Oracle® Communications ASAP

Installation Guide

Release 7.2

E18878-04

July 2014

ORACLE®

Oracle Communications ASAP Installation Guide, Release 7.2

E18878-04

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Preface

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.

Related Documents

For more information, see the following documents in the Oracle Communications ASAP 7.2 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 Web site, you must select **Oracle Communications Service Activation Developer Documentation Pack**. You can visit the Oracle software delivery Web site at:
>
> https://edelivery.oracle.com

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ASAP Installation Overview

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 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.

Directory Placeholders Used in This Guide

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

Table 1–1   Directory Placeholders Used in This Guide

Placeholder	Directory Description
ASAP_Home	The directory into which the ASAP software is installed.
ASAP_src	The directory into which the ASAP source installation files were extracted.
MW_Home	The location where the Oracle Middleware product was installed. This directory contains the base directory for the WebLogic Server, a utils directory, and other files and directories.
WLServer_Home	The base directory for the WebLogic Server core files. It is located in the *MW_Home* directory.
Domain_Home	The directory that contains the configuration for the domain into which ASAP is installed. The default location is *MW_Home***/user_projects/domains/***domain_name* but it is frequently set to some other directory at installation.
Oracle_Home	The location which contains the Oracle database instance.
Oracle_Client_Home	The location which contains the Oracle client.

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Planning Your ASAP Installation

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 2–1   ASAP Implementation Size Classifications

Implementation Size	Number of Orders per Second
Small	1 order per second, up to 50,000 per day
Medium	Up to 10 orders per second, up to 500,000 per day
Large	10 to 20+ orders per second, 500,000 to 1M+ orders per day.

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).

Table 2–2   ASAP Server Memory Requirements

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

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 Component Requirements

Components	Disk Space
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 [1] 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.

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 2–4   Suggested NE to NEP Ratios

NE Classification	Number of Orders per Day per NE	Average Number of NEs per NEP
Idle	Fewer than 10	30 to 100
Normal	Between 10 and 100	15 to 30
Busy	More than 100	5 to 15

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 x 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 2–5   Memory Requirements per NEP

NEs per NEP	Approximate Memory Requirements
0	7 MB
10	10 MB
20	15 MB
50	20 to 35 MB
500	50 to 70 MB

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 2–6   NE/NEP Configuration Example

NE Classification	Number of NEs	NEs per NEP	Number of NEPs Required	Memory (MB)	Cumulative Number of NEPs	Cumulative Memory (MB)
Idle	200	50	4	4 x 50 = 200	4	200
Normal	200	20	10	10 x 15 = 150	14	350
Busy	100	10	10	10 x 10 = 100	24	450
Totals	400				24	450

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 order 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.

Figure 2–1   Sample ASAP Distribution
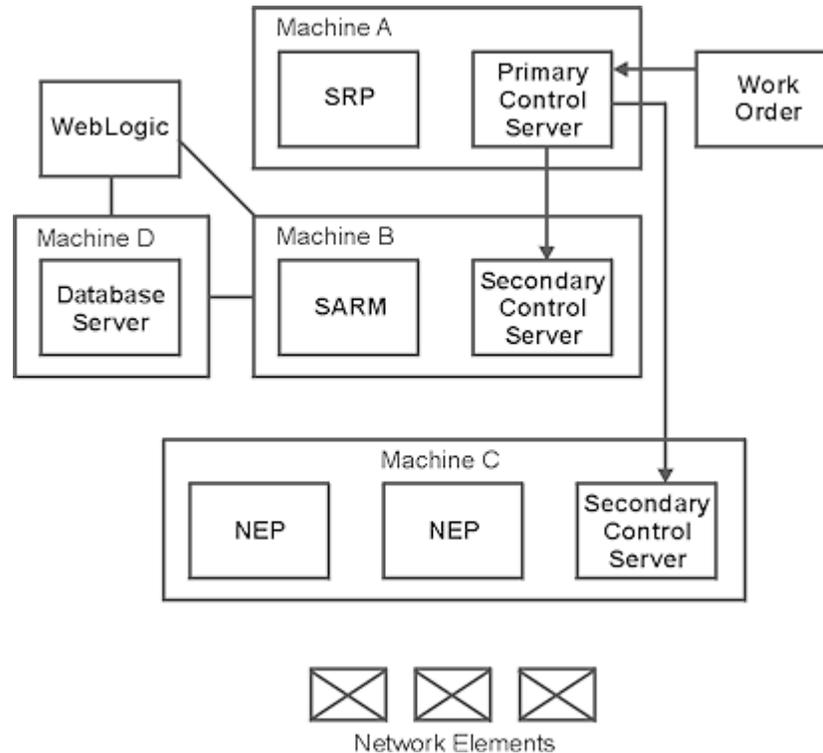
Oracle Database Deployment Options Supported by ASAP

Each ASAP server process has a database schema. The ASAP server schemas reside in a single or a 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 a RAC Oracle 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 Real Application Clusters (RAC). 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 against Oracle Real Application Cluster (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 DB RAC 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 Third Party Applications

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 Using Third Party Applications

For high availability functionality customers may run ASAP in a clustered environment using 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.

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.

Table 2–7   Recommended Tablespace and Redo Log Sizes for ASAP

Environment	Recommended Size
Test	5 GB for the entire database. Each individual ASAP test environment requires at least 75 MB. The actual size of these tablespaces and redo log files depends on the number of testing environments expected on each Oracle Database instance.
Production	Small: 36 GB Medium: 73 GB The actual disk space usage is dependent on the size of logs and completed order retention as well as order size. Create three 1 to 5 GB redo log files on three separate drives.

> **Note:**   Your Oracle DBA must create these tablespaces before installing ASAP. While it is possible to create individual tablespaces for each environment, you can combine the tablespace requirements for many test environments into fewer and larger tablespaces.

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

Database	Space (KB/WO)	Description
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 2–8   (Cont.) Sample ASAP Tablespace Sizing Requirements

Database	Space (KB/WO)	Description
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 the 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 tablespace size.

Table 2–9 contains the results of a test suite of 80 work orders processed by ASAP to produce rough SARM sizing requirements.

Table 2–9   SARM Work Order Sizing Estimates

Name	Row Total	Reserved	Data Segment Size	Index Segment Size	Unused
tbl_asap_stats	0	80 KB	2 KB	8 KB	70 KB
tbl_asdl_log	311	62 KB	42 KB	2 KB	18 KB
tbl_info_parm	88	32 KB	10 KB	10 KB	12 KB
tbl_srq_csdl	191	32 KB	10 KB	6 KB	16 KB
tbl_srq_log	3482	526 KB	496 KB	8 KB	22 KB
tbl_srq_parm	4782	368 KB	142 KB	208 KB	18 KB
tbl_wrk_ord	80	48 KB	14 KB	4 KB	30 KB

> **Note:**   Estimates for **tbl_info_parm** assume that limited information is brought back from the NE and stored in the SARM. If queries are performed, the tablespace needs to be sized accordingly.

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.

> **Note:**   These figures indicate that for simple residential orders, an average of 12 KB per work order is required in the SARM database. This estimate assumes fairly conservative switch history for each work order. Larger volumes of switch history have an impact on this estimate. In addition, the data requirements for the SRP database are not specified here because the SRP is specific to each client site.

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 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 dataspace. 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.

Figure 2–2   WebLogic Domain Within ASAP
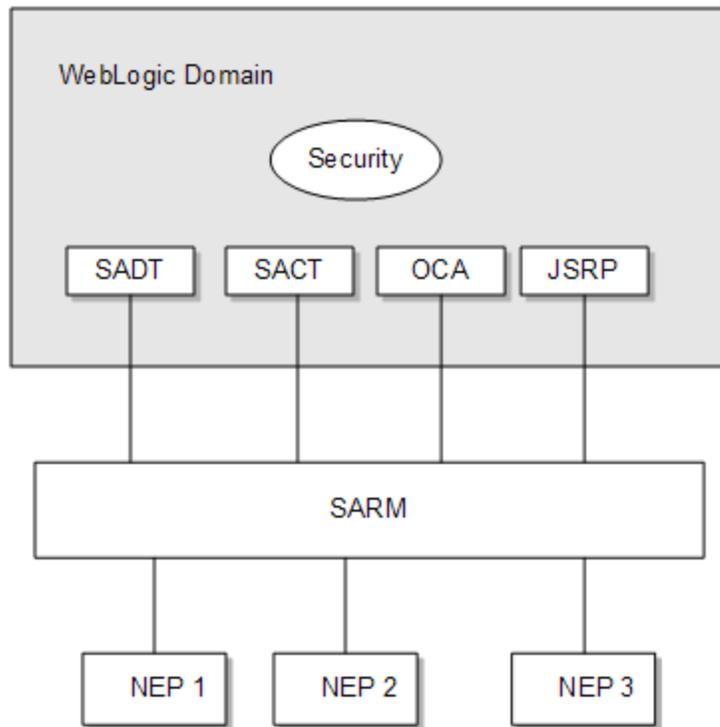
In a test environment, you can create a domain that consists of an administration server and deploy ASAP components to this server instance. However, in a production environment, Oracle recommends that the administration server reside on a dedicated physical machine and ASAP components be deployed to 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.

Figure 2–3   Administration and Managed Server
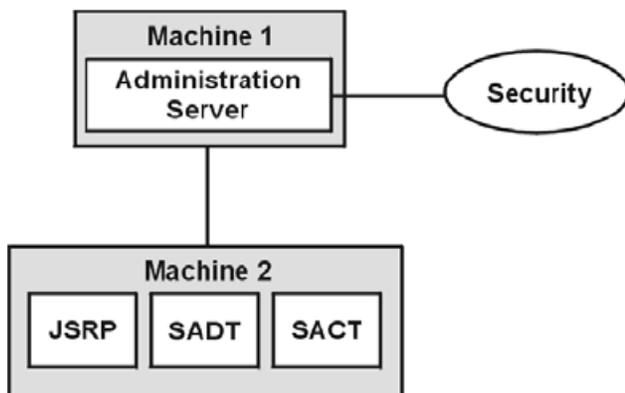
The node manager monitors the health of all servers on a machine and controls the restarting of failed servers.

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**, refer to the following link:

http://download.oracle.com/docs/cd/E13222_01/wls/docs103/domain_config/config_files.html

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

http://download.oracle.com/docs/cd/E13222_01/wls/docs103/config_wls/network.html

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, refer to

http://download.oracle.com/docs/cd/E13222_01/wls/docs103/nodemgr/intro.html.

3

ASAP System Requirements

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 3–1   Hardware Requirements for Solaris

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

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

Table 3–2   Hardware Requirements for AIX (IBM)

Software Components	Small System POWER6 5.0 GHz (2 threads per core)	Medium System POWER6 5.0 GHz (2 threads per core)	Large System POWER6 5.0 GHz (2 threads per core)
ASAP Server and WebLogic Server	1 core, 4 GB RAM, 4 x 73 GB (RAID5)	4 cores, 8 GB RAM	8 cores, 16 GB RAM
Oracle Database	1 core, 6 GB RAM	2 cores, 12 GB RAM	4 cores, 32 GB RAM
External Storage for Oracle Datafiles	N/A	14 x 73 GB (RAID 1+0)	28 x 73 GB (RAID 1+0)

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 Intel (Linux)

Software Components	Small System E5-2690 2.9 GHz (2 threads per core)	Medium System E5-2690 2.9 GHz (2 threads per core)	Large System E5-2690 2.9 GHz (2 threads per core)
ASAP Server and WebLogic Server	2 cores, 4 GB RAM, 4 x 73 GB (RAID5)	3 cores, 8 GB RAM	4 cores, 16 GB RAM
Oracle Database	2 cores, 6 GB RAM	3 cores, 12 GB RAM	4 cores, 32 GB RAM
External Storage for Oracle Datafiles	N/A	14 x 73 GB (RAID 1+0)	28 x 73 GB (RAID 1+0)

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

Software Components	Small System Itanium2 1.6 GHz	Medium System Itanium2 1.6 GHz	Large System Itanium2 1.73 GHz
ASAP Server and WebLogic Server	2 cores, 4 GB RAM, 4 x 73 GB (RAID5)	8 cores, 8 GB RAM	16 cores, 16 GB RAM
Oracle Database	2 cores, 6 GB RAM	4 cores, 12 GB RAM	8 cores, 32 GB RAM
External Storage for Oracle Datafiles	N/A	14 x 73 GB (RAID 1+0)	28 x 73 GB (RAID 1+0)

ASAP Order Control Application Hardware Requirements

The Order Control Application (OCA) client can be deployed on a Windows XP SP3 or Windows 7 platform. Ensure that the target machines for the OCA installation meet the following hardware requirements:

- OCA client installer is 35 MB

- Disk space requirements for the following components are 26 MB and include:

  - Java Runtime Environment 1.7.0_51

  - OCA Client software

  - BI Publisher Report Templates

■ x86 Intel or AMD 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 or My Oracle Support Help for additional information:

https://support.oracle.com

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

Table 3–5   ASAP Software Requirements

Component	Product	Version	Patches	Notes
Server Operating System	Oracle Linux (64-bit)	Linux 5 update 8 or higher (such as Linux 5.8, 5.9, or 5.10) Linux 6 update 2 or higher (such as Linux 6.2, 6.3, 6.4, or 6.5)	N/A	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.
Server Operating System	Oracle Solaris on SPARC architecture (32-bit and 64-bit)	10, 11	N/A	N/A
Server Operating System	IBM AIX (64-bit)	6.1	N/A	N/A
Server Operating System	Hewlett Packard HP-UX for Itanium (64-bit)	11i V3	N/A	N/A
Server Operating System	Oracle VM for use with Oracle Linux	3.0	N/A	N/A
Operating System for the Order Control Application	Windows XP on x86 Intel or AMD 32-bit architecture (For OCA only)	SP3	N/A	N/A
Operating System for the Order Control Application	Windows 7 on x86 Intel or AMD 32-bit architecture (For OCA only)	N/A	N/A	N/A
Application Server	Oracle WebLogic Server 11g Enterprise Edition (generic installer)	10.3.6	N/A	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.

Table 3–5   (Cont.) ASAP Software Requirements

Component	Product	Version	Patches	Notes
Application Server	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**.	10.3.6	N/A	N/A
Java	32- or 64-bit Oracle JDK (Java SE) for WebLogic Server. Select the JDK for your platform.	For Linux or Solaris: 1.7.0 with the latest Critical Patch Update AIX: IBM Java 1.7 (This IBM JDK corresponds to Java SE version 1.7.x) HP-UX: 1.7.0	N/A	The generic WebLogic Server available with the ASAP software from the Oracle software delivery Web site can run in 32-bit or 64-bit mode, depending on the JDK (Java SE) version you use.
Database Server	Oracle Database 11*g* R2 Enterprise Edition for the following platforms: ■ Oracle Solaris ■ HP-UX ■ Oracle Linux ■ IBM AIX	11.2.0.4	Available in patch 13390677	For information about downloading these databases see "Downloading and Installing the Oracle Database Software".
Database Client	Oracle Client for the following platforms: ■ Oracle Solaris ■ HP-UX ■ Oracle Linux ■ IBM AIX	11.2.0.4	Available in patch 13390677	For information about downloading this client see "Downloading and Installing the Oracle Client Software".
Reporting Solution for the OCA Client	Business Intelligence (BI) Publisher for use with the OCA Client (Thick or Thin)	11G	N/A	N/A
IDE	Oracle Communications Design Studio for ASAP Cartridge Development	7.2.4	N/A	N/A
IDE	Fort C++ (C/C++ Compiler) for creating custom SRP	Sun Studio 12 Update 1	N/A	N/A

Table 3–5   (Cont.) ASAP Software Requirements

Component	Product	Version	Patches	Notes
OCA Java Applet Thin Client Browser Support	Microsoft Internet Explorer 1024 x 768 resolution monitor with 256 colors recommended (640 x 480 is minimum resolution required)	7, 8	N/A	N/A
OCA Java Applet Thin Client Browser Support	Mozilla Firefox	3.5 or higher	N/A	N/A
JDK (Java SE) for OCA thin client	32-bit JDK (Java SE) for Windows XP SP3 or Windows 7 OCA thick client deployment	1.7.x	N/A	Download this JDK for the OCA Thick client only. The OCA java applet Thin client automatically installs the appropriate JDK when you run the client using Internet Explorer or Firefox.

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.

> **Note:**   It is advisable that you print the table(s) and enter your values for future reference.
>
> You will be required to enter these values during the installation process.

Oracle Database Information

Table 3–6 lists the Oracle Database information that you are required to provide during the ASAP installation process.

Table 3–6   Database Information Required in the ASAP Installation Process

Installer Field	Description	Value
Directory Name:	The base directory of the Oracle Database Client software. For example: `/u01/app/oracle/db/11.2.0.4/client_1` The ASAP Installer requires that you enter this value.	
Name of RDBMS Server	The tnsnames.ora entry name of the database instance on which the ASAP schemas will be installed (for example ASAPDB). The ASAP Installer requires that you enter this value.	
Oracle Server DBA User Name	User name of the Oracle DBA for the predefined **SYS** user account. The ASAP Installer requires that you enter this value.	

Table 3–6   (Cont.) Database Information Required in the ASAP Installation Process

Installer Field	Description	Value
Oracle Server DBA Password	Password of the Oracle DBA for the predefined **SYS** user account. The ASAP Installer requires that you enter this value.	
System Admin User Name	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.	
System Admin Password	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.	

Table 3–7 lists schema details that you are required to provide during installation.

Table 3–7   Schema user Information

Installer Field	Description	Value
Data Segment **Index 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 tables spaces for every data and index segments for every server (see "Database and Client Planning").	
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 port 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**	Provide a server port number.

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

WebLogic Connection Information

Table 3–8 lists WebLogic Server connection details that you are required to provide during installation.

Table 3–8   WebLogic Server Connection Information

Information Type	Description	Value
Host Name of Oracle WebLogic Server	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.	
Port Number of Oracle WebLogic Server	This is the port number assigned to this specific the WebLogic Server (for example **7001**). The ASAP Installer requires that you enter this value.	
User Name of Oracle WebLogic Server Administrator	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.	
Password of Oracle WebLogic Server Administrator	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.	

Patch Requirements

This section documents required software patches for ASAP 7.2.

There are currently Oracle Client, or Oracle Database patches required to install ASAP; however, new patches and security updates should be applied as they become available (see "About Critical Patch Updates" for more information).

Oracle WebLogic Server 10.3.6 Patches

You must download PSU Patch **13529623**. Go to the Oracle support Web site to download the 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 Oracle Technology Network:

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 Oracle Technology Network at:

http://www.oracle.com/technetwork/topics/security/whatsnew/index
.html

4

Configuring the Operating System

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, 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:

   https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=MallocNextGen

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 project.max-sem-ids=512
Set project.max-shm-ids to 300
Set project.max-sem-ids to 512
set process.max-sem-nsems=1024
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 on how to use resource controls 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 11g Client for Linux and before installing ASAP.

Table 4–1 lists and describes the recommended kernel parameter settings for supported Linux systems.

Table 4–1   Kernel Parameter Configuration

Parameter	Recommended Value	File and Description
semmsl semmns semopm semmni	250 3200 32 128	**/proc/sys/kernel/sem** 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 sempahore set. ■ semmns: 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. ■ semmni: The system-wide limit on the maximum number of semaphore identifiers.
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.
shmmax	4294967295	**/proc/sys/kernel/shmmax** 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.
msgmni	2878	**/proc/sys/kernel/msgmni** The msgmni 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-nr	8192 0 327679	**/proc/sys/fs** The three values in the file-nr denote the number of allocated file handles, the number of allocated but unused file handles, and the maximum number of file handles.

Table 4–1 (Cont.) Kernel Parameter Configuration

Parameter	Recommended Value	File and Description
`queues_max`	256	**/proc/sys/fs/mqueue** The `queues_max` is a read/write file for setting and getting the maximum number of message queues allowed on the system.
`msgsize_max`	8192	**/proc/sys/fs/mqueue** The `msgsize_max` is a read/write file for setting and getting the maximum message size value. This message queue attribute is used when creating any message.
`msg_max`	32767	**/proc/sys/fs/mqueue** The `msg_max` is a read/write file for setting and getting the maximum number of messages in queue value.

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

Parameter	Command
`semms1`, `semmns`, `semopm`, and `semmni`	`# /sbin/sysctl -a	grep sem` Displays the value of the semaphore parameters in the order listed.
`shmall`, `shmmax`, and `shmmni`	`# /sbin/sysctl -a	grep shm` Displays the details of the shared memory segment sizes.
`msgmnb`, `msgmni`, and `msgmax`	`# /sbin/sysctl -a	grep msgm` Displays the details of the System V IPC message queue parameters.
`threads-max`	`# /sbin/sysctl -a	grep threads-max` Displays the maximum number of threads possible system-wide.
`file-nr`	`# /sbin/sysctl -a	grep file-nr` Displays the number of allocated file handles, the number of allocated but unused file handles, and the maximum number of file handles.
`queues_max`	`# /sbin/sysctl -a	grep queues_max` Displays the maximum number of message queues allowed on the system.
`msgsize_max`	`# /sbin/sysctl -a	grep msgsize_max` Displays the maximum message size value.
`msg_max`	`# /sbin/sysctl -a	grep msg_max` Displays the maximum number of messages in a queue value.

If the value of any kernel parameter is different from the recommended value, perform the following:

1. Using any text editor, create or edit the **/etc/sysctl.conf** file, and add or edit lines similar to the following:

> **Note:** Include lines for kernel parameters values that you want to change. For the semaphore (`kernel.sem`) and the file-nr (`fs.file-nr`) parameters, 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-nr = 8192 0 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 4–3   Hewlett Packard HP-UX for Itanium Kernel Parameters

Name	Recommended Value	Description
STRMSGSZ	65535	--
aio_listio_max	512	--
aio_physmem_pct	20	--
aio_max_ops	4096	--
create_fastlinks	1	--
cmc_plat_poll	15	--
dbc_max_pct	5	--
dbc_min_pct	2	--
dnlc_hash_locks	512	--
fs_async	1	--

Table 4–3   (Cont.) Hewlett Packard HP-UX for Itanium Kernel Parameters

Name	Recommended Value	Description
max_async_ports	8192	--
max_thread_proc	2048	Maximum number of threads allowed in each process.
maxdsiz	0XC0000000	Maximum size (in bytes) of the data segment for any user process.
maxdsiz_64bit	0X400000000	Maximum size (in bytes) of the data segment for 64-bit processes.
maxfiles	4098	The soft limit for the number of files a process is allowed to have open simultaneously.
maxfiles_lim	4098	Hard limit for the number of files that a process is allowed to have open simultaneously.
dbc_min_pct	5	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.
dbc_max_pct	10	--
maxssiz	0X8000000	Maximum size (in bytes) of the stack for any user process.
maxssiz_64bit	0X10000000	Maximum size (in bytes) of the stack for 64-bit processes.
maxswapchunks	4096	Maximum number of swap chunks.
maxtsiz	0X40000000	Maximum size (in bytes) of the text segment for any user process.
maxuprc	1024	Limits the maximum number of concurrent user processes per user.
mesg	1	Enables Sys V messages at boot time.
msgmap	(2+msgtql)	Number of entries in the System V IPC message space resource map.
msgmax	8192	Maximum System V IPC message size in bytes.
msgmnb	65536	Maximum number of bytes on a single System V IPC message queue.
msgmni	(NPROC)	Maximum number of permitted system-wide System V IPC message queues (IDs).
msgseg	32767	Number of system V IPC message segments in the system.
msgssz	128	Number of bytes in a System V IPC message segment.
msgtql	(NPROC)	Maximum number of System V IPC messages in the system at any time.
ncallout	(NPROC + 16)	Maximum number of pending timeouts. Calculated as nkthread + the number of I/O devices connected to the machine.

Table 4–3   (Cont.) Hewlett Packard HP-UX for Itanium Kernel Parameters

Name	Recommended Value	Description
nfile	(15 * NPROC + 2048)	Maximum number of files that can be open simultaneously on the system at any given time. Calculate as follows: ((16*(4200+16+maxusers)/10)+32+2*(npty+nstrpty +nstrtel)
nflocks	NPROC (at least 4096)	Maximum combined total number of file locks that are available system-wide to all processes at any given time.
ninode	(8 * NPROC + 2048)	Maximum number of open inodes that can be in memory. Calculate as follows: 4200+48+maxusers+(2*npty)
nkthread	2 * NPROC	Limits the number of threads allowed to run simultaneously.
nproc	8192	Limits the number of processes allowed to exist simultaneously.
npty	2000	--
nstrpty	2000	--
nstrtel	2000	--
semmni	512	Number of system V IPC system-wide semaphore identifiers.
semmsl	1043	Maximum number of Semaphores Per ID.
semmni	512	--
semmns	4096	Number of system V IPC system-wide semaphores.
semmnu	(NPROC - 4)	Maximum number of System V IPC undo structures for processes.
semmsl	1024	Number of semaphores in a semaphore set
semvmx	32767	Maximum value of any single System V IPC semaphore.
shmem	1	Enable or disable System V shared memory.
shmmax	0X100000000 (or up to physical memory size)	Maximum size for a System V shared memory segment.
shmmni	300	Number of System V shared memory segment identifiers in the system.
shmseg	120	Maximum number of System V shared memory segments per process.
swapmem_on	1	Allows physical memory size to exceed the available swap space.
vps_ceiling	64	--

5

Installing and Configuring Oracle Database and Client

This chapter describes the tasks 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 **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 64-bit version of your platform.

5. Click **Download**.

    The File Download screen appears.

6. Click **p10404530_112030_***platform***_1of7.zip** and **p10404530_112030_***platform***_2of7.zip** for the database (where platform is the 64-bit version of the operating system).

   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.

To download and install the 32-bit Oracle Client 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 **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:

   - For Linux platform (64-bit): **p13390677_112040_***platform***_4of7.zip**

     where *platform* is the name of the platform that you are using.

   - For other supported platforms (32-bit) (for example, AIX or Solaris): **p13390677_112040_***platform***_1of2.zip**

     where *platform* is the name of the platform that you are using.

   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.

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

This section describes the overall workflow for creating and configuring a single database instance or a 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.

   > **Note:** Review and apply recommended database instance initialization parameters listed in "Configuring the Oracle Database Initialization Parameters". Some default database initialization parameters must be configured for ASAP to run.
   >
   > For a RAC database, follow the additional database connection recommendations described in "Configuring Oracle Real Application Clusters Database Connectivity".

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 5–1   RDBMS server configurations for ASAP

System Size	Automatic Maximum Memory Target	Number of Sessions
Small	4 GB	100-120 per development instance.
Medium	8 GB	800 per high performance production ASAP instance.
Large	16 GB	-

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> SHOW PARAMETER DB
```

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

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

> **Note:**   Do not manually edit the **spfile$ORACLE_SID.ora**. Editing an spfile corrupts it. This can prevent you from starting an instance, or cause an active instance to fail.

To convert the INIT.ora file to an spfile:

1. Start **sqlplus**.

2. Log in using **as sysdba** for the user-name.

    ```
    sqlplus sys/password as sysdba
    ```

    Where *password* is the password for your **sys** database user account.

3. Enter:

    ```
    create spfile from pfile;
    File created.

    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.

    ```
    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

Parameter and Value	Description
PROCESSES =500 (small) 1000 (medium), 3000 (large with under 14 NEP server), and 5000 (large with over 14 NEP servers)	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*.
SESSIONS = 1600 or up to 600 per online instance (production) 100 - 120 per online instance (development)	This parameter sets the maximum number of connections to the Oracle Database.
COMMIT_WAIT = 'WAIT'	This parameter controls when the redo for a commit is flushed to the redo logs.
FILESYSTEMIO_OPTION = 'SETALL'	Specifies I/O operations for file system files.

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.

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 remains 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:

   ```
   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;
   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.DBMS_LOCK TO "ASAP_SYS" WITH GRANT OPTION;
   GRANT SELECT ON DBA_TABLESPACES 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 to admASAP_envID ;
   create user sarmASAP_envID identified by sarmASAP_envID default tablespace
   Tablespace_name temporary tablespace $TEMP_TS;
   grant connect, resource to sarmASAP_envID ;
   create user nepASAP_envID identified by nepASAP_envID default tablespace
   Tablespace_name temporary tablespace $TEMP_TS ;
   grant connect, resource to nepASAP_envID;
   create user srpASAP_envID identified by srpASAP_envID default tablespace
   Tablespace_name temporary tablespace $TEMP_TS;
   grant connect, resource to srpASAP_envID;
   create user ctrlASAP_envID identified by ctrlASAP_envID default tablespace
   Tablespace_name temporary tablespace $TEMP_TS;
   grant connect, resource 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.

   - PASSWORD=*db_pw*: Where *db_pw* is database password for the database user with sufficient privileges to create new tablespace users.

   - ORACLE_SID=*sid*: Where *sid* is the database SID value.

   - TEMP_TS=*temp_ts*: Where *temp_ts* is the temporary tablespace associated to each user.

4. Run the *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 Real Application Clusters Database Connectivity

ASAP uses the availability features of Oracle Real Application Clusters (RAC) system. ASAP supports an active/passive failover RAC database configuration. If you have installed ASAP in a 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 RAC node switchover. If a transaction is in progress when the 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 (*LOCAL_ LISTENER*). For more information on listener configuration and RAC installation, refer to the **Oracle Real Application Clusters Installation Guide** and the **Oracle Database Net Services Administrator's Guide**.

To configure the **TNSNAMES.ora** file for RAC support:

1. Using a text editor, open **TNSNAMES.ora** file in the *Oracle_Home***/network/admin/** directory, where *Oracle_Home* is the directory in which the Oracle database is installed.

2. Configure the **TNSNAMES.ora** file entries listed in Table 5–3.

Table 5–3   TNSNAMES.ora Entries

Entry	Description
LOAD_BALANCE	This parameter specifies whether load balancing is enabled between RAC databases. This parameter is embedded in the ADDRESS_LIST parameter in the tnsnames.ora file.
	Set this attribute to **NO**. ASAP does not support active/active RAC databases configuration.
FAILOVER	This parameter specifies whether connect-time failover is enabled between primary and secondary RAC databases. This parameter is embedded in the ADDRESS_LIST parameter in the tnsnames.ora file
	Set this attribute to TRUE. ASAP supports the active/passive RAC database configurations.
ADDRESS	This parameter contains the address information for a RAC database. Include two instances of this attribute for the primary and secondary RAC databases. This parameter is embedded in the ADDRESS_LIST parameter in the tnsnames.ora file
	The ADDRESS parameters includes the following parameters:
	■ PROTOCOL: Specifies the protocol used to connect to the RAC database. For example, TCP.
	■ HOST: Specifies the host name or IP address for the RAC database.
	■ PORT: Specifies the port number for the RAC database.
SERVER	This parameter directs the listener to connect the client to a specific service handler. Set this parameter to DEDICATED.
SERVICE_NAME	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.

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

Entry	Description
FAILOVER_MODE	This parameter contains the connection information required for a 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 confused 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`.

For example:

```
DB_CONNECT=
    (DESCRIPTION =
        (ADDRESS_LIST =
            (LOAD_BALANCE=NO)
            (FAILOVER=TRUE)
            (ADDRESS =
                (PROTOCOL = TCP)
                (HOST = test.system.com)
                (PORT = 1521)
            )
            (ADDRESS =
                (PROTOCOL = TCP)
                (HOST = test.system.com)
                (PORT = 1521)
            )
        )
        (CONNECT_DATA =
            (SERVER = DEDICATED)
            (SERVICE_NAME = TEST)
            (FAILOVER_MODE=
                (TYPE=select)
                (METHOD=basic)
                (RETRIES=30)
                (DELAY=15)
            )
```

```
      )
    )
```

3. Install ASAP.

4. Perform the post installation tasks described in "Configuring ASAP to Support TAF for RAC".

6

Installing and Configuring Oracle WebLogic Server

This chapter describes the tasks 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 Oracle 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).

See "Software Requirements" for the required WebLogic Server version, Java Standard Edition (Java SE) Java Development Kit (JDK). See "Patch Requirements" for more information on required patches WebLogic Server.

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 you follow the Oracle WebLogic Server installation documentation carefully, performing all required steps. For WebLogic Server installation information, see
>
> http://download.oracle.com/docs/cd/E13179_
> 01/common/docs103/index.html
>
> For PDFs and downloadable HTML versions of the WebLogic Server installation information, see
>
> http://download.oracle.com/docs/cd/E13179_
> 01/common/docs103/pdf.html

2. Locate the generic Oracle WebLogic Server software distribution file included with the ASAP software on the Oracle software delivery 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 wls1035_generic.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 wls1035_generic.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:
>
> ```
> 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***/wlserver_10.3/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***/wlserver_10.3/common/bin**, start the **WebLogic Configuration Wizard** using the following command:

   ```
   ./config.sh
   ```

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

2. On the **Welcome** screen, select **Create a new WebLogic domain**.

3. Click **Next**.

   The **Select Domain Source** screen is displayed.

4. On the **Select Domain Source** screen, select **Generate a domain configured automatically to support the following products:**

   > **Note:** **Basic WebLogic Server Domain - 10.3.5.0 [wlserver_10.3]** is automatically selected.

5. Click **Next**.

   The **Specify Domain Name and Location** screen is displayed.

6. On the **Specify Domain Name and Location** screen, specify the WebLogic domain name and the location where you want to install your domain.

7. Click **Next**.

   The **Configure Administrator Username and Password** screen is displayed.

8. On the **Configure Administrator Username and Password** screen, specify the admin user name and password for your WebLogic domain. Enter an optional description.

9. Click **Next**.

   The **Configure Server Start Mode and JDK** screen is displayed.

10. On the **Configure Server Start Mode and JDK** screen choose from **Development mode** or **Production mode**. Select the location of the installed JDK for WebLogic to use.

11. Click **Next**.

   The **Select Optional Configuration** screen is displayed.

12. On the **Select Optional Configuration** screen, select the **Administration Server** and **Managed Servers, Clusters and Machines** check boxes.

   > **Note:** ASAP does not support clusters, but the screen to configure clusters appears after the **Managed Servers** configuration screen. Ignore the **Configure Clusters** screen.
   >
   > ASAP does not support **RDBMS Security Store**. Do no select this check box.

13. Click **Next**.

   The **Configure the Administration Server** screen is displayed.

14. On the **Configure the Administration Server** screen, specify the values described in Table 6–1.

Table 6–1 Configure the Administration Server screen

Administration Server fields	Values
Name	Enter a name for your WebLogic server.
Listen address	Select **All Local Addresses** from the list.
Listen port	Enter a port number for your WebLogic server.
SSL listen port [1]	Enter an SSL port number for your WebLogic server.
SSL enabled	Select this check box to enable SSL.

[1] The **SSL enabled** check box must be selected before a value can be entered for this field.

15. Click **Next**.

   The **Configure Managed Servers** screen is displayed.

16. On the **Configure 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.

17. After you add your managed server specified, click **Next**.

The **Configure Clusters** screen is displayed.

18. Click **Next**.

The **Configure Machines** screen is displayed.

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

20. Click **Next**.

The **Assign Servers to Machines** screen is displayed.

21. After you assign servers to machines, click **Next**.

The **Configuration Summary** screen is displayed.

22. Review the configuration settings you have made. Click **Create**.

The **Create WebLogic Domain** screen is displayed.

23. When creation is 100% complete, click **Done**.

For more information on the steps required to configure each of these options, refer to the following Web page:

http://download.oracle.com/docs/cd/E13222_01/wls/docs103/index.html

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.

7

Installing ASAP

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").

> **Note:** If you do not have a window manager on your UNIX machine, you cannot view the GUI interface. An error message appears notifying you that variables have not been set. In these situations, you must use 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 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 will write 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. Invoke the command as follows:
>
> - asap72ServerAIX61 -is:tempdir *Temp_directory_name*
> - asap72ServerSolaris -is:tempdir *Temp_directory_name*
> - asap72ServerLinux -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 **jconn2.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:

> **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.

1. Copy the **jconn2.jar** file from your ASAP installation directory to your WebLogic domain **lib** folder.

   ```
   cp ASAP_src/asap_utils/jconn2.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.

   ```
   <Jul 15, 2011 2:50:29 PM EDT> <Notice> <WebLogicServer> <BEA-000360> <Server
   started in RUNNING mode>
   ```

5. Stop the **tail** process.

   ```
   Ctrl + Shift + C
   ```

6. Exit from your oracle user session.

   ```
   exit
   ```

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".

For more information about the directory placeholders used in this procedure, see Table 1–1, " Directory Placeholders Used in This Guide".

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

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 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**.

    - Check **Enable Network Time Protocol** in the Network Time Protocol tab.

Preparing the Linux Environment

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

- 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

1. Log into Oracle Linux as **root**.

2. Using Firefox, download the Oracle Linux Java SE version required for the WebLogic Server (see "Software Requirements").

3. Change the permissions on the Java installation file:

   ```
   chmod a+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:

   ```
   mv jdk_install_file /usr/local
   ```

5. From the new location, install Java SE.

   ```
   ./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:

   ```
   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.

   ```
   ifconfig
   ```

9. Edit the **/etc/hosts** file and provide a host name for your IP address. For example:

   ```
   # 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:

   ```
   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:

```
# .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/11.2.0/dbhome_1
PATH=$PATH:$HOME/bin:/u01/app/oracle/product/11.2.0/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:

```
cd /home/asap
mkdir asapinstaller
mv ASAP.R7_2_0.B165.linux.tar asapinstaller/
cd asapinstaller
tar -xvf ASAP.R7_2_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 Web site using Mozilla Firefox.

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 Web site.

4. Use the following command to extract the content from the installation files:

```
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/11.2.0/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**).

   ```
   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.

    > **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".

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.

    The **Database Configuration Assistant: Step 7 of 12: Recovery Configuration** screen appears.

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

    The **Database Configuration Assistant: Step 8 of 12: DatabaseContent** screen appears.

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

The **Database Configuration Assistant: Step 9 of 12: Initialization Parameters** screen appears.

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 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.DBMS_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.

13. Become **root** user.

```
su root
```

14. Copy the Database **tnsnames.ora** file to your **asap** user account home directory.

```
cp /u01/app/oracle/product/11.2.0/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 Web site using Mozilla Firefox.

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 wls1035_generic.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/wls1035_generic.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.1

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.

Table 7–1 WebLogic Domain Demonstration System Installation Values

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

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.

   ```
   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 7–2 ASAP Demonstration System Installation Values

Installer Screen	Fields	Value
Enter Server Destination Directory	**Directory Name**	**/home/asap/asap72**
Configure ASAP UNIX Environment Variables	**Environment ID**	**demo**
	Directory Name	**/u01/app/oracle/product/11.2.0/client_1**
Configure ASAP Database	**Name of RDBMS Server**	**ASAP**
	Oracle Server DBA User Name	**ASAP_SYS**
	Oracle Server DBA Password	**ASAP_SYS**

Table 7–2   (Cont.) ASAP Demonstration System Installation Values

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

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.

> **Note:** The ASAP Server installation process must be run while logged in using the ASAP environment user account. Oracle recommends that the ASAP user's home directory is provided as the installation location for the ASAP software so that the installation process has read/write access to the installation target directory.

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:

     *asap72*ServerAIX61

   - For the Solaris platform:

     asap72ServerSolaris

   - For the Linux platform:

     asap72ServerLinux

   > **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.

   > **Note:** The absolute path of the directory cannot exceed 48 characters.

- 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 components 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 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.

> **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.

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 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 RAC databases, *port* is the port number for the RAC databases, and *servicename* is the service name for the 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***/wlserver_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.

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

you want to install ASAP to an admin server or 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.

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:

   ■ For the Solaris platform:

      ```
      asap72ServerSolaris -console
      ```

- For the Linux platform:

  ```
  asap72ServerLinux -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 components 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 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 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 RAC databases, port is the *port* number for the RAC databases, and *servicename* is the service name for the 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.

> **Note:** You can deploy multiple ASAP instances against the same WebLogic Server with different domains. You cannot use the same domain for different ASAP instances.

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:

```
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:

     ```
     asap72ServerSolaris.response
     ```

   - For AIX:

     ```
     asap72ServerAIX61.response
     ```

   - For Linux:

     ```
     asap72ServerLinux.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 asap72ServerSolaris.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 **asap720ServerSilent** 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:

   ```
   ../asap72ServerOperating_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:

   ```
   ../asap72ServerOperating_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:

```
asap720ServerSilent
```

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 you 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 username 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 username 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 **<jinterpreterPort></jinterpreterPort>** 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**
    - *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
replace config/ASAP.cfg? [y]es, [n]o, [A]ll, [N]one, [r]ename: A
```

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).

- *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:

```
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.

```
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:

```
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:

```
cd $ASAP_BASE
rm -r *
```

> **Caution:** Be careful which directory you run this command against. It is possible to damage your system configuration if you make an error.

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
   ```

8

Installing the Order Control Application Client

This chapter describes how to install the Oracle Communications 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 Oracle Communications 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 8–1   OCA Client Checklist

Description	Value
Record the hostname of the UNIX machine on which ASAP is running.	--
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.	--
Record the Environment ID of the ASAP Environment on UNIX machine	--

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, **asap***ReleaseNumberBuildNumber***ClientWin.exe** (for example, **asap720B100ClientWin.exe**), from the Oracle software delivery 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 following session parameters:

- **HOST**: Name of host machine where WebLogic Server is installed. The session associated OCA SRP server is running as an application of this WebLogic Server.

- **PORT**: Port number on which WebLogic Server is listening. The session associated OCA SRP server is running as an application of this WebLogic Server.

- **ENVID**: Environment ID of ASAP instance. The session associated OCA SRP server is a component of this ASAP system.

- **SYSTEM_NAME**: Name of the OCA Server to which the OCA client connects. Used to support multiple ASAP systems from a single client.

4. In the **OCA.cfg** file, set the following global parameters:

- **SYSTEM_NAME**: Name of the ASAP system to which the OCA client connects. Used to support multiple ASAP systems from a single client.

- (Optional) **LANGCODE**: 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.

- (Optional) **IDLETIMEOUT**: Maximum idle time, in minutes, after which the OCA SRP server terminates the OCA client connection. Set to zero (0) to disable this feature.

- (Optional) **DATE_FORMAT**: *dd/MM/yyyy* or *MM/dd/yyyy*

- (Optional) **TIME_FORMAT**: AM_PM (12-hour clock with an AM or PM designation) or NON_AM_PM (a 24-hour clock).

- **OCA_EVENTS_SUPPORTED**: Enables the propagation of SARM events.

- **MAXW_OPEN_DETAILS**: The number of detail windows a user can have open at one time.

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

> **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.

6. 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:\ASAP72"
```

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. Copy the *ASAP_home***/oca_sys_if/client/java/config/OCA.cfg** file to *ASAP_home***/config** folder.

2. In the *ASAP_home***/config/OCA.cfg** file, set the following session parameters:

   - **HOST**: Name of host machine where WebLogic Server is installed. The session associated OCA SRP server is running as an application of this WebLogic Server.

   - **PORT**: Port number on which WebLogic Server is listening. The session associated OCA SRP server is running as an application of this WebLogic Server.

   - **ENVID**: Environment ID of ASAP instance. The session associated OCA SRP server is a component of this ASAP system.

   - **SYSTEM_NAME**: Name of the OCA Server to which the OCA client connects. Used to support multiple ASAP systems from a single client.

3. In the *ASAP_home***/config/OCA.cfg** file, set the following global parameters:

   - **SYSTEM_NAME**: Name of the ASAP system to which the OCA client connects. Used to support multiple ASAP systems from a single client.

   - (Optional) **LANGCODE**: 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.

   - (Optional) **IDLETIMEOUT**: Maximum idle time, in minutes, after which the OCA SRP server terminates the OCA client connection. Set to zero (0) to disable this feature.

   - (Optional) **DATE_FORMAT**: *dd/MM/yyyy* or *MM/dd/yyyy*

   - (Optional) **TIME_FORMAT**: AM_PM (12-hour clock with an AM or PM designation) or NON_AM_PM (a 24-hour clock).

   - **OCA_EVENTS_SUPPORTED**: Enables the propagation of SARM events.

   - **MAXW_OPEN_DETAILS**: The number of detail windows a user can have open at one time.

4. Modify **$ASAP_BASE/scripts/runocaclient** as required.

5. 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:** 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 Order Control Application Thin Client (Java Applet)

To set up the OCA think 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 Oder 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:

   ```
   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. 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
   ```

   > **WARNING:** Do not overwrite the existing entries.

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 **asap*ENV*.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_clien_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*.

9

ASAP Post-Installation Tasks

This chapter provides instructions for Oracle Communications ASAP post-installation tasks.

Overview of ASAP Post-Installation Tasks

Post-installation tasks for ASAP include:

- Configuring ASAP to Support TAF for RAC
- Installing and Testing a Cartridge
- Backing Up the InstallShield Directory
- Using ASAP with Oracle Database 11g and NLS_CHARACTERSET WE8ISO8859P15
- Creating a Backup of ASAP, WebLogic Domain, and ASAP Schemas

Configuring ASAP to Support TAF for 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*/**config/** directory.

2. Configure the entries in **ASAP.cfg** listed in Table 9–1.

Table 9–1   ASAP.cfg Entries

Entry	Description
DB_RETRY_NUMBER	Specify the number of times you want ASAP to retry the connection when the connection to the database fails. For example, `DB_RETRY_NUMBER = 11`.
DB_RETRY_INTERVAL	Specify the interval (in seconds) between attempts for establishing the connection. For example, `DB_RETRY_INTERVAL = 10`.

The following are reliability related configuration parameters in the **ASAP.cfg** file:

```
# ASAP Availability Enhancement Parameters
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 the a cartridge:

1. Go to the My Oracle Support Web site:

   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.

   ```
   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**

- *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
replace config/ASAP.cfg? [y]es, [n]o, [A]ll, [N]one, [r]ename: A
```

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 he 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:

```
<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>
```

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 backup of 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 updirectory 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 11g and NLS_CHARACTERSET WE8ISO8859P15

Perform the following tasks if you are using Oracle Database 11g 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 11g version of **orai18n.jar** from *WLS_home***/Oracle/Middleware/wlserver_10.3/server/ext/jdbc/oracle/11g** 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/wlserver_10.3/server/ext/jdbc/oracle/11g/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/wlserver_
   10.3/server/ext/jdbc/oracle/11g/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**.

    ```
    . ./Environment_Profile
    ```

2. Shut down ASAP.

    ```
    stop_asap_sys -d
    ```

3. From the directory that contains *ASAP_home*, use the zip utility to generate an ASAP backup file:

    ```
    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.

    ```
    ./stopWeblogic.sh
    ```

2. From the directory that contains the *Domain_home* folder, use the zip utility to generate an WebLogic Domain backup file.

    ```
    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.

    ```
    . ./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.

```
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.

10

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:

   - asap*envid* (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

Demonstration Service Activation Model	Installation Path	Executable[1]
ATM/FR Service Activation Model	$ASAP_BASE/samples/sadt/ATM_FR/Nortel/PASSPORT_3_0/	run_suite $SRP *ctrl_password* ALL_ATM or run_suite $SRP *ctrl_password* ALL_FR
3G Wireless Service Activation Model	$ASAP_BASE/samples/sadt/3G_Wireless/Nortel/HLR_PS_3_0/	run_suite $SRP *ctrl_password* ALL_3GWL
POTS Service Activation Model	$ASAP_BASE/samples/sadt/DemoInstall/Nortel/DMS/POTS/	run_suite $SRP *ctrl_password* ALL_POTS
IP VPN Service Activation Model	$ASAP_BASE/samples/sadt/IPVPN/Nortel/SHASTA_2_5/	run_suite $SRP *ctrl_password* ALL_IPVPN

[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).

- 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:

- *crtl_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" below.

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:

- **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

Configuration Variable	Parameter Settings	Location
LOOPBACK_ON	1 (default setting)	*ASAP_home*/**configASAP.cfg**

Live Mode:

Set the parameter listed in Table 10–3 to test the cartridge in live mode.

Table 10–3   Live Mode Parameter Settings

Configuration Variable	Parameter Settings	Location
LOOPBACK_ON	0	*ASAP_home*/**configASAP.cfg**

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.

    ```
    mkdir New_source_directory
    ```

2. Copy *SAR_file.sar* to this new source directory.

    ```
    cp SAR_file.sar ./New_source_directory
    ```

3. Change directory to *New_source_directory*.

    ```
    cd New_source_directory
    ```

4. Un-jar *SAR_file.sar*. This extracts the contents of the sar file.

    ```
    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.

    ```
    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 loop back 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.

11

Upgrading ASAP

This chapter describes how to upgrade your existing system to Oracle Communications ASAP 7.2 release. 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 7.2 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 7.2 from ASAP 5.2.4 and any ASAP 7.0.x 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

- Maintaining Access to Services While Upgrading
- Creating Test Environments
- Testing Your Upgraded System

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 5.2.4 or ASAP 7.0.X to ASAP 7.2".

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 **in 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:

    ```
    ora_dump_sql [-d|-n|-t] user ID/password [table name]
    ```

    where [-d|-n|-t] are options that apply to reinserting the data as follows:

    - 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:

    ```
    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**

- **tbl_asdl_parm**

- **tbl_csdl_asdl**

- **tbl_csdl_config**

- **tbl_nep_asdl_prog**

- **tbl_nep_jprogram**

- **tbl_nep_program**

- **tbl_program_source**

Service Activation Request Manager Schema Static NE Configuration Tables

- **tbl_clii_route**

- **tbl_comm_param**

- **tbl_cp_mux**

- **tbl_err_threshold**

- **tbl_host_clii**

- **tbl_ne_config**

- **tbl_ne_event**

- **tbl_ne_monitor**

- **tbl_nep**

- **tbl_nep_mux**

- **tbl_nep_rte_asdl_nxx**

- **tbl_q3_agent_name**

- **tbl_resource_pool**

- **tbl_user_err_threshold**

Upgrade Impacts from ASAP 5.2.4 or ASAP 7.0.X to ASAP 7.2

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 Middle Ware 11g R1

ASAP 7.2 supports Oracle Fusion Middle Ware 11g R1's WebLogic Server 10.3.5. To upgrade your WebLogic Server, you must also upgrade your JDK to version 1.7.

Schema Changes

This section lists the summary of schema changes for various possible upgrades.

Summary of Schema Changes – ASAP 7.0.1 to ASAP 7.0.2

The following is the only change to the ASAP 7.0.2 database schema from ASAP 7.0.1:

Table Made Empty

- **tbl_classA_secu** table in the Control database is now empty.

Summary of Schema Changes – ASAP 7.0.0 to ASAP 7.0.1

The following is the only change to the ASAP 7.0.1 database schema from ASAP 7.0.0:

New Function

- **SSP_get_completed_asdls**

Summary of Schema Changes – ASAP 5.2.3 to ASAP 5.2.4

Table 11–1 summarizes the changes to the ASAP 5.2.4 database schema from ASAP 5.2.3.

Table 11–1   Database Schema Differences

Database	Table	Details
SARM database	**tbl_ne_strsub**	created table
		strsub_type VARCHAR2(20) NOT NULL,
		description VARCHAR2(255) NULL,
		asdl VARCHAR2(80) NULL,
		csdl VARCHAR2(80) NULL,
		ne_vendor VARCHAR2(255) NULL,
		tech_type VARCHAR2(255) NULL,
		sftwr_load VARCHAR2(16) NULL,
		ne_str_pattern VARCHAR2(255) NULL,
		ne_replace_pattern VARCHAR2(255) NULL,
		CHECK ((ne_vendor IS NOT NULL and tech_type IS NOT NULL and sftwr_load IS NOT NULL) or (ne_vendor IS NOT NULL and tech_type IS NOT NULL and sftwr_load IS NULL) or (ne_ vendor IS NULL and tech_type IS NULL and sftwr_ load IS NULL))
SARM database	**tbl_srq_csdl**	added column EXCEPTIONS CHAR(1) NOT NULL,
		added column ROLLBACK_EXCEPTIONS CHAR(1) NOT NULL,
		added column CSDL_INSTANCE VARCHAR2(80) NULL

Summary of Schema Changes – ASAP 5.2.2 to ASAP 5.2.3

Table 11–2 summarizes the changes to the ASAP 5.2.3 database schema from ASAP 5.2.2.

Table 11–2   Database Schema Differences

Database	Table	Details
SARM database	**tbl_srq**	added column srq_sub_stat SMALLINT DEFAULT 127 CHECK (srq_sub_stat BETWEEN 0 AND 127);
-	**tbl_srt_header_mapping**	created table xpath_name VARCHAR2(1024) NOT NULL, xpath_value VARCHAR2(1024) NOT NULL
-	**tbl_event_template**	created table name VARCHAR2(80) NOT NULL, event_type VARCHAR2(20) NOT NULL, csdl VARCHAR2(80) NULL, parameter_name VARCHAR2(80) NULL, parameter_value VARCHAR2(255) NULL
-	**tbl_event_dataset**	created table template_name VARCHAR2(80) NOT NULL, parameter_type VARCHAR2(20) NOT NULL, csdl VARCHAR2(80) NULL, parameter_name VARCHAR2(80) NULL,

Deleted Functions

- getallWoListByWoId

Summary of Schema Changes – ASAP 5.2.0 to ASAP 5.2.2

Table 11–3 summarizes the changes to the ASAP 5.2.2 database schema from ASAP 5.2.0.

Table 11–3   Database Schema Differences

Database	Table	Details
SARM database	**tbl_asdl_config**	added column ASDL_TIMEOUT SMALLINT NOT NULL added column ASDL_TIMEOUT SMALLINT NOT NULL added column ASDL_RETRY_ INTERVAL SMALLINT NOT NULL added column ASDL_RETRY_ NUMBER SMALLINT NOT NULL
-	**tbl_csdl_asdl**	added column PNR SMALLINT DEFAULT 0 CHECK (PNR>=0 AND PNR<=2)

Table 11–3   (Cont.) Database Schema Differences

Database	Table	Details
-	**tbl_ne_config**	added column REQUEST_ TIMEOUT SMALLINT NOT NULL
		added column REQUEST_RETRY_ NUMBER SMALLINT NOT NULL
		added column REQUEST_RETRY_ INTERVAL SMALLINT NOT NULL
		added column THROUGHPUT SMALLINT NOT NULL
-	**tbl_srt_bundle**	rename column from BUNDLE_ID to SERVICE_ID
		added column SERVICE_TYPE CHAR
-	**tbl_srt_bundle_csdl**	rename column from BUNDLE_ID to SERVICE_ID
-	**tbl_srt_csdl_parm**	rename column from BUNDLE_ID to SERVICE_ID
-	**tbl_wrk_ord**	added column POINT_OF_NO_ RETURN SMALLINT DEFAULT 0 CHECK (POINT_OF_NO_ RETURN>=-1)
-	**temp_wrk_ord**	added column POINT_OF_NO_ RETURN SMALLINT DEFAULT 0 CHECK (POINT_OF_NO_ RETURN>=-1)

Modified Packages

SrtPkg:

- **SSP_list_srt_bundle_rt1**
- **SSP_list_srt_bundle_csdl_rt1**
- **SSP_nep_load_rt1**
- **SSP_nep_load_rt5**
- **SSP_list_asdl_defn_rt1**
- **SSP_list_net_elem_rt1**
- **SSP_wo_cancel_rqst_rt1**
- **SSP_future_wo_rt1**
- **SSP_load_asdl_rt3**
- **SSP_xfer_order_rt1**

New Functions

- **SSP_nep_config_load**
- **SSP_set_ne_throughput**
- **SSP_update_wo_pnr**

Modified Functions

- **SSP_new_srt_bundle**

- **SSP_list_srt_bundle**

- **SSP_new_asdl_defn**

- **SSP_list_asdl_defn**

- **SSP_list_net_elem**

- **SSP_new_net_elem**

- **SSP_nep_load**

- **SSP_nep_list**

- **SSP_new_csdl_asdl_idx**

Upgrading from ASAP 5.2.4 or ASAP 7.0.x to ASAP 7.2

Table 11–4 describes the upgrade methods for ASAP software component upgrade methods.

Table 11–4   ASAP Software Component Upgrade Methods

Software	Upgrade Method	Description
Oracle database	In-place or out-of-place (during the database installation, using **dbua** after installing the database, or using the **expdp** and **impdp** utilities)	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 Real Application Clusters (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 "Creating a Backup of the ASAP Schemas" and "Rolling Back the ASAP Database".
Oracle client	New installation.	Install a new version of the Oracle client when you upgrade your database. Download and install the software as described in "Downloading and Installing the Oracle Client Software".
Oracle WebLogic Server	In-place (using **upgrade.sh** script)	Locate the Oracle WebLogic Server software distribution file on the Oracle software delivery 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 "Software Requirements" for Java version requirements for your platform. Run *wls_home*/**Middleware/wlserver_10.3/common/bin/upgrade.sh** to activate the **WebLogic Server Upgrade Wizard** (where *wls_home* is the location of the new version of the WebLogic Server software).
ASAP software	In-place (using the ASAP installer with the **vpd.properties** file from the old installation)	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 describe in "Downloading the ASAP Installation Files".

> **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 upgrades from ASAP 7.0.x or ASAP 5.2.4 to ASAP 7.2:

1. Ensure that your current ASAP server is running.

2. Upgrade the Oracle Database and Client to the appropriate release (see Table 11–4).

   > **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 ASAP 7.2, WebLogic Server 10.3.5, and the correct Java version for your platform (see Table 11–4) from the Oracle software delivery Web site:

   https://edelivery.oracle.com/

5. Unzip the WebLogic Server zip file.

6. Install the WebLogic Server software.

7. Upgrade ASAP WebLogic Server domain to release 10.3.5.

   > **Note:** For information about performing an upgrade for WebLogic server domain, see the *Installation Guide* in Oracle WebLogic 10.3.5 documentation located at:
   >
   > http://download.oracle.com/docs/cd/E12840_01/wls/docs103/upgrade/upgrading9091.html
   >
   > For upgrades of ASAP, Oracle recommends to run the **WebLogic Upgrade Wizard** on the older WebLogic server domain to upgrade it to WebLogic Server 10.3.5.
   >
   > For information about the correct JDK required for your WebLogic Server, see "Software Requirements".

   The WebLogic Server upgrade scripts automatically creates a backup file for your WebLogic Server called **weblogic-domain-backup-my103domain.zip**. Save this file in a secure location.

8. Perform the procedures described in the "Configuring, Backing Up, and Starting WebLogic Before Installing ASAP".

9. Start the WebLogic server domain for ASAP.

10. Log in with the same user ID that you used to install the old version of ASAP.

11. Source *ASAP_home***/Environment_Profile** from the old version of ASAP.

    ```
    . ./Environment_Profile
    ```

12. Untar the ASAP 7.2 software that you downloaded to a folder of your choice.

13. (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:

       ```
       ./asap720.wl.resource.update.sh
       ```

14. Run the following script:

    ```
    chmod u+x /asap_utils/asap720.wl.resource.update.sh
    ./asap_utils/asap720.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 5.2.4 or 7.0.x to the 7.2

    ■ Un-deploys the **asap$ENV_ID.ear**, **cartridge_management_ws.ear**, **SecurityServices.ear**, **srt$ENV_ID.ear**, removing the old 5.2.4 or 7.0.x WebLogic content for ASAP.

    > **Note:** Customizations related to these EAR files are not removed by this script. The customizations remains in ASAP 7.2 WebLogic domain.

15. Restart the WebLogic Server domain.

16. Shut down the current ASAP servers.

    ```
    stop_asap_sys -d
    ```

17. 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 7.2 installer refers to the existing **vpd.properties** file.

18. 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 ASAP 7.2 installer (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/Applicatio
n/1-0; 7-2;ASAP/Comp/routingElement/TORONTO-,type=routingElement>
javax.management.InstanceNotFoundException: WL_
Domain:name=System/UA77/ApplicationType/ServiceActivation/Applicatio
n/1-0;7 -2;ASAP/Comp/routingElement/TORONTO-,type=routingElement
```

---

19. 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.

20. Re-install the SRT components (if required) after ASAP installs. See *Service Request Translator User's Guide* for more information.

Upgrading ASAP from a Single Database to a RAC Database

The following sections describe additional upgrade procedures required if you are upgrading from a single Oracle database instance to a 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 11–4, " ASAP Software Component Upgrade Methods").

2. Upgrade ASAP as described in "Upgrading from ASAP 5.2.4 or ASAP 7.0.x to ASAP 7.2".

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 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 11–5. Each RAC database requires a single generic data source that are both members of a common multi data source.

Table 11–5   ASAP Data Source Migration

Original Data Source Name and JNDI Name	New Data Source Name and JNDI Name
envid.ADMDataSource System.*envid*.ApplicationType.ServiceActivation.Application.1-0;7-2;ASAP.Comp.ADMDataSource	Generic data sources: ■ *envid*.ADMDataSource-1 System.*envid*.ApplicationType.ServiceActivation.Application.1-0;7-2;ASAP.Comp.ADMDataSource-1 ■ *envid*.ADMDataSource-2 System.*envid*.ApplicationType.ServiceActivation.Application.1-0;7-2;ASAP.Comp.ADMDataSource-2 Multi Data Source: *envid*.ADMDataSourcenew System.*envid*.ApplicationType.ServiceActivation.Application.1-0;7-2;ASAP.Comp.ADMDataSource
envid.CTRLDataSource System.*envid*.ApplicationType.ServiceActivation.Application.1-0;7-2;ASAP.Comp.CTRLDataSource	Generic data sources: ■ *envid*.CTRLDataSource-1 System.*envid*.ApplicationType.ServiceActivation.Application.1-0;7-2;ASAP.Comp.CTRLDataSource-1 ■ *envid*.CTRLDataSource-2 System.*envid*.ApplicationType.ServiceActivation.Application.1-0;7-2;ASAP.Comp.CTRLDataSource-2 Multi Data Source: *envid*.CTRLDataSource System.*envid*.ApplicationType.ServiceActivation.Application.1-0;7-2;ASAP.Comp.CTRLDataSource

Table 11–5   (Cont.) ASAP Data Source Migration

Original Data Source Name and JNDI Name	New Data Source Name and JNDI Name

envid.NEPDataSource
 	
System.*envid*.ApplicationType.ServiceActivation. Application.1-0;7-2;ASAP.Comp.NEPDataSource
	Generic data sources:
	
	■ *envid*.NEPDataSource-1
	
	  System.*envid*.ApplicationType.ServiceActivation. Application.1-0;7-2;ASAP.Comp.NEPDataSource-1
	
	■ *envid*.NEPDataSource-2
	
	  System.*envid*.ApplicationType.ServiceActivation. Application.1-0;7-2;ASAP.Comp.NEPDataSource-2
	
	Multi Data Source:
	
	envid.NEPDataSource
	
	System.*envid*.ApplicationType.ServiceActivation. Application.1-0;7-2;ASAP.Comp.NEPDataSource

envid.SARMDataSource
 	
System.*envid*.ApplicationType.ServiceActivation. Application.1-0;7-2;ASAP.Comp.SARMDataSource
	Generic data sources:
	
	■ *envid*.SARMDataSource-1
	
	  System.*envid*.ApplicationType.ServiceActivation. Application.1-0;7-2;ASAP.Comp.SARMDataSource-1
	
	■ *envid*.SARMDataSource-2
	
	  System.*envid*.ApplicationType.ServiceActivation. Application.1-0;7-2;ASAP.Comp.SARMDataSource-2
	
	Multi data source:
	
	envid.SARMDataSource
	
	System.*envid*.ApplicationType.ServiceActivation. Application.1-0;7-2;ASAP.Comp.SARMDataSource

envid.SRPDataSource
 	
System.*envid*.ApplicationType.ServiceActivation. Application.1-0;7-2;ASAP.Comp.SRPDataSource
	Generic data sources:
	
	■ *envid*.SRPDataSource-1
	
	  System.*envid*.ApplicationType.ServiceActivation. Application.1-0;7-2;ASAP.Comp.SRPDataSource-1
	
	■ *envid*.SRPDataSource-2
	
	  System.*envid*.ApplicationType.ServiceActivation. Application.1-0;7-2;ASAP.Comp.SRPDataSource-2
	
	Multi data source:
	
	envid.SRPDataSource
	
	System.*envid*.ApplicationType.ServiceActivation. Application.1-0;7-2;ASAP.Comp.SRPDataSource

To create new generic and multi data sources to a 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**.

6. Expand **Services**.

7. Click **Database Sources**.

8. Select all the original data sources listed in Table 11–5 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 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 11–5. For example, *envid*.ADMDataSource-1.

13. In the **JNDI Name** field, add the first new JNDI name listed in Table 11–5. For example,
    System.*envid*.ApplicationType.ServiceActivation.Application.1-0;7-2;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:

    a. In the **Service Name** field, enter the service name of the RAC database you want this data source to connect to.

    b. In the **Database Name** field, enter the database name for the RAC database you want this data source to connect to.

    c. In the **Hostname** field, enter the hostname for the RAC database you want this data source to connect to.

    d. in the **Port** field, enter the port number for the 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 a 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 11–5. For example, *envid*.ADMDataSource-2 System.*envid*.ApplicationType.ServiceActivation.Application.1-0;7-2;ASAP.Comp. ADMDataSource-2.

30. You must create a multi data source for 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 11–5.

33. In the **JNDI Name** field, enter the multi data source JNDI name listed in Table 11–5.

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 11–5.

43. Click **Services**.

44. Click **Persistent Stores**.

45. Click *envid*.**JMSJDBCStore**.

46. 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.

47. 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.

48. Click Save.

49. Click **Database Sources**.

50. Select the old Admin data source.

51. Click **Delete**.

52. Restart the WebLogic server.

53. Log into the WebLogic server.

    The WebLogic Administration Console appears.

54. Click **Deployments**.

55. Select all **Deployments**

56. Click **Start**.

57. Select **Service All Requests**.

Configuring the ASAP Environment for the RAC Database

To configure the ASAP environment for the 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 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 RAC database tnsname.ora DB_CONNECT values.

8. Add the **RACDB_CONNECT_STR** parameter and set it to the RAC database connection string. This connection string repeats the IP addresses and port numbers for the 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 RAC databases, *port* is the port number for the RAC databases, and *servicename* is the service name for the RAC databases.

9. Restart ASAP.

Upgrading Stored Procedures for ASAP Servers

To upgrade ASAP server stored procedures:

1. Change to the **$ASAP_BASE/isql** of ASAP 7.2:

   ```
   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.

```
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.

```
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).

   ```
   . ./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:

   ```
   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.

   ```
   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").

   ```
   impdp system/password SCHEMAS=$CTRL_USER,$SARM_USER,$ADM_USER,$NEP_USER,$SRP_
   USER DUMPFILE=filename.dmp
   ```

   Note: When you run the **impdp** script, the script reports the following error five times, once for each ASAP server schema user:

   ```
   Processing object type SCHEMA_EXPORT/EVENT/TRIGGER
   ORA-39083: Object type TRIGGER failed to create with error:
   ORA-04072: invalid trigger type
   Failing sql is:
   BEGIN DBMS_DDL.SET_TRIGGER_FIRING_PROPERTY('"ADMenvid"','"ASAP_
   LOGON"',FALSE) ; END;
   ```

   Ignore these messages since they are false.

12

Uninstalling ASAP

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 do 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.

9. Note any manual cleanup tasks indicated in the **Uninstall Summary.**

10. Click **Finish**.

11. Perform any additional manual cleanup steps that were indicated in the **Uninstall Summary**.

> **Note:** In Oracle Linux operating systems, you receive error messages when uninstalling ASAP. These messages can be ignored.

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

- 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 necessary cartridge from the Environment Cartridge list in Studio 7.2 and click **Undeploy**.

3. Verify the Environment Cartridge list. If the check box for the cartridges is unchecked, it means that the cartridge is uninstalled.

A

Pre-Production Checklist

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 A–1   Pre-production Checklist – WebLogic Server Configuration

Checklist Item	Description	Reference
Design applications to handle undelivered messages	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.	`http://download.oracle.com/docs/cd/E13222_01/wls/docs103/admin.html`

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 A–2 Pre-production Checklist – ASAP.cfg

Checklist Item	Description	Reference
Set up database administrative routines. Involves the following parameters: DB_ADMIN_ON DB_ADMIN_TIME DB_ADMIN_PROC DB_ADMIN_PROC_PARAM	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.	See "Database purging" in the *System Administrator's Guide*. See also "ASAP Configuration Parameters" in the *System Administrator's Guide*.
MAX_ORDERS_IN_PROGRESS	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.	See "ASAP Configuration Parameters" in the *System Administrator's Guide*.
DIAG_LINE_FLUSH	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.	See "ASAP Configuration Parameters" in the *System Administrator's Guide*.

Table A–2   (Cont.) Pre-production Checklist – ASAP.cfg

Checklist Item	Description	Reference
LANGUAGE_DUMP_ON	Determines whether the language buffer being transmitted or received should be logged as a low level diagnostic in the server's diagnostic log file. The primary use is for debugging such language buffers, and therefore, is generally disabled in production environments.	See "ASAP Configuration Parameters" in the *System Administrator's Guide*.
WO_AUDIT_LEVEL	Ensure that the audit level is not set to 4. A level of 4 should not be used in production environments as this level of auditing may result in degraded performance.	See "ASAP Configuration Parameters" in the *System Administrator's Guide*.
MEMORY_LOGGING	Determines whether diagnostic memory management RPCs (mem_usage and mem_stats) are created in the server as well as the degree of memory management diagnostic logging to be performed while the server is running. Ensure that this parameter is set to 0 in production systems, this configuration parameter should not be set as it imposes performance overhead.	See "ASAP Configuration Parameters" in the *System Administrator's Guide*.

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

Checklist Item	Description	Reference
Location of log directories	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.	See *System Administrator's Guide*.
Set up purging of logs and diagnostics	This requires a cron script that clears alarm entries, event logs and process information.	See "Database purging" in the *System Administrator's Guide*.
Set the diagnostic level	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.	See "DIAG_LEVEL abstract data type" in *Developer Reference*. See also "ASAP security features" in the *System Administrator's Guide*.