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## A Pre-Production Checklist
This guide explains how to install and upgrade Oracle Communications ASAP and OCA Clients.

Audience
This document is intended for system administrators, system integrators, and other individuals who need to install, upgrade, and work with ASAP.

Accessing Oracle Communications Documentation
ASAP documentation and additional Oracle documentation (such as database and WebLogic Server documentation) is available from the Oracle Help Center website:
http://docs.oracle.com

Additional Oracle Communications documentation, including ASAP developer documentation, is available from the Oracle software delivery Web site:
https://edelivery.oracle.com

Related Documents
For more information, see the following documents in the Oracle Communications ASAP documentation set:
- Oracle Communications ASAP Release Notes
- Oracle Communications ASAP Concepts
- Oracle Communications ASAP Service Request Translator User’s Guide
- Oracle Communications ASAP Order Control Application User’s Guide
- Oracle Communications ASAP Server Configuration Guide
- Oracle Communications ASAP System Administrator’s Guide
- Oracle Communications ASAP Cartridge Development Guide
- Oracle Communications ASAP Security Guide
- Oracle Communications ASAP Developer’s Guide
**Note:** To download the *Oracle Communications ASAP Developer’s Guide* from the Oracle Software Delivery Cloud Web site, you must select *Oracle Communications ASAP Developer Documentation Pack*. You can visit the Oracle Software Delivery Cloud Web site at: [https://edelivery.oracle.com](https://edelivery.oracle.com)

## Document Revision History

The following table lists the revision history for this guide:

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<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Description</th>
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<tr>
<td>E61077-01</td>
<td>July 2015</td>
<td>Initial release</td>
</tr>
<tr>
<td>E61077-02</td>
<td>March 2017</td>
<td>Updated software requirements for ASAP 7.3.0.2.</td>
</tr>
</tbody>
</table>
This chapter provides an overview of the installation process for Oracle Communications ASAP.

**Overview of the ASAP Installation Procedure**

Before installing application, the following applications must be installed:

- **Platform**
- **Oracle Database and client**
- **Oracle WebLogic Server**

The following is an outline of the installation procedure for ASAP:

1. Plan your installation. Planning your installation involves:
   - Determining the scale of your implementation; for example, is it a small test system, or a large production system. You should assess the scale of the network that ASAP must manage.
   - Assessing how many physical machines you need for the ASAP components that you have selected.
   - Planning the system topology; for example, determining whether you want a standalone ASAP deployment or a distributed ASAP deployment.

2. Review system requirements. System requirements include:
   - System software requirements, such as operating system (OS) versions and OS patch requirements.
   - Hardware requirements, such as disk space.
   - Information requirements, such as IP addresses and host names.

3. Configure the operating system as described in "Configuring the Operating System."

4. Create and configure the Oracle Database instance as described in "About Creating and Configuring the Oracle Database."

5. Download and Install the Oracle Client as described in "Installing and Configuring Oracle Database and Client."

6. Install and configure the Oracle WebLogic Server (WebLogic) as described in "About Configuring Oracle WebLogic Server."

7. Install ASAP.
You are required to provide the following connection information during installation:
- WebLogic Server details
- Database, or Oracle RAC database, server details
- ASAP schema user details

8. (Optional) Install Order Control Application (OCA) Client for ASAP.
9. Perform post-installation configuration tasks, such as deploying ASAP cartridges.
10. Verify the installation.

**ASAP Installation Options**

You can install ASAP in the following ways:
- **GUI mode:** Use the GUI mode when you want to interact with the Installer GUI during installation.
- **Console mode:** Use the console mode when you want to interact with the Installer during installation but do not have a system that supports a GUI.
- **Silent install mode:** Use the silent install mode when you are installing ASAP using the same configuration repeatedly. Silent install mode does not use the GUI and it runs in the background.
- **Distributed installation:** Install ASAP using one of the other installation modes, then distribute the installed components across multiple UNIX machines.

**Ensuring a Successful ASAP Installation**

ASAP installation must be performed only by qualified personnel. You must be familiar with the following before you begin the installation:
- UNIX operating system
- Oracle WebLogic Server administration
- Oracle Database administration

Additionally, you should have experience installing Java-related packages.

Oracle recommends that the installation and configuration of the Oracle database be performed by an experienced database administrator.

Follow these guidelines:
- As you install each component, for example, the Oracle database and WebLogic Server, verify that the component installed successfully before continuing the installation process.
- Pay close attention to the system requirements. Before you begin installing the application, ensure your system has the required base software. In addition, ensure that you know all of the required configuration values, such as host names and port numbers.
- Make a note of any new configuration values as you create them. You will be required to enter configuration values later in the procedure.
Downloading the ASAP Media Pack

To download the media pack from the Oracle Software Delivery Cloud Web site (https://edelivery.oracle.com):

1. Select the ASAP media pack for your platform from the Oracle E-Delivery Web site.
2. Download the media pack.
3. Extract the components that you need from the downloaded file.
4. Follow the installation procedure for each component that you want to install.

Directory Placeholders Used in This Guide

Table 1–1 lists and describes placeholders used in this guide.

<table>
<thead>
<tr>
<th>Placeholder</th>
<th>Directory Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASAP_Home</td>
<td>The directory into which the ASAP software is installed.</td>
</tr>
<tr>
<td>ASAP_src</td>
<td>The directory into which the ASAP source installation files were extracted.</td>
</tr>
<tr>
<td>MW_Home</td>
<td>The location where the Oracle Middleware product was installed. This directory contains</td>
</tr>
<tr>
<td></td>
<td>the base directory for the WebLogic Server, a utils directory, and other files and</td>
</tr>
<tr>
<td></td>
<td>directories.</td>
</tr>
<tr>
<td>WLServer_Home</td>
<td>The base directory for the WebLogic Server core files. It is located in the MW_Home</td>
</tr>
<tr>
<td></td>
<td>directory.</td>
</tr>
<tr>
<td>Domain_Home</td>
<td>The directory that contains the configuration for the domain into which ASAP is installed.</td>
</tr>
<tr>
<td></td>
<td>The default location is MW_Home/User_projects/domains/domain_name but it is frequently</td>
</tr>
<tr>
<td></td>
<td>set to some other directory at installation.</td>
</tr>
<tr>
<td>Oracle_Home</td>
<td>The location which contains the Oracle database instance.</td>
</tr>
<tr>
<td>Oracle_Client_Home</td>
<td>The location which contains the Oracle client.</td>
</tr>
</tbody>
</table>
This chapter describes the hardware, operating system, software, server, and database requirements for installing Oracle Communications ASAP.

**About Planning Your ASAP Installation**

ASAP is comprised of a series of applications, each with its own database schema which are installed on an Oracle WebLogic Server domain. ASAP connects with an Oracle database to store all relevant information.

**About Test Systems and Production Systems**

Create test systems to support the following activities:

- Familiarize yourself with ASAP functionality.
- Investigate the ASAP Server implementation size for your production system.
- Determine the ASAP server deployment options for your production system.
- Determine your ASAP OCA client deployment and sizing options for your production system.
- Determine the number and size of your Oracle Database tablespaces that your production system will require.
- Determine the memory requirements for the individual ASAP server schemas.
- Test WebLogic Server functionality and deployment options for test and production environments.
- Develop new network activation (NA) cartridges or service activation (SA) network cartridges, or integrate and customize pre-existing ASAP cartridges.
- Investigate and implement possible ASAP customization requirements for the ASAP SRP or NEP.

Create production systems after fully testing and integrating ASAP functionality according to your network requirements.

**Types of Implementations**

This section provides details on ASAP server and client implementations.
ASAP Server Implementation

This section provides details on ASAP server implementation size classifications, memory, and ASAP server disk space requirements.

ASAP Server Implementation Size

The ASAP implementation size classifications provided in this section are for approximate sizing purposes and align with the pre-tuned default configurations included with new ASAP installations. Your implementation requirements may vary.

The ASAP pre-tuned configurations are classified as small, medium, or large. These categories are defined based on the following factors:

- Number and complexity of incoming requests (per day)
- Number of network elements (NEs) that ASAP interfaces with
- Average completion time of a request

The complexity of any custom code extensions can also affect ASAP performance and size requirements. For complete details on pre-tuned ASAP system configuration, see the appendix on tuning ASAP in the ASAP System Administrator’s Guide.

As a general rule, the number of incoming requests per day determines the configuration classifications (see Table 2–1).

<table>
<thead>
<tr>
<th>Implementation Size</th>
<th>Number of Orders per Second</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>1 order per second, up to 50,000 per day</td>
</tr>
<tr>
<td>Medium</td>
<td>Up to 10 orders per second, up to 500,000 per day</td>
</tr>
<tr>
<td>Large</td>
<td>10 to 20+ orders per second, 500,000 to 1M+ orders per day</td>
</tr>
</tbody>
</table>

Large configurations generally use multiple territories and instances of ASAP. Each territory can be a distributed configuration. A specific ASAP implementation can have many territories. The installations are independent because there is no communication between ASAP systems in different territories.

ASAP Server Memory

Table 2–2 lists example memory requirements for ASAP servers on UNIX running in an Oracle virtual machine. These example memory requirements also apply to other operating systems supported by ASAP (see "Hardware Requirements" for supported operating systems).
The Oracle database server also has memory requirements. For sizing guidelines, consult the Oracle Database documentation.

### ASAP Disk Space

The disk space requirements for test and production system differ. These space requirements described in the following sections are for the file systems required by the ASAP installer only and do not account for additional software (for example, the Oracle Database or WebLogic Server).

You must ensure that you have enough disk space, appropriately allocated, before beginning the installation process.

### Test System Disk Space

Test systems have simple disk space requirements because they do not have to accommodate a production work order stream or a full array of network element mappings. Production systems have more complex disk space requirements than test systems.

Test systems are used to build and test support for network elements and build automated interfaces into ASAP for upstream systems. Ensure that you have enough disk space available on your machines for all of the requirements as listed in Table 2–3.

---

**Table 2–3 ASAP Server Memory Requirements**

<table>
<thead>
<tr>
<th>Application</th>
<th>Memory Requirements</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SARM Server</td>
<td>50 MB (small implementation)</td>
<td>The amount of memory required for the SARM depends on:</td>
</tr>
<tr>
<td></td>
<td>55 MB (medium implementation)</td>
<td>■ Number of concurrent work orders (WOs) being processed</td>
</tr>
<tr>
<td></td>
<td>65 MB (large implementation)</td>
<td>■ Complexity of ASAP service modeling based on the number of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Common Service Description Layer (CSDL) commands per work order</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Number of target network elements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Number of service request processors (SRPs) for event notification</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Internal resource for SARM configuration (for example, the number of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>threads)</td>
</tr>
<tr>
<td>Admin Server</td>
<td>25 MB</td>
<td>The Admin Server memory requirement.</td>
</tr>
<tr>
<td>Control Server</td>
<td>10 to 15 MB</td>
<td>The Control Server memory requirement.</td>
</tr>
<tr>
<td>Java SRP Server</td>
<td>256 MB</td>
<td>The Java SRP is managed through WebLogic Server and requires a minimum of 256 MB in production.</td>
</tr>
<tr>
<td>C/C++ SRP Server</td>
<td>6 to 30 MB</td>
<td>Because you can customize the SRP, the memory can also be used for:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Static cached configuration information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Dynamic data structures of work orders in progress</td>
</tr>
<tr>
<td>NEP Server – asc_nep</td>
<td>40 MB (small implementation)</td>
<td>The NEP memory usage depends on:</td>
</tr>
<tr>
<td></td>
<td>45 MB (medium implementation)</td>
<td>■ Number of NEs managed by the NEP</td>
</tr>
<tr>
<td></td>
<td>40 MB on each server (large implementation)</td>
<td>■ Number of communication devices used by the NEP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ State Table cache within the NEP</td>
</tr>
<tr>
<td>NEP server – Java process</td>
<td>128 MB</td>
<td>Minimum production size</td>
</tr>
</tbody>
</table>

The Oracle database server also has memory requirements. For sizing guidelines, consult the Oracle Database documentation.
**Types of Implementations**

**Production System Disk Space**

Production systems are used against live network elements to process real work orders.

The sizing of production systems depends on variables such as daily transaction volume and amount of historical data to be maintained. If your production environment generates many log files due to high volumes of work orders, allocate additional space. Consult with your UNIX administrator for assistance.

Disk I/O speed can be a factor in performance, especially if many log entries are being written. Oracle recommends that you distribute your database and index segments over multiple disks as described in "ASAP Server Hardware Requirements" for small, medium, and large system for increased performance.

For detailed information on tuning ASAP, see *ASAP System Administrator’s Guide*.

**Determining the Number of Network Elements per Network Element Processor**

The number of Network Elements (NEs) per Network Element Processor (NEP) required is dependent on:

- Whether the NE interface is asynchronous or synchronous.
- Whether the NE can support independent concurrent connections.
- The speed of the NE interface (for example, a slow MML response time or fast EMS interface).
- The number of requests to that NE per day. This is usually expressed in terms of work orders per day although a more accurate measure is the number of ASDL commands per day.
- The complexity of custom code extensions, State Tables, or Java code.

For more information about adding NEP servers, see the *ASAP Server Configuration Guide*. For more information about mapping NEs to NEP servers, see the *ASAP Cartridge Development Guide*.

Table 2–4 shows NEs classified according to their anticipated loads and provides a rough estimate of the number of NEs typically allocated to a single NEP.

---

**Table 2–3 ASAP Component Requirements**

<table>
<thead>
<tr>
<th>Components</th>
<th>Disk Space</th>
</tr>
</thead>
</table>
| ASAP Installer TAR file size by platform | Solaris: 372 MB  
Oracle Linux: 358 MB  
AIX: 625 MB |
| ASAP core components size by platform | Solaris: 693 MB  
Oracle Linux: 607 MB  
AIX: 655 MB |
| ASAP logs | 100 MB |

1 The ASAP Installer for Solaris also provides optional X2X (for the X.25 and X.29 protocols) and SNMP component support for External Device Drivers (EDD) functionality. This EDD functionality has been deprecated.
The number of NEs that can be managed by a particular NEP is limited only by available system resources. The NEP allocates threads to manage each NE and device used to interface to the NEs. For example, an NEP managing 20 NEs where each NE has two dedicated connections would require $20 + (2 \times 20) = 60$ threads within the NEP.

Table 2–5 shows the typical memory requirements for NEPs managing different numbers of NEs, excluding State Table caches.

### Table 2–4  Suggested NE to NEP Ratios

<table>
<thead>
<tr>
<th>NE Classification</th>
<th>Number of Orders per Day per NE</th>
<th>Average Number of NEs per NEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idle</td>
<td>Fewer than 10</td>
<td>30 to 100</td>
</tr>
<tr>
<td>Normal</td>
<td>Between 10 and 100</td>
<td>15 to 30</td>
</tr>
<tr>
<td>Busy</td>
<td>More than 100</td>
<td>5 to 15</td>
</tr>
</tbody>
</table>

Note: The example of 500 NEs per NEP is provided for reference purposes only. Your configuration may differ.

Table 2–6 shows an example for a client with 200 NEs.

### Table 2–5  Memory Requirements per NEP

<table>
<thead>
<tr>
<th>NEs per NEP</th>
<th>Approximate Memory Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>7 MB</td>
</tr>
<tr>
<td>10</td>
<td>10 MB</td>
</tr>
<tr>
<td>20</td>
<td>15 MB</td>
</tr>
<tr>
<td>50</td>
<td>20 to 35 MB</td>
</tr>
<tr>
<td>500</td>
<td>50 to 70 MB</td>
</tr>
</tbody>
</table>

Order Control Application Implementation

This section provides details about the ASAP OCA client implementation size and NEP to NE distribution requirements.

### Order Control Application Implementation Size

The OCA is a client application used for system administration and fallout management. You can deploy OCA to support a small, medium, or large number of concurrent users. The deployment details for setting up OCA are dependent on the following factors:
Number of OCA clients installed, the geographic locations to support, and the number of concurrent sessions to be run.

Number of orders to be queried and fixed per day. For example, if ASAP handles over 500,000 work orders per day, and a small percentage of those work orders fail (for reasons such as incorrectly configured work orders, network connection problems, and so on) you may need a larger amount of concurrent OCA sessions than in a smaller ASAP implementation.

System Deployment Planning

This section provides details about:

- ASAP Server Process Deployment Options
- Oracle Database Deployment Options Supported by ASAP
- Oracle WebLogic Server Deployment Options Supported by ASAP
- ASAP Reliability Deployment Planning

ASAP Server Process Deployment Options

Install the ASAP environment on one or more UNIX machines. These UNIX machines run the ASAP server processes (with the exception of the JSRP that runs in the WebLogic server). The ASAP server processes can be:

- All resident on one UNIX machine (see "Deploying ASAP to One UNIX Machine")
- Distributed over several UNIX machines (see "Deploying ASAP Over Several UNIX Machines")

Deploying ASAP to One UNIX Machine

When you install ASAP on one machine, ASAP must be able to access an Oracle database instance and WebLogic server instance. These applications can be co-resident with the ASAP environment, or located on different machines.

A typical configuration consists of ASAP co-resident with the WebLogic server instance connected to a remote Oracle database instance.

Deploying ASAP Over Several UNIX Machines

In a distributed environment, a control server must be present on each computer that runs an ASAP server application (such as SRP, SARM, NEP, and ADMIN servers). One of these Control Servers is designated the master while the rest are designated as remote servers. The primary Control Server manages all ASAP applications centrally. There can be many secondary Control Servers managing individual machines, each receiving application startup and shutdown requests from the primary server.

Figure 2–1 shows a sample ASAP system distribution with four networked machines. In Figure 2–1:

- Machine A – Hosts the primary Control Server and the SRP.
- Machine B – Hosts a secondary Control Server and the SARM.
- Machine C – Hosts another secondary Control Server and two NEPs.
- Machine D – Hosts the database server.
ASAP components (for example, SRP, SARM, and NEP) can be distributed over several machines.

**Note:** These machines do not need to be from the same vendor.

![Sample ASAP Distribution Diagram](image)

**Oracle Database Deployment Options Supported by ASAP**

Each ASAP server process has a database schema. The ASAP server schemas reside in a single or an Oracle Real Application Clusters (RAC) database instance and associated to one or more tablespace.

ASAP can be:

- Deployed with a single Oracle database instance (see "Deploying ASAP to a Single Database")
- Deployed with an Oracle RAC database instance (see "Deploying ASAP to a Real Application Clusters Database")

**Deploying ASAP to a Single Database**

You can deploy ASAP to a single Database instance. This database can be co-resident with ASAP or located on a remote machine.

**Deploying ASAP to a Real Application Clusters Database**

You can enhance Oracle Communications ASAP reliability using the ASAP server configurations and Oracle RAC database. With these added configurations, the ASAP server does not shut down if it loses connection with the database. The ASAP behavior is same for a connection failure during initial connection and during normal operation.
In ASAP installations with a single database instance and an Oracle RAC system, ASAP servers can be configured to wait for a specific period of time before the connection to the database is lost. You can also configure the number of attempts to establish the database connection and the interval between attempts. When the ASAP server reconnects, it uses transparent application failover (TAF) to reconnect to a preconfigured secondary instance or to the same instance of a single instance database. It creates a new connection identical to the connection established on the original instance. The connection properties are the same as the original connection.

**Oracle WebLogic Server Deployment Options Supported by ASAP**

Several ASAP functions deploy to a WebLogic server instance. ASAP can be:

- Deployed with an administrator WebLogic server instance (see "Deploying ASAP to an Administrator WebLogic Server Instance")
- Deployed with an administrator WebLogic server instance and a managed Weblogic server instance (see "Deploying ASAP to an Administrator WebLogic Server with One Managed WebLogic Server")

**Deploying ASAP to an Administrator WebLogic Server Instance**

Oracle recommends that you deploy ASAP to a single administrator WebLogic server instance for test environments.

**Deploying ASAP to an Administrator WebLogic Server with One Managed WebLogic Server**

Oracle recommends that you deploy ASAP to an administrator WebLogic server instance with a managed server for production environments.

**ASAP Reliability Deployment Planning**

There are many configuration solutions to address availability and the right configuration option is often a balance between recovery time requirements and solution costs. System unavailability and downtime can occur for various reasons with most people associating downtime with hardware failure. While hardware failure is a contributing factor to system unavailability, other factors include network outages, software error and human error.

ASAP was designed for maximum system availability and application resiliency to various failure conditions. The ASAP control daemon (Control Server) process monitors other ASAP processes and restarts them if they fail.

To protect against network or disk failures, ASAP may be deployed using the following subsystem components:

- Mirrored dual-ported data disks to protect the application from loss of critical configuration data
- Backup or redundant network interfaces to assure network connectivity to application clients
- Backup or redundant networks to assure network connectivity to application clients
- Backup or redundant Power Distribution Units to guard against system power outages
ASAP is also certified for Oracle RAC to protect against database server failures. The ASAP Control Server monitors the connection to the Oracle Database and maintains database connectivity in the event of an Oracle RAC database node failover.

In addition to these considerations, ASAP provides the following availability recommendations:

- Using ASAP Distributed Architecture to Insure NEP Availability
- Configuring a Cold Standby ASAP Server
- Configuring ASAP Clusters

**Using ASAP Distributed Architecture to Insure NEP Availability**

To protect against a single point of failure, the ASAP network element processors (NEPs), which manage the interactions to network elements, can be deployed in a distributed manner. Distributing the NEPs allows you to manage your entire network and also provides a level of redundancy.

You can apply an ASAP cartridge to both the remote and local NEP server. If the active NEP server fails, update the NEP mapping to point to the backup remote NEP server. See "Installing ASAP Across Multiple UNIX Machines" for details on how to distribute the NEPs.

**Configuring a Cold Standby ASAP Server**

To offer additional reliability in the event of a hardware failure on the server running the ASAP SARM, ASAP may be deployed in a cold standby environment. A cold standby environment refers to a type of availability solution that allows ASAP to run on one server at a time (active/passive). The active server processes the orders while the standby server is installed with the same configuration as the active server.

Implementations of cold standby ASAP servers have been accomplished by systems integrators with solutions that are tailored to the customers’ needs.

---

**Note:** ASAP supports an active/passive cold standby deployment configuration. ASAP does not support active/passive warm or hot standby deployment configurations, or an active/active deployment configuration.

---

**Configuring ASAP Clusters**

For high availability functionality customers may run ASAP in a clustered environment using Oracle Solaris cluster or third-party software. High availability using clustering is non-native to ASAP. ASAP does not support deployment into a clustered WebLogic environment using WebLogic Clustering support.

ASAP can be deployed for active-passive high availability using Oracle Solaris Cluster Data Service for Oracle Communications ASAP. See *Oracle Solaris Cluster Data Service for Oracle Communications ASAP Guide*, which is part of the Oracle Solaris Cluster documentation, for more information about this configuration.

Implementations of ASAP using third-party high availability clustering software have been accomplished by systems integrators with solutions that are tailored to the customers’ needs. ASAP has been deployed for active passive high availability using products like Veritas.
Database and Client Planning

The ASAP installer uses tablespaces to create data and index segments for ASAP server schemas.

For test environments, the ASAP installer can create data and index segments for all server schemas within a single Oracle Database tablespace. In production environments, more complex configurations may be required to enhance performance. For example, you may need a separate tablespace for the SARM data and index segments, or separate tablespaces for all the ASAP servers data and index segments. You must create the required tablespaces prior to the installation of the ASAP Server software.

The ASAP server data stored in the Oracle Database tablespaces implements the following schemas:

- Service Activation Request Manager Server Schema
  The SARM tablespace tables contain a large amount of dynamic information about past, present, and future ASAP requests.

- Control Server Schema
  Two types of data are generated dynamically: performance data and event logs. The amount of performance data generated is configurable by modifying the time interval of sampling. If the time interval of generating data is two hours or more, and the performance data and event logs are purged every two days, 40 MB is sufficient.
  For information about modifying the time interval of sampling, see ASAP System Administrator’s Guide.

- Admin Server Schema
  This schema contains work order performance information, such as how long it takes to complete a CSDL and ASDL, how many CSDLs are processed, and the ASDL queue size for each NE.

- Service Request Processor Server Schema
  The SRP schema is used for development testing. This schema can be used to store work order templates for use with the SRP emulator. Custom SRPs can also make use of this table for implementing custom transactions.

- Network Element Processor Server Schema
  This optional schema stores static data, the amount of which will not grow.

For more information on Oracle Database versions supported for this release, see "Software Requirements."

ASAP Oracle Database Tablespace Sizing Requirements

Use the information in this section to plan how you will create and configure the Oracle Database tablespaces required for the ASAP server software.

Recommended Tablespace and Redo Log Sizes for ASAP

Table 2–7 lists the recommended tablespace and redo log sizes for test environments and large production environments.
Suggested Data to Index Segment Size Ratio

Although data and index segments grow at different rates, Oracle recommends that there should be a one to one size ratio between your data and index segments.

More Detailed Database Size Estimates

Table 2–8 should be used only as a guideline to determine your tablespace sizing.
### Table 2–8 Sample ASAP Tablespace Sizing Requirements

<table>
<thead>
<tr>
<th>Database</th>
<th>Space (KB/WO)</th>
<th>Description</th>
</tr>
</thead>
</table>
| SARM     | 8 to 20 KB per WO | The SARM tablespace tables contain a large amount of dynamic information about past, present, and future ASAP requests. The data size per work order can remain uniform from client to client, however sizes have become increasingly varied, specifically with next generation services. The maintenance of extensive NE history information increases the average work order size in the tablespace. Also, the data gathered from the NEs (for example, on queries) can be substantial and change from client to client, depending on business rules, OSS infrastructure, and so on. The example configuration provided is for a medium range ratio of KB per work order. For a medium-sized telco with 50,000 work orders per day, the SARM tablespace requirements can be calculated as follows:  
  - Total number of work orders per day: 50,000  
  - Total reserved space: 700,000 KB  
  - Total space per work order: 14 KB  
  - Data and log space per work order: 10 KB  
  - Index space per work order: 4 KB  
  For more details about estimating tablespace sizing requirements see "Sample Service Activation Request Manager Tablespace Requirements." |
| CTRL     | Not applicable per work order | The CTRL (Control Server) tablespace tables maintain dynamic information related to:  
  - Application process performance  
  - System events and alarms  
  This dynamic information can be subject to different archiving and purging policies. Therefore, if the system configuration generates a large number of system events and alarms and has a long purge interval, more space can be required. The CTRL tablespace tables do not contain any dynamic information related to the work order volume. |
### Table 2–9 (Cont.) Sample ASAP Tablespace Sizing Requirements

<table>
<thead>
<tr>
<th>Database</th>
<th>Space (KB/WO)</th>
<th>Description</th>
</tr>
</thead>
</table>
| ADM      | Not applicable per work order | The ADM (Admin) server tablespace tables maintain the following statistical information on ASAP processing:  
  - Work order statistics  
  - CSDL statistics  
  - ASDL statistics  
  - NE statistics  
  - ASDL/NE statistics  
  The size of these tables depends on the following factors:  
  - Poll period between the retrieval of statistical information by the Admin Server from the SARM  
  - Number of CSDLs, ASDLs, and NEs in the system  
  - Archive and purge interval of the data in these tables. These intervals can be quite large as the data can be used for reporting purposes. |
| SRP      | 2 to 10 KB per WO | The SRP schema is customizable per SRP; therefore, it is difficult to provide an accurate space estimate. The SRP schema is purely dependent on any custom tables defined at a client installation.  
  The following sample configuration is for a low to medium complexity SRP that does not maintain extensive information about work orders in its schema. For a medium-sized telco with 50,000 work orders per day, the SRP disk space sizing can be calculated as follows:  
  - Total number of work orders per day: 50,000  
  - Total reserved space: 225,000 KB  
  - Total space per work order: 4.5 KB  
  - Data and log space per work order: 3.0 KB  
  - Index space per work order: 1.5 KB |
| NEP      | 0 to 5 KB per WO | As the NEP tablespace tables maintain only static information, not dynamic, they are usually quite small. If dynamic information is generated and maintained in the NEP tablespace tables, then this space requirement can increase. The NEP data requirements are approximately 10 to 20 MB. |

---

**Sample Service Activation Request Manager Tablespace Requirements**

This section contains sample SARM database sizes.

The average work order size is an important factor in determining the tablespace size requirements. Oracle recommends that you have a rough estimate of the sizing requirements on the ASAP application databases.

**Note:** Depending on any additional tables that you have created, the SRP database size can be proportional to the SARM database size. This can also be an important consideration in determining a tables pace size.

Table 2–9 contains the results of a test suite of 80 work orders processed by ASAP to produce rough SARM sizing requirements.
The work order details that produced the results for of the dynamic SARM tables listed in Table 2–9 are specified below:

- 80 work orders
- 2.4 CSDLs per work order
- 3.9 ASDLs per work order
- 60 parameters per work order
- 44 work order log entries per work order

For such orders, the size breakdown is:

- Total data size: 726 KB
- Total index size: Consider the index segment size as approximately equal to the data index size. Index size may vary depending on logging levels, operations, and so on
- Size of switch history log data within the log data is approximately 400 KB, index size is 6 KB.

This implies the space required for each work order, including the switch history data is 12 KB/work order.

Without any switch history, these values are reduced to approximately 8 KB.

---

### Estimating Service Activation Request Manager Tablespace Size Requirements

Most of the space in the tablespace is required for data generated by the SARM during provisioning. The following estimations are used for tablespace sizing:
The average work order (or a transaction) takes 15KB.
- Add or deduct 5KB for a bigger or smaller work orders.

As an example, consider a system that processes 10,000 immediate work orders/day, and has an average of 2,000 future-dated work orders. Completed work orders are purged every three days, and failed work orders are handled promptly.

The SARM schema sizing can be calculated as follows:

- 10,000 x 15KB = 150MB
- 2,000 x 15KB = 30MB
- for 3 days: 150 x 3 + 30 = 480MB
- add about 15% on the top for peak time and static data: 480 x 1.15 = 552MB
- take 550MB

**Note:** Some orders, such as those that query NEs, can generate a large amount of data that requires additional space per order to store in the SARM.

### Java Service Request Processor Tablespace Requirement

Most of the JSRP data is incorporated into the SARM tablespace. See "Sample Service Activation Request Manager Tablespace Requirements."

### Oracle Client

The Oracle Client is required for ASAP components to communicate with the Oracle Database. This client must be installed and configured before you install ASAP.

For more information about the Oracle Client versions supported for this release of ASAP, see "Software Requirements."

### WebLogic Server Planning

This section provides details on WebLogic Server domain configurations supported by ASAP.

### WebLogic Server Domain Options

ASAP supports the following domain configurations:

- For test environments: one administration server
- For production environments: one administration server and one managed server

An ASAP domain consist of one administration and one optional managed WebLogic Server instance and their associated resources possibly distributed over two machines. A managed server obtains its configuration from the administration server upon startup. Consequently, the administration server should be started before the managed server.

*Figure 2–2 shows a WebLogic Domain within ASAP.*
In a test environment, you can create a domain that consists of an administration server and deploy ASAP components to this server instance. However, in a production environment, Oracle recommends that the administration server reside on a dedicated physical machine and ASAP components be deployed to the managed server only (see Figure 2–3). The managed server is assigned to a physical machine. The administration server connects to a machine’s node manager, which the administration server uses to monitor, start, stop, and restart a domain’s managed server.

The node manager monitors the health of all servers on a machine and controls the restarting of failed servers.
Each domain contains a configuration file – *Domain_home/config/config.xml* – that stores changes to managed objects so that they are available when WebLogic Server is restarted.

Do not manually modify the *config.xml* file. If you must make configuration changes use the WebLogic Server Console.

For more information about *config.xml*, see the latest Oracle Fusion Middleware WebLogic Server documentation.

**Configuring Domain Networks**

In a simple server setup, you assign a single network address and port number to each WebLogic instance.

You can configure the domain with multiple port numbers to improve performance and solve common networking problems. These port numbers allow you to:

- Separate administration traffic from application traffic in a domain by creating an administration channel.
- Improve network throughput by using multiple NICs with a single WebLogic Server instance.
- Designate specific NICs or multiple port numbers on a single NIC for use with specific WebLogic Server instances.
- Physically separate external, client-based traffic from internal, server-based traffic in a domain.
- Prioritize network connections that servers use to connect to other servers in a domain.

If your domain contains a managed server that is running on a different machine or if your domain contains clients that use different protocols, you can use network channels. Using a single custom channel with multiple servers simplifies network configuration for a domain – changing a channel configuration automatically changes the connection attributes of all servers that use the channel.

You can use multiple channels to segment network traffic by protocol, listen ports, or any other channel configuration property. For example, you can use two channels with a single server to tailor the default connection properties for secure vs. non-secure traffic. You can also use multiple channels to separate external, client traffic from internal, server-to-server traffic.

Most WebLogic Server installations use one or more of the following common types of channels:

- **Default Channel** – WebLogic Server automatically creates a default channel to describe the listen address and listen port settings associated with the ServerMBean. You can view the default channel configuration during server startup.

- **Administration Channel** – You can define an optional administration port to separate administration traffic from application traffic in your domain. When you enable the administration port, WebLogic Server automatically generates an Administration Channel based on the port settings.

- **Custom Channels** – A custom channel is a channel that you define and apply in a domain (rather than a channel that WebLogic Server automatically generates).

A network channel defines the basic attributes of a network connection to WebLogic Server including:
You configure network channels as distinct entities in the Administration Console, and then assign one or more channels to servers in a domain. The server instances to which you assign a channel use the port numbers and protocol configuration associated with the channel, instead of the default network configuration.

For information about using network channels, see the latest Oracle Fusion Middleware WebLogic Server documentation.

**Node Manager**

Node Manager is a standalone Java program provided with WebLogic Server that you can use to:

- Start remote Managed Server.
- Restart Managed Server that have shut down unexpectedly (for example, due to a system crash, hardware reboot, or server failure).
- Automatically monitor the health of Managed Server and restart server instances that have reached the “failed” health state.
- Shut down or force the shut down of a Managed Server that has failed to respond to a shutdown request.

For more information about using the node manager, see the latest Oracle Fusion Middleware WebLogic Server documentation.
This chapter describes the hardware, operating system, software, server, and database requirements for installing Oracle Communications ASAP.

**Hardware Requirements**

The number and configuration of the machines that you employ for your ASAP installation depend on the scale and the kind of deployment you have planned according to your network(s).

**ASAP Server Hardware Requirements**

The ASAP hardware requirements described in this section are based on the ASAP implementation size classifications defined in "ASAP Server Implementation Size."

Table 3–1 provides the small, medium, and large implementation hardware requirements for ASAP installed on the Solaris platform.

<table>
<thead>
<tr>
<th>Software Components</th>
<th>Small System SPARC T4 2.85 GHz (8 threads per core)</th>
<th>Medium System SPARC T4 2.85 GHz (8 threads per core)</th>
<th>Large System SPARC T4 2.85 GHz (8 threads per core)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASAP Server and WebLogic Server</td>
<td>1 core, 4 GB RAM, 4 x 73 GB (RAID5)</td>
<td>1 core, 8 GB RAM</td>
<td>2 cores, 16 GB RAM</td>
</tr>
<tr>
<td>Oracle Database</td>
<td>1 core, 6 GB RAM</td>
<td>1 core, 12 GB RAM</td>
<td>2 cores, 32 GB RAM</td>
</tr>
<tr>
<td>External Storage for Oracle Datafiles</td>
<td>NA</td>
<td>14 x 73 GB (RAID 1+0)</td>
<td>28 x 73 GB (RAID 1+0)</td>
</tr>
</tbody>
</table>

Table 3–2 provides the small, medium, and large implementation hardware requirements for ASAP installed on the IBM AIX platform.
Table 3–2 Hardware Requirements for IBM AIX

<table>
<thead>
<tr>
<th>Software Components</th>
<th>Small System</th>
<th>Medium System</th>
<th>Large System</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>POWER6 5.0 GHz (2 threads per core)</td>
<td>POWER6 5.0 GHz (2 threads per core)</td>
<td>POWER6 5.0 GHz (2 threads per core)</td>
</tr>
<tr>
<td>ASAP Server and WebLogic Server</td>
<td>1 core, 4 GB RAM, 4 x 73 GB (RAID5)</td>
<td>4 cores, 8 GB RAM</td>
<td>8 cores, 16 GB RAM</td>
</tr>
<tr>
<td>Oracle Database</td>
<td>1 core, 6 GB RAM</td>
<td>2 cores, 12 GB RAM</td>
<td>4 cores, 32 GB RAM</td>
</tr>
<tr>
<td>External Storage for Oracle Datasfiles</td>
<td>NA</td>
<td>14 x 73 GB (RAID 1+0)</td>
<td>28 x 73 GB (RAID 1+0)</td>
</tr>
</tbody>
</table>

Table 3–3 provides the small, medium, and large implementation hardware requirements for ASAP installed on an Intel Linux platform.

Table 3–3 Hardware Requirements for Linux

<table>
<thead>
<tr>
<th>Software Components</th>
<th>Small System</th>
<th>Medium System</th>
<th>Large System</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>E5-2690 2.9 GHz (2 threads per core)</td>
<td>E5-2690 2.9 GHz (2 threads per core)</td>
<td>E5-2690 2.9 GHz (2 threads per core)</td>
</tr>
<tr>
<td>ASAP Server and WebLogic Server</td>
<td>2 cores, 4 GB RAM, 4 x 73 GB (RAID5)</td>
<td>3 cores, 8 GB RAM</td>
<td>4 cores, 16 GB RAM</td>
</tr>
<tr>
<td>Oracle Database</td>
<td>2 cores, 6 GB RAM</td>
<td>3 cores, 12 GB RAM</td>
<td>4 cores, 32 GB RAM</td>
</tr>
<tr>
<td>External Storage for Oracle Datasfiles</td>
<td>NA</td>
<td>14 x 73 GB (RAID 1+0)</td>
<td>28 x 73 GB (RAID 1+0)</td>
</tr>
</tbody>
</table>

Table 3–4 provides the small, medium, and large implementation hardware requirements for ASAP installed on an HP Itanium platform.

Table 3–4 Hardware Requirements for HP Itanium

<table>
<thead>
<tr>
<th>Software Components</th>
<th>Small System</th>
<th>Medium System</th>
<th>Large System</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Itanium2 1.6 GHz</td>
<td>Itanium2 1.6 GHz</td>
<td>Itanium2 1.73 GHz</td>
</tr>
<tr>
<td>ASAP Server and WebLogic Server</td>
<td>2 cores, 4 GB RAM, 4 x 73 GB (RAID5)</td>
<td>8 cores, 8 GB RAM</td>
<td>16 cores, 16 GB RAM</td>
</tr>
<tr>
<td>Oracle Database</td>
<td>2 cores, 6 GB RAM</td>
<td>4 cores, 12 GB RAM</td>
<td>8 cores, 32 GB RAM</td>
</tr>
<tr>
<td>External Storage for Oracle Datasfiles</td>
<td>NA</td>
<td>14 x 73 GB (RAID 1+0)</td>
<td>28 x 73 GB (RAID 1+0)</td>
</tr>
</tbody>
</table>

ASAP Order Control Application Hardware Requirements

The Order Control Application (OCA) client can be deployed on a Windows platform. Ensure that the target machines for the OCA installation meet the following hardware requirements:

- OCA client installer is 45 MB
- Disk space requirements for the following components are 26 MB and include:
  - Java Development Kit (JDK)
  - OCA Client software
  - BI Publisher Report Templates
- x86 32-bit architecture

Software Requirements

Ensure that you have the supported patch levels of the operating environment and additional software components (including Oracle Database Server and Oracle WebLogic Server). For information about patch levels, see "Patch Requirements."

Use the My Oracle Support Certifications tab to access the latest software platform support information. See knowledge article 1491004.1 on the My Oracle Support Help Web site for additional information:

https://support.oracle.com

Table 3–5 lists operating systems and software that support ASAP 7.3.0.2. Table 3–6 lists operating systems and software that support ASAP 7.3.0.0 and 7.3.0.1. Consult with your Oracle Database and UNIX administrators to confirm that you have the required system elements.

Table 3–5 ASAP 7.3.0.2 Software Requirements

<table>
<thead>
<tr>
<th>Component</th>
<th>Product</th>
<th>Version</th>
<th>Patches</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Operating System</td>
<td>Oracle Linux (64-bit)</td>
<td>6.6+ or 7.1+</td>
<td>NA</td>
<td>Oracle recommends the latest available update.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Oracle products certified on Oracle Linux are also supported on Red Hat</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Enterprise Linux due to implicit compatibility between both distributions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Oracle does not run any additional testing on Red Hat Enterprise Linux</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>products.</td>
</tr>
<tr>
<td>Server Operating System</td>
<td>Oracle Solaris on SPARC architecture (64-bit)</td>
<td>10 or 11</td>
<td>NA</td>
<td>Solaris 10 is only supported if you are using Oracle WebLogic Server version 12.1.3.</td>
</tr>
<tr>
<td>Server Operating System</td>
<td>IBM AIX (64-bit)</td>
<td>6.1 TL7+ or 7.1 TL3+</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Server Operating System</td>
<td>Hewlett Packard HP-UX for Itanium (64-bit)</td>
<td>11iv3</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(11.31)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Server Operating System</td>
<td>Oracle VM Server for x86 (to be used with Oracle Linux)</td>
<td>3.0</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Operating System for the Order Control Application</td>
<td>Microsoft Windows on x86 (32-bit or 64-bit) (For OCA only)</td>
<td>7 (SP1) or 10</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>
### Table 3–5 (Cont.) ASAP 7.3.0.2 Software Requirements

<table>
<thead>
<tr>
<th>Component</th>
<th>Product</th>
<th>Version</th>
<th>Patches</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Application Server</strong></td>
<td>Oracle WebLogic Server 12c Enterprise Edition (generic installer)</td>
<td>12.1.3 or 12.2.1.2</td>
<td>NA</td>
<td>ASAP is supported on WebLogic Server 12.1.3 with Java 7 only, and on WebLogic Server version 12.2.1.2 with Java 8 only. The generic version of the WebLogic Server software can be found as a separate downloadable item with the ASAP software. This version does not include a JDK. You must download and install the JDK for your platform as listed in this table before you install WebLogic Server.</td>
</tr>
<tr>
<td><strong>Application Server</strong></td>
<td>Application Server RDBMS Thin JDBC driver (<em>ojdbc6.jar</em>). This driver is an optional WebLogic Server component. You must install this component before you install ASAP. During the installation of the WebLogic Server software, make sure you select <strong>WebLogic JDBC Drivers</strong>.</td>
<td>12.1.3 or 12.2.1.2</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td><strong>Java Standard Edition: JDK for the WebLogic Server</strong></td>
<td>64-bit Oracle JDK For Linux or Solaris</td>
<td>1.7.x or 1.8.x with the latest Critical Patch Update</td>
<td>NA</td>
<td>This Java will be used by WebLogic Server only. For information about the Java version used by the ASAP servers, see &quot;Java 8 Compatibility.&quot;</td>
</tr>
<tr>
<td><strong>Java Standard Edition: JDK for the WebLogic Server</strong></td>
<td>32- or 64-bit IBM JDK For AIX</td>
<td>1.7.0 (SR9 FP6(0)+ or 1.8.0 (SR3 FP10)+</td>
<td>NA</td>
<td>This Java will be used by WebLogic Server only. For information about the Java version used by the ASAP servers, see &quot;Java 8 Compatibility.&quot; The generic WebLogic Server available with the ASAP software from the Oracle Software Delivery Cloud Web site can run in 32-bit or 64-bit mode, depending on the JDK version you use.</td>
</tr>
<tr>
<td>Component</td>
<td>Product</td>
<td>Version</td>
<td>Patches</td>
<td>Notes</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>------------------</td>
<td>---------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Java Standard Edition: JDK for the WebLogic Server</td>
<td>32- or 64-bit HP JDK For HP-UX</td>
<td>1.7.0.19+ or 1.8.0.08+</td>
<td>NA</td>
<td>This Java will be used by WebLogic Server only. For information about the Java version used by the ASAP servers, see &quot;Java 8 Compatibility.&quot; The generic WebLogic Server available with the ASAP software from the Oracle Software Delivery Cloud Web site can run in 32-bit or 64-bit mode, depending on the JDK version you use.</td>
</tr>
<tr>
<td>Database Server</td>
<td>Oracle Database 12c Enterprise Edition for the following platforms:</td>
<td>12.1.0.2</td>
<td>NA</td>
<td>For information about downloading these databases see &quot;Downloading and Installing the Oracle Database Software.&quot;</td>
</tr>
<tr>
<td>Database Client</td>
<td>Oracle Client for the following platforms:</td>
<td>12.1.0.2 (32-bit) or 11.2.0.4 (32-bit)</td>
<td>NA</td>
<td>For information about downloading this client see &quot;Downloading and Installing the Oracle Client Software.&quot; You must install either the 12.1.0.2 or 11.2.0.4 version of the Oracle Database Client software.</td>
</tr>
<tr>
<td>Reporting Solution for the OCA Client</td>
<td>Business Intelligence (BI) Publisher for use with the OCA Client (Thick or Thin)</td>
<td>12.2.1.2</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>IDE</td>
<td>Sun Studio (C/C++ Compiler for creating custom SRP)</td>
<td>12 Update 1</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>OCA Java Web Start Thin Client Browser Support</td>
<td>Microsoft Internet Explorer</td>
<td>11</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>OCA Java Web Start Thin Client Browser Support</td>
<td>Mozilla Firefox ESR 45</td>
<td></td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Java Standard Edition: JDK for OCA thick client</td>
<td>32-bit Oracle JDK For Microsoft Windows</td>
<td>1.7.x or 1.8.x with the latest Critical Patch Update</td>
<td>NA</td>
<td>Download this JDK for the OCA thick client only. The OCA java thin client automatically installs the appropriate JDK when you run the client using Internet Explorer or Firefox.</td>
</tr>
</tbody>
</table>
Table 3–6  ASAP 7.3.0.0 and 7.3.0.1 Software Requirements

<table>
<thead>
<tr>
<th>Component</th>
<th>Product</th>
<th>Version</th>
<th>Patches</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Operating System</td>
<td>Oracle Linux (64-bit)</td>
<td>6.6+ or</td>
<td>NA</td>
<td>Oracle recommends the latest available update. Oracle products certified on Oracle Linux are also certified and supported on Red Hat Enterprise Linux due to implicit compatibility between both distributions. Oracle does not run any additional testing on Red Hat Enterprise Linux products.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7.1+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Server Operating System</td>
<td>Oracle Solaris on SPARC architecture (32-bit and 64-bit)</td>
<td>10 or 11</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Server Operating System</td>
<td>IBM AIX (64-bit)</td>
<td>6.1 TL7+</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Server Operating System</td>
<td>Hewlett Packard HP-UX for Itanium (64-bit)</td>
<td>11i V3</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Server Operating System</td>
<td>Oracle VM for use with Oracle Linux</td>
<td>3.0</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Operating System for the Order Control Application</td>
<td>Microsoft Windows on x86 (32-bit) (For OCA only)</td>
<td>7 (SP1)</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Application Server</td>
<td>Oracle WebLogic Server 12c Enterprise Edition (generic installer)</td>
<td>12.1.2 or 12.1.3</td>
<td>NA</td>
<td>The generic version of the WebLogic Server software can be found as a separate downloadable item with the ASAP software. This version does not include a JDK. You must download and install the JDK for your platform as listed in this table before you install WebLogic Server.</td>
</tr>
<tr>
<td>Application Server</td>
<td>Application Server RDBMS Thin JDBC driver (ojdbc6.jar). This driver is an optional WebLogic Server component. You must install this component before you install ASAP. During the installation of the WebLogic Server software, make sure you select WebLogic JDBC Drivers.</td>
<td>12.1.3</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Java Standard Edition: JDK for the WebLogic Server</td>
<td>32- or 64-bit Oracle JDK For Linux or Solaris</td>
<td>1.7.x with the latest Critical Patch Update</td>
<td>NA</td>
<td>This Java will be used by WebLogic Server only. The generic WebLogic Server available with the ASAP software from the Oracle Software Delivery Cloud Web site can run in 32-bit or 64-bit mode, depending on the JDK (Java SE) version you use.</td>
</tr>
<tr>
<td>Component</td>
<td>Product</td>
<td>Version</td>
<td>Patches</td>
<td>Notes</td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td><strong>Java Standard Edition: JDK for the WebLogic Server</strong></td>
<td>32- or 64-bit IBM JDK For AIX</td>
<td>1.7</td>
<td>NA</td>
<td>This Java will be used by WebLogic Server only. The generic WebLogic Server available with the ASAP software from the Oracle Software Delivery Cloud Web site can run in 32-bit or 64-bit mode, depending on the JDK (Java SE) version you use.</td>
</tr>
<tr>
<td><strong>Java Standard Edition: JDK for the WebLogic Server</strong></td>
<td>32- or 64-bit HP JDK For HP-UX</td>
<td>1.7.x</td>
<td>NA</td>
<td>This Java will be used by WebLogic Server only. The generic WebLogic Server available with the ASAP software from the Oracle Software Delivery Cloud Web site can run in 32-bit or 64-bit mode, depending on the JDK (Java SE) version you use.</td>
</tr>
<tr>
<td><strong>Database Server</strong></td>
<td>Oracle Database 12c: Enterprise Edition for the following platforms:</td>
<td>12.1.0.2</td>
<td>NA</td>
<td>For information about downloading these databases see &quot;Downloading and Installing the Oracle Database Software.&quot;</td>
</tr>
<tr>
<td><strong>Database Client</strong></td>
<td>Oracle Client for the following platforms:</td>
<td>12.1.0.2 (32-bit) or 11.2.0.4 (32-bit)</td>
<td>NA</td>
<td>For information about downloading this client see &quot;Downloading and Installing the Oracle Client Software.” You must install either the 12.1.0.2 or 11.2.0.4 version of the Oracle Database Client software.</td>
</tr>
<tr>
<td><strong>Reporting Solution for the OCA Client</strong></td>
<td>Business Intelligence (BI) Publisher for use with the OCA Client (Thick or Thin)</td>
<td>11.1.1</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td><strong>IDE</strong></td>
<td>Sun Studio (C/C++ Compiler for creating custom SRP)</td>
<td>12 Update 1</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td><strong>OCA Java Web Start Thin Client Browser Support</strong></td>
<td>Microsoft Internet Explorer</td>
<td>9, 10, or 11</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td><strong>OCA Java Web Start Thin Client Browser Support</strong></td>
<td>Mozilla Firefox</td>
<td>3.5 or higher</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td><strong>Java Standard Edition: JDK for OCA thick client</strong></td>
<td>32-bit Oracle JDK For Microsoft Windows</td>
<td>1.7.x with the latest Critical Patch Update</td>
<td>NA</td>
<td>Download this JDK for the OCA thick client only. The OCA java thin client automatically installs the appropriate JDK when you run the client using Internet Explorer or Firefox.</td>
</tr>
</tbody>
</table>
Design Studio Installation and Version Compatibility

For Oracle Communications Design Studio plug-in installation information, see *Design Studio Installation Guide*.

See *Design Studio Product Compatibility Matrix* (included in the Design Studio documentation) for Design Studio for Order and Service Management compatibility information.

Java 8 Compatibility

Java 7 is bundled with the ASAP installer and will be used by default for the ASAP servers. As of ASAP 7.3.0.2, however, ASAP is also fully compatible with Java 8. To use Java 8, you must upgrade it according to the instructions in knowledge article 1469854.1, "How To Upgrade The JDK Used By ASAP To A Different Version," available on the Oracle support Web site:

https://support.oracle.com

The version of Java used by the ASAP servers is completely independent of the version of Java used by WebLogic Server. For example, you can use Java 8 for WebLogic Server 12.2.1.2 even if the ASAP servers are using Java 7.

Information Requirements

During ASAP installation, you are required to enter configuration values, such as host names and port numbers. This section describes the information that you will be required to provide during the installation process. You define some of these configuration values when you install and configure the Oracle database, client, and WebLogic Server.

Oracle Database Information

Table 3–7 lists the Oracle Database information that you are required to provide during the ASAP installation process.

<table>
<thead>
<tr>
<th>Installer Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directory Name:</td>
<td>The base directory of the Oracle Database Client software. For example:</td>
</tr>
<tr>
<td></td>
<td>/u01/app/oracle/db/12.1.0.2.0/client_1</td>
</tr>
<tr>
<td></td>
<td>The ASAP Installer requires that you enter this value.</td>
</tr>
<tr>
<td>Name of RDBMS Server</td>
<td>The tnsnames.ora entry name of the database instance on which the ASAP schemas</td>
</tr>
<tr>
<td></td>
<td>will be installed (for example ASAPDB).</td>
</tr>
<tr>
<td></td>
<td>The ASAP Installer requires that you enter this value.</td>
</tr>
<tr>
<td>Oracle Server DBA User Name</td>
<td>User name of the Oracle DBA for the predefined SYS user account.</td>
</tr>
<tr>
<td></td>
<td>The ASAP Installer requires that you enter this value.</td>
</tr>
</tbody>
</table>
Table 3–7 (Cont.) Database Information Required in the ASAP Installation Process

<table>
<thead>
<tr>
<th>Installer Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle Server DBA Password</td>
<td>Password of the Oracle DBA for the predefined SYS user account. The ASAP Installer requires that you enter this value.</td>
</tr>
<tr>
<td>System Admin User Name</td>
<td>User name of the predefined Oracle database SYSTEM user account. You need this account to run ora_system_procs.sh script after you install ASAP for the first time.</td>
</tr>
<tr>
<td>System Admin Password</td>
<td>Password for the predefined Oracle database SYSTEM user account. You need this password to run ora_system_procs.sh script after you install ASAP for the first time.</td>
</tr>
</tbody>
</table>

Table 3–8 lists schema details that you are required to provide during installation.

Table 3–8 Schema user Information

<table>
<thead>
<tr>
<th>Installer Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| Data Segment        | You must create one or more tablespaces and associated data files for the ASAP schemas (SARM, CTRL, ADM, SRP, and NEP) before you install ASAP. The ASAP installer requires you to select tablespaces in which to create data and index segments for each ASAP schema. For example  
  - ASAP_DATA  
  - ASAP_INDEX  
  The sample values provided here show one tablespace for all data and one for all index segments, however this is not mandatory. For example, you can create one tablespace for all the segments or individual table spaces for every data and index segments for every server (see "Database and Client Planning"). |
| Index Segment       |                                                                             |
| TMP_TS              | You must select a temporary tablespace, for example, TEMP. The ASAP Installer requires that you enter this value. |
| Server Port Numbers | The ASAP Installer automatically generates ports for ASAP servers and checks that these ports do not conflict with other ASAP environments. However, you can also select your own values during the installation process. You can select ports for the following servers (where envID represents you ASAP environment ID):  
  - SARM_envID  
  - CTRL_envID  
  - SRP_envID  
  - NEP_envID  
  - ADM_envID  
  - OCA_envID  
  - JSRP_envID - Sending WO  
  - JSRP_envID - Receiving WO event  
  - NEP_envID  
  - NEP_envID - jListener |

For more information about creating tablespaces, see "About Creating and Configuring the Oracle Database."
WebLogic Connection Information

Table 3–9 lists WebLogic Server connection details that you are required to provide during installation.

<table>
<thead>
<tr>
<th>Information Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host Name of Oracle WebLogic Server</td>
<td>You provide the host name for the WebLogic Server instance to define it uniquely for the specific purpose of installing, and working with, ASAP (for example, localhost). The ASAP Installer requires that you enter this value.</td>
</tr>
<tr>
<td>Port Number of Oracle WebLogic Server</td>
<td>This is the port number assigned to this specific the WebLogic Server (for example 7001). The ASAP Installer requires that you enter this value.</td>
</tr>
<tr>
<td>User Name of Oracle WebLogic Server Administrator</td>
<td>Your WebLogic Server user name. You define this name when create an Oracle WebLogic Server domain. The ASAP Installer requires that you enter this value.</td>
</tr>
<tr>
<td>Password of Oracle WebLogic Server Administrator</td>
<td>You define this password along with the user name when you create an Oracle WebLogic Server domain. The ASAP Installer requires that you enter this value.</td>
</tr>
</tbody>
</table>

Patch Requirements

This section documents required software patches for ASAP 7.3.

New patches and security updates should be applied as they become available (see "About Critical Patch Updates" for more information).

Oracle WebLogic Server 12c Patches

You must download the latest WebLogic server patch. Go to the Oracle support Web site to download patches:

https://support.oracle.com

Use the WebLogic Server Oracle Smart Update tool to apply the downloaded patch. For more information, see the discussion on applying and managing patches in the Oracle Smart Update documentation on the Oracle Technology Network Web site:

http://download.oracle.com/docs/cd/E14759_01/index.htm

About Critical Patch Updates

Oracle provides a Critical Patch Update Advisory Web page that is updated on a quarterly basis. ASAP supports all Critical Patch Updates. Install all applicable Critical Patch Updates as soon as possible.

To check for Critical Patch Updates, find out about security alerts, and enable email notifications about Critical Patch Updates, see the Security topic on the Oracle Technology Network Web site at:

http://www.oracle.com/technetwork/topics/security/whatsnew/index.html
This chapter describes how to configure operating systems supported by Oracle Communications ASAP.

**About Configuring the Operating System**

ASAP can be installed on Oracle Solaris, Oracle Linux, IBM AIX, or HP-UX Itanium. This section describes procedures relating to configuring each operating system and other required applications for use with the ASAP server software.

Before proceeding, the appropriate version of the UNIX operating system must be installed on any machines that will be running ASAP server software, and the machines must be configured to be part of your network. See "Software Requirements" for a list of supported operating systems.

---

**Note:** In order to install and configure the UNIX environment for ASAP as described in this section, you must be familiar with the UNIX operating system. You should know how to configure users and groups, understand shells, and be able to manipulate file and directory permissions. You also need to understand a number of other UNIX system administration concepts.

---

**Configuring a UNIX ASAP Group and User**

To support installation and running of ASAP, each ASAP environment that you create must have at least one dedicated UNIX ASAP group and one dedicated ASAP user account within that group. You may choose to have additional ASAP users in the ASAP group, depending on your specific implementation.

Prior to installing ASAP, you must create a UNIX ASAP group and an ASAP user. The ASAP group must be the primary group of the ASAP user.

**Creating the UNIX ASAP Group**

This group is required to coordinate access to files that are needed to develop and test ASAP. All UNIX users of ASAP must belong to this group.

---

**Note:** Oracle recommends that you use UNIX groups to coordinate the read/write access required for ASAP. You can use any other name for the group that is appropriate for the project, as long as the ASAP and environment users belong to that group.
Create a group for ASAP with the following members:

- ASAP user account
- root

Creating the UNIX ASAP User Account

Each ASAP environment must have a dedicated UNIX user account. For development purposes, you may have multiple ASAP environments. In this case, you must define multiple users. In a production environment, you generally have only one environment and therefore only one group and user.

Oracle recommends for configuration if you set the home directory of the ASAP user to be the same directory where you plan to install the ASAP software. Take this into account when you set up the home directory.

Create the ASAP user and password, and make the user’s primary group the newly created ASAP group. Additional ASAP user accounts may be needed depending on your implementation.

---

**Note:** You must use this ASAP user account to create the directory where ASAP will be installed. The installer uses the ASAP user account to access the UNIX system and must have write privileges on the destination install directory.

---

Checking /tmp and /var/tmp Directory Status

You must ensure that the directories `/tmp` and `/var/tmp` have their permissions set so that they are writable by all ASAP users. To do this:

1. Check the permissions on the `/tmp` directory:

   ```
   cd /
   ls -l | grep tmp
   
   Check that the permissions string has the appropriate settings for the ASAP group. Use chmod to update the permissions if needed. For example:
   
   ```chmod a+rwx tmp```

2. Check the permissions on the `/var/tmp` directory.

   ```
   cd /var
   ls -l | grep tmp
   ```

Configuring HP-UX Itanium User Space Memory Allocator

ASAP uses the MallocNextGen software for HP-UX Itanium that provides an implementation of the user space memory allocator. You must download and install this software if you are using the HP-UX Itanium platform.

To download and configure the MallocNextGen software:

1. Go to the following HP website:

   ```
   ```
2. Download and install the MallocNextGen software.

---

**Note:** Make sure that you install the libmallocng.so library in the default location provided by the MallocNextGen installer: /usr/lib/hpux32/. The ASAP installer uses this default path when it creates the Environment_Profile during ASAP installation, as shown in the following example:

```
if [ -a "/usr/lib/hpux32/libmallocng.so" ]; then export LD_PRELOAD="/usr/lib/hpux32/libmallocng.so"
```

---

## Configuring the Kernel

There are certain UNIX kernel configuration parameters that require tuning so that both the database and ASAP function correctly. The most important aspect of UNIX kernel configuration is to provide an environment in which the database server can handle hundreds of concurrent connections.

The following are the principal areas that require tuning:

- **Shared memory**
  
  Oracle Database requires the ability to share large amounts of memory. Typically, the potential shared memory size should be 100 MB or greater.

- **Open files per process**
  
  The RDBMS server is expected to manage a large number of concurrent connections. These connections constitute open file descriptors to the RDBMS Server. The maximum number of file descriptors dictates the maximum number of concurrent connections that can be managed by the RDBMS Server. To support multiple ASAP environments, the UNIX kernel should be configured to support an appropriately large number of open files per process.

  **Note:** Consult with your operating system administrator to determine a value.

In addition, some operating systems use the concept of soft and hard file limits. Ensure that both limits are set appropriately.

- **Asynchronous I/O**
  
  Asynchronous I/O is required for Solaris platforms.

- **Inter process communication**
  
  Inter Process Communication (IPC) modules are implemented as dynamically loadable modules on the Oracle Solaris system. By default, the Solaris operating system loads the IPC subsystem into memory on demand. Separate loadable UNIX kernel modules are available for shared memory, message queues, and semaphores. These modules must be loaded with the kernel at boot time.

To update the UNIX kernel configuration:

1. Using the information below and in "Configuring the Kernel" update the UNIX kernel parameters.

2. Reboot the machine after you have made the changes.

For more information, see the ASAP Administrator's Guide.
Note: When ASAP is deployed on the same platform as the Oracle Database or WebLogic server instance, use the highest kernel value recommended in either ASAP, Oracle Database, or WebLogic Server documentation.

Setting Oracle Solaris Kernel Parameters

This section lists the Oracle Solaris Kernel parameters.

Oracle Solaris 10: /etc/system File:

- set pt_cnt=254
- set rstchown=0
- set maxuprc=1024
- set PCIe:pcie_aer_ce_mask=0x1
- set segkmem_lpsize=0x400000
- set rlim_fd_cur=8192
- set rlim_fd_max=8192

The following resource control values should be set:

- Set process.max-sem-nsems to 1024
- Set project.max-shm-ids to 300
- Set project.max-sem-ids to 512

Refer to the Solaris 10 documentation for details about how to use resource control to set kernel parameters.

Setting Linux Kernel Parameters

Oracle recommends that the kernel parameters shown in Table 4–1 are set to values greater than or equal to the value shown.

The procedure following the table describes how to verify and set the values manually.

Note: The kernel parameter and shell limit values shown in the following section are recommended values, and should be modified after installing Oracle 12c Client for Linux and before installing ASAP.

Table 4–1 lists and describes the recommended kernel parameter settings for supported Linux systems.
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Recommended Value</th>
<th>File and Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>semmsl</td>
<td>250</td>
<td>/proc/sys/kernel/sem</td>
</tr>
</tbody>
</table>
| semms     | 3200              | This file contains the four numbers that define the limits of the System V IPC semaphores. These fields are:  
|           |                   | ■ semmsl: The maximum number of semaphores per semaphore set.  
|           |                   | ■ semms: The system-wide limit on the number of semaphores in all semaphore sets.  
|           |                   | ■ semopm: The maximum number of operations that may be specified in a semop(2) call.  
|           |                   | ■ semmpi: The system-wide limit on the maximum number of semaphore identifiers.  
| semopm    | 32                |                      |
| semmpi    | 128               |                      |

| shmall    | 268435456         | /proc/sys/kernel/shmall  |
|           |                   | This file contains the system-wide limits on the total number of pages of System V IPC shared memory.  

| shmax     | 4294967295        | /proc/sys/kernel/shmax  |
|           |                   | This file can be used to query and set the run-time limit on the maximum System V IPC shared memory segment size that can be created. Oracle recommends 4 GB for optimum system performance.  

| msgmax    | 65536             | /proc/sys/kernel/msgmax  |
|           |                   | The msgmax tunable specifies the maximum allowable size of any single message in a System V IPC message queue, in bytes. msgmax must be no larger than msgmnb (the size of the queue).  

| msgmnb    | 65536             | /proc/sys/kernel/msgmnb  |
|           |                   | The msgmnb tunable specifies the maximum allowable total combined size of all messages queued in a single System V IPC message queue at one time, in bytes. The default is 16384.  

| msgmini   | 2878              | /proc/sys/kernel/msgmini  |
|           |                   | The msgmini tunable specifies the maximum number of system-wide System IPC message queue identifiers (one per queue). The default is 16.  

| threads_max | 131072         | /proc/sys/kernel/threads-max  |
|            |               | Gets and sets the limit on the maximum number of running threads system-wide.  

| file-max  | 327679          | /proc/sys/fs/file-max  |
|           |                 | This file defines a system-wide limit on the number of open files for all processes.  

Table 4–2 provides the commands to display the current values of the kernel parameters. Make a note of these values and identify any values that you must change.

Table 4–2  Commands to Display Kernel Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>semmsl, semmns, semopm, and</td>
<td># /sbin/sysctl -a</td>
</tr>
<tr>
<td>semni</td>
<td>Displays the value of the semaphore parameters in the order listed.</td>
</tr>
<tr>
<td>shmall, shmax, and shmmni</td>
<td># /sbin/sysctl -a</td>
</tr>
<tr>
<td></td>
<td>Displays the details of the shared memory segment sizes.</td>
</tr>
<tr>
<td>msgmnb, msgmni, and msgmax</td>
<td># /sbin/sysctl -a</td>
</tr>
<tr>
<td></td>
<td>Displays the details of the System V IPC message queue parameters.</td>
</tr>
<tr>
<td>threads-max</td>
<td># /sbin/sysctl -a</td>
</tr>
<tr>
<td></td>
<td>Displays the maximum number of threads possible system-wide.</td>
</tr>
<tr>
<td>file-max</td>
<td># /sbin/sysctl -a</td>
</tr>
<tr>
<td></td>
<td>Displays the maximum number of open files throughout the system.</td>
</tr>
<tr>
<td>queues_max</td>
<td># /sbin/sysctl -a</td>
</tr>
<tr>
<td></td>
<td>Displays the maximum number of message queues allowed on the system.</td>
</tr>
<tr>
<td>msgsize_max</td>
<td># /sbin/sysctl -a</td>
</tr>
<tr>
<td></td>
<td>Displays the maximum message size value.</td>
</tr>
<tr>
<td>msg_max</td>
<td># /sbin/sysctl -a</td>
</tr>
<tr>
<td></td>
<td>Displays the maximum number of messages in a queue value.</td>
</tr>
</tbody>
</table>
Note: Include lines for kernel parameters values that you want to change. For the semaphore (kernel.sem) parameter, you must specify all values. However, if any of the current values are larger than the recommended values, then specify the larger value.

kernel.sem = 250 32000 32 128
kernel.shmall = 268435456
kernel.shmmax = 4294967295
kernel.msgmax = 65536
kernel.msgmnb = 65536
kernel.msgmni = 2878
kernel.threads-max = 131072
fs.file-max = 327679
fs.mqueue.queues_max = 256
fs.mqueue.msgsize_max = 256
fs.mqueue.msg_max = 32767

By specifying the values in the /etc/sysctl.conf file, these values persist when you restart the system.

2. Enter the following command to change the current values of the kernel parameters:

# /sbin/sysctl -p

Review the output from the command to verify that the values are correct. If the values are incorrect, edit the /etc/sysctl.conf file, then enter this command again.

3. Enter the command /sbin/sysctl -a to confirm the values are set correctly.

4. After updating the values of the kernel parameters in the /etc/sysctl.conf file, either restart the computer, or run the command sysctl -p to make the changes in the /etc/sysctl.conf file available in the active kernel memory.

Setting HP-UX Itanium Kernel Parameters

This section lists the Hewlett Packard HP-UX kernel parameters.

<table>
<thead>
<tr>
<th>Name</th>
<th>Recommended Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRMSGSZ</td>
<td>65535</td>
<td>--</td>
</tr>
<tr>
<td>aio_listio_max</td>
<td>512</td>
<td>--</td>
</tr>
<tr>
<td>aio_physmem_pct</td>
<td>20</td>
<td>--</td>
</tr>
<tr>
<td>aio_max_ops</td>
<td>4096</td>
<td>--</td>
</tr>
<tr>
<td>create_fastlinks</td>
<td>1</td>
<td>--</td>
</tr>
<tr>
<td>cmc_plat_poll</td>
<td>15</td>
<td>--</td>
</tr>
<tr>
<td>dbc_max_pct</td>
<td>5</td>
<td>--</td>
</tr>
<tr>
<td>dbc_min_pct</td>
<td>2</td>
<td>--</td>
</tr>
<tr>
<td>dnlc_hash_locks</td>
<td>512</td>
<td>--</td>
</tr>
<tr>
<td>fs_async</td>
<td>1</td>
<td>--</td>
</tr>
<tr>
<td>max_async_ports</td>
<td>8192</td>
<td>--</td>
</tr>
</tbody>
</table>
### Table 4–3 (Cont.) HP-UX for Itanium Kernel Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Recommended Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>max_thread_proc</td>
<td>2048</td>
<td>Maximum number of threads allowed in each process.</td>
</tr>
<tr>
<td>maxdsiz</td>
<td>0XC0000000</td>
<td>Maximum size (in bytes) of the data segment for any user process.</td>
</tr>
<tr>
<td>maxdsiz_64bit</td>
<td>0X400000000</td>
<td>Maximum size (in bytes) of the data segment for 64-bit processes.</td>
</tr>
<tr>
<td>maxfiles</td>
<td>4098</td>
<td>The soft limit for the number of files a process is allowed to have open simultaneously.</td>
</tr>
<tr>
<td>maxfiles_lim</td>
<td>4098</td>
<td>Hard limit for the number of files that a process is allowed to have open simultaneously.</td>
</tr>
<tr>
<td>dbc_min_pct</td>
<td>5</td>
<td>The percentage of physical memory to be used for the buffer cache. Together with setting nbuf and bufpages to 0, these values activate dynamic buffer cache allocation.</td>
</tr>
<tr>
<td>dbc_max_pct</td>
<td>10</td>
<td>--</td>
</tr>
<tr>
<td>maxssiz</td>
<td>0X8000000</td>
<td>Maximum size (in bytes) of the stack for any user process.</td>
</tr>
<tr>
<td>maxssiz_64bit</td>
<td>0X100000000</td>
<td>Maximum size (in bytes) of the stack for 64-bit processes.</td>
</tr>
<tr>
<td>maxswapchunks</td>
<td>4096</td>
<td>Maximum number of swap chunks.</td>
</tr>
<tr>
<td>maxtsiz</td>
<td>0X400000000</td>
<td>Maximum size (in bytes) of the text segment for any user process.</td>
</tr>
<tr>
<td>maxuprc</td>
<td>1024</td>
<td>Limits the maximum number of concurrent user processes per user.</td>
</tr>
<tr>
<td>mesg</td>
<td>1</td>
<td>Enables Sys V messages at boot time.</td>
</tr>
<tr>
<td>msgmap</td>
<td>(2+msgtql)</td>
<td>Number of entries in the System V IPC message space resource map.</td>
</tr>
<tr>
<td>msgmax</td>
<td>8192</td>
<td>Maximum System V IPC message size in bytes.</td>
</tr>
<tr>
<td>msgmnb</td>
<td>65536</td>
<td>Maximum number of bytes on a single System V IPC message queue.</td>
</tr>
<tr>
<td>msgmni</td>
<td>(NPROC)</td>
<td>Maximum number of permitted system-wide System V IPC message queues (IDs).</td>
</tr>
<tr>
<td>msgseg</td>
<td>32767</td>
<td>Number of system V IPC message segments in the system.</td>
</tr>
<tr>
<td>msgszsz</td>
<td>128</td>
<td>Number of bytes in a System V IPC message segment.</td>
</tr>
<tr>
<td>msgtql</td>
<td>(NPROC)</td>
<td>Maximum number of System V IPC messages in the system at any time.</td>
</tr>
<tr>
<td>ncallout</td>
<td>(NPROC + 16)</td>
<td>Maximum number of pending timeouts. Calculated as nkthread + the number of I/O devices connected to the machine.</td>
</tr>
<tr>
<td>nfile</td>
<td>(15 * NPROC + 2048)</td>
<td>Maximum number of files that can be open simultaneously on the system at any given time. Calculate as follows: ((16^2*(4200+16+maxusers)/10)+32+2^2*(npty+nstrpty+nstrtel))</td>
</tr>
</tbody>
</table>
Table 4–3 (Cont.) HP-UX for Itanium Kernel Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Recommended Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>nflocks</td>
<td>NPROC (at least 4096)</td>
<td>Maximum combined total number of file locks that are available system-wide to all processes at any given time.</td>
</tr>
<tr>
<td>ninode</td>
<td>(8 * NPROC + 2048)</td>
<td>Maximum number of open inodes that can be in memory. Calculate as follows: 4200 + 48 + maxusers + (2 * npty)</td>
</tr>
<tr>
<td>nkthread</td>
<td>2 * NPROC</td>
<td>Limits the number of threads allowed to run simultaneously.</td>
</tr>
<tr>
<td>nproc</td>
<td>8192</td>
<td>Limits the number of processes allowed to exist simultaneously.</td>
</tr>
<tr>
<td>npty</td>
<td>2000</td>
<td>--</td>
</tr>
<tr>
<td>nstrpty</td>
<td>2000</td>
<td>--</td>
</tr>
<tr>
<td>nstrtel</td>
<td>2000</td>
<td>--</td>
</tr>
<tr>
<td>semmni</td>
<td>512</td>
<td>Number of system V IPC system-wide semaphore identifiers.</td>
</tr>
<tr>
<td>semmsl</td>
<td>1043</td>
<td>Maximum number of Semaphores Per ID.</td>
</tr>
<tr>
<td>semmni</td>
<td>512</td>
<td>--</td>
</tr>
<tr>
<td>semmns</td>
<td>4096</td>
<td>Number of system V IPC system-wide semaphores.</td>
</tr>
<tr>
<td>semmmu</td>
<td>(NPROC - 4)</td>
<td>Maximum number of System V IPC undo structures for processes.</td>
</tr>
<tr>
<td>semmsl</td>
<td>1024</td>
<td>Number of semaphores in a semaphore set</td>
</tr>
<tr>
<td>semvmx</td>
<td>32767</td>
<td>Maximum value of any single System V IPC semaphore.</td>
</tr>
<tr>
<td>shmmem</td>
<td>1</td>
<td>Enable or disable System V shared memory.</td>
</tr>
<tr>
<td>shmmmax</td>
<td>0X1000000000 (or up to physical memory size)</td>
<td>Maximum size for a System V shared memory segment.</td>
</tr>
<tr>
<td>shmmni</td>
<td>300</td>
<td>Number of System V shared memory segment identifiers in the system.</td>
</tr>
<tr>
<td>shmseg</td>
<td>120</td>
<td>Maximum number of System V shared memory segments per process.</td>
</tr>
<tr>
<td>swapmem_on</td>
<td>1</td>
<td>Allows physical memory size to exceed the available swap space.</td>
</tr>
<tr>
<td>vps_ceiling</td>
<td>64</td>
<td>--</td>
</tr>
</tbody>
</table>
Installing and Configuring Oracle Database and Client

This chapter describes the tasks relating to the Oracle database that you perform before installing Oracle Communications ASAP.

About Creating and Configuring the Oracle Database

The ASAP Installer checks for a database to connect to during the installation process. Ensure that a database is up and running before you start installing ASAP. If you already have a database up and running, create one or more tablespaces for the ASAP schemas data and index segments.

For information about installing Oracle Database, see the Oracle Database installation documentation.

Oracle recommends that the installation and configuration of Oracle Database be performed by an experienced Oracle Database Administrator (DBA). In addition, some UNIX administrative skills are required to uncompress software, create users and groups, and similar tasks.

Downloading and Installing the Oracle Database Software

Oracle requires that you use the 64-bit Oracle database software.

To download and install the 64-bit Oracle database software:

1. Sign on to the My Oracle Support web site:
   https://support.oracle.com/CSP/ui/flash.html

2. Click the Patches and Updates link.
   The Patch Search screen appears.

3. In the Patch Name or Number field, enter 17694377 and click Search.
   The patchset list appears.

4. Select Patch 17694377: 12.1.0.2.0 PATCH SET FOR ORACLE DATABASE SERVER for the 64-bit version of your platform.

5. Click Download.
   The File Download screen appears.
6. Click **p17694377_121020_platform_1of8.zip** and **p17694377_121020_platform_2of8.zip** for the database (where platform is the 64-bit version of the operating system).

   Specifically, the files to download for each platform are:

<table>
<thead>
<tr>
<th>Select Platform (64-bit)</th>
<th>Download Files</th>
</tr>
</thead>
</table>
   | Linux x86-64             | p17694377_121020_Linux-x86-64_1of8.zip  
                           | p17694377_121020_Linux-x86-64_2of8.zip  |
   | Oracle Solaris on SPARC (64-bit) | p17694377_121020_SOLARIS64_1of8.zip  
                                   | p17694377_121020_SOLARIS64_2of8.zip  |
   | HP-UX Itanium            | p17694377_121020_HPUX-IA64_1of8.zip  
                           | p17694377_121020_HPUX-IA64_2of8.zip  |
   | IBM AIX on POWER Systems (64-bit) | p17694377_121020_AIX64-5L_1of8.zip  
                                       | p17694377_121020_AIX64-5L_2of8.zip  |

   A download progress screen appears.

7. Install the database according to an Oracle database installation guide applicable to your installation requirements.

---

**Downloading and Installing the Oracle Client Software**

Oracle requires that you use the 32-bit Oracle Client software, even if ASAP is installed on a 64-bit platform. You must install either the 12.1.0.2 or 11.2.0.4 version of the Oracle Client software.

**Downloading Oracle Client Software for Oracle Client 12.1.0.2**

To download and install the 32-bit Oracle Client software for Oracle Client 12.1.0.2:

1. Sign on to the My Oracle Support web site:
   
   [https://support.oracle.com/CSP/ui/flash.html](https://support.oracle.com/CSP/ui/flash.html)

2. Click the **Patches and Updates** link.

   The Patch Search screen appears.

3. In the **Patch Name** or Number field, enter **17694377** and click **Search**.

   The patchset list appears.

4. Select **Patch 17694377: 12.1.0.2.0 PATCH SET FOR ORACLE DATABASE SERVER** for the 32-bit version of your platform (even if your platform is 64-bit).

5. Click **Download**.

   The File Download screen appears.

6. Click one of the following files for the Oracle database client:

<table>
<thead>
<tr>
<th>Select Platform (32-bit)</th>
<th>Download File</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linux x86</td>
<td>p17694377_121020_LINUX.zip</td>
</tr>
<tr>
<td>Oracle Solaris on SPARC (32-bit)</td>
<td>p17694377_121020_SOLARIS.zip</td>
</tr>
</tbody>
</table>
A download progress screen appears.

7. Install the client according to the installation instructions in the downloaded ZIP file.

---

**Note:** Oracle recommends using the Administrator Installation Type for your client.

---

**Note:** Oracle Database defines NLS (National Language Support) values to set up language-specific databases. Ensure that the Oracle Database server and the Oracle Database client use the same NLS_LANG settings. This improves performance because there is no translation of character sets.

---

8. Run the Net Configuration Assistant (netca) and perform Local Net Service Name configuration, to ensure that the database client can connect to your database server.

9. After you install Oracle Client 12.1.0.2, go to the Oracle_Client_HOME/lib directory and add a libnnz11.so symbolic link:

   ```
   cd Oracle_Client_HOME/lib
   ln -s libnnz12.so libnnz11.so
   ```

---

**Note:** The ASAP installation will not work if you do not add libnnz11.so to the Oracle_Client_HOME/lib directory of the Oracle 12c client.

---

**Downloading Oracle Client Software for Oracle Client 11.2.0.4**

To download and install the 32-bit Oracle Client software for Oracle Client 11.2.0.4:

1. Sign on to the My Oracle Support web site:
   
   [https://support.oracle.com/CSP/ui/flash.html](https://support.oracle.com/CSP/ui/flash.html)

2. Click the Patches and Updates link.
   
   The Patch Search screen appears.

3. In the Patch Name or Number field, enter 13390677 and click Search.
   
   The patchset list appears.

4. Select Patch 13390677: 11.2.0.4.0 PATCH SET FOR ORACLE DATABASE SERVER for the 32-bit version of your platform (even if your platform is 64-bit).

5. Click Download.
   
   The File Download screen appears.
6. Click one of the following files for the Oracle database client:

<table>
<thead>
<tr>
<th>Select Platform (32-bit)</th>
<th>Download File</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linux x86</td>
<td>p13390677_112040_LINUX_4of7.zip</td>
</tr>
<tr>
<td>Oracle Solaris on SPARC (32-bit)</td>
<td>p13390677_112040_SOLARIS_1of2.zip</td>
</tr>
<tr>
<td>HP-UX Itanium (32-bit)</td>
<td>p13390677_112040_HPUX-IA32_1of2.zip</td>
</tr>
<tr>
<td>IBM AIX on POWER Systems (32-bit)</td>
<td>p13390677_112040_AIX_1of2.zip</td>
</tr>
</tbody>
</table>

A download progress screen appears.

7. Install the client according to the installation instructions in the downloaded ZIP file.

**Note:** Oracle recommends using the Administrator Installation Type for your client.

**Note:** Oracle Database defines NLS (National Language Support) values to set up language-specific databases. Ensure that the Oracle Database server and the Oracle Database client use the same NLS_LANG settings. This improves performance because there is no translation of character sets.

8. Run the Net Configuration Assistant (netca) and perform Local Net Service Name configuration, to ensure that the database client can connect to your database server.

---

**Installing, Creating, and Configuring an ASAP Database Instance (Single or Oracle RAC)**

This section describes the overall workflow for creating and configuring a single database instance or an Oracle Real Application Clusters (RAC) database instance for use with ASAP.

To install, create, and configure Oracle RAC or Single database instance for ASAP:

1. After installing the Oracle database and client, apply any appropriate software patches.

**Note:** See "Patch Requirements" for the required software patches.

Some of the scripts that run with Oracle Database patch installation can take several hours to complete. Plan accordingly, and ensure that all patch scripts run correctly to completion and return to the UNIX prompt.

2. Create a database instance.
3. Ensure that you have determined the database tablespace and Oracle Database Server configuration that you require. See "Configuring the Oracle Database Connection Mode."

4. Start the Oracle Database instance.

5. Create one or more ASAP tablespaces and redo log files. (Oracle recommends that your Oracle DBA create the ASAP tablespaces.)

   For more information, see "Recommended Tablespace and Redo Log Sizes for ASAP" and "Creating Oracle Database Tablespaces, Tablespace User, and Granting Permissions."

6. Switch to an Oracle Database admin account (for example, SYS) and execute the `ora_system_procs.sh` script to populate the common PL/SQL functions used by multiple instances of ASAP.

   **Note:** The `ASAP_src/asap_utils/ora_system_procs.sh` script should not be run more than once against a single Oracle Database server.

7. Verify the Oracle Database installation and configuration.

---

### Configuring the Oracle Database Connection Mode

Configure your Oracle database to accept connections from ASAP using the dedicated connection mode. For each Oracle database connection, a dedicated server process is created which does work on behalf of the ASAP user session. All interactions with the Oracle Shared Global Area (SGA) and data files are done through this dedicated server processes. A server process is started for every user session connecting to the database.

### Configuring the Oracle Database Maximum Memory Target

*Table 5–1* provides the recommended Oracle database maximum memory target for the automatic memory manager (AMM). You can set this value when you create your database using the `dbca` utility.

<table>
<thead>
<tr>
<th>System Size</th>
<th>Automatic Maximum Memory Target</th>
<th>Number of Sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>4 GB</td>
<td>100-120 per development instance.</td>
</tr>
<tr>
<td>Medium</td>
<td>8 GB</td>
<td>800 per high performance production ASAP instance.</td>
</tr>
<tr>
<td>Large</td>
<td>16 GB</td>
<td>-</td>
</tr>
</tbody>
</table>
Configuring the Oracle Database Initialization Parameters

In Oracle Database instance installations, you can use either `init$ORACLE_SID.ora` or `spfile$ORACLE_SID.ora` to specify initialization parameters.

The most secure way of modifying Oracle Database parameters, is to specify them on the SQL*PLUS command line, storing them in the spfile. This way, each modification is parsed as you enter it and the parameters are correctly entered.

To show the value of a parameter in the spfile, and then change it, use the following procedure:

1. Start `sqlplus`.
2. Log in using `/as sysdba`.
3. Enter:
   ```
   SHOW PARAMETER PROCESSES
   ALTER SYSTEM SET PROCESSES='200' SCOPE=spfile;
   ```

To show all parameters that start with certain characters, use a common abbreviation. For example, the following command shows all parameters that start with `DB`.

```sql
SQL> SHOW PARAMETER DB
```

To manually edit parameters in the `init$ORACLE_SID.ora` file, convert it to an spfile.

```plaintext
Note: Some parameters will not take effect until the database instance is stopped, and then restarted. The command `startup force` can accomplish this.
```

To convert the INIT.ora file to an spfile:

1. Start `sqlplus`.
2. Log in using `as sysdba` for the user-name.
3. Enter:
   ```sql
   create spfile from pfile;
   File created.
   ```

   ```sql
   CREATE SPFILE [='spfile_name'] FROM PFILE [='pfile_name'];
   COMMIT;
   ```

To return parameters to the INIT.ORA type parameter file from an spfile:

1. Start `sqlplus`.
2. Log in using `as sysdba` for the user-name.
3. Enter:
   ```sql
   sqlplus sys/password as sysdba
   ```
3. Enter:

```
create pfile from spfile;
```

File created.

```
CREATE PFILE [='pfile_name'] FROM SPFILE [='spfile_name'];
COMMIT;
```

**Recommended Oracle Database Initialization Parameter Settings**

This section provides recommended Oracle Database initialization parameter values for use with ASAP in a production system. The suggested values are guidelines only. The optimum values for your system will depend on the particulars of your installation, and your processing requirements.

Table 5–2 lists suggested Oracle Database initialization parameter values.

---

**Note:** You must configure the following parameters. However, the particular values you implement will depend on your chosen configuration.

---

### Table 5–2  Database Initialization (init$ORACLE_SID.ora) Parameters

<table>
<thead>
<tr>
<th>Parameter and Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROCESSES = 500 (small) 1000 (medium), 3000 (large with under 14 NEP server), and 5000 (large with over 14 NEP servers)</td>
<td>PROCESSES specifies the maximum number of operating system user processes that can simultaneously connect to Oracle Database. Its value should allow for all background processes such as locks, job queue processes, and parallel execution processes. The default values of the SESSIONS and TRANSACTIONS parameters are derived from this parameter. Therefore, if you change the value of PROCESSES, you should evaluate whether to adjust the values of those derived parameters. For more information on Configuration Variables, see the ASAP System Administrator’s Guide.</td>
</tr>
<tr>
<td>SESSIONS = 1600 or up to 600 per online instance (production) 100 - 120 per online instance (development)</td>
<td>This parameter sets the maximum number of connections to the Oracle Database.</td>
</tr>
<tr>
<td>COMMIT_WAIT = 'WAIT'</td>
<td>This parameter controls when the redo for a commit is flushed to the redo logs.</td>
</tr>
<tr>
<td>FILESYSTEMIO_OPTION = 'SETALL'</td>
<td>Specifies I/O operations for file system files.</td>
</tr>
</tbody>
</table>

---

**Creating Oracle Database Tablespaces, Tablespace User, and Granting Permissions**

In "ASAP Oracle Database Tablespace Sizing Requirements" you determine how you will map ASAP server schemas to tablespaces, what the tablespaces will be named, and what their size requirements are.

Typically, all environments for testing can share the tablespaces. However, in Oracle Database you can distribute the ASAP components by specifying different default tablespaces for each environment before installing the ASAP database definitions.
Creating Oracle Database Tablespaces, Tablespace User, and Granting Permissions

Some ASAP implementations may require a tablespace layout that differs from the layout recommended here. The ASAP administrator, in conjunction with the Oracle DBA, can create any tablespace layout that is required.

Oracle recommends that tablespaces be created with the following default properties:

- **Size** – as determined using the sizing information provided in "Recommended Tablespace and Redo Log Sizes for ASAP."
- **Storage Clause:**
  - Initial 256 GB
  - Next 256 KB
  - Percent increase 0
  - Maxextents Unlimited

---

**Note:** In development systems, a database can remain idle for longer than the default database connection time-out setting. This can cause the database to terminate the connections to the ASAP servers generating the ORA-02396 event. This scenario can be avoided by setting the database connection time-out parameter to a higher value.

This scenario is unlikely to occur in a production system.

---

To create the tablespaces, tablespace users, and grant permissions in the Oracle Database:

1. Log in to your Oracle database as a sysdba.
2. Start the Oracle database.
3. Create the tablespaces.

   For example:

   ```sql
   create tablespace "ASAPDATA_TS" logging datafile '/u01/app/oracle/oradata/ASAP72/ASAPDATA_TS1.dbf' size 31999M reuse autoextend on next 5120K maxsize unlimited default storage (initial 256K next 256K minextents 1 maxextents 2147483645 pctincrease 0);
   create tablespace "ASAPINDEX_TS" logging datafile '/u01/app/oracle/oradata/ASAP72/ASAPINDEX_TS1.dbf' size 31999M reuse autoextend on next 5120K maxsize unlimited default storage (initial 256K next 256K minextents 1 maxextents 2147483645 pctincrease 0);
   CREATE USER "ASAP_SYS" PROFILE "DEFAULT" IDENTIFIED BY "ASAP_SYS" DEFAULT TABLESPACE "ASAPDATA_TS" TEMPORARY TABLESPACE "TEMP" ACCOUNT UNLOCK;
   GRANT CREATE ANY CONTEXT TO "ASAP_SYS" WITH ADMIN OPTION;
   GRANT CREATE ANY TABLE TO "ASAP_SYS" WITH ADMIN OPTION;
   GRANT CREATE ANY VIEW TO "ASAP_SYS" WITH ADMIN OPTION;
   GRANT CREATE SNAPSHOT TO "ASAP_SYS" WITH ADMIN OPTION;
   GRANT CREATE SYNONYM TO "ASAP_SYS" WITH ADMIN OPTION;
   GRANT CREATE TABLE TO "ASAP_SYS" WITH ADMIN OPTION;
   GRANT CREATE USER TO "ASAP_SYS" WITH ADMIN OPTION;
   GRANT CREATE VIEW TO "ASAP_SYS" WITH ADMIN OPTION;
   GRANT GRANT ANY PRIVILEGE TO "ASAP_SYS" WITH ADMIN OPTION;
   GRANT QUERY REWRITE TO "ASAP_SYS" WITH ADMIN OPTION;
   GRANT UNLIMITED TABLESPACE TO "ASAP_SYS" WITH ADMIN OPTION;
   GRANT SELECT ON "SYS"."V_$PARAMETER" TO "ASAP_SYS" WITH GRANT OPTION;
   ```
Creating Oracle Database Users

Each ASAP server schema requires an Oracle user name and password. You can pre-configure these accounts and supply the needed information during the installation; however, this step is optional. The ASAP installation will automatically create the needed users unless you indicate they have already been created.

To create the Oracle Database users using SQL Plus commands:

1. Start SQL Plus and log in as the Oracle admin user.
   
   sqlplus -s Oracle_admin/Oracle_admin_pw@Oracle_SID
   
   Where Oracle_admin and Oracle_admin_pw is an Oracle Database administration account and password and Oracle_SID is the Oracle Database SID.

2. Create the users. In the example below, you would replace the ASAP_envID tags with the actual ASAP environment ID you want to use when you install ASAP.
   
   create user admASAP_envID identified by admASAP_envID default tablespace Tablespace_name temporary tablespace $TEMP_TS;
   grant connect, resource, unlimited tablespace to admASAP_envID;
   create user sarmASAP_envID identified by sarmASAP_envID default tablespace Tablespace_name temporary tablespace $TEMP_TS;
   grant connect, resource, unlimited tablespace to sarmASAP_envID;
   create user nepASAP_envID identified by nepASAP_envID default tablespace Tablespace_name temporary tablespace $TEMP_TS;
   grant connect, resource, unlimited tablespace to nepASAP_envID;
   create user srpASAP_envID identified by srpASAP_envID default tablespace Tablespace_name temporary tablespace $TEMP_TS;
   grant connect, resource, unlimited tablespace to srpASAP_envID;
   create user ctrlASAP_envID identified by ctrlASAP_envID default tablespace Tablespace_name temporary tablespace $TEMP_TS;
   grant connect, resource, unlimited tablespace to ctrlASAP_envID;
   commit;

3. Record the actual names used in the table "Installing ASAP Using the GUI Installer."

To create the Oracle Database users using the ASAP sample create users script:

1. Download the ASAP installation software as described in "Downloading the ASAP Installation Files."

2. Using a text editor, open ASAP_src/asap_utils/sample-create-user.ksh.

3. Edit the following variables:
   
   ■ ENV_ID=env_id: Where env_id is the environment ID that you will use for your ASAP installation.
   
   ■ USER=db_user: Where db_user is database user with sufficient privileges to create new tablespace users.
Configuring Oracle RAC Database Connectivity

- PASSWORD=\texttt{db\_pw}: Where \texttt{db\_pw} is database password for the database user with sufficient privileges to create new tablespace users.
- ORACLE\_SID=\texttt{sid}: Where \texttt{sid} is the database SID value.
- TEMP\_TS=\texttt{temp\_ts}: Where \texttt{temp\_ts} is the temporary tablespace associated to each user.

4. Run the \texttt{ASAP\_src/asap\_utils/sample-create-user.ksh} script.

If you use different user names, ensure that you supply the same names during the ASAP server installation.

Patch the Oracle Database Server Software

You may need to apply a patch to the Oracle Database Server software after installation. For details, see "Patch Requirements."

Configuring Oracle RAC Database Connectivity

ASAP uses the availability features of the Oracle RAC system. ASAP supports an active/passive failover Oracle RAC database configuration. If you have installed ASAP in an Oracle RAC system, ASAP automatically connects to the active secondary database node when the primary database node fails over to the secondary. ASAP Control Server remains running during the Oracle RAC node switchover. If a transaction is in progress when the Oracle RAC node fails over and, as a result, if any ASAP server shuts down, ASAP Control Server automatically restarts the failed ASAP processes.

Follow the recommendations in the Oracle RAC documentation and use cluster node Virtual IP Addresses (VIP) when configuring Oracle LOCAL listeners (\texttt{LOCAL\_LISTENER}). For more information on listener configuration and Oracle RAC installation, refer to the \textit{Oracle Real Application Clusters Installation Guide} and the \textit{Oracle Database Net Services Administrator's Guide}.

To configure the \texttt{TNSNAMES.ora} file for Oracle RAC support:

1. Using a text editor, open \texttt{TNSNAMES.ora} file in the \texttt{Oracle\_Home/network/admin/} directory, where \texttt{Oracle\_Home} is the directory in which the Oracle database is installed.

2. Configure the \texttt{TNSNAMES.ora} file entries listed in Table 5–3.

\begin{table}[h]
\centering
\begin{tabular}{|l|l|}
\hline
Entry & Description \\
\hline
LOAD\_BALANCE & This parameter specifies whether load balancing is enabled between Oracle RAC databases. This parameter is embedded in the ADDRESS\_LIST parameter in the \texttt{tnsnames.ora} file. Set this attribute to \texttt{NO}. ASAP does not support active/active RAC databases configuration. \\
\hline
FAILOVER & This parameter specifies whether connect-time failover is enabled between primary and secondary Oracle RAC databases. This parameter is embedded in the ADDRESS\_LIST parameter in the \texttt{tnsnames.ora} file. Set this attribute to \texttt{TRUE}. ASAP supports the active/passive Oracle RAC database configurations. \\
\hline
\end{tabular}
\caption{TNSNAMES.ora Entries}
\end{table}
Configuring Oracle RAC Database Connectivity

Installing and Configuring Oracle Database and Client

For example:

DB_CONNECT=
  (DESCRIPTION =
    (ADDRESS_LIST =
      (LOAD_BALANCE=NO)
      (FAILOVER=TRUE)
    )
  )

Table 5–3 (Cont.) TNSNAMES.ora Entries

<table>
<thead>
<tr>
<th>Entry</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADDRESS</td>
<td>This parameter contains the address information for an Oracle RAC database. Include two instances of this attribute for the primary and secondary Oracle RAC databases. This parameter is embedded in the ADDRESS_LIST parameter in the tnsnames.ora file. The ADDRESS parameters include the following parameters: ■ PROTOCOL: Specifies the protocol used to connect to the Oracle RAC database. For example, TCP. ■ HOST: Specifies the host name or IP address for the RAC database. ■ PORT: Specifies the port number for the Oracle RAC database.</td>
</tr>
<tr>
<td>SERVER</td>
<td>This parameter directs the listener to connect the client to a specific service handler. Set this parameter to DEDICATED.</td>
</tr>
<tr>
<td>SERVICE_NAME</td>
<td>This parameter identifies the Oracle Database database service to access. Set the value to a value specified by the SERVICE_NAMES parameter in the initialization parameter file.</td>
</tr>
<tr>
<td>FAILOVER_MODE</td>
<td>This parameter contains the connection information required for an Oracle RAC active/passive failover database configuration and transparent application failover (TAF). It instructs Oracle Net to fail over to a different listener if the first listener fails during run time. Do not confuse this parameter with the connect-time failover FAILOVER parameter. This parameter is embedded in the CONNECT_DATA parameter in the tnsnames.ora file. The FAILOVER_MODE parameter includes the following parameters: ■ TYPE: Set TYPE to session. TYPE=session establishes a new connection to the Oracle active instance, and any work in progress is lost. ASAP will replay all such failed transactions related to the Control Server. ■ METHOD: Specify the method to be used for establishing the connection. METHOD=preconnect directs TAF to create two connections at transaction startup time: one to the primary database and a backup connection to the backup database. METHOD=basic directs TAF to create a connection to the primary database at transaction startup time. Connection to the backup database is established only after the connection to the primary database fails. ■ RETRIES: Specify the number of times you want ASAP to retry the connection when the connection to the database fails. For example, RETRIES=11. ■ DELAY: Specify the interval in seconds between connection retries. For example, DELAY=6.</td>
</tr>
</tbody>
</table>
3. Install ASAP.

4. Perform the post installation tasks described in "Configuring ASAP to Support TAF for Oracle RAC."
Installing and Configuring Oracle WebLogic Server

This chapter describes the tasks relating to Oracle WebLogic Server that you perform before installing Oracle Communications ASAP.

About Configuring Oracle WebLogic Server

This chapter describes procedures relating to installing the WebLogic Server and other required applications, and also configuring the WebLogic Server domain where you will install ASAP.

**Note:** Ensure that the WebLogic Server is running before you install ASAP.

WebLogic Server Java Requirements

ASAP uses WebLogic Server to support Java Platform, Enterprise Edition (Java EE) applications such as the Java SRP, User Security Management, and the Service Activation Deployment Tool (SADT).


Downloading and Installing the WebLogic Server Software

You must create a WebLogic Server UNIX user account and password to install and configure the WebLogic Server. Make certain that you use this account for any subsequent changes to the WebLogic Server configuration.

If you have an existing WebLogic Server installation, ensure that the versions and patches of your existing installation meet the requirements for ASAP (see "Patch Requirements").

If you do not have an existing WebLogic Server installation, you must perform a full installation and create a WebLogic Server Domain.

To download and install Oracle WebLogic Server software:

**Note:** This procedure contains example commands for Solaris.
1. Install the appropriate JDK for your platform and the required version of the Oracle WebLogic Server (see "WebLogic Server Java Requirements").

   **Note:** Ensure that you follow the latest Oracle WebLogic Server installation documentation carefully, performing all required steps.

2. Locate the generic Oracle WebLogic Server software distribution file included with the ASAP software on the Oracle Software Delivery Cloud Web site.

3. Download the generic Oracle WebLogic Server software distribution file for your hardware platform. (You may have to save it to an interim machine, and then use FTP to transfer the file to your target machine.)

4. Switch to the UNIX account you created to install the WebLogic Server:

   `su - WLS_user`

   Where `WLS_user` is the name of the account you used to install the WebLogic Server.

5. Change the permissions on the installation JAR file so that your WebLogic Server user can run it. For example:

   `chmod a+x fmw_12.1.3.0.0_wls.jar`

6. If you are running X-Windows on a remote display, export the display. For example:

   `export DISPLAY=10.15.16.17:0.0`.

7. Start the Oracle WebLogic installer. For example:

   `java -jar fmw_12.1.3.0.0_wls.jar`

   **Note:** Specify a different directory from the directory containing the install JAR file for the Oracle installation.

8. When the installation is complete, perform domain creation and configuration for ASAP as described in "Creating a WebLogic Server Domain."

---

### Creating a WebLogic Server Domain

The instructions below describe a scenario to configure an admin server domain or an Admin server with managed server domain. You may decide to vary your implementation based on the requirements of your installation. Refer to the Oracle WebLogic Server documentation for details.

**Note:** When the Oracle WebLogic Server is started or stopped, you should not have the ASAP Environment_Profile sourced. Some settings in the ASAP CLASSPATH can interfere with the java libraries needed for log4j and cause errors such as `java.lang.NoClassDefFoundError`. You can use the command:

```bash
unset CLASSPATH
```

prior to starting the WebLogic Server to avoid the conflict.
To install and configure an Oracle WebLogic server domain:

---

**Note:** This procedure contains example commands for Solaris.

---

**Note:** The paths in the steps below are specified for a standard Oracle WebLogic and Oracle Database configuration. Ensure you use paths appropriate to your installation.

Navigate to `WLServer_home/wlservr/common/bin` and execute the following commands at the prompt, substituting the placeholder values with the actual name values:

- `export WL_HOME=Domain_home`
- `export ORACLE_HOME=Oracle_home`
- `export PATH="$PATH:$ORACLE_HOME/bin"`
- If you are using Sun Solaris, use the command:
  ```
  export LD_LIBRARY_PATH="$ORACLE_HOME/lib"
  ```

---

1. From `WLServer_home/wlservr/common/bin`, start the **WebLogic Configuration Wizard** using the following command:

   ```
   ./config.sh
   ```

   The **Configuration Type** screen displays on which you can choose either to Create or Extend a Configuration.

2. On the **Configuration Type** screen, select **Create a new domain**, and in **Domain Location**, specify the location where you want to install your domain.

3. Click **Next**.

   The **Templates** screen is displayed.

4. On the **Templates** screen, select **Create Domain Using Product Templates**:  

   **Note:** Basic WebLogic Server Domain... is automatically selected.

---

5. Click **Next**.

   The **Administrator Account** screen is displayed.

6. On the **Administrator Account** screen, specify the admin user name and password for your WebLogic domain.

7. Click **Next**.

   The **Domain Mode and JDK** screen is displayed.

8. On the **Domain Mode and JDK** screen choose from **Development mode** or **Production mode**. Select the location of the installed JDK for WebLogic to use.

9. Click **Next**.

   The **Advanced Configuration** screen is displayed.
10. On the Advanced Configuration screen, select the Administration Server and Managed Servers, Clusters and Coherence check boxes.

**Note:** ASAP does not support clusters, but the screen to configure clusters appears after the Managed Servers configuration screen. Ignore the Clusters screen.

11. Click Next.

The Administration Server screen is displayed.

12. On the Administration Server screen, specify the values described in Table 6–1.

**Table 6–1 Configure the Administration Server screen**

<table>
<thead>
<tr>
<th>Administration Server fields</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a name for your WebLogic server.</td>
</tr>
<tr>
<td>Listen address</td>
<td>Select All Local Addresses from the list.</td>
</tr>
<tr>
<td>Listen port</td>
<td>Enter a port number for your WebLogic server.</td>
</tr>
<tr>
<td>SSL listen port</td>
<td>Enter an SSL port number for your WebLogic server. The SSL enabled check box must be selected before a value can be entered for this field.</td>
</tr>
<tr>
<td>SSL enabled</td>
<td>Select this check box to enable SSL.</td>
</tr>
</tbody>
</table>

13. Click Next.

The Managed Servers screen is displayed.

14. On the Managed Servers screen, enter values for the managed server that you want to configure. To configure a managed server click Add. The Listen address should match the IP address of the WebLogic server host. Enable SSL and specify a listen and an SSL port.

15. After you add your managed server specified, click Next.

The Clusters screen is displayed.

16. Click Next.

The Machines screen is displayed.

17. Select the Unix Machine tab and add and configure the machines that you want. For more information about configuration options, see WebLogic documentation.

18. Click Next.

The Assign Servers to Machines screen is displayed.

19. After you assign servers to machines, click Next.

The Configuration Summary screen is displayed.

20. Review the configuration settings you have made. Click Create.

The Configuration Progress screen is displayed.

21. When creation is 100% complete, click Next.

The Configuration Success screen is displayed.

22. Click Finish.
For more information on the steps required to configure each of these options, see *Fusion Middleware Creating WebLogic Domains Using the Configuration Wizard* for your version of WebLogic Server.

The main Oracle WebLogic Server software installation is complete – continue with the installation of required patches below.

**Patching the WebLogic Server Software**

You may need to apply a patch to the WebLogic Server software after installation. See "Patch Requirements" for details.
This chapter describes how to install Oracle Communications ASAP. Before installing ASAP, read these chapters:

- ASAP Installation Overview
- Planning Your ASAP Installation
- ASAP System Requirements
- Configuring the Operating System
- Installing and Configuring Oracle Database and Client
- Installing and Configuring Oracle WebLogic Server

About Installing the ASAP Software

**Note:** The term *ASAP Server* is used throughout this chapter when addressing all ASAP servers collectively.

Oracle recommends that you back up the WebLogic Server and the WebLogic server domain before installing ASAP. For installation, ASAP must be linked to an as-yet unused WebLogic domain. If the ASAP installation fails, and you have not backed up the WebLogic domain information, you must recreate the WebLogic domain before installing ASAP. See "Creating a Backup of the WebLogic Server."

**Note:** Before installing a new version of ASAP, Oracle recommends that you back up all data.

Types of Installation

The ASAP Server software supports three installation options. After you install ASAP, you also have the option to distribute ASAP across multiple UNIX machines.

The installation options are:

- **GUI Installer** – This installer mode prompts for required values using a series of dialog boxes (see "Installing ASAP Using the GUI Installer").

- **Console Installer** – A prompted installation that uses a console for you to enter values at the command line (see "Installing ASAP Using the Console Installer").
Silent Installer – An automatic installation started from a console that uses
prerecorded values entered during GUI install (see "Installing ASAP Using the
Silent Installer").

Distributed ASAP Install – An installation of ASAP across multiple UNIX
machines. (see "Installing ASAP Across Multiple UNIX Machines").

**Downloading the ASAP Installation Files**

To obtain and uncompress the ASAP software installation files

1. On the target machine, log in with your UNIX user account for ASAP.
2. On a Windows workstation, launch Internet Explorer and log in to the Oracle
   Software Delivery Cloud Web site.
3. Download the ASAP software.
4. Transfer the downloaded TAR file to the target ASAP server machine.
5. Uncompress and untar the downloaded file to the *ASAP_src*.
   For example:
   ```
   # tar -xvf tar_filename
   ```
   The TAR file expands into a set of sub-directories containing the installation files.
6. Locate and read any **README** files in the install set.

**Note:** If you are concerned that there is insufficient temporary disk
space, you can create another temp directory before starting the
installation. The installation program writes temp files to that
directory. You can optionally use the current or home directory.

The -is:tempdir switch enables you to identify a temporary directory
on a partition. Enter the command as follows:

- asap70ServerAIX61 -is:tempdir *Temp_directory_name*
- asap70ServerSolaris -is:tempdir *Temp_directory_name*
- asap70ServerLinux -is:tempdir *Temp_directory_name*
- asap73ServerHP11iV3Itanium -is:tempdir *Temp_directory_name*

**Configuring, Backing Up, and Starting WebLogic Before Installing ASAP**

Before you begin installation of the ASAP server software, you must copy the
**jconn4.jar** file from the *ASAP_src/asap_utils* folder into the *Domain_Home/lib*
directory.

To configure, backup, and start the WebLogic server, use the following procedure:
Installing an ASAP Demonstration System

The instructions in this section assume that you are installing all of the ASAP components, including the database, on a single computer. This computer should meet the hardware requirements for Oracle Linux for a small ASAP system as described in "ASAP Server Hardware Requirements."

The procedure for installing a demonstration system include:

1. Installing Oracle Linux with the Oracle Validated Package
2. Preparing the Linux Environment
3. Downloading and Extracting the ASAP Installation Files

1. Copy the jconn4.jar file from your ASAP installation directory to your WebLogic domain lib folder.
   
   cp ASAP_src/asap_utils/jconn4.jar Domain_Home/lib/

2. Archive your WebLogic domain. For example,
   
   cd Domain_Home/
   tar cf domain_name.tar Domain_Home/

   Where domain_name is the name you want to give your WebLogic domain backup file.

3. Start the WebLogic server. You can use nohup to run your WebLogic server in the background.
   
   cd Domain_home/
   nohup ./startWebLogic.sh &

4. Monitor nohup.out file to make sure the domain goes into the RUNNING mode.
   
   tail -f nohup.out

   The output from this command should end with the following text when it enters the RUNNING mode.


5. Stop the tail process.

   Ctrl-C

6. Exit from your oracle user session.

   exit

---

**Note:** When you start your WebLogic server instance, make sure that the ASAP_home/Environment_Profile has not been sourced in your WebLogic server terminal session. This file references environment variables that are incompatible with your WebLogic server. In the context of this procedure, ASAP has not been installed, and this scenario is not possible; however, it can occur after you have installed ASAP.
Installing an ASAP Demonstration System

4. **Downloading and Installing the Oracle Database and Client Software**

5. **Configuring Database Listener**

6. **Creating the Database Instance**

7. **Creating Tablespace, Tablespace Users, and Granting User Privileges**

8. **Downloading and Installing the Oracle WebLogic Server Software**

9. **Creating and Configuring a WebLogic Domain**

10. **Installing ASAP Using the GUI Installer**

### Installing Oracle Linux with the Oracle Validated Package

- **Use the following procedure to install Oracle Linux with the Oracle validated software package.**

1. **On a Windows workstation, launch Internet Explorer and log in to the Oracle Software Delivery Cloud Web site.**

2. **Select and download Oracle Linux version required for the x86 64 bit platform (see "Software Requirements").**

3. **Burn the Oracle Linux ISO image to a DVD and install the Oracle Linux software on an x86 64 bit platform using the GUI Linux installer.**

4. **Select default installation options until you reach the page where it gives you the option to customize your installation. Select the Customize now, and click Next.**

5. **Select Base System from the left menu.**

6. **Select System Tools from the right menu.**

7. **Click Optional packages.**

8. **Select the Oracle Validated RPM package from the package list, and click Next.**

   **This package provides the following features:**

   - Preconfigured Oracle Linux kernel configuration, suitable for the Oracle database. These kernel configuration attributes are sufficient for an ASAP demonstration system; however, for a production environment or test system, configure your kernel parameters as describe in "Setting Linux Kernel Parameters."

   - All Oracle packages required to install and run the Oracle database software

   - Preconfigured oracle database user and groups for database installation

9. **Click Close.**

10. **Click Next and continue the installation process.**

11. **During the Oracle Linux configuration process, select the following options:**

    - Enable the firewall and set SSH, Telnet, and FTP as trusted protocols.

    - Set SELinux to Permissive.


### Preparing the Linux Environment

- **Use the following procedure to prepare your Oracle Linux Environment. The steps described in this procedure include:**

---

7-4 ASAP Installation Guide
Installing an ASAP Demonstration System

- Installing the JDK for WebLogic
- Creating a symbolic link to the JDK from Mozilla Firefox to enable the Java plugin
- Creating an ASAP user and group
- Configuring a host name for your installation in the `/etc/hosts` file
- Creating the directories for your Oracle Database installation
- Configuring the oracle user `.bashrc` file

To prepare the Linux environment:

1. Log into Oracle Linux as `root`.
2. Download the Oracle Linux Java SE version required for the WebLogic Server (see "Software Requirements").
3. Change the permissions on the Java installation file:
   ```shell
cmd -x jdk_install_file
   
   Where `jdk_install_file` is the java installation file.
   ```
4. Move the file to a system-wide location such as `/usr/local`. For example:
   ```shell
   mv jdk_install_file /usr/local
   ```
5. From the new location, install Java SE.
   ```shell
   .jdk_install_file
   ```
6. Create a symbolic link from the `/usr/lib/mozilla/plugins` directory to `java_home /jre/lib/i386/libnpjp2.so` file (where `java_home` is the location where you installed the JDK) to enable the Java plugin for Mozilla Firefox. For example:
   ```shell
   cd /usr/lib/mozilla/plugins
   ln -s /usr/local/jdk1.7.x/jre/lib/i386/libnpjp2.so
   ```
7. Create an ASAP user and group as described in "Configuring a UNIX ASAP Group and User."
8. Determine your IP address for your platform.
   ```shell
   ifconfig
   ```
9. Edit the `/etc/hosts` file and provide a host name for your IP address. For example:
   ```plaintext
   # Do not remove the following line, or various programs
   # that require network functionality will fail.
   127.0.0.1 localhost.localdomain localhost loopback
   ::1 localhost6.localdomain6 localhost6
   10.156.53.74 testsystem.oracle.us.com testsystem loghost
   ```
10. Create and assign permissions to folders in preparation to install your Oracle database. For example:
    ```shell
    mkdir -p /u01/app/
    chown -R oracle:oinstall /u01/app/
    chmod -R 775 /u01/app/
    mkdir /u01/app/oradata /u01/app/fast_recovery_area
    chown oracle:oinstall /u01/app/oradata/u01/app/fast_recovery_area
    chmod 755 /u01/app/oradata /u01/app/fast_recovery_area
    ```
11. Edit the oracle user’s .bashrc system setup file using a text editor such as gedit or vi. This example provides common Oracle database environment variables and paths:

```bash
# .bashrc

# Source global definitions
if [ -f /etc/bashrc ]; then
  . /etc/bashrc
fi

# User specific aliases and functions
export ORACLE_SID=ASAP
export ORACLE_HOME=/u01/app/oracle/product/12.1.3/dbhome_1
PATH=$PATH:$HOME/bin:/u01/app/oracle/product/12.1.3/dbhome_1/bin/
export PATH

umask 022
```

**Downloading and Extracting the ASAP Installation Files**

To download the ASAP installation files use the procedure described in "Downloading the ASAP Installation Files" with the following exceptions:

- Log in to your Oracle Linux workstation with your asap user account.
- Download the file directly to your Oracle Linux workstation using Mozilla Firefox.
- For this demonstration system, create a new directory called asapinstaller in the /home/asap directory and extract the ASAP installation files in this directory. For example:

```bash
cd /home/asap
mkdir asapinstaller
mv ASAP.R7_3_0.B165.linux.tar asapinstaller/
cd asapinstaller
tar -xvf ASAP.R7_3_0.B165.linux.tar
```

**Downloading and Installing the Oracle Database and Client Software**

Use the following procedure to download and install the Oracle database and client software.

1. Log in as the oracle user.
2. Log in to the Oracle Software Delivery Cloud Web site.
3. Select and download the Oracle Database version you require for the Linux x86-64 platform (see "Software Requirements").

---

**Note:** Do not download the client from the Oracle Software Delivery Cloud Web site.

---

4. Use the following command to extract the content from the installation files:
   ```bash
   unzip file_name.zip
   ```

Where file_name is the name of the database installation file. There are typically two installation files.
5. Run the database installer.
   
   ./database/runInstaller

6. During the installation process select the default options for all fields except for the following:
   
   a. Install database software only
   b. Single Database Instance
   c. Enterprise Edition

7. Follow the GUI instructions to finish the installation.

8. Download and install the client as described in "Downloading and Installing the Oracle Client Software" using the default options for all fields except for the following:
   
   a. Select the Administrator Installation Type
   b. Enter /u01/app/oracle/product/12.1.0.2/client_1 for the Software Location
   c. Enterprise Edition

---

**Configuring Database Listener**

Use the following procedure to configure a database listener.

1. Run the Network Configuration Assistant (netca).
   
   netca

   The Network Configuration Assistant: Welcome screen appears.

2. Select Listener Configuration.

   The Network Configuration Assistant: Listener Configuration Listener screen appears.

3. Select Add.

   The Network Configuration Assistant: Listener Configuration, Listener Name screen appears.

4. Accept default LISTENER. Click Next.

   The Network Configuration Assistant: Listener Configuration, Select Protocols screen appears.

5. Select Next to accept the default TCP selection.

   The Network Configuration Assistant: Listener Configuration, TCP/IP Protocol screen appears.

6. Select Use the standard port number 1521. Click Next.

   The Network Configuration Assistant: Listener Configuration, More Listeners? screen appears.

7. Select No. Click Next.

   The Network Configuration Assistant: Listener Configuration Done screen appears.

8. Click Next.

9. Click Finish.
Creating the Database Instance

Use the following procedure to configure a database instance.

1. Run the Database Configuration Assistant (dbca).
   
   The Database Configuration Assistant: Welcome screen appears.

2. Click Next.
   
   The Database Configuration Assistant: Step 1 of 12: Operations screen appears.

3. Select Create a Database.

4. Click Next.
   
   The Database Configuration Assistant: Step 2 of 12: Database Templates screen appears.

5. Select General Purpose or Transaction Processing.

6. Click Next.
   
   The Database Configuration Assistant: Step 3 of 12: Database Identification screen appears.

7. Enter ASAP for the Global Database Name and SID fields.

8. Click Next.
   
   The Database Configuration Assistant: Step 4 of 12: Management Options screen appears.

9. Click Next to accept the default options.
   
   The Database Configuration Assistant: Step 5 of 12: Database Credentials screen appears.

10. Select Use the Same Administrative Password for All Accounts.

11. Enter a Password in the Password and Confirm Password fields.

12. Click Next.
   
   The Database Configuration Assistant: Step 6 of 12: Database File Locations screen appears.

13. Click Next to accept the default options for storage type and location of data files.

14. Click Next to accept the default flash recovery area options.

15. Click Next to accept default options for Sample Schema and Custom Scripts tabs.

---

Note: Mark down the password you used. You will need this password for the procedure described in "Creating Tablespace, Tablespace Users, and Granting User Privileges."
16. Click Finish.

The Create Database - Summary screen appears.

17. Click OK to create your database.

18. Click Exit.

Creating Tablespace, Tablespace Users, and Granting User Privileges

Use the following procedure to create a tablespace, tablespace user, and grant privileges.

1. From the Unix terminal, log into the database instance with the sys user account.

   sqlplus sys/password as sysdba

   Where password is the password you choose for your sys account (see "Creating the Database Instance").

2. Run the following command to create your tablespace.

   CREATE TABLESPACE "POOL_TS" LOGGING DATAFILE '/u01/app/oracle/POOLS_TS.dbf'
   SIZE 6000M REUSE AUTOEXTEND ON NEXT 1000K MAXSIZE UNLIMITED DEFAULT STORAGE
   (INITIAL 128K NEXT 128K MINEXTENTS 1 MAXEXTENTS 2147483645 PCTINCREASE 0);

3. Create a new user for the tablespace. For example:

   CREATE USER "ASAP_SYS" PROFILE "DEFAULT" IDENTIFIED BY "ASAP_SYS" DEFAULT
   TABLESPACE "POOL_TS" TEMPORARY TABLESPACE "TEMP" ACCOUNT UNLOCK;

4. Grant privileges to your tablespace user account. For example:

   GRANT CREATE ANY CONTEXT TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT CREATE ANY TABLE TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT CREATE ANY VIEW TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT CREATE SNAPSHOT TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT CREATE TABLE TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT CREATE USER TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT CREATE VIEW TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT CREATE SNAPSHOT TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT CREATE SYNONYM TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT CREATE TABLE TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT CREATE USER TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT CREATE VIEW TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT GRANT ANY PRIVILEGE TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT QUERY_REWRITE TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT UNLIMITED TABLESPACE TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT SELECT ON "SYS"."V$PARAMETER" TO 'ASAP_SYS' WITH GRANT OPTION;
   GRANT "CONNECT" TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT "DBA" TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT "EXP_FULL_DATABASE" TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT "IMP_FULL_DATABASE" TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT "RESOURCE" TO 'ASAP_SYS' WITH ADMIN OPTION;
   GRANT EXECUTE ON SYS.DBS_OEM_LOCK TO 'ASAP_SYS' WITH GRANT OPTION;
   GRANT SELECT ON DBA_TABLESPACES TO 'ASAP_SYS' WITH GRANT OPTION;

5. Log out of sqlplus.

   exit

6. Log into the root user account from the oracle user session.

   su root

7. Copy the ora_system_procs.sh from the ASAP installation directory to the oracle user account home directory.
cd /home/asap/asapinstaller/asap_utils/
  cp ora_system_procs.sh /home/oracle

8. Set permissions for the ora_system_procs.sh file.
  cd /home/oracle
  chmod 755 ora_system_procs.sh

9. Log out of the root user session.
  exit

10. As oracle user, run the ora_system_procs.sh script.
  cd /home/oracle
  ./ora_system_procs.sh

11. Enter Y and press Enter to continue.
12. Enter the password you created for your sys database user account (see "Creating the Database Instance") and press Enter.

Note: The script may produce the following error message.

drop public synonym set_session
  
  ERROR at line 1:
  ORA-01432: public synonym to be dropped does not exist

  Ignore this message.

  su root

14. Copy the Database tnsnames.ora file to your asap user account home directory.
  cp /u01/app/oracle/product/12.1.3/dbhome_1/network/admin/tnsnames.ora
     /home/asap

15. Change the permissions on the tnsnames.ora file.
  cd /home/asap
  chmod 755 tnsnames.ora

16. Log out of root user.
  exit

17. Log out of oracle user.
  exit

---

**Downloading and Installing the Oracle WebLogic Server Software**

Use the following procedure to download and install the Oracle WebLogic Server software.

1. Log in as the asap user.
2. Log in to the Oracle Software Delivery Cloud Web site.
3. Select and download the Oracle WebLogic version you require for the Linux x86-64 platform (see "Software Requirements").

4. Change the permissions on the installation .jar file so that your WebLogic Server user can run it. For example:
   chmod a+x fmw_12.1.3.0.0_wls.jar

5. If you are running X-Windows on a remote display, export the display. For example:
   export DISPLAY=10.15.16.17:0.0.

6. Start the Oracle WebLogic installer. For example:
   cd /usr/local/jdk1.7.x/bin/
   ./java -jar /home/oracle/Desktop/fmw_12.1.3.0.0_wls.jar

   **Note:** Make sure you use ./ before the java command to use the correct JDK.

7. Click Next.

8. Click Next to accept the default Middleware home directory (for example, /home/asap/Oracle/Middleware and follow the Installation Instructions.

9. Select the Custom installation type from the Choose Install Type screen.

10. Click Next.

11. Deselect the Coherence Server components from the component list.

12. Click Next.

13. Click Next to select the Local JDK (for example Sun SDK 1.7.x (/usr/local/jdk1.7.x)).

14. Click Next to select the default product installation directory for your WebLogic Server (for example /home/asap/Oracle/Middleware/wlserver_10.3).

15. Review the Installation Summary, and click Next to start the installation process.

16. After the installation is complete, deselect Run Quickstart.

17. Click Done.

**Creating and Configuring a WebLogic Domain**

Use the following procedure to create and configure a WebLogic domain.

1. Log in as the asap user.

2. Follow the procedure describe in "Creating a WebLogic Server Domain" and select the default options except for those described in Table 7–1.
Installing an ASAP Demonstration System

3. Configure, backup, and start the WebLogic server as described in "Configuring, Backing Up, and Starting WebLogic Before Installing ASAP."

### Installing ASAP Using the GUI Installer

Use the following procedure to install an ASAP demonstration system using the GUI installer.

1. Log in as the `asap` user.
2. Define the TNS_ADMIN variable and set it to the location of your `tnsnames.ora` file.
   
   ```bash
   export TNS_ADMIN=/home/asap
   ```

3. Follow the procedure describe in "Installing ASAP Using the GUI Installer" and select the default options except for those described in Table 7–2.

### Table 7–1  WebLogic Domain Demonstration System Installation Values

<table>
<thead>
<tr>
<th>Installer Screen</th>
<th>Fields</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specify Domain Name and Location</td>
<td>Domain name:</td>
<td>basedomain</td>
</tr>
<tr>
<td></td>
<td>Domain location:</td>
<td>/home/asap/Oracle/Middleware/user_projects/domains</td>
</tr>
<tr>
<td>Configure Administrator User Name and Password</td>
<td>Name:</td>
<td>weblogic</td>
</tr>
<tr>
<td></td>
<td>User password:</td>
<td>weblogic1</td>
</tr>
<tr>
<td></td>
<td>Confirm user password:</td>
<td>weblogic1</td>
</tr>
<tr>
<td>Select Optional Configuration</td>
<td>Select only the Administrator Server option. This demonstration system does not require a managed server.</td>
<td>N/A</td>
</tr>
<tr>
<td>Configure the Administration Server</td>
<td>Name:</td>
<td>AdminServer</td>
</tr>
<tr>
<td></td>
<td>Listen address:</td>
<td>All Local Addresses</td>
</tr>
<tr>
<td></td>
<td>Listen port:</td>
<td>7001</td>
</tr>
<tr>
<td></td>
<td>SSL listen port:</td>
<td>7002</td>
</tr>
<tr>
<td></td>
<td>Select SSL enabled.</td>
<td></td>
</tr>
</tbody>
</table>

### Table 7–2  ASAP Demonstration System Installation Values

<table>
<thead>
<tr>
<th>Installer Screen</th>
<th>Fields</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Server Destination Directory</td>
<td>Directory Name</td>
<td>/home/asap/asap73</td>
</tr>
<tr>
<td>Configure ASAP UNIX Environment Variables</td>
<td>Environment ID</td>
<td>demo</td>
</tr>
<tr>
<td></td>
<td>Directory Name</td>
<td>/u01/app/oracle/product/12.1.3/client_1</td>
</tr>
<tr>
<td>Configure ASAP Database</td>
<td>Name of RDBMS Server</td>
<td>ASAP</td>
</tr>
<tr>
<td></td>
<td>Oracle Server DBA User Name</td>
<td>ASAP_SYS</td>
</tr>
<tr>
<td></td>
<td>Oracle Server DBA Password</td>
<td>ASAP_SYS</td>
</tr>
</tbody>
</table>
Table 7–2  (Cont.) ASAP Demonstration System Installation Values

<table>
<thead>
<tr>
<th>Installer Screen</th>
<th>Fields</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configure ASAP Database Tablespaces</td>
<td>For all Data Segments and Index Segments</td>
<td>POOLS_TS</td>
</tr>
<tr>
<td></td>
<td>For the Temporary Tablespace</td>
<td>TMP</td>
</tr>
<tr>
<td>Configure ASAP Database User Password</td>
<td>For all Password and Confirm-Password fields.</td>
<td>abcd</td>
</tr>
<tr>
<td>Configure Oracle WebLogic Server for ASAP</td>
<td>Host Name of Oracle WebLogic Server</td>
<td>localhost.localdomain</td>
</tr>
<tr>
<td></td>
<td>Port Number of WebLogic Server</td>
<td>7001</td>
</tr>
<tr>
<td></td>
<td>User Name of Oracle WebLogic Server Administrator</td>
<td>weblogic</td>
</tr>
<tr>
<td></td>
<td>Password of Oracle WebLogic Server Administrator</td>
<td>weblogic1</td>
</tr>
</tbody>
</table>

Installing ASAP Using the GUI Installer

**Note:** If you cancel the installation of ASAP, the files that have been created in ASAP_home (where ASAP_home is the location of your ASAP server installation directory) up to that point are not removed automatically. If you want to remove these files, you must do so manually. See "Re-Running the ASAP Server Installation."

Also, ASAP database schemas may have been created. Your Database Administrator can refer to ASAP_src/asap_utils/sample_drop_user.ksh for a sample script to drop the schemas that were created.

**Note:** To execute ASAP server installer in GUI mode, you must set up your X-Windows properly. Consult your X-Windows Manager documentation for assistance.

If you are working from the actual UNIX machine, the GUI is displayed locally using X-Windows.

If you are working from a remote machine:

- Enter `who` to get a list of current users. Locate your IP address.
- Enter, for example, `export DISPLAY=IP Address:0.0` if using bash. (The command may be slightly different if you are using a different shell.)
- Ensure that an X-Windows client is configured and running on your remote machine before starting the GUI mode installation process.

To install the ASAP Server using the GUI installer:

1. Log in using your UNIX user account for ASAP.
2. Ensure that the `/var/tmp` directory is empty. The Oracle JDBC driver uses this directory to store temporary files. If this directory is unavailable or otherwise unusable, the Java virtual machine will fail, and this will cause the ASAP installation to fail.

3. Go to `ASAP_src`.

4. Start the GUI installer for the platform you are using:
   - For the IBM AIX platform:
     
     `asap70ServerAIX61`
   - For the HP Itanium platform:
     
     `asap73ServerHP11iV3Itanium`
   - For the Solaris platform:
     
     `asap70ServerSolaris`
   - For the Linux platform:
     
     `asap70ServerLinux`

   **Note:** If the installer does not launch, enter the following command at the UNIX prompt: `export NO_J2D_DGA=true` and then relaunch the installer.

   **Note:** The installer may show a "quota not found" message on the console. This message can be ignored.

   **Note:** Monitor the console output in the shell from which you initiate the installer. Informational and error messages are written to the console.

The ASAP splash screen appears, followed by the Welcome dialog box.

5. Review the pre-installation requirements on screen and ensure that you have observed the listed recommendations.

6. Click Next.

   The Enter Server Destination Directory dialog box appears.

7. Do one of the following:
   - In the **Directory Name** field, enter the name of the directory where you want to install the ASAP Server.
To install the ASAP Server to a specific directory, click **Browse** and locate the appropriate directory.

To simplify configuration, install ASAP to the user’s home directory.

8. Click **Next**.

   The Select Installation Type dialog box appears.

9. Select the type of ASAP installation you require.

   - If you selected **Typical**, the Disk Space Required dialog appears. This installation option installs the base ASAP components, configured the WebLogic server and database for ASAP and installs the POTS demo cartridge. Skip the next step.

   - If you selected **Custom**, the Select Components dialog appears. This installation option allows you to select the ASAP components you want to install. Continue with the next step.

10. (Optional) In the Select Components dialog box, select the ASAP Server components you want to install and configure. Components and configurations that you can select are:

   - **ASAP**
     - **ASAP core components**: This component provides the core ASAP software components. You must install the ASAP core components. The other components can be installed later by re-running the installer.

     - **ASAP samples and demonstration models**: This component provides samples and demonstration models that you can use with ASAP. You must select this component if you want to configure ASAP demonstration models. You must de-select the **Configure ASAP** sub-component, **Configure Oracle WebLogic server for ASAP and deploy Security, JSRP, and SADT** to de-select the **ASAP samples and demonstration models** sub-component.

     - **ASAP X2X component**: This component is for Solaris only, and has been deprecated. This component provide support for ASAP to NE connectivity over X.25 and X.29 protocols.

     - **ASAP SNMP component**: This components is for Solaris only. This component provides support for the SNMP protocol. This component provides support for ASAP to NE connectivity over SNMP.

   - **Configure ASAP**

     - **Configure ASAP UNIX environment variables**: This configuration option configured the $ASAP_home/Environment_Profile with the UNIX environment variables required to run ASAP.

     - **Configure ASAP database**: This configuration option creates and applies the ASAP server schemas and tables to the ASAP database instance tablespaces.

     - **Configure Oracle WebLogic server for ASAP and deploy Security, JSRP, and SADT**: This configuration option configures the ASAP WebLogic server components. You can also select the **Configure Demonstration**

---

*Note:* The absolute path of the directory cannot exceed 48 characters.
Service Activation Model option that provides demonstration service modes.

---

**Note:** ASAP supports the following demonstration models:

- ATM/FR Service Activation Model
- 3G Wireless Service Activation Model
- POTS Service Activation Model
- IP/VPN Service Activation Model

These demonstration models are part of the ASAP samples and demonstration models ASAP sub-component. You cannot install the demonstration models without installing this ASAP sub-component. You can use these demonstration models to test ASAP. See "Testing the ASAP Server Installation."

---

11. Click Next.

The Components Selected - Disk Space Required dialog appears, providing summary information on the ASAP Server installation location, the server components to be installed, and the total size (in MB) of the installation.

12. Click Next.

The Configure ASAP UNIX Environment Variables dialog box appears.

13. Do the following:

   a. Select the mode that you want to operate in (**Development** or **Production**).
   
   b. In the **ASAP Environment ID** field, enter `ASAP_envID` (where `ASAP_envID` is the environment ID for your ASAP instance).
   
   c. Do one of the following:
      
      - In the **Directory Name** field, enter the name of the base directory of your Oracle Database client installation `Oracle_client_home`.
      
      - Click **Browse** and navigate to `Oracle_client_home`.

14. Click Next.

---

**Note:** If you receive an error message stating "Oracle Home is invalid – missing bin/sqlplus or lib/libclntsh. Please check with your system administrator and re-enter the value".

---

The Configure ASAP UNIX Environment Variables - ASAP Server Port dialog box appears.

The port numbers shown for the ASAP servers are default port numbers. Depending on your environment, you may want to change the port numbers. Oracle recommends that you view the system file `/etc/services` to check which ports are currently assigned in order to avoid conflicts.

The following UNIX command returns the ports that are currently in use, but does not indicate what ports are not currently in use, but are nonetheless assigned:

```
netstat -n | grep Port_number
```
15. Click Next.
   The Configure ASAP Database dialog box appears.

16. Complete the required Oracle Database information:
   - In the **Name of Oracle RDBMS Server** field, enter the name of the destination Oracle RDBMS server that ASAP will use (tnsnames.ora entry name).
   - In the **Oracle Server DBA User Name** field, enter your Oracle system account user name.
   - In the **Oracle Server DBA Password** field, enter your password for the Oracle system account user name.

   **Note:** If you encounter a "Failed to resolve name" error, copy the tnsnames.ora and listener.ora files from the Oracle_home/network/admin location to the $TNS_ADMIN location and repeat the installation.

   Refer to "Re-Running the ASAP Server Installation" for important tasks that must be completed before re-running a failed installation.

17. (Optional) Do the following:
   - (Optional) If you want ASAP to use Oracle users that your DBA has already created, select the **Have you created Oracle Users?** option. This skips the database schema creation part of the installation process.
     For information about already existing Oracle users (that is from a previous installation), see "Creating Oracle Database Users."
   - (Optional) If you are installing ASAP on an Oracle Real Application Clusters (RAC) database, do the following:
     a. Select the **Is this an Oracle RAC database?** option.
     b. Enter the **RAC Database Connection String**. Information for at least two Oracle RAC nodes must be provided and separated by a comma. The format for this connection string is:
        
        \[host1:port:serviceName,host2:port:serviceName\]
        
        Where **host1** and **host2** is the name or IP address of your Oracle RAC databases, **port** is the port number for the Oracle RAC databases, and **serviceName** is the service name for the Oracle RAC databases.

18. Click Next.
   The Configure ASAP Database Tablespaces dialog box appears. The Data and Index tablespaces are populated with the Oracle Database Server information provided.
19. (Optional) If you had selected Have you created Oracle Users option in the previous step, enter the tablespace data and index names you recorded in "Oracle Database Information."

The Configure ASAP Database User Password dialog box appears.

20. Enter and confirm the password for each database schema you recorded in "Oracle Database Information."

**Note:** If you selected to use pre-created users, you are not prompted to confirm the passwords.

21. Click Next.

The Configure WebLogic Server for ASAP dialog box appears.

22. Complete the required WebLogic Server information:
   a. In the Host Name of WebLogic Server field, enter the name or IP address of the server on which the WebLogic Server has been created.
   b. In the Port Number of WebLogic Server field, enter the port number as defined during the configuration of the WebLogic Server domain.
   c. In the User Name of WebLogic Server Administrator field, enter the WebLogic Server administrator account user name.
   d. In the Password of WebLogic Server Administrator field, enter the WebLogic Server administrator account password.
   e. (Optional) If you are installing ASAP WebLogic server components using the SSL port, do the following:
      a. Select the Connect to WebLogic Server using SSL option.
      b. Enter or browse to a path to an SSL KeyStore File.

**Note:** Your WebLogic server instance provides a demo SSL keystore file at WLServer_Home/wlsServer_10.3/server/lib/DemoTrust.jks that can be used in a test environment.

**Note:** If the WebLogic Server information is incorrect, or a connection to the server cannot be made, a dialog box appears with the following message:

"Connection Fail: Invalid URL, User ID or Password."

23. Click OK and correct the WebLogic Server information, then click Next to try again.

24. Click Next.

The Configure WebLogic Server Domain and Server dialog box appears.

25. In the Oracle WebLogic Server field, select one of the following:
   - AdminServer: Select this option if you are installing ASAP to the admin server.
Installing ASAP Using the Console Installer

When the ASAP installation wizard runs in console mode, information is sent to the console rather than to the wizard dialogs.

To install the ASAP Server using the console installer:

1. Log in using your UNIX user account for ASAP.

2. Ensure that the /var/tmp directory is empty. The Oracle JDBC driver uses this directory to store temporary files. If this directory is unavailable or otherwise unusable, the java virtual machine will fail, and this will cause the ASAP installation to fail.

3. Go to the directory that contains the ASAP installation files you uncompressed (ASAP_src). See "Downloading the ASAP Installation Files."

4. Start the console installer for the platform you are using:

   - **ManagedServer**: Select this option if you are installing ASAP to a managed server.

   The ASAP Server Installation Summary dialog box appears.

26. Click Next.

   The ASAP Server Installation Summary dialog box appears.

27. When you install ASAP for the first time, a response file is automatically created in ASAP_home. However, if you want to explicitly save your settings to a file, click **Save As** to choose a target directory.

   The response file is a text file that contains a record of the selections for the installation you have just completed. This text file is used to perform subsequent, silent installations. For more information, see "Installing ASAP Using the Silent Installer."

28. Click Next.

   The Installing ASAP dialog box appears. The installation executes and provides information as the installation progresses.

   After the installation completes, the Installation Summary dialog box appears.

29. Review the summary and click **Finish**.

30. Review the messages written to the console to confirm that no errors occurred during the installation. Should you need to re-install, see "Re-Running the ASAP Server Installation."

31. Stop and restart the WebLogic Server.

32. Go to the home directory for the user account you used to create ASAP. For example:

   ```
   cd $HOME
   ```

33. Archive the InstallShield directory and move it to a secure location. You will need this directory if you decide to upgrade ASAP.

---

**Caution**: You cannot upgrade ASAP without the InstallShield directory that the ASAP installer creates when you initially install ASAP.
- For the IBM AIX platform:
  asap73ServerAIX61 -console

- For the HP Itanium platform:
  asap73ServerHP11iV3Itanium -console

- For the Solaris platform:
  asap70ServerSolaris -console

- For the Linux platform:
  asap70ServerLinux -console

**Note:** If the installer does not launch, enter the following command at the UNIX prompt: export NO_J2D_DGA=true and then relaunch the installer.

**Note:** The installer may show a "quota not found" message on the console. This message can be ignored.

---

The ASAP console Welcome and pre-installation requirements text appears. Review the pre-installation requirements text and ensure that you have observed the listed recommendations.

5. Press **Enter** to scroll to the bottom of the text.

6. Type **1** and press **Enter** to continue.
   
   The Enter Server Destination Directory text appears.

7. In the **Directory Name** field, enter the name of the directory where you want to install the ASAP Server.
   
   **Note:** The absolute path of the directory cannot exceed 48 characters.

8. Type **1** and press **Enter** to continue.
   
   The Select Installation Type text appears.

9. Select the type of ASAP installation you require.
   
   - If you type **1** for the **Typical** installation type, the **Disk Space Required** text appears. Skip the next three steps.
   
   - If you type **2** for the **Custom** installation type, the **Select Components** text appears. Continue with the next step.

10. (Optional) Type **1** and press **Enter** to continue.
    
    The Select Components text appears.

11. (Optional) Type **1** or **2** to select or expand and select the ASAP Server components you want to install. You can select the following components and configuration options:
    
    - **ASAP**
– **ASAP core components**: This component provides the core ASAP software components. You must install the ASAP core components. The other components can be installed later by re-running the installer.

– **ASAP samples and demonstration models**: This component provides samples and demonstration models that you can use with ASAP. You must select this component if you want to configure ASAP demonstration models. You must de-select the Configure ASAP sub-component, Configure Oracle WebLogic server for ASAP and deploy Security, JSRP, and SADT to de-select the ASAP samples and demonstration models sub-component.

– **ASAP X2X component**: This component is for Solaris only, and has been deprecated. This component provide support for ASAP to NE connectivity over X.25 and X.29 protocols.

– **ASAP SNMP component**: This component is for Solaris only. This component provides support for the SNMP protocol. This component provides support for ASAP to NE connectivity over SNMP.

  ■ Configure ASAP

  – **Configure ASAP UNIX environment variables**: This configuration option configured the `ASAP_home/Environment_Profile` with the UNIX environment variables required to run ASAP.

  – **Configure ASAP database**: This configuration option creates and applies the ASAP server schemas and tables to the ASAP database instance tablespaces.

  – **Configure Oracle WebLogic server for ASAP and deploy Security, JSRP, and SADT**: This configuration option configures the ASAP WebLogic server components. You can also select the Configure Demonstration Service Activation Model option that provides demonstration service modes.

---

**Note:** ASAP supports the following demonstration models:

- **ATM/FR Service Activation Model**
- **3G Wireless Service Activation Model**
- **POTS Service Activation Model**
- **IP/VPN Service Activation Model**

These demonstration models are part of the ASAP samples and demonstration models ASAP sub-component. You cannot install the demonstration models without installing this ASAP sub-component.

You can use these demonstration models to test ASAP. See "Testing the ASAP Server Installation."

---

12. (Optional) Type 1 and press **Enter** to continue.

   Text that describes the components, and the total size of the components appears.

13. Type 1 and press **Enter** to continue.

   The Configure ASAP UNIX Environment Variables text appears.

14. Do the following:
a. Select the mode that you want to operate in by typing 1 for Development or 2 for Production. Type 0 when you are finished.

b. In the ASAP Environment ID field, enter an envID for ASAP.

c. In the Directory Name field, enter the name of the base directory of your Oracle Database client installation Oracle_client_home.

15. Type 1 and press Enter to continue.

Note: If you receive an error message stating "Oracle Home is invalid – missing bin/sqlplus or lib/libclntsh. Please check with your system administrator and re-enter the value”.

The Configure ASAP UNIX Environment Variables - ASAP Server Port text appears.

16. Each server has a default port number. Select one of the following options:

- Press enter to accept the default port number.
- Type a new port number for each server, and press enter.

The port numbers shown for the ASAP servers are default port numbers. Depending on your environment, you may want to change the port numbers. Oracle recommends that you view the system file /etc/services to check which ports are currently assigned in order to avoid conflicts.

The following UNIX command returns the ports that are currently in use, but does not indicate what ports are not currently in use, but are nonetheless assigned:

```
netstat -n | grep Port_number
```

17. Type 1 and press Enter to continue.

The Configure ASAP Database text appears.

18. In the Name of Oracle RDBMS Server field, enter the name of the destination Oracle RDBMS server that ASAP will use (tnsnames.ora entry name) and press Enter.

19. (Optional) If you want ASAP to use Oracle users that your DBA has already created, type 1 to select the Have you created Oracle Users? option. This skips the database schema creation part of the installation process. Type 0 to skip this option.

For information about already existing Oracle users (that is from a previous installation), see "Creating Oracle Database Users."

20. In the Oracle Server DBA User Name field, enter your Oracle system account user name and press enter.

21. In the Oracle Server DBA Password field, enter your password for the Oracle system account user name and press Enter.

22. (Optional) If you are installing ASAP on an Oracle RAC database, do the following:

   a. Type 1 to select the Is this an Oracle RAC database? option, and press Enter.
   b. Press Enter.
c. Enter the **RAC Database Connection String**. Information for at least two Oracle RAC nodes must be provided and separated by a comma. The format for this connection string is:

```
host1:port:servicename,host2:port:servicename
```

Where `host1` and `host2` is the name or IP address of your Oracle RAC databases, `port` is the `port` number for the Oracle RAC databases, and `servicename` is the service name for the Oracle RAC databases.

d. Press Enter.

23. Type 1 and press Enter to continue.

---

**Note:** If you encounter a "Failed to resolve name" error, copy the `tnsnames.ora` and `listener.ora` files from the `Oracle_home/network/admin` location to the `$TNS_ADMIN` location and repeat the installation.

Refer to "Re-Running the ASAP Server Installation" for important tasks that must be completed before re-running a failed installation.

---

**Note:** If you are installing ASAP and Oracle WebLogic Server on different machines, ensure that the alias of the DB connect string (the Oracle Database SID) is referenced in the `tnsnames.ora` files on both machines.

---

The Configure ASAP Database Tablespaces text appears listing all available tablespaces on your Oracle database instance.

24. Select the number for the tablespace you want to use for each ASAP server schema data and index segments and press Enter.

**Note:** If you had selected **Have you created Oracle Users option**, enter the tablespace data and index names you recorded in "Oracle Database Information."

---

25. Select the number for the tablespace you want to use for `TEMP_TS` and press Enter.

26. Press Enter.

27. Type 1 and press Enter to continue.

The Configure ASAP Database User Password text appears.

28. Enter a password and press Enter.

29. Enter the password again and press Enter to confirm the password for each database schema you recorded in "Oracle Database Information." If you are using pre-created user names and passwords, this options does not appear.

30. Type 1 and press Enter to continue.

The Configure WebLogic Server for ASAP text appears.
31. In the Host Name of WebLogic Server field, enter the name or IP address of the server on which the WebLogic server domain has been created and press Enter.

32. (Optional) If you are installing ASAP WebLogic server components using the SSL port, do the following:
   a. Type 1 to select the Use SSL option and press Enter.
   b. Press Enter to confirm.

33. In the Port Number of WebLogic Server field, enter the port number as defined during the configuration of the WebLogic Server domain.

34. In the User Name of WebLogic Server Administrator field, enter the WebLogic Server administrator account user name.

35. In the Password of WebLogic Server Administrator field, enter the WebLogic Server administrator account password.

36. (Optional) Enter a path to an SSL KeyStore File.

   Note: Your WebLogic server instance provides a demo SSL keystore file at WLServer_Home/wlserver_10.3/server/lib/DemoTrust.jks that can be used in a test environment.

37. Type 1 and press Enter to continue.

   Note: If the WebLogic Server information is incorrect, or a connection to the server cannot be made, a dialog box appears with the following message:

   “Connection Fail: Invalid URL, User ID or Password.”

   Click OK and correct the WebLogic Server information, then click Next to try again.

The Configure WebLogic Server Domain and Server text appears.

38. Select the WebLogic server you want to use by typing the number corresponding to the WebLogic server you want to use, then press Enter. The options are:
   - **AdminServer**: Select this option if you are installing ASAP to the admin server.
   - **ManagedServer**: Select this option if you are installing ASAP to a managed server.

39. Type 1 and press Enter to continue.

The ASAP Server Installation Summary text appears.

40. Type 1 and press Enter to begin the installation.

The Installation Summary text appears. Review the messages written to the console to confirm that no errors occurred during the installation. Should you
need to re-install, see "Re-Running the ASAP Server Installation."

41. Stop and restart the WebLogic Server.

42. Go to the home directory for the user account you used to create ASAP. For example:
    ```bash
    cd $HOME
    ```

43. Archive the InstallShield directory and move it to a secure location. You will need this directory if you decide to upgrade ASAP.

---

**Caution:** You cannot upgrade ASAP without the InstallShield directory that the ASAP installer creates when you initially install ASAP.

---

### Installing ASAP Using the Silent Installer

You can create a response file using the ASAP GUI installer that records all settings and selections you made using the GUI installer. You can use this file to perform subsequent, silent installations on other machines. You cannot use the console installer to create a response file. In addition to the settings contained in the response file, the silent installer also create a CSF wallet containing the passwords for each database schema and the user names and passwords for the Oracle DBA and WebLogic Server you recorded in "WebLogic Connection Information." For more information about the CSF wallet, see the *ASAP System Administrator’s Guide*. The silent installer prompts you to enter these user names and passwords during the silent installation process.

You can edit the variables contained in the response file before running the silent installation, as required, but do not change the name of the response file.

To create a response file using the GUI installer (without installing ASAP):

1. Perform the installation steps and answer the prompts.
   a. In the Select Installation Type dialog box of the ASAP Installer, select a **Custom** install.
   b. In the Select Components dialog box, select **ASAP core components** and the options available under the **Configure ASAP** option.
   c. In the subsequent dialog boxes, enter the information for the ASAP environment.

2. When you reach the Summary dialog box, click **Save As** to save the response file. You must use the following naming convention for your response file:
   - For Solaris:
     ```bash
     asap73ServerSolaris.response
     ```
   - For AIX:
     ```bash
     asap73ServerAIX61.response
     ```
   - For HP Itanium:
     ```bash
     asap73ServerHP11iV3Itanium.response
     ```
   - For Linux:
     ```bash
     asap73ServerLinux.response
     ```
The response file is saved to the *ASAP_home* directory (where *ASAP_home* is the location of your ASAP server installation directory).

3. Cancel the installation to exit the GUI installer.

4. (Optional) You can edit the response file so that each installer has the specific information that is required.

To start a silent installation:

1. Move the response file to the *ASAP_src/asap_utils* directory. For example:
   ```
   mv asap73ServerSolaris.response ASAP_src/asap_utils
   ```

2. Ensure that all the files in the *ASAP_src/asap_utils* directory have read write permissions.

3. Set the path for the **ORACLE_HOME** environment variable to the Oracle Client. For example:
   ```
   export ORACLE_HOME=Oracle_client_home
   export PATH=$ORACLE_HOME/bin:$PATH
   ```

4. Set the path for the **TNS_ADMIN** environment variable to the location of your *tnsnames.ora* file. For example:
   ```
   export TNS_ADMIN=$HOME
   ```

5. (Optional) Customize the silent installer *asap730ServerSilent* script, which is located in the *ASAP_src/asap_utils*/ directory.
   - Specify the name of the generated installer log file by adding the following line to the bottom of the script text file:
     ```
     ../asap73ServerOperating_System -is:log ./log_file_name.log -silent -options ./response_file.response
     ```

     The log file is saved in the *ASAP_src/asap_utils* directory.
   - Specify a temporary directory to be used by the silent installer by modifying the following line at the bottom of the script text file:
     ```
     ../asap73ServerOperating_System -is:tempdir ./temp_directory -is:log ./log_file_name.log -silent -options ./response_file.response
     ```

     Where *Operating_System* represents your platform operating system, such as Solaris, or Linux.

6. At the command prompt, launch the silent installer:
   ```
   asap730ServerSilent
   ```

---

**Installing ASAP Across Multiple UNIX Machines**

To install ASAP across multiple UNIX machines:

---

**Note:** This procedure uses the sample configuration file

*ASAP_home/samples/sadt/SampleCommonConfig/SlaveNEP.xml* as a template for creating a remote slave control server, NEP/JNEP server, and SRP server. Other server combinations are possible.
1. Install ASAP to the UNIX machine you want to use for the **master** ASAP environment using the typical installation option as described in "Installing ASAP Using the GUI Installer."

2. Install ASAP to the UNIX machine you want to use for the **slave** ASAP environment using the custom installation option, and selecting only the Core ASAP component.

**Note:** You must install Oracle client on the UNIX machine hosting the slave ASAP environment. For more information, see "Downloading and Installing the Oracle Client Software."

**Note:** If you want to create more than one slave ASAP environment, you must also install the Core ASAP components to these environments.

3. In the master ASAP environment terminal session, test your ASAP installation as described in "Verifying the ASAP Installation."

4. From the slave ASAP environment terminal session, create a `.rhosts` file in the home directory of the ASAP user account you used to install the ASAP core components. You must also do this for any additional slave ASAP environments.

   ```
   cd $HOME
   touch .rhosts
   ```

5. With a text editor, add an entry in the `.rhosts` file in the home directory of the login user. For example:

   ```
   + username
   hostname
   ```

   Where `username` is the user name for the master UNIX machine and `hostname` is the hostname for the master UNIX machine. This allows the specified user on the master UNIX server, to run "rsh" to execute commands on the slave environment.

6. From the master ASAP environment, test the rsh connection to the slave ASAP environment.

   ```
   rsh -l username hostname pwd
   ```

   Where `username` is the user name of the slave ASAP environment, and `hostname` is the hostname for the slave ASAP environment.

7. From the slave ASAP environment, check for available ports that you can use for your slave ASAP servers. Use the following command to identify available ports:

   ```
   netstat -n | grep port_number
   ```

   Where `port_number` is the port number you want to check.

**Note:** The `ASAP_home/samples/sadt/SampleCommonConfig/SlaveNEP.xml` requires five available ports.
8. In the master ASAP environment, open the `ASAP_home/samples/sadt/SampleCommonConfig/SlaveNEP.xml` with a text editor.

9. Change the following:

   - (mandatory) For a remote Control server, in the `remoteSlaveControlServer` element,
     a. Add the hostname for the slave ASAP environment to the `<hostname></hostname>` element.
     b. Add a port number for the slave Control server to the `<interfacePort></interfacePort>` element.
   - (optional) If you are adding a remote NEP server, in the `nepServer` element,
     a. Add the hostname for the slave ASAP environment to the `<hostname></hostname>` element.
     b. Add a port number for the slave NEP server to the `<interfacePort></interfacePort>` element.
     c. Add a JInterpreter port number for the slave NEP server to the `<interpreterPort/></interpreterPort>` element.
   - (optional) If you are adding a remote SRP server, in the `genericServer` element,
     a. Add the hostname for the slave ASAP environment to the `<hostname></hostname>` element.
     b. Add a port number for the slave SRP server to the `<interfacePort></interfacePort>` element.
     c. Add a SRP Listen port number for the slave SRP server to the `<SRPListenPort></SRPListenPort>` element.

---

**Note:** If you are not using either the SRP or NEP server configurations, delete the `genericServer` or `nepServer` elements and all child elements within them.

10. Source the master ASAP environment `ASAP_home/Environment_Profile`.
    ```
    . ./Environment_Profile
    ```

11. Start ASAP in the master ASAP environment.
    ```
    start_asap_sys -d
    ```

12. Start the ASAP WebLogic server.

13. Go to the `ASAP_home/samples/sadt/SampleCommonConfig/` directory.

14. Use `sactConfig` to upload the server `SlaveNEP.xml` file.
    ```
    sactConfig SlaveNEP.xml
    ```

15. Go to `ASAP_home` in the master ASAP environment.
    ```
    cd $ASAP_BASE
    ```

16. Archive the following files and folders:
    - `ASAP_home/Environment_Profile`
Installing ASAP Across Multiple UNIX Machines

- `ASAP_home/config/ASAP.cfg`
- `ASAP_home/SYBASE/interfaces`
- `ASAP_home/lib/`
- `ASAP_home/install/cwallet.sso`
- `ASAP_home/ASAP.properties`
- `ASAP_home/programs/JInterpreter`

For example:

```
zip -r Masterfile.zip Environment_Profile config/ASAP.cfg SYBASE/interfaces lib/ install/cwallet.sso ASAP.properties programs/JInterpreter
```

17. Copy the archive to the `ASAP_home` directory in your slave environment, using FTP for example.

18. From the slave ASAP environment change the permissions for the archive.

```
chmod 755 Masterfile.zip
```

19. Extract the archive.

```
unzip Masterfile.zip
```

20. From `ASAP_home/programs` create a symbolic link for the slave NEP server using the following command:

```
ln -s JInterpreter NEPSlave_jinterpreter
```

21. Open `ASAP_home/Environment_Profile` with a text editor.

22. Change the following variables:

- **DEV_BASE**: Change the path for this variable to the `ASAP_home` for slave ASAP environment.
- **ASAP_BASE**: Change the path for this variable to the `ASAP_home` for slave ASAP environment.
- **ORACLE_HOME**: Change the path for this variable to the location of the Oracle client for the slave ASAP environment.

23. From the master ASAP environment, open `ASAP_home/Environment_Profile` with a text editor.

24. Add the following variables:

```
export SLAVE_CONTROL_SERVERS="SlaveCtrl:Host:ASAP_home:username"
export ASAP_PROFILE="ASAP_home/Environment_Profile"
```

Where:

- **SlaveCtrl** is the slave control server name as defined in `tbl_appl_proc` table in the ASAP CONTROL database. This value is mandatory.
- **Host** is the hostname or IP address of the UNIX machine where the slave control server resides. This value is optional. If no slave control server is specified, the interfaces file `ASAP_home/SYBASE/interfaces` is referenced to find the host for that server (assuming that the Interfaces file is being used on this platform and is located in its default directory).
Re-Running the ASAP Server Installation

- **ASAP_home** is the ASAP base directory of the slave control server. This value is optional. If it is not provided, the master control server’s directory will be used as the default.

- **username** is the UNIX user ID for this slave control environment. This value is optional. If not provided, the master control server’s login ID will be used as the default by the remote shell.

For example:

```
export SLAVE_CONTROL_SERVERS=“CTRLSLV1:test.host:/home/asap/asap72:user1”
export ASAP_PROFILE="/home/asap/asap72/Environment_Profile"
```

25. If the **tnsnames.ora** file is not located in **$ORACLE_HOME/network/admin**, do the following steps:

a. From the slave ASAP environment, change the permissions for **ASAP_home/scripts/start_slave_control** using the following command:

   ```bash
   chmod 755 start_slave_control
   ```

b. Open the **ASAP_home/scripts/start_slave_control** with a text editor.

c. Remove the comment symbol “#” from the **$TNS_ADMIN** variable and provide a path to the **tnsnames.ora** file

26. From the master ASAP environment, restart ASAP.

   ```bash
   start_asap_sys -d
   ```

Re-Running the ASAP Server Installation

**Note:** Re-running a failed installation without performing the tasks below will result in another failed installation.

**Note:** If the installer finds **$HOME/InstallShield/**, an upgrade installation is run to add components onto an existing installation, instead of a new complete installation.

To re-run the ASAP Server installation:

1. Stop the WebLogic Server:

   ```bash
   cd Domain_Home/bin
   ./stopWebLogic.sh -U wls_admin_user
   ```

2. Uninstall the ASAP Server software by changing to the **$ASAP_BASE/_uninst** directory and running **./uninstall.sh** to trigger the uninstall utility. See "Uninstalling ASAP UNIX Servers" for details.

3. Perform any manual cleanup tasks as indicated by the uninstaller.

4. Log in and delete the **ASAP_home** directory contents (where **ASAP_home** is the location of your ASAP server installation directory). For example:

   ```bash
   cd $ASAP_BASE
   rm -r *
   ```
5. This will leave a directory called `.jvm`. This must also be removed.
   
   rm -rf .jvm

6. Also remove `.asap.java.pids` and `.ASAP`.
   
   rm -rf .asap.java.pids
   rm -rf .ASAP

7. ASAP database schemas may have been created. Your Database Administrator can refer to `ASAP_src/asap_utils/sample_drop_user.ksh` for a sample script to drop the schemas that were created.

8. Either restore the backup of the unused ASAP WebLogic Server domain `Domain_Home` or create a new `Domain_Home`. The installation process will not work on a domain that has been used in a previous installation attempt.

9. Restart the WebLogic Server. For example:
   
   cd /WLServer_Home/user_projects/domains/Domain_Home
   ./startWebLogic.sh

10. Re-run the ASAP Server installation process.

If you are re-running the ASAP Server installation after a previous successful installation:

If you choose not to delete the ASAP home directory `ASAP_home`, delete the `$HOME/InstallShield` directory (if it exists) in order to trigger a full re-install instead of an upgrade install. During an upgrade install, not all installation parameters are collected. The `InstallShield` directory may exist under the `$HOME` directory, if `$HOME` does not match `$ASAP_BASE`.

**Troubleshooting a Failed ASAP Installation**

This section explains how to troubleshoot error messages that you may encounter during an unsuccessful ASAP installation.

**Java Heap Space Exception Prevents ASAP Installation**

A Java heap exception may be caused because the physical memory, CPU speed, or the quantity of CPUs is less than the minimum requirements. The JVM, which is initiated by the ASAP installer to deploy the EAR file, runs out of memory and returns the Java heap space exception in the log.

Ensure that your system meets or exceeds the minimum requirements, as outlined in "ASAP Server Hardware Requirements."

If you discovers a Java heap space exception in the installation log after a failed ASAP installation:

1. Open the `deployWbApp` script file in the `ASAP_home/scripts/` directory.
2. Update the `deployWbApp` script by adding the following option:
   
   `-Xmx128m`
3. Restart the installer by using the following command:

```
java -Xmx128m -Xms128m weblogic.Deployer -adminurl WL_url -username WL_username
-name WL_name -targets server_name -source EAR_file_path -upload -deploy
```
This chapter describes how to install the Oracle Communications ASAP Order Control Application (OCA) client. Before installing the OCA client, read these chapters:

- ASAP Installation Overview
- Planning Your ASAP Installation
- ASAP System Requirements
- Configuring the Operating System
- Installing and Configuring Oracle Database and Client
- Installing and Configuring Oracle WebLogic Server
- Installing ASAP

About Order Control Application Client Session and User Configuration

Any OCA client can have sessions to one or more ASAP instances. There is a one-to-one relationship between a session and an ASAP instance.

If you are planning to operate more than 500 OCA clients, consider increasing the value of OCA_MAX_SESSIONS parameter in the *ASAP.cfg* file. The default number of sessions is 100.

You may also extend OCA client to connect to multiple ASAP instances by adding new server sessions to OCA client.

You can configure additional OCA client users in the WebLogic Server. For more information on configuring OCA client users, see the discussion on GUI interface security in *ASAP System Administrator’s Guide*.

---

**Note:** If you have errors with the OCA client and security exceptions are generated by the Oracle WebLogic Server you may need to update an OCA-related security setting within a server domain.

- In the Oracle WebLogic Server console, navigate to the Security section, and under Realms, click on your realm (For example, myrealm).
- On the General tab, locate the Check Roles and Policies for entry and change it to Web Applications and EJBs protected in DD.
- Click Apply.
- Restart your Oracle WebLogic Server.
Types of Installation

The installation options for the OCA client are:

- **OCA Thick client GUI Installer** – This installer mode prompts for required values using a series of dialog boxes (see "Installing Order Control Application Thick Client by Using the GUI Installer").

- **OCA Thick client Silent Installer** – An automatic installation started from a console that uses pre-recorded values entered during GUI install (see "Installing the Order Control Application Thick Client Using the Silent Installer").

- **OCA Thick client Included with the ASAP Environment** - You can run a local version of the OCA client within your ASAP environment. (see "Configuring the Order Control Application Thick Client in the ASAP Environment").

- **OCA Thin client Web Installer** - You can install the OCA Thin client using Internet Explorer or Mozilla Firefox (see "Configuring Order Control Application Thin Client (Java Applet)").

Installing Order Control Application Thick Client by Using the GUI Installer

The OCA thick client is supported on Microsoft Windows-based machines.

Installing OCA client involves the following tasks:

- Installing the client GUIs using the install wizard
- Specifying the OCA server so it can communicate with the ASAP servers
- Editing the WebLogic Server service parameters

Use the OCA client checklist (see Table 8–1) to make sure that you have met all of the requirements prior to starting the installation process.

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Record the hostname of the UNIX machine on which ASAP is running.</td>
<td>--</td>
</tr>
<tr>
<td>Record the IP address of the UNIX machine on which ASAP is running. If you are unsure of the IP address, see the system administrator.</td>
<td>--</td>
</tr>
<tr>
<td>Record the Environment ID of the ASAP Environment on UNIX machine</td>
<td>--</td>
</tr>
</tbody>
</table>

To install the OCA thick client by using the GUI installer:

1. Close all other applications on the target machine.
2. Remove all previous versions of the OCA client, including the AIMS client, if used.
3. Ensure that a local administrator account has been created on the target system.
4. Download the client installation executable, `asapReleaseNumberBuildNumberClientWin.exe` (for example, `asap730B100ClientWin.exe`), from the Oracle Software Delivery Cloud Web site.
5. Double-click the executable to start the client installer.
The ASAP splash screen appears followed by the Welcome dialog box. The Welcome dialog contains a Pre-installation Checklist. Ensure that you have completed the pre-installation requirements.

6. Click Next.

The Enter Client Destination Directory dialog appears.

7. Do one of the following:
   - In the Directory Name field, type the name of the directory where you want to install the OCA client.
   - To install the OCA client to another directory, click Browse.

8. Click Next.

The Select Installation Type dialog box appears.

9. Choose the type of OCA thick client installation you require.
   - If you selected Custom, the Select Components dialog appears. A custom installation allows you to select the components you want to install. Continue to next step.
   - If you selected Typical, the Disk Space Required dialog appears. A typical installation type includes the Java Runtime Environment, the OCA client, and Business Intelligence (BI) publisher reports. Skip the next two steps.

10. Click Next.

The Select Components dialog box appears.

11. Select the OCA client components you want to install.

   **Note:** If you do not have the Java Runtime Environment installed on your machine, enable Java Runtime Environment in the Select Components dialog, as it is required to run the OCA Client.

12. Click Next. The Components Selected - Disk Space Required dialog box appears, providing summary information on the ASAP installation location, the OCA client components to be installed, and the total size (in MB) of the installation.

13. Click Next. The OCA client Installation Summary dialog appears, displaying the installation directory and the client settings.

14. From the OCA client Installation Summary dialog click Save As to choose a directory to save the current ASAP installation settings. You can use this file for future unattended OCA client installation.

15. Click Next. The Installing OCA client dialog appears as the installation executes.

16. After the OCA client installation completes, the Installation Summary dialog appears. To view the README file, enable the check box.

17. Click Next.

The README file appears.

18. Click Finish.
Setting Up the Order Control Application Thick Client

1. Confirm that the `\Windows\system32\drivers\etc\hosts` file on the machine includes the fully qualified DNS name of the UNIX server where the ASAP server is running.

2. Open the `C:\Program Files\Oracle Communications\ASAP\OCAClient\config\OCA.cfg` file.

3. In the `OCA.cfg` file, set the session parameters and global parameters that are described in the topic about setting OCA SRP configuration parameters in ASAP Server Configuration Guide.

4. Double-click the OCA client icon on the desktop.

   **Note:** Log in to the OCA client using the OCA password that was specified during ASAP installation.

5. If the OCA client does not start, ensure that the WebLogic Server and the SARM server are running.

Installing the Order Control Application Thick Client Using the Silent Installer

You can create a response file using the client GUI installer that records all settings and selections you made using the GUI installer. You can use this file to perform subsequent, silent installations on other machines. When you invoke a silent installation, you are not prompted for input - instead, this input is read from the response file at run time.

**Note:** When running a silent installation of the OCA client, the OCA client, and JRE are installed by default.

You can edit the variables contained in the response file before invoking the silent installation to customize it. You can edit some of the custom values in the response file which pertain to ASAP. For example:

```
-P installLocation="C:\ASAP73"
```

To create a response file without installing the OCA client:

1. Perform the installation steps and answer the prompts.

2. When you reach the Summary Panel, click **Save As** to save the response file to disk.

3. Cancel the remaining installation. In other words, do not install the OCA client.

4. You can edit the response file so that the installer has the specific information that is required.

To invoke a silent installation:

1. Ensure that the response file and the client installation executable are in the same folder.

2. Enter the command prompt.
3. Go to the directory that contains the response file and the client installation executable.
4. Type:

   asapReleaseNumberBuildNumberClientWin -silent -options Response_filename

Configuring the Order Control Application Thick Client in the ASAP Environment

The following procedure enables you to configure the OCA thick client located on your UNIX system. This deployment of the OCA client is automatically installed in the ASAP environment when you install the ASAP server.

To configure the OCA client thick client in the ASAP environment:

1. In the $ASAP_HOME/config/OCA.cfg file, set the session parameters and global parameters that are described in the topic about setting the OCA SRP configuration parameters in ASAP Server Configuration Guide.
2. Modify $ASAP_BASE/scripts/runocaclient as required.
3. Do one of the following:
   - Run runocaclient
   - Type the following command:

     ```
     java -ms64m -mx64m -classpath "$ASAP_BASE/lib/ocac.jar" architel.OCA.OCAClient.app.OCAMain -c $ASAP_BASE/config/oca.cfg
     ```

     **Note:** Log in to the OCA client using the OCA password that was specified during ASAP installation.

Configuring Order Control Application Thin Client (Java Applet)

To set up the OCA thin client application, ensure that your browser has the required Java plug-in for the OCA client.

**Note:** There can be large performance differences when performing queries which return large numbers of work orders. See “Software Requirements” for your release to confirm the recommended JRE browser plug-in version.

Adding Order Control Application Thin Client Server Sessions

The following procedure describes how to add new server sessions for a given OCA client.

OCA users that have access privileges to multiple OCA sessions can select one or more sessions to use when performing order queries or audit log queries.

You need to perform the following procedure only if you intend to add new session configurations; ASAP installation automatically creates one session to the OCA JSRP.

To add new server session configurations to the OCA web client application:

1. To open the Web-based client, open a web browser and type:
For example: http://10.15.15.7001/AS47/OCA

ASAP_envID is the ASAP environment ID. An ASAP system can have multiple ASAP instances with multiple environments.

The OCA Web Client Configuration screen appears.

2. Click **Add Server Session Configuration**. The following screen appears.
3. Supply the following information.
   - **ASAP Environment ID**: The ASAP environment ID is a unique identifier for each ASAP environment within an ASAP instance. Maximum of four alphanumeric characters.
   - **Control Database Host**: The host name or IP address of the ASAP server.
   - **Control Database Port**: Enter Control Database Port.
   - **Control Database Name**: The name of the control database for the ASAP instance.
   - **Control User Name**: The control database user ID.
   - **Control User Password**: The control database user password.
   - **WebLogic Administrator**: WebLogic Server system administration login ID.
   - **WebLogic Password**: WebLogic Server system administration login password.
   - **WebLogic Target Server**: The name of the WebLogic Server for the ASAP instance.

4. Click **Add Server Session**.
   A message appears confirming the successful addition of the server session, or any errors related to the addition of the server session.

5. Click **Continue** to return to the OCA Web Client Configuration screen. The new server session appears in the Registered Server Sessions list.

### Launching an Order Control Application Thin Client Server Session

To launch an OCA thin client server session:

1. Open a web browser and type:
   
   http://BEA_host:/BEA_port/ASAP_envID/OCA

   For example: http://10.15.15.15:7001/AS47/OCA

   *ASAP_envID* is the ASAP environment ID. An ASAP system can have multiple ASAP instances with multiple environments.

   The OCA Web Client Configuration screen appears.
2. Select a server to launch from the Select from the following Registered Server Sessions list.

3. Set the following global parameters:

   - **Language Code**: Language code for the language in which translatable information is returned to and displayed by the client. If applied, all translatable fields are shown in the OCA client native language, as specified by the LANGUAGE variable.
   
   - **Idle Timeout**: Maximum idle time, in minutes, after which the OCA SRP server terminates the OCA client connection. Set to zero (0) to disable this feature.
   
   - **Events Supported**: Enables the propagation of SARM events.
   
   - **Max Open Windows**: The number of detail windows a user can have open at one time.

4. Click Launch Selected Server Sessions.

---

**Note**: The first time you log in to OCA, the user name is ASAP_admin and the password is password_ASAP_admin. Users with the access privileges can change the default user name and password using the WebLogic Server Console.

---

### Configuring the OCA Client on Systems with Multiple Interfaces or IP Addresses

If the Windows computer hosting your OCA client is configured with more than one network interface or IP address or if the hostname of your computer maps to a network address that the WebLogic Server cannot contact (for example when the OCA user is accessing ASAP over a VPN) configure your client as follows.
Configuring the Windows Order Control Application Thick Client

1. On your Windows system, click Start, point to Programs, point to Oracle Communications, point to ASAP, point to OCA Client.
2. Right-click on OCA Client and select Properties.
3. In the Properties dialog box, click the Shortcut tab.
4. In the Target field, between the entries
   
   C:\WINDOWS\system32\javaw.exe

   and

   -ms64m -mx64m -classpath 'C:\Program Files\Oracle Communications\ASAP\OCAClient\lib\ocac.jar' architel.OCA.OCAClient.app.OCAMain

   add

   -Dweblogic.corba.client.bidir=true

   Your entry must now look like this (the new entry is highlighted in bold letters):

   C:\WINDOWS\system32\javaw.exe -Dweblogic.corba.client.bidir=true -ms64m -mx64m -classpath 'C:\Program Files\Oracle Communications\ASAP\OCAClient\lib\ocac.jar' architel.OCA.OCAClient.app.OCAMain

Configuring the Order Control Application Thin Client (Java Applet)

1. On your Windows system, click Start, point to Settings, and click Control Panel.
   The Control Panel dialog appears.
2. Double-click the Java icon to open the Java Control Panel.
3. In the Java Control Panel, open the Java tab.
4. In the Java Applet Runtime Settings box, click View.
   The Java Runtime Settings dialog appears.
5. In the Java Runtime Versions table, add the following entry to the Java Runtime Parameters column for your preferred version of JRE:

   -Dweblogic.corba.client.bidir=true

   WARNING: Do not overwrite the existing entries.

Localizing the Order Control Application Client

Perform the following procedures to translate OCA client interface components as well as the OCA applet to a language other than English. This procedure does not extend to the HTML page within which the OCA applet runs.

All elements that can be translated are contained in the OCAResources.properties file. Specifically, elements that can be translated are:

- Screen titles
- Field labels
- Informational labels (such as the number of work orders found)
- Menus and their contents
- List headers
- OCA-specific error messages
- Tooltips
- OCA-populated drop-down lists

Elements that cannot be translated are:
- Error messages that are generated by the OCA SRP
- Data that appears within fields and data lists
- Data that appears in some drop-down lists populated by systems external to the OCA client

It is not necessary to modify the OCA.cfg file.

**Configuring Your Locale**

To configure your locale:

1. On your Windows system, click **Start**, point to **Settings**, and click **Control Panel**. The Control Panel dialog appears.
2. Double-click the **Regional and Language Options** icon. The Regional and Language Options dialog appears.
3. Select the target locale, such as "French (Canada)".

**Configuring Your Browser if Running the OCA Applet**

To configure your browser if you are running the OCA applet:

1. Open the Web browser and select **Tools > Internet Options**.
2. In the General tab, click **Languages**.
3. In the Language Preference dialog, click **Add**.
4. Ensure that "French(Canada)[fr-ca]" and "English(United States)[en-us]" are included in the list.
5. Click **OK**.

**Translating the Template File**

To translate the template files:

1. Open the OCAResources.properties file and save it with a different name. For example, if you are producing a French properties file, you could name it OCAResources_fr_ca.properties.
2. Open the OCAResources_fr_ca.properties file and translate the values to the right of the equals sign as required. For example:

```
# OCA Frame Temp Action
TMP_ACTION=Ajouter
TMP_ASDLDELAYFAIL=ASDL insuccès retardée
TMP_ASDLRETRY=ASDL réessayage
...
```
3. Package the translated OCAResources_fr_ca.properties file into a new JAR file (ocac_lang.jar).
   For example, type:
   
   `jar uvf ocac_lang.jar`

   For the OCA client (Windows platform), ocac_lang.jar is located in $OCA_ClientHOME\lib.
   For example, C:\Program Files\Oracle Communications\ASAP\OCAClient\lib.
   If you are running OCA as a web application, you must copy the OCAResources_fr_ca.properties to the UNIX platform using FTP, compile it, and package it to ocac_lang.jar on the server side. On the server side, ocac_lang.jar is normally bundled in asapENV.ear.

4. In the Target command, add the "-Duser.language=fr_ca" flag before the classpath flag.

5. Append the ocac_lang.jar file to the classpath.

### Installing Order Control Application Client Report Templates

When the OCA client is installed, the following templates are created:

- OCA_client_home\BIReports\report_name\report_name.xdoz
- OCA_client_home\BIReports\report_name\report_name.xdmz

Where OCA_client_home is the location of your OCA thick client installation directory and report_name is the name of the report.

For example, when the OCA client is installed with ASAP report templates, the Activity_Report directory is created with the following templates:

- C:\Program Files\Oracle Communications\ASAP\BIReports\Activity_Report\Activity_Report.xdoz
- C:\Program Files\Oracle Communications\ASAP\BIReports\Activity_Report\Activity_Report.zdmz

**Note:** If you select the installation type as Custom, ensure that you select Report.

For more information about ASAP reports, see Order Control Application User’s Guide.
This chapter provides instructions for performing Oracle Communications ASAP post-installation tasks.

Overview of ASAP Post-Installation Tasks

Post-installation tasks for ASAP include:

- Configuring ASAP to Support TAF for Oracle RAC
- Installing and Testing a Cartridge
- Backing Up the InstallShield Directory
- Using ASAP with Oracle Database 12c and NLS_CHARACTERSET WE8ISO8859P15
- Creating a Backup of ASAP, WebLogic Domain, and ASAP Schemas

Configuring ASAP to Support TAF for Oracle RAC

To configure the `asap_home/conf/ASAP.cfg` file (where `ASAP_home` is the location of your ASAP server installation directory) to take advantage of the Oracle Real Application Cluster (RAC) system functionality and transparent application failover (TAF), use the following procedure:

1. Using a text editor, open the `ASAP.cfg` file in the `ASAP_home/conf/` directory.
2. Configure the entries in `ASAP.cfg` listed in Table 9–1.

<table>
<thead>
<tr>
<th>Entry</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DB_RETRY_NUMBER</td>
<td>Specify the number of times you want ASAP to retry the connection when the connection to the database fails. For example, <code>DB_RETRY_NUMBER = 11</code>.</td>
</tr>
<tr>
<td>DB_RETRY_INTERVAL</td>
<td>Specify the interval (in seconds) between attempts for establishing the connection. For example, <code>DB_RETRY_INTERVAL = 10</code>.</td>
</tr>
</tbody>
</table>

The following are reliability related configuration parameters in the `ASAP.cfg` file:

- `DB_RETRY_NUMBER = 5` # Manual Retry count on loss of DB Connection
- `DB_RETRY_INTERVAL = 1` # Sleep period between each manual retry on loss of DB connection
- `USE_OCI_EVENTS = 1` # Activates OCI_EVENTS on OCI Environment
For information about troubleshooting ASAP, see the *ASAP System Administrator’s Guide*.

**Installing and Testing a Cartridge**

This section describes the following procedures related to installing and testing a cartridge:

- Downloading a Cartridge
- Installing a Cartridge
- Installing a Cartridge to a Distributed ASAP Environment
- Redirecting Work Orders to a Remote Backup NEP Server

**Downloading a Cartridge**

To download a cartridge:

1. Go to the My Oracle Support Web site:
   
   [https://support.oracle.com/CSP/ui/flash.html](https://support.oracle.com/CSP/ui/flash.html)
2. On your workstation, create a repository directory with a name of your choice.
3. Download the cartridge to a temporary directory.
4. Extract the TAR file.
   
   ```
   tar xvf TAR_file.tar
   ```

The directory structure should look like the following:

```
repository_directory
  /README.txt
  /installCartridge
  /uninstallCartridge
  /SAR_file.sar
```

This is the minimum required structure. You can enhance this directory structure with additional directories.

**Installing a Cartridge**

There are two ways of installing a cartridge:

- Installing a Cartridge Using Scripts
- Installing a Cartridge Using Studio

Before installing a cartridge, ensure that ASAP is running.

To start ASAP:

1. Start ASAP:
   
   ```
   start_asap_sys -d
   ```
2. Verify that the WebLogic instance for this ASAP environment is running.

The *ASAP System Administrator’s Guide* contains more information on starting the ASAP server, the ASAP Daemon, and the WebLogic Server.
Installing a Cartridge Using Scripts

The `installCartridge` script executes the following tasks:

- Configures the cartridge-specific NE using the Service Activation Configuration Tool (SACT).
- Deploys the cartridge service model (only if the cartridge service model is not yet deployed) using the Service Activation Deployment Tool (SADT).
- Copies the cartridge-specific JAR files to the ASAP environment.
- Using the `PostDeploySarFile` script:
  - Searches for and invokes the `SarPatch` script inside a SAR file.
  - Searches for and populates all SQL files whose name has no `undeploy_` prefix.
  - Searches for all `.tst` work order files and load the work order defined in them.

For information about the SACT refer to the *ASAP Server Configuration Guide*. For more information about SADT and the PostDeploySarFile, refer to the *ASAP Cartridge Development Guide*.

---

**Note:** Before deploying an XML file for the first time, ensure that the `ASAP_home/SYBASE/interface` file exists.

To install the cartridge:

1. Run the `ASAP_home/samples/DIT/scripts/installCartridge` script.
   
   ```bash
   installCartridge SAR_file.sar
   ```
   
   Where `SAR_file` is the name of your SAR file.

2. The script prompts you for the values of the following WebLogic login parameters:
   - WebLogic Hostname
   - WebLogic HTTP Port
   - WebLogic Login User ID
   - WebLogic Login Password

   The script loads the NEP-NE configuration and the CSDL-ASDL configuration to the SARM database, and loads sample work orders to the SRP database. The script also copies the cartridge-specific jar files to the ASAP environment.

3. Add `${ASAP_BASE}/lib/studio_2_6_0.jar` to the CLASSPATH in the `JInterpreter` file under `${ASAP_BASE}/programs` directory.

4. Restart ASAP to upload the cartridge configuration into ASAP.

Installing a Cartridge Using Studio

Ensure ASAP and WebLogic Server are started and running. For more information on using Design Studio with ASAP, see *Design Studio Help for ASAP*.

To install a cartridge using Design Studio:

1. From the File menu, select Import, then select Activation Archive (SAR) under Studio Wizards to import the SAR file. Browse for the path of the SAR file and click Finish.

2. Create a new Service Activation Project.
3. Define a new **NE Entity** based on the **NE Template** contained in the cartridge provided by Oracle.

4. Ensure that the primary pool of the newly created NE is different from the NE template primary pool. You can modify it, if necessary.

5. Ensure that the test work order provided with the cartridge targets the newly defined NE. If not, then modify the test work orders file(s).

6. Create a new **Activation Environment Project** from the **Studio** menu. See Studio documentation for more information.

7. Create **Activation Environment** inside the **Activation Environment Project** and configure the **Connection Details** tab with your Environment ID, Activation version, and WebLogic data.

8. Connect to your environment using the **Connect** button.

9. Select the **Cartridge** tab of the **Activation Environment** and click **Add** to add your projects to the environment. The cartridge and the newly created **Service Activation** should appear in the **Cartridges** list.

10. Deploy the **NetworkActivation** (NA) cartridge provided by Oracle. (No NE information is to be deployed with this cartridge, therefore it is not necessary to deploy the NEP map info).

11. Deploy the **Service Activation** (SA) project as follows:
   - On the **Cartridge** tab, select the necessary SA cartridge and click **Deploy**.
   - Select the **NEP Map** tab of the Activation Environment. Select the required NEP server from **Network Element Processors**. See Studio documentation for more information.
   - Select the SA cartridge from the **Network Element Processor Map** and click **Deploy**.

12. Verify the SADT console to confirm the installation.

13. Go to ASAP environment.

14. Add `$ASAP_BASE/lib/studio_2_6_0.jar` to the CLASSPATH in the **JInterpreter** file under `$ASAP_BASE/programs` directory.

15. Restart ASAP in order to start working with the cartridge.

### Installing a Cartridge to a Distributed ASAP Environment

To install an ASAP cartridge to an ASAP environment that has been distributed over several UNIX machines:

1. Install the cartridge to the master ASAP environment as described in "Installing a Cartridge Using Scripts" or "Installing a Cartridge Using Studio."

2. Archive the following files and folders:
   - `ASAP_home/Environment_Profile`
   - `ASAP_home/config/ASAP.cfg`
   - `ASAP_home/SYBASE/interfaces`
   - `ASAP_home/lib/`
   - `ASAP_home/install/cwallet.sso`
   - `ASAP_home/ASAP.properties`
Installing and Testing a Cartridge

ASAP Post-Installation Tasks

- **ASAP_home/programs/JInterpreter**

For example:

```
zip -r Masterfile.zip Environment_Profile config/ASAP.cfg SYBASE/interfaces
lib/ install/cwallet.sso ASAP.properties programs/JInterpreter
```

3. Copy the archive to the **ASAP_home** directory in your slave environment, using FTP for example.

4. From the slave ASAP environment extract the archive.

```
unzip Masterfile.zip
```

## Redirecting Work Orders to a Remote Backup NEP Server

This procedure assumes that you have set up a remote NEP server to act as a backup in the event that the local NEP server fails.

To redirect work orders to the remote backup NEP server:

1. Install ASAP with a distributed remote NEP server as described in "Installing ASAP Across Multiple UNIX Machines."

2. Create a cartridge that is mapped to the local NEP.

3. Deploy the cartridge to the master environment and the slave environment as described in "Installing a Cartridge to a Distributed ASAP Environment." In this scenario, after deploying the cartridge, the remote NEP does not need to be running.

4. Create an SACT XML file that you can use to remap the work order from the local NEP server to the remote NEP server. For example:

   ```xml
   <element name="MSLV-TELNET-HOST">
     <vendor>MSLV</vendor>
     <technology>TELNET</technology>
     <softwareLoad>1-0</softwareLoad>
     <nepServerName>NEP_Server</nepServerName>
     <primaryPool>MSLVPOOL</primaryPool>
     <maximumConnections>10</maximumConnections>
     <dropTimeout>2</dropTimeout>
     <spawnThreshold>4</spawnThreshold>
     <killThreshold>2</killThreshold>
     <routingElement name="MSLV-TELNET-HOST">
       <atomicService/>
     </routingElement>
   </element>
   
   Where **NEP_Server** can is the name of the remote backup NEP server.

5. If the local NEP server fails, run SACT with the NEP backup server XML file to update the SARM database with the new routing information.

6. Restart the ASAP server.

```
stop_asap_sys -d
start_asap_sys -d
```

7. When the local NEP server become available again, repeat steps 4 to 6 using the **NEP_Server** name of the local NEP server.
Backing Up the InstallShield Directory

Certain install files are created during installation and contains information about which components were installed into an ASAP environment. They are stored under $HOME/InstallShield/... and are referred to by the installer when the ASAP environment is subsequently upgraded.

You should back up the $HOME/InstallShield/ directory for each ASAP installation you perform. Ensure that you are able to identify which ASAP version and EFix number the backed up directory is associated with.

Note that the $HOME/InstallShield/ directory can be overwritten by a subsequent install if:

- You have more than one ASAP environment installed on one machine
- These installations share the same $HOME location
- The $HOME location is different than the $ASAP_BASE location

Using ASAP with Oracle Database 12c and NLS_CHARACTERSET WE8ISO8859P15

Perform the following tasks if you are using Oracle Database 12c with NLS_CHARACTERSET WE8ISO8859P15.

To enable ASAP to function with the NLS_CHARACTERSET WE8ISO8859P15

1. After you install the ASAP server software, you must copy the Oracle 12c version of orai18n.jar from WLS_home/Oracle/Middleware/oracle_common/modules/oracle.nlsrtl_12.1.0 to ASAP_home/JLIB.

   ASAP_home is the location of your ASAP server installation directory, and WLS_home is the directory containing the WebLogic Server software.

2. Add WLS_home/Oracle/Middleware/oracle_common/modules/oracle.nlsrtl_12.1.0/orai18n.jar to the CLASSPATH for WebLogic Server

3. Add PRE_CLASSPATH in WLS_domain_home/bin/setDomainEnv.sh.

   WLS_domain_home is the directory containing your WebLogic Server domain.

4. Clear the PRE_CLASSPATH in case an application template wants to set it before the larger PRE_CLASSPATH is invoked as shown below:

   
   PRE_CLASSPATH=""
   export PRE_CLASSPATH

   
   PRE_CLASSPATH="$WL_HOME/Oracle/Middleware/oracle_common/modules/oracle.nlsrtl_12.1.0/orai18n.jar"
   export PRE_CLASSPATH

Creating a Backup of ASAP, WebLogic Domain, and ASAP Schemas

After installing or before upgrading ASAP, create a backup of the ASAP environment, WebLogic domain, and ASAP schemas. These backups can be used to recover from system or upgrade failures.

Ensure that you have installed the zip and unzip utility (or a similar utility such as tar) before you start the backup procedures.
The Oracle database server provides the `impdp` and `expdp` utilities to import and export database schemas.

---

**Note:** While backing up ASAP, you must shutdown ASAP and the ASAP WebLogic domain. Do not start these backup procedures until the status for all work orders indicate **Completed**, **Cancelled**, or **Failed**, and no work order status indicates **in Loading**, **Initial**, or **in progress**. The Oracle database server must be running.

To minimize service outage while you upgrade, perform the backup during off-peak hours.

---

**Creating a Backup of the ASAP Environment**

To create a backup of the ASAP environment, use the following procedure:

1. Source the `ASAP_home/Environment_Profile`.
   ```bash
   . ./Environment_Profile
   ``

2. Shut down ASAP.
   ```bash
   stop_asap_sys -d
   ``

3. From the directory that contains `ASAP_home`, use the `zip` utility to generate an ASAP backup file:
   ```bash
   zip -r ASAP720_BACKUP.zip ASAP_home
   ``

4. Store the backup file in a safe location.

**Creating a Backup of the WebLogic Server**

To create a backup of the WebLogic Server:

1. Shutdown the WebLogic Server using the `Domain_home/bin/stopWeblogic.sh` script or from the WebLogic GUI.
   ```bash
   ./stopWeblogic.sh
   ``

2. From the directory that contains the `Domain_home` folder, use the `zip` utility to generate an WebLogic Domain backup file.
   ```bash
   zip -r WLDOMAIN_BACKUP.zip WeblogicDomain
   ``

   **Note:** It is also good practice to backup the WebLogic Server software located at `BEA_home`.

3. Store the backup file in a safe location.

**Creating a Backup of the ASAP Schemas**

To create a backup of the ASAP Database:

1. Ensure that your database is running.

2. Source the ASAP `Environment_Profile` in the `ASAP_home` folder.
   ```bash
   . ./Environment_Profile
   ```
3. Use the following command to generate a backup file for the Control, Admin, SARM, NEP, and SRP servers, where `password` is the database system admin password and `filename` is the name you want to give your DMP file.

```bash
expdp system/password SCHEMAS=$CTRL_USER,$SARM_USER,$ADM_USER,$NEP_USER,$SRP_USER DUMPFILE=filename.dmp
```

**Note:** You can find the location for the DMP file at the end of the output from this command. For example:

```
Dump file set for SYSTEM.SYS_EXPORT_SCHEMA_01 is:
/path/dpdump/FILENAME.dmp
```

Where `path` is the path to the `dpdump` directory.

If the database is co-resident with ASAP, you must log in with a database user account to access the file. If the database is on a different UNIX machine, you must log into the UNIX machine with a database user account to access the file.
Verifying the ASAP Installation

This chapter describes how to verify that Oracle Communications ASAP is installed correctly.

Checking the State of all Installed Components

You can verify that ASAP is installed by checking the state of all installed components. To check the state of all installed components:

1. Log in to the WebLogic Administration console.
2. In the left panel, in the Domain Structure section, click Deployments.
   The Summary of Deployments page appears.
3. Ensure that the managed server is running.
4. If ASAP is installed successfully, the following deployments appear in the Active state:
   - asapenvid (where envid is the environment ID for the ASAP instance)
   - cartridge_management_ws
   - SecurityServices

Testing the ASAP Server Installation

The ASAP Server installation provides several Demonstration Service Activation Models. If you have selected any of these models during the installation process, you can use them to test your ASAP installation.

---

**Note:** Oracle recommends that you read the Demonstration Service Activation Model README file of the Service Activation Model you chose to install during the ASAP installation. The ATM/FR, 3G Wireless and IP VPN Service Activation Models require additional configuration.

---

To test the ASAP Server installation, start ASAP and send sample work orders to the Demonstration Service Activation Model.

It is also recommended that you restart the WebLogic Server before testing the ASAP installation.

There are four Demonstration Service Activation Models in the ASAP server installer.
To test the installation:

1. From ASAP_home, source the Environment_Profile file:
   
   . ./Environment_Profile

2. (Optional) Set the TNS_ADMIN variable to the location of your tnsname.ora. This step is only required if the Oracle_home/network/admin/tnsnames.ora file does not contain the ASAP database information.

3. Start ASAP using the following command (see Table 10–1 for argument details):
   
   start_asap_sys -d

4. From the UNIX prompt, enter:
   
   status

   A list of the ASAP servers that are running is displayed.

5. Using Table 10–1, locate the appropriate executable and enter it at the UNIX command prompt. The executables vary, depending on the activation cartridges you chose during the installation process.

   Refer to the README file for each Demonstration Service Activation Model for instructions on running ASAP using each model.

**Table 10–1  Service Activation Model Executables**

<table>
<thead>
<tr>
<th>Demonstration Service Activation Model</th>
<th>Installation Path</th>
<th>Executable¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM/FR Service Activation Model</td>
<td>$ASAP_BASE/samples/sadt/ATM_FR/Nortel/PASSPORT_3.0/</td>
<td>run_suite $SRP ctrl_password ALL_ATM or run_suite $SRP ctrl_password ALL_FR</td>
</tr>
<tr>
<td>3G Wireless Service Activation Model</td>
<td>$ASAP_BASE/samples/sadt/3G_Wireless/Nortel/HLR_PS_3.0/</td>
<td>run_suite $SRP ctrl_password ALL_3GW</td>
</tr>
<tr>
<td>POTS Service Activation Model</td>
<td>$ASAP_BASE/samples/sadt/DemoInstall/Nortel/DMS/POTS/</td>
<td>run_suite $SRP ctrl_password ALL_POTS</td>
</tr>
<tr>
<td>IP VPN Service Activation Model</td>
<td>$ASAP_BASE/samples/sadt/IPVPN/Nortel/SHAISTA_2.5/</td>
<td>run_suite $SRP ctrl_password ALL_IPVPN</td>
</tr>
</tbody>
</table>

¹ Where ctrl_password is the password for the control server.

6. To verify that work orders are executing, enter asap_utils.

7. When prompted, enter the password to the control server.

8. When prompted, enter 1 to view the service requests in the SARM database. The WO_STAT column displays the status of the work orders.

   Expect a combination of 104 (success), 103 (in progress), 253 (failure) and 255 (translation failure). Some work orders may intentionally fail. The expected results are listed below.

   - ATM/FR Service Activation Model – The expected results for every work order is success (104).
Testing a Cartridge Installation

To test a cartridge installation, you need to know about the network element, services, and basic activation configuration. You may need to perform adjustments to provision a service for a specific NE, network, or connectivity configuration.

You can test the cartridge installation using one of the following methods:

- **3G Wireless Service Activation Model** – The expected results for every work order is success (104).
- **POTS Service Activation Model** – The expected results when running in loopback mode are listed below. (If not in loopback mode, the results vary depending upon your specific configuration.)
  - Success (104): POTS-1, POTS-2, RAW-1, and TRUNK-1
  - Failure (253): POTS-3, POTS-4, and CTX-1
  - In Progress (103): POTS-5
- **IP VPN Service Activation Model** – The expected results for every work order is success (104).

9. Use the test suite script `run_suite` to test the operation of ASAP in the current environment. The test suite uses an SRP emulator to send work orders through ASAP. You can then check work order status using the Order Control Application (OCA) or the ASAP utility script `asap_utils`.

If the password is set with the same value as the user name, then the `run_suite` utility can be executed using one of the following formats:

```
run_suite $SRP $CTRL_USER work_order_name [count [delay]]
run_suite $SRP ctrl_password work_order_name [count [delay]]
```

If you define a `$CTRL_PASSWORD` variable with the password value, you can use the command:

```
run_suite $SRP $CTRL_PASSWORD work_order_name [count [delay]]
```

If the password is set with a different value from the user name, `run_suite $SRP $CTRL_USER` does not work. The `run_suite` utility can be executed with:

```
run_suite $SRP ctrl_password work_order_name [count [delay]]
```

Or, you can define a `$CTRL_PASSWORD` environment variable with the password value, then use the command:

```
run_suite $SRP $CTRL_PASSWORD work_order_name [count [delay]]
```

Where:
- `ctrl_password` is the control password. For example, ctrlPass. Mandatory.
- `work_order_name` is the work order or suite name. For example, POTS-2. Mandatory.
- Values surrounded with `[]` are optional.

Note: If ASAP fails to start, confirm that the `ASAP_home/SYBASE/interfaces` file is not empty (where `ASAP_home` is the location of your ASAP server installation directory). If it is, re-install ASAP. See "Re-Running the ASAP Server Installation."
Loopback Mode: Does not actually connect to or send commands to the NE.

Live Mode: Connects to and sends commands to a live NE.

Configuring Loopback and Live Mode Parameters

Set the following variables to test the cartridge in loopback or live testing modes.

Loopback Mode:
Set the parameter listed in Table 10–2 to test the cartridge in loopback mode.

Table 10–2 Loopback Mode Parameter Settings

<table>
<thead>
<tr>
<th>Configuration Variable</th>
<th>Parameter Settings</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOOPBACK_ON</td>
<td>1 (default setting)</td>
<td>ASAP_home/configASAP.cfg</td>
</tr>
</tbody>
</table>

Live Mode:
Set the parameter listed in Table 10–3 to test the cartridge in live mode.

Table 10–3 Live Mode Parameter Settings

<table>
<thead>
<tr>
<th>Configuration Variable</th>
<th>Parameter Settings</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOOPBACK_ON</td>
<td>0</td>
<td>ASAP_home/configASAP.cfg</td>
</tr>
</tbody>
</table>

Mapping the NE_Cartridge_name_HOST.xml file to NEP Servers

To modify the NE_Cartridge_name_HOST.xml file:
1. Create a new source directory with a name of your choice.
   ```bash
mkdir New_source_directory
   ```
2. Copy SAR_file.sar to this new source directory.
   ```bash
cp SAR_file.sar ./New_source_directory
   ```
3. Change directory to New_source_directory.
   ```bash
cd New_source_directory
   ```
4. Un-jar SAR_file.sar. This extracts the contents of the sar file.
   ```bash
jar xvf SAR_file.sar
   ```
5. Edit New_source_directory/NE_Cartridge_name_HOST.xml to map the file to the NEP servers.
6. Create a new sar file at the New_source_directory level.
   ```bash
CreateSar $PWD
   ```
7. Uninstall the cartridge using SAR_file.sar.
8. After you uninstall the cartridge, rename the sar file, so you have a backup copy.
9. Copy the new sar file from New_source_directory.
10. Reinstall the cartridge.
Testing the Installation

The following procedure describes the steps required to test the cartridge installation in loopback mode. We recommend that you perform the initial cartridge installation test in loopback mode.

To test the cartridge installation in loopback mode:

1. Stop ASAP by entering the following command at the UNIX prompt:
   ```
   stop_asap_sys -d
   ```

2. Ensure loopback mode is on. See "Configuring Loopback and Live Mode Parameters" for a description of how to set the loopback parameter to On.

3. Start ASAP by entering:
   ```
   start_asap_sys -d
   ```

4. Send the sample work orders through the SRP Emulator by entering:
   ```
   run_suite $SRP ctrl_password suite name
   ```
   You can locate the suite names by entering:
   ```
   grep SUITE * | grep -v END
   ```
   A list of all available suites appears.
   For more information on the SRP Emulator, refer to the ASAP System Administrator’s Guide.

5. Verify the status of the sample work orders by entering:
   ```
   asap_utils -d l
   ```
   All successful work orders return to 104 state.
   To view the sample work orders provided with the cartridge, refer to the cartridge source.

Viewing the Sample Work Orders

You find the sample work orders under the sample_wo directory in the SAR file. The following procedure describes how to view the sample work orders.

To view the sample work orders:

1. Create a repository directory, copy the SAR file to the new directory, and un-jar the SAR file, as described in Step 1 through Step 4 in "Mapping the NE_Cartridge_name_HOST.xml file to NEP Servers."

2. Locate and view the sample work order files.
This chapter describes how to upgrade your existing Oracle Communications ASAP system to ASAP release 7.3. It also includes information about new features, any impact that these new features have with respect to the operation of ASAP, and instructions on how to recover from a failed upgrade.

In this chapter, the ASAP release running on your production or development system is called the old release. The release you are upgrading to is called the new release.

About Upgrading ASAP

Upgrading to ASAP 7.3 consists of the following process:

- Planning the upgrade
- Implementing and testing the upgrade on a development test system
- Preparing to upgrade a production system
- Implementing and testing the upgrade on the production system

The upgrade process includes these tasks:

- Updating the Oracle database and client
- Updating the WebLogic Server and domain
- Updating the ASAP software
- Implement new features

For current patch information, see "Patch Requirements." For current release information, see "ASAP System Requirements."

Supported Upgrade Paths

You can directly upgrade to ASAP 7.3 from the ASAP 7.2 release.

Planning Your Upgrade

To plan your upgrade, review the following tasks:

- Identifying Your Upgrade Team
- Identifying Who Is Affected by the Upgrade
- Determining the Impact of New Features
- Estimating How Long the Upgrade Will Take
### Identifying Your Upgrade Team

Your upgrade team should include the following team members:

- A database administrator to manage the database upgrade and tune the database
- A system integrator to handle new and existing ASAP customizations
- A system administrator to manage the WebLogic Server and ASAP software upgrade
- A UNIX administrator to manage accounts, network setup, and IP configurations

### Identifying Who Is Affected by the Upgrade

You should identify who might be affected by the upgrade. For example:

- You might need to give your customer service representatives (CSRs) who send work orders to ASAP advanced notice of any system downtime.
- Tell your system administrators in advance about any changes to the system architecture (for example, Oracle database, client, or WebLogic Server upgrades).
- Train CSR, cartridge developers, or system integrators on any new ASAP functionality that the upgrade may provide that would have an impact on their role.
- Notify Oracle so that Oracle can help you anticipate and avoid problems. Technical support might have additional information about upgrading ASAP or information specific to your implementation.

### Determining the Impact of New Features

You might need to make changes to your current system to accommodate additional or modified functionality in the new ASAP release. For example, if the release provides new security functionality, additional system configuration steps may be required.

For more information, see "Upgrade Impacts from ASAP 7.2 or ASAP 7.2.0.x to ASAP 7.3."

### Estimating How Long the Upgrade Will Take

This is an important consideration because work order processing might be suspended as a result of upgrading ASAP.

The best way to determine how long the database upgrade will take is to run the upgrade on a test system that contains a duplicate of the data in your production system (see "Creating Test Environments").

In general, it takes longer to upgrade large databases with large tables.

### Maintaining Access to Services While Upgrading

While upgrading ASAP, you must shutdown ASAP and the ASAP WebLogic Domain. Do not start the upgrade procedure until the status for all work orders indicates **Completed** and no work order status indicates **Loading**, **Initial**, or **in progress**.
To minimize service outage while you upgrade, perform the upgrade during off-peak hours.

**Creating Test Environments**

To test the upgrade process, create a test environment. Use this environment to do the following:

- Test the upgrade process and its results.
- Compare the default behavior of the old and new ASAP releases.
- Determine what customizations you made in the old ASAP release. Any customized ASAP clients and servers (SRP or NEP) or application that provides a programmatic integration with ASAP (using of the APIs described in the *Developer’s Reference Guide*) should be identified.

For more information on creating a test environment from an existing ASAP environment, see "Creating a Test Environment from an Existing Environment."

**Testing Your Upgraded System**

When testing your upgraded ASAP system, verify that:

- The database tables are installed.
- The data in database tables is correct.
- All IP addresses and ports are correct.
- The WebLogic Server starts.
- The SARM starts.
- The SRP starts.
- The NEPs start.
- Users and user permissions are correct.
- Cartridges are imported correctly.
- No changes need to be made to existing cartridges.
- No changes need to be made to the SRT.
- Work orders are being processed correctly.
- NEs are properly provisioned.

**Creating a Test Environment from an Existing Environment**

When you create a new Oracle Communications ASAP environment, dynamic ASAP data is created automatically. However, if you want to create a new environment that is identical to an existing environment, you must copy the data from the existing ASAP static tables to the new environment.

You may want to create additional identical environments for comparison testing.

**Copying Static Data**

If you want to move your static data from one database to another, you must first save the data in a flat file and then load the data into the new database. If the data used for
the static tables is already stored within flat files, then simply load the data into the tables. All the static data tables are listed by component following these procedures.

To save tables to files (Oracle):

The `ora_dump_sql` script copies the table data to a file named `TABLE NAME.sql`, where `TABLE NAME` is the name of the table in uppercase characters. If there is more than one table, the script creates a separate file for each one.

1. In a UNIX operating system, type the command line:

   ```sh
da_dump_sql [-d|-n|-t] user ID/password [table name]
   ```

   where `-d` - Deletes and replaces with new rows
   - `t` - Truncates table first
   - `n` - Inserts new rows, no deletions

   `user ID` and `password` are your user ID and password for the appropriate component

   `[table name]` is the name of the static table. If you do not specify a table, the script takes all tables for the user and copies them to separate files.

To load data into tables:

1. In a UNIX, type the command line:

   ```sh
sqlplus user_name/password filename
   ```

   where:
   - `user_name` and `password` are your user name and password for the appropriate component
   - `filename` is the name of the file where the static data is stored

**Control Schema Static Data tables**

- `tbl_alarm_center`
- `tbl_appl_proc`
- `tbl_classA_secu`
- `tbl_classB_secu`
- `tbl_code_list`
- `tbl_component`
- `tbl_db_threshold`
- `tbl_event_type`
- `tbl_fs_threshold`
- `tbl_name_value_pair`
- `tbl_system_alarm`
- `tbl_unid`

**Service Activation Request Manager Schema Static Provisioning Translation Tables**

- `tbl_asdl_config`
Upgrade Impacts from ASAP 7.2 or ASAP 7.2.0.x to ASAP 7.3

This section explains any important system changes introduced by an upgrade. New features and new functionality are described in the ASAP Release Notes.

Support for Oracle Fusion Middleware 12c

ASAP 7.3 supports Oracle Fusion Middleware 12c WebLogic Server 12c. To upgrade your WebLogic Server, you must also upgrade your JDK to the version specified in "Software Requirements."

Support Oracle Database Server 12c

ASAP 7.3 supports Oracle Database Server 12c. You need to upgrade Oracle Database Server to the version specified in "Software Requirements."

Support for Oracle Database Client 11g and 12c

ASAP 7.3 supports Oracle Database Client 11g and 12c. You need to install only one version of the client. See "Software Requirements" for more information.
Schema Changes

There are no schema changes for various possible upgrades between ASAP 7.2 and ASAP 7.3.

Upgrading from ASAP 7.2 or ASAP 7.2.0.x to ASAP 7.3

Table 11–1 describes the upgrade methods for ASAP software component upgrade methods.

<table>
<thead>
<tr>
<th>Software</th>
<th>Upgrade Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle database</td>
<td>In-place or out-of-place (during the database installation, using dbua after installing the database, or using the expdp and impdp utilities)</td>
<td>You can either upgrade your existing ASAP database when you install the new version of the database software, or run Oracle_Home/bin/dbua after you have installed the new database software where Oracle_Home is the location of the new Oracle Database installation. You can also create a new database and use the expdp or impdp utilities to import the old database into the new one. You may perform an in-place upgrade (into the same Oracle_Home) or an out-of-place upgrade (into a separate Oracle_Home). You may also upgrade your database from a single instance Oracle Database to an Oracle RAC database. Refer to the Oracle Database Upgrade Guide for recommendations and procedures. In either case, Oracle recommends that you back up your database before the upgrade. For Database backup and restore procedure, please refer to &quot;Creating a Backup of the ASAP Schemas&quot; and &quot;Rolling Back the ASAP Database.&quot;</td>
</tr>
<tr>
<td>Oracle client</td>
<td>New installation.</td>
<td>Install a new version of the Oracle client when you upgrade your database. Download and install the software as described in &quot;Downloading and Installing the Oracle Client Software.&quot;</td>
</tr>
<tr>
<td>Oracle WebLogic Server</td>
<td>In-place (using reconfig.sh script)</td>
<td>Locate the Oracle WebLogic Server software distribution file on the Oracle Software Delivery Cloud Web site. The Oracle WebLogic Server distribution file is located with the ASAP software components. Also download and install the version of Java for the operating system you are using for your WebLogic Server software. See &quot;Software Requirements&quot; for Java version requirements for your platform. Run WLServer_Home/Middleware/wlserver/common/bin/reconfig.sh to activate the WebLogic Server Reconfiguration Wizard.</td>
</tr>
<tr>
<td>ASAP software</td>
<td>In-place (using the ASAP installer with the vpd.properties file from the old installation)</td>
<td>Run the ASAP installer after you have upgraded all other ASAP software components. The ASAP installer will reference the vpd.properties file from the previous installation to upgrade your ASAP software. Download the ASAP installation files as described in &quot;Downloading the ASAP Installation Files.&quot;</td>
</tr>
</tbody>
</table>

Caution: Before you start the upgrade procedure, you must backup your WebLogic domain, ASAP, and Oracle database (see "Creating a Backup of ASAP, WebLogic Domain, and ASAP Schemas"). The upgrade process for these software components is in-place, meaning the upgrades are applied to the existing software. If the upgrade fails, you must use these backups to roll back your upgrades (see "About Rolling Back ASAP").
To upgrade from ASAP 7.2 or ASAP 7.2.0.x to ASAP 7.3:

1. Ensure that your current ASAP server is running.

2. Upgrade the Oracle Database and Client to the appropriate release (see Table 11–1).

   **Caution:** It is very important that you read and follow the Oracle Database Upgrade Guide to ensure that your database instance is successfully upgraded.

   Open a service request (SR) in **My Oracle Support** with the Oracle Database team for database upgrade problems.

3. Log in with the same user ID that you used to install the old version of WebLogic Server.

4. Download the versions of ASAP, WebLogic Server, and the correct Java version for your platform from the Oracle Software Delivery Cloud Web site:

   [https://edelivery.oracle.com/](https://edelivery.oracle.com/)

   See "Software Requirements" for more information.

5. Unzip the WebLogic Server zip file.

6. Install the WebLogic Server software.

7. Upgrade ASAP WebLogic Server domain to the new version.

   **Note:** For information about performing an upgrade of the WebLogic server domain, see the Installation Guide for your version of the WebLogic documentation.

   For upgrades of ASAP, Oracle recommends that you run the WebLogic Reconfiguration Wizard on the older WebLogic server domain to upgrade it to the newer version of WebLogic Server.

   For information about the correct JDK required for your WebLogic Server, see "Software Requirements."

8. Do one of the following in the `Domain_Home/lib` directory:
   - Remove the `jconn2.jar` file from the directory.
   - Change the name of the `jconn2.jar` file to `jconn2.jar.bak`.

9. Perform the procedures described in the "Configuring, Backing Up, and Starting WebLogic Before Installing ASAP."

10. Start the WebLogic server domain for ASAP.
11. Log in with the same user ID that you used to install the old version of ASAP.

12. Source $ASAP\_home/Environment\_Profile$ from the old version of ASAP.

   . ./Environment\_Profile

13. Untar the new version of the ASAP software that you downloaded to a folder of your choice.

14. (Optional) If the WebLogic Server and ASAP are installed on separate machines, do the following:

   a. Export the AWK\_CMD variable:

      - On Solaris and AIX, export the variable with nawk:

      
      ```
      export AWK\_CMD=nawk
      ```

   b. Where the WebLogic Server and domain are installed, run the following script:

      ./asap730.wl.resource.update.sh

15. Run the following script:

   ```
   chmod u+x /asap\_utils/asap730.wl.resource.update.sh
   ./asap\_utils/asap730.wl.resource.update.sh
   ```

   This script performs the following tasks:

   - Validates the WebLogic Server version
   - Updates the config.xml, jdbc/, jms/ resource files in the new WebLogic domain
   - Updates the JNDI names from 7.2 or 7.2.0.x to the 7.3 names
   - Un-deploys the asap$ENV\_ID.ear, cartridge\_management\_ws.ear, SecurityServices.ear, srt$ENV\_ID.ear, removing the old 7.2 or 7.2.0.x WebLogic content for ASAP.

16. Restart the WebLogic Server domain.

17. Shut down the current ASAP servers.

---

**Note:** During the upgrade, if you receive an error similar to the following example in WebLogic Console after the domain restarts, you can ignore this error and proceed with the upgrade.

```java
<BREA-149205> <Failed to initialize the application "SRI3.RPCDataSource" due to error weblogic.application.ModuleException: weblogic.common.resourcepool.ResourceSystemException: Cannot load driver class com.sybase.jdbc2.jdbc.SybConnectionPoolDataSource for datasource 'SRI3.RPCDataSource'.
```
18. Copy and unzip the InstallShield backup you created when you installed the old version of ASAP into the $HOME directory for your UNIX user account for ASAP.

The installer must pick up all the information collected by the old installation contained in the InstallShield file. Certain install files including the vpd.properties file were created during the old installation and contain information about the components installed in an ASAP environment. The install files are stored under ~/InstallShield/Universal/common/Gen1/_vpddb directory. You must ensure that ASAP 7.3 installer refers to the existing vpd.properties file.

19. In a terminal new session, do the following:
   a. Log in with the same user ID that you used to install the old version of ASAP.
   b. Using the console, export the following variables:
      
      ```
      export ORACLE_HOME=Oracle_client_home
      export PATH=$PATH:ORACLE_HOME/bin
      ```
   c. Update the path for the $ORACLE_HOME variable in the ASAP_home/Environment_Profile file in the old version of ASAP.
      
      ```
      export ORACLE_HOME=Oracle_client_home
      ```

   **Note:** Do not source the $ASAP_BASE/Environment_Profile file.

   d. Export $TNS_ADMIN to the directory where the tnsnames.ora file is located (if required) using the following command:
      
      ```
      export TNS_ADMIN=tnsnames_file_directory_location
      ```

   e. Run the installer for the new version of ASAP (see "Installing ASAP").

   **Note:** Some of the steps listed in the GUI installation do not appear when upgrading ASAP.

   Also, during the upgrade, WebLogic Server may throw the following error message, which can be ignored:

   ```
   <ERROR> <network.Element> <[ACTIVE] ExecuteThread: '3' for queue:
   'weblogic.kernel.Default (self-tuning)'> <Unset routing element :WL_
   Domain:name=System/UA77/ApplicationType/ServiceActivation/Application
   n/1-0;7-3;ASAP/Comp/routingElement/TORONTO-,type=routingElement>
   javax.management.InstanceNotFoundException: WL_
   Domain:name=System/UA77/ApplicationType/ServiceActivation/Application
   n/1-0;7-3;ASAP/Comp/routingElement/TORONTO-,type=routingElement
   ```

20. Open ASAP_home/Environment_Profile and update the following environment variables:

   ```
   Update export DSQUERY="Oracle_SID"
   Update exportVERSION='"\"Build_Number\"'"
   ```

   where Oracle_SID is the SID for the Oracle Database, and Build_number is the ASAP software build number.

Upgrading ASAP from a Single Database to an Oracle RAC Database

The following sections describe additional upgrade procedures required if you are upgrading from a single Oracle database instance to an Oracle RAC database instance.

Upgrading the Oracle Database, WebLogic, and ASAP Servers

To upgrade the Oracle Database and ASAP Servers:

1. Upgrade the single instance database (see Table 11–1).

2. Upgrade ASAP as described in "Upgrading from ASAP 7.2 or ASAP 7.2.0.x to ASAP 7.3."

3. Stop ASAP.

4. Migrate the upgraded single instance database to an Oracle RAC database. For instructions, see the Oracle Database documentation.

Creating WebLogic Generic and Multi Data Sources to the Oracle RAC Database

After upgrading ASAP and migrating the ASAP Oracle database content to an Oracle RAC database, you must delete the original WebLogic data sources that connected to the single database instance and create new WebLogic data sources as listed in Table 11–2. Each Oracle RAC database requires a single generic data source that are both members of a common multi data source.

Note: If you are using different databases that are running on different hosts, you must do the following:

- Update the DB_CONNECT details in the ASAP.Properties file after you have completed the upgrade procedure.
- If these databases have different SIDs, update the DSQUERY value in the Environment_Profile.
- Update the database details in WebLogic Server, in the connection pool URL for the following data sources: SARMDDataSource, ADMDataSource, NEPDataSource, CTRLDataSource, and SRPDataSource. For more information about changing these details, see WebLogic Server documentation.
### ASAP Data Source Migration

<table>
<thead>
<tr>
<th>Original Data Source Name and JNDI Name</th>
<th>New Data Source Name and JNDI Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>envid.ADMDataSource</code></td>
<td><strong>Generic data sources:</strong></td>
</tr>
<tr>
<td>System.<code>envid.ApplicationType.ServiceActivation.Application.1-0;7-3;ASAP.Comp.ADMDataSource</code></td>
<td><code>envid.ADMDataSource-1</code></td>
</tr>
<tr>
<td></td>
<td>System.<code>envid.ApplicationType.ServiceActivation.Application.1-0;7-3;ASAP.Comp.ADMDataSource-1</code></td>
</tr>
<tr>
<td></td>
<td><code>envid.ADMDataSource-2</code></td>
</tr>
<tr>
<td></td>
<td>System.<code>envid.ApplicationType.ServiceActivation.Application.1-0;7-3;ASAP.Comp.ADMDataSource-2</code></td>
</tr>
<tr>
<td><strong>Multi Data Source:</strong></td>
<td></td>
</tr>
<tr>
<td><code>envid.ADMDataSource</code></td>
<td></td>
</tr>
<tr>
<td>System.<code>envid.ApplicationType.ServiceActivation.Application.1-0;7-3;ASAP.Comp.ADMDataSource</code></td>
<td></td>
</tr>
</tbody>
</table>

| `envid.CTRLDataSource`                 | **Generic data sources:**         |
| System.`envid.ApplicationType.ServiceActivation.Application.1-0;7-3;ASAP.Comp.CTRLDataSource` | `envid.CTRLDataSource-1`          |
|                                       | System.`envid.ApplicationType.ServiceActivation.Application.1-0;7-3;ASAP.Comp.CTRLDataSource-1` |
|                                       | `envid.CTRLDataSource-2`          |
|                                       | System.`envid.ApplicationType.ServiceActivation.Application.1-0;7-3;ASAP.Comp.CTRLDataSource-2` |
| **Multi Data Source:**                 |                                   |
| `envid.CTRLDataSource`                 |                                   |
| System.`envid.ApplicationType.ServiceActivation.Application.1-0;7-3;ASAP.Comp.CTRLDataSource` |                                   |
Table 11–2  (Cont.) ASAP Data Source Migration

<table>
<thead>
<tr>
<th>Original Data Source Name and JNDI Name</th>
<th>New Data Source Name and JNDI Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>envid</em>.NEPDataSource</td>
<td>Generic data sources:</td>
</tr>
<tr>
<td>System.<em>envid</em>.ApplicationType.ServiceActivation. Application.1-0;7-3;ASAP.Comp.NEPDataSource</td>
<td></td>
</tr>
<tr>
<td><strong>envid</strong>.NEPDataSource-1</td>
<td>System.<em>envid</em>.ApplicationType.ServiceActivation. Application.1-0;7-3;ASAP.Comp.NEPDataSource-1</td>
</tr>
<tr>
<td><strong>envid</strong>.NEPDataSource-2</td>
<td>System.<em>envid</em>.ApplicationType.ServiceActivation. Application.1-0;7-3;ASAP.Comp.NEPDataSource-2</td>
</tr>
<tr>
<td><strong>envid</strong>.SARMDataSource</td>
<td>Multi data source:</td>
</tr>
<tr>
<td>System.<em>envid</em>.ApplicationType.ServiceActivation. Application.1-0;7-3;ASAP.Comp.SARMDataSource</td>
<td><strong>envid</strong>.SARMDataSource</td>
</tr>
<tr>
<td><strong>envid</strong>.SARMDataSource-1</td>
<td>System.<em>envid</em>.ApplicationType.ServiceActivation. Application.1-0;7-3;ASAP.Comp.SARMDataSource-1</td>
</tr>
<tr>
<td><strong>envid</strong>.SARMDataSource-2</td>
<td>System.<em>envid</em>.ApplicationType.ServiceActivation. Application.1-0;7-3;ASAP.Comp.SARMDataSource-2</td>
</tr>
<tr>
<td><strong>envid</strong>.SRPDataSource</td>
<td>Multi data source:</td>
</tr>
<tr>
<td>System.<em>envid</em>.ApplicationType.ServiceActivation. Application.1-0;7-3;ASAP.Comp.SRPDataSource</td>
<td><strong>envid</strong>.SRPDataSource</td>
</tr>
<tr>
<td><strong>envid</strong>.SRPDataSource-1</td>
<td>System.<em>envid</em>.ApplicationType.ServiceActivation. Application.1-0;7-3;ASAP.Comp.SRPDataSource-1</td>
</tr>
<tr>
<td><strong>envid</strong>.SRPDataSource-2</td>
<td>System.<em>envid</em>.ApplicationType.ServiceActivation. Application.1-0;7-3;ASAP.Comp.SRPDataSource-2</td>
</tr>
</tbody>
</table>

Table 11–3  Additional Settings for Generic Data Sources

<table>
<thead>
<tr>
<th>Field</th>
<th>Tab</th>
<th>ADM Data Source Value</th>
<th>SARM/NEP/SRP/CTRL Data Source Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row Prefetch Enabled</td>
<td>General</td>
<td>Enabled</td>
<td>Enabled</td>
</tr>
<tr>
<td>Row Prefetch Size</td>
<td>General</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Driver Class Name</td>
<td>Connection Pool</td>
<td>oracle.jdbc.driver.OracleDriver</td>
<td>oracle.jdbc.driver.OracleDriver</td>
</tr>
<tr>
<td>Initial Capacity</td>
<td>Connection Pool</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Maximum Capacity</td>
<td>Connection Pool</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>Capacity Increment</td>
<td>Connection Pool</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>
To create new generic and multi data sources to an Oracle RAC database:

1. Log into the WebLogic Server.
   The WebLogic Administration Console appears.

2. Click Deployments.

3. Select all Deployments

4. Click Stop.

5. Click Force Stop Now.


7. Click Database Sources.

8. Select all the original data sources listed in Table 11–2 except for the Admin data source. Do not select the RPC data source.

9. Click Delete.

10. You must create a generic data source for each Oracle RAC database. Click New.

11. Click Generic Data Source.
   The Create a New JDBC Data Source screen appears.

12. In the Name field, add the first new data source name listed in Table 11–2. For example, \textit{envid.ADMDataSource-1}.

13. In the JNDI Name field, add the first new JNDI name listed in Table 11–2. For example, \textit{System.envid.ApplicationType.ServiceActivation.Application.1-0;7-3;ASAP.Comp.ADMDataSource-1}.

14. From the Database Type list, select Oracle.

15. Click Next.

16. From Database Drive list, select Oracle Driver for RAC Service-Instance connections; Version 10: and later.

17. Click Next.

18. Click Next.

19. Do the following:
   \begin{itemize}
   \item[a] In the Service Name field, enter the service name of the Oracle RAC database you want this data source to connect to.
   \item[b] In the Database Name field, enter the database name for the Oracle RAC database you want this data source to connect to.
   \end{itemize}
c. In the **Hostname** field, enter the host name for the Oracle RAC database you want this data source to connect to.

d. In the **Port** field, enter the port number for the Oracle RAC database you want this data source to connect to.

e. Enter the **Database User Name** for the Schema you want to create a data source for.

f. Enter the **Password** for the ASAP schema you want to create a data source for.

g. Confirm the **Password** for the ASAP schema you want to create a data source for.

20. Click **Next**.

21. Edit the URL field as follows:

   jdbc:oracle:thin:@//ip_address:port/service_name

   where `ip_address`, `port`, and `service_name` are the IP address, port number, and service name for an Oracle RAC database.

22. Click **Test Configuration**.

23. Do the following:

   - If the test succeed, click **Next**.
   - If the test did not succeed, review the steps in this procedure and check for configuration errors.

24. In the Select Targets section, select **Admin** if ASAP is installed in a single Admin server or **Managed Server** if ASAP is installed with an Admin server and a managed server.

25. Click **Finish**.

26. Select the created data source.

27. On the **Transaction** tab, deselect the **Supports Global Transactions** check box.

28. Click **Save**.

29. Repeat steps 6 to 28 for the second new data source name listed in Table 11–2. For example, `envid.ADMDataSource-2

   System.envid.ApplicationType.ServiceActivation.Application.1-0;7-3;ASAP.Comp.

   ADMDataSource-2`.

30. You must create a multi data source for Oracle RAC that references these two data sources. Click **New**.

31. Click **Multi Data Source**.

32. In the **Name** field, enter the multi data source name listed in Table 11–2.

33. In the **JNDI Name** field, enter the multi data source JNDI name listed in Table 11–2.

34. From the **Algorithm Type** list, select **Failover**.

35. Click **Next**.

36. In the Select Targets section, select **Admin** if ASAP is installed in a single Admin server or **Managed Server** if ASAP is installed with an Admin server and a managed server. The target server should be the same one used for the original data sources.
37. Click Next.
38. Click Next.
39. From the Data Source Available section, select the two generic data sources that correspond to the multi data source node you are creating.
40. Click the right arrow to choose them.
41. Click Finish.
42. Repeat steps 6 to 41 for all remaining generic and multi data sources listed in Table 11–2.
43. Update the newly created generic data source values using the values shown in Table 11–3.
44. Click Services.
45. Click Persistent Stores.
46. Click envid.JMSJDBCStore.
47. In the Target list, do one of the following:
   - Select AdminServer if ASAP is installed on a single administration server.
   - Select ManagedServer if ASAP is installed on an administration server with one or more managed servers.
48. In the Data Source field, select the new multi data source for the Admin server. This step only applies to the Admin Server. All other servers used JDBC. The target server should be the same one used for the original data sources.
49. Click Save.
50. Click Database Sources.
51. Select the old Admin data source.
52. Click Delete.
53. Restart the WebLogic server.
54. Log into the WebLogic server. The WebLogic Administration Console appears.
55. Click Deployments.
56. Select all Deployments
57. Click Start.
58. Select Service All Requests.

Configuring the ASAP Environment for the Oracle RAC Database

To configure the ASAP environment for the Oracle RAC database:
1. From the ASAP environment, source the ASAP_home/Environment_Profile.
2. Open the Environment_Profile with a text editor.
3. Search for DSQUERY.
4. Change the value for DSQUERY to the new Oracle RAC database service name.
5. Save the Environment_Profile.
6. Open `ASAP_home/ASAP.properties` with a text editor.

7. Change the values for `DB_CONNECT` to the new Oracle RAC database `tnsnames.ora` `DB_CONNECT` values.

8. Add the `RACDB_CONNECT_STR` parameter and set it to the Oracle RAC database connection string. This connection string repeats the IP addresses and port numbers for the Oracle RAC databases listed in the `tnsnames.ora` file in a different format. For example:

   ```
   RACDB_CONNECT_STR=host1:port:servicename,host2:port:servicename
   ```

   Where `host1` and `host2` are the name or IP address of your Oracle RAC databases, `port` is the port number for the Oracle RAC databases, and `servicename` is the service name for the Oracle RAC databases.

9. Restart ASAP.

### Upgrading Stored Procedures for ASAP Servers

To upgrade ASAP server stored procedures:

1. Change to the `$ASAP_BASE/isql` directory for the new version of ASAP:

   ```
   cd $ASAP_BASE/isql
   ```

2. Run the following commands to upgrade the stored procedures:

   ```
   sqlplus $SARM_USER/sarm_db_password < sarm_procs.sql
   sqlplus $SARM_USER/sarm_db_password < oca_sarm_procs.sql
   sqlplus $CTRL_USER/control_db_password < control_procs.sql
   sqlplus $ADM_USER/admin_db_password < admin_procs.sql
   sqlplus $ADM_USER/admin_db_password < aims_procs.sql
   sqlplus $ADM_USER/admin_db_password < oca_admin_procs.sql
   sqlplus $SRP_USER/srp_db_password < srp_emul_procs.sql
   sqlplus $NEP_USER/nep_db_password < asc_nep_procs.sql
   ```

3. Check the upgraded database object status as follows:

   ```
   $ASAP_BASE/db_migration/oracle_from_asap_ver_to_asap_versionL/scripts/check_db_obj_status.ksh
   ```

   The status of all database objects should be VALID. For example:

   ```
   $ASAP_BASE/db_migration/oracle_from_asap_ver_to_asap_versionL/scripts/check_db_obj_status.ksh -U $SRP_USER -P srp_db_password
   ```

### About Rolling Back ASAP

You can roll back to a previous version of ASAP by using the backup files that you created after you installed ASAP or before you started an upgrade (see "Creating a Backup of ASAP, WebLogic Domain, and ASAP Schemas").

If you are restoring a backup created on one machine to a different machine, ensure the following:

- The new machine name must be identical to the old machine name.
- The new user accounts and permissions should be identical to the old user accounts and permissions.
- The IP addresses for the new box must be updated in the ASAP environment, WebLogic Domain, and ASAP database servers.
Ensure that you have installed the `zip` and `unzip` utility before you start the roll back procedures for the ASAP environment and WebLogic Domain.

The Oracle Database Server provides the `impdp` and `expdp` utilities to import and export database schemas.

**Rolling Back the ASAP Environment**

To roll back the ASAP environment, use the following procedure.

1. From the directory that contains the old `ASAP_home` folder (where `ASAP_home` is the location of your ASAP server installation directory), use the `unzip` utility to unzip an ASAP backup file.

   ```shell
   unzip ASAP720_BACKUP.zip
   ```

**Rolling Back the WebLogic Domain**

To roll back the WebLogic domain, use the following procedure:

1. From the directory that contains the old `WLS_domain_home` folder (where `WLS_domain_home` is the location of your old WebLogic Server domain directory), use the `unzip` utility to unzip a WebLogic Domain backup file.

   ```shell
   unzip WLDOMAIN_BACKUP.zip
   ```

**Rolling Back the ASAP Database**

To roll back the ASAP Database, use the following procedure:

1. Source the ASAP `Environment_Profile` in the `ASAP_home` folder (where `ASAP_home` is the location of your ASAP server installation directory).

   ```shell
   . ./Environment_Profile
   ```

2. Drop all database users, if you are importing your database back into an environment where those users were already created.

   a. Log into your database using `/as sysdba` for the user-name.

   b. Enter the following commands to drop the ASAP users:

      ```sql
      drop user admenvid cascade;
      drop user sarmenvid cascade;
      drop user ctrlenvid cascade;
      drop user nepenvid cascade;
      drop user srpenvid cascade;
      ```

      Where `envid` is the environment ID for your ASAP instance.

   c. Log out of your database.

      ```shell
      exit
      ```

3. Use the following command to restore the backup file for the Control, Admin, SARM, NEP, and SRP servers. Where `password` is the database system admin password and `filename` is the name that you gave your DMP file when you created the backup (see "Creating a Backup of the ASAP Schemas").

   ```shell
   impdp system/password SCHEMAS=$CTRL_USER,$SARM_USER,$ADM_USER,$NEP_USER,$SRP_USER DUMPFILE=filename.dmp
   ```
This chapter describes how to uninstall Oracle Communications ASAP and components.

About Uninstalling ASAP

You use the Oracle Universal Installer to uninstall ASAP. You can also uninstall other components of the ASAP product using the Oracle Universal Installer.

Uninstalling ASAP WebLogic Server Components

The ASAP WebLogic server uninstaller removes all of the components and features of ASAP on the WebLogic server side with the exception of the cartridge management component. This component is shared by other Oracle products and should be deleted manually using the WebLogic Administrator console.

The uninstaller also removes all changes or customizations to your ASAP WebLogic server components.

To remove ASAP UNIX server components, see “Uninstalling ASAP UNIX Servers.”

Note: You must uninstall the ASAP WebLogic server before you uninstall the ASAP UNIX server components.

To uninstall the ASAP WebLogic server components:

1. Change to the `ASAP_home/scripts` directory.
2. Execute the `asap_uninstall_WLS` script:

```
./asap_uninstall_WLS
```

3. Enter the Hostname of the WebLogic server instance you want to uninstall.
4. Press Enter and press Enter again to confirm.
5. Select one of the following options:
   a. Enter true if you want to use the SSL connection to uninstall your WebLogic server instance.
   b. Enter false if you do not want to use the SSL connection.
6. Press Enter and press Enter again to confirm.
7. Select one of the following options:
a. Enter the http port number for your WebLogic server instance if you do not want to use the SSL connection to uninstall your WebLogic server instance.

b. Enter the https port number for your WebLogic server instance if you want to use the SSL connection to uninstall your WebLogic server instance.

8. Press Enter and press Enter again to confirm.

9. Enter the WebLogic server instance user name.

10. Press Enter and press Enter again to confirm.

11. Enter the WebLogic server password.

12. Press Enter and press Enter again to confirm.

13. Enter the name of the WebLogic server instance you want to uninstall (for example, AdminServer).

14. Press Enter and press Enter again to confirm.

The asap_uninstall_WLS script removes all ASAP WebLogic server components.

Uninstalling ASAP UNIX Servers

The ASAP server uninstaller removes all of the components and features of ASAP on the UNIX server side. All changes, including any files that you have added and all registry entries related to ASAP, are removed.

To remove ASAP WebLogic server components, see "Uninstalling ASAP WebLogic Server Components."

To uninstall the ASAP UNIX servers:

1. Ensure that the InstallShield directory generated when you first installed ASAP is located in your ASAP_Home directory.

2. Change to the ASAP_Home/_uninst directory.

3. (Optional) If using a remote X-Windows client, prepare it, and export the display. For example:

   export DISPLAY=10.15.16.17:0.0

4. Execute the uninstall script:

   java -jar uninstall.jar

   The ASAP Welcome dialog appears. Click Next.

5. In the Select Features dialog, select the installed ASAP components you want to uninstall.

6. Click Next. The Uninstall Preview dialog appears.

7. Click Next. The Uninstalling ASAP dialog appears.

8. When the ASAP uninstallation completes, the Uninstall Summary dialog appears.


10. Click Finish.

11. Perform any additional manual cleanup steps that were indicated in the Uninstall Summary.
Uninstalling a Cartridge

Uninstalling ASAP

Uninstalling an Order Control Application Thick Client on Windows

The OCA thick client uninstallers remove all of the components and features of the OCA thick client on a Windows platform. All changes, including any files that you have added and all registry entries related to ASAP, are removed.

To uninstall the OCA thick client on a Windows platform:

1. Open the `OCA_home\Oracle Communications\ASAP\uninst` folder (where `OCA_home` is the directory where you installed the OCA client.
2. Click the `uninstall.jar` executable file. The Uninstaller–InstallShield Wizard for ASAP Client dialog appears.
3. Click Next. The Select Features dialog appears.
4. Select the OCA client features you want to uninstall.
5. Click Next. The ASAP Client uninstallation summary dialog appears.
6. Click Next. The ASAP Uninstaller summary dialog appears.
7. Click Finish to exit.

Uninstalling a Cartridge

There are two ways of uninstalling a cartridge:

- Uninstalling a Cartridge Using Scripts
- Uninstalling a Cartridge Using Design Studio

Uninstalling a Cartridge Using Scripts

Run the uninstallation script `uninstallCartridge` to uninstall the cartridge. The script executes the following tasks:

- Deconfigures cartridge-specific NEs using the SACT.
- Undeploys the cartridge service model (only if the cartridge service model is already deployed) using the SADT.
- Removes the cartridge-specific jar files and `cpp` library file from the ASAP environment.

For more information on the SACT and the SADT, refer to the ASAP System Administrator's Guide.

To uninstall the cartridge:

1. Run the `uninstallCartridge` script. At the prompt, type:
   
   `uninstallCartridge SAR_file.Timestamp.sar`

2. The script prompts you to enter the NEP server name.
3. The script prompts you for the values of the following parameters:
   
   - WebLogic Hostname
   - WebLogic HTTP Port

**Note:** In Oracle Linux operating systems, you receive error messages when uninstalling ASAP. These messages can be ignored.
Uninstalling a Cartridge

- WebLogic Login User ID
- WebLogic Login Password

The script unloads the NEP-NE configuration and CSDL-ASDL configuration from SARM database. It also removes the cartridge specific jar files from the ASAP environment.

**Uninstalling a Cartridge Using Design Studio**

To uninstall a cartridge using Studio:

1. Connect to your environment using the **Connect** button.
2. Select the cartridge from the Environment Cartridge list in Design Studio and click **Undeploy**.
3. Verify the Environment Cartridge list. If the check box for the cartridge is unchecked, it means that the cartridge is uninstalled.
This chapter contains a checklist of items that should be checked or modified before moving Oracle Communications ASAP to production.

Table A–1 provides a pre-production checklist for WebLogic Server configuration.

<table>
<thead>
<tr>
<th>Checklist Item</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design applications to handle undelivered messages</td>
<td>The Admin database contains the WLStore table, a JDBC table that is populated and managed by WebLogic Server to maintain persistence in their JMS destinations. Oracle recommends that you manually clean these tables during development if you want to start with a fresh environment. Otherwise, old undelivered messages will occupy the queues and may cause problems when trying to debug or test. For production environments, you should design applications to handle undelivered messages. For instance, you can configure an error destination to use if a message fails to be delivered after a configurable number of attempts.</td>
<td>For more information, see the latest Oracle Fusion Middleware WebLogic Server documentation.</td>
</tr>
</tbody>
</table>

In production environments, Oracle recommends that you adjust the ASAP.cfg configuration variables listed in Table A–2.

**Note:** You should also review "ASAP Configuration Parameters" in the *ASAP System Administrator’s Guide* to determine whether configuration parameters other than the ones listed in the table below should be adjusted to suit your ASAP implementation.
<table>
<thead>
<tr>
<th>Checklist Item</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set up database admin</td>
<td>Database purging can be performed for the SRP, SARM, and control databases, but is most commonly performed in the SARM as this is where the majority of the work order information is stored. The SRP and SARM databases maintain a history of all work orders received, while the ASAP control database maintains a history of alarms, events, performance, and process information. The purging of the SRP and SARM is usually based on work order age. The purge age is usually determined by the amount of available disk space. Usually, only orders that have been completed for a certain amount of time are purged.</td>
<td>See “Database purging” in the System Administrator’s Guide. See also “ASAP Configuration Parameters” in the System Administrator’s Guide.</td>
</tr>
<tr>
<td>MAX_ORDERS_IN_PROGRESS</td>
<td>This is the maximum number of orders that the SARM allows to be in progress at any given time. This is to limit the memory requirements of the SARM should there be large numbers of orders in progress for long periods of time. If zero, this check is disabled. Default = 40. In production environments, ensure that the MAX_ORDERS_IN_PROGRESS parameter is not set to 0. A setting of 0 specifies no upper limit on memory consumption and can result in significant performance consequences.</td>
<td>See “ASAP Configuration Parameters” in the System Administrator’s Guide.</td>
</tr>
<tr>
<td>DIAG_LINE_FLUSH</td>
<td>If set, it determines whether the diagnostic file output is flushed to disk at the end of each diagnostic line. If disabled, the diagnostics are only flushed to the diagnostic file if a PROGRAM or SANITY level diagnostic message is written, or if the I/O buffer is flushed by the operating system. You can change the treatment of diagnostic files parameter by setting this configuration parameter or changing the diagnostic line flush flag of the application server by using the diag_line_flush API RPC/Registered Procedure to the particular server. Default = 1. Disable (set to 0) in a production environment as it causes considerable performance overhead in disk activity.</td>
<td>See “ASAP Configuration Parameters” in the System Administrator’s Guide.</td>
</tr>
</tbody>
</table>
Ensure that production environments observe the log and diagnostic setting recommendations listed in Table A–3.

**Table A–3 Pre-production Checklist – Log and Diagnostic Settings**

<table>
<thead>
<tr>
<th>Checklist Item</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location of log directories</td>
<td>Local versus NFS-Mounted File Systems for Diagnostic Files ASAP diagnostic files on NFS-mounted file systems increase network traffic and slow down disk I/O. For production systems, the log directories should be local, not NFS mounted.</td>
<td>See System Administrator’s Guide.</td>
</tr>
<tr>
<td>Set up purging of logs and diagnostics</td>
<td>This requires a cron script that clears alarm entries, event logs and process information.</td>
<td>See “Database purging” in the System Administrator’s Guide.</td>
</tr>
<tr>
<td>Set the diagnostic level</td>
<td>SANITY_LEVEL – Used by the application for high-level diagnostics. This level of diagnostic messages provides user information about the processing of the system. It is used for low level diagnostic messages. A production application has its diagnostic level set at either PROG or SANE in tbl_appl_proc. PROGRAM_LEVEL – This is primarily used to generate error messages when the application is running in a production environment.</td>
<td>See &quot;DIAG_LEVEL abstract data type&quot; in Developer Reference. See also &quot;ASAP security features&quot; in the System Administrator’s Guide.</td>
</tr>
</tbody>
</table>