String Quality Policy page displays text in vertical lines. (ID-18551)

- Role type delegations will override role approval delegations made for a specific role. (ID-18559)

   For example, if future role work item types for one or more specific roles are delegated to user one, while all future business role work items are delegated to user two, the specific roles from the first delegation will be delegated to user two rather than user one.

   The scenario delegation summary follows:
   - Delegate role approval for business role 1 to user one
   - Delegate business role approval to user two

   In all requests where a user was assigned a business role approval, the business role will be delegated to user two.

- Enabling a role does not give the user an option to update assigned roles. (ID-18647)

  Workarounds: Manually update the assigned users, or update the assigned users from the List/Find Roles pages.

- Roles contained by other roles can now be conditionally assigned to users when their parent role is assigned. A condition can be specified on the association between the parent and contained role when editing the parent role. A condition can be created or can reference a rule. If a rule is specified, all user view attributes required for the evaluation of the rule must be specified using a rule argument. (ID-18734)

- Upgrading from Oracle Waveset 7.x to Oracle Waveset 8.0 will fail if the repository is MySQL and the 7.x installation has configured role objects. This problem occurs when the upgradeto80from71.mysql script executes. When this script executes, the columns in the old object table, which contain the 7.x roles, and the new role table are in a different order. (ID-18874)

- The data warehouse message catalog, WICMessages.properties, is loaded based on the server location instead of the user's location. For example, if an application server is running in a Japanese locale, the query attributes will be displayed in Japanese, even if the user's interface is normally in English. (ID-18898)

  Workaround: Restart the application server in a locale with a UTF-8 variant that corresponds to the browser's language setting.

- Oracle Waveset 8.0 added a new queryable attribute, assignedRoles, which references all direct and indirect roles assigned to a user. (ID-18921) Prior releases contain the still available queryable attribute, role, which only contains roles directly assigned to users. The upgrade process only automatically refreshes users with indirect roles to enable population of assignedRoles. A report for users Assigned a Role will not return all users assigned to a role in an upgraded environment until all users have been refreshed.

  Workarounds:
  - Refresh all users.
  - Create a report for users with directly assigned roles.

- The Sort by Repetition option does not work on the Scheduled Tasks table. (ID-20377)

Auditing

- During a scan, there is no support for retrying user accounts that could not be fetched from resources, or where other failures occur. These failures are reported when the scan is complete, but there is no automated way to rescan the accounts. (ID-9112)

- Identity Auditor attempts to keep users in compliance between policy scans by enforcing policy whenever the user is edited. If editing a user that has assigned audit policies and also is in violation of a policy, you cannot save changes to the user, even if the change is as simple as moving a user to another organization. (ID-9504)

Workaround: Use the right-click move (or find then move) functionality on the user applet, or temporarily disable the audit policy checks.

To disable the auditor policy checks, edit the system configuration and remove `userViewValidators` property. This property which has a value of a List of strings is added during the import of `init.xml` or `upgrade.xml`.

- In the AuditPolicy, Resource and Organization Violation History reports, implementing logarithmic scaling for a STACK chart type may result in unusual display behavior. (ID-9522)

- Currently, the Auditor Access Scan Report administrator cannot schedule an Audit Policy Scan. An error, `Error message: Create access denied to Subject auditadmin on type TaskSchedule` is displayed. To schedule any task, administrators must have `create` privileges for the `TaskSchedule` authType. (ID-14713)

  Workaround: Edit the administrator to assign the `create` privilege for the `TaskSchedule`, or specify a user with at least the `Auditor Administrator` or `Waveset Adminsistrator` capabilities.

- When running Audit Scans that produce multiple violations, Auditor might create a remediation workflow to manage processing of the violations. The default MySQL setting for `max_allowed_packet` (1M) is too small for a workflow with dozens of violations. If this limit is reached, Auditor will not start the remediation workflow. (ID-15830)

  Workaround: For heavy use of Auditor, this value should be much larger. To address this issue, add `max_allowed_packet = 32M` to the MySQL configuration file (`my.cnf`) and restart the database server.

- Changing severity and priority values for Compliance Violation remediations can be misleading. The initial values in the form are *not* the current values of the Compliance Violations. They are the last values set when making a change. It is important that you know what severity/priority value you want while still viewing the list view, because you cannot determine the current values when on the page that lets you change the values. (ID-16040)

- Audit policy names cannot contain these characters: ' (apostrophe), . (period), | (line), [(left bracket),] (right bracket), , (comma), : (colon), $ (dollar sign), " (double quote), = (equals sign). (ID-16078)

Data Exporter

- The Data Exporter can be configured to run as any Oracle Waveset administrator with the appropriate capabilities. The export task runs as a daemon, and is started and monitored by the Oracle Waveset scheduler. Audit records created by the Data Exporter will show the subject of the Oracle Waveset scheduler (Scheduler:IDMServer), rather than the subject the task is configured to use. (ID-18055)

- Forensic query does not support Edit/Modify actions against role types. (ID-18769)

■ Users of Data Exporter must be aware of the following performance issues: After warehouse model configuration has been written, Data Exporter will not re-examine warehouse interface code. If you modify the warehouse interface code to add extended user attributes, these new attributes do not appear in the Configure → Warehouse → Warehouse Model Configuration (Model → Attributes tab), and consequently do not appear for use within the Forensic Query interface. (ID-18975)

You will see this problem when you configure your warehouse and afterward try to add custom attributes for export. The initial warehouse configuration looks at the WIC code and writes the Configuration → Data Warehouse Configuration object. Subsequently, Data Exporter does not re-examine the WIC code.

Subsequent warehouse upgrades with new versions of Oracle Waveset also experience this problem.

■ When exporting data to the data warehouse, if the number of records being exported exceeds the 'Repository Read Limit', the exporter may write data to the warehouse more than once even when the 'Export Once' flag has been set.

Workaround:

■ Increase the `blockRowsList` property of the RepositoryConfiguration object from the default of 10000 to a larger value. For example 50000 or 100000. Try to use the lowest value possible as returning large numbers of entries in one batch will increase memory consumption by the server. It may also be necessary to increase the JVM heap in order to accommodate the increase in batch size and therefore some testing should be done based on the new value.

■ Reduce the Repository read limit value within the Data Warehouse Task Configuration from the default of 250000 to the value you've specified for the `blockRowsList` property above. This will ensure that during an export Oracle Waveset does not attempt to read more entries from the repository than can fit within a single batch.

Oracle Waveset Service Provider

■ Oracle Waveset Service Provider and Sun Java System Portal Server may not be compatible; there is a problem related to the encrypted libraries. (ID-10744)

This problem may be corrected by setting the following values in Portal Server's `/etc/opt/SUNWam/config/AMConfig.properties` file, and then restarting the web container:

```
com.iplanet.security.encryptor=com.iplanet.services.util.JCEEncryption
com.iplanet.security.SSLSocketFactoryImpl=netscape.ldap.factory.
    JSSESocketFactory
com.iplanet.security.SecureRandomFactoryImpl=com.iplanet.am.util.
    SecureRandomFactoryImpl
```

■ Some configuration options that appear in the Oracle Waveset Administrator interface are not used with Service Provider. (ID-10843).

Among these are:

- Resource options: exclude accounts rule, approvers, and the organization that the resource is assigned to.
- Role attributes

- The default Service Provider login module group expects the Service Provider resource to be named 'SPE End-User Directory'. If the name of the resource is different, then the Service Provider end-user login page will not function properly. The page will not show the login related fields. (ID-14891)

  Workaround: Update the resource name in the `UI_LOGIN_MOD_GRP_DEFAULT_SPE_PWD` `LoginModGroup` object to reference the correct resource name.

Localization

- Oracle Waveset does not provide a mechanism to customize encoding of a CSV file that has been generated as a result of a bulk action. When you use Excel to open a UTF-8 encoded CSV file, the contents are displayed as garbage because Excel expects native encoding in CSV file. (For example, for Japanese, iShift_JIS) (ID-19901)

  Workaround: Use an editor that supports UTF-8 encoding.

- In PasswordSync Notification email, the multibyte characters in the `$cn` field are not displayed properly. (ID-19934)

- In the Tomcat web container, the multibyte characters for column names are displayed as "???" in the SOD report with compact display mode. (ID-20040)

- For a Solaris resource, Oracle Waveset displays a garbled message in the Roles field. If the OpenSolaris is used as a resource, then this is not an issue. (ID-20046)

  Workaround: In /etc/default/init file, set LANG=C and reboot Solaris. Then assign a Solaris resource to the user. The Roles field is empty, which is the expected behavior.

- Oracle Waveset garbles apostrophes and multibyte characters on MultiSelect Java applets for the following browser configurations: Internet Explorer 7 with Java 1.6.0_07 and 1.6.0_11 (when UTF-8 encoding is set) Firefox 3 with Java 1.6.0_07 on Windows XP Professional (ID-20106)

- The string "Check Alignment of PHs" and misplaced html tags are shown on some German online help files. (ID-20345)

Login Configuration

- If an Administrator logs in and selects Change My Password, and then selects another tab, their account is locked until the lock expires. (ID-3705)

  If another Administrator attempts to edit that locked Administrator, the following message displays:

  ```
  com.waveset.util.WavesetException:
  Unable to access account #ID#Configurator at this time
  Please try again later.
  ```

  If that Administrator clicks OK, the workflow process diagram from the last action is displayed.

Organizations

- Renaming an organization when there are provisioning requests pending that have users belonging to the organization will cause the provision request to fail (ID-564).

  Workaround: Ensure there are no outstanding requests before renaming an organization.

- When creating a new organization, if the User Member Rules option is selected before specifying an org name, when the page is refreshed, an organization ID will appear in the Organization name field (ID-6302). The name can still be set prior to saving the new organization.

PasswordSync

- The PasswordSync installation and configuration application can read an XML file to populate the registry keys used by the DLL. The XML file used should always be based on the file generated by the "-writexml" option of the configuration application taken from a working PasswordSync installation. (ID-20375)

  Workaround: You can change the file if you keep in mind these restrictions: keynames are case-sensitive; Oracle Waveset does not check values; keys that Oracle Waveset does not recognize will not generate errors or warnings, and are silently ignored.

Policies and Capabilities

- The Oracle Waveset account policy attribute Reset Notification Option has a value option of "administrator" that has no effect (ID-944). The only viable options are "immediate" and "user."

- The minimum number of questions a user must answer can be set to a value greater than the number of defined questions (ID-1834). If this situation occurs, the user will not be able to log in using the "Forgot My Password" option.

- The Default Lighthouse Account Policy cannot be cloned by editing the policy, changing the name, and selecting to create a new object (ID-5147).

  Workaround: Create a new account policy.

- Audit scan has an option in the Task Launch form to send an email to a specified email address with a violation report. This email will not be sent if no violations are found. (ID-18773)

Reconcile and Import Users

- When a full reconciliation is canceled, the error message displays: (ID-14554)

  ```
  Canceled the incremental reconciliation of [resource] running on [server]
  ```

  The message should read:

  ```
  Canceled the full reconciliation of [resource] running on [server]
  ```

- When executing Load From Resource, and the resource supports ACCOUNT_CASE_INSENSITIVE_IDS, if the user's accountId differs in case from the accountId stored in Oracle Waveset's ResourceInfo user object, a second ResourceInfo will be added to the user object with the accountId in the same case as reported by the resource. (ID-17377)

  Workaround: Ensure that the accountId in the Oracle Waveset ResourceInfo object in the user object is the same case as that reported by the resource.

- If you disabled the MultiSelect display component applet (and are using the HTML version instead), and edit the reconciliation policy of a particular resource instance, you can get an error when you uncheck the Inherit resource type policy checkbox. (ID-18964)

  Workaround: Re-enable the MultiSelect applets.

Reports

- Numbers display in the Priority and Severity columns of the Violation Summary Report instead of text descriptions. (ID-16932)

- The Violation Summary Report does not include fixed violations. The report only includes violations that are currently active (new or recurring) or mitigated. (ID-16933)

- When several conditions are specified to generate a usage report, the graph displays correctly on the Report Result page, but the fixed line width will truncate the conditional text. (ID-17224)

- All Inactive Account Scan reports do not display their results on the View Risk Analysis page. To view the result from these reports, go to the Server Tasks page. (ID-17255)

- The User Question report does not display the report title when Question Policy is not configured. (ID-17415)

- The Resource User report lists Reset Administrator as a user, but Reset Administrator is a hidden user that should not be displayed. (ID-17650)

- Oracle Waveset does not display the "Last Login Date" label on the Risk Analysis Report results table. (ID-20269)

- The Download CSV report sends email notification when the email report check box is selected. This email notification should happen only when the report is run (by clicking Run button). (ID-20346)

Resources

- Resource test button does not test all fields. (ID-51)

- The error message when a resource account password or username is not correct on a PeopleSoft resource is not clear (ID-2235). The error message states:

  ```
  bea.jolt.ApplicationException: TPESVCFAIL - application level service failure
  ```

- Windows Active Directory resource actions that use the %DISPLAY_INFO_CODE% exit status cause the action to fail with errors (ID-2827).

- Setting a user's primary group ID on Active Directory cannot be done when creating the user (ID-3221).

  Workaround: Create the user without setting the primary group ID, then edit the user and set the value. The primary group ID is also set by number and not by the distinguished name (DN) of the group.

- Resource IP addresses are cached in the JVM after the hostname is resolved to an IP address. If a resource IP address is changed, the application server must be restarted for Oracle Waveset to detect the change (ID-3635). This is a setting in the Sun JDK (version 1.3 and higher) and can be controlled with the sun.net.inetaddr.ttl property, which is typically set in jre/lib/security/java.security.

- You cannot create multiple accounts for a single user on Oracle resources (ID-3832).

- If a user is moved from or to a sub-container within the Active Directory organization, the Active Sync adapter will detect the change, but when you view the user on the edit page, (or make a change and view the confirmation page) the user's accountId is still displayed as the original DN (distinguished name) (ID-4950). Because we use GUID to modify the user, this will not cause any operational problems. Running a reconcile against the resource will fix the problem.

- If a user is moved from an Organization (OU) to a sub-organization, the LDAP ChangeLog adapter will not recognize the change and assumes the user has been deleted. The user object is then locked in Oracle Waveset (if that is the current setting), and a new account is not created for the moved account (ID-4953).

- The pooled connections used by the UNIX resource adapters can be left in an undetermined state if an error occurs while executing a command or script (ID-5406).

- On NDS, if you edit a field (such Grace Login Limit) on the initial provision, and do not provide values for the boolean fields, all the Boolean fields are set to false (ID-6770). This prevents you from setting the other fields on the restriction tab which require certain check box values to be true. To avoid this, always ensure all your Boolean fields are true when you expect them to be, so they are properly pushed when editing other fields.

- When updating users by selecting update from an Oracle Waveset organization, users with a Sun One ID Server account will get an error if those users were created natively and loaded into Oracle Waveset (ID-7094). The work around is to update those users individually.

- Oracle Waveset still contains the following deprecated classes:

  - com.waveset.object.IAPI

  - com.waveset.object.IAPIProcess

  - com.waveset.object.IAPIUser

    Custom adapter classes should no longer refer to these classes, and should instead refer to the corresponding classes in package com.waveset.adapter.iapi. (ID-8246)

- If you leave the New Resource Object wizard without clicking the **Save** or **Cancel** button, the abandoned form may not be destroyed and may interfere with the creation of subsequent new resource objects. (ID-11033) This leads to an error that says

  ```
  No resource form id found in options or view.
  ```

  Workaround: Always use the Cancel button to abandon the New Resource Object wizard.

- If you edit a user while you are also running Active Sync as a different administrator, an Active Sync exception occurs. Because the user is locked by another administrator, Active Sync cannot retry the process. (ID-11255)

  Workaround: To enable Active Sync retry for a resource, update the resource XML to include these two additional resource attributes, in the following format:

  ```
  <ResourceAttribute name='syncRetryCountLimit' type='string'
  multi='false'facets='activesync' value='180'/>
  ```

```
<ResourceAttribute name='syncRetryInterval' type='string' multi='false'
facets='activesync' value='10000'/>
```

Where:

- `syncRetryCountLimit` is the number of times to retry the update.
- `syncRetryInterval` is the number of milliseconds to wait between retries.

Subsequently, these values will appear as custom resource settings when you configure Active Sync. Specifying a `displayName` is advisable; using a custom catalog key if localization is necessary.

- If a password for a user on all systems that are part of the CUA landscape is not in sync, changing the password might fail on child systems that are out-of-sync. This will occur only when the administrator sets a productive, not expired, password for the user, or the user changes the password himself. Under all other circumstances, the password change will succeed even if the systems are out-of-sync. (ID-13396)

  Workaround: First, set an expired password and then, through a second change, set the productive password for the user.

- There are two known issues with the Remedy Integration template editor. (ID-14729)

  - The default Remedy Schema value "HPD:HelpDesk" is not appropriate for later versions of BMC Remedy. Later versions do contain a schema "HPE:Help Desk".

  - The Choices columns is not displayed for some fields. This does not affect the ability to use Remedy templates.

- A regression causes Oracle Waveset password synchronization to fail when used with Sun Java SystemDirectory Server Enterprise Edition 6.0, 6.1, and 6.2. The failure will be corrected in the Directory Server 6.3 release. If versions 6.0, 6.1, or 6.2 are required to work with Oracle Waveset, please request a Directory Server hotfix from Support, referencing Directory Server bug 6604342. (ID-14895)

- When you expand the resource objects of a Sun Java System Access Manager 7.0 resource from the Resources tab, you might see the following error: (ID-15525)

```
Error listing objects. ==> com.waveset.util.WavesetException:
Error trying to get attribute value for attribute 'guid'.
==> java.lang.IllegalAccessError: tried to access method
com.sun.identity.idm.AMIdentity.getUniversalId()Ljava/lang/String; from
class com.waveset.adapter.SunAccessManagerRealmResourceAdapter
```

  This error occurs on Access Manager 7.0 resources that have not had any patches applied. To fix this problem, you must apply at least Patch 1 of Access Manager, and then rebuild and redeploy the Access Manager client SDK.

- NDS/Groupwise users created by Oracle Waveset that possess the Access and AccountID fields can appear to not have their corresponding values saved when inspected by certain viewers within the NDS Console 1 application (for example, by selecting user's properties and then selecting the Groupwise tab). (ID-16330)

However, if the user's Groupwise Diagnostic → Display Object "viewer" is used instead, the field are then seen. Updates made by Oracle Waveset to the aforementioned fields do not seem to be affected by this "viewer" bug.

- WRQ looks though the classpath to discover its own entry. From that entry, WRQ computes the directory where the JAR is stored, and then uses that directory to read the `.JAW` (licensing file). However, both BEA and WebSphere use non-standard protocol names (BEA uses zip, and WebSphere uses wsjar) rather than the standard JAR, which is the protocol the WRQ code assumes exists. (ID-16709, 17319)

  Workarounds:

  - For BEA, add the following option to the `java` command in the `startWeblogic.sh` file:

    `-Dcom.wrq.profile.dir="DirectoryContainingLibraries"`

  - For WebSphere, add the `com.wrq.profile.dir=DirectoryContainingLibraries` property to the `WebSphere/AppServer/configuration/config.ini` file.

- Before creating a new resource, be sure to enable the resource type in the list of configured types. Otherwise, the newly created resource object may not have all the required fields. (ID-17324)

- The default value for the Make Directory resource attribute is inconsistent among the different UNIX OS resource adapters. For AIX, user creates always result in the home directory being created, and consequently this value is not present. For the Linux adapters, this value is set to "true" by default. For Solaris and HP-UX adapters, the default is set to "false". (ID-18301)

- If an external resource assignment is pending provisioning, and you rename the user to whom that work item was escalated, the provisioning task will finish without escalating to the renamed user. (ID-19897)

- When pass-through authentication is configured between Oracle Waveset and OpenSSO server (Sun Access Manager Realm Resource adapter), authentication may fail if you use the '%' character in passwords. For more information on this issue, see `https://opensso.dev.java.net/issues/show_bug.cgi?id=4122`. (ID-20011)

- The Domino gateway resource object create and update forms do not recognize non-default group category values (that is, values other than "Administration" and "None". The Domino gateway resource object update form will display an error when editing a group that uses non-default category values. (ID-20212)

- The Active Directory connector does not display localized messages if the browser language is set to a value without *cntry*, such as *ja*. (ID-20255)

  Workaround: Select a language with a *cntry* value, such as `ja-JP` on the browser or specify **cntry=JP** as a URL parameter when you log into Oracle Waveset. For example,

  `http://`*host*`:`*port*`/idm/login.jsp?lang&cntry=ja=JP`

- If you are migrating an Active Directory adapter-based resource to an Active Directory connector-based resource, you must edit any associated resource actions to include the `execMode` attribute. Valid values for this attribute are `connector` and `resource`, but for Active Directory, if you are using the SHELL action type, `resource` is the only valid value. (ID-20534)

  For example, where previous implementations of a resource action would have this line: <

  ```
  <ResTypeAction restype='Windows Active Directory' actionType='SHELL'>
  ```

  You must add the following line if you are using the Active Directory connector:

  ```
  <ResTypeAction restype='Windows Active Directory' actionType='SHELL'
  execMode='resource'>
  ```

- On SAP GRC 5.3 patch 9 resources, when you assign an SAP role to an existing Oracle Waveset user, the following error is generated (ID-22267):

  ```
  com.waveset.util.WavesetException: Error executing the request: 'JAVA
  ERROR(2010) -
  com.virsa.ae.core.ObjectNotFoundException: Invalid Company : 00000000'
  ```

  Workaround: Use the following steps to create a dummy company in Access Control:

  1. Click the Configuration tab.
  2. On the left hand side under Roles, click Attributes.
  3. Click Company.
  4. Click Create at the bottom.
  5. Enter a value of 00000000 for the Company ID and a short description .
  6. Save your changes.

Roles

- Role status is not updated immediately on Role List page. (ID-20259)
  Workaround: Reload the page or click Clear.

SPML

- SPML2 search responses that include iterators may include inconsistent result items if the search request uses the Substrings filter item. (ID-20328)

Oracle Waveset Gateway

- The gateway occasionally will not stop when using `net stop "Oracle Waveset Gateway"` (ID-2337).

- Under some circumstances, the gateway does not stop cleanly when stopped from the Services Console on Windows (any supported Windows version). In response, Oracle Waveset displays a dialog box with a message that indicates that the gateway did not respond in a timely fashion. If you dismiss the dialog box, Oracle Waveset indicates that the gateway has stopped. If you use the command-line equivalent, `net stop <service name>`, Oracle Waveset indicates that an exception has occurred. Note that in both cases, the gateway has stopped. (ID-20296)

  Workaround: Use the command line `gateway -k` to stop the gateway service.

Tasks

- The Find Task page does not display the number of tasks matching the search criteria (ID-5152).

- Delegated administrators who do not control Top can schedule tasks and view the task results, but cannot view the task after it has been created (ID-6659). The scheduled task was placed in Top and the delegated administrator does not have rights to view the object.

Workflows, Forms, Rules, and XPRESS

- You cannot use the XPRESS <eq> function to compare Boolean values to TRUE or FALSE strings or to the integers 1 or 2 (ID-3904).

  Workaround: Use the following

  ```
  <cond>
      <isTrue><ref>Boolean_variable</ref></isTrue>
      <s>True action</s>
      <s>False action</s>
  </cond>
  ```

- Path expressions do not work when iterating a list of generic objects with a dolist (ID-4920).

  ```
  <dolist name='genericObj'>
      <ref>listOfGenericObjects</ref>
      <ref>genericObj.name</ref>
  </dolist>
  ```

  Workaround: Use <get> / <set> as shown:

  ```
  <dolist name='genericObj'>
      <ref>listOfGenericObjects</ref>
      <get><ref>genericObject</ref><s>name</s>
  </dolist>
  ```

- If you use `global.attrname` variables for fields in your user form, and the attribute is shared among more than one resource, you should also define a Derivation rule (ID-5074). Otherwise, if the attribute has been changed natively on one of the resources, the attribute may or may not be picked up and propagated to the other resources.

- You cannot use special strings beginning with "&" in HTML components of forms. For example,   will no longer appear as a space. This issue was introduced because of a change to support special characters (&<>') in Select lists. (ID-5548)

- Form, workflow and rule comments contained in `<Comment>` tags have
 strings in them representing the line feed character (ID-6243). These characters are seen only when viewing the XML for these objects; the Oracle Waveset server will process these characters properly.

- If you use the Resource Table User Form for editing users, when editing a user's resource, the resource attributes are not fetched when the form first appears.

  Workaround: Click the Refresh button, which will fetch the attribute data. (ID-10551)

- If Oracle Waveset is protected by a Sun Java System Access Manager Policy Agent, workflow process diagrams might render incompletely. (ID-18304)

5

Installation and Upgrade Notes

This section provides information related to installing or updating Oracle Waveset. The information is organized as follows:

- "Oracle Waveset Upgrade Paths" on page 59
- "Upgrade Notes" on page 61
- "Installation Notes" on page 69

Oracle Waveset Upgrade Paths

This section provides information about the upgrade paths that you should follow when upgrading to Oracle Waveset 8.1.1.

Determining Your Upgrade Path

Use the following table to determine the upgrade path you must follow when upgrading to a newer version of Oracle Waveset.

1. In the left-most column find the version of Sun Identity Manager that you currently have installed.

2. In the top row find the version of the software that you want to upgrade to (the target version).

3. Find the intersection between your currently installed version and the target version.

   The intersection specifies the upgrade path you must follow.

FIGURE 5–1   Oracle Waveset Upgrade Path Matrix

Current Version (The version that you currently have installed)		Target Upgrade Version (The version that you want to upgrade to)					
		7.0	**7.1**	**7.1.1**	**8.0**	**8.1**	**8.1.1**
	6.0	7.0	7.1	7.1 > 7.1.1	7.1 > 8.0	7.1 > 8.1	7.1 > 8.1 > 8.1.1
	7.0		7.1	7.1 > 7.1.1	8.0	8.1	8.1 > 8.1.1
	7.1			7.1.1	8.0	8.1	8.1 > 8.1.1
	7.1.1				8.0	8.1	8.1 > 8.1.1
	8.0					8.1	8.1 > 8.1.1
	8.1						8.1.1

To determine your upgrade path, find the intersection between the version that you currently have installed and the version that you want to upgrade to. For example, if you currently have version 7.1.1 installed and you want to upgrade to version 8.1.1, you first need to install version 8.1 followed by version 8.1.1.

Note –

- For information about skip-level upgrades, see Chapter 6, "Skip-Level Upgrade Considerations," in *Oracle Waveset 8.1.1 Upgrade*.

- When upgrading Oracle Waveset, you do not have to install Updates (*formerly called Service Packs or SPs*) within a major release to upgrade to the next major release. For example, when upgrading from Sun Identity Manager 5.0 to 6.0, you do not have to install any of the 5.0 Service Packs.

- Updates for a major release are cumulative. After upgrading to the major release, you can install the latest Update without having to install all of the Updates (or Service Packs) for that release. For example, if you upgraded to Sun Identity Manager 5.0, installing SP6 gives you all of the functionality provided in SP1 through SP5.

- Sun Identity Manager Installation Pack 2005Q4M3 (version 6.0) was a major release. If you are upgrading from a pre-6.0 version of Identity Manager, Identity Auditor, or Sun Identity Manager Service Provider, you must upgrade to Sun Identity Manager Installation Pack 2005Q4M3 before advancing to later releases.

Upgrade Notes

This section contains information and known issues related to upgrading to Oracle Waveset 8.1.1 from Sun Identity Manager versions 6.0, 7.0, 7.1, 7.1.1, 8.0, and 8.1.

The information in this section is organized as follows:

- "Before you Begin" on page 61
- "Upgrade Notes if you are Upgrading From Version 6.0" on page 63
- "Upgrade Notes if you are Upgrading From Version 7.0" on page 63
- "Upgrade Notes if you are Upgrading From Version 7.1" on page 64
- "Upgrade Notes if you are Upgrading From Version 7.1.1" on page 65
- "Upgrade Notes if you are Upgrading From Version 8.0" on page 68
- "Upgrade Notes if you are Upgrading From Version 8.1" on page 68

Before you Begin

Be aware of the following information before starting the upgrade process:

- See *Oracle Waveset 8.1.1 Upgrade* for comprehensive upgrade instructions.

- If you upgrade your JDK or JRE, you must use a JDK or JRE supplied by the same vendor as your previous JDK. For example, do not install a Sun JDK if previously you were using a JDK from IBM. If you mix JDKs from different vendors, data encrypted under a previous JDK cannot be read by a JDK from another vendor. (ID-17800)

- Upgrade Identity Manager in the following order:
  1. Upgrade all Identity Manager server instances and Gateway instances
  2. Upgrade all PasswordSync instances

  The 8.1.1 version of Oracle Waveset server provides limited, temporary support for older versions of PasswordSync. This support is provided so that older versions of Identity Manager can continue to run while you upgrade your PasswordSync instances. All instances of PasswordSync should be updated to the same version as the Oracle Waveset server as soon as possible.

- When *uninstalling* PasswordSync, use the add/modify programs feature from the Windows Control Panel to ensure correct removal. You must reboot after uninstalling.

  When *installing* PasswordSync, use the appropriate binary file for the operating system on which you are installing. The binary for 32-bit Windows is called `IdmPwSync_x86.msi` and the binary for 64-bit Windows is called `IdmPwSync_x64.msi`. After each PasswordSync installation you must reboot.

- Be sure to use only one Oracle Waveset server to import `update.xml`.

- During an upgrade, only one Oracle Waveset/Sun Identity Manager server should be running. If you start any other Oracle Waveset servers during the upgrade, you must stop and restart those servers before making them available. Note that changes to `RepositoryConfiguration` do not affect an Oracle Waveset server until you restart that server.

- If the upgrade process fails to log in with the default configurator account and password, the log file logs the error, but does not log anything after the error. (ID-18929)

  The `update.xml` file is imported during the upgrade process. The import attempts to log in as configurator with the default password. If the login fails, an error is displayed, and the upgrade program prompts you for the correct login information. If you provide the correct information, the upgrade continues. When looking through the log file for the upgrade process, you can see the error message when the default log in fails, but you do not see any further information about the upgrade in the log file. This issue does not affect the upgrade, only the log file.

- If your current Identity Manager installation has a large amount of custom work, consider contacting Professional Services for assistance with planning and executing your upgrade.

- When running Oracle Waveset on multiple physical servers, the servers' system clocks must be synchronized. Each Oracle Waveset server regularly issues a timestamped "heartbeat" to the Oracle Waveset repository. If any server observes that another server's heartbeat is too old (by default five minutes), then it will mark that server as "recovered" and mark all tasks currently executing on that server as terminated. Proper Oracle Waveset operation requires that all server clocks be synchronized to within five minutes of each other, and preferably within one minute. (ID-22418)

Upgrade Notes if you are Upgrading From Version 6.0

If planning a skip-level upgrade, be sure to also review the upgrade notes in the following sections. Upgrade notes for subsequent versions of Identity Manager also apply to your upgrade.

- If you are upgrading from an Identity Manager version 6.*x* installation and you want to start using the new Oracle Waveset end-user pages, you must manually change the system configuration `ui.web.user.showMenu` to `true` for the horizontal navigation bar to display. (ID-14901)

  Also, if you want the new end-user dashboard to display on the end-user home page, you must manually change the end-user form mapping for Form Type `endUserMenu`. Go to Configure > Form and Process Mapping > for Form Type 'endUserMenu'. Change the Form Name Mapped To to be **End User Dashboard**.

  You should also update the mapping for Form Type `endUserWorkItemListExt`. Change the Form Name Mapped To to be **End User Approvals List**.

- If you are upgrading from version 6.0 and using `LocalFiles`, you must export all of your data before upgrading and then re-import the data after doing a clean installation of 8.1. (ID-15366)

Upgrade Notes if you are Upgrading From Version 7.0

If planning a skip-level upgrade, be sure to also review the upgrade notes in the following sections. Upgrade notes for subsequent versions of Identity Manager also apply to your upgrade.

- If you are upgrading from version 7.0 and using `LocalFiles`, you must export all of your data before upgrading and then re-import the data after doing a clean installation of 8.1. (ID-15366)

- There may be ItemNotFound Exceptions in the upgrade log due to Identity Manager Service Provider Edition (SPE) objects being renamed to Identity Manager Service Provider. (ID-18860)

- If your installation contains a Remedy resource, you must place Remedy API libraries in the directory where the Gateway is installed. These libraries can be found on the Remedy server.

TABLE 5–1 Remedy API Libraries

Remedy 4.x and 5.x	Remedy 6.3	Remedy 7.0
■ `arapiXX.dll` ■ `arrpcXX.dll` ■ `arutlXX.dll` where *XX* matches the version of Remedy. For example, `arapi45.dll` on Remedy 4.5.	■ `arapi63.dll` ■ `arrpc63.dll` ■ `arutl63.dll` ■ `icudt20.dll` ■ `icuin20.dll` ■ `icuuc20.dll`	■ `arapi70.dll` ■ `arrpc70.dll` ■ `arutl70.dll` ■ `icudt32.dll` ■ `icuin32.dll` ■ `icuuc32.dll`

Upgrade Notes if you are Upgrading From Version 7.1

If planning a skip-level upgrade, be sure to also review the upgrade notes in the following sections. Upgrade notes for subsequent versions of Identity Manager also apply to your upgrade.

■ As of version 7.1.1, Sun Identity Manager User Extended Attributes fully support multi-valued attributes. (ID-14863)

Note – You can add a multi-valued user extended attribute to the accounts list table, and it will render the list without error. However, attempting to sort on that column will yield the following error:

```
java.lang.ClassCastException: java.util.ArrayList
```

An attribute condition that refers to a multi-valued extended attribute will evaluate correctly for a user object *only* after that user object has been re-serialized. If you want such an attribute condition to evaluate correctly for all user objects, then you must re-serialize all user objects. See Refreshing User Objects in the following section for instructions.

Refreshing User Objects

Certain types of changes require an administrator to refresh all `User` objects. For example, you must refresh all `User` objects when you change the inline attributes for `Type.USER` in `RepositoryConfiguration`. Whenever you mark an attribute as queryable or summary in the `IDMSchemaConfiguration` object, you must refresh all `User` objects for the change to affect older, unmodified objects. The same logic applies when a new version of Identity Manager or Oracle Waveset adds a new attribute, or when a new version of Identity Manager or Oracle Waveset changes the values of an existing attribute— the upgrade process or an administrator must refresh all `User` objects for the change to affect older, unmodified objects.

There are three ways to reserialize existing users:

- Modify an individual User object during normal operations.

  For example, opening a user account through the user interface and saving it with or without modifications.

  Disadvantage: This method is time-consuming, and the administrator must be meticulous to ensure all existing users are reserialized.

- Use the lh refreshType utility to reserialize all users. The refreshType utility's output is a refreshed list of users.

  lh console

  refreshType User

  Disadvantage: Because the refreshType utility runs in the foreground and not the background, this process can be time-consuming. If you have a lot of users, reserializing them all takes a long time.

- Use the Deferred Task Scanner.

  Note – Before running the Deferred Task Scanner process, you must edit the System Configuration object using the Sun Identity Manager Integrated Development Environment (IDE) or some other method.

  Search for 'refreshOfType' and remove the attributes for '2005Q4M3refreshOfTypeUserIsComplete' and '2005Q4M3refreshOfTypeUserUpperBound'.

  After editing the System Configuration object, you must import that object to repository for your changes to be present.

  Disadvantage: This method causes the next Deferred Task Scanner run to take a long time because it examines and rewrites almost every User object. However, subsequent Deferred Task Scanner runs should execute at normal speed and duration.

Upgrade Notes if you are Upgrading From Version 7.1.1

If planning a skip-level upgrade, be sure to also review the upgrade notes in the following sections. Upgrade notes for subsequent versions of Identity Manager also apply to your upgrade.

- If you are using an Oracle repository, the Sun Identity Manager 8.0 and 8.1 and Oracle Waveset repository DDL uses data types that are not properly handled by older Oracle JDBC drivers. The JDBC drivers in ojdbc14.jar do not properly read all of the columns in the log table.

You must upgrade to the `ojdbc5.jar` for JDK 5 drivers for Oracle Waveset to work properly.

- Upgrading automatically converts the `User Extended Attributes` object and `QueryableAttrNames` and `SummaryAttrNames` elements of the `UserUIConfig` object into the `IDM Schema Configuration` object. (ID-17784)

  The sample `update.xml` script contains an import command that invokes `IDMSchemaConfigurationUpdater` to convert legacy user schema configuration objects. Successful conversion of legacy user schema configuration objects performs the following:

  - Creates within `IDM Schema Configuration` an `IDMObjectClassAttribute` element for each extended attribute name from `User Extended Attributes`.

  - Flags as "summary' any `IDMObjectClassAttribute` that corresponds to each value from the `SummaryAttrNames` element within `UserUIConfig`.

  - Flags as "queryable' any `IDMObjectClassAttribute` that corresponds to each value from the `QueryableAttrNames` element within `UserUIConfig`.

  - Empties the `SummaryAttrNames` element within `UserUIConfig`.

  - Empties the `QueryableAttrNames` element within `UserUIConfig`.

  - Renames any extended attribute named `objectClass` to `spml2ObjectClass`. Starting in version 8.0, legacy attributes named `objectClass` conflict with a core attribute in the Identity Manager schema.

- Identity Manager 8.0 dedicated some new tables for `Roles` objects. You must use the sample scripts provided in the `db_scripts` directory to make the schema changes, create the new table structures, and move your existing data.

Tip –

- Before updating the repository database table definitions, make a full backup of your repository tables.

- Refer to the db_scripts/upgradeto8.0from71.*DBMSName* script for more information.

- Be careful when you edit the super role field in the Role form because the super role itself may be a nested role. The super roles and subroles fields indicate a nesting of roles and their associated resources or resource groups. When applied to a user, the super role includes the resources associated with any designated subrole. The super role field is displayed to indicate the roles that include the displayed role.

- During the upgrade process, Oracle Waveset analyzes all roles on the system and then updates any missing subroles and super roles links using the `RoleUpdater` class.

  To check and upgrade roles outside of the upgrade process, you can import the new `RoleUpdater` configuration object that is provided in `sample/forms/RoleUpdater.xml`.

For example:

```
<?xml version='1.0' encoding='UTF-8'?>
<!DOCTYPE Waveset PUBLIC 'waveset.dtd' 'waveset.dtd'>
<Waveset>
  <ImportCommand class='com.waveset.session.RoleUpdater' >
    <Map>
      <MapEntry key='verbose' value='true' />
      <MapEntry key='noupdate' value='false' />
      <MapEntry key='nofixsubrolelinks' value='false' />
    </Map>
  </ImportCommand>
</Waveset>
```

Where:

- **verbose**: Provides verbose output when updating roles. Specify `false` to enable a silent update of roles.

- **noupdate**: Determines whether the roles are updated. Specify `false` to get a report that only lists which roles will be updated.

- **nofixsubrolelinks**: Determines whether super roles are updated with missing subrole links. This value is set to false by default and links will be repaired.

■ Administrators who need to view or edit the Oracle Waveset schema for Users or Roles must be in the IDM Schema Configuration AdminGroup and must have the IDM Schema Configuration capability.

■ The SPML 2.0 implementation in Oracle Waveset changed in Sun Identity Manager 8.0. In previous releases, the SPML `objectclass` attribute used in SPML messages was mapped directly to the `objectclass` attribute of Identity Manager User objects. The `objectclass` attribute is now mapped internally to the `spml2ObjectClass` attribute and is used internally for other purposes.

During the upgrade process the `objectclass` attribute value is automatically renamed for existing users. If your SPML 2.0 configuration contains forms that reference the `objectclass` attribute, you must manually change those references to `spml2ObjectClass`.

Oracle Waveset does not replace the sample `spml2.xml` configuration file during an upgrade. If you used the `spml2.xml` configuration file as a starting point, be aware that this file contains a form with references to `objectclass` that you must change to `spml2ObjectClass`. Change the `objectclass` attribute in forms (where it is used internally), but *do not* change the `objectclass` attribute in the target schema (where the attribute is exposed externally).

■ When you upgrade Oracle Waveset, any custom code that calls `UserUIConfig#getRepoIndexAttributes()` must be removed or changed to call `Type.USER#getInlineAttributeNames()`. (ID-18051)

Importing update.xml converts the values from the `UserUIConfig RepoIndexAttrs` into values of XML attributes on the `TypeDataStore` element for `Type.USER` within the `RepositoryConfiguration` object. The update.xml file includes the `UserUIConfigUpdater.xml` file, which contains an import command that invokes

UserUIConfigUpdater to convert RepoIndexAttrs. Conversion also sets a flag in SystemConfiguration that inhibits reconversion.

Any future changes to the inline attributes for Type.USER should be made by editing the RepositoryConfiguration object. If you change the inline attributes for Type.USER, you generally must refresh all Type.USER objects.

Note – Changes to RepositoryConfiguration do not affect an Oracle Waveset server until you restart that server.

Upgrade Notes if you are Upgrading From Version 8.0

- Sun Identity Manager 8.0 changed the display method of charts and graphs in reports. Reports created prior to version 8.0 display as expected in the version 8.0 release. These reports, however, will not display properly in Oracle Waveset 8.1.1. A deprecation notice regarding this issue appeared in the *Sun Identity Manager Release Notes, Version 8.0 May 2008*. (ID-17636)

- Forms and workflows that use the SaveNoValidate action will need to be added to the new saveNoValidateAllowedFormsAndWorkflows list. (ID-19115)

  Whitelist functionality added in Sun Identity Manager 8.1 checks forms and workflows that use the SaveNoValidate action against a list of IDs of form names. The saveNoValidateAllowedFormsAndWorkflows list is located in the security attribute in the System Configuration object. With this update, if the form name or owner ID is on the whitelist, the form or workflow can use the SaveNoValidate action. If the form name or the owner ID is not on the list, the form or workflow is processed using a Save action.

  To obtain the IDs or form names for forms and workflows that use the SaveNoValidate action, check the system log or turn on trace level 4 for com.waveset.ui.util.GenericEditForm and submit any custom forms or workflows that use SaveNoValidate. A warning including the ID will be logged.

Note – If you add a form name to the whitelist, be sure that the name attribute for the form is set, otherwise you will see the following error message:

```
SaveNoValidate on null processed as Save because it is not
 in the saveNoValidateAllowedFormsAndWorkflows list.
```

Upgrade Notes if you are Upgrading From Version 8.1

- Review the "Installation Notes" on page 69 if you are upgrading to Oracle Waveset on a 64–bit system.

- The `wfexternalpolicy.xml` file has changed. If you previously customized your workflows for external policy checks, you may need to merge your workflows with the updated workflow. For details, see "Oracle Identity Analytics / Oracle Waveset Integration" on page 33. (ID-22104)

- If you are running Oracle Waveset on the WebLogic application server, and either Oracle Waveset is integrated with Oracle Identity Analytics, or you are using the SAP Web Services adapter, then the Metro web service libraries need to be installed. For details, see "Step 5: Install the Metro Libraries (optional)" in *Oracle Waveset Installation*. (ID-22628)

Installation Notes

Note – Refer to *Oracle Waveset Installation* for detailed product installation instructions.

- On 64–bit AIX systems, the Oracle Waveset installer will halt with the error "attach to native process failed" if run using an IBM JVM supplied with either WebSphere 7.0 Fix Pack 5 (7.0.0.5) or Fix Pack 7 (7.0.0.7). To fix this issue, install Fix Pack 9.

  Note that the `os.arch=ppc` property must be set when performing an upgrade installation of Oracle Waveset on 64–bit AIX systems. See the following bullet point for details. (ID-22285)

- The Oracle Waveset installer may not run with a 64-bit JDK. (ID-18534)

  Workarounds:

  - Install manually.

  - Use a 32-bit version JDK to run the installer.

  - Set `os.arch=ppc` by setting `JAVA_OPTS` (used by the install script) to get through the install. For example,

    ```
    export JAVA_OPTS="-Dos.arch=ppc"
    install
    ```

  - Or, if `JAVA_OPTS` already contains needed options:

    ```
    export JAVA_OPTS="$JAVA_OPTS -Dos.arch=ppc"
    install
    ```

- When installing Oracle Waveset do not mix JDKs from different vendors . For example, if you are running Identity Manager using the IBM JDK on WebSphere, use the IBM JDK to install Identity Manager. Do not use JDKs from different vendors because data encrypted under one JDK cannot be read by a JDK from another vendor. (ID-17800)

- When running Oracle Waveset on multiple physical servers, the servers' system clocks must be synchronized. Each Oracle Waveset server regularly issues a timestamped "heartbeat" to the Oracle Waveset repository. If any server observes that another server's heartbeat is too old (by default, five minutes), then it will mark that server as "recovered" and mark all tasks currently executing on that server as terminated. Proper Oracle Waveset operation requires that all server clocks be synchronized to within five minutes of each other, and preferably within one minute. (ID-22418)

Deprecated APIs

This section lists all Oracle Waveset Application Programming Interfaces (APIs) deprecated since Oracle Waveset 6.0 2005Q4M3 and their replacements (if available).

This information is organized into the following sections:

- "Deprecated Java Classes, Methods, and Fields" on page 71
- "Deprecated JSP Files and URLs" on page 95
- "Deprecated Configuration Objects" on page 95
- "Deprecated Views and Path Expressions" on page 95

Note –

- MultiSelect and TreeTable applet support will be discontinued in the next major Oracle Waveset release; however, similar functionality will be maintained. (ID-18785)

- Oracle Waveset release 2005Q4M3 deprecated the `com.waveset.util.Trace` and `com.waveset.util.ITrace` classes (in favor of the `com.sun.idm.logging.Trace` and `com.sun.idm.logging.TraceManager` classes). Many undeprecated classes still refer to these deprecated classes to preserve backward compatibility with any custom code that extends the undeprecated classes and may rely on an inherited reference to one of the deprecated classes. You should remove any references to either of these deprecated classes from your custom code. A future release will remove the deprecated classes. (ID-11878)

Deprecated Java Classes, Methods, and Fields

The following table lists deprecated classes, methods, and fields and their replacements, when available. The table is sorted by class name, and all classes, methods, and fields are listed using JavaDoc syntax.

Deprecated	Replacement
com.sun.idm.idmx.IDMXContext	com.waveset.object.LighthouseContext
com.sun.idm.idmx.IDMXContextFactory	com.waveset.session.SessionFactory
com.sun.idm.idmx.sync.util.CaseInsensitiveStringComparator	java.lang.String.CASE_INSENSITIVE_ORDER
com.waveset.adapter.AccessManagerResourceAdapter#handlePDException(Exception)	com.waveset.adapter.AccessManagerResourceAdapter#handlePDException(PDException)
com.waveset.adapter.ACF2ResourceAdapter#getAccountAttributes(String)	
com.waveset.adapter.ActivCardResourceAdapter	
com.waveset.adapter.ActiveDirectoryActiveSyncAdapter	com.waveset.adapter.ADSIResourceAdapter
com.waveset.adapter.ActiveSync#RA_PARAMETERIZED_INPUT_FORM	
com.waveset.adapter.ActiveSync#RA_SYNC_CONFIG_MODE	
com.waveset.adapter.ActiveSync#RA_SYNC_POST_PROCESS_FORM	
com.waveset.adapter.ActiveSync#RA_UPDATE_IF_DELETE	
com.waveset.adapter.ActiveSync#RA_USE_INPUT_FORM	
com.waveset.adapter.ActiveSyncUtil#getLogFileFullPath()	
com.waveset.adapter.AD_LDAPResourceAdapter	com.waveset.adapter.LDAPResourceAdapter
com.waveset.adapter.ADSIResourceAdapter#buildEvent(UpdateRow)	com.waveset.adapter.iapi.IAPIFactory#getIAPI(Map,Map,ResourceAdapterBase)
com.waveset.adapter.ADSIResourceAdapter#getBaseContextAttrName()	com.waveset.adapter.ResourceAdapter#getBaseContexts()
com.waveset.adapter.ADSIResourceAdapter#RA_UPDATE_IF_DELETE	com.waveset.adapter.ActiveSync#RA_DELETE_RULE
com.waveset.adapter.AgentResourceAdapter#getAccountAttributes(String)	
com.waveset.adapter.AIXResourceAdapter.BlockAcctIter	References to this class should be replaced with an AccountIterator based on the Supplier model. For example BufferedAccountQueue(new AIXAccountSupplier).

Deprecated	Replacement
com.waveset.adapter.AuthSSOResourceAdapter #getAccountAttributes(String)	
com.waveset.adapter.BlackberryResourceAdapter	com.waveset.adapter.ScriptedGatewayResourceAdapter
com.waveset.adapter.ClearTrustResourceAdapter #getAccountAttributes(String)	
com.waveset.adapter.ConfirmedSync	References to this class should be replaced with an AccountIterator based on the Supplier model. For example BufferedAccountQueue(new LinuxAccountSupplier).
com.waveset.adapter.DatabaseTableResourceAdapter #RA_PROCESS_NAME	com.waveset.adapter.ActiveSync#RA_PROCESS_RULE
com.waveset.adapter.DblBufIterator	com.waveset.util.BufferedIterator
	com.waveset.util.BlockIterator
	com.waveset.adapter.AccountIteratorWrapper
com.waveset.adapter.DB2ResourceAdapter #getAccountAttributes(String)	
com.waveset.adapter.DominoActiveSyncAdapter	com.waveset.adapter.DominoResourceAdapter
com.waveset.adapter.DominoResourceAdapter #buildEvent(UpdateRow)	com.waveset.adapter.iapi.IAPIFactory#getIAPI (Map,Map,ResourceAdapterBase)
com.waveset.adapter.DominoResourceAdapter #RA_UPDATE_IF_DELETE	com.waveset.adapter.ActiveSync#RA_DELETE_RULE
com.waveset.adapter.DominoResourceAdapter #USER_DEPARTMENY	USER_DEPARTMENT
com.waveset.adapter.Exchange55ResourceAdapter	
com.waveset.adapter.ExampleTableResourceAdapter #getAccountAttributes(String)	
com.waveset.adapter.GenericScriptResourceAdapter #getAccountAttributes(String)	
com.waveset.adapter.GetAccessResourceAdapter #getAccountAttributes(String)	
com.waveset.adapter.HostConnectionPool #getConnectionHostAccessLogin)	com.waveset.adapter.HostConnPool#getAffinity Connection(HostAccessLogin)
com.waveset.adapter.HostConnectionPool #releaseConnection(HostAccess)	com.waveset.adapter.HostConnPool#releaseConnection (HostAccess)

Deprecated	Replacement
com.waveset.adapter.HostConnectionPool #releaseConnection(IHostAccess)	com.waveset.adapter.HostConnPool#release Connection(IHostAccess)
com.waveset.adapter.HostConnPool #getConnection(HostAccessLogin)	com.waveset.adapter.HostConnPool#getAffinity Connection(HostAccessLogin)
com.waveset.adapter.HostConnPool#putFree()	
com.waveset.adapter.iapi.IAPIFactory.AbstractFactory .getIAPIProcess(Map, Map, String, Resource)	As of Identity Manager 5.0SP1, use IAPIProcess(Map, Map, String, ResourceAdapter) or you will not have the LighthouseContext initialization. For backward compatibility, this factory supplies its default LighthouseContext to the constructed IAPIProcess.
com.waveset.adapter.iapi.IAPIFactory.AbstractFactory .getIAPIUser(Map, Map, String, Map)	getIAPIUser(Map, Map, String, ResourceAdapter, LighthouseContext)
com.waveset.adapter.iapi.IAPIFactory.AbstractFactory .getIAPIUser(Map, Map, String, Resource)	getIAPIUser(Map, Map, String, ResourceAdapter, LighthouseContext)
com.waveset.adapter.iapi.IAPIFactory.getIAPIProcess (Map, Map, String, Resource)	As of Identity Manager 5.0SP1, use IAPIProcess(Map, Map, String, ResourceAdapter) or you will not have the LighthouseContext initialization. For backward compatibility, this factory supplies its default LighthouseContext to the constructed IAPIProcess.
com.waveset.adapter.iapi.IAPIFactory.getIAPIUser (Map, Map, String, Map)	As of Identity Manager 5.0SP1, use getIAPIUser(Map, Map, String, ResourceAdapter) or you will not have the LighthouseContext initialization. For backward compatibility, this factory supplies its default LighthouseContext to the constructed IAPIProcess.
com.waveset.adapter.iapi.IAPIFactory.getIAPIUser (Map, Map, String, Resource)	As of Identity Manager 5.0SP1, use getIAPIUser(Map, Map, String, ResourceAdapter) or you will not have the LighthouseContext initialization. For backward compatibility, this factory supplies its default LighthouseContext to the constructed IAPIProcess.
com.waveset.adapter.HostConnPool#putFree(IHostAccess)	com.waveset.adapter.HostConnPool#putAffinityFree
com.waveset.adapter.iapi.IAPIFactory#getIAPIProcess (Map,Map,String,Resource)	com.waveset.adapter.iapi.IAPIFactory#getIAPI (Map,Map,String,ResourceAdapterBase)
com.waveset.adapter.iapi.IAPIFactory#getIAPIProcess (Element)	
com.waveset.adapter.iapi.IAPIFactory#getIAPIUser (Element)	
com.waveset.adapter.iapi.IAPIFactory#getIAPIUser (Map,Map,String,Map)	com.waveset.adapter.iapi.IAPIFactory#getIAPI (Map, Map, String, ResourceAdapterBase)

Deprecated	Replacement
com.waveset.adapter.iapi.IAPIFactory#getIAPIUser (Map,Map,String,Resource)	com.waveset.adapter.iapi.IAPIFactory#getIAPI (Map,Map,String,ResourceAdapterBase)
com.waveset.adapter.IDMResourceAdapter #getAccountAttributes(String)	
com.waveset.adapter.INISafeNexessResourceAdapter #getAccountAttributes(String)	
com.waveset.adapter.LDAPChangeLogActiveSyncAdapter	com.waveset.adapter.LDAPResourceAdapter
com.waveset.adapter.LDAPListenerActiveSyncAdapter	com.waveset.adapter.LDAPChangeLogActiveSyncAdapter
com.waveset.adapter.LDAPResourceAdapterBase #addUserToGroup(LDAPObject,String,String)	com.waveset.adapter.LDAPResourceAdapterBase #addUserToGroup(String,String,String)
com.waveset.adapter.LDAPResourceAdapterBase #buildBaseUrl()	
com.waveset.adapter.LDAPResourceAdapterBase #buildBaseUrl(String)	
com.waveset.adapter.LDAPResourceAdapterBase #buildEvent(UpdateRow)	
com.waveset.adapter.LDAPResourceAdapterBase #getAccountAttributes(String)	
com.waveset.adapter.LDAPResourceAdapterBase #getBaseContextAttrName()	com.waveset.adapter.ResourceAdapter#getBaseContexts()
com.waveset.adapter.LDAPResourceAdapterBase #getGroups(Name,String,Vector,Vector)	com.waveset.adapter.LDAPResourceAdapterBase #getGroups(String,String,Vector,Vector)
com.waveset.adapter.LDAPResourceAdapterBase #getLDAPAttributes(String,DirContext[],String)	com.waveset.adapter.LDAPResourceAdapterBase #getLDAPAttributes(String,DirContext,String,String[])
com.waveset.adapter.LDAPResourceAdapterBase #getLDAPAttributes(String,DirContext[])	com.waveset.adapter.LDAPResourceAdapterBase #getLDAPAttributes(String,DirContext,String,String[])
com.waveset.adapter.LDAPResourceAdapterBase #RA_PROCESS_NAME	com.waveset.adapter.ActiveSync #RA_PROCESS_RULE
com.waveset.adapter.LDAPResourceAdapterBase #removeNameFromAttribute(DirContext,Name,Attribute)	com.waveset.adapter.LDAPResourceAdapterBase #removeNameFromAttribute(DirContext,String,boolean, Attribute)
com.waveset.adapter.LDAPResourceAdapterBase #removeUserFromAllGroups (Name,String,WavesetResult)	com.waveset.adapter.LDAPResourceAdapterBase #removeUserFromAllGroups(String,boolean, String,WavesetResult)

Deprecated	Replacement
com.waveset.adapter.LDAPResourceAdapterBase #removeUserFromGroup(DirContext,Name, String,String,Attributes)	com.waveset.adapter.LDAPResourceAdapterBase #removeUserFromGroup(DirContext,String, boolean,String,String,Attributes)
com.waveset.adapter.LDAPResourceAdapterBase #removeUserFromGroups(Name,Vector,String, WavesetResult)	com.waveset.adapter.LDAPResourceAdapterBase #removeUserFromGroups(String, boolean,Vector,String,WavesetResult)
com.waveset.adapter.LinuxResourceAdapter. BlockAcctIter	
com.waveset.adapter.MySQLResourceAdapter #getAccountAttributes(String)	
com.waveset.adapter.NaturalResourceAdapter #getAccountAttributes(String)	
com.waveset.adapter.NaturalResourceAdapter.getUser()	com.waveset.adapter.NaturalResourceAdapter#affinity
com.waveset.adapter.NaturalResourceAdapter.login (IHostAccess)	com.waveset.adapter.NaturalResourceAdapter #login(IHostAccess,ServerAffinity)
com.waveset.adapter.NDSActiveSyncAdapter	com.waveset.adapter.NDSResourceAdapter
com.waveset.adapter.NDSResourceAdapter #buildEvent(UpdateRow)	
com.waveset.adapter.NDSResourceAdapter #getBaseContextAttrName()	com.waveset.adapter.ResourceAdapter#getBaseContexts()
com.waveset.adapter.NISResourceAdapter	
com.waveset.adapter.NTResourceAdapter	
com.waveset.adapter.ONTDirectorySmartResource Adapter#getAccountAttributes(String)	
com.waveset.adapter.OS400ResourceAdapter #getAccountAttributes(String)	
com.waveset.adapter.PeopleSoftComponentActiveSync Adapter#DEFAULT_AUDIT_STAMP_FORMAT	
com.waveset.adapter.PeopleSoftComponentActiveSync Adapter#DEFAULT_AUDIT_STAMP_START_DATE	
com.waveset.adapter.PeopleSoftComponentActiveSync Adapter#getAccountAttributes(String)	
com.waveset.adapter.PeopleSoftComponentActiveSync Adapter#getUpdateRows(UpdateRow)	com.waveset.adapter.PeopleSoftComponentActiveSync Adapter#getUpdateRows(UpdateRow)

Deprecated	Replacement
com.waveset.adapter.PeopleSoftComponentActiveSync Adapter#RA_AUDIT_STAMP_FORMAT	
com.waveset.adapter.PeopleSoftResourceAdapter	
com.waveset.adapter.RACFResourceAdapter #getAccountAttributes(String)	
com.waveset.adapter.RASecureConnection #ExchangeAuth(boolean)	com.waveset.adapter.RASecureConnection #ExchangeAuth(boolean,byte[])
com.waveset.adapter.RASecureConnection (InetAddress, int, byte[])	#RASecureConnection(InetAddress, int, Map)
com.waveset.adapter.RASecureConnection. ResetEncryption(byte[])	#resetEncryption(String, byte[])
com.waveset.adapter.RASecureConnection. SendConnectionKey(byte[])	#SendConnectionKey(EncryptionKey) SendConnectionKey sends a new encryption key to the remote end. With a successful result, the session key changes to this new key.
com.waveset.adapter.RASecureConnection (Socket, byte[])	#RASecureConnection(Socket, Map)
com.waveset.adapter.RASecureConnection (String, int, byte[])	#RASecureConnection(String, int, Map)
com.waveset.adapter.RemedyActiveSyncResourceAdapter	com.waveset.adapter.RemedyResourceAdapter
com.waveset.adapter.RequestResourceAdapter	ExternalResourceAdapter
com.waveset.adapter.RequestResourceAdapter #getAccountAttributes(String)	
com.waveset.adapter.ResourceAdapter #getAccountAttributes(String)	
com.waveset.adapter.ResourceAdapter #getBaseContextAttrName()	com.waveset.adapter.ResourceAdapter#getBaseContexts()
com.waveset.adapter.ResourceAdapterBase #getAccountAttributes(String)	
com.waveset.adapter.ResourceAdapterBase #getAdapter(Resource,LighthouseContext)	com.waveset.adapter.ResourceAdapterBase #getAdapterProxy(Resource,LighthouseContext)
com.waveset.adapter.ResourceAdapterBase #getAdapter(Resource,ObjectCache,WSUser)	com.waveset.adapter.ResourceAdapterBase #getAdapterProxy(Resource,ObjectCache)
com.waveset.adapter.ResourceAdapterBase #getAdapter(Resource,ObjectCache)	

Deprecated	Replacement
com.waveset.adapter.ResourceAdapterBase #getBaseContextAttrName()	com.waveset.adapter.ResourceAdapterBase #getBaseContexts()
com.waveset.adapter.ResourceAdapterBase #isExcludedAccount(String,Rule)	com.waveset.adapter.ResourceAdapterProxy#isExcluded Account(String,Map,ResourceOperation,Rule)
com.waveset.adapter.ResourceAdapterBase #isExcludedAccount(String)	com.waveset.adapter.ResourceAdapterProxy#isExcluded Account(String,Map,ResourceOperation,Rule)
com.waveset.adapter.ResourceAdapterBase. SimpleAccountIterator	Users of this class should switch to using the supplier model for account iteration. A direct replacement for this class would be: new BufferedAccountQueue(new SimpleAccountSupplier(accounts));
com.waveset.adapter.ResourceAdapterProxy #getAccountAttributes(String)	
com.waveset.adapter.ResourceAdapterProxy #getBaseContextAttrName()	com.waveset.adapter.ResourceAdapterProxy#getBase Contexts()
com.waveset.adapter.ResourceManager#getResourceTypes()	com.waveset.adapter.ResourceManager#getResource Prototypes()
	com.waveset.adapter.ResourceManager#getResource Prototypes(ObjectCache,boolean)
com.waveset.adapter.ResourceManager #getResourceTypeStrings()	com.waveset.adapter.ResourceManager#getResource PrototypeNames(ObjectCache)
com.waveset.adapter.SAPHRActiveSyncAdapter #RA_NO_BAPI	To be removed when Before and After actions are available
com.waveset.adapter.SAPHRActiveSyncAdapter #RA_PROCESS_NAME	com.waveset.adapter.ActiveSync#RA_PROCESS_RULE
com.waveset.adapter.SAPResourceAdapter#reverse MapMultiAttr(String, Object, WSUser)	
com.waveset.adapter.SAPResourceAdapter #setUserField(JCO.Function, String)	Function#setUserField(String)
com.waveset.adapter.SAPResourceAdapter #unexpirePassword(String,WavesetResult)	com.waveset.adapter.SAPResourceAdapter #unexpirePassword(String,String,String,WavesetResult)
com.waveset.adapter.SAPResourceAdapter #unexpirePassword(WSUser,WavesetResult)	com.waveset.adapter.SAPResourceAdapter #unexpirePassword(String,String,String,WavesetResult)
com.waveset.adapter.SAPResourceAdapter #AA_ACTIVITY_GROUP_OBJECTS_MAPNAME	AA_ACTIVITY_GROUPS_GENERIC_MAPNAME
com.waveset.adapter.SAPResourceAdapter #AA_ACTIVITY_GROUPS_MAPNAME	AA_ACTIVITY_GROUPS_GENERIC_MAPNAME

Deprecated	Replacement
com.waveset.adapter.SAPResourceAdapter #AA_ACTIVITY_GROUPS_SHADOW	AA_ACTIVITY_GROUPS_GENERIC_MAPNAME
com.waveset.adapter.SAPResourceAdapter #AA_BAPI_CUA_SYSTEMS_SHADOW	AA_BAPI_CUA_SYSTEMS_MAPNAME
com.waveset.adapter.SAPResourceAdapter #AA_DIRECT_ACTIVITY_GROUPS_SHADOW	
com.waveset.adapter.SAPResourceAdapter #AA_DIRECT_LOCAL_ACTIVITYGROUP_OBJECTS	AA_ACTIVITY_GROUPS_GENERIC_MAPNAME
com.waveset.adapter.SAPResourceAdapter #AA_DIRECT_LOCAL_ACTIVITYGROUPS	AA_ACTIVITY_GROUPS_GENERIC_MAPNAME
com.waveset.adapter.SAPResourceAdapter #AA_DIRECT_LOCAL_PROFILE_OBJECTS	AA_PROFILES_GENERIC_MAPNAME
com.waveset.adapter.SAPResourceAdapter #AA_DIRECT_LOCAL_PROFILES	AA_PROFILES_GENERIC_MAPNAME
com.waveset.adapter.SAPResourceAdapter #AA_DIRECT_PROFILES_SHADOW	
com.waveset.adapter.SAPResourceAdapter #AA_LOCAL_ACTIVITYGROUPS	AA_ACTIVITY_GROUPS_GENERIC_MAPNAME
com.waveset.adapter.SAPResourceAdapter #AA_LOCAL_PROFILES	
com.waveset.adapter.SAPResourceAdapter #AA_PROFILES_MAPNAME	AA_PROFILES_GENERIC_MAPNAME
com.waveset.adapter.SAPResourceAdapter #AA_PROFILES_SHADOW	AA_PROFILES_GENERIC_MAPNAME
com.waveset.adapter.SAPResourceAdapter #ACTIVITY_COMPOUND_NAME	
com.waveset.adapter.SAPResourceAdapter #ACTIVITY_GROUP_FROM_DATE	
com.waveset.adapter.SAPResourceAdapter #ACTIVITY_GROUP_NAME	
com.waveset.adapter.SAPResourceAdapter #ACTIVITY_GROUP_TO_DATE	
com.waveset.adapter.SAPResourceAdapter #PROFILE_COMPOUND_NAME	

Deprecated	Replacement
com.waveset.adapter.SAPResourceAdapter #PROFILE_FROM_DATE	
com.waveset.adapter.SAPResourceAdapter #PROFILE_NAME	
com.waveset.adapter.SAPResourceAdapter #PROFILE_TO_DATE	
com.waveset.adapter.ScriptedConnection.Script #hasNextToken()	
com.waveset.adapter.ScriptedConnection.Script #nextToken()	
com.waveset.adapter.ScriptedConnection.Scripted Connection#disConnect()	com.waveset.adapter.ResourceConnection#disconnect()
com.waveset.adapter.ScriptedConnection.Scripted ConnectionFactory#getScriptedConnection (String,HashMap)	com.waveset.adapter.ScriptedConnectionPool #getConnection(HashMap,String,long,boolean)
com.waveset.adapter.ScriptedConnection. SSHConnection#disConnect()	com.waveset.adapter.ScriptedConnection. SSHConnection#disconnect()
com.waveset.adapter.ScriptedConnection. TelnetConnection#disConnect()	com.waveset.adapter.ScriptedConnection. TelnetConnection#disconnect()
com.waveset.adapter.ScriptedHostResourceAdapter #getAccountAttributes(String)	
com.waveset.adapter.SkeletonActiveSyncAdapter	
com.waveset.adapter.SkeletonResourceAdapter	
com.waveset.adapter.SkeletonResourceAdapter #getAccountAttributes(String)	
com.waveset.adapter.SMEResourceAdapter #getAccountAttributes(String)	
com.waveset.adapter.SQLServerResourceAdapter	com.waveset.adapter.MSSQLServerResourceAdapter
com.waveset.adapter.SunAccessManager ResourceAdapter#getAccountAttributes(String)	
com.waveset.adapter.SunAccessManager ResourceAdapter#getBaseContextAttrName()	com.waveset.adapter.ResourceAdapter#getBaseContexts()
com.waveset.adapter.SVIDResourceAdapter.BlockAcctIter	References to this class should be replaced with an AccountIterator based on the Supplier model. For example BufferedAccountQueue(new SVIDAccountSupplier).

Deprecated	Replacement
com.waveset.adapter.SybaseResourceAdapter	com.waveset.adapter.SybaseASEResourceAdapter
com.waveset.adapter.TestResourceAdapter #getAccountAttributes(String)	
com.waveset.adapter.TopSecretActiveSyncAdapter	com.waveset.adapter.TopSecretResourceAdapter
com.waveset.adapter.TopSecretResourceAdapter #hasError(String,String)	com.waveset.adapter.TopSecretResourceAdapter #hasError(String,String,String)
com.waveset.adapter.TopSecretResourceAdapter #login(HostAccess hostAccess)	com.waveset.adapter.TopSecretResourceAdapter #login(HostAccess,ServerAffinity)
com.waveset.adapter.TopSecretResourceAdapter #login(IHostAccess hostAccess)	com.waveset.adapter.TopSecretResourceAdapter #login(IHostAccess hostAccess,ServerAffinity affinity)
com.waveset.adapter.VerityResourceAdapter #getAccountAttributes(String)	
com.waveset.adapter.XMLResourceAdapter #getAccountAttributes(String)	
com.waveset.exception.ConfigurationError	com.waveset.util.ConfigurationError
com.waveset.exception.IOException	com.waveset.util.IOException
com.waveset.exception.XmlParseException	com.waveset.util.XmlParseException
com.waveset.extractor.CSVFormatter	com.sun.idm.changelog.CSVFormatter
com.waveset.msgcat.Catalog#getMessage (String,Object[],Locale)	com.waveset.msgcat.Catalog#format (Locale,String,Object[])
com.waveset.msgcat.Catalog#getMessage (Locale,String,Object[])	com.waveset.msgcat.Catalog#format (Locale,String,Object[])
com.waveset.msgcat.Catalog#getMessage (Locale,String)	fcom.waveset.msgcat.Catalog#format (Locale,String)
com.waveset.msgcat.Catalog#getMessage(String,Locale)	com.waveset.msgcat.Catalog#format (Locale,String)
com.waveset.msgcat.Catalog#getMessage(String,Object[])	com.waveset.msgcat.Catalog#format (Locale,String,Object[])
com.waveset.object.Account#getUnowned()	com.waveset.object.Account#hasOwner()
com.waveset.object.Account#setUnowned(boolean)	com.waveset.object.Account#setOwner(WSUser)
com.waveset.object.AccountAttributeType#getAttrType()	com.waveset.object.AccountAttributeType#getSyntax()
com.waveset.object.AccountAttributeType #setAttrType(String)	com.waveset.object.AccountAttributeType #setSyntax(String)
	com.waveset.object.AccountAttributeType #setSyntax(Syntax)

Deprecated	Replacement
com.waveset.object.Attribute#BLOCK_SIZE	com.waveset.object.Attribute#BLOCK_ROWS_GET
	com.waveset.object.Attribute#BLOCK_ROWS_LIST
com.waveset.object.Attribute#EVENTDATE	com.waveset.object.Attribute#EVENT_DATETIME
com.waveset.object.Attribute#EVENTTIME	com.waveset.object.Attribute#EVENT_DATETIME
com.waveset.object.Attribute#getDbColumnLength()	
com.waveset.object.Attribute#getDbColumnName()	
com.waveset.object.Attribute#STARTUP_TYPE_AUTO	com.waveset.object.Resource#STARTUP_TYPE_AUTO
com.waveset.object.Attribute#STARTUP_TYPE_ AUTO_FAILOVER	com.waveset.object.Resource#STARTUP_TYPE_ AUTO_FAILOVER
com.waveset.object.Attribute#STARTUP_TYPE_ DISABLED	com.waveset.object.Resource#STARTUP_TYPE_ DISABLED
com.waveset.object.Attribute#STARTUP_TYPE_ MANUAL	com.waveset.object.Resource#STARTUP_TYPE_ MANUAL
com.waveset.object.Attribute#STARTUP_TYPES	com.waveset.object.Resource#STARTUP_TYPES
com.waveset.object.Attribute#STARTUP_TYPES_ DISPLAY_NAMES	com.waveset.object.Resource#STARTUP_TYPES_ DISPLAY_NAMES
com.waveset.object.AttributeDefinition#Attribute Definition(String,String)	com.waveset.object.AttributeDefinition#Attribute Definition(String,Syntax)
com.waveset.object.AttributeDefinition #setAttrType(String)	com.waveset.object.AttributeDefinition#setSyntax(Syntax)
com.waveset.object.AuditEvent#setAttributeMap(Map)	com.waveset.object.AuditEvent#setAuditable Attributes(Map)
com.waveset.object.AuditEvent#addAuditable Attributes(AccountAttributeType[],WSAttributes)	com.waveset.object.AuditEvent#setAuditable Attributes(Map)
com.waveset.object.AuditEvent#getAttributeMap()	com.waveset.object.AuditEvent#getAuditableAttributes()
com.waveset.object.AuditEvent#getAttributeValue(String)	com.waveset.object.AuditEvent#getAuditableAttributes()
com.waveset.object.AuditEvent#setAccountAttributes Blob(Map)	com.waveset.object.AuditEvent#setAccountAttributes Blob(Map,Map)
com.waveset.object.AuditEvent#setAccount AttributesBlob(WSAttributes,List)	com.waveset.object.AuditEvent#setAccount AttributesBlob(WSAttributes, WSAttributes, List)
com.waveset.object.AuditEvent.setAccount AttributesBlob(List)	Use one of the other forms of setAccountAttributes Blob (to allow for new, attempted, or old values).

Deprecated	Replacement
com.waveset.object.AuditEvent.setAccount AttributesBlob(Map, Map)	Put the list of attributes into name=value;; format, which in turn will be stored in a blob. The delimiter ;; will be filtered.
com.waveset.object.AuditEvent.setAccount AttributesBlob(Map,Map,Set)	Use one of the other forms of setAccountAttributes Blob (to allow for new, attempted, or old attribute values).
com.waveset.object.CacheManager#getAllObjects (Type,AttributeCondition[])	com.waveset.object.CacheManager#listObjects (Type,AttributeCondition[])
com.waveset.object.CacheManager#getAllObjects (Type,WSAttributes)	com.waveset.object.CacheManager#listObjects (Type,WSAttributes)
com.waveset.object.CacheManager#getAllObjects(Type)	com.waveset.object.CacheManager#listObjects(Type)
com.waveset.object.Constants#MAX_SUMMARY_ STRING_LENGTH	
com.waveset.object.EmailTemplate#setToAddress (String)	com.waveset.object.EmailTemplate#setTo(String)
com.waveset.object.EmailTemplate#getFromAddress()	com.waveset.object.EmailTemplate#getFrom()
com.waveset.object.EmailTemplate#getToAddress()	com.waveset.object.EmailTemplate#getTo()
com.waveset.object.EmailTemplate#setFrom Address(String)	com.waveset.object.EmailTemplate#setFrom(String)
com.waveset.object.EmailTemplate#VAR_FROM_ ADDRESS	com.waveset.object.EmailTemplate#VAR_FROM
com.waveset.object.EmailTemplate#VAR_TO_ ADDRESS	com.waveset.object.EmailTemplate#VAR_TO
com.waveset.object.Form#EL_HELP	com.waveset.object.GenericObject#toMap(int)
com.waveset.object.Form#getDefaultDataType()	com.waveset.object.Form#getDefaultSyntax()
com.waveset.object.Form#getType()	com.waveset.object.Form#getSyntax()
com.waveset.object.Form#setType(String)	com.waveset.object.Form#setSyntax(Syntax)
com.waveset.object.GenericObject.addAlias(String,String)	
com.waveset.object.GenericObject#toMap(boolean)	com.waveset.object.GenericObject#toMap(String,int)
com.waveset.object.GenericObject#toMap(String,boolean)	
com.waveset.object.IAPI	com.waveset.adapter.iapi.IAPI
com.waveset.object.IAPIProcess	com.waveset.adapter.iapi.IAPIFactory
com.waveset.object.IAPIUser	com.waveset.adapter.iapi.IAPIUser
com.waveset.object.LighthouseContext#OP_NO_RESULT	

Deprecated	Replacement
com.waveset.object.LoginConfig#getApp(String)	com.waveset.object.LoginConfig#getLoginApp(String)
com.waveset.object.MessageUtil#getAction DisplayKey(String)	
com.waveset.object.MessageUtil#getEventParm DisplayKey(String)	
com.waveset.object.MessageUtil#getResult DisplayKey(String)	
com.waveset.object.MessageUtil#getType DisplayKey(String)	com.waveset.ui.FormUtil#getTypeDisplayName (LighthouseContext,String)
com.waveset.object.PersistentObject()	com.waveset.object.PersistentObject(ObjectClass)
com.waveset.object.PersistentObject.fakeId(Type,String)	com.waveset.object.IDFactory.fakeID(type,name). toString()
com.waveset.object.PersistentObject.isId(String)	com.waveset.object.IDFactory.isValidID(id)
com.waveset.object.Principal()	com.waveset.object.Principal(ObjectClass)
com.waveset.object.Principal(String)	com.waveset.object.Principal(ObjectClass,String)
com.waveset.object.RemedyTemplate	
com.waveset.object.ReportCounter	
com.waveset.object.RepositoryProxy.sort (RepositoryResult)	
com.waveset.object.RepositoryResult#get(int)	
com.waveset.object.RepositoryResult#getId(int)	
com.waveset.object.RepositoryResult#getName(int)	
com.waveset.object.RepositoryResult#getObject(int)	
com.waveset.object.RepositoryResult#getRowCount()	
com.waveset.object.RepositoryResult#getRows()	
com.waveset.object.RepositoryResult#seek(int)	com.waveset.object.RepositoryResult#hasNext()
	com.waveset.object.RepositoryResult#next()
com.waveset.object.RepositoryResult#sort()	
com.waveset.object.RepositoryResult.Row #getSummaryAttributes()	com.waveset.object.RepositoryResult.Row#getAttributes()
com.waveset.object.ResourceAttribute#setType(String)	com.waveset.object.ResourceAttribute#setSyntax(Syntax)

Deprecated	Replacement
com.waveset.object.Role()	com.waveset.object.Role(ObjectClass)
com.waveset.object.Service()	com.waveset.object.Service(ObjectClass)
com.waveset.object.SourceManager	com.waveset.view.SourceAdapterManageView
com.waveset.object.Syntax.getDescription()	
com.waveset.object.TaskInstance#DATE_FORMAT	com.waveset.util.Util#stringToDate(String,String)
	com.waveset.util.Util#getCanonicalDate(Date)
	com.waveset.util.Util#getCanonicalDate(Date,TimeZone)
	com.waveset.util.Util#getCanonicalDate(long)
com.waveset.object.TaskInstance#VAR_RESULT_LIMIT	com.waveset.object.TaskInstance#setResultLimit(int)
	com.waveset.object.TaskInstance#getResultLimit()
com.waveset.object.TaskInstance#VAR_TASK_STATUS	
com.waveset.object.TaskTemplate#setMode(String)	com.waveset.object.TaskTemplate#setExecMode(String)
com.waveset.object.TaskTemplate#setMode (TaskDefinition.ExecMode)	com.waveset.object.TaskTemplate#setExecMode (TaskDefinition,ExecMode)
com.waveset.object.Type#AUDIT_CONFIG	
com.waveset.object.Type#AUDIT_PRUNER_TASK	
com.waveset.object.Type#AUDIT_QUERY	
com.waveset.object.Type#DISCOVERY	
com.waveset.object.Type#getSubtypes()	com.waveset.object.Type#getLegacyTypes()
com.waveset.object.Type#NOTIFY_CONFIG	
com.waveset.object.Type#REPORT_COUNTER	
com.waveset.object.Type#SUMMARY_REPORT_TASK	
com.waveset.object.Type#USAGE_REPORT	
com.waveset.object.Type#USAGE_REPORT_TASK	
com.waveset.object.UserUIConfig.empty QueryableAttributeNames()	
com.waveset.object.UserUIConfig.empty RepoIndexAttributes()	
com.waveset.object.UserUIConfig.empty SummaryAttributeNames()	

Deprecated	Replacement
com.waveset.object.UserUIConfig#getAppletColumns()	com.waveset.object.UserUIConfig#getAppletColumnDefs()
com.waveset.object.UserUIConfig #getFindMatchOperatorDisplayNameKeys()	
com.waveset.object.UserUIConfig#getFind MatchOperators()	
com.waveset.object.UserUIConfig#getFind ResultsColumns()	
com.waveset.object.UserUIConfig#getFind ResultsSortColumn()	
com.waveset.object.UserUIConfig#getFind UserDefaultSearchAttribute()	
com.waveset.object.UserUIConfig#getFind UserSearchAttributes()	
com.waveset.object.UserUIConfig#getFind UserShowAttribute(int)	
com.waveset.object.UserUIConfig#getFind UserShowCapabilitiesSearch(int)	
com.waveset.object.UserUIConfig#getFind UserShowDisabled(int)	
com.waveset.object.UserUIConfig#getFind UserShowOrganizationSearch(int)	
com.waveset.object.UserUIConfig#getFind UserShowProvisioningSearch(int)	
com.waveset.object.UserUIConfig#getFind UserShowResourcesSearch(int)	
com.waveset.object.UserUIConfig#getFind UserShowRoleSearch(int)	
com.waveset.object.UserUIConfig#getQueryable AttributeNames	com.waveset.object.IDMSchema.getQueryable AttributeNames(String ocName)
com.waveset.object.UserUIConfig.getRepoIndex Attributes()	
com.waveset.object.UserUIConfig.getSummary AttributeNames()	com.waveset.object.IDMSchema#getSummaryAttributeNames(String name)
com.waveset.object.UserUIConfig.getSummary AttributeTypes()	com.waveset.object.WSUser#getSummaryAttributeTypes()

Deprecated	Replacement
com.waveset.object.UserUIConfig #SUMMARY_ATTTR_TYPES_WRAPPER	
com.waveset.object.ViewMaster()	
com.waveset.object.ViewMaster.ViewMaster (String,String)	
com.waveset.object.ViewMaster.ViewMaster (Subject,String)	
com.waveset.object.WorkItem.getDelegator()	
com.waveset.object.WorkItem.setDelegator(String)	
com.waveset.object.WSUser.clearExtendedAttributes()	
com.waveset.object.WSUser#getApproverDelegate()	com.waveset.object.WSUser#getWorkItemDelegate (String workItemType)
com.waveset.object.WSUser.getCurrentServiceRefs()	
com.waveset.object.WSUser#getDelegateHistory()	com.waveset.object.WSUser#getWorkItemDelegate History()
com.waveset.object.WSUser.getRoleAttributeRefs()	
com.waveset.object.WSUser#setApproverDelegate (WSUser.Delegate)	com.waveset.object.WSUser#addWorkItemDelegate (Delegate workItemDelegate)
com.waveset.object.WSUser#setDelegateHistory(List)	com.waveset.object.WSUser#setWorkItemDelegate History(ListworkItemDelegateHistory)
com.waveset.rpc.SimpleRpcHandler	
com.waveset.security.authn.EncryptedData	
com.waveset.security.authn.Encryptor	
com.waveset.security.authn.LoginInfo	com.waveset.object.LoginInfo
com.waveset.security.authn.SignedString	com.waveset.util.SignedString
com.waveset.security.authn.Subject	com.waveset.object.Subject
com.waveset.security.authz.Permission	com.waveset.object.Permission
com.waveset.security.authz.Right	com.waveset.object.Right
com.waveset.server.Server#getResourceObjectGetCache()	
com.waveset.server.Server#getResourceObjectListCache()	

Deprecated	Replacement
com.waveset.session.LocalSession#deleteAccount Immediate()	
com.waveset.session.LocalSession #getAdministrators(Map)	com.waveset.view.WorkItemUtil#getAdministrators
com.waveset.session.Session#listApprovers()	com.waveset.session.Session#getAdministrators(Map)
com.waveset.session#listControlledApprovers()	com.waveset.session#getAdministrators(Map)
com.waveset.session#listSimilarApprovers (String adminName)	com.waveset.session#getAdministrators(Map)
com.waveset.session.SessionFactory#getApp(String)	com.waveset.session.SessionFactory#getLoginApp(String)
com.waveset.session#getApps()	com.waveset.session#getLoginApps()
com.waveset.session.WorkflowServices #ARG_TASK_DATE	com.waveset.object.Attribute#DATE
com.waveset.task.TaskContext#getAccessPolicy()	
com.waveset.task.TaskContext#getRepository()	
com.waveset.ui.SearchTableBase	
com.waveset.ui.util.FormUtil#getAdministrators (Session,List)	com.waveset.ui.util.FormUtil#getUsers (LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getAdministrators (Session,Map)	com.waveset.ui.util.FormUtil#getUsers (LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getApplications (LighthouseContext,List)	com.waveset.ui.util.FormUtil#getApplications (LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getApplications (LighthouseContext)	com.waveset.ui.util.FormUtil#getApplications (LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getApproverNames (Session,List)	com.waveset.ui.util.FormUtil#getUsers (LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getApproverNames (Session)	com.waveset.ui.util.FormUtil#getUsers (LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getApprovers(Session, List)	com.waveset.ui.util.FormUtil#getUsers (LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getApprovers(Session)	com.waveset.ui.util.FormUtil#getUsers (LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getCapabilities (LighthouseContext,List,Map)	com.waveset.ui.util.FormUtil#getCapabilities (LighthouseContext,Map)

Deprecated	Replacement
com.waveset.ui.util.FormUtil#getCapabilities (LighthouseContext,List)	com.waveset.ui.util.FormUtil#getCapabilities (LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getCapabilities (LighthouseContext,String,String)	com.waveset.ui.util.FormUtil#getCapabilities (LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getCapabilities (LighthouseContext)	com.waveset.ui.util.FormUtil#getCapabilities (LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getObjectNames (LighthouseContext,String,List,Map)	com.waveset.ui.util.FormUtil#getObjectNames (LighthouseContext,String,Map)
com.waveset.ui.util.FormUtil#getObjectNames (LighthouseContext,String,List)	com.waveset.ui.util.FormUtil#getObjectNames (LighthouseContext,String,Map)
com.waveset.ui.util.FormUtil#getObjectNames (LighthouseContext,String,String,String,List,Map)	com.waveset.ui.util.FormUtil#getObjectNames (LighthouseContext,String,Map)
com.waveset.ui.util.FormUtil#getObjectNames (LighthouseContext,String,String,String,List)	com.waveset.ui.util.FormUtil#getObjectNames (LighthouseContext,String,Map)
com.waveset.ui.util.FormUtil#getObjectNames (LighthouseContext,Type,String,String,List,Map)	com.waveset.ui.util.FormUtil#getObjectNames (LighthouseContext,String,Map)
com.waveset.ui.util.FormUtil#getObjectNames (LighthouseContext,Type,String,String,List)	com.waveset.ui.util.FormUtil#getObjectNames (LighthouseContext,String,Map)
com.waveset.ui.util.FormUtil#getOrganizations (LighthouseContext,boolean,List)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getOrganizations (LighthouseContext,boolean)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getOrganizations (LighthouseContext,List)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getOrganizations (LighthouseContext)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,boolean,List)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,boolean)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getOrganizations DisplayNamesWithPrefixes(LighthouseContext,List)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)

Deprecated	Replacement
com.waveset.ui.util.FormUtil#getOrganizations DisplayNamesWithPrefixes(LighthouseContext)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getOrganizations WithPrefixes(LighthouseContext,List)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getOrganizations WithPrefixes(LighthouseContext)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getSimilarApprover Names(Session,String)	com.waveset.ui.util.FormUtil#getUsers(Lighthouse Context,Map)
com.waveset.ui.util.FormUtil#getSimilarApprover Names(Session)	com.waveset.ui.util.FormUtil#getUsers(Lighthouse Context,Map)
com.waveset.ui.util.FormUtil#getUnassigned Organizations(LighthouseContext,List)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getUnassigned Organizations(LighthouseContext)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getUnassigned OrganizationsDisplayNames(LighthouseContext,List)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getUnassigned OrganizationsDisplayNames(LighthouseContext,Map)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getUnassigned OrganizationsDisplayNames(LighthouseContext)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getUnassigned OrganizationsDisplayNamesWithPrefixes(LighthouseContext,List)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getUnassigned OrganizationsDisplayNamesWithPrefixes(LighthouseContext)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getUnassigned OrganizationsWithPrefixes(LighthouseContext,List)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getUnassigned OrganizationsWithPrefixes(LighthouseContext)	com.waveset.ui.util.FormUtil#getOrganizations DisplayNames(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getUnassigned Resources(LighthouseContext,List,List)	com.waveset.ui.util.FormUtil#getUnassigned Resources(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getUnassigned Resources(LighthouseContext,String)	com.waveset.ui.util.FormUtil#getUnassigned Resources(LighthouseContext,Map)
com.waveset.ui.util.FormUtil#getUnassigned Resources(LighthouseContext,String,List)	com.waveset.ui.util.FormUtil#getUnassigned Resources(LighthouseContext,Map)
com.waveset.ui.util.html.Component#isNoWrap()	

Deprecated	Replacement
com.waveset.ui.util.html.HtmlHeader#NORMAL_BODY	
com.waveset.ui.util.html.MultiSelect#isLockhart()	
com.waveset.ui.util.html#setHelpKey(String)	
com.waveset.ui.util.html#setLockhart(boolean)	
com.waveset.ui.util.html#setNoWrap(boolean)	
com.waveset.ui.util.html.TransactionSigner.getSupportedKeyStoreTypes()	com.waveset.ui.util.html.TransactionSigner.getSupportedKeyStoreType
com.waveset.ui.util.html.TransactionSigner.setSupportedKeyStoreTypes(String)	com.waveset.ui.util.html.TransactionSigner.setSupportedKeyStoreType
com.waveset.ui.util.html.WizardPanel #setPreviousLabel(String)	com.waveset.ui.util.html.WizardPanel #setPrevLabel(String)
com.waveset.ui.web.account.SearchForm	
com.waveset.ui.web.account.SearchTable	
com.waveset.ui.web.account.UserAppletTable	
com.waveset.ui.web.resources.ResourceAppletTable	
com.waveset.ui.web.roles.SearchRoleForm	
com.waveset.ui.web.roles.SearchRoleTable	
com.waveset.util.ArgumentsParser.parse(String[])	com.waveset.util.ArgumentsParser.parse(String[] args,List additionalArguments,boolean ignoreIncorrectUsage)
com.waveset.util.PdfReportRenderer.render (Element, boolean, String)	#render(Element, Properties, OutputStream, boolean)
com.waveset.util.PdfReportRenderer.render (Element, boolean, String, OutputStream)	#render(Element, Properties, OutputStream, boolean)
com.waveset.util.PdfReportRenderer.render (Element, boolean, String, OutputStream, String, boolean)	#render(Element, Properties, OutputStream, boolean)
com.waveset.util.PdfReportRenderer.render (Element, boolean, String, String, boolean)	#render(Element, Properties, boolean)
com.waveset.util.PdfReportRenderer.render (Report, boolean, String)	#render(Report, Properties, OutputStream, boolean)
com.waveset.util.PdfReportRenderer.render (Report, boolean, String, OutputStream)	#render(Report, Properties, OutputStream, boolean)
com.waveset.util.PdfReportRenderer.render (Report, boolean, String, OutputStream, String, boolean)	#render(Report, Properties, OutputStream, boolean)

Deprecated	Replacement
com.waveset.util.PdfReportRenderer.render (Report, boolean, String, String, boolean)	#render(Report, Properties, OutputStream, boolean)
com.waveset.util.PdfReportRenderer.render (String, boolean, String)	#render(Element, Properties, OutputStream, boolean)
com.waveset.util.PdfReportRenderer.render (String, boolean, String, String, boolean)	#render(Report, Properties, OutputStream, boolean)
com.waveset.util.Util.autoBox(int)	java.lang.Integer.valueOf(int)
com.waveset.util.Util.autoBox(long)	java.lang.Long.valueOf(long)
com.waveset.util.Util.autoBox(boolean)	java.lang.Boolean.valueOf(boolean)
com.waveset.util.CaseInsensitiveStringComparator	java.lang.String.CASE_INSENSITIVE_ORDER
com.waveset.util.ConnectionPool.getConnection (String,String,String,boolean,String)	com.waveset.util.ConnectionPooll#getConnection (String,String,String,boolean,String)
com.waveset.util.ConnectionPool.getConnection (String,String,String,String)	com.waveset.util.ConnectionPooll#getConnection (String,String,String,String)
com.waveset.util.ConnectionPool.getConnection (String,String,String,String,String,boolean)	com.waveset.util.ConnectionPooll#getConnection (String driverClass,String driverPrefix,String url,String user,String password,boolean checkConnection,String validationSql)
com.waveset.util.CSVParser	com.waveset.util.ConfigurableDelimitedFileParser
com.waveset.util.Debug	com.sun.idm.logging.Trace
com.waveset.util.HtmlUtil	com.waveset.ui.util.html.HtmlUtil
com.waveset.util.FileCounter.java	
com.waveset.util.JSSE#installIfAvailable()	
com.waveset.util.ITrace	com.sun.idm.logging.Trace
com.waveset.util.PipeDelimitedParser	com.waveset.util.ConfigurableDelimitedFileParser
com.waveset.util.PdfReportRenderer#render (Element,boolean,String,OutputStream)	com.waveset.util.PdfReportRenderer#render (Element,boolean,String,OutputStream,String,boolean)
com.waveset.util.PdfReportRenderer#render (Element,boolean,String)	com.waveset.util.PdfReportRenderer#render (Element,boolean,String,String,boolean)
com.waveset.util.PdfReportRenderer#render (Report,boolean,String,OutputStream)	com.waveset.util.PdfReportRenderer#render (Report,boolean,String,OutputStream,String,boolean)
com.waveset.util.PdfReportRenderer#render (Report,boolean,String)	com.waveset.util.PdfReportRenderer#render (String,boolean,String,String,boolean)
com.waveset.util.PooledConnection.isValid()	isValid(String SQL)

Deprecated	Replacement
com.waveset.util.Quota#getQuota()	
com.waveset.util.ReportRenderer#renderToPdf (Report,boolean,String,OutputStream)	com.waveset.util.ReportRenderer#renderToPdf (Report,boolean,String,OutputStream,String,boolean)
com.waveset.util.ReportRenderer#renderToPdf (Report,boolean,String)	com.waveset.util.ReportRenderer#renderToPdf (Report,boolean,String,String,boolean)
com.waveset.util.Trace#data(long,Object,String,byte[])	com.sun.idm.logging.trace.Trace#data(long,String,byte[])
com.waveset.util.Trace#entry(long,Object,String,Object[])	com.sun.idm.logging.trace.Trace#entry (long,String,Object[])
com.waveset.util.Trace#entry(long,Object,String,String)	com.sun.idm.logging.trace.Trace#entry(long,String)
com.waveset.util.Trace#entry(long,Object,String)	com.sun.idm.logging.trace.Trace#entry(long,String)
com.waveset.util.Trace#exception(long,Object,String,t)	com.sun.idm.logging.trace.Trace#throwing (long,String,Throwable)
	com.sun.idm.logging.trace.Trace#caught (long,String,Throwable)
com.waveset.util.Trace#exit(long,Object,String,boolean)	com.sun.idm.logging.trace.Trace#exit(long,String,boolean)
com.waveset.util.Trace#exit(long,Object,String,int)	com.sun.idm.logging.trace.Trace#exit(long,String,int)
com.waveset.util.Trace#exit(long,Object,String,long)	com.sun.idm.logging.trace.Trace#exit(long,String,long)
com.waveset.util.Trace#exit(long,Object,String,Object)	com.sun.idm.logging.trace.Trace#exit(long,String,Object)
com.waveset.util.Trace#exit(long,Object,String)	com.sun.idm.logging.trace.Trace#exit(long,String)
com.waveset.util.Trace#getTrace()	com.sun.idm.logging.trace.TraceManager#getTrace(String)
com.waveset.util.Trace#getTrace(Class)	com.sun.idm.logging.trace.TraceManager#getTrace(String)
com.waveset.util.Trace#getTrace(String)	com.sun.idm.logging.trace.TraceManager#getTrace(String)
com.waveset.util.Trace#level1(Class,String)	com.sun.idm.logging.trace.Trace#level1(String)
com.waveset.util.Trace#level1(Object,String)	com.sun.idm.logging.trace.Trace#level1(String)
com.waveset.util.Trace#level2(Class,String)	com.sun.idm.logging.trace.Trace#level2(String)
com.waveset.util.Trace#level2(Object,String)	com.sun.idm.logging.trace.Trace#level2(String)
com.waveset.util.Trace#level3(Class,String)	com.sun.idm.logging.trace.Trace#level3(String)
com.waveset.util.Trace#level3(Object,String)	com.sun.idm.logging.trace.Trace#level3(String)
com.waveset.util.Trace#level4(Class,String)	com.sun.idm.logging.trace.Trace#level4(String)
com.waveset.util.Trace#level4(Object,String)	com.sun.idm.logging.trace.Trace#level4(String)

Deprecated	Replacement
com.waveset.util.Trace#variable(long,Object, String,String,boolean)	com.sun.idm.logging.trace.Trace#variable (long,String,String,boolean)
com.waveset.util.Trace#variable(long,Object, String,String,int)	com.sun.idm.logging.trace.Trace#variable (long,String,String,int)
com.waveset.util.Trace#variable(long,Object, String,String,long)	com.sun.idm.logging.trace.Trace#variable (long,String,String,long)
com.waveset.util.Trace#variable(long,Object, String,String,Object)	com.sun.idm.logging.trace.Trace#variable (long,String,String,Object)
com.waveset.util.Trace#void info(long,Object,String,String)	com.sun.idm.logging.trace.Trace#info (long,String,String)
com.waveset.util.Util#DATE_FORMAT_CANONICAL	com.waveset.util.Util#stringToDate(String,String)
	com.waveset.util.Util#getCanonicalDate(Date)
	com.waveset.util.Util#getCanonicalDate(Date,TimeZone)
	com.waveset.util.Util#getCanonicalDate(long)
com.waveset.util.Util#debug(Object)	
com.waveset.util.Util#getCanonicalDateFormat()	com.waveset.util.Util#stringToDate(String,String)
	com.waveset.util.Util#getCanonicalDate(Date)
	com.waveset.util.Util#getCanonicalDate(Date,TimeZone)
	com.waveset.util.Util#getCanonicalDate(long)
com.waveset.util.Util#getLocalHostName()	#getServerId() (to get a unique server identifier)
com.waveset.util.Util#getOldCanonicalDateString (Date,boolean)	com.waveset.util.Util#getCanonicalDateString(Date)
com.waveset.util.Util.getUniqueId()	com.waveset.util.Util.generateGUID()
com.waveset.util.Util#rfc2396URLPieceEncode(String)	com.waveset.util.RFC2396URLPieceEncode#encode (String)
com.waveset.util.Util#rfc2396URLPieceEncode (String,String)	com.waveset.util.RFC2396URLPieceEncode#encode (String,String)
com.waveset.view.ViewUtil.getExtendedAttributes (LighthouseContext)	com.sun.idm.util.ObjectClasses.getExtendedAttributes (ObjectClass)
com.waveset.view.ViewUtil.isExtendedAttribute (ViewMaster vm, String name)	ObjectClasses.getExtendedAttributes(ObjectClass)
com.waveset.view.ViewUtil.reloadExtendedAttributes()	

Deprecated	Replacement
com.waveset.view.ViewUtil.setExtendedAttributes (LighthouseContext, List attributes)	IDMSchemaConfiguration
com.waveset.workflow.WorkflowContext #VAR_CASE_TERMINATED	com.waveset.object.WFProcess #VAR_CASE_TERMINATED

Deprecated JSP Files and URLs

The following table lists deprecated JSP files and URLs and their replacements, when available.

Deprecated	Replacement
account/listapplet.jsp	
resources/listapplet.jsp	
resources/reconLinkAccountFilter.jsp	

Deprecated Configuration Objects

The following table lists deprecated configuration objects and their replacements, when available.

Deprecated	Replacement
UserExtendedAttributes	IDMSchemaConfiguration
UserUIConfig	IDMSchemaConfiguration

Deprecated Views and Path Expressions

The following table lists the deprecated views and path expressions within views and their replacements, when available.

Deprecated	Replacement
DelegateApproversViewer	DelegateWorkItemsViewer

7

Documentation Additions and Corrections

This section contains new and corrected information that was required after the Oracle Waveset 8.1.1 documentation set was published.

Identity Manager 8.1 Deployment Reference

This section contains new information and documentation corrections for *Oracle Waveset 8.1.1 Deployment Reference*.

Issues Common to Both Workflows and Forms

The Forms and Workflow chapters of this guide are missing the following discussion about assigning scope to <Variable> elements: (ID-14915)

Identity Manager assigns a scope to all `<Variable>` elements when the element is declared. If you do not assign a value to the scope attribute, Identity Manager assigns it a value of local, which means that the variable can be accessed only within the XPRESS section that is declared in.

Additional Variable attributes that define scope include:

`input` -- Declares that the `<Variable>` element has local scope and that the value can be initialized by the caller.

output -- Declares that the `<Variable>` element has local scope but can be returned to the caller.

external -- Declares a `<Variable>` that has non-local scope - that is, assignments to this variable will result in assignment to this variable in the scope it was first declared in.

The following discussion of the Identity Manager whitelist feature is missing from this chapter. (ID-19474)

The Identity Manager whitelist feature makes it possible to check forms and workflows that use the SaveNoValidate action against a list of IDs or form names. Identity Manager checks the whitelist for either form names or form-owner IDs.) The list of IDs, called saveNoValidateAllowedFormsAndWorkflows, is located in the security attribute in the System Configuration object. If the form name or owner ID is on the whitelist, the form or workflow can use the SaveNoValidate action. If the form name or the owner ID is not on the list, the form or workflow is processed using a Save action. If the list is not present, all forms and workflows can be processed as SaveNoValidate.

To implement this feature in your deployment, you must add any forms or workflows using SaveNoValidate to the saveNoValidateAllowedFormsAndWorkflows list in the System Configuration object. To see the IDs or form names that you must add, check the syslog or turn trace level 4 on for com.waveset.ui.util.GenericEditForm and submit any custom forms or workflows that use SaveNoValidate. A warning including the ID will be logged. If you are getting "null" form names in the syslog, confirm that the form in the TaskDefinition that was run has a name attribute.

Workflow-Related Issues

The Workflow chapter is missing the following discussion of the handleNativeChangeToAccountAttributes workflow (ID-3275):

Whenever Oracle Waveset detects a native change (that is, a change not performed through Oracle Waveset) to the values of an auditable attribute of a resource account, it responds by running the handleNativeChangeToAccountAttributes workflow, which is associated with this System Configuration object attribute:

```
<Attribute name='process'>
  <Object>
    <Attribute name='handleNativeChangeToAccountAttributes' value='Audit Native
      Change To Account Attributes'/>
  </Object>
</Attribute>
```

This workflow logs the native change events to the event log if you have enabled the Changes Outside Lighthouse audit filter. Otherwise, Identity Manager ignores the event. Warning: Be careful which methods you call from any workflow that replaces the default workflow listed above.

Because Identity Manager launches this workflow whenever a resource account fetch reveals a native change, it must not invoke any method or workflow that would trigger another fetch of the same resource account. For example, an infinite loop will result if you call any WorkflowServices method that assembles the user view: getView(User),checkoutView(User) and possibly checkinView(User).

The fact that Identity Manager handles each native change by running a workflow allows you to hook the native change event, and to handle that native change however you see fit by replacing or adding to the default native change workflow. For example, you might choose to send email to an administrator or a user, to record the event in a database, to queue an update that would back out the native change, or even to pull that native change into and push it back out to the other resources.

The Workflow chapter of this guide is missing the following description of how to specify the subject or administrator of a source adapter task. (ID-19694).

You can assign a subject or administrator to a Source adapter task and designate the server on which it runs by editing the following attributes of the system configuration object. source.subject specifies the login name of administrator designated as the owner of this task. sources.host specifies the server on which the task runs. The new values in the configuration object are by default:

```
<Attribute name='sources'>
        <Object>
          <Attribute name='hosts'/> <!-- any host is the default -->
        <Attribute name='subject' value='Configurator'/>
      </Object>
      </Attribute>
```

Identity Manager 8.1 Resource Reference

This section contains new information and documentation corrections for *Oracle Waveset 8.1.1 Resources Reference*.

The discussion of identity connectors is missing the following information about how ConnectorAdapter implements the run() method: The arguments passed to the runResourceAction service are passed to the script (defined in the ResourceAction) as direct script variables. (ID-19856)

Identity Manager 8.1 Service Provider Deployment Guide

This section contains new information and documentation corrections for *Oracle Waveset Service Provider 8.1.1 Deployment*.

Developing Customer Adapters

The ResourceAttribute element may contain a ValidationPolicy element. A validation policy ensures the value a user specifies on the Resource Parameters page meets the requirements defined in a separate policy object.

The following sample causes the adapter to use the Port Policy to ensure the specified value is valid. The default Port Policy checks the value is an integer between 1 and 65536.

```
<ResourceAttribute name=.Port. value="123">
   <ValidationPolicy>
      <ObjectRef type="Policy" id="#ID#PortPolicy" name="Port Policy"/>
   </ValidationPolicy>
</ResourceAttribute>
```

Identity Manager IDE Frequently Asked Questions (FAQ)

This FAQ answers some commonly asked questions related to using the Identity Manager IDE.

The information is organized into these categories:

- "Using NetBeans" on page 100
- "Working with Projects" on page 101
- "Working with the Repository" on page 102
- "Using the Identity Manager IDE Debugger" on page 103
- "Working with Rules" on page 104

Using NetBeans

Question: Which version of Netbeans should I use?

Answer: Use the Netbeans version referenced in the Oracle Waveset product documentation provided for the Netbeans plugin version you are using.

Note – Always use the *exact* version referenced because even patch releases can cause major functionality to break.

Question: The Netbeans plugin was working, I did something, and now it is no longer working. What could be causing this problem?

Answer: This problem is commonly caused by a corrupt file in your `.netbeans` directory. Generally, deleting your `.netbeans` directory and re-installing the NetBeans plugin resolves the problem. (Deleting the `.netbeans` directory effectively uninstalls the NetBeans plugin. You lose all of your user settings, but the contents of your project will be safe.)

The steps are as follows:

1. Shutdown NetBeans.
2. Delete the .netbeans directory.
3. Start NetBeans.
4. Install the NetBeans plugin.
5. Restart NetBeans.

Working with Projects

Question: Building and running a project is taking a very long time, and the Identity Manager IDE seems to be copying a lot of files. What could be causing this problem?

Answer: This problem can occur for the following reasons:

- You are using the Identity Manager IDE 7.0 or 7.1 plugin.

  Use the Identity Manager IDE 8.0 plugin. Several adjustments were made to the Identity Manager IDE 8.0 Configuration Build Environment (CBE) to improve performance.

- You might be using the `Clean` commands unnecessarily.

  When you use `Clean Project` or `Clean And Build Project`, the Identity Manager IDE deletes the entire `image` directory, which contains several thousand files. Identity Manager IDE must copy all of these files from `idm-staging` during the next build.

  To use the Identity Manager IDE efficiently, you must understand when to use the `Clean` commands. Refer to the "When to Use Clean" section in the Identity Manager IDE `README.txt` file for more information.

Question: Now that I have created an Identity Manager project, what files should be checked into source control?

Answer: See the "CVS Best Practices" section in the Identity Manager IDE `README.txt` for information.

Question: What are the best practices for using project management in CVS?

Answer: See the "CVS Best Practices" section in the Identity Manager IDE `README.txt` for information.

Question: When are objects imported into the repository?

Answer: See "Working with the Repository" on page 102 for information.

Question: How do I add a new JAR to the project?

Answer: See the "How to add a new JAR dependency" section in the Identity Manager IDE
`README.txt`.

Working with the Repository

Question: Which repository should I use for my sandbox repository?

Answer: Use the embedded repository for your sandbox— particularly if you are using Oracle
Waveset 7.1 (or higher), which has an HsSQL repository available. You lose functionality if you
do not use the embedded repository.

Refer to the "Working with the Repository" section in the Identity Manager IDE `README.txt`
for more information.

Question: When are objects imported automatically?

Answer: You have to configure Identity Manager IDE to import objects automatically.

The steps are as follows:

1. Select Repository > Manage Embedded Repository from the IdM menu.
2. Enable the Automatically Publish Identity Manager Objects option on the Manage
   Embedded Repository dialog.

   Note – This option is not available for Identity Manager Project (Remote) or if you specify
   your own repository.

   ---

3. Select Project > Run Project or Project > Debug Project.

   The Identity Manager IDE automatically imports all objects that have changed since the last
   time you ran the project.

   Tip – Automatically publishing Identity Manager objects increases the time needed to start
   the server. To minimize server start time, disable this option and explicitly upload objects to
   the repository.

Question: What is the most effective way to upload objects?

Answer: Use one of the following methods to upload modified objects:

- Right-click one or more edited objects in the project tree and select Upload Object from the pop-up menu.

Tip – To upload multiple objects, press and hold the Control key as you select objects from the list.

- Select one or more edited objects, and then select Repository > Upload Objects from the IdM menu. A dialog is displayed so you can select the objects to upload.

Either method uploads the object or objects directly to the server, so there is no cache latency issue and it is much faster than using Run Project or Debug Project. The Upload Objects feature is available regardless of which repository you are using.

Using the Identity Manager IDE Debugger

Note – The Netbeans embedded application server automatically shuts down whenever you perform any of the following project operations:

- Clean Project
- Create Delta Distribution
- Create Jar
- Debug Project
- Manage Embedded Repository
- Profile Project
- Run Project

Question: The Identity Manager IDE Debugger is sluggish. What could be causing this problem?

Answer: To improve the Debugger's performance:

- Always disable Tomcat's HTTP Monitor, as follows:
  - Select the Identity Manager IDE Runtime Tab.
  - Expand the Servers node and right-click Bundled Tomcat > Properties.
  - Disable the Enable HTTP Monitor option, and then close the dialog.

    The next time you start Tomcat, the HTTP Monitor will be disabled.

- If you are not debugging Java, select Project > Run Project, and then select Attach Debugger > Oracle Waveset XML Object Debugger to use just the XPRESS Debugger.

  Selecting Project > Debug Project for a non-remote Identity Manager IDE project starts both the XPRESS Debugger *and* Java Debugger, and the Java Debugger adds substantial overhead.

Question: I cannot set a breakpoint in the Debugger. What could be causing this problem?

Answer: The following conditions might prevent you from setting a breakpoint:

- You just installed the NBM, but did not restart Netbeans.
- Your XML contains a `<Waveset>` wrapper element.

  The Identity Manager IDE basically ignores any file that starts with a `<Waveset>` wrapper element because the Identity Manager IDE parses that element as a multi-object file.

  The following features do not work on multi-object files:

  - Debugger
  - Rule Tester
  - Form Previewer
  - Any of the editors
  - Import file generator
  - Upload Object
  - Diff Object

    Basically, all you can do with multi-object files is import them. The only files that should contain `<Waveset>` wrapper elements are your project's top-level import files.

Question: I set a breakpoint in the Debugger and it is not suspending on the breakpoint. What could be causing this problem?

Answer: There are two things to check:

- Be sure the object name does not contain a CBE replacement string (`%%`). CBE replacement strings are not allowed in object names.
- Verify that the code you think is being executed is actually being executed. Try adding a trace and see if anything prints out.

Working with Rules

Question: When developing rules in Netbeans, why is design mode not available for a Rule Library?

Answer: The design mode functionality is available from the explorer tree in Projects view. Use the following steps:

1. Expand the library node and right-click a rule.
2. When the pop-up menu displays, select Properties and then click Body.

Localization Scope

Historically, Oracle Waveset does not localize resource objects and functions, primarily because they are mostly samples that get loaded (through init.xml) during initialization of Oracle Waveset, and because the attributes of object types can vary between actual customer deployments, depending on the level of customizations. Following is a list of areas where users might encounter English: (ID-16349)

- Default user forms and process mapping
    - **Example**: Edit User > Security > User Form pull-down menus
    - **Example**: Configure > Form and Process Mappings

    Configuration object attribute names

    Example: Configure > User Interface, concatenated names such as displayPasswordExpirationWarning
- Default tasks
    - Task templates

        Example: Server Tasks > Configure Tasks > available task template names in table
    - Task type labels

        Example: Server Tasks > Run Tasks > second column items from Available Tasks table
    - Task definitions

        Example: Server Tasks > Find Tasks > second pull-down menu to select Task Definition

    Default report names

    Example: Report names found under Reports > Run Reports > Report Table
- Default policy names

    Example: Compliance > Manage Policies > audit policy names and descriptions
- Default capability names

    Example: Edit User > Security > Available Capabilities
- Default report & graph names
- Process/workflow diagram applets

Online Help

This section contains documentation corrections for online help.

The "Configure Reports" help page contains the following sentence, which should be disregarded:

Fonts should also be added to the JVM in order for graphs to display properly.

The sentence is incorrect. Adding fonts to the JVM is not necessary in order to properly render text in the PDF report.