Oracle9*i* Application Server

Release Notes

Release 2 (9.0.3) for Solaris Operating System (SPARC)

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Oracle9*i* Application Server Release Notes, Release 2 (9.0.3) for Solaris Operating System (SPARC)

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Preface

This preface contains the following topics:

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JAWS, a Windows screen reader, may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, JAWS may not always read a line of text that consists solely of a bracket or brace.

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For more information, see these Oracle resources:

- Oracle9*i* Application Server 9.0.3 Documentation on Oracle9*i* Application Server Disk 1
- Oracle9*i* Application Server Documentation Library, Release 2 (9.0.2)

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To download free release notes, installation documentation, white papers, or other collateral, please visit the Oracle Technology Network (OTN). You must register online before using OTN; registration is free and can be done at

`http://otn.oracle.com/membership`

If you already have a username and password for OTN, then you can go directly to the documentation section of the OTN Web site at

`http://otn.oracle.com/docs`

Conventions

This section describes the conventions used in the text and code examples of this documentation set. It describes:

- Conventions in Text
- Conventions in Code Examples

Conventions in Text

We use various conventions in text to help you more quickly identify special terms. The following table describes those conventions and provides examples of their use.

Convention	Meaning	Example
Bold	Bold typeface indicates terms that are defined in the text or terms that appear in a glossary, or both.	When you specify this clause, you create an **index-organized table**.
Italics	Italic typeface indicates book titles or emphasis.	*Oracle9i Database Concepts* Ensure that the recovery catalog and target database do *not* reside on the same disk.
`UPPERCASE monospace (fixed-width) font`	Uppercase monospace typeface indicates elements supplied by the system. Such elements include parameters, privileges, datatypes, RMAN keywords, SQL keywords, SQL*Plus or utility commands, packages and methods, as well as system-supplied column names, database objects and structures, usernames, and roles.	You can specify this clause only for a `NUMBER` column. You can back up the database by using the `BACKUP` command. Query the `TABLE_NAME` column in the `USER_TABLES` data dictionary view. Use the `DBMS_STATS.GENERATE_STATS` procedure.

Convention	Meaning	Example
`lowercase monospace (fixed-width) font`	Lowercase monospace typeface indicates executables, filenames, directory names, and sample user-supplied elements. Such elements include computer and database names, net service names, and connect identifiers, as well as user-supplied database objects and structures, column names, packages and classes, usernames and roles, program units, and parameter values. **Note:** Some programmatic elements use a mixture of UPPERCASE and lowercase. Enter these elements as shown.	Enter `sqlplus` to open SQL*Plus. The password is specified in the `orapwd` file. Back up the datafiles and control files in the `/disk1/oracle/dbs` directory. The `department_id`, `department_name`, and `location_id` columns are in the `hr.departments` table. Set the `QUERY_REWRITE_ENABLED` initialization parameter to `true`. Connect as `oe` user. The `JRepUtil` class implements these methods.
`lowercase italic monospace (fixed-width) font`	Lowercase italic monospace font represents placeholders or variables.	You can specify the *`parallel_clause`*. Run `U`*`old_release`*`.SQL` where *`old_release`* refers to the release you installed prior to upgrading.

Conventions in Code Examples

Code examples illustrate SQL, PL/SQL, SQL*Plus, or other command-line statements. They are displayed in a monospace (fixed-width) font and separated from normal text as shown in this example:

```
SELECT username FROM dba_users WHERE username = 'MIGRATE';
```

The following table describes typographic conventions used in code examples and provides examples of their use.

Convention	Meaning	Example
[ ]	Brackets enclose one or more optional items. Do not enter the brackets.	`DECIMAL (`*`digits`*` [ , `*`precision`*` ])`
{ }	Braces enclose two or more items, one of which is required. Do not enter the braces.	`{ENABLE | DISABLE}`
|	A vertical bar represents a choice of two or more options within brackets or braces. Enter one of the options. Do not enter the vertical bar.	`{ENABLE | DISABLE}` `[COMPRESS | NOCOMPRESS]`

Convention	Meaning	Example
`...`	Horizontal ellipsis points indicate either: ■ That we have omitted parts of the code that are not directly related to the example ■ That you can repeat a portion of the code	`CREATE TABLE ... AS subquery;` `SELECT col1, col2, ... , coln FROM employees;`
. . .	Vertical ellipsis points indicate that we have omitted several lines of code not directly related to the example.	
Other notation	You must enter symbols other than brackets, braces, vertical bars, and ellipsis points as shown.	`acctbal NUMBER(11,2);` `acct CONSTANT NUMBER(4) := 3;`
Italics	Italicized text indicates placeholders or variables for which you must supply particular values.	`CONNECT SYSTEM/system_password` `DB_NAME = database_name`

UPPERCASE	Uppercase typeface indicates elements supplied by the system. We show these terms in uppercase in order to distinguish them from terms you define. Unless terms appear in brackets, enter them in the order and with the spelling shown. However, because these terms are not case sensitive, you can enter them in lowercase.	`SELECT last_name, employee_id FROM employees;`
		`SELECT * FROM USER_TABLES;`
		`DROP TABLE hr.employees;`

lowercase	Lowercase typeface indicates programmatic elements that you supply. For example, lowercase indicates names of tables, columns, or files.
	Note: Some programmatic elements use a mixture of UPPERCASE and lowercase. Enter these elements as shown.
		`SELECT last_name, employee_id FROM employees;`
		`sqlplus hr/hr`
		`CREATE USER mjones IDENTIFIED BY ty3MU9;`

1

Introduction

This chapter introduces Oracle9*i* Application Server (Oracle9*i*AS) Release 2 (9.0.3) Release Notes. It covers the following topics:

1.1 Latest Release Information

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

`http://otn.oracle.com/docs/products/ias/content.html`

1.2 Purpose of this Document

This document contains the release information for Oracle9*i*AS Release 2 (9.0.3). It describes differences between Oracle9*i*AS Release 2 (9.0.3) and its documented functionality.

It contains the following two parts:

- General Oracle9*i*AS Issues
- J2EE and Web Cache Install Type Issues

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

1.3 Operating System Requirements

Oracle9*i*AS installation and configuration will not complete successfully unless users meet the hardware and software pre-requisite requirements before installation. See *Oracle9i* Application Server *Installation Guide* for a complete list of operating system requirements.

1.4 Certification Information

The latest certification information for Oracle9*i*AS Release 2 (9.0.3) is available at:

`http://metalink.oracle.com`

1.5 Licensing Information

Licensing information for Oracle9*i*AS Release 2 (9.0.3) is available at:

`http://oraclestore.oracle.com`

Detailed information regarding license compliance for Oracle9*i*AS Release 2 (9.0.3) is available at:

`http://otn.oracle.com/products/ias/content.html`

1.6 Best Practices

Oracle provides a Best Practices white paper. This document describes common practices around development and deployment of Oracle9*i*AS, common errors, and scenarios for using the product.

You can find the white paper on OTN at

`http://otn.oracle.com/products/ias/ohs/collateral/r2/bp-core-v2.PDF`

Part I

General Oracle9*i* Application Server Issues

This part discusses general Oracle9*i* Application Server issues, including issues that are common to multiple components. It contains the following chapters:

2

Installation and Migration

This chapter describes installation and migration issues and their workarounds associated with Oracle9*i*AS. It covers the following topics:

2.1 Preinstallation Issues

There are no known preinstallation issues.

2.2 Installation Issues

There are no known installation issues.

2.3 Postinstallation Issues

This section covers the following postinstallation issue:

- (UNIX only) Configure JServ After Installation

2.3.1 (UNIX only) Configure JServ After Installation

Oracle9*i*AS install does not configure JServ by default. As a workaround, configure JServe using the Oracle Enterprise Manager Console after installation. Oracle Management Server has a reporting servlet that runs within JServ. In order to access this reporting servlet, configure JServ from the Oracle Enterprise Manager Console.

Infrastructure installs do not have `JServ` listed as an installed component in *`ORACLE_HOME`*`/config/ias.properties`. Therefore, `JServ` is, by default, not configurable after installation.

To make `JServ` configurable in the infrastructure install, edit the `ias.properties` file from *`ORACLE_HOME`*`/config` directory as below:

Change the following existing line (to append `JServ` to `Components` entry) from:

```
Components=Apache,J2EE,WebCache,SSO,OID
```

to:

```
Components=Apache,J2EE,WebCache,SSO,OID,JServ
```

2.4 Deinstallation Issues

There are no known deinstallation issues.

2.5 Reinstallation Issues

This section covers the following reinstallation issue:

- Reinstallation not Supported

2.5.1 Reinstallation not Supported

Oracle9*i*AS Release 2 (9.0.3) does not support reinstallation. After you successfully installed Oracle9*i*AS Release 2 (9.0.3) J2EE and Webcache, if you try to install the same product into the same home directory, the OC4J configuration tool fails. This is because the OC4J configuration tool does not handle the reinstallation appropriately.

2.6 Migration Issues

There are no known migration issues.

3

Configuration

This chapter discusses Oracle9*i* Application Server configuration topics. It covers the following topics:

3.1 Common Configurations

Oracle certifies the following common configurations with Oracle9*i*AS Release 2 (9.0.3):

Table 3–1 Supported Configurations

Supported Configuration	Reference	Possible Deployments	Restrictions
Change CPU on an installed machine.	None.	NA	None.
Using Oracle9*i*AS with J2SE Version 1.4	Section 3.4	NA	None.

3.2 Configuration Limitations

Oracle9*i*AS Release 2 (9.0.3) does not support the following:

- Changing the domain name of a host that contains an Oracle9*i*AS Release 2 (9.0.3) installation.
- Changing the IP address for a host that is part of a farm or cluster.
- Cloning an Oracle9*i*AS Release 2 (9.0.3) instance.
- Using Network File System (NFS) for accessing shared files.
- Backing up of a configured environment and restoring it, either to a different machine or to the same machine.
- Using Oracle Data Guard on Oracle9*i*AS infrastructure.
- Using Oracle Real Application Clusters database on Oracle9*i*AS infrastructure.
- Deassociating or reassociating an Oracle9*i*AS Release 2 (9.0.3) installation with an infrastructure.
- Transitioning your installation from a development or test environment to a production environment.

3.3 Configuration Tasks and Issues

This section covers the following configuration issues and tasks:

- Attributes Containing Paths Break Cluster Model

3.3.1 Attributes Containing Paths Break Cluster Model

In attributes that specify paths, make sure that the paths are relative to *ORACLE_HOME* directory. Otherwise, your cluster members may not run properly.

3.4 Using Oracle9*i*AS with J2SE, Version 1.4

Oracle9*i*AS Release 2 (9.0.3) ships with Java 2 Platform, Standard Edition (J2SE) version 1.3.1, which is installed in the *ORACLE_HOME*`/jdk` directory. Oracle9*i*AS Release 2 (9.0.3) also supports J2SE version 1.4. If you have applications that use J2SE 1.4 features, you need to use J2SE version 1.4.

This section describes how to run Oracle9*i*AS against J2SE version 1.4. The general idea is to rename the current `jdk` directory to something else (such as `jdk13`), and install J2SE version 1.4 in the `jdk` directory. This makes it simple for you so that you do not have to modify any paths or scripts that reference the `jdk` directory.

To run Oracle9*i*AS with J2SE version 1.4, use the following procedures:

1. Stop all Oracle9*i*AS processes.
2. Rename *ORACLE_HOME*`/jdk` to something else. The following command renames it to `jdk13`.

   ```
   prompt> cd ORACLE_HOME
   prompt> mv jdk jdk13
   ```

3. Download J2SE version 1.4 from `http://java.sun.com`.

   Download notes:

   - Download the SDK version, not the JRE version.
   - Download either the self-extracting binary file version or the `.tar.Z` package version. You can install the J2SE using either version. Table 3–2 compares the two versions:

Table 3–2 Differences between the self-extracting binary file and the .tar.Z package versions

Self-Extracting Binary File Version	.tar.Z Package Version
■ You do not need to be root. ■ You can install the J2SE anywhere on your machine.	■ You need to be root. ■ The default installation location is `/usr/j2se`.

4. Install J2SE 1.4 according to the instructions provided by Sun Microsystems.
5. If you install J2SE 1.4 in a directory other than *ORACLE_HOME*/jdk, then you need to create a symbolic link to the directory. The following example shows how to create a symbolic link from *ORACLE_HOME*/jdk to /usr/j2se.

   ```
   prompt> cd ORACLE_HOME
   prompt> ln -s /usr/j2se jdk
   ```

6. Add the following lines to *JDK_1.4_HOME*/jre/lib/security/java.security:

   ```
   # Oracle-specific
   definitionsauth.policy.provider=oracle.security.jazn.spi.PolicyProvider
   login.configuration.provider=oracle.security.jazn.spi.LoginConfigProvider
   ```

   Note: The login.configuration.provider line already exists in the java.security file. Comment out the existing line by prefixing a # character at the beginning of the line and add the line with the Oracle-specific value.

7. Start all Oracle9*i*AS processes.

4

Management and Security

This chapter describes management and security issues associated with Oracle9*i*AS. It covers the following topics:

4.1 Deployment Issues

This section covers the following deployment issues:

- Deploying Applications to OC4J When Default User Manager is Principal
- Using Port Option to Configure Loading Application

4.1.1 Deploying Applications to OC4J When Default User Manager is Principal

Each OC4J instance has a global application called `default` that is the parent application of all applications deployed to the instance. This will use `jazn-xml` as the user manager by default.

If the user manager for this application is changed to `principals`, and you attempt to deploy an application using Oracle Enterprise Manager, the deployment will fail if changes are made on the **Select User Manager** page.

Thus, if the user manager for the default application of an OC4J instance is changed to `principals`, for future application deployments using Oracle Enterprise Manager, you should not visit the **Select User Manager** page in the wizard. The application will be deployed successfully with `principals` as its user manager. However, the summary screen of the **Deployment** wizard will show `jazn-xml` as the user manager. Any changes you wish to make to the application's user manager can then be completed by drilling down to the **Application Properties** page.

4.1.2 Using Port Option to Configure Loading Application

There are several approaches to configure how to load an application.

- One approach is to load the application dynamically when the first request comes in. This approach uses named pipes for communication.
- Another approach is to load the application at startup. With this approach, you can configure the application to use the port option or the named pipe option, where you do not have to specify the port. This release supports the port option only.

4.2 DCM Issues

This section covers the following Distributed Configuration Management (DCM) utility issues:

- Running dcmctl to Update Configuration for Manual Changes

- Using Port Option to Configure Loading Application

4.2.1 Running dcmctl to Update Configuration for Manual Changes

If you make manual changes to the configuration files for the following components:

- Oracle HTTP Server
- OC4J

your changes will not be reflected in the DCM repository.

To propagate your manual edits back to the DCM repository, run the following commands after making any edits, either manually or through the Oracle Enterprise Manager.

```
dcmctl updateconfig -ct ohs
dcmctl updateconfig -ct oc4j
```

This is also the case if you created, modified, or deleted Database Access Descriptors (DADs) or modified the `mod_plsql` cache setting using the Oracle Enterprise Manager.

See *Oracle9i Application Server Administrator's Guide* for details.

4.2.2 Concurrent Administrative Operations on a Cluster Not Supported

Concurrent administrative operations on a cluster are not supported in Oracle9*i*AS. Configuration information for clusters is stored in a central repository. All members of the cluster have access to this repository. This keeps configuration consistent across the cluster. Since the objects in the repository are shared across the cluster, concurrent write access to these objects is not allowed.

4.3 OPMN Issues

This section covers the following Oracle Process Management Notification (OPMN) issues:

- OPMN Cannot Start OC4J Instance with Multibyte
- opmnctl restart Command Displaying "Unavailable Hostname" Messages
- opmnctl stopproc Command Hanging

4.3.1 OPMN Cannot Start OC4J Instance with Multibyte

The configuration file for OPMN, `opmn.xml`, is in UTF-8 encoding. The code that parses `opmn.xml` is written in C, and the data in `opmn.xml` is handled as UTF-8 bytes. This causes problems when the data is not converted to the right encoding. For example, if the default encoding of your operation system is EUC-JP, the directory is created using UTF-8 data. The multibyte instance name then becomes inaccessible.

As a workaround, avoid using multibyte characters for contents such as instance names and environment variables in `opmn.xml`.

4.3.2 opmnctl restart Command Displaying "Unavailable Hostname" Messages

If you run **opmnctl restart** or restart OC4J by other means, and EMD is running, you might see the following error messages in the *ORACLE_HOME*`/Apache/Apache/error_log` file:

```
[Wed Apr  3 12:09:50 2002] [error] MOD_OC4J_0082: Failed to call
gethostbyname() for host name: UNAVAILABLE.
[Wed Apr  3 12:09:50 2002] [error] MOD_OC4J_0019: Failed to resolve network
address of worker: home_15's host: UNAVAILABLE and port: 3003.
[Wed Apr  3 12:09:50 2002] [error] [client 130.35.92.190] MOD_OC4J_0138:
Failed tovalidate network worker: home_15 with host: UNAVAILABLE and port:
3003.
[Wed Apr  3 12:09:50 2002] [error] [client 130.35.92.190] MOD_OC4J_0141:
Failed to validate host: UNAVAILABLE and port 3003 for network worker:
home_15.
```

You can ignore these error messages since they will not cause any problems.

4.3.3 opmnctl stopproc Command Hanging

If you issue the `opmnctl stopproc` command in a process seconds after the process was killed or abnormally terminated, the `opmnctl stopproc` command might hang. This might prevent you from issuing other process-related commands.

In this situation, issue the following commands:

```
opmnctl reload
opmnctl stopproc
```

If you are using `dcmctl`, then the `dcmctl stop` command will not hang, but fail. Issue the following commands to resolve the situation:

```
dcmctl updateconfig -ct opmn
dcmctl stop
```

4.4 Oracle Enterprise Manager Issues

This section covers the following Oracle Enterprise Manager issues:

- Log in Problems with Secondary Instance
- Oracle Enterprise Manager Web Site Log Files Too Large
- Metrics and Rollup Data Invisible on Oracle9iAS Home Page
- Using emctl to Change the ias_admin Password
- OC4J Metrics Not Displayed in the Home Page
- Changing the ias_admin Password in Translated Versions of the Web Site
- Oracle Enterprise Manager Not Supporting Multiple Locales
- Deploying BC4J JSP, UIX JSP and UIX XML Applications
- (UNIX only) Configuring JAAS with Oracle Enterprise Manager Web Site
- (UNIX only) Intelligent Agent May Not Work in Non-English Environment
- Oracle9iAS 9.0.3 and Oracle9iAS 9.0.2x Instances Incompatible for Clustering

4.4.1 Log in Problems with Secondary Instance

You cannot log in to the Oracle Enterprise Manager of a secondary instance after the instance is made active during deinstall of the first instance. As a workaround, perform the following steps:

1. After deinstalling the first instance and making the second instance Oracle Enterprise Manager active, go to *ORACLE_HOME*/`bin` and issue the following command with a password:

   ```
   emctl set password...
   ```

2. You cannot access Oracle Enterprise Manager using the new password until you restart `emctl`. In addition, `emctl stop` will not work as the password will not be accepted. When you issue `emctl start` directly, assuming the Oracle Enterprise Manager service is up and running, the following option appears:

```
An instance of EMD is already running. Do you want to shut it down first [Y
or N]
```

Select **Y** and click **Enter**.

The status shows the following:

```
Waiting for EM to initialize... Started.
```

3. Access the Oracle Enterprise Manager Web Site using the new password

> **Note:** Use this workaround before any subsequent install on the same host

4.4.2 Oracle Enterprise Manager Web Site Log Files Too Large

With the default logging level, some of the Oracle Enterprise Manager Web Site log files become very large.

As a workaround, edit the logging properties configuration file and increase the logging level used by the Oracle Enterprise Manager software. The logging level can be set to `INFO`, `WARN`, or `ERROR`. When it is set to `INFO`, all informational messages are saved in the log files. When it is set to `WARN`, all warning messages are saved to the file. To reduce the amount of disk space required by the log files, do the following:

1. Edit the logging.properties file, which is located in

   `<ORACLE_HOME>/sysman/config/logging.properties`

2. Change all occurrences of `INFO` and `WARN` to `ERROR`.
3. Save the file and restart the Oracle Enterprise Manager middle tier Web site.

> **See Also:** *Oracle9i Application Server Administrator's Guide* for information about restarting Oracle Enterprise Manager.

4.4.3 Metrics and Rollup Data Invisible on Oracle9*i*AS Home Page

When you log on to the Oracle9*i*AS home page on host *xyz*.oracle.com, you may not see the rollup data. In addition, you may not see metrics on the Oracle HTTP Server and OC4J instance pages.

As a workaround, edit `targets.xml` and set all instances of hostname *`xyz`* to the complete host and domain name, such as *`xyz`*`.oracle.com`. The metrics and rollup data should be visible once you restart EMD.

4.4.4 Using emctl to Change the ias_admin Password

If you change the `ias_admin` password using emctl, then you must restart the Oracle Enterprise Manager Web Site with the following commands:

```
emctl stop
emctl start
```

4.4.5 OC4J Metrics Not Displayed in the Home Page

When the Oracle Enterprise Manager Home Page is opened, the OC4J metrics are not displayed. As a workaround, refresh the page to see the metrics.

4.4.6 Changing the ias_admin Password in Translated Versions of the Web Site

You cannot change the `ias_admin` password using a translated version of the Oracle Enterprise Manager Web site. This is because the **Preferences** link on the Instance Home Page is disabled.

You can change the `ias_admin` password using the following command:

`ORACLE_HOME``/bin/emctl set password `*`new_password`*

4.4.7 Oracle Enterprise Manager Not Supporting Multiple Locales

Oracle Enterprise Manager does not support multiple locales. The following components use the browser's locale when displaying pages in Oracle Enterprise Manager:

- Oracle9*i*AS Discoverer
- Oracle9*i*AS Forms Services
- Oracle9*i*AS Portal
- Oracle9*i*AS Single Sign-On
- PL/SQL properties
- Oracle9*i*AS Unified Messaging

4.4.8 Deploying BC4J JSP, UIX JSP and UIX XML Applications

BC4J JSP, UIX JSP, and UIX XML applications from JDeveloper deployed to Oracle9*i*AS through the Oracle Enterprise Manager deployment functionality runtime will result in a runtime rendering data access error. This happens only if data source information is added subsequently through Oracle Enterprise Manager and not pre-packaged in the EAR file from JDeveloper.

If the EAR file generated from JDeveloper does not package the data source information or the **deploy to EAR files** option is chosen instead of **deploy to connection**, and if that information is subsequently added through the Oracle Enterprise Manager through the edit data sources functionality, then the UIX JSP and UIX XML applications cannot run successfully due to runtime rendering error.

To avoid the error, do not add the data sources information after deployment through Oracle Enterprise Manager. Instead, package the EAR file with the data sources information from JDeveloper prior to deployment through Oracle Enterprise Manager. While creating the UIX JSP or the UIX XML application from JDeveloper, instead of deploying it to an EAR file, deploy it to any existing connection, including dummy connections. That process will create an EAR file with the data sources information packaged.

If deploying to a dummy connection, although the process will result in deployment errors in JDeveloper, it will create an EAR file that includes the data source information that can be successfully deployed to Oracle9*i*AS.

4.4.9 (UNIX only) Configuring JAAS with Oracle Enterprise Manager Web Site

To configure JAAS, perform the following tasks:

1. Open *ORACLE_HOME*`/sysman/j2ee/config/jazn.xml` in a text editor.
2. Uncomment the following properties in the `jazn.xml` file:

   ```
   <property name="ldap.service" value="ldap://localhost:389"/>
   <property name="ldap.user" value="cn=oracladmin"/>
   <property name="policymgr.provider" value="LDAP"/>
   ```

   If *`localhost`* does not work in your environment, replace it with the actual name of your Oracle Internet Directory server. Similarly, replace the port number if your Oracle Internet Directory server does not use the default port of 389.
3. Modify the `ldap.password` property by entering the password you used for Oracle Internet Directory server login. Be sure to include an exclamation point (!) before the password to encrypt it. For example:

```
<property name="ldap.password" value="!manager1234"/>
```

4. Save the modified `jazn.xml` file and restart the Oracle Enterprise Manager Web Site.

> **Note:** By default, the Oracle Internet Directory server will recognize your `ias_admin` password. If you later change this password for Oracle Internet Directory administration, you must re-enter it using the `ldap.password` property in the `jazn.xml` file, and then restart the Oracle Enterprise Manager Web Site in order to manage JAAS using Oracle Internet Directory.

4.4.10 (UNIX only) Intelligent Agent May Not Work in Non-English Environment

If the language environment is non-English, and the `/usr/local/lib/tcl8.2/encoding/*.enc` Tcl interpreter encoding definition files are installed on the node, Oracle Enterprise Manager Intelligent Agent may not work properly with non-English characters. As a result, Oracle Enterprise Manager jobs may fail to execute or may return corrupted strings. If the above encoding definition files are not present, this problem should not occur.

The solution to this problem is to create empty Tcl interpreter encoding definition files at the following location:

ORACLE_HOME`/lib/tcl8.2/encoding/*.enc`

To achieve this solution, perform the following steps:

1. Execute the following commands:

```
% cd ORACLE_HOME/lib
% mkdir tcl8.2
% cp -pr /usr/local/lib/tcl8.2/encoding tcl8.2
% cd tcl8.2/encoding
```

2. Execute the following commands depending on which shell you are running:

   - If you are using C-shell or T C-shell:

```
% foreach file (*.enc)
foreach? cp /dev/null $file
foreach? end
```

   - If you are using Korn-shell or B-shell:

```
% for file in *.enc; do
> cp /dev/null $file
> done
```

3. Once the empty encoding definition files have been created, restart Oracle Intelligent Agent as follows:

```
% agentctl stop
% agentctl start
```

Note: The `NLS_LANG` and `LANG` environment variables must be defined with appropriate values before Oracle Intelligent Agent is restarted.

4.4.11 Oracle9*i*AS 9.0.3 and Oracle9*i*AS 9.0.2x Instances Incompatible for Clustering

You cannot add an Oracle9*i*AS 9.0.3 instance to an empty Oracle9*i*AS 9.0.3 cluster from an Oracle9*i*AS 9.0.2 Oracle Enterprise Manager. It is necessary to prevent Oracle9*i*AS 9.0.2x instances and Oracle9*i*AS 9.0.3 instances from being clustered together due to incompatibility of J2EE versions. Oracle9*i*AS 9.0.3 includes a special installed component type, which is unrecognizable to Oracle9*i*AS 9.0.2 Oracle Enterprise Manager. This special installed component type would not allow you to join a different instance type. A check is performed only when you are joining an empty cluster. If a cluster already contains instances, it only takes instances that are of the same type as those in the cluster.

Therefore, when adding an Oracle9*i*AS 9.0.3 instance to an empty cluster, you must go to the Oracle9*i*AS 9.0.3 instance and use either the `dcmctl` command or Oracle Enterprise Manager user interface for Oracle9*i*AS 9.0.3.

4.5 Globalization Issues

This section covers the following other globalization issues:

- Microsoft Internet Explorer Failing in Chinese Environment on DAS
- Japanese Help Modules Displaying Incorrectly
- Japanese Language Version Missing Graphic Files
- Several Language Help Files Missing

4.5.1 Microsoft Internet Explorer Failing in Chinese Environment on DAS

Using Microsoft Internet Explorer 5.5 in a Simplified Chinese environment on DAS, you are unable to edit/delete **Attribute** on the **Configure User Attribute** page. For example:

1. Log in to `http://hostname:port/oiddas/`
2. Click the **Configuration** tab, then the **User Entry** tab.
3. Go to the second step **Configure User Attribute**.
4. Choose **Next**, or **Edit**, **Delete**. On this page, you cannot access the corresponding page, but stay in this page. The browser status bar displays `Error on Page`.

As a workaround, use Netscape 4.7 to access the DAS component in a simplified Chinese environment.

4.5.2 Japanese Help Modules Displaying Incorrectly

Japanese text is not readable when running in a Japanese environment. This affects three help modules:

- OID Server Manageability
- Discoverer Oracle Enterprise Manager help system
- BC4J Help

As a workaround, use the following procedures.

For Oracle Internet Directory Server Manageability:

1. Extract the file:

   ```
   jar xvf ORACLE_HOME/sysman/webapps/emd/online_help/oidsm/oidsm_help_ja.jar
   oidsm.hs
   ```

2. Using a text editor, ensure the character set in the following line is specified as `Shift_JIS` in the `oidsm.hs` file:

   ```
   <xml version='1.0' encoding="Shift_JIS">
   ```

3. Convert `oidsm.hs` from the `EUC` format to the `SJIS` format.
4. Replace the existing `oidsm.hs` file with the fixed file:

   ```
   jar uvf ORACLE_HOME/sysman/webapps/emd/online_help/oidsm/oidsm_help_ja.jar
   oidsm.hs
   ```

For Discoverer Oracle Enterprise Manager Help System:

1. Extract the following files to fix:

```
jar xvf ORACLE_HOME/sysman/webapps/emd/online_help/disco/disco_help_ja.jar
disco.hs
jar xvf ORACLE_HOME/sysman/webapps/emd/online_help/disco/disco_help_ja.jar
toc.xml
```

2. Using a text editor, ensure the character set in the line below is specified as `Shift_JIS` in the above two files:

```
<xml version='1.0' encoding="Shift_JIS">
```

3. Convert `disco.hs` and `toc.xml` from the `unicode` format to the `SJIS` format.

4. Replace the existing files with the fixed files:

```
jar uvf ORACLE_HOME/sysman/webapps/emd/online_help/disco/disco_help_ja.jar
disco.hs
jar uvf ORACLE_HOME/sysman/webapps/emd/online_help/disco/disco_help_ja.jar
toc.xml
```

5. In a similar fashion, extract all nine HTML files from the `.jar` file, and add the following line to each file, within the <`head`> section:

```
<meta http-equiv=content-type content="text/html; charset=Shift_JIS">
```

   Then replace the files.

For BC4J:

1. Extract the following file to fix:

```
jar xvf ORACLE_HOME/sysman/webapps/emd/online_help/bc4j/bc4j_help_ja.jar
bc4j.hs
```

2. Delete the following lines from the file:

```
<view>
    <label>index</label>
    <type>oracle.help.navigator.keywordNavigator.KeywordNavigator</type>
    <data engine="oracle.help.engine.XMLIndexEngine">index.xml</data>
</view>
```

3. Add the following lines:

```
<view>
    <label>contents</label>
    <type>oracle.help.navigator.tocNavigator.TOCNavigator</type>
    <data engine="oracle.help.engine.XMLTOCEngine">toc.xml</data>
</view>
```

4. Replace the existing file with the fixed file:

```
jar uvf ORACLE_HOME/sysman/webapps/emd/online_help/bc4j/bc4j_help_ja.jar
bc4j.hs
```

4.5.3 Japanese Language Version Missing Graphic Files

For the Japanese language version only, certain graphic (`.gif`) files are missing from the *ORACLE_HOME*`/classes/oracle/sysman/help/detailpanels_ja` directory. The workaround is to copy the gif files from the *ORACLE_HOME*`/classes/oracle/sysman/help/detailpanels` directory (English files). If you are using the Oracle Enterprise Manager Web Site, you should also copy the `.gif` files from *ORACLE_HOME* into:

ORACLE_HOME`/oem_webstage/oracle/sysman/help/detailpanels_ja`

Also, some Japanese files are installed into the wrong directory. Under *ORACLE_HOME*`/classes/oracle/sysman/help/detailpanels_ja` and *ORACLE_HOME*`/oem_webstage/oracle/sysman/help/detailpanels_ja`, the following files are installed into platform-specific subdirectories:

- `dv_advque.htm`
- `dv_dguard.htm`
- `dv_inst.htm`
- `dv_logm.htm`
- `dv_olap.htm`
- `dv_schm.htm`
- `dv_secu.htm`
- `dv_stg.htm`

The files are located under the `/euc for solaris` subdirectory. As a workaround, copy the files for your platform from the subdirectory into the `/detailpanels_ja` directory.

4.5.4 Several Language Help Files Missing

Language help files are missing for for Oracle HTTP Server, OC4J, and Oracle9*i*AS Management Pages. Instead of Japanese files, English help files are included in the following online help JAR files:

ORACLE_HOME/sysman/webapps/emd/online_help/apch/apch_help_ja.jar
ORACLE_HOME/sysman/webapps/emd/online_help/oc_4j/oc_4j_help_ja.jar
ORACLE_HOME/sysman/webapps/emd/online_help/iastop/iastop_help_ja.jar

4.6 Other Management Issues

This section covers the following other management issue:

- Clock Synchronization
- (Solaris 2.6 only) Localized Exception Messages Display Incorrectly

4.6.1 Clock Synchronization

Several Oracle9*i*AS components require the clocks on the machines on which they run to be synchronized. You can synchronize the clocks by running the Network Time Protocol (NTP) daemon on these machines. You do this with starting `xntpd` or a similar daemon processing .

4.6.2 (Solaris 2.6 only) Localized Exception Messages Display Incorrectly

On Sun SPARC Solaris 2.6, the `strerror()` function returns messages in the native language. However, JDK 1.2.x and 1.3.x cannot display many localized messages of native methods correctly. It displays the message in corrupted form or displays the message in English on non-English platforms. This is a known Java issue. See bug ID 4258198 in the Java Bug database.

4.7 Security Issues

This section covers the following security issues:

- Disabling Demonstration Pages in Production Systems
- IASOBF and Oracle9iAS Single Sign-On Wallet Support User-dependent

4.7.1 Disabling Demonstration Pages in Production Systems

The demonstration pages for J2EE and Web Cache, located in `http://host.domain:port/J2EE.htm` are vulnerable. You must disable the all demonstration pages when exhibiting a site in order to ensure security.

The following URLs indicate some demonstration pages that are vulnerable.

Oracle HTTP Server

```
http://host.domain:port/cgi-bin/printenv?<script>alert(document.cookie)</script>
http://host.domain:port/perl/printenv?<script>alert(document.cookie)</script>
http://host.domain:port/fcgi-bin/echo?<script>alert(document.cookie)</script>
```

OJSP Sample

```
http://host.domain:port/ojspdemos/basic/hellouser/hellouser.jsp
http://host.domain:port/ojspdemos/basic/simple/welcomeuser.jsp
http://host.domain:port/ojspdemos/basic/simple/usebean.jsp
```

JSP Sample

```
http://host.domain:port/j2ee/examples/jsp/snp/snoop.jsp?<script>alert(document.cookie)</script>
http://host.domain:port/j2ee/examples/jsp/cal/login.html
```

Servlet Sample

```
http://host.domain:port/j2ee/servlet/RequestParamExample
http://host.domain:port/j2ee/servlet/CookieExample
http://host.domain:port/j2ee/servlet/SessionExample
http://host.domain:port/j2ee/servlet/SnoopServlet?<script>alert(document.cookie)</script>
```

4.7.2 IASOBF and Oracle9*i*AS Single Sign-On Wallet Support User-dependent

To run the Oracle HTTP Server with SSL server correctly after installation in Oracle9*i*AS, you should create a wallet and have the certificates contained within it signed by the proper Certificate Authorities. Make sure that the `SSLWallet` directive in `httpd.conf` points to this new wallet rather than the default wallet provided by the installation. Oracle HTTP Server will not start if you fail to do one of the following:

1. Obfuscate the password for this new wallet by running:

   ```
   iasobf -p password rootosslpassword -p password LocalSystem
   ```

   and place this obfuscated password in the `httpd.conf` file using the Wallet Password directive, for example `WalletPassword obfuscatedPassword`.

You can always put the wallet password in `httpd.conf` in clear text but this is not recommended by Oracle.

2. Make this new wallet an Oracle9*i*AS Single Sign-On wallet as the root user.

See Also: *Oracle9i Application Server Security Guide*

4.8 Directing Requests to OC4J Instances in Different Oracle Homes

This section covers the following issues regarding directing requests to OC4J instances:

4.8.1 Overview

This section describes how to direct requests to OC4J instances running on *`ORACLE_HOME`* directories that are different from the one that first received the request. In other words, Oracle HTTP Server receives a request, then forwards it to an OC4J instance that belongs to a different *`ORACLE_HOME`* directory. In that *`ORACLE_HOME`*, OC4J instances are running, but Oracle HTTP Server may or may not be running. The *`ORACLE_HOME`* directories can be installed on the same or different machines.

This scenario is different from clusters. In a cluster, all the Oracle9*i*AS instances are configured identically, and `mod_oc4j` sends requests to the instances in the cluster in a round-robin fashion. See the "Application Server Clustering" chapter in the *Oracle9i Application Server Administrator's Guide* for details on clustering.

In this scenario, the Oracle9*i*AS instances do not need to be the same type. They can be different middle tier types and they can be configured differently. You can even direct requests between an infrastructure and a middle tier type.

4.8.2 Requirements

Your environment must have the following characteristics:

- The *ORACLE_HOME* directories must belong to the same farm, using the same metadata repository, unless users make OPMN connections manually using `dcmctl addOPMNLink`.

  See Also: The *Oracle9i Application Server mod_oc4j Functional Overview* white paper on OTN at

  `http://otn.oracle.com/products/ias/ohs/content.html`

- The targeted *ORACLE_HOME* directory must have the desired OC4J instances and the OC4J instance must be running.
- The application must be deployed on the OC4J instance to which you want to route the request. In addition, the application must have the same URL prefix as on the local instance.
- The middle tier may be clustered with other identically configured middle tier installations.

4.8.3 General Procedure

The procedure for directing requests to another *ORACLE_HOME* directory is to edit the `Oc4jMount` directive in the *ORACLE_HOME*`/Apache/Apache/conf/mod_oc4j.conf` file. The directive maps URLs to OC4J instances.

By default, the directive directs requests to OC4J instances in the local Oracle home (the OC4J instances belong to the same *host:port* specified in the URL).

For example, the following lines route requests that begin with `/webapp` to the `home` OC4J instance on the local Oracle9*i*AS instance:

```
Oc4jMount /webapp/* home
```

To direct requests to an OC4J instance on another *ORACLE_HOME* directory, you prepend the name of the Oracle9*i*AS instance to the OC4J instance name, and you use the keyword `instance`.

Syntax:

```
Oc4jMount url instance://ias_instance_name1:oc4j_instance_name [, ias_instance_
name2:oc4j_instance_name, ...]

Oc4jMount url cluster://cluster_name1:oc4j_instance_name [, cluster_name2:oc4j_
instance_name, ...]
```

where:

- `instance` is a keyword.
- `cluster` is a keyword.
- *`url`* specifies the URL for the application.
- *`ias_instance_nameN`* specifies the names of Oracle9*i*AS instances. These instances can run on the same machine or different machines. The instance name includes the machine name. See Section 4.8.6, "Determining Oracle9iAS Instance Names" for details.

  If you specify more than one instance name, the requests are sent to the instances in a round-robin manner.
- *`cluster_nameN`* specifies the names of the clusters to which you want to direct the requests. Oracle HTTP Server distributes the requests to the Oracle9*i*AS instances in the cluster. See Section 4.8.8, "Determining Cluster Names" for details.

  For clustering details, see the "Application Server Clustering" chapter in the *Oracle9i Application Server Administrator's Guide*.
- *`oc4j_instance_name`* specifies the name of the OC4J instance name on the Oracle9*i*AS instance. See Section 4.8.7, "Determining OC4J Instance Names" for details.

4.8.4 Non-Clustered Example

The following lines direct the requests to instances on an Oracle9*i*AS instance called `pw.machine2.us.oracle.com`. The instance is running on a machine called `machine2.us.oracle.com`.

```
Oc4jMount /webapp/* instance://pw.machine2.us.oracle.com:home
```

The syntax allows you to specify more than one instance to which to direct the requests. You separate the instances with the comma character. For example, the

following line directs /foo/* requests to the OC4J_Foo instance running on machine2 and machine3 (all on one line):

```
Oc4jMount /foo/* instance://pw.machine2.us.oracle.com:OC4J_Foo,
pw.machine3.us.oracle.com:OC4J_Foo
```

In the above example, the pw.machine2.us.oracle.com and the pw.machine3.us.oracle.com Oracle9*i*AS instances do not need to be the same install type, but they do need to be running the OC4J_Foo instance.

4.8.5 Clustered Example

The syntax also allows you to direct requests to clusters. Oracle HTTP Server distributes the requests to the Oracle9*i*AS instances in the cluster.

The following example directs requests to OC4J_Foo instances in Oracle9*i*AS instances in the foo_cluster cluster.

```
Oc4jMount /foo/* cluster://foo_cluster:OC4J_Foo
```

4.8.6 Determining Oracle9*i*AS Instance Names

You can determine the name of an Oracle9*i*AS instance by running the dcmctl command with the whichInstance option:

```
prompt> dcmctl whichInstance
doctest_j2ee.machine1.us.oracle.com
```

The instance name contains the host name, including the domain name.

dcmctl is in *ORACLE_HOME*/dcm/bin. If you have multiple *ORACLE_HOME* directories on the same machine, run the command from the appropriate *ORACLE_HOME*.

For example, to route requests from the middle tier to infrastructure OC4J instances (scenario 2), you need the name of the infrastructure instance.

```
prompt> cd INFRASTRUCTURE_ORACLE_HOME
prompt> cd dcm/bin
prompt> ./dcmctl whichInstance
doctest_infra.machine1.us.oracle.com
```

4.8.7 Determining OC4J Instance Names

You can determine the names of installed OC4J instances on a machine by running the dcmctl command with the listComponents option on that machine:

```
prompt> dcmctl listComponents
HTTP Server
home
```

The command returns the names of Oracle HTTP Server instances as well. You can determine the type of a component by running the `dcmctl` command with the `getComponentType` option:

```
prompt> dcmctl getComponentType -co home
oc4j
prompt> dcmctl getComponentType -co "HTTP Server"
ohs
```

To route requests from the middle tier to the infrastructure OC4J instances (scenario 2), you need the `OC4J_DAS` instance on the infrastructure.

4.8.8 Determining Cluster Names

You can determine the names of clusters by running the `dcmctl` command with the `listClusters` option.

```
prompt> dcmctl listClusters
foo_cluster
```

4.8.9 Editing the mod_oc4j.conf File

You can edit the *`ORACLE_HOME`*`/Apache/Apache/conf/mod_oc4j.conf` file using a text editor or Oracle Enterprise Manager.

> **Note:** If you use a text editor to edit `mod_oc4j.conf`, you must run `dcmctl` with the `updateConfig` option to synchronize the changes with the DCM repository. Then you must restart Oracle HTTP Server so that it can read the updated file.

To edit the `mod_oc4j.conf` file using Oracle Enterprise Manager:

1. Navigate to the Oracle Enterprise Manager Web Site:

   `http://`*`host`*`:1810/`

   where *`host`* specifies the machine running Oracle Enterprise Manager. The default port is `1810`.

2. On the Farm page, click the name of the middle tier instance.

3. On the middle tier instance home page, click **HTTP Server** in the System Components table.
4. On the HTTP Server page, click **Advanced Server Properties** in the Administration section.
5. On the Advanced Server Properties page, click **`mod_oc4j.conf`**.

   This displays the **Edit mod_oc4j.conf** page.
6. Make your changes to the file.
7. Click **Apply**.
8. Click **Yes** when prompted to restart HTTP Server.

To edit the `mod_oc4j.conf` file using a text editor:

1. Go to the *`ORACLE_HOME`*`/Apache/Apache/conf` directory.

   ```
   prompt> cd ORACLE_HOME/Apache/Apache/conf
   ```

2. Make your changes to the file using a text editor.
3. Run `dcmctl` with the `updateConfig` parameter.

   ```
   prompt> cd ORACLE_HOME/dcm/bin
   prompt> ./dcmctl updateConfig
   ```

4. Restart Oracle HTTP Server.

   ```
   prompt> ./dcmctl restart -ct ohs
   ```

Part II

J2EE and Web Cache Install Type Issues

This part discusses issues associated with the J2EE and Web Cache components. It contains the following chapters:

5

Oracle HTTP Server

This chapter discusses issues associated with Oracle HTTP Server. It covers the following topics:

5.1 General Issues and Workarounds

This section covers the following general issues and their workarounds for Oracle HTTP Server:

- Manual Configuration to Access mod_osso Protected Pages from Netscape 4.7

5.1.1 Manual Configuration to Access mod_osso Protected Pages from Netscape 4.7

You may not be able to access `mod_osso` protected pages from Netscape 4.7. If you want to access `mod_osso` protected pages from Netscape 4.7, then the partner application corresponding to `mod_osso` should be modified from the Oracle9*i*AS Single Sign-On server configuration console to point to Oracle9*i*AS Web Cache port number, which is usually 7777. For details on how to use the Oracle9*i*AS Single Sign-On console, see *Oracle9iAS Single Sign-On Administrator's Guide*.

5.2 Configuration Issues and Workarounds

This section covers the following configuration issues and their workarounds for Oracle HTTP Server:

- Securing a Web Site Having OPMN/Oracle HTTP Server Infrastructure
- Receiving Single Sign-On Errors When Accessing Protected Page
- Configuring a Virtual Host Improperly Can Cause DADs to Break
- Using a Full or Partial Host Name in Oc4jMount Syntax in mod_oc4j.conf File

5.2.1 Securing a Web Site Having OPMN/Oracle HTTP Server Infrastructure

When using OPMN/Oracle HTTP Server infrastructure, you must specify at least one `non_ssl` port. For a purely secure Web Site, it only accepts SSL connection. You must provide an extra `non_ssl` port in `httpd.conf`. You can do so by adding the following lines to maintain a secure Web Site:

```
Listen port

<VirtualHost _default_:port>
   SSLEngine Off
   <Location />
      Order deny,allow
      Deny from all
      Allow from localhost
      Allow from <ip1 of a localhost>
```

```
      Allow from <ip2 of a localhost>
      Allow from <ip3 of a localhost>
   </Location>
</VirtualHost>
```

Therefore, security is maintained by restricting the non-ssl port to only accept traffic from the local host.

5.2.2 Receiving Single Sign-On Errors When Accessing Protected Page

When attempting to access a protected resource, you are redirected to the Oracle9*i*AS Single Sign-On Server. However, you may receive 503 errors initially. To avoid errors, disable the `KeepAlive` directive when you are using a server load balancer.

5.2.3 Configuring a Virtual Host Improperly Can Cause DADs to Break

After installation, if you wish to configure Virtual Hosts in the `httpd.conf` file, or by using the **advanced** section of the EMD console, or by using a text editor on the `httpd.conf` file, use the following guidelines:

1. Ensure that the server definitions for `VirtualHosts` are provided *after* the `Port`, `Listen`, and `ServerName` directives. A simple example of a correctly set Virtual Host section might be as follows:

   ```
   #
   # these are set at the end of the httpd.conf file after the IAS installation
   occurs
   #
   Port 7778
   ServerName someServer.mycompany.com
   Listen 7779
   #
   # these lines were added manually to create a virtualHost
   #
   NameVirtualHost 1.2.3.4
   <VirtualHost 1.2.3.4>
       DocumentRoot /u01/app/oracle/product/iAS9020_portal/Vhost1.htdocs
       ServerName Vhost1.mycompany.com
   </VirtualHost>
   ```

2. Ensure that if you use a regular text editor to make changes to the file, you use the following `dcmctl` utility to update your changes.

```
ORACLE_HOME/dcm/bin/dcmctl updateConfig
```

This is automatically done for you if you edit the file through the EMD console.

5.2.4 Using a Full or Partial Host Name in Oc4jMount Syntax in mod_oc4j.conf File

While using the following `Oc4jMount` syntax in `mod_oc4j.conf` file:

```
Oc4jMount /path/* instance://[hostname:]ias_instance:oc4j_instance
```

- Be aware that the host name is optional. It is only necessary to specify it when there are some standalone Oracle9*i*AS instances installed on different hosts that have identical Oracle9*i*AS instance names, which is rare.
- When host name is specified, be sure to test with both a partially qualified host name as well as a fully qualified host name to see which one works. The host name that works matches the host name stored in the OC4J registration event.

5.3 Administration Issues and Workarounds

This section covers the following administration issues and their workarounds for Oracle HTTP Server:

5.3.1 Microsoft Internet Explorer Reporting Incorrect Host Header

If an infrastructure Oracle9*i*AS Single Sign-On Server install and a middle tier install are on the same machine (in different Oracle Homes), Microsoft Internet Explorer reports an incorrect host header after a redirect. This incorrect host headed causes `mod_osso` to generate an error message when trying to access a protected resource after the user has been redirected from the Oracle9*i*AS Single Sign-On Server back to the original server. If you click **Reload** in Internet Explorer, the session continues successfully. This issue will not occur if any of the following conditions are true:

- You do not use Microsoft Internet Explorer.
- The protected resource and the Oracle9*i*AS Single Sign-On Server are running behind Oracle HTTP Server instances with different server names or on different hosts. This is the most likely deployment.

- Oracle9*i*AS Single Sign-On Server and the protected resource are running behind a single Oracle HTTP Server port.

5.3.2 Microsoft Internet Explorer Reporting Errors

When you install an infrastructure instance of Oracle9*i*AS and a middle tier on a same machine, Microsoft Internet Explorer might report various errors where an incorrect host header is sometimes passed after redirection. Specifically, if you have already logged on via the Single Sign-On Server to the middle tier instance and then click a link redirecting you to the infrastructure instance, you will receive an `OSSO` error page. Pressing the **Back** button allows you to continue to the page you originally wished to reach.

5.3.3 Stop and Start Oracle HTTP Server After Adding an SSL-Enabled Virtual Host

In Oracle9*i*AS Release 2 (9.0.3), when you add an ssl-enabled virtual host to Oracle HTTP Server, you must stop and then start Oracle HTTP Server for this virtual host to function. Simply restarting Oracle HTTP Server will not enable the virtual host and may cause Oracle HTTP Server to crash, depending on your configuration. Virtual hosts that specify a wallet file but no wallet password will cause Oracle HTTP Server to crash on restart.

5.4 Documentation Errata

This section covers the following known documentation issues for Oracle HTTP Server:

5.4.1 Correction for "Configuring the IIS Listener for Single Sign-On"

Step 6 in the "Configuring the IIS Listener for Single Sign-On" section of the "Using Oracle9*i*AS Proxy Plug-in" appendix of the *Oracle HTTP Server Administration Guide*, incorrectly states the following:

Restart IIS (stop and then start the IIS Server), ensuring that the `oproxy` filter is marked with a green up-pointing arrow.

It should read:

Restart IIS (stop and then start the IIS Server), ensuring that the `osso` filter is marked with a green up-pointing arrow.

5.4.2 Login Server File Example Giving Incorrect Syntax

In the "Using Single Sign-On with the Plug-in" section of appendix A of the *Oracle HTTP Server Administration Guide*, the "OSSO Configuration File Examples" incorrectly presents the syntax for the `LoginServerFile` directive with double quotes around the value.

The correct syntax is:

```
LoginServerFile = /path/config/sso_conf
```

6

Oracle9*i*AS Containers for J2EE (OC4J)

This chapter discusses issues with Oracle9*i*AS Containers for J2EE (OC4J). It includes the following topics:

6.1 Release Notes for CTS Compatibility Flag and Migration Issues

This section discusses the OC4J CTS compatibility flag relating to J2EE 1.3 compatibility, and covers J2EE 1.3 migration considerations for some OC4J subcomponents.

6.1.1 Master CTS Compatibility Flag

In Oracle9*i*AS Release 2 (9.0.3), OC4J by default complies with the J2EE 1.3 specification. In some cases, this results in behavior that differs from that seen with previous OC4J implementations. To allow for backward compatibility, OC4J supports a CTS compliance flag that you can set to `false` to revert to previous OC4J behavior in the following components:

- Oracle JMS
- Oracle JDBC
- Oracle XML parser for JAXP/XDK

The compliance behavior of OC4J is determined by the flag `oracle.cts.useCtsFlags`, with a default value of `true`. If any of the migration issues are critical in a particular application, you can disable CTS compliance and revert to old behavior for an OC4J instance by setting the flag value to `false` in an OC4J properties file, then providing the location of the properties file to OC4J.

For example, you might create a file `OC4J.properties` in the OC4J `config` directory, with the following content:

```
oracle.cts.useCtsFlags=false
```

In Oracle9*i*AS, supply the name and location of a properties file to OC4J through an `<oc4j-option>` element in the `opmn.xml` file, as in the following example:

```
<oc4j>
...
   <oc4j-option value="-p ORACLE_HOME/j2ee/home/config/OC4J.properties" />
...
</oc4j>
```

This is equivalent to starting OC4J as follows in standalone mode (where % is a system prompt):

```
% java -jar OC4J -p ORACLE_HOME/j2ee/home/config/OC4J.properties
```

6.1.2 CTS Compatibility: Migration Considerations for OJMS

In the Oracle9*i*AS Release 2 (9.0.3) implementation of Oracle JMS (OJMS), which complies with J2EE 1.3, some behavior differs from OJMS behavior in Oracle9*i*AS release 1.0.2.2. (There are no such migration considerations between Oracle9*i*AS releases 9.0.2 and 9.0.3.) The differences are as follows:

- `JMSExpiration`—In the OJMS 9.0.3 J2EE 1.3-compliant implementation, the `JMSExpiration` header value in a dequeued message is the sum of the JMS timestamp when the message was enqueued, and the time-to-live. This value is expressed in milliseconds from midnight, January 1, 1970 to the current Greenwich Mean Time. If a message never expires, the value is 0.

  In the OJMS 1.0.2.2 implementation, the `JMSExpiration` header value in a dequeued message is the duration until expiration of the message, in milliseconds. If a message never expires, the value is -1.

- `JMSPriority`—In the OJMS 9.0.3 J2EE 1.3-compliant implementation, 9 is the highest priority, 0 is the lowest priority, and 4 is the default priority.

  In the OJMS 1.0.2.2 implementation, `java.lang.Integer.MIN_VALUE` is the highest priority, `Integer.MAX_VALUE` is the lowest priority, and 1 is the default priority.

- Durable subscribers—In the OJMS 9.0.3 J2EE 1.3-compliant implementation, durable Topic Subscribers with the same name are not allowed under any circumstances.

  In the OJMS 1.0.2.2 implementation, durable Topic Subscribers with the same name are allowed if they are subscribed to different topics.

- Strongly typed JMS selectors—In accordance with the JMS 1.02b specification and J2EE 1.3 compliance requirements, the OJMS 9.0.3 implementation uses only a certain subset of SQL92 syntax for selector expression syntax, with the following mandated restrictions:

  – Selector expressions are strongly typed, meaning operators and operands in arithmetic comparisons must be of the same type. Automatic type conversions for the purpose of comparison, such as converting the string "1" to the integer 1, are prohibited.

  – String and boolean comparisons are restricted to "=", "<", and ">". Two strings are equal only if they contain the exact same sequence of characters.

  – The "!=" operator is disallowed.

The OJMS 1.0.2.2 implementation is not subject to these restrictions or to the limited subset of SQL92 syntax for selector expression syntax.

6.1.3 CTS Compatibility: Migration Considerations for JDBC

In the Oracle9*i*AS Release 2 (9.0.3) implementation of Oracle JDBC, which complies with J2EE 1.3, some behavior differs from JDBC behavior in Oracle9*i*AS Release 2 (9.0.2) and prior. The differences are as follows:

- Java types for `NUMBER` columns—In 9.0.3, the `getObject()` method of a result set (`java.sql.ResultSet` instance) returns a `java.lang.Double` value for a `NUMBER` column with precision, or a `java.math.BigDecimal` value for a `NUMBER` column without precision.

  In prior releases, `getObject()` returns a `BigDecimal` value for any `NUMBER` column.

- Metadata for `NUMBER` columns—In 9.0.3, the `getColumnTypeName()` method of a result set metadata object (`java.sql.ResultSetMetaData` instance) returns "`FLOAT`" for a `NUMBER` column with precision, or "`NUMBER`" for a `NUMBER` column without precision. The `getColumnType()` method returns `java.sql.Types.FLOAT` for a `NUMBER` column with precision, or `Types.NUMBER` for a `NUMBER` column without precision.

  In prior releases, `getColumnTypeName()` returns "`NUMBER`" for any `NUMBER` column, and `getColumnType()` returns `Types.NUMBER` for any `NUMBER` column.

- Java types for `DATE` and `TIMESTAMP` columns—In 9.0.3, the `getObject()` method of a result set returns a `java.sql.Date` value for a `DATE` column, and a `java.sql.Timestamp` value for a `TIMESTAMP` column.

  In prior releases, `getObject()` returns a `java.sql.Timestamp` value for a `DATE` column. (`TIMESTAMP` columns were not supported.)

- Exceptions for inappropriate SQL statements—In 9.0.3, if an `executeQuery()` call in a statement object contains anything but a `SELECT` statement (such as if it instead contains an `INSERT` or `UPDATE` statement), the JDBC driver properly throws an exception. Similarly, if an `executeUpdate()` call contains a `SELECT` statement, the driver properly throws an exception. (An `UPDATE`, `INSERT`, or `DELETE` statement is expected.)

  In prior releases, these situations did not result in exceptions.

6.1.4 CTS Compatibility: Migration Considerations for JAXP/XDK XML Parser

In the Oracle9*i*AS Release 2 (9.0.3) implementation of the XML parser for JAXP/XDK, which complies with J2EE 1.3, some behavior differs from XML parser behavior in Oracle9*i*AS Release 2 (9.0.2) and prior. The differences are as follows:

- `getNamespaceURI()` null return values—In 9.0.3, the `getNamespaceURI()` method returns `'null'` if the namespace is not defined for an element or attribute.

  In prior releases, the `getNamespaceURI()` method returns `''''` in these circumstances.

- `getLocalName()` null return values—In 9.0.3, the `getLocalName()` method returns `'null'` if the element or attribute was created using a DOM level 1 API call to `createElement()` or `createAttribute()`.

  In prior releases, the `getLocalName()` method returns `''''` in these circumstances.

- `getPrefix()` null return values—In 9.0.3, the `getPrefix()` method returns `'null'` if the element or attribute was created using a DOM level 1 API call to `createElement()` or `createAttribute()`.

  In prior releases, the `getPrefix()` method returns `''''` in these circumstances.

  Note: The `getNamespaceURI()`, `getLocalName()`, and `getPrefix()` methods exist with the above changes in the `XMLElement` and `XMLAttr` classes of the `oracle.xml.parser.v2` package.

- SAX exceptions—In 9.0.3, registered error handlers throw a `SAXException` or `SAXParseException` in error conditions.

  In prior releases, error handlers throw an `XMLParseException` in error conditions.

- I/O exceptions—In 9.0.3, an `IOException` is thrown as is in I/O error conditions.

  In prior releases, an `IOException` is wrapped in an `XMLParseException`.

6.2 Release Notes for JMS

This section describes issues for Java Message Service (JMS).

> **See also:** Section 6.1, "Release Notes for CTS Compatibility Flag and Migration Issues".

6.2.1 Using Oracle JMS

To use Oracle JMS, you must do one of the following:

- If you have an RDBMS 9.0.1 release for your server, use RDBMS 9.0.1.4.
- You must apply a server-side patch for Oracle JMS, which ships with Oracle9*i*AS Release 2 (9.0.3) and the OTN release of OC4J, to work with an RDBMS 9.2.0.1 database. This patch is documented as bug 2513629; see the Metalink Web site or contact Oracle support for more information. However, it is strongly recommended that users move to RDBMS 9.2.0.2 when it is available. Users do not need to apply any server-side database patches when running with RDBMS 9.2.0.2.

6.2.2 OC4J/JMS Should Not Be Used in Oracle9*i*AS Releases 1.0.2.2, 9.0.2, and 9.0.3

In Oracle9*i*AS Release 1.0.2.2, Release 2 (9.0.2), and Release 2 (9.0.3), OC4J contains a default Java Message Service (JMS) provider called OC4J/JMS (sometimes referred to as OrionJMS). Because OC4J/JMS is not fully JMS 1.02-compliant and was not used to achieve J2EE 1.3 compatibility, we recommend using the Oracle JMS (OJMS) implementation, which is provided. This JMS provider leverages Advanced Queueing (AQ) from the Oracle9*i* Database and is integrated into Oracle9*i*AS by means of a resource provider interface. In Oracle9*i*AS Release 2 (9.0.3), OJMS is JMS 1.0 compliant and was used to achieve J2EE 1.3 compatibility.

6.2.3 Timeout Error with MDB

You may receive an ORA-04021 message "timeout occurred while waiting to lock object SYS.DBMS_AQ" when creating queues if an MDB is executing within OC4J at the same time. If you receive this message, try to create the queues again.

6.3 Release Notes for DataDirect Connect JDBC Driver

This section contains release notes for the DataDirect Connect JDBC Driver.

6.3.1 Use of the DataDirect Connect JDBC Driver

A customized version of the DataDirect Connect JDBC driver is shipped with Oracle9*i*AS to provide connectivity to non-Oracle databases. Do not use the DataDirect Connect JDBC driver outside of Oracle9*i*AS; the driver is available only within Oracle9*i*AS. You should refer to standard DataDirect documentation and release notes for technical information on the DataDirect JDBC driver. However, it is important to note the differences between the standard DataDirect JDBC driver and this customized version:

- The customized DataDirect driver JAR files use the `YM` prefix. The following DataDirect JAR files are distributed with Oracle9*i*AS:

  ```
  YMbase.jar  YMinformix.jar  YMsqlserver.jar  YMutil.jar YMdb2.jar
  YMsybase.jar
  ```

- The URL sub-protocol prefix is `oracle`. When you connect, use the correct sub-protocol. For example:

  ```
  jdbc:oracle:db2://server1:1433
  ```

- The package names are `com.oracle.ias`.
- The vendor message prefix is `[oias]`.
- The customized DataDirect driver is configured to run within the Oracle9*i*AS product. Attempting to use the customized DataDirect JDBC driver outside Oracle9*i*AS will yield the following exception:

  ```
  java.sql.SQLException: [oias][... JDBC Driver]
  ```

6.4 Release Notes for JDBC

This section includes issues with JDBC that are not reflected in the Oracle9*i*AS Release 2 (9.0.3) documentation.

> **See also:** Section 6.1, "Release Notes for CTS Compatibility Flag and Migration Issues".

6.4.1 Incorrect BatchUpdateException ORA-01013

The version of JDBC shipped with Oracle9*i*AS Release 2 (9.0.3) is a patched version of Oracle9*i* JDBC 9.0.1.4. This patch fixes the problem (noted in bug 2232903) of the issuance of an incorrect `BatchUpdateException` ORA-01013. You may see the

exception when performing a statement execution right after a statement cancellation.

6.5 Release Notes for JAXP/XDK XML Parser

This section contains release notes for the JAXP/XDK XML Parser.

See also: Section 6.1, "Release Notes for CTS Compatibility Flag and Migration Issues".

6.5.1 Preservation of White Space

As of Oracle9*i*AS Release 2 (9.0.3), the default setting for preservation of white space is dependent on the presence of the DTD—if the DTD is present, the default value is `false`; if it is not present, the default value is `true`.

In Oracle9*i*AS Release 2 (9.0.2) and prior, the default was always `false`.

You can explicitly set the value through the `setPreserveWhitespace()` method of the `oracle.xml.parser.v2.XMLParser` class.

6.6 Release Notes for JSP, Tag Libraries, and Related Demos

The following release notes apply to OC4J JSP, JSP tag libraries, and related demo applications as of Oracle9*i*AS Release 2 (9.0.3).

6.6.1 JSP Application Security: Protection Against Cross-Site Script (XSS) Attacks

OJSP demo applications in Oracle9*i*AS Release 2 (9.0.3) have been updated according to the Secure Coding Standards (addressing bug 2485625). The standards include a directive to filter user input that is subsequently sent to a Web browser. This avoids cross-site script (XSS) vulnerability and provides an example to users of how to produce a secure application.

Any JSP page with output that includes a string containing user input must first filter the string, replacing special HTML characters with their mnemonic equivalents to prevent them from being interpreted as actual tags.

Before echoing or printing data from request parameters—either directly, or indirectly through a Java variable value—create a string in which special characters are replaced as follows:

- Replace < with `&lt`

- Replace > with `&gt`
- Replace & with `&amp`
- Replace `\"` with `&quot`

For example, change the following JSP code:

```
<% out.print(mystr); %>
```

to something like the following:

```
<% out.print(util.HTMLReplace(mystr)); %>
```

where `util.HTMLReplace()` is defined as follows:

```
<%!

// The demoUtil class will be declared as an inner class in any JSP which
// includes this file.
class demoUtil
{
  // List of mappings.  The first element is the original HTML special
  // character, and the second the replacement string.
  public String[][] mappings =
  {{"<", "&lt"},
   {">", "&gt"},
   {"&", "&amp"},
   {"\"", "&quot"}};

  /**
   * HTMLReplace()
   * Returns the input string with any HTML special characters replaced by
   * their mnemonic equivalents.
   *
   * @param input  Input string
   * @return       Input with characters replaced
   */
  public String HTMLReplace(String input)
  {
    StringBuffer output = new StringBuffer();

    // Loop over the input string
    for (int i = 0; i < input.length(); i++)
    {
      boolean replaced = false;
      String current = input.substring(i, i + 1);
```

```
      // For each character in the input, loop through the mappings
      for (int j = 0; j < mappings.length; j++)
      {
        // and replace if necessary
        if (current.equalsIgnoreCase(mappings[j][0]))
        {
          replaced = true;
          output = output.append(mappings[j][1]);
          break;
        }
      }
      if (!replaced)
        output.append(current);
    }

    return new String(output);
  }
}

// Declare an instance of the demoUtil class, which can then be referenced
// with "util".
demoUtil util = new demoUtil();

%>
```

As a test, the following in a text entry field would expose a cookie if you do not take the above precautions:

```
<script>alert(document.cookie)</script>
```

For background information on XSS attack vulnerability, refer to the following Web site:

```
http://www.cert.org/advisories/CA-2000-02.html
```

6.6.2 Miscellaneous JSP and ojspc Release Notes

The following release notes apply to JavaServer Pages and the `ojspc` pre-translation utility (batch pre-translation only):

- Beginning with Oracle9*i*AS Release 2 (9.0.3), the OC4J JSP container by default imports the following packages into any JSP page, in accordance with the JSP specification. No `page` directive `import` settings are required:

  ```
  javax.servlet.*
  ```

```
javax.servlet.http.*
javax.servlet.jsp.*
```

In previous releases, the following packages were also imported by default:

```
java.io.*
java.util.*
java.lang.reflect.*
java.beans.*
```

For backward compatibility, you can use the JSP `extra_imports` configuration parameter as a workaround. Alternatively, you can add desired imports through `page` directives or global includes. See the *Oracle9iAS Containers for J2EE JavaServer Pages Developer's Guide* for information about these topics.

- `ojspc -output` option: Note the following issues with the `-output` option.
  - If you use the `-output` option and specify a file that already exists, that file will be overwritten regardless of its file permissions, even if it is read-only (bug 2555684).
  - No error message is generated if you try to use the `-output` option without specifying an output file (bug 2555686).
- `ojspc -batchMask` option: No error message is generated if you try to use the `-batchMask` option without specifying the additional file name extensions to pre-translate (bug 2555686).
- When pre-translating files in a WAR file (or EAR) file, `ojspc` cannot find the `WEB-INF` directory if the WAR file is created such that `WEB-INF` is nested (bug 2542886). For example, consider an application whose root directory is `/tmp/foo/package`. If you create a WAR file while your current directory is the `package` directory, you would have WAR file entries such as the following, and there would be no problem:

  ```
  a.jsp
  b.jsp
  c.jsp
  WEB-INF/
  ```

  If, however, you create the WAR file while your current directory is `foo`, for example, you would have WAR file entries such as the following:

  ```
  package/a.jsp
  package/b.jsp
  ```

```
package/c.jsp
package/WEB-INF/
```

In this case, there is a problem—`ojspc` would be unable to find `WEB-INF` after it extracts the WAR file. The only workaround is to recreate the WAR file so that `WEB-INF` is at the top level.

- The `ojspc` utility cannot handle a JAR (or WAR or EAR) file that has JSP pages with different encodings. All pages in any given JAR file must currently use the same encoding (bug 2505205).
- When given a JAR (or WAR or EAR) file as input, `ojspc` will produce an output JAR file even if there are no JSP pages to translate in the original JAR file, although the translator and compiler are never invoked (bug 2579898). As always, the original JAR file is overwritten, unless you use the `-output` option. The output JAR file will be identical to the original, aside from the timestamp.
- When translating files in a WAR or EAR file, if there are already one or more `.class` files in the `WEB-INF/classes` directory (prior to any `ojspc` processing), `ojspc` has been known to occasionally create a duplicate of one (and only one) of these `.class` files (bug 2580021). The duplicate is placed at the top level of the output WAR or EAR file, but will not be found or executed. You can ignore or delete any such duplicate entry in the output WAR or EAR file. This duplication bug does not occur with any `.class` files that are created during `ojspc` processing.

6.6.3 Miscellaneous JSP, Tag Library, and Demo Release Notes

The following release notes apply to JSP tag libraries and related demo applications:

- The OC4J EJB tag library now supports local interfaces. This is not documented in the *Oracle9iAS Containers for J2EE Tag Libraries and Utilities Reference*, Release 2 (9.0.3).

  The `useHome` and `useBean` tags have an optional attribute called `local`, which takes a value of either "`true`" or "`false`" (default). Use a "`true`" setting for local EJBs, and set up the local interface as you normally would. You can set the `local` attribute using a runtime expression, but remember that the attribute expects a string value, not an actual boolean value.

  There is one restriction—if `local="true"` for a `useBean` tag, you cannot use `scope="session"` if the application is distributable.

- The OC4J Web services tag library now supports document-style as well as RPC-style bindings. The *Oracle9iAS Containers for J2EE Tag Libraries and Utilities*

Reference, Release 2 (9.0.3), still states that only RPC-style bindings are supported.

This mostly affects the `part` tag, which has a `name` attribute (required) and a `value` attribute. The value attribute, formerly required, is now optional—you would use it only for an RPC-style Web service. For a document-style Web service, you would use a tag body instead, to input an XML document, XML element, or whatever is expected for input of an XML node.

For a document-style Web service, the output response object will be of type `XMLElement`.

- When using mail attachments with the OC4J `sendMail` tag, note the following issues:
  - If you set `sendmail.attachment=server` in the `sendmail.properties` file and try to send both a server-side attachment and a client-side attachment, no error message is output. (The `sendMail` tag, as documented, supports server-side attachments or client-side attachments, but not both for any single application.) The message is sent with the server-side attachment but without the client-side attachment (bug 2496367).
  - If you try to send an attachment when `sendmail.attachment=none`, no attachment is sent but no error message is output (bug 2474501).
  - You cannot attach a symbolic link file; this results in an empty file being sent (bug 2452451).

  (Watch for updates to the OC4J release notes on OTN for possible further issues with sendmail attachments.)
- Tag library event listeners do not currently work properly if the JSP configuration parameter `well_known_taglib_loc` is used to set a non-default "well-known" tag library location.
- Personalization demos that are included in the OC4J JSP demo application `ojspdemos` do not work as deployed. They will output an error such as the following:

```
Error: Only java.io.Serializable, javax.ejb.EJBObject and
javax.ejb.EJBHome instances
can be bound to a session in a distributable web-application, not:
oracle.dmt.op.re.reapi.rt.REProxyRT@1fe451 (class
oracle.dmt.op.re.reapi.rt.REProxyRT)
```

The reason for this is that `ojspdemos` is declared to be distributable through a `<distributable/>` element in the application `web.xml` file, but the Oracle Personalization REAPI for Java, and therefore the Oracle9*i*AS Personalization tag library, cannot be used in a distributable application in Oracle9*i*AS Release 2 (9.0.3).

The suggested workaround is to make the `ojspdemo` instance *not* distributable by removing the `<distributable/>` element from the application `web.xml` file after deployment. Use the following steps, for example:

1. Make a copy of `ojspdemos.jar` with another name, such as `nondistrib-demos.jar`.
2. Extract `WEB-INF/web.xml`.
3. Edit `web.xml` to remove the `<distributable/>` element.
4. Repackage the JAR file.
5. Deploy a new application—`nondistrib-demos`, for example—using the new JAR file.

6.6.4 JSP Tag Library URIs

As of Oracle9*i*AS Release 2 (9.0.3), the tag libraries bundled with OC4J JSP are packaged with their tag library descriptor (TLD) files inside `ojsputil.jar`.

Each `.tld` file contains an appropriate `<uri>` setting for accessing the tag library. For convenience, you can define a shortcut for any tag library URI in your `web.xml` file. The URIs for the OC4J JSP TLD files are defined in the TLD files themselves, as follows:

In the `ejbtaglib.tld` file:

```
<uri>http://xmlns.oracle.com/j2ee/jsp/tld/ojsp/ejbtaglib.tld</uri>
```

In the `email.tld` file:

```
<uri>http://xmlns.oracle.com/j2ee/jsp/tld/ojsp/email.tld</uri>
```

In the `fileaccess.tld` file:

```
<uri>http://xmlns.oracle.com/j2ee/jsp/tld/ojsp/fileaccess.tld</uri>
```

In the `jesitaglib.tld` file:

```
<uri>http://xmlns.oracle.com/j2ee/jsp/tld/ojsp/jesitaglib.tld</uri>
```

In the `jml.tld` file:

```
<uri>http://xmlns.oracle.com/j2ee/jsp/tld/ojsp/jml.tld</uri>
```

In the `jwcache.tld` file:

```
<uri>http://xmlns.oracle.com/j2ee/jsp/tld/ojsp/jwcache.tld</uri>
```

In the `personalization.tld` file:

```
<uri>http://xmlns.oracle.com/j2ee/jsp/tld/ojsp/personalization.tld</uri>
```

In the `sqltaglib.tld` file:

```
<uri>http://xmlns.oracle.com/j2ee/jsp/tld/ojsp/sqltaglib.tld</uri>
```

In the `utiltaglib.tld` file:

```
<uri>http://xmlns.oracle.com/j2ee/jsp/tld/ojsp/utiltaglib.tld</uri>
```

In the `wstaglib.tld` file:

```
<uri>http://xmlns.oracle.com/j2ee/jsp/tld/ws/wstaglib.tld</uri>
```

In the `xml.tld` file:

```
<uri>http://xmlns.oracle.com/j2ee/jsp/tld/ojsp/xml.tld</uri>
```

In your `web.xml` file, you can specify a shortcut for any of these URI settings by using a `<taglib>` element and its subelements, as in the following example:

```
<taglib>
   <taglib-uri>/oraejbtags</taglib-uri>
   <taglib-location>http://xmlns.oracle.com/j2ee/jsp/tld/ojsp/ejbtaglib.tld
   </taglib-location>
</taglib>
```

Given this example, a JSP page can use the following `taglib` directive to access the EJB tag library:

```
<%@ taglib prefix="ejb" uri="/oraejbtags" %>
```

See the *Oracle9iAS Containers for J2EE JavaServer Pages Developer's Guide* for more information about use of tag library URIs.

6.6.5 JSP Bug Fixes of Note

JSP bug fixes for Oracle9*i*AS Release 2 (9.0.3) include the following:

- Bug 2053895—MERGE FOR PORT SPECIFIC CHANGES TO HTTPDSCTL, JSERV.PROPERTIES.PROT (JServ)

  Code was added to appropriately set `SHLIB_PATH` on HPUX and `LIBPATH` on AIX. (These are equivalent to `LD_LIBRARY_PATH` on Solaris.) Files `httpdsctl` and `jserv.properties.prot` now set the `SHLIB_PATH` and `LIBPATH` environment variables appropriately for the product line platforms.

- Bug 2138334—DEFAULT CONTENT-TYPE IS TEXT/HTML, DOES NOT INCLUDE CHARSET

  The default content type is as follows, which complies with the JSP specification:

  ```
  text/html;charset=ISO-8859-1
  ```

  Previously, the default was just `text/html`, without specification of a character set.

- Bug 2186625—OJSPC DOES NOT KNOW TO TAKE A LINK PARAMETER

  This bug has been fixed.

  Previously, `ojspc` (particularly `ojspc` standalone) sometimes had problems accessing JSP files through symbolic links (such as when the link pointed to a file that was located in a non-writable directory).

- Bug 2197462—NLS: CANNOT SET UTF-8 AS A RESPONSE CHARSET FOR UIX (CABO) APPLICATION

  You can now set UTF-8 as the response character set.

- Bug 2227940—FAILURE TO GC LARGE JSPS CAUSES OUTOFMEMORY (JServ)

  The JSP configuration parameter `external_resource_timeout` has been added for the JServ environment. (This is similar to `jsp-timeout` in OC4J.) Enabling this parameter resolves a garbage collection issue with large numbers of big JSP pages, which caused the JVM running JServ to run out of memory.

- Bug 2248478—DEBUG_MODE SHOULD BE SET TO FALSE BY DEFAULT

  The default setting of the `debug_mode` JSP configuration parameter is `false`, for security reasons.

Previously, the default was `true`.

- Bug 2310924—IMPLEMENT JSP-TIMEOUT FEATURE

  The `jsp-timeout` feature has been implemented in OC4J, allowing you to specify an integer value, in seconds, after which any JSP page will be removed from memory if it has not been requested.

  The `jsp-timeout` parameter is an attribute of the `<orion-web-app>` element in `global-web-application.xml` or `orion-web.xml` (as opposed to being one of the JSP configuration parameters, which are set through `<init-param>` settings in the `<servlet>` element for the front-end servlet of the JSP container).

- Bug 2387109—ESI/JESI TAG PROCESSING BREAKS WITH REAL-WORLD JSP

  This bug has been fixed in the JESI tag library by ensuring that an ESI `Surrogate-Control` header is sent for each page fragment.

  Previously, JSP files with large amounts of template data would cause the buffer to be filled and auto-flushed before all `Surrogate-Control` headers were sent.

- Bug 2405180—JSP:FORWARD INSIDE A TABLE RESULTS IN AN EXCEPTION

  This bug has been fixed.

  Previously, the user would receive the following error:

  ```
  java.lang.IllegalStateException: Response has already been committed.
  ```

- Bug 2453675—NLS: GBK IS NOT WORKING AS PAGE DIRECTIVE

  The Chinese GBK encoding is now accepted in a `page` directive (`charset="GBK"`).

- Bug 2513959—NEGATIVE REFERENCE COUNT EXCEPTION IN OJSP'S CACHE TAGS

  This bug in the Web Object Cache tag library has been fixed by changing usage patterns in the tag library code to work around the fact that a critical module was not thread-safe.

  Previously, in high-stress situations, the user would likely see the following exception:

  ```
  oracle.ias.cache.CacheException:
  An exception occurred in the method CacheAccess.getAttributes
  negative reference count
  ```

6.7 Release Notes for Data Sources

The following release notes apply to OC4J data sources.

6.7.1 Connection Pooling

If you set the minimum number of connections in your application, these connections are pooled for you after the first `getConnection()` method invocation. However, when you undeploy this application, these connections are not scavenged for you.

6.7.2 Client-Side Data Source Lookup Not Supported

Bug 2143605—A client cannot use data sources to get connections. The client should use `DriverManager` to get the connections.

6.8 Release Notes for EJB

The following release notes apply to Enterprise JavaBeans.

6.8.1 General EJB Backward Compatibility Issues

The `dedicated.connection` system property for load balancing is deprecated. Instead, use the `dedicated.rmicontext` system property. See the "Performance" section of the *Oracle9iAS Containers for J2EE Enterprise JavaBeans Developer's Guide* for more information on the `dedicated.rmicontext` system property.

The `old_pessimistic` locking mode is also deprecated. The other locking modes are described in the "Advanced" chapter of the *Oracle9iAS Containers for J2EE Enterprise JavaBeans Developer's Guide*.

6.8.2 Container-Managed Persistence

EJB applications that used the proprietary container-managed fields and relationships features from earlier versions are not EJB 2.0-compliant. These applications must be migrated to use the standard EJB 2.0 features.

Oracle9*i*AS Release 2 (9.0.2) required specifying the object relationships in the `orion-ejb-jar.xml` file. Oracle9*i*AS Release 2 (9.0.3) requires using the standard EJB 2.0 CMR definitions in `ejb-jar.xml`. Programs that used the old 9.0.2-style CMR definitions must be migrated to the EJB 2.0 standard.

6.8.2.1 Dependent Objects

Bugs 2465874 and 2454567—Oracle9*i*AS Release 2 (9.0.2) supported mappings of dependent objects. This feature does not work in Oracle9*i*AS Release 2 (9.0.3) and will be deprecated in Oracle10*i*AS. You can serialize the dependent object as a BLOB or use container-managed relationships as workarounds.

6.8.2.2 Self-Referencing

Bug 2504337—If you set up a many-to-many or one-to-many self-referencing relationship, the association table does not generate properly.

Workaround—Do not use the association table for self-referencing. This can be achieved by specifying `associateUsingThirdTable=false` at startup, or, in the input `orion-ejb-jar.xml` file, by specifying the "collection" table to be the same as the "many" table.

6.8.2.3 Association Table for One-to-Many Unidirectional Relationships

In Oracle9*i*AS Release 2 (9.0.3), OC4J creates an association table for one-to-many unidirectional relationships regardless of the setting of `-DassociateUsingThirdTable`.

6.8.2.4 Association Table for One-to-One Unidirectional Relationships

In one-to-one unidirectional cases, the rules of relationship assignment specified in the *Oracle9iAS Containers for J2EE Enterprise JavaBeans Developer's Guide* are valid only if the getter and setter methods are executed in one transaction.

6.8.3 Message-Driven Beans

Message Driven Beans (MDBs) work only with Oracle JMS. They do not work with OC4J/JMS, MQSeries, or SonicMQ.

The `min-instances`, `max-instances`, and `cache-timeout` elements are not recommended for use with 9.0.3. Use `listener-threads` instead for concurrent support for both topics and queues. If `listener-threads` is set to greater than 1, the container spawns as many threads as specified to concurrently process messages.

The current behavior of `min-instances`, `max-instances`, and `cache-timeout` (with default of `cache-timeout` as 120 seconds and no default for `min-instances` and `max-instances`) for MDBs is that the container pre-creates the minimum number of instances during deployment, after which other bean

instances are created as needed when client requests come in. However, after the `cache-timeout` period expires, the pool size does not deflate to `min-instances`.

6.8.3.1 Backward Compatibility for MDBs

An MDB must now implement the `javax.jms.MessageListener` interface in addition to the `javax.ejb.MessageDrivenBean` interface. This was introduced in the final version of the EJB 2.0 specification.

The tag used to specify an MDB destination in the `ejb-jar.xml` file was changed in the final version of the EJB 2.0 specification. The earlier tag `<jms-destination-type>` must be changed to `<destination-type>`.

The 9.0.2 MDB implementation was not EJB 2.0-compliant. Thus, to bring your MDBs up to EJB 2.0 compliance, you must modify the `ejb-jar.xml` file of the MDB to specify the `<resource-ref>` and `<resource-env-ref>` mappings for the `Destination` and `Factory` objects. Otherwise, your 9.0.2 MDB will not work in 9.0.3.

6.8.3.2 Core Dump During Shutdown of OC4J Server

If you configured MDBs using OJMS with the JDBC OCI Driver, you may encounter a core dump during shutdown of the OC4J server. The workaround is to use the JDBC Thin driver.

6.8.3.3 Modification for MDB Demos

When using the MDB demos shipped with 9.0.3, modify the file *ORACLE_HOME*`/j2ee/home/demo/mdb/common.xml` to run `ant` to compile the demos. Replace the following:

```
<pathelement location="J2EE_HOME/lib/classes12.jar"/>
```

with:

```
<pathelement location="ORACLE_HOME/jdbc/lib/classes12dms.jar"/>
```

6.8.4 Interoperability

When running RMI/IIOP with JDK 1.4, you must start the OC4J instance with the following `-D` system property:

```
-Djavax.rmi.CORBA.UtilClass=com.sum.corba.ee.internal.POA.ShutdownUtilDelegate
```

If you do not provide this system property, you will receive a `ClassCastException`.

6.8.4.1 CosNaming

You can use CosNaming only to retrieve EJB references. You cannot look up other resources.

6.8.4.2 Potential IIOP Port Conflicts

By default, IIOP is not enabled. To enable IIOP, uncomment the `<sep-config>` element in the `server.xml` file that points to the `internal-settings.xml` file. If you do enable IIOP, you may encounter IIOP port conflicts. The IIOP ports currently are not managed by OPMN. Instead, fixed IIOP ports of 5555, 5556, and 5557 are provided. IIOP without SSL is port 5555. SSL with server authentication is port 5556. SSL with client authentication is port 5557. If you are using IIOP and encounter port conflicts, you must manually change the default port number for each OC4J process in the `internal-settings.xml` file.

6.8.5 EJB Client Using an RMI Port

OC4J is configured to assign an RMI or JMS port dynamically within set ranges. However, if you have a standalone EJB client, you must know an exact port number to direct your request. Perform the following steps:

1. Pick a port number that is not being used by the OC4J process.
2. Modify the `opmn.xml` file, using the Enterprise Manager Advanced Properties screen, within the OPMN configuration. Change the RMI or JMS range to the specified port number. The following demonstrates setting the RMI port to 3202 in the `opmn.xml` file:

   ```
   <port ajp="..." jms="..." rmi="3202"/>
   ```

3. Restart the OC4J process to initialize the new port numbers.
4. Configure the same port number within the JNDI properties of the standalone client. The following demonstrates setting the same RMI port number in the JNDI properties for the EJB client:

   ```
   java.naming.provider.url=ormi://myhost:3202/myapp
   ```

6.8.6 EJB QL Backward Compatibility for Finder Methods

In Oracle9*i*AS Release 2 (9.0.3) and previous releases, OC4J had its own methodology for finder methods. These finder methods were configured in the `orion-ejb-jar.xml` file in a `<finder-method>` element. Each

<finder-method> element specified a partial or full SQL statement in its query attribute, as follows:

```
<finder-method query="">
```

or:

```
<finder-method query="$empname = $1">
```

If you have a <finder-method> element with a query attribute from a previous release, it overrides any EJB QL modifications to the same method in the ejb-jar.xml file. The <finder-method> element with a query attribute configured in orion-ejb-jar.xml has higher priority.

To have the previous finder method modified with EJB QL, erase the query attribute of the <finder-method> element in the orion-ejb-jar.xml file and redeploy the application. OC4J notes that the query attribute is not present and uses the EJB QL methodology from the ejb-jar.xml file instead.

6.8.7 OC4J Does Not Passivate Stateful EJBs when Server Runs out of Memory

The OC4J server does not passivate stateful EJBs when the server runs out of memory. Stateful EJBs are passivated only when the OC4J server shuts down. However, EJB resources are released whenever a a stateful EJB times out. To avoid locking up resources unnecessarily, set an appropriate timeout on stateful session beans.

6.8.8 EJB Security

Any user that executes the create() method (which in turn invokes the ejbCreate() method) must be a member of the Administrator group or role that is created in the principals.xml or JAZN configuration files.

6.8.9 EJB Clustering

If you use the split-tier mode of clustering, then you must set the -D option of dedicated.rmicontext=true on the client tier. As mentioned in the "Advanced" chapter of the *Oracle9iAS Containers for J2EE Enterprise JavaBeans Developer's Guide*, this is the recommended method for scalability.

6.9 Release Notes for RMI

The following release notes apply to RMI (Remote Method Invocation).

6.9.1 RMI/IIOP Client Support

The client JAR file—`oc4jclient.jar`—does not support RMI/IIOP. For a client to use RMI/IIOP, the client must use the `oc4j.jar` file.

6.10 Release Notes for Servlets

The following release notes apply to the OC4J servlet container.

6.10.1 NullPointerException when Invoking Remote EJB from Servlet or JSP

A `NullPointerException` is generated when a servlet or JSP tries to look up a remote EJB in another container in any situation in which `dedicated.connection` and `dedicated.rmicontext` are disabled.

For Oracle9*i*AS Release 2 (9.0.3), set `dedicated.rmicontext` to a value of "`true`".

6.11 Release Notes for JAZN

The following release notes apply to JAZN, the Oracle JAAS implementation.

6.11.1 Clustering Support for JAZN admintool

Clustering support has been added to the JAZN Admintool in Oracle9*i*AS Release 2 (9.0.3).

To enable this functionality, invoke the tool with the following:

```
-clustersupport ORACLE_HOME
```

where *`ORACLE_HOME`* is the absolute path of the Oracle home directory.

If you invoke the JAZN Admintool with the `-clustersupport` flag, then JAZN will propagate the changes made through the Admintool to the other instances in the cluster. (This applies to JAZN-XML only.)

For example, to invoke the JAZN Admintool in shell mode, execute the following at the command prompt:

```
java -jar jazn.jar -clustersupport /private/foo/ora9ias -shell
```

The preceding assumes that the OC4J instance has been configured correctly for the clustering environment.

For more information about the JAZN Admintool, refer to the *Oracle9iAS Containers for J2EE Services Guide*.

6.11.2 Miscellaneous JAZN Issues

Be aware of these issues regarding the JAZN product in Oracle9*i*AS Release 2 (9.0.3):

- Entries in the file `principals.xml` should not have spaces in any user name or password. (However, as the 9.0.3 documentation notes, `principals.xml` is deprecated in 9.0.3 in favor of the `JAZNUserManager` class.)
- The default `jazn.xml` file is the following:

  ```
  $ORACLE_HOME/j2ee/home/config/jazn.xml
  ```

  (`$ORACLE_HOME/j2ee/home/jazn/config/jazn.xml` is a private copy used by the Oracle Universal Installer.)
- When there are multiple realms in the system, users should specify the `default-realm` setting in both the `jazn.xml` file and the `application.xml` file (in `j2ee/home/config`). This applies to both JAZN-XML and JAZN-LDAP.

  For example, if you are using JAZN-XML and your default realm is `jazn.com`, your `jazn.xml` and `application.xml` files should each have an entry such as the following:

  ```
  <jazn provider="XML" default-realm="jazn.com" location="./jazn-data.xml" />
  ```

6.11.3 Changing User Manager from JAZN LDAP to XML Has No Dynamic Effect

If the user manager for OC4J is changed from JAZN LDAP to JAZN XML, the change is not picked up dynamically. OC4J continues to use JAZN LDAP as the user manager. You must restart OC4J when the user manager is changed from JAZN LDAP to XML for the change to take effect.

6.12 Release Notes for J2EE Connector Architecture

The following release notes apply to J2EE Connector Architecture.

6.12.1 JSP Page Compilation Problem

JSP pages that reference classes defined in a resource adapter, such as the CCI implementation classes, fail to compile. They generate an error indicating that the JSP compiler fails to find such classes or packages even though the resource adapter is contained in the same application as the `.jsp` files, or has already been deployed into OC4J.

The workaround to this problem is to add a `<library>` element to the `orion-application.xml` file of the application pointing to the JAR files from the resource adapter. For example:

```
<library path="connector-name/jar-file-name" />
```

where *`connector-name`* is the value of the `name` attribute in the `<connector>` element for the resource adapter defined in the `oc4j-connectors.xml` file, and *`jar-file-name`* is the name of the JAR file inside the resource adapter that contains the classes that the JSP compiler is referencing in its error message.

Alternatively, if a `<library>` element exists in the `orion-application.xml` file and points to a particular directory, the JAR files of the resource adapter can simply be moved into that directory.

6.13 Release Notes for Oracle9*i*AS TopLink

Release Notes for Oracle9*i*AS TopLink are available in the following locations:

- The Oracle9*i*AS TopLink CD-ROM in the Oracle9*i*AS CD Pack
- The Oracle9*i*AS 9.0.3 documentation on OTN at

  `http://otn.oracle.com/docs/products/ias/content.html`

6.14 OC4J User's Guide Security Update

This section supplements Chapter 8 of the *Oracle9iAS Containers for J2EE User's Guide.*

6.14.1 Specifying Login Modules

Specify login module information by editing the Login Module section of the `jazn-data.xml` file.

Note: To configure login modules, you must edit the `jazn-data.xml` file directly; you cannot use the JAZN AdminTool or the Enterprise Manager. In a clustered environment, you must then use `dcmctl` to propagate your changes; use `dcmctl updateConfig`, specifying JAZN as the component type.

6.14.2 Configuring Login Modules

To configure an application to use a `LoginModule`, you create an `<application>` entity for the module. Each `<application>` entity specifies the login modules for one application. An `<application>` entity contains a `<name>` entity for the application (the classname of the application) and a `<login-modules>` entity. The `<login-modules>` entity contains individual `<login-module>` entities, each specifying the `LoginModule` to be used by one class. A `<login-module>` entity specifies the following:

Table 6–1 LoginModule XML Tags in jazn-data.xml

Tag	Defines
`<class>`	The class that uses the `LoginModule`.
`<control-flag>`	Correlation to the `Flag` value in `javax.security.auth.login.Configuration`. The possible values are: ■ **`Required`**—The `LoginModule` is required to succeed. Whether it succeeds or fails, authentication continues on the next item in the `LoginModule` list. ■ **`Requisite`**—The `LoginModule` is required to succeed. If it succeeds, authentication continues on the next item in the `LoginModule` list. If it fails, control immediately returns to the application (authentication does not continue down the `LoginModule` list). ■ **`Sufficient`**—The `LoginModule` is not required to succeed. If it does succeed, control immediately returns to the application (authentication does not continue down the `LoginModule` list). If it fails, authentication continues down the `LoginModule` list. ■ **`Optional`**—The `LoginModule` is not required to succeed. Whether it succeeds or fails, authentication continues on the next item in the `LoginModule` list.
`<options>`	A list of `<option>` entities; these hold any arguments required by your `LoginModule`.

Table 6–1 LoginModule XML Tags in jazn-data.xml (Cont.)

Tag	Defines
`<option>`	A `<name>` and a `<value>` for a single `LoginModule` argument.

6.14.3 Example LoginModule

A representative `LoginModule` entry in `jazn-data.xml` might look like this:

```
<!-- Login Module Data -->
<jazn-loginconfig>
  <application>
    <name>oracle.security.jazn.tools.JAZN.Admintool</name>
    <login-modules>
      <login-module>
        <class>oracle.security.jazn.realm.RealmLoginModule</class>
        <control-flag>required</control-flag>
        <options>
          <option>
            <name>addRoles</name>
            <value>true</value>
          </option>
        </options>
      </login-module>
    </login-modules>
  </application>
</jazn-loginconfig>
```

6.15 Documentation Errata

This section describes known errors in the Oracle9*i*AS Release 2 (9.0.3) documentation.

6.15.1 OC4J Services Guide Errata

Note the following errata in the *Oracle9iAS Containers for J2EE Services Guide:*

6.15.1.1 Data Source Definition Syntax

The JTA chapter contains data source definitions (pages 12-13 and 12-14) with incorrect XML syntax. These definitions fail to close the `<data-source>` tag before opening the `<property>` tag.

The correct definitions are:

```
<data-source
  class="com.evermind.sql.OrionCMTDataSource"
  name="OracleCMTDS1"
  location="jdbc/OracleDS1"
  connection-driver="oracle.jdbc.driver.OracleDriver"
  username="scott"
  password="driver"
  url="jdbc:oracle:thin:@mysun:5521:jis"
  inactivity-timeout="30">
  <property name="dblink"
  value="LINK.REGRESS.RDBMS.DEV.US.ORACLE.COM"/>
</data-source>

<data-source
  class="com.evermind.sql.OrionCMTDataSource"
  name="OracleCMTDS2"
  location="jdbc/OracleDS2"
  connection-driver="oracle.jdbc.driver.OracleDriver"
  username="scott"
  password="driver"
  url="jdbc:oracle:thin:@mysun:6521:jis"
  inactivity-timeout="30">
  <property name="dblink"
  value="LINK.REGRESS.RDBMS.DEV.US.ORACLE.COM"/>
</data-source>
```

6.15.1.2 HTTPClient Support for java.net.URL

Chapter 15 includes the following note describing the support that `HTTPClient` provides for the `java.net.URL` class:

> If the `java.net.URL` framework is used, then set the `java.protocol.handler.pkgs` system property to select the `HTTPSConnection` package as a replacement for the JDK client, as follows:
>
> `java.protocol.handler=HTTPClient`

There are two errors in this passage:

- Where the passage refers to `HTTPSConnection`, it should refer to `HTTPClient` instead.
- The property name is incorrect in the example. The example should be:

  `java.protocol.handler.pkgs=HTTPClient`

6.15.2 OC4J Support for JavaServer Pages Developer's Guide Errata

This section describes errata in the *Oracle9iAS Containers for J2EE JavaServer Pages Developer's Guide*.

6.15.2.1 Location of Generated Files

Chapter 7, "JSP Translation and Deployment", in the section "JSP Translator Output File Locations", contains the following passages:

> The JSP translator places generated output files under a base `temp/_pages` directory, as in the following example:
>
> *ORACLE_HOME*`/j2ee/home/`*app-deployment/app-name/web-app-name*`/temp/_pages/...`
>
> ...
>
> The path under the `_pages` directory depends on the path of the `.jsp` file under the application root directory.
>
> As an example, consider the page `welcome.jsp` in the `examples/jsp` subdirectory under the OC4J standalone default Web application directory. The path would be as follows:
>
> *ORACLE_HOME*`/j2ee/home/default-web-app/examples/jsp/welcome.jsp`
>
> Assuming the default application deployment directory, the JSP translator would place the output files (`_welcome.java`, `_welcome.class`, and `_welcome$__jsp_StaticText.class` for the page implementation class inner class) in the following directory:

ORACLE_HOME`/j2ee/home/application-deployments/default/defaultWebApp/temp/_pages/_examples/_jsp`

The preceding passage is in error. Actually, the JSP translator places generated output files under a `_pages` directory that is created under the JSP cache directory, which is specified in the `jsp-cache-directory` attribute of the `<orion-web-app>` element in either the `global-web-application.xml` file or the application `orion-web.xml` file. Here is the general base location if you assume the default "`./persistence`" value of `jsp-cache-directory`:

ORACLE_HOME`/j2ee/home/`*app-deployment/app-name/web-app-name*`/persistence/_pages/...`

For the example in the errant documentation passage above, the JSP translator would place the output files in the following directory:

ORACLE_HOME`/j2ee/home/application-deployments/default/defaultWebApp/persistence/_pages/_examples/_jsp`

6.15.2.2 Default Well-Known Tag Library Location

Chapter 8, "JSP Tag Libraries", in the section "Oracle Extension for Tag Library Sharing", states that the default value of `well_known_taglib_loc` is as follows:

```
j2ee/home/jsp/lib/taglib/
```

where this location is under *`ORACLE_HOME`* if defined, or otherwise under the current directory.

This documentation is incorrect when *`ORACLE_HOME`* is undefined. In this case, the default is actually as follows, under the current directory:

```
jsp/lib/taglib/
```

However, this is typically relevant only in an OC4J standalone environment, not in an Oracle9*i*AS environment.

7

Oracle9*i*AS Web Services

This chapter discusses the issues associated with Oracle9*i*AS Web Services. It covers the following topics:

7.1 General Issues and Workarounds

This section describes general issues and their workarounds for Oracle9*i*AS Web Services. Topics include:

7.1.1 UDDI Patches

Patch kits for UDDI v1.0 and v2.0 compliance of the Oracle9*i*AS UDDI registry will be available for download from Oracle*MetaLink* for Oracle9*i*AS Release 2 (9.0.3) at:

```
http://metalink.oracle.com
```

Check with Oracle*MetaLink* for more information on these UDDI patch kits.

7.1.2 Adding JMS Doc Service Tags

The `<jms-doc-service>` tag supports the `<receive-timeout>` sub-tag. This sub-tag provides a configureable timeout property to specify the receive timeout in milliseconds.

When this tag is not specified, or when the value is set to `0`, a JMS receive operation blocks indefinitely.

This tag is optional. Valid values are `0` and all positive integers.

This tag is valid when the `<operation>` value is `receive` or `both`.

The following is a sample Web Services Assembler configuration file that contains a `<receive-timeout>` tag.

```
<jms-doc-service>
    <uri>JmsReceive</uri>

<connection-factory-resource-ref>jms/logQueueConnectionFactory</connection-
factory-resource-ref>
   <queue-resource-ref>jms/logQueue</queue-resource-ref>
   <operation>receive</operation>
```

```
   <!-- provides the time in milliseconds that the receive operation will wait
   for a new message -->
   <receive-timeout>5</receive-timeout>
</jms-doc-service>
...

<web-service>
```

7.1.3 Adding JMS Doc Service Tags for Durable Topic Destinations

When a JMS provider supports durable JMS topics, the JMS Doc service supports using the durable topics.

To specify a durable topic, configure the JMS Doc web service using the `<jms-doc-service>` tag and the `<topic-subscription-name>` sub-tag.

For example:

```
<jms-doc-service>
   <uri>JmsDemo2</uri>
   <connection-factory-resource-ref>jms/theNewTopicConnectionFactory
   </connection-factory-resource-ref>
   <topic-resource-ref>jms/theNewTopic</topic-resource-ref>
   <!-- Name of durable topic subscription  -->
   <topic-subscription-name>WS_SUBSCRIBER</topic-subscription-name>
</jms-doc-service>
```

The `<topic-subscription-name>` tag is optional and is only valid when a `<topic-resource-ref>` tag is supplied.

7.1.4 OC4J Server not Accepting RPC Requests when Part Names are Untyped

Every part should have a type attribute. OC4J server does not accept RPC requests when part names are untyped.

For example, OC4J Web Services request will fail if the SOAP Body is as follows:

```
<ns:GetStockQuote>
   <ticker>ORCL</ticker>
</ns:GetStockQuote>
```

The correct request should have been as follows:

```
<ns:GetStockQuote>
   <ticker type="xsi:string">ORCL</ticker>
</ns:GetStockQuote>
```

If a client uses Oracle's Dynamic Proxy APIs, then response part should also be typed. A response with untyped parts will fail.

8

Oracle9*i*AS Web Cache

This chapter discusses the following topics:

8.1 General Issues and Workarounds

This section describes general issues and their workarounds for Oracle9*i*AS Web Cache. It contains the following subsections:

8.1.1 Default Buffer Sizes

Oracle9*i*AS Web Cache uses 2 KB for the access log buffer size and the following for cached documents:

- 4 KB for the sum of all HTTP header fields

  To change the default value, add the `DOCHEADERBUFFERSIZE` attribute with the new default size as its value to the `<CACHE>` element in the `internal.xml` file. For example:

  ```
  <CACHE DOCHEADERBUFFERSIZE="20480"... />
  ```

- 3 KB for a single HTTP header field

  To change the default value, add the `MAXRESPONSEHEADERSIZE` attribute with the new default size as its value to the `<MISCELLANEOUS>` element in the `internal.xml` file. For example:

  ```
  <MISCELLANEOUS MAXRESPONSEHEADERSIZE="8192" ... />
  ```

- 32 KB for the HTTP response body

  To change the default value, add the `DOCBUFFERSIZE` attribute with the new default size as its value to the `<CACHE>` element in the `internal.xml` file. For example:

  ```
  <CACHE DOCBUFFERSIZE="65536"... />
  ```

  If the HTTP response body is less than 4 KB, then Oracle9*i*AS Web Cache uses a 4 KB buffer size.

The `internal.xml` file is located in the `$ORACLE_HOME/webcache` directory on UNIX and the *`ORACLE_HOME`*`\webcache` directory on Windows.

8.1.2 Insufficient Input Checking in Oracle9*i*AS Web Cache Manager

Oracle9*i*AS Web Cache Manager does not enforce the same level of consistency checking upon receiving configuration input that Oracle9*i*AS Web Cache does upon starting up. Therefore, there may be instances where configuration changes are accepted by the Oracle9*i*AS Web Cache Manager, but Oracle9*i*AS Web Cache does not start up with the resulting configuration.

This is especially a problem when the `admin` server process is shut down (with the `webcachectl stop` or `webcachectl stopadm` command) after applying invalid configuration changes. In that case, the `admin` server process will not be able to start up, and the Oracle9*i*AS Web Cache Manager will become inaccessible.

To solve this problem:

- If you want to retain the configuration changes you made, then send the `webcache.xml` file to Oracle Support Services to troubleshoot the invalid configuration entry. The `webcache.xml` file is located in the `$ORACLE_HOME/webcache` directory on UNIX and the *`ORACLE_HOME`*`\webcache` directory on Windows.
- If you want to restore configuration to a previous configuration, then run the `webcachectl reset` command to restore to the previous version of the configuration. `webcachectl` is located in the `$ORACLE_HOME/webcache/bin` directory on UNIX and the *`ORACLE_HOME`*`\bin` directory on Windows.

8.1.3 Oracle Application Server Limitations

> **Note:** This limitation applies to Oracle Application Server using the Oracle Web Listener only. This does not apply to other listeners used with Oracle Application Server. It also does not apply to Oracle9*i* Application Server.

Oracle Application Server, when used specifically with the Oracle Web Listener, strictly enforces virtual-host checking using the `Host` request header that is sent by almost all browsers. The `Host` header contains the string "*`hostname:port`*" where *`hostname`* and *`port`* are as entered in the location bar of the browser, even if the *`hostname`* in the location bar is an IP address. If the Oracle Web Listener receives a `Host` header that does not match an entry in the `Host Name` and `Port` columns of the `Network` section of the configuration (corresponding to the `[Multiport]`

section in the `sv*.cfg` configuration file for the listener), it returns an HTTP error code 400 indicating that the request did not specify a valid virtual host.

8.1.3.1 Deployments

This limitation applies to the following deployments:

1. In Oracle Application Server 4.*x*, this is strictly enforced for HTTP/1.1 requests only. For HTTP/1.0 requests, only the host name has to match an entry in the `Network` section. The port number in the `Host` header does not matter.
2. Oracle Web Listener, as shipped with Oracle Web Application Server 3.0, enforces this strictly for all HTTP requests, that is HTTP/1.0 and HTTP/1.1.

8.1.3.2 Entries for Network

To make an Oracle Web Listener recognize and accept a `Host` header, a corresponding entry must be added to the `Network` section for that listener. When you add an entry with host name `h1` and port `p1`, `h1` is only used to match incoming `Host` headers and does not otherwise affect the operation of the listener. `h1` does not need to be a DNS host name of the computer. However, `p1` is used as a port on which the Oracle Web Listener tries to listen on. Hence there should be no other process on the computer listening on port `p1`.

8.1.3.3 Oracle9*i*AS Web Cache Behavior

Oracle9*i*AS Web Cache does not change the `Host` header that it receives as part of a request when relaying that request to the application Web server.

If you set up Oracle9*i*AS Web Cache to listen on port 1100 on a computer with DNS host name `m1` and the Application Web Server is on computer `m2` on port 80, and you use a browser to access `http://m1:1100/`, the `Host` header received by Oracle9*i*AS Web Cache is "`Host: m1:1100`". This is exactly the `Host` header that will be received by the application Web server.

8.1.3.4 What Restrictions Does This Imply?

If you are using Oracle Application Server with the Oracle Web Listener as your application Web server, this means that the `Host` header sent to Oracle9*i*AS Web Cache must be recognized by the Oracle Web Listener; that is, there must be a corresponding entry in the `Network` section.

If you are using Oracle9*i*AS Web Cache's host name and port directly in your browser, and if Oracle9*i*AS Web Cache and the Oracle Web Listener are on the same computer, the Oracle Web Listener will need to accept Oracle9*i*AS Web Cache's host

name and port number in the `Host` header, and for that to occur Oracle9*i*AS Web Cache's port number needs to be in the `Network` section of the Listener's configuration. This would mean that both Oracle9*i*AS Web Cache and the Oracle Web Listener will try to listen on that port, which is not possible. See Section 8.1.3.2, "Entries for Network".

When you are using your browser to connect directly to Oracle9*i*AS Web Cache, ensure that Oracle9*i*AS Web Cache and the Oracle Web Listener are not on the same computer.

To deploy Oracle9*i*AS Web Cache and the Oracle Web Listener on the same computer, there has to be a port-translating switch between the browser and Oracle9*i*AS Web Cache that translates the port number to which the browser connects to Oracle9*i*AS Web Cache's listening port.

For example, assume that Oracle9*i*AS Web Cache is listening on port 7777 on computer `m1.aaa.com`, and Oracle Web Listener is the application Web server listening on port 80 on the same computer `m1.aaa.com`. In this example, the user enters `http://www.aaa.com/` in the browser. The browser will attempt to connect to port 80 on `www.aaa.com`. `www.aaa.com` should be resolved through DNS to the switch, which should redirect requests for `www.aaa.com` on port 80 to computer m1 on port 1100. Note that the Host header will be: "`Host: www.aaa.com:80`". Oracle9*i*AS Web Cache will forward requests as needed to computer m1 port 80, that is, the Oracle Web Listener. For the Oracle Web Listener to accept this `Host` header, you will need to have added an entry to `Network` containing host name `www.aaa.com` and port 80. See Section 8.1.3.2, "Entries for Network" for how this can done on computer `m1`.

8.1.4 TCP/IP Tuning

If you want Oracle9*i*AS Web Cache to handle a large number of concurrent HTTP requests, you may need to tune TCP/IP settings for your operating system, such as the maximum TCP/IP connection queue length.

> **See Also:** Operating-system-specific documentation. For example, `http://www.rvs.uni-hannover.de/people/voeckler/tune/EN/tune.html` describes how to tune Solaris 2.*x* TCP/IP parameters.

In particular, if you run stress tests against Oracle9*i*AS Web Cache and continuously open more TCP/IP connections from one client computer to Oracle9*i*AS Web Cache,

you may experience periodic oscillation of throughput. This is usually caused by the TCP/IP `TIMED_WAIT` state of the operating system. In real world deployments, this is not an issue since it is unlikely that a single client will generate a huge number of connections. On Windows, you can adjust the setting of the `TIMED_WAIT` state by modifying the value of the `TcpTimedWaitDelay` parameter in the registry at `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters`.

In the case of a denial-of-service attack, availability problems usually arise in the network layer in your operating system. For example, if one client generates large number of connections, TCP/IP connection problems generally arise in your operating system.

The following examples demonstrate utilities that set some of the TCP/IP parameters for Solaris, HP-UX, AIX, Linux, and Compaq Tru64.

Example Utilities Script for Solaris 2.x

```
#!/usr/bin/bash -x
/usr/sbin/ndd -set /dev/tcp tcp_conn_req_max_q 10240
/usr/sbin/ndd -set /dev/tcp tcp_conn_req_max_q0 10240
/usr/sbin/ndd -set /dev/tcp tcp_xmit_hiwat 32768
/usr/sbin/ndd -set /dev/tcp tcp_recv_hiwat 32768
/usr/sbin/ndd -set /dev/tcp tcp_time_wait_interval 1000
```

Example Utilities Script for HP-UX

```
#!/usr/bin/ksh
/usr/bin/ndd -set /dev/tcp tcp_conn_req_max_q 10240
/usr/bin/ndd -set /dev/tcp tcp_time_wait_interval 1000
```

Example Utilities for AIX

Use the `no` utility to set the `tcp` tunable values on AIX.

For example, to see current values, enter:

```
prompt> no -a
```

To increase the size of send and receive buffers, enter:

```
prompt> no -o tcp_sendspace=65536
prompt> no -o tcp_recvspace=65536
```

Example Utilities for Linux

On Linux, the tunable TCP/IP parameters can be set through the `/proc` file system.

The `/proc/sys/net/ipv4` directory contains the files which can be edited to change the TCP/IP default values.

For example, enter the following commands:

```
prompt> echo 900 > /proc/sys/net/ipv4/tcp_keepalive_time
prompt> echo 10 > /proc/sys/net/ipv4/tcp_fin_timeout
```

Also, you can set the size of TCP/IP sender and receiver windows using the following command, where *`w_value`* and *`r_value`* are the new sizes of the windows:

```
prompt> echo w_value /proc/sys/net/core/wmem_max
prompt> echo r_value /proc/sys/net/core/rmem_max
```

Example Utilities for Compaq Tru64

Use the `sysconfig` utility to set the TCP/IP tunable values for Tru64.

For example, to set the value of `tcbhashsize` to 16384, enter:

```
prompt> sysconfig -r inet tcbhashsize=16384
```

To enable keepalive, enter:

```
prompt> sysconfig -r inet tcp_keepalive_default=1
```

To set the maximum number of pending TCP/IP connections, enter:

```
prompt> sysconfig -r socket somaxconn=65535
```

8.2 Configuration Issues and Workarounds

This section describes configuration issues and their workarounds for Oracle9*i*AS Web Cache. It contains the following sections:

8.2.1 Oracle9*i*AS Web Cache Configuration Basics

To start initial Oracle9*i*AS Web Cache configuration:

1. If not currently logged on to the Oracle9*i*AS Web Cache computer, log in with the user ID of the user that performed the installation.
2. Start Oracle9*i*AS Web Cache. From the command line, enter `webcachectl start`.
3. Point your browser to the Oracle9*i*AS Web Cache Welcome URL:

   `http://web_cache_hostname:4000/`

4. When prompted for the administrator user ID and password, enter `administrator` for the user name and the appropriate password. The first time you log in, the password is `administrator`.

> **See Also:** *Oracle9iAS Web Cache Administration and Deployment Guide* (available at `http://otn.oracle.com/products/ias/web_cache/`) for complete configuration coverage

Oracle9*i*AS Web Cache uses two configuration files: `webcache.xml` and `internal.xml`. The Oracle9*i*AS Web Cache Manager writes its configuration information to the `webcache.xml` file. Oracle9*i*AS Web Cache uses `internal.xml` file. These files are located in the `$ORACLE_HOME/webcache`

directory on UNIX and *ORACLE_HOME*\webcache directory on Windows. Do not edit these configuration files manually, except in the cases described in these Release Notes, or when directed to do so by Oracle Support Services. Improper editing of these configuration files may cause problems in Oracle9*i*AS Web Cache.

8.2.2 Configuration File Upgrades

In past releases, the following attributes required manual modification of the `internal.xml` file:

- `KEEPALIVE_TIMEOUT` specifies the time, in seconds, for Oracle9*i*AS Web Cache to keep a connection open to the browser after it has returned a response.
- `OSRECV_TIMEOUT` specifies the time, in seconds, for the origin server to generate a response to Oracle9*i*AS Web Cache.

In this release of Oracle9*i*AS Web Cache, these attributes have been merged into the Oracle9*i*AS Web Cache Manager (`webcache.xml`). During migration, these modifications are not preserved. If you modified these attributes, you have two choices. You can do one of the following:

- Use the Network Timeouts page (**Cache-Specific Configuration** > **Network Timeouts**) of Oracle9*i*AS Web Cache Manager to reconfigure the settings
- Preserve any change that you made to the old version of `internal.xml`, and copy the changes to the appropriate place in `webcache.xml`

If you are upgrading an existing Oracle9*i*AS Web Cache installation, the passwords for administration and invalidation are reset. The user name and password for administration is `administrator/administrator` and the user name and password for invalidation is `invalidator/invalidator`. You can change both passwords in the Security page (**General Configuration** > **Security**) of Oracle9*i*AS Web Cache Manager.

8.2.3 Oracle9*i*AS Web Cache Default Ports

By default, Oracle9*i*AS Web Cache is configured to use the following default TCP ports:

- Listening HTTP Requests: 7777
- Listening HTTPS Requests: 4443
- Administration HTTP Requests: 4000
- Invalidation HTTP Requests: 4001
- Statistics HTTP Requests: 4002

If these ports are in use, then the installation procedure attempts to assign other port numbers from a range of possible port numbers.

See Also: *Oracle9i Application Server Installation Guide*

The Oracle HTTP Server is configured to use the following default ports:

- HTTP Requests: 7778
- HTTPS Requests: 4444

At the end of installation, Oracle9*i*AS Web Cache will attempt to start. If there are port conflicts, then Oracle9*i*AS Web Cache may fail to start.

See Also:

- Chapter 10, "Troubleshooting Oracle9iAS Web Cache Configuration," of the *Oracle9iAS Web Cache Administrator's Guide* to resolve port conflicts
- Appendix E, "Event Log Messages," of the *Oracle9iAS Web Cache Administrator's Guide* to understand common event log error messages

8.2.4 Mismatched Oracle Home Definitions Causes Web Cache to Fail to Start

If the definition of Oracle home in the `webcache.xml` configuration file is different than the definition of Oracle home in your environment, Oracle9*i*AS Web Cache may fail to start.

For example on UNIX, if `$ORACLE_HOME` was defined as `/home/oracle_home_ias` during the installation, that definition is written to the `ORACLEHOME` attribute in the `webcache.xml` file. Then, if your environment defines `$ORACLE_HOME` as `/private/oracle_home_ias` and you invoke the `webcachectl` executable to start Oracle9*i*AS Web Cache, Oracle9*i*AS Web Cache will fail to start.

In this case, you may see a message similar to the following:

```
Error:  No matching CACHE element found in webcache.xml for current host name
(webcache-host) and ORACLE_HOME (/private/oracle_home_ias). Admin Server failed
to start.
```

You can solve this situation by either redefining `$ORACLE_HOME` in your environment or editing the `webcache.xml` file so that the definitions are identical. (In the `webcache.xml` file, you modify the `ORACLEHOME` attribute of the `CACHE NAME` element. In a cluster environment, there is more than one `CACHE NAME` element, one for each cluster member. Be sure to modify the correct element.)

For example on Windows, if the Oracle home is defined as `C:\home\oracle_home_ias` during the installation, then that definition is written to the `ORACLEHOME` attribute in the `webcache.xml` file. However, if the registry specifies the `ORACLE_HOME` parameter as `C:\oracle\oracle_home_ias` and you invoke the `webcachectl start` command to start Oracle9*i*AS Web Cache, then Oracle9*i*AS Web Cache will fail to start.

In this case, you may see a message similar to the following:

```
The description for Event ID ( 1 ) in Source ( Oracle9iAS-Web-Cache ) cannot be
found.The local computer may not have the necessary registry
information or message DLL files to display messages from a remote computer.The
following information is part of the event: Cannot open log files because NULL
socket indicates problem.
```

To solve this situation, modify the `webcache.xml` file to match the registry settings located in `HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE` so that the definitions are identical. (In the `webcache.xml` file, you modify the `ORACLEHOME` attribute of the `CACHE NAME` element. In a cluster environment, there is more than one `CACHE NAME` element, one for each cluster member. Be sure to modify the correct element.)

[Reference Bug: 2286732]

8.2.5 Peer-to Peer-Logging

By default, peer requests between two members of a cache cluster are not logged in the access log. Only client requests to the cluster are logged. Peer request logging can be enabled for individual cache cluster members by adding the `ACCESSLOGIGNOREPEERREQUEST` attribute to the `MISCELLANEOUS` element in the `internal.xml` configuration file.

The valid values for this attribute are:

- `YES`
- `NO`

The default value is `YES`.

The following example shows the `MISCELLANEOUS` element with peer-to-peer logging enabled:

```
<MISCELLANEOUS
    ERRORLOGFILE="my_oracle_home/webcache/logs/event_log"
    ACCESSLOGIGNOREPEERREQUEST="NO"/>
```

[Reference Bug: 2364139]

8.2.6 Using Session Binding within a Cache Cluster

When Oracle9*i*AS Web Cache receives an initial request that requires session binding, it load balances across origin servers and passes the request to an origin server to establish the session. In addition, Oracle9*i*AS Web Cache internally maintains the session-to-origin server binding information for that session. When Oracle9*i*AS Web Cache receives a subsequent request for the same session, it looks up the session-to-origin server binding information and forwards the request to the same origin server.

In a cache cluster, the binding information for a session is maintained by the cache cluster member that received the initial request. This information is not shared by the cache cluster members. Therefore, subsequent requests for the same session must go through the same cache cluster member. In order to use cache session binding with a cache cluster deployment, you must use a Load Balancer with connection persistence capabilities. A Load Balancer with these capabilities ensures that subsequent requests for the same client session session are sent to the same cluster member.

8.2.7 DAVOraWebCacheReadOnly Parameter Does Not Work

The `DAVOraWebCacheReadOnly` parameter, if specified in the `httpd.conf` file, does not work in this release.

As a workaround, use the `<LimitExcept>` directive in the `httpd.conf` file, as described in the OraDAV module configuration chapter of the *Oracle HTTP Server Administration Guide*. Applying access restrictions to a location for all methods except `GET`, `HEAD`, and `OPTIONS` requests will essentially achieve the goal of using the `DAVOraWebCacheReadOnly` parameter. However, a caveat is that end users will always be restricted to `GET`, `HEAD`, and `OPTIONS` requests, even when Oracle9*i*AS Web Cache is not being used.

[Reference Bug: 2312620]

8.3 Security Issues and Workarounds

This section describes security limitations for Oracle9*i*AS Web Cache. It contains the following subsections:

8.3.1 Single Sign-On

Oracle9*i*AS Web Cache does not cache login requests or authenticated pages that use `mod_sso` static directives. To ensure that responses for those pages using dynamic directives with `mod_sso` are not cached, add the `Surrogate-Control: no-store` response-header field to identify the page as non-cacheable.

When configured with HTTPS listening ports, Oracle9*i*AS Web Cache is unable to forward browser certificates to origin servers. If browsers are using certificate-based single sign-on authentication, do not use Oracle9*i*AS Web Cache.

8.3.2 User Certificates

If a wallet contains a user certificate as a trustpoint for an origin server, then a core dump will occur when the user connects to the origin server. Oracle Corporation recommends not adding user certificates to trustpoints in the Oracle wallet, but instead, install the certificate authority (CA) signers' certificate as a trustpoint.

[Reference Bugs: 2295542 and 2295884]

8.3.3 HTTP Authentication

By default, Oracle9*i*AS Web Cachee caches all `*.htm` and `*.html` pages. Since caching rules override HTTP headers in determining cacheability, HTML pages that contain HTTP authentication response headers are cached. To avoid pages that support basic HTTP authentication from being cached, modify the caching rules to not include pages that require authentication.

[Reference Bug: 2411607]