

# Oracle9i Application Server

Migrating to Oracle9iAS Release 2 (9.0.3)

Release 2 (9.0.3)

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## **Oracle9i Application Server Migrating to Oracle9iAS Release 2 (9.0.3), Release 2 (9.0.3)**

**Part No. B10473-01**

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# Preface

This guide describes how to migrate from Oracle9iAS Release 1 (1.0.2.2.x) and Oracle9iAS Release 2 (9.0.2) to Release 2 (9.0.3).

This preface contains these topics:

- [Audience](#)
- [Organization](#)
- [Related Documentation](#)
- [Conventions](#)
- [Documentation Accessibility](#)

## Audience

Migrating to Oracle9iAS Release 2 (9.0.3) is intended for application server administrators and managers of databases used by application servers.

## Organization

This book contains the following chapters:

### **[Chapter 1, "Overview of Oracle9iAS Migration"](#)**

Identifies the migration scope, components in the previous and current releases, and migration approaches and terminology.

### **Chapter 2, "Migrating the Oracle HTTP Server"**

Describes the functionality of the Oracle HTTP Server migration option, and lists the files and directives migrated.

### **Chapter 3, "Migrating Oracle9iAS Containers for J2EE (OC4J)"**

Describes the functionality of the Oracle9iAS Containers for J2EE migration option, and lists the files and directives migrated.

### **Chapter 4, "Migrating Oracle9iAS Web Cache"**

Describes the functionality of the Oracle9iAS Web Cache migration option, and lists the files and directives migrated.

### **Chapter 5, "Using the Oracle9iAS Migration Assistant"**

Describes the functionality of the Oracle9iAS Migration Assistant, and provides instructions for installing it and using it to migrate the Oracle HTTP Server, Oracle9iAS Containers for J2EE, and Oracle9iAS Web Cache.

### **Chapter 6, "Migrating Distributed Configurations"**

Explains how to associate an instance with a Release 2 (9.0.2) infrastructure, migrate a cluster, and activate Oracle Enterprise Manager in an Oracle home of your choice.

### **Appendix A, "Files Reference"**

Lists files that may contain customization and indicates whether the Migration Assistant processes them.

## **Related Documentation**

Printed documentation is available for sale in the Oracle Store at

<http://oraclestore.oracle.com>

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  |
|---|---|--|
| <b>Bold</b>                                     | 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 <b>index-organized table</b> .   |
| <i>Italics</i>                                  | Italic typeface indicates book titles or emphasis.  | <i>Oracle9i Concepts</i><br>Ensure that the recovery catalog and target database do <i>not</i> reside on the same disk.  |
| UPPERCASE<br>monospace<br>(fixed-width<br>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.<br>You can back up the database by using the BACKUP command.<br>Query the TABLE_NAME column in the USER_TABLES data dictionary view.<br>Use the DBMS_STATS.GENERATE_STATS procedure. |

| Convention   | Meaning   | Example   |
|--|---|---|
| lowercase<br>monospace<br>(fixed-width<br>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.<br><br><b>Note:</b> Some programmatic elements use a mixture of UPPERCASE and lowercase. Enter these elements as shown. | Enter <code>sqlplus</code> to open SQL*Plus.<br><br>The password is specified in the <code>orapwd</code> file.<br><br>Back up the datafiles and control files in the <code>/disk1/oracle/dbs</code> directory.<br><br>The <code>department_id</code> , <code>department_name</code> , and <code>location_id</code> columns are in the <code>hr.departments</code> table.<br><br>Set the <code>QUERY_REWRITE_ENABLED</code> initialization parameter to <code>true</code> .<br><br>Connect as <code>oe</code> user.<br><br>The <code>JRepUtil</code> class implements these methods. |
| <i>lowercase<br/>monospace<br/>(fixed-width<br/>font) italic</i> | Lowercase monospace italic font represents placeholders or variables.   | You can specify the <i>parallel_clause</i> .<br><br>Run <i>Uold_release</i> .SQL where <i>old_release</i> 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 ( <i>digits</i> [ , <i>precision</i> ]) |
| { }        | 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}<br>[COMPRESS   NOCOMPRESS]   |

| Convention     | Meaning  | Example   |
|----------------|--|---|
| ...            | Horizontal ellipsis points indicate either: <ul style="list-style-type: none"> <li>■ That we have omitted parts of the code that are not directly related to the example</li> <li>■ That you can repeat a portion of the code</li> </ul>   | <pre>CREATE TABLE ... AS subquery;</pre> <pre>SELECT col1, col2, ... , coln FROM employees;</pre>                                     |
| .              | 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.   | <pre>acctbal NUMBER(11,2);</pre> <pre>acct      CONSTANT NUMBER(4) := 3;</pre>  |
| <i>Italics</i> | Italicized text indicates placeholders or variables for which you must supply particular values.   | <pre>CONNECT SYSTEM/system_password</pre> <pre>DB_NAME = database_name</pre>  |
| 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. | <pre>SELECT last_name, employee_id FROM employees;</pre> <pre>SELECT * FROM USER_TABLES;</pre> <pre>DROP TABLE hr.employees;</pre>    |
| lowercase      | Lowercase typeface indicates programmatic elements that you supply. For example, lowercase indicates names of tables, columns, or files.<br><b>Note:</b> Some programmatic elements use a mixture of UPPERCASE and lowercase. Enter these elements as shown.   | <pre>SELECT last_name, employee_id FROM employees;</pre> <pre>sqlplus hr/hr</pre> <pre>CREATE USER mjones IDENTIFIED BY ty3MU9;</pre> |

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# Overview of Oracle9iAS Migration

This chapter discusses the Oracle9iAS migration method, migration scope, and considerations for using the previous and current releases together.

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**Note:** The Oracle9iAS Migration Assistant is currently not supported on IBM AIX 5L.

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## Migration Method

The Oracle9iAS Migration Assistant is a tool that migrates primary elements of Oracle HTTP Server, Oracle9iAS Containers for J2EE, and Web Cache from Oracle9iAS Release 1 (1.0.2.2.x) or Oracle9iAS Release 2 (9.0.2) to Oracle9iAS Release 2 (9.0.3). Release 2 (9.0.3) enables you to build and deploy applications that take advantage of J2EE 1.3 features.

By automating much of the migration process, the Oracle9iAS Migration Assistant expedites what can otherwise be a very lengthy process. The Migration Assistant (GUI and command-line versions) is installed automatically with Oracle9iAS Release 2 (9.0.3).

Some configuration elements and applications are not migrated by the Migration Assistant. See [Chapter 5, "Using the Oracle9iAS Migration Assistant"](#), in the ["Verifying Migration Results"](#) section for a description of the elements not migrated by the Migration Assistant.

## Migration Scope

Oracle9iAS Release 2 (9.0.3) contains only Oracle HTTP Server, Oracle9iAS Containers for J2EE, and Web Cache. It will not run Portal, Wireless, or other components from installation types other than J2EE and Web Cache that are available in Oracle9iAS Release 2 (9.0.2).

The Oracle9iAS Migration Assistant will allow you to migrate from any Oracle9iAS Release 2 (9.0.2) installation type, but it issues a warning if you try to use it to migrate from the Portal and Wireless, Business Intelligence and Forms, or Unified Messaging installation types. You can dismiss the warning and continue to migrate, and the Migration Assistant will allow you to select the Oracle HTTP Server, Oracle9iAS Containers for J2EE, and Web Cache components for migration from the Oracle9iAS Release 1 (1.0.2.2.x) or Oracle9iAS Release 2 (9.0.2) installation.

If you have a Release 1 (1.0.2.1.x) installation, you must migrate to Oracle9iAS Release 1 (1.0.2.2.x) before using the Migration Assistant.

**See Also:** *Oracle9i Application Server Migration Guide* in the Release 1 (1.0.2.2.x) Oracle9i Application Server documentation library.

## Identifying Source and Target Oracle9iAS Installations

The Migration Assistant performs a migration from one Oracle home to another, where Oracle9iAS Release 1 (1.0.2.2.x) or Oracle9iAS Release 2 (9.0.2) is installed in a different Oracle home than Oracle9iAS Release 2 (9.0.3). These Oracle homes are designated as follows:

The location of Oracle9iAS Release 1 (1.0.2.2.x) or Oracle9iAS Release 2 (9.0.2) is called `ORACLE_HOME_1`, or the source Oracle home.

The location of Oracle9iAS Release 2 (9.0.3) is called `ORACLE_HOME_2`, or the target Oracle home.

In this guide, the notations *ORACLE\_HOME\_1* and *ORACLE\_HOME\_2* (italics) mean ‘the full path to the Oracle home’.

The source and target Oracle homes must be on the same computer.

## Considerations for Using Oracle9iAS Release 2 (9.0.2) and (9.0.3) Together

The source installation is unaffected by the migration, so the Oracle HTTP Server, Oracle9iAS Containers for J2EE, and Web Cache components on the source installation remain configured exactly as they were before the migration. If you



continue to use the Oracle9iAS Release 2 (9.0.2) instance to run Portal and Wireless or Business Intelligence and Forms components, some or all of their Oracle HTTP Server, Oracle9iAS Containers for J2EE, and Web Cache configuration elements may be redundantly applied on two instances on the same computer. Therefore, problems may occur if the (9.0.2) and (9.0.3) instances are run simultaneously.

Also note that you can use Oracle Enterprise Manager to manage only one of the instances. The `emctl switch` utility is provided for you to choose an Oracle home to manage with Oracle Enterprise Manager. See "[Activating Oracle Enterprise Manager](#)" on page 6-3 for instructions on how to use `emctl switch`.



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# Migrating the Oracle HTTP Server

This chapter describes the functionality of the Migration Assistant in migrating the Oracle HTTP Server (OHS), and lists the elements migrated for each component. It contains the following topics:

- [Oracle HTTP Server Migration Candidates](#)
- [HTTP Server Elements Not Migrated](#)
- [The Oracle HTTP Server Directive Migration Process](#)
- [Backup and Auditing Measures for Oracle HTTP Server Migration](#)

## Oracle HTTP Server Migration Candidates

This section describes the configuration files, programs, static documents, and modules that the Migration Assistant recognizes as candidates for migration in Oracle HTTP Server directories.

### The httpd.conf File

The Assistant migrates the `httpd.conf` file.

On UNIX systems, its location is:

`ORACLE_HOME_1/Apache/Apache/conf`

On Windows systems its location is:

`ORACLE_HOME_1\Apache\Apache\conf`

This file must be selected, and the Migration Assistant must be able to parse it. If it is not selected or cannot be parsed, no other OHS files will be migrated.

## User-defined Configuration Files

The Assistant migrates any user-defined configuration file named in an `Include` directive in `httpd.conf` (and, recursively, any user-defined configuration file named in an `Include` directive in the parent user-defined configuration file). The parent user-defined configuration file must be selected. If it is not selected, none of the child user-defined configuration files will be selected. Each user-defined configuration file found in `ORACLE_HOME_1` is re-created in the corresponding location in `ORACLE_HOME_2`.

## cgi and fastcgi Programs

The Assistant migrates non-default cgi and fastcgi programs found in the following directories only:

On UNIX systems, their location is:

`ORACLE_HOME_1/Apache/Apache/cgi-bin`

`ORACLE_HOME_1/Apache/Apache/fcgi-bin`

On Windows systems their location is:

`ORACLE_HOME_1\Apache\Apache\fcgi-bin`

`ORACLE_HOME_1\Apache\Apache\cgi-bin`

## Static Documents and Directories

The Assistant migrates non-default static documents or directories that it finds in the default location for static documents.

On UNIX systems, the default location is:

`ORACLE_HOME_1/Apache/Apache/htdocs`

On Windows systems, the default location is:

`ORACLE_HOME_1\Apache\Apache\htdocs`

If you have placed customized files in default sub-directories of `htdocs`, you must migrate them manually.

**When migrating from Release 1**, the Assistant migrates any non-default files or directories in the subdirectories of `htdocs`.

On UNIX systems:

`ORACLE_HOME_1/Apache/Apache/htdocs/WEB-INF` (including subdirectories)

`ORACLE_HOME_1/Apache/Apache/htdocs/demo` (including subdirectories)

On Windows systems:

`ORACLE_HOME_1\Apache\Apache\htdocs\WEB-INF` (including subdirectories)

`ORACLE_HOME_1\Apache\Apache\htdocs\demo` (including subdirectories)

---

**Note:** `index.html` exists in the source and target Oracle homes. To determine whether customization has occurred, compare the file's contents to the default `index.html`.

**Migrating from 1.0.2.2:** The Migration Assistant compares the file sizes to determine whether it should migrate the file. However, note that it is possible that file sizes could be the same, and the contents could differ between the source and target Oracle homes. In 1.0.2.2, the default size is 2183 bytes.

**Migrating from 9.0.2:** The `index.html` file must be migrated manually.

---

The Assistant migrates static documents or directories that are defined by the `DocumentRoot` directive.

## Shared Object (.so) and Dynamic Link Library (.dll) Files

The Assistant migrates the `.so` files on UNIX systems, or the `.dll` files on Windows systems, for any modules that are not in the Oracle9iAS Release 1 (1.0.2.2.x) or Oracle9iAS Release 2 (9.0.2) default set, but are specified in a `LoadModule` directive.

## Default modules

Table 2–1 lists the default set of modules shipped in Oracle9iAS Release 1 (1.0.2.2.x).

**Table 2–1 Default Oracle9iAS Release 1 (1.0.2.2.x) Modules**

| Module Name       |                    |                    |
|-------------------|--------------------|--------------------|
| access_module     | dir_module         | oprocmgr_module    |
| action_module     | dms_module         | perl_module        |
| agent_log_module  | env_module         | proxy_module       |
| alias_module      | example_module     | referer_log_module |
| anon_auth_module  | expires_module     | rewrite_module     |
| asis_module       | fastcgi_module     | setenvif_module    |
| auth_module       | headers_module     | speling_module     |
| autoindex_module  | imap_module        | ssl_module         |
| cern_meta_module  | includes_module    | status_module      |
| cgi_module        | info_module        | unique_id_module   |
| config_log_module | mime_magic_module  | userdir_module     |
| dbm_auth_module   | mime_module        | usertrack_module   |
| define_module     | mmap_static_module | vhost_alias_module |
| digest_module     | negotiation_module |                    |

Table 2–1 lists the default set of modules shipped in Oracle9iAS Release 2 (9.0.2).

**Table 2–2 Default Oracle9iAS Release 2 (9.0.2) Modules**

| Module Name      |                |                    |
|------------------|----------------|--------------------|
| access_module    | dir_module     | oc4j_module        |
| action_module    | dms_module     | ossl_module        |
| agent_log_module | env_module     | perl_module        |
| alias_module     | example_module | proxy_module       |
| anon_auth_module | expires_module | referer_log_module |
| asis_module      | fastcgi_module | rewrite_module     |
| auth_module      | headers_module | setenvif_module    |

**Table 2–2 Default Oracle9iAS Release 2 (9.0.2) Modules**

| Module Name       |                    |                    |
|-------------------|--------------------|--------------------|
| autoindex_module  | imap_module        | speling_module     |
| cern_meta_module  | includes_module    | status_module      |
| cgi_module        | info_module        | unique_id_module   |
| config_log_module | mime_magic_module  | userdir_module     |
| dbm_auth_module   | mime_module        | usertrack_module   |
| define_module     | mmap_static_module | vhost_alias_module |
| digest_module     | negotiation_module |                    |

## Default Directives in Source and Target Versions of httpd.conf

The directives listed in [Table 2–3](#) occur in the default versions of the `httpd.conf` files in the source and target instances.

**Table 2–3** *Default Directives*

|                           |                      |                            |                           |
|---------------------------|----------------------|----------------------------|---------------------------|
| AccessFileName            | DocumentRoot         | MaxRequestsPerChild (UNIX) | SetEnvIf                  |
| AddCharset                | ErrorLog             | MaxSpareServers (UNIX)     | SetHandler                |
| AddEncoding               | ExtendedStatus       | MIMEMagicFile              | SSLEngine                 |
| AddHandler                | Files                | MinSpareServers (UNIX)     | SSLLog                    |
| AddIcon                   | Group (UNIX)         | Options                    | SSLLogLevel               |
| AddIconByEncoding         | HeaderName           | Order                      | SSLMutex                  |
| AddIconByType             | HostnameLookups      | PassEnv                    | SSLOptions                |
| AddLanguage               | IfDefine             | PerlHandler                | SSLPassPhraseDialog       |
| AddModule (Windows)       | IfModule             | PerlModule                 | SSLSessionCache           |
| AddType                   | IndexIgnore          | PerlSendHeader             | SSLSessionCacheTimeout    |
| Alias                     | IndexOptions         | PidFile                    | StartServers (UNIX)       |
| Allow                     | KeepAlive            | Port                       | ThreadsPerChild (Windows) |
| AllowOverride             | KeepAliveTimeout     | ReadmeName                 | Timeout                   |
| BrowserMatch              | LanguagePriority     | ScoreBoardFile             | TransferLog               |
| ClearModuleList (Windows) | Listen               | ScriptAlias                | TypesConfig               |
| CustomLog                 | LoadModule           | ServerAdmin                | UseCanonicalName          |
| DefaultIcon               | Location             | ServerName                 | User (UNIX)               |
| DefaultType               | LogFormat            | ServerRoot                 | UserDir                   |
| Deny                      | LogLevel             | ServerSignature            | VirtualHost               |
| Directory                 | MaxClients (UNIX)    | ServerType                 |                           |
| DirectoryIndex            | MaxKeepAliveRequests | SetEnv                     |                           |

The Assistant highlights any differences between the directives in the source and target files so that you can select them for migration. If the setting for a directive is the same in both files, no action is taken.



In the discussion of the migration process below, directives are described as primitive directives or container directives. Primitive directives occupy a single line; for example:

```
Timeout 300
```

```
KeepAlive on
```

Container directives occupy multiple lines, have a start directive and an end directive, and contain arguments (which are primitive directives). For example:

```
<Directory "myDirectory">
    Options FollowSymLinks MultiViews
    AllowOverride None
</Directory>
```

The container directive above has start and end directives `<Directory "myDirectory">` and `</Directory>`. The arguments are the primitive directives `Options FollowSymLinks MultiViews` and `AllowOverride None`.

## HTTP Server Elements Not Migrated

The following Oracle HTTP Server elements are not migrated:

- **JServ** - JServ is no longer supported; Release 1 (1.0.2.2) supported it for legacy use only. The current servlet container is Oracle9iAS Containers for J2EE (OC4J).
- **Configuration files related to the use of `mod_plsql`** - Files such as `oracle_apache.conf`, `plsql.conf`, `dads.conf` and `cache.conf` and the `Include` directive in `httpd.conf` (for `oracle_apache.conf`) are excluded from the migration.
- **Static documents in non-default locations of `ORACLE_HOME_1`** - The Migration Assistant will not migrate static documents that are in `ORACLE_HOME_1` in locations other than `ORACLE_HOME_1/Apache/Apache/htdocs` (UNIX) or `ORACLE_HOME_1\Apache\Apache\htdocs` (Windows).  
If static documents are found in non-default locations of `ORACLE_HOME_1`, a message is written to the log file as a reminder to migrate them manually.
- **cgi or fastcgi programs in non-default locations of `ORACLE_HOME_1`** - The Migration Assistant will not migrate cgi or fastcgi programs that are in `ORACLE_HOME_1` in locations other than `ORACLE_HOME_1`

1/Apache/Apache/cgi-bin or fcgi-bin (UNIX) or `ORACLE_HOME_1\Apache\Apache\cgi-bin` or `fcgi-bin` (Windows).

If `cgi` or `fastcgi` programs are found in non-default locations of `ORACLE_HOME_1`, a message is written to the log file as a reminder to migrate them manually.

- **cgi or fastcgi applications not defined by the ScriptAlias directive** - The Migration Assistant will not migrate `cgi` or `fastcgi` applications defined by means other than the `ScriptAlias` directive. You must migrate these manually.
- **mod\_osso.conf or mod\_oc4j.conf** - These configuration files are not migrated from Release 2 (9.0.2) to Release 2 (9.0.3).

## A Note About Web Cache and Oracle HTTP Server

If you are migrating an Oracle HTTP Server that ran behind Web Cache in the previous release, you should look closely at the port configuration in both components to ensure that the desired port configuration is preserved in the migration. Specifically, the `VirtualHost`, `Port`, and `Listen` directives have corresponding Web Cache elements that need to specify the same ports.

See ["Synchronizing Oracle9iAS Web Cache and Oracle HTTP Server Ports"](#) on page 4-6.

## The Oracle HTTP Server Directive Migration Process

To migrate directives, the Assistant:

1. Presents directives in the source `httpd.conf` file that are different from the default (uncustomized) file, `httpd.conf.default`, or that are new (not part of the default set of directives). The default file, `httpd.conf.default`, must be present or the program will not function.

By default, all such directives are selected for migration via a checkbox and presented in a scrolling list. You can exclude a directive from the migration by clearing its checkbox.

---

---

**Note:** An exception to this default selection of directives is the `mod_proxy` directive. All `mod_proxy` directives are unchecked by default. They will not be migrated unless they are explicitly selected in the [httpd.conf: Directives screen](#) (shown on page 5-10).

---

---

---

**Notes:** Container directives are migrated as a whole; when you select a container directive for migration, you select all of the arguments (primitive directives) in it. For this reason, only the top level (that is, the start and end directives) of the container directive is presented as a migration selection.

Path-related directives are presented with the destination path instead of the source path. For example, a directive from the Release 1 configuration such as

`ORACLE_HOME_1/Apache/Apache/myAlias (UNIX)`

`ORACLE_HOME_1\Apache\Apache\myAlias (Windows)`

will appear on the screen as

`ORACLE_HOME_2/Apache/Apache/myAlias (UNIX)`

`ORACLE_HOME_2\Apache\Apache\myAlias (Windows)`

---

2. Writes selected directives to a difference file.
3. Merges the difference file with the Release 2 (9.0.3) `httpd.conf` file as follows:
  - Default directives with changed settings replace the corresponding directives in the Release 2 (9.0.3) `httpd.conf` file.
  - Non-default directives (that is, those not listed in [Table 2-3](#)) are written to the end of the Release 2 (9.0.3) `httpd.conf` file.
4. Discards JServ directives.

## Migration of SSL Settings from Oracle9iAS Release 1 (1.0.2.2.x)

When you migrate from Release 1, the Assistant automatically creates a directive for `mod_ssl`, `SSLWallet`, based on the Release 1 configuration. It then starts a program called `osslconvert` that generates an Oracle wallet. You can choose not to generate the wallet during migration by commenting out the SSL configuration in the Release 1 file before you start the Migration Assistant.

**See Also:** *Oracle9i Application Server Security Guide*

---

---

**Note:** The following directives are uncommented in the default Release 1 `httpd.conf` file:

- `SSLCertificateFile`
- `SSLCertificateKeyFile`

When these directives are uncommented, the Migration Assistant attempts to create an Oracle wallet, and may fail. To prevent this, comment out these directives.

---

---

To ensure that a valid wallet is generated in the migration, you must specify the trust points (the signers of the certificates) in the Release 1 configuration. There are two ways to do this:

- Concatenate the signer certificates (the certificate chain) into the Release 1 server certificate file.
- Concatenate all of the signers into one file, and use the `SSLCertificateChainFile` directive in the Release 1 `httpd.conf` file.

You can also import other certificate authority certificates into the wallet by specifying them with the `SSLCACertificateFile` and `SSLCACertificatePath` directives in the Release 1 `httpd.conf` file.

---

---

**Note:** The Release 1 default SSL certificate is signed by the certificate authority 'oracle demoCA'. Before migration, you must set the `SSLCertificateChainFile` directive to point to the default SSL certificate or the purchased certificate.

The directive setting for the default certificate is:

```
SSLCertificateChainFile ORACLE_HOME_  
1/Apache/Apache/conf/ssl.crt/demoCAcert.crt (UNIX)  
  
SSLCertificateChainFile ORACLE_HOME_  
1\Apache\Apache\conf\ssl.crt\demoCAcert.crt  
(Windows)
```

---

---

The Migration Assistant manages SSL certificate key file and wallet passwords as follows:

**Table 2–4 SSL Password Requirements**

| <b>If Release 1 SSL Certificate Key File has...</b> | <b>Then during migration...</b>   |
|---|---|
| the default 'welcome' password                      | you are not prompted for a password.  |
| a password other than 'welcome'                     | you are prompted to enter the correct password.   |
| no password assigned                                | you are not prompted for a password, and the generated wallet password is set to 'welcome'. |

The SSL directives in `httpd.conf` are shown below for Oracle9iAS Release 2 (IfModule) and Release 1 (IfDefine):

**Example 2–1 SSL Directive (Release 2)**

```
<IfModule mod_ssl.c>
  <VirtualHost _default_:4443>
    SSLWallet wallet location
    SSLVerifyClient optional
    SSLProtocol all
  </VirtualHost>
</IfModule>
```

**Example 2–2 SSL Directive (Release 1)**

```
<IfDefine SSL>
  <VirtualHost _default_:443>
    SSLCertificateFile certificate location
    SSLCertificateKeyFile key location
    SSLCertificateChainFile chain location
    SSLVerifyClient optional_no_ca
    SSLProtocol TLSv1
  </VirtualHost>
</IfDefine>
```

Note the following changes:

- `SSLVerifyClient` is set to `optional` if it was set to `optional_no_ca`.
- `SSLProtocol` is set to `all` if it was set to `TLSv1`.

The following directives are invalid in `mod_ssl`, and replaced by `SSLWallet`:

- `SSLCertificateFile`

- SSLCertificateKeyFile
- SSLCertificateChainFile
- SSLCACertificatePath
- SSLCACertificateFile
- SSLRandomSeed
- SSLVerifyDepth

During migration, the Assistant extracts certificate-related directives and starts a program that generates a wallet. The wallet-related directives are written to the difference file. The value of `SSLWallet` is the value of `SSLCertificateFile`, or, if path-related:

`ORACLE_HOME_2/Apache/Apache/conf/ssl.wlt/certificate name`  
(UNIX)

`ORACLE_HOME_2\Apache\Apache\conf\ssl.wlt\certificate name`  
(Windows)

## Wallet Generation for Default Virtual Host

The Assistant automatically generates the wallet for any virtual host that is SSL-enabled. The default `httpd.conf` file only defines one virtual host.

On UNIX systems, if you override the certificate that is associated with the virtual host named in the Release 1 `httpd.conf` file, the Assistant modifies the Release 2 `httpd.conf` file during migration so that it points to the newly generated wallet.

On Windows systems, if you override the certificate that is associated with the virtual host named in the Release 1 `httpd.conf` file, you can manually modify the Release 2 `httpd.conf` file after migration so that it points to the newly generated wallet.

## Backup and Auditing Measures for Oracle HTTP Server Migration

The Assistant performs the following functions to provide a way to audit the migration process:

- Creates a backup of the default target `httpd.conf` file named `httpd.conf.migbak`. Because it was written by a parser, this file is not identical in format to `httpd.conf`, but the content is exactly the same.

- Logs all migration activity and errors in

`ORACLE_HOME_2/migration/log/iASMigration.log` (UNIX)

`ORACLE_HOME_2\migration\log\iASMigration.log` (Windows)





---

# Migrating Oracle9iAS Containers for J2EE (OC4J)

This chapter explains the functionality of the OC4J migration option. It contains the following topics:

- [OC4J Migration Candidates](#)
- [The OC4J Configuration File Migration Process](#)
- [Backup and Auditing Measures for OC4J Migration](#)

## OC4J Migration Candidates

The OC4J migration option recognizes these configuration files and applications as candidates for migration:

- The `principals.xml` and `data-sources.xml` files.
- Applications defined in the `server.xml` file in the source instance, in `.ear` file format.

---

---

**Note:** Applications must be in `.ear` file format and defined in the source `server.xml` file in order to be migrated. Applications are deployed to the 9.0.3 Oracle9iAS instance using DCM (Distributed Configuration Management). The assumption is that the application being migrated was not installed there previously (the 9.0.3 instance is supposed to be a new, unchanged Oracle9iAS installation), but if an application of the same name exists, it will be overwritten.

The Assistant will not migrate applications in any format other than `.ear` (such as `.war`, exploded, etc.).

---

---

## Default JSP Package Imports in OC4J

When migrating applications to Release 2 (9.0.3), be aware that the OC4J JSP container imports the following packages into any JSP page, by default, 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.*
```

The default list of packages to import was reduced to minimize the chance of a conflict between any unqualified class name you might use and a class by the same name in any of the imported packages.

However, this might result in migration problems for applications you have used with previous versions of Oracle9iAS. Such applications might no longer compile successfully. If you need imports beyond the default list, you have two choices:

- Specify additional package names or fully qualified class names in one or more `page` directive `import` settings.

- Specify additional package names or fully qualified class names through the JSP `extra_imports` configuration parameter, or by using the `ojspc -extraImports` option for pre-translation. Syntax varies between OC4J configuration parameter settings, JServ configuration parameter settings, and `ojspc` option settings, so refer to information in the *Oracle9iAS Support for JavaServer Pages Developer's Guide*.

## OC4J Elements Not Migrated

The Migration Assistant does not migrate:

- Files other than those listed in ["OC4J Migration Candidates"](#) on page 3-1. Any customizations made to files that are not included in the `.ear` file in the source instance must be migrated manually. For example, files such as `orion-web.xml`, `orion-ejb-jar.xml`, and `orion-application.xml` that are created by OC4J in the `/application-deployments` directory must be migrated manually.
- OC4J instances in locations other than the `ORACLE_HOME_1/j2ee/home/` directory (the "home" instance). There may be other instances of OC4J in use, such as the Portal instance, the demos instance, or instances created elsewhere), but these will not be migrated when you run the Migration Assistant.
- OC4J applications in formats other than `.ear` file format. Customization not included in the selected `.ear` file in the "home" instance must be migrated manually. Usually, `.ear` files are located in:

```
ORACLE_HOME_1/j2ee/oc4j instance name/applications/
```

For a complete listing of the `.ear` files, look in:

```
ORACLE_HOME_1/j2ee/oc4j instance name/config/server.xml
```

## The OC4J Configuration File Migration Process

The Migration Assistant performs the following steps during OC4J migration:

1. Copies selected `principals.xml` and `data-sources.xml` from:

```
ORACLE_HOME_1/j2ee to ORACLE_HOME_2/j2ee (UNIX)
```

```
ORACLE_HOME_1\j2ee\home\config to ORACLE_HOME_2\j2ee\home\config (Windows)
```

2. Reads application information from the `server.xml` file in `ORACLE_HOME_1` and prompts you to select the applications to migrate.
3. Starts a default OC4J instance in `ORACLE_HOME_2`.
4. Re-deploys the migrated applications in `ORACLE_HOME_2`.
5. Stops the default OC4J instance.

## J2EE Compliance Requirements for OC4J Migration

OC4J deployment enforces J2EE compliance rules. For this reason, the Oracle9iAS Migration Assistant may not migrate applications that are not 100% J2EE compliant. The Assistant simply reads the files and attempts to deploy them to the target Oracle9iAS instance; if deployment fails, it could be because an application is not J2EE compliant.

If the Assistant cannot deploy an application for any reason, it logs the exception, however, the exception may not be explicitly described as a compliance issue.

While the development of J2EE applications is standardized and portable, the XML configuration files are not. You may have to configure multiple XML files before deploying an application to OC4J. The configuration needed depends on the services the application uses. For example, if the application uses a database, you must configure the DataSource object in the `data-sources.xml` file.

---

---

**Warning:** If any migrated application uses datasource tags, you must select `data-sources.xml` for migration. If you do not, the migration will fail.

---

---

## Validating EAR Files for J2EE Compliance

The `dcmctl` utility (`ORACLE_HOME_2/dcm/bin/dcmctl` on UNIX, or `ORACLE_HOME_2\dcm\bin\dcmctl`) provides a J2EE compliance validation command. It takes one input, the name of an EAR file, and lists non-compliant characteristics of that file. The syntax is:

```
dcmctl validateEarFile -v -f name.ear
```

where `name` is the name of the `.ear` file. `-v` specifies the verbose option of `dcmctl`; this provides the most detailed output of commands.

You must configure proxy settings so that the validation routine can access DTDs on the Web, if necessary (for example, on the Sun Microsystems site). To do this, you define an environment variable called `ORACLE_DCM_JVM_ARGS`, which specifies

a hostname and port for the proxy. The commands to set the variable are shown below.

UNIX:

```
setenv ORACLE_DCM_JVM_ARGS '-Dhttp.proxyHost=host  
-Dhttp.proxy.port=port'
```

Windows:

```
set ORACLE_DCM_JVM_ARGS="-Dhttp.proxyHost=host  
-Dhttp.proxyPort=port"
```

***Example 3-1 validateEarFile Command and Output for J2EE-Compliant Application***

```
dcmctl validateEarFile -v -f simple.ear
```

No J2EE XML/DTD validation errors were found

***Example 3-2 validateEarFile Command and Output for non- J2EE-Compliant Application***

```
dcmctl validateEarFile -v -f petstore.ear
```

Warning: J2EE/DTD validation errors were found

Cannot get xml document by parsing WEB-INF\web.xml in  
petstore.war:

Invalid element 'servlet' in content of 'web-app', expected  
elements

'[servlet-mapping, session-config, mime-mapping,  
welcome-file-list, error-page, taglib,resource-ref,  
security-constraint, login-config, security-role, env-entry,  
ejb-ref]'

It is a good idea to review all applications for overall J2EE compliance before migrating them, since there are cases in which an application is deployable, but delivers unpredictable or undesirable server behavior. For example, ensure that content is served correctly by defining a unique context root for each application in application.xml.

## Using OC4J in Backward-compatibility Mode

The following OC4J components may require backward compatibility:

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

You can revert an OC4J instance to pre-J2EE 1.3 behavior by setting the Master CTS compatibility flag.

**See Also:** *Oracle9iAS Containers for J2EE (OC4J) Release Notes* in the Oracle9iAS Documentation Library

## Backup and Auditing Measures for OC4J Migration

The Assistant performs the following functions to provide a way to audit the migration process:

- Creates a backup of each configuration file. The copy has the same filename, and the extension `.SAVED_COPY`.
- Logs all migration activity and errors in

`ORACLE_HOME_2/migration/log/iASMigration.log` (UNIX)

`ORACLE_HOME_2\migration\log\iASMigration.log` (Windows)

---

## Migrating Oracle9iAS Web Cache

This chapter explains the functionality of the Web Cache migration option. It contains the following topics:

- [Web Cache Migration Candidates for Migration from Release 1 \(1.0.2.2.x\)](#)
- [The Web Cache Migration Process: Migrating from Release 1 \(1.0.2.2.x\)](#)
- [The Web Cache Migration Process: Migrating from Release 2 \(9.0.2\)](#)
- [The Web Cache Migration Process: Migrating from Release 2 \(9.0.2\)](#)
- [The Web Cache Migration Process: Migrating from Release 1 \(1.0.2.2.x\)](#)
- [Backup and Auditing Measures for Web Cache Migration](#)
- [Completing the Web Cache Migration](#)

### Web Cache Migration Candidates for Migration from Release 1 (1.0.2.2.x)

When you migrate from Release 1 (1.0.2.2.x), the Migration Assistant recognizes most of the elements in the `webcache.xml` file in `ORACLE_HOME_1`. They are listed in "[The Web Cache Migration Process: Migrating from Release 1 \(1.0.2.2.x\)](#)" below.

### Web Cache Migration Candidates for Migration from Release 2 (9.0.2)

When you migrate from Oracle9iAS Release 2 (9.0.2), all customization values are migrated to the Oracle9iAS Release 2 (9.0.3) instance, except:

- ORACLEHOME
- IDENTITY

- LOGDIR
- MULTIPOINT
- OSWALLET

These values remain as specified by the Oracle9iAS Release 2 (9.0.3) installation.

## Migration of Session Definitions

A session definition consists of a session name, a cookie, a URL parameter, and a default value. The Migration Assistant migrates session definitions as follows:

- If the session name, cookie, URL parameter, and default value, are the same in the source installation as in the target installation, then the session definition is not migrated.
- If the session name is the same, but the cookie, URL parameter, or default value is different, then the Migration Assistant migrates the session as it is, changes the name of the target session, and updates its references.

---

---

**Warning:** Any application that was using WEBCACHETAG with reference to the original target Web Cache session definition must be modified to use the re-named session definitions.

---

---

## Web Cache Elements Not Migrated

The Assistant does not migrate the MULTIVERSIONHEADERRULE, if the Host header is used for disambiguation. Web Cache in Oracle9iAS Release 2 (9.0.2) supports multiple sites. See the Web Cache documentation for site-to-server mapping.

The Assistant does not migrate the `internal.xml` and `internal_admin.xml` files (which contain values such as buffer sizes and network time-outs).

## The Web Cache Migration Process: Migrating from Release 2 (9.0.2)

When you migrate from Release 2 (9.0.2) to Release 3 (9.0.3), the `9.0.2 webcache.xml` file is unchanged by the Migration Assistant, except for certain values, retained from the 9.0.3 installation:

- ORACLEHOME
- IDENTITY



- LOGDIR
- MULTIPOINT
- OSWALLET

If the 9.0.2 version of `webcache.xml` contained all of the necessary customization, no post-migration tasks are necessary.

## The Web Cache Migration Process: Migrating from Release 1 (1.0.2.2.x)

The Web Cache migration option does the following copies the following elements of the `webcache.xml` file from `ORACLE_HOME_1` to `ORACLE_HOME_2`:

- SECURITY

SECURESUBNET (Sub-element of SECURITY; trusted subnets).

---



---

**Note:** The Migration Assistant does not migrate any passwords. The administrator and invalidation passwords have default values when Release 2 is installed; see the Web Cache documentation for the default passwords.

---



---

- WATCHDOG
- REQUESTBACKLOGTIMELIMIT (an attribute of the SITE element)  
Copied to the first SITE element of the `webcache.xml` file in `ORACLE_HOME_2`.
- ERRORPAGES  
Copied to the `ORACLE_HOME_2 webcache.xml` file under the first SITE element.
- MULTIVERSIONCOOKIESRULE  
Merged with the data in the same sections of the GLOBALCACHINGRULES element in the `webcache.xml` file in `ORACLE_HOME_2`. This can result in duplicate or redundant multi-version cookies rules. See ["Completing the Web Cache Migration"](#) on page 4-5 for instructions on resolving this.
- SESSIONCACHINGRULE  
Copied to the `ORACLE_HOME_2 webcache.xml` file, in the GLOBALCACHINGRULES section. This can result in duplicate or redundant

session caching rules. See ["Completing the Web Cache Migration"](#) on page 4-5 for instructions on resolving this.

- EXPIRATIONRULE

Merged with the data in the same sections of the GLOBALCACHINGRULES element in the webcache.xml file in ORACLE\_HOME\_2. This can result in duplicate or redundant expiration rules. See ["Completing the Web Cache Migration"](#) on page 4-5 for instructions on resolving this.

CACHEABILITY

Copied to the ORACLE\_HOME\_2 webcache.xml file, in the GLOBALCACHINGRULES section. This can result in duplicate or redundant cacheability rules. See ["Completing the Web Cache Migration"](#) on page 4-5 for instructions on resolving this.

---

---

**Note:** Since the migrated CACHEABILITY rules are defined in the GLOBALCACHINGRULES section, they apply to all of the SITES defined in the ORACLE\_HOME\_2 webcache.xml file.

If you define another SITE element later in ORACLE\_HOME\_2, you must also define cacheability rules for it. The rules defined in the GLOBALCACHINGRULES section will apply to the new SITE also.

---

---

- HOST

All of the application web servers from the ORACLE\_HOME\_1 webcache.xml file are migrated to the ORACLE\_HOME\_2 webcache.xml file. Host IDs are generated for each of these hosts.

- EVENTLOG
- ACCESSLOG (except for the LOGDIR attribute)
- RESOURCELIMITS

## Backup and Auditing Measures for Web Cache Migration

The Assistant performs the following functions to provide a way to audit the migration process:

1. Creates a backup copy of the webcache.xml file from ORACLE\_HOME\_2. The backup file is named webcache.xml.backup.

## 2. Logs all migration activity and errors in

`ORACLE_HOME_2/migration/log/iASMigration.log` (UNIX)

`ORACLE_HOME_2\migration\log\iASMigration.log` (Windows)

## Completing the Web Cache Migration

To complete the Web Cache migration, you may need to perform the tasks in this section after the Migration Assistant has executed.

---

---

**Note:** These tasks are always necessary after migrating from Release 1.

If you are migrating from Release 2 (9.0.2), and the Web Cache configuration files were migrated from Release 1, but the tasks in this section were not performed at that time, then you must perform them when migrating to Release 2 (9.0.3).

---

---

Use the Web Cache Administration user interface to review and, if necessary, change the configuration as follows:

---

---

**Note:** If, because of a port conflict, the Web Cache administration process does not start, you must specify the correct administration port in the `MULTIPOINT` element of the `webcache.xml` file, and restart Web Cache.

---

---

- Create the site-to-server mappings.
- To use the same Operations Port or Listening Port wallets as in Release 1, obtain the wallet information from Release 1 and modify the wallet information in Release 2, using the Administration user interface.
- Review post-installation user changes.

The Migration Assistant can be invoked any time after the Oracle9iAS Release 2 (9.0.3) installation. If changes were made to the `webcache.xml` file, they are preserved. There may be redundant cacheability rules. You must review the file to resolve these. The rules themselves, and the order in which they appear, determine the caching behaviors executed by Web Cache.

- Resolve any port conflicts introduced by the migration.

Port numbers are not migrated from the `webcache.xml` file. Compare the Release 1 and Release 2 `webcache.xml` files to ensure that there are no port conflicts after the Migration Assistant has executed.

Web Cache does not migrate administration, listen, statistics, and invalidation port numbers. To use the Release 1 port numbers in Release 2, perform the following steps:

1. Determine the Web Cache port numbers used in Release 1.
  2. Use the Administration user interface to change the port numbers in Release 2.
- Review session caching rules and resolve any duplications.
  - Review expiration rules and resolve any duplications.
  - Review multi-version cookies rules and resolve any duplications.

## Synchronizing Oracle9iAS Web Cache and Oracle HTTP Server Ports

Web Cache and the Oracle HTTP Server have runtime interdependencies. When Web Cache runs in front of OHS, the elements and directives shown in the table below are related:

| Web Cache Element       | Corresponding OHS Directive |
|-------------------------|-----------------------------|
| Site definitions        | VirtualHost                 |
| Origin server ports     | Listen                      |
| Site-to-server mappings | Virtual Host, Listen        |
| Listen                  | Port                        |

After migration, these Web Cache elements will be exactly as they were in Release 2 (9.0.2). In the Release 2 (9.0.3) instance, compare the Web Cache and OHS configurations to ensure that:

- If Web Cache has an OHS hostname as an origin server, that origin server points to the Listen port specified by OHS.
- The Web Cache listening port is the same port specified by the OHS Port directive.
- The ports in the site-to-server mapping properly correspond.

---

# Using the Oracle9iAS Migration Assistant

This chapter explains how to use the Oracle9iAS Migration Assistant. This chapter contains these sections:

- [Understanding the Migration Assistant](#)
- [Using the Migration Assistant](#)
- [Verifying Migration Results](#)
- [Restarting the Oracle9iAS Migration Assistant](#)

---

**Note:** The Oracle9iAS Migration Assistant is currently not supported on IBM AIX 5L.

---

## Understanding the Migration Assistant

This section details the overall functionality of the Assistant. The Migration Assistant is designed to:

- Provide options for Oracle HTTP Server, Oracle9iAS Containers for J2EE, and Web Cache) to migrate configuration settings and applications from the source Oracle home to the target Oracle home on the same computer.
- Create a log file of all migration activity.
- Migrate configuration settings and applications to an uncustomized installation of Release 2 (9.0.3).
- Make the migration process auditable. A flag is set in the target Oracle home, Release 2 (9.0.3), to indicate that the Assistant has performed a migration there. All migration activities are recorded in a log file. See "[Restarting the Oracle9iAS Migration Assistant](#)" on page 5-16.

Before starting the Assistant, read the section for each migration option you plan to use.

- [Migrating the Oracle HTTP Server](#) on page 2-1
- [Migrating Oracle9iAS Containers for J2EE \(OC4J\)](#) on page 3-1
- [Migrating Oracle9iAS Web Cache](#) on page 4-1

## Using the Migration Assistant

This section explains how to prepare for and complete a migration. It contains these topics:

[Preparing to Migrate](#)

[Using the Oracle9iAS Migration Assistant \(GUI Version\)](#)

[Using the Oracle9iAS Migration Assistant \(Command Line Version\)](#)

### Preparing to Migrate

Perform the tasks in this section before you begin migrating to Release 2 (9.0.3). If you have a Release 1 (1.0.2.1.x) installation, you must first migrate to Oracle9iAS Release 1 (1.0.2.2.x).

**See Also:** *Oracle9i Application Server Migration Guide* in the Release 1 (1.0.2.2.x) Oracle9i Application Server documentation library

Before you begin the migration process:

1. Install Release 2 (9.0.3), and all associated patches. Patches are available for download on <http://metalink.oracle.com> on the Patches page (for queries, use the product family '9i Application Server').

---

---

**Note:** If Release 2 (9.0.3) is installed on the same computer as the Release 2 (9.0.2) Infrastructure, you may also need to apply infrastructure patches to the Release 2 (9.0.2) installation.

---

---

**See Also:** *Oracle9i Application Server Installation Guide*

2. Stop the Release 2 (9.0.3) instance, if necessary.

3. Stop the Oracle9iAS Release 1 (1.0.2.2.x) or Oracle9iAS Release 2 (9.0.2) instance.
4. Ensure that you have access rights to all directories in the target Oracle home.

### Information Requirements

Before you start the Assistant, be prepared with the password for the SSL certificate key file for the Oracle HTTP Server, if a password other than the default 'welcome' password was assigned. See [Table 2-4](#) for password requirements. This password is used to generate the wallet during SSL conversion. If you enter the password incorrectly 3 times, components containing the SSL-related information are set to non-migratable status (excluded from the migration).

### SSL Configuration Requirements When Migrating from Release 1

If you want to use SSL with the Oracle HTTP Server in the Release 2 (9.0.3) environment, ensure that the following directives are configured (uncommented) in the `httpd.conf` file before you start the Assistant:

- `SSLCertificateFile`
- `SSLCertificateKeyFile`

`SSLCertificateFile` and `SSLCertificateKeyFile` are necessary for any SSL-enabled web site, and if the configuration being migrated is an SSL configuration, these will be configured in `httpd.conf` in the source installation.

You must also ensure that the trust points are specified by some directive in the Release 1 installation. See ["Migration of SSL Settings from Oracle9iAS Release 1 \(1.0.2.2.x\)"](#) on page 2-9 for instructions on how to do this.

## Using the Oracle9iAS Migration Assistant (GUI Version)

---

**Note:** The screen images in this section show the migration process on a UNIX system (different from Windows only in the separation character used in the directory paths).

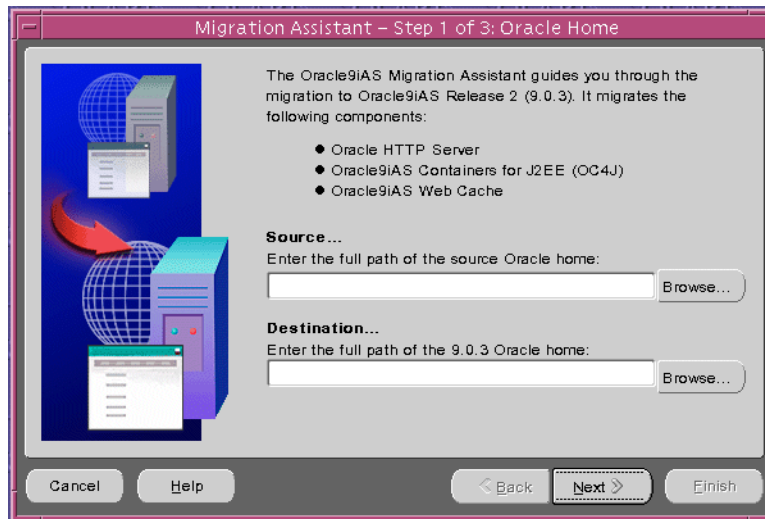
---

1. Go to `ORACLE_HOME_2/migration` (UNIX), `ORACLE_HOME_2\migration` (Windows).
2. Start the Assistant with the command:  
`MigAssistant.sh` (UNIX)

MigAssistant.bat (Windows)

The Oracle Home screen appears (Figure 5–1).

**Figure 5–1 Oracle Home screen**



3. Complete the Source... field with the full path to `ORACLE_HOME_1`. You can:
  - Type the full path into the field.
  - Click Browse... to specify the path by navigating. When the Browse window appears, displaying top-level folders, click once on the Oracle home and click Open (double-clicking opens the folder).
4. Complete the Destination... field with the full path to `ORACLE_HOME_2`. You can:
  - Type the full path into the field.
  - Click Browse... to specify the path by navigating. When the Browse window appears, displaying top-level folders, click once on the Oracle home and click Open (double-clicking opens the folder).

If OC4J was not found in the Source... path you specified, the J2EE Home screen appears (Figure 5–2).



---

**Note:** The Migration Assistant looks for OC4J in:

`ORACLE_HOME_1/J2EE_containers/j2ee/home (UNIX)`

`ORACLE_HOME_1/j2ee/home (UNIX)`

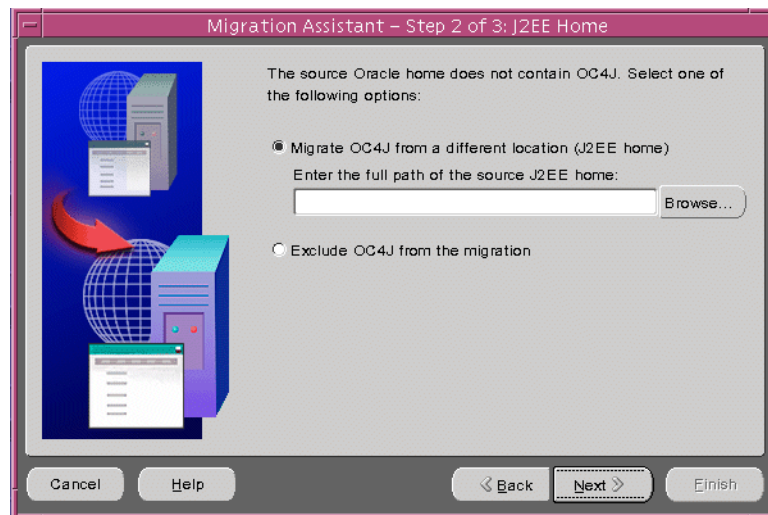
`ORACLE_HOME_1\J2EE_containers\j2ee\home (Windows)`

`ORACLE_HOME_1\j2ee\home (Windows)`

and presents the J2EE Home screen if it does not find it there.

---

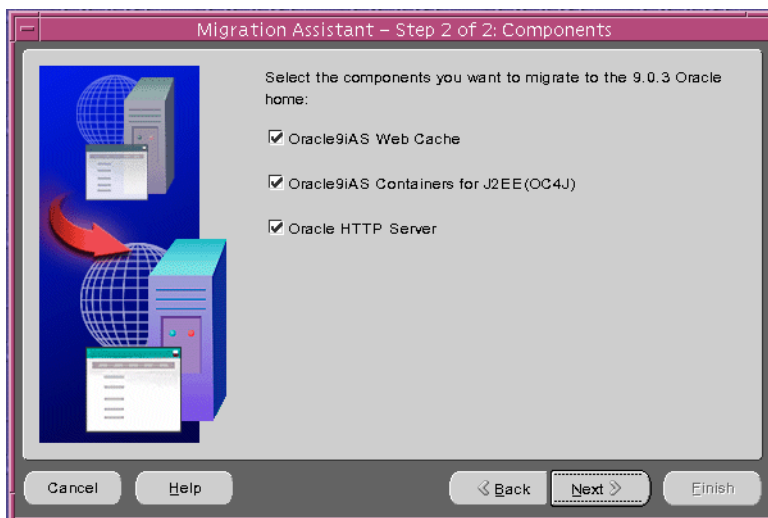
**Figure 5–2 J2EE Home screen**



5. If OC4J was installed in a location other than the Source... path, click the Migrate OC4J radio button and complete the J2EE home path (type it or navigate to it), then click Next.
6. If OC4J is not installed, or you do not intend to migrate it, click the Exclude OC4J radio button, then click Next.

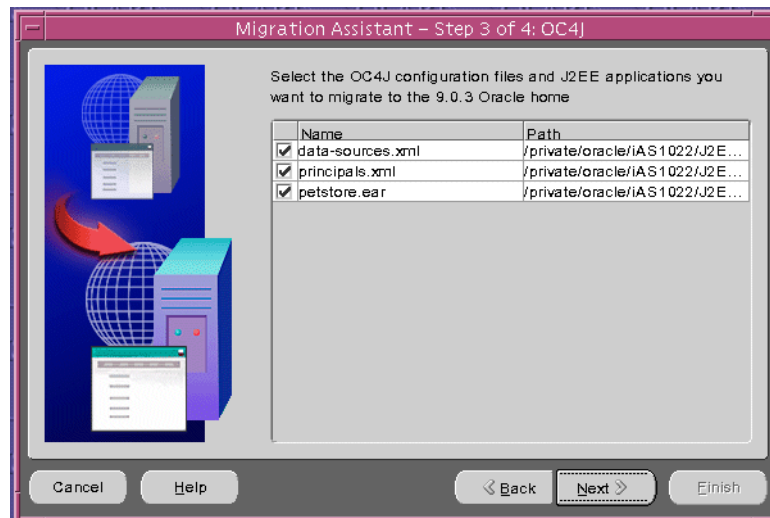
The Components screen appears (Figure 5–3). By default, all of the components are selected for migration.

**Figure 5–3 Components screen**



7. To deselect a component for migration, click the checkbox to clear it.
8. Click Next.

If OC4J was selected, the OC4J screen appears ([Figure 5–4](#)). By default, all applications are selected for migration. See "[OC4J Migration Candidates](#)" on page 3-1 for information on how the configuration files and applications are identified for migration.

**Figure 5–4 OC4J screen**

9. To deselect a file or application for migration, click the checkbox to clear it.

---

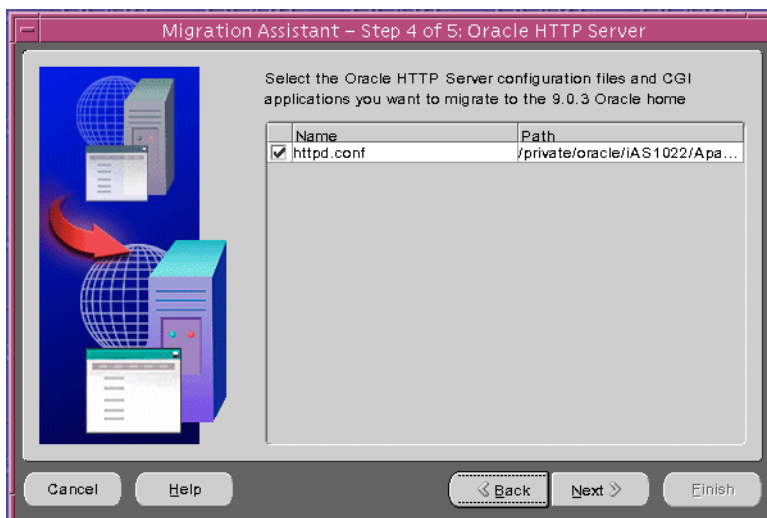
**Warning:** If any migrated application uses datasource tags, you must select data-sources.xml for migration. If you do not, the migration will fail.

---

10. Click Next.

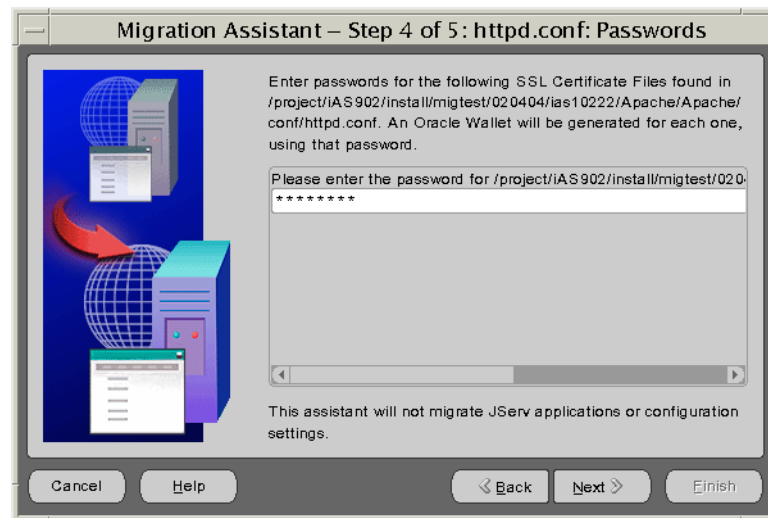
If Oracle HTTP Server was selected, the Oracle HTTP Server screen appears (Figure 5–5). By default, all of the configuration files, CGI applications, and static documents found are selected for migration. See "[Oracle HTTP Server Migration Candidates](#)" on page 2-1 for information on how the configuration files and applications are identified for migration.

**Figure 5–5 Oracle HTTP Server screen**



11. To deselect a file or application for migration, click the checkbox to clear it.
12. Click Next.

If an SSL certificate file was found with a password other than the default 'welcome', the httpd.conf: Passwords screen appears ([Figure 5–6](#)).

**Figure 5–6** *httpd.conf: Passwords screen*

13. Complete the password field with the password for the certificate key file. The SSL wallet will be generated with this password.

---

**Note:** The Assistant allows you three attempts to enter the correct password before setting the SSL-enabled component to non-migratable status. If this happens, you must migrate the component manually.

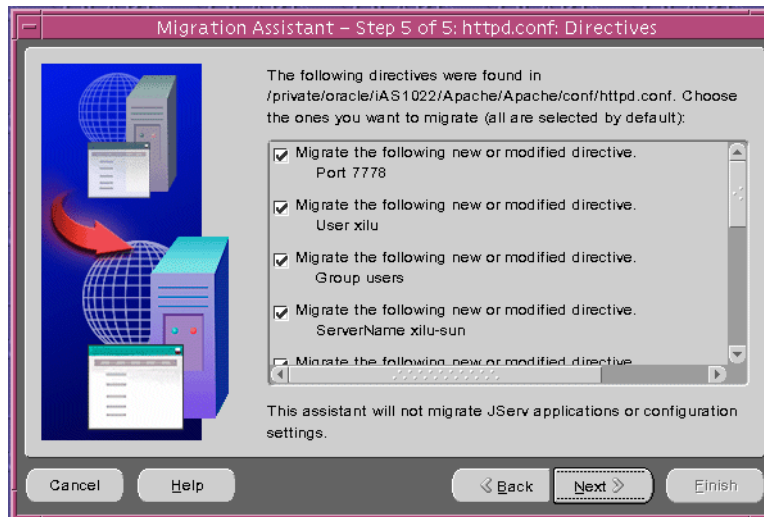
---

14. Click Next.

The httpd.conf: Directives screen appears (Figure 5–7), which is populated with the directives you can choose to migrate. By default, all directives except for mod\_proxy are selected for migration. See ["The Oracle HTTP Server Directive Migration Process"](#) on page 2-8 for information on how the Assistant compiled this list of directives.

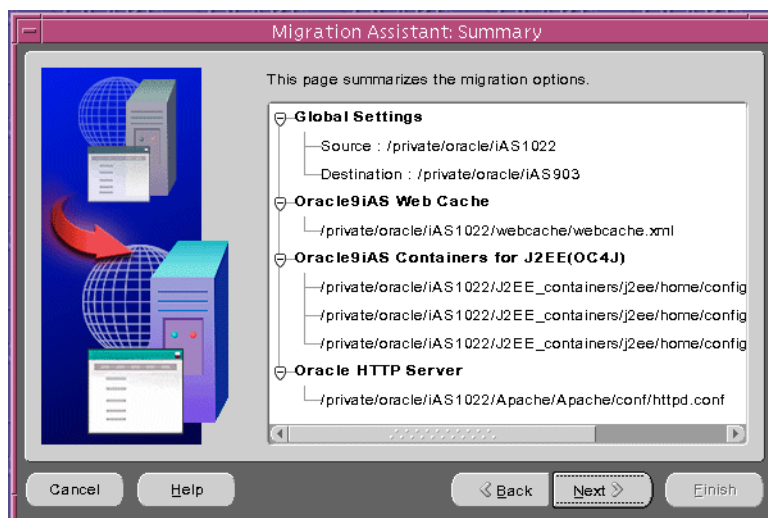
15. To deselect a directive, click the checkbox to clear it.

**Figure 5–7** *httpd.conf: Directives screen*



**16.** Click Next.

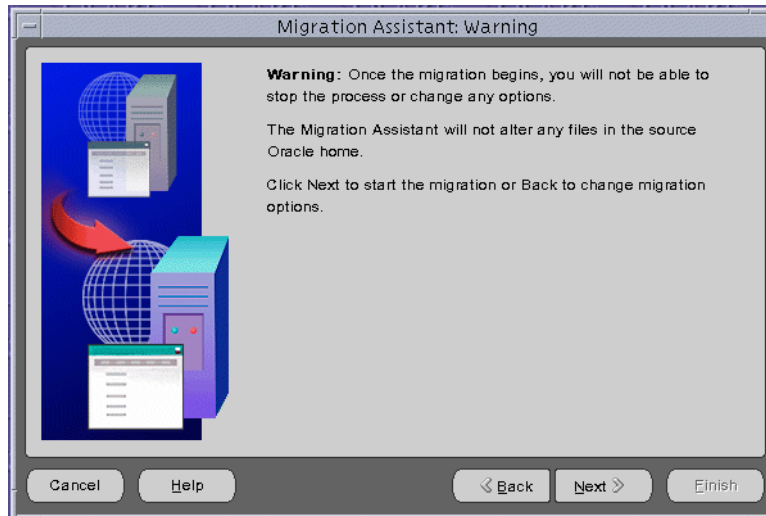
The Summary screen appears (Figure 5–8), showing your choices of Oracle homes, configuration files, and applications.

**Figure 5–8 Summary screen**

17. Review the choices.
18. If necessary, click Back to navigate to previous screens to make changes.
19. Click Next.

The Warning screen appears (Figure 5–9).

**Figure 5–9 Warning screen**



---

**Warning:** If you click Next now, the Assistant will begin to apply the current migration selections. Once the migration begins, you can click Cancel to stop the Assistant. It will finish the migration in progress (Oracle HTTP Server, OC4J or Web Cache), and then stop. No other selected migrations will start.

To undo a migration, you must manually restore the configuration files in the 9.0.3 instance from a backup.

For a description of backups and file names, see:

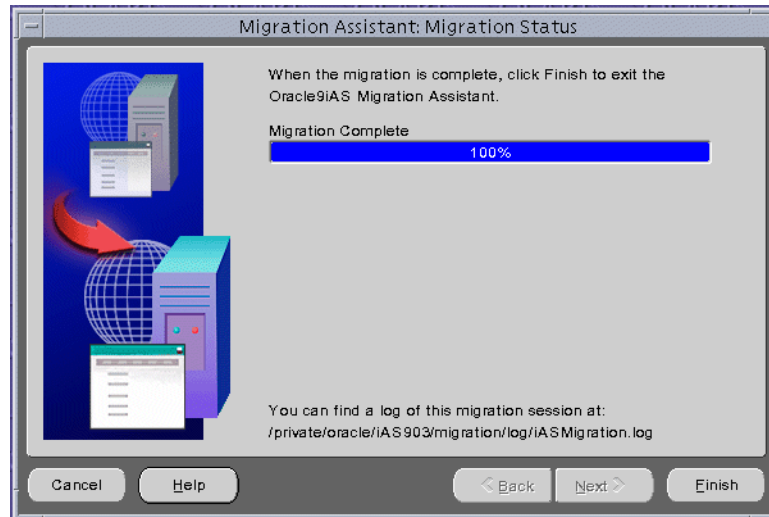
- ["Backup and Auditing Measures for Oracle HTTP Server Migration"](#) on page 2-13
  - ["Backup and Auditing Measures for OC4J Migration"](#) on page 3-6
  - ["Backup and Auditing Measures for Web Cache Migration"](#) on page 4-4
- 

20. Click Next to apply the migration choices you have made, or click Back to navigate to previous screens to make changes.



The Migration Status screen appears with a progress bar showing the percentage of the migration completed (Figure 5–10).

**Figure 5–10 Migration Status screen**



21. Click Finish to close the Migration Assistant.

## Using the Oracle9iAS Migration Assistant (Command Line Version)

1. Go to `ORACLE_HOME_2/migration` (UNIX), or `ORACLE_HOME_2\migration` (Windows).
2. Start the Assistant with the command:  
`MigAssistantCmd.sh` (UNIX)  
`MigAssistantCmd.bat` (Windows)  
 The following prompt appears:  
 Source Oracle home?
3. Enter the path to `ORACLE_HOME_1`.  
 The following prompt appears:  
 Target Oracle home?

4. Enter the path to ORACLE\_HOME\_2.

A prompt resembling the following appears.

```
Select components to migrate
```

```
Migrate all components?[YES]n
```

5. Press Enter to accept the default in brackets, or type n and press Enter to answer No.

The next prompt appears.

6. Repeat Step 5 for each prompt. The remaining prompts resemble the following:

```
Migrate all files for PlugIn Oracle9iAS WebCache?[YES]n
```

```
Migrate webcache.xml[YES]
```

```
Migrate all files for PlugIn Oracle9iAS Containers for
```

```
J2EE(OC4J)?[YES]n
```

```
Migrate data-sources.xml[YES]
```

```
Migrate principals.xml[YES]
```

```
Migrate all files for PlugIn Oracle HTTP Server?[YES]n
```

```
Migrate httpd.conf[YES]
```

```
Questionnaire
```

```
PlugIn Oracle HTTP Server httpd.conf
```

```
Please enter the password for ORACLE_HOME_
```

```
1/conf/ssl.crt/server.crt[welcome]
```

7. Press Enter to accept the default password welcome, or type the password and press Enter.

A summary of selections resembling the following appears:

```
Press Enter to accept the default password welcome, or type  
the password and press Enter.
```

```
A summary of selections resembling the following appears:
```

```
Summary page
```

```
PlugIn Oracle9iAS Web Cache
```

```
webcache.xml
```

```

Plugin Oracle9iAS Containers for J2EE(OC4J)
data-sources.xml
principals.xml

PlugIn Oracle HTTP Server
httpd.conf

Start migration...

```

**8. Press Enter to start the migration.**

Migration processing begins. Status messages resembling the following appear:

```

Migrating plugin   Oracle9iAS Web Cache
Outcome Status code      0
Status description              SUCCESS

Migrating plugin   Oracle9iAS Containers for J2EE(OC4J)
Outcome Status code      0
Status description              SUCCESS

Migrating plugin   Oracle9iAS HTTP Server
Outcome Status code      0
Status description              SUCCESS

```

## Verifying Migration Results

**1. Review the log file, located in:**

`ORACLE_HOME_2/migration/log/iASMigration.log` (UNIX)

`ORACLE_HOME_2\migration\log\iASMigration.log` (Windows)

The log files summarize all migration activity and errors.

**2. Migrate manually any configuration or applications not migrated by the Migration Assistant, for example:**

- Static documents or cgi or fastcgi applications noted in the log file (these are only logged, not migrated, if found in non-default locations).
- cgi or fastcgi applications defined by means other than the `ScriptAlias` directive.
- `mod_ossso.conf` or `mod_oc4j.conf`

- `mod_plsql` configuration files
  - Other configuration described in ["HTTP Server Elements Not Migrated"](#) on page 5-1.
  - Web Cache elements not migrated. See ["Completing the Web Cache Migration"](#) on page 4-5.
  - OC4J elements not migrated, specifically customization in files such as `orion-web.xml`, `orion-ejb-jar.xml`, `orion-application.xml`. See ["OC4J Elements Not Migrated"](#) on page 3-3 and [Appendix A, "Files Reference"](#) for examples of files not migrated.
3. Ensure that all of the components in the target installation will start. Run the demos (available on the Oracle9iAS Welcome page) to verify this.
  4. Perform tests for each migrated application or configuration setting to ensure it is working as it did in the previous release.

## Restarting the Oracle9iAS Migration Assistant

If the migration is unsuccessful, you can run the Migration Assistant again. Follow these steps:

1. Delete the flag file `firstRun` from the Release 2 (9.0.3) Oracle home directory.
2. Restore all configuration files and directories to their pre-migration state. The log file contains the names of all files that were altered or copied.
3. Follow the instructions in:

["Using the Oracle9iAS Migration Assistant \(GUI Version\)"](#) on page 5-3

or

["Using the Oracle9iAS Migration Assistant \(Command Line Version\)"](#) on page 5-13.

---

## Migrating Distributed Configurations

This chapter provides instructions on, migrating an instance that is associated with an infrastructure, migrating Oracle9iAS clusters, and using the `emctl switch` utility to activate Oracle Enterprise Manager in the Oracle Home of your choice.

It is expected that you already know:

- How the clustered architecture works.
- The functionality and expected behavior of the configuration you are migrating.
- How to create and manage clusters. You can use Oracle Enterprise Manager or the `dcmctl` utility to do this.

**See Also:** *Oracle9i Application Server Administrator's Guide.*

---

**Notes:** You cannot create a cluster that combines Oracle9iAS Release 2 (9.0.2) instances with Oracle9iAS Release 2 (9.0.3) instances.

You can use Oracle Enterprise Manager to manage one of the instances, not both.

See ["Considerations for Using Oracle9iAS Release 2 \(9.0.2\) and \(9.0.3\) Together"](#) on page 1-2.

---

## Migrating an Instance Associated with an Infrastructure

Infrastructure 9.0.2 enables you to use clustering. It must be installed and configured before you install Oracle9iAS Release 2 (9.0.3). If Infrastructure 9.0.2 is on the same computer as Oracle9iAS Release 2 (9.0.3), it will be associated automatically.

If it is on a different computer, you must associate Oracle9iAS Release 2 (9.0.3) with Infrastructure 9.0.2.

**See Also:** *Oracle9i Application Server Administrator's Guide*, Chapter 10, "Reconfiguring the Application Server".

**See Also:** *Oracle9i Application Server Installation Guide*, Chapter 1, "Installation Concepts".

## Migrating a Clustered Instance

Perform the steps below to migrate a cluster.

1. Determine the instance name of the instance to migrate.
  - a. `cd ORACLE_HOME_1/dcm/bin`
  - b. `dcmctl listinstances`
2. Go to the source instance and stop all processes there.
3. Go to the target instance and stop all processes there.
4. Access the Migration Assistant directory:  
`cd ORACLE_HOME_2/migration/`
5. Start the Migration Assistant with one of the following commands:

GUI version:

`./MigAssistant.sh` (UNIX)

`./MigAssistant.bat` (Windows)

Command-line version:

`./MigAssistantCmd.sh` (UNIX)

`./MigAssistantCmd.bat` (Windows)

6. Follow the instructions in [Chapter 5, "Using the Migration Assistant"](#) on page 5-2.
7. Start Oracle Enterprise Manager with the command:  

```
cd ORACLE_HOME_2/bin/emctl start
```

 where `ORACLE_HOME_2` is the location of the active Oracle home.
8. Use a browser to display the Oracle9iAS Instance Home Page.
9. Start the target instance.
10. Follow the steps in ["Verifying Migration Results"](#) on page 5-15.
11. Create a cluster.
12. Join the migrated instance to the cluster.
13. Install and join additional instances to the cluster.
14. If you used the `mod_oc4j.conf` file to route requests to OC4J instances in the Release 2 (9.0.2) cluster, do the following:
  - a. Edit `mod_oc4j.conf` in one of the instances and look at the `Oc4jMount` directives.
  - b. Change the instance names to the name of the Release 2 (9.0.3) instance.
  - c. If the cluster names are different from those used in the Release 2 (9.0.3) instance, change them to the names used in the 9.0.3 instance.
  - d. Copy the mount points (the `Oc4jMount` directive settings), to the `mod_oc4j.conf` files in the remaining Release 2 (9.0.3) instances.
15. If you performed step 13, verify that requests with URL patterns specified in the `Oc4jMount` directives are routed to the named instances.
16. Perform post-migration maintenance to the source environment, as needed, such as removing the migrated instance from the infrastructure and farm.

**See Also:** *Oracle9i Application Server Administrator's Guide*

## Activating Oracle Enterprise Manager

Oracle Enterprise Manager can be active in only one Oracle Home. Follow the instructions below to switch the active home.

1. Issue this command:

```
emctl switch home
```

A dialog with a drop-down list of homes displays. Select the home to activate.

2. Copy the file below to the Oracle home you activated.

```
ORACLE_HOME/sysman/j2ee/config/jazn-data.xml
```

3. Edit the `jazn-data.xml` file, removing the block shown below:

```
<user>

    <name>test</name>

    <credentials>/78TLB5pR2Y=</credentials>

</user>
```

4. Start Oracle Enterprise Manager in the active home with this command:

```
emctl start
```



## Files Reference

This appendix lists the files that may contain customizations to be migrated.

An asterisk in the Migration Assistant column indicates that the Migration Assistant processes the file, copying the majority of the customizations made to it to the Oracle9iAS version. (Exceptions such as interdependent port numbers, mount points, and other non-durable configuration settings are identified in the guide; you may need to edit the file after migration.)

An asterisk in the Manual column indicates that the Migration Assistant does not process these files. Customizations made to these files in the source instance must be transferred manually to these files in the target instance.

| File   | Path from Oracle home   | Migration Assistant | Manual |
|--|---|---------------------|--------|
| application-client.xml   | /j2ee/NameOfOC4JInstance/config/<br>application-client.xml  |                     | *      |
| application.xml  | /j2ee/NameOfOC4JInstance/config/<br>application.xml (Global, for all applications in<br>instance)<br><br>/j2ee/home/applications/NameofApplication/<br>META-INF/application.xml (Local, for one<br>application) |                     | *      |
| data-sources.xml   | /j2ee/NameOfOC4JInstance/config/<br>data-sources.xml  | *                   |        |
| default-web-site.xml   | /j2ee/NameOfOC4JInstance/config/default-web-<br>site.xml  |                     | *      |
| EAR files for applications<br>defined in the server.xml file<br>in the source instance | /j2ee/NameOfOC4JInstance/applications/*.ear   | *                   |        |

| File                       | Path from Oracle home   | Migration Assistant | Manual |
|----------------------------|---|---------------------|--------|
| global-web-application.xml | /j2ee/NameOfOC4JInstance/config/global-web-application.xml  |                     | *      |
| http-web-site.xml          | /j2ee/NameOfOC4JInstance/config/http-web-site.xml   |                     | *      |
| httpd.conf                 | /Apache/Apache/conf/httpd.conf  | *                   |        |
| index.html                 | /Apache/Apache/htdocs/index.html  |                     | *      |
| internal.xml               | /webcache/internal.xml  |                     | *      |
| internal_admin.xml         | /webcache/internal_admin.xml  |                     | *      |
| jazn.xml                   | /j2ee/home/jazn/config/jazn.xml   |                     |        |
| jazn-data.xml              | /j2ee/home/jazn/config/jazn-data.xml<br>/j2ee/home/application-deployments/NameofApplication/jazn-data.xml<br>/sysman/j2ee/config/jazn-data.xml |                     | *      |
| jms.xml                    | /j2ee/home/config/jms.xml   |                     | *      |
| jserv.conf                 | /Apache/JServ/conf/jserv.conf   |                     | *      |
| mod_oc4j.conf              | /Apache/Apache/conf/mod_oc4j.conf   |                     | *      |
| opmn.xml                   | /opmn/conf/opmn.xml   |                     | *      |
| oracle_apache.conf         | /Apache/Apache/conf/oracle_apache.conf  |                     | *      |
| orion-application.xml      | /j2ee/home/application-deployments/NameofApplication/orion-application.xml  |                     | *      |
| orion-web.xml              | /j2ee/home/application-deployments/NameofApplication/orion-web.xml  |                     | *      |
| principals.xml             | /j2ee/home/config/principals.xml  | *                   |        |
| rmi.xml                    | /j2ee/home/config/rmi.xml   |                     | *      |
| server.xml                 | /j2ee/home/config/server.xml  |                     | *      |
| web.xml                    | /j2ee/home/default-web-app/WEB-INF/web.xml  |                     | *      |
| webcache.xml               | /webcache/webcache.xml  | *                   |        |

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