



**Valient™**

# Server Installation Guide ServiceAssure

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**SERVER INSTALLATION GUIDE**  
ServiceAssure 3.1.3

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# 1 About This Documentation

This Server Installation Guide provides details about the ServiceAssure 3.1.3 system installation.

This guide was last updated September 13, 2007 4:14 pm.

## 1.1 Audience

This guide is intended for ServiceAssure 3.1.3 installation engineers who have responsibility for the installation of ServiceAssure.

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**Important:** Before attempting an installation of ServiceAssure you are strongly advised to read the release notes and any readme files distributed with your ServiceAssure software. Readme files and release notes may contain information specific to your installation not contained in this guide. Failure to consult readme files and release notes may result in a corrupt, incomplete or failed installation.

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**Note:** ServiceAssure administrators should not, without prior consultation and agreement from IBM Vallent, make any changes to the Index Organized tables or database schema. Changes to the Index Organized tables or database schema may result in corruption of data and failure of the ServiceAssure System. This applies to all releases of ServiceAssure using all versions of interfaces.

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## 1.2 Required Skills and Knowledge

This guide assume the ServiceAssure installation engineers are familiar with the following:

- IT Principles
- Solaris 10
- Oracle 10g

## 1.3 Document Conventions

This document uses the typographical conventions shown in the following table:

**Table 1:** General Document Conventions

<b>Format</b>	<b>Examples</b>	<b>Description</b>
ALL UPPERCASE	<ul style="list-style-type: none"> <li>• GPS</li> <li>• NULL</li> <li>• MYWEBSERVER</li> </ul>	Acronyms, device names, logical operators, registry keys, and some data structures.
<u>Underscore</u>	See <a href="#">Document Conventions</a>	For links within a document or to the Internet. Note that TOC and index links are not underscored. Color of text is determined by browser settings.
<b>Bold</b>	<ul style="list-style-type: none"> <li>• <b>Note:</b> The busy hour determiner is...</li> </ul>	Heading text for Notes, Tips, and Warnings.
SMALL CAPS	<ul style="list-style-type: none"> <li>• The STORED SQL dialog box...</li> <li>• ...click VIEW...</li> <li>• In the main GUI window, select the FILE menu, point to NEW, and then select TRAFFIC TEMPLATE.</li> </ul>	Any text that appears on the GUI.
<i>Italic</i>	<ul style="list-style-type: none"> <li>• A <i>busy hour</i> is...</li> <li>• A web server <i>must</i> be installed...</li> <li>• See the <i>User Guide</i></li> </ul>	New terms, emphasis, and book titles.
Monospace	<ul style="list-style-type: none"> <li>• <code>./wminstall</code></li> <li>• <code>\$ cd /cdrom/cdrom0</code></li> <li>• <code>/xml/dict</code></li> <li>• <code>http://java.sun.com/products/</code></li> <li>• <code>addmsc.sh</code></li> <li>• <code>core.spec</code></li> <li>• Type OK to continue.</li> </ul>	Code text, command line text, paths, scripts, and file names.  Text written in the body of a paragraph that the user is expected to enter.
<b>Monospace Bold</b>	<pre>[root] # pkginfo   grep -i perl system Perl5 On-Line Manual Pages system Perl 5.005_03 (POD Document- tation) system Perl 5.005_03</pre>	For contrast in a code example to show lines the user is expected to enter.
<Monospace italics>	<ul style="list-style-type: none"> <li>• <code># cd &lt;oracle_setup&gt;</code></li> </ul>	Used in code examples: command-line variables that you replace with a real name or value. These are always marked with arrow brackets.
[square bracket]	<code>log-archiver.sh [-i] [-w] [-t]</code>	Used in code examples: indicates options.

## 1.4 Document Structure

This guide is organized into the following chapters:

<b>Chapter</b>	<b>Description</b>
<a href="#">System Configuration</a>	Provides an introduction to the ServiceAssure product, including a description of its installation and an overview of the system itself.
<a href="#">Operating System Installation</a>	Provides procedures for Jump starting your system with Solaris 10.
<a href="#">The Platform Package</a>	Provides details for the installation of several software components required for ServiceAssure.
<a href="#">Creating User and Group Accounts</a>	Provides procedures for creating user and group accounts.
<a href="#">ServiceAssure Software Installation</a>	Provides procedures for installing ServiceAssure and required third party products.
<a href="#">Oracle Software Installation</a>	Provides procedures for installing Oracle 10g software.
<a href="#">Configuring and Starting ServiceAssure</a>	Provides procedures for configuring and starting ServiceAssure.
<a href="#">ServiceAssure Installation Output</a>	Appendix A provides details on the output from the packages installations.
<a href="#">Environment Variables</a>	Appendix B provides details on ServiceAssure Environment variables.
<a href="#">Jumpstart Output</a>	Appendix C provides details on Jumpstart output.

## 1.5 User Publications

ServiceAssure software provides the following user publications in HTML or Adobe Portable Document Format (PDF) formats.

**Table 2:** ServiceAssure User Documentation

<b>Document</b>	<b>Description</b>
<i>Release Notes</i>	Instructions for installing and configuring the ServiceAssure software.
<i>Architecture Overview Guide</i>	Provides an overview of ServiceAssure 3.1.3 product architecture.
<i>Configuration Guide</i>	Describes Resource Topology, KQI Model Editor, Service Model Editor and SLA Management GUIs in ServiceAssure.
<i>Monitoring Guide</i>	Describes in detail the Monitoring Graphical User Interface for ServiceAssure 3.1.3.
<i>Server Install Guide</i>	Details the ServiceAssure system installation.

**Table 2:** ServiceAssure User Documentation (Continued)

<b>Document</b>	<b>Description</b>
<i>Client Install Guide</i>	Details the sequence of steps required to install ServiceAssure 3.1.3 Client System.
<i>System Administration Guide</i>	Provides an overview of the ServiceAssure system, as well as instructions on how to complete the following tasks: <ul style="list-style-type: none"><li>• Starting and stopping ServiceAssure.</li><li>• Running batch processes such as archiving trace files and log files.</li><li>• Backing up and restoring the system.</li></ul>
<i>Upgrade Guide</i>	Details the ServiceAssure system upgrade from 3.1.1 to 3.1.3.
<i>Business Objects Server Install Guide</i>	Overview of the sequence of steps required to install the Business Objects Server for use with ServiceAssure for reporting.
<i>Business Objects Client User Guide</i>	Provides an overview of the sequence of steps required to install the Business Objects Client PC for use with ServiceAssure 3.1.3 for reporting.
<i>Business Objects Administrator Guide</i>	Provides an overview of the sequence of steps required to install or upgrade the Business Objects Administrator PC for use with ServiceAssure 3.1.3 for reporting.
<i>Online Help</i>	Provides information and procedures for using ServiceAssure software.

### **1.5.1 Viewing the Online Help**

You can view ServiceAssure online help by selecting the ONLINE HELP tab from the ServiceAssure desktop, this tab is accessible from all ServiceAssure modules on the ServiceAssure GUI. Online help is organized in a tree type structure. If you select any of the help topics on the left of the help page the detailed help text will be displayed on the right. You can also access help links for context-sensitive help.

### **1.5.2 Viewing the Publications in PDF**

All of the user publications are available in Adobe Portable Document Format (PDF). To open a PDF, you need the Adobe Acrobat Reader; a copy is included on your documentation CD-ROM. If you have a browser, you can also download Adobe Acrobat Reader free of charge from the Adobe Web site. For more details about the Acrobat Reader, see the Adobe Web site <http://www.adobe.com/>.

## 2 System Configuration

### 2.1 System Overview

ServiceAssure is targeted for mobile network operators to manage the service quality delivered to their customers. In order to achieve this goal, ServiceAssure needs to be installed on a high-performance and scalable Sun platform.

### 2.2 Additional Information

To cater for different systems and scenarios, all possible installation options are detailed in this guide. Depending on your machine specification and configuration, some or all of the installation options may be displayed.

### 2.3 Platform Overview and Software Inventory

The following sections details the hardware and software overview that is required for ServiceAssure.

#### 2.3.1 Hardware Specification

The following details the minimum hardware specification for the ServiceAssure Server:

- UltraSPARC IV, IV+ or UltraSPARC T1 processors.
- 8 GB core memory.
- 4 \* 72 GB harddisks.
- Optical Drive - DVD ROM/R/RW.

The following details the minimum hardware specification for the ServiceAssure Client and/or Business Objects Client which is optional.

- Pentium III or equivalent CPU; 1.5-GHz.
- 512MB RAM.
  - 300MB RAM for ServiceAssure Client
- One 4.1-GB SCSI or Enhanced Integrated Drive Electronics (EIDE) HDD

The minimum peripheral requirements for the ServiceAssure Client and/or Business Objects Client which is optional are:

- One high-resolution SVGA color monitor, 15 inches.
- One 104-key, Windows-compatible keyboard.
- One two-button, Windows-compatible mouse.
- At least one 10 Base-T (10/100 Base-T recommended) network interface card.
- One accelerated SVGA card with at least 2 MB RAM.

The following details the minimum hardware specification for the Business Objects Server:

- Pentium III or equivalent CPU
- 3 GHz Processor
- 3 GB RAM
- 4 GB of available Disk Space

### **2.3.2 ServiceAssure Component Functionality**

ServiceAssure architecture is typically made up of five components, each with specific functions.

#### ***Application Component***

The Application component consists of the ServiceAssure software which is used to run a ServiceAssure Framework.

#### ***Gateway Component***

The Gateway component deals with the processing of data which is downloaded from the adapter data sources.

#### ***Database Component***

The Database component consists of an Oracle database which ServiceAssure uses to store data.

#### ***Business Objects Reporting Component***

The Business Objects Reporting component is used as a reporting tool for ServiceAssure. This is an optional component.

#### ***Client PC***

The Client PC is used to run the ServiceAssure GUI. When it is applicable, it also runs the Business Objects Client which is an optional component.

### 2.3.3 ServiceAssure Installation Structure

ServiceAssure Components can be installed on a single Server or distributed over several machines. For example, a single ServiceAssure Server could house the Application, Gateway and Database Components or these three components could be split over three Servers.

### 2.3.4 Software Products (Server)

**Note:** The software products in Table 3 must be installed on the Server before completing an installation of ServiceAssure.

To install the ServiceAssure system on a UNIX Server, the following software products are required:

**Table 3:** Software Products (Server)

<b>Product</b>	<b>Version</b>	<b>Patch Level</b>	<b>Medium</b>
Solaris	10 Release 6/06	118833-36 or later	DVD
Oracle 10g	10g Version 10.2.0	10.2.0.3. Patches include 3748430, 5579055, 5195356 and 5752399.	DVD
Sun ONE Directory Server	5.2	4	Download this software from: <a href="http://www.sun.com">http://www.sun.com</a>
Sun Java System Message Queue	3.6		Download this software from: <a href="http://www.sun.com">http://www.sun.com</a>
ServiceAssure 3.1.33.1.3 Software 3.1.3 CD-ROM Installation and Documentation	3.1.3		CD-ROM

### 2.3.5 Software Products (Client)

To install the ServiceAssure system on the Client PC, the following software products are required:

**Table 4:** Software Products (Client)

<b>Product</b>	<b>Version</b>	<b>Medium</b>
Windows	2000 SP4, 2003, XP	CD-ROM
Oracle Client	10.2.0.3	CD-ROM
Business Objects Client (optional) <sup>2</sup> (Refer to note below)	6.5.1	3 * CD-ROM

<sup>2</sup> If the Business Objects Client software is going to be installed on the same machine as the ServiceAs-

sure 3.1 Client software, Windows 2003 must be used. Business Objects version 6.5.1 is not supported on Windows 2000 and XP.

### 2.3.6 Software Products Business Objects Server (Optional Component)

To install the Business Objects Server software on the Server PC, the following software products are required:

**Table 5:** Software Products Business Objects Server

<b>Product</b>	<b>Version</b>	<b>Medium</b>
Windows	2003	CD-ROM (Customer must supply this)
Oracle Client	10.2.0.3	CD-ROM
Business Objects Client (optional)	6.5.1	3 * CD-ROM

### 2.3.7 Software Products Business Objects Client (Optional Component)

To install the Business Objects Client software on the Client PC, the following software products are required:

**Table 6:** Software Products Business Objects Client

<b>Product</b>	<b>Version</b>	<b>Medium</b>
Windows	2003	CD-ROM (Customer supplies this)
Oracle Client	10.2.0.3	CD-ROM
Business Objects Client (optional)	6.5.1	3 * CD-ROM

## 2.4 Server Installation Overview

### 2.4.1 Preparation

Before installing the system, the following information about the Server(s) where ServiceAssure will be installed is required:

- IP address of the Server(s)
- Hostname of the Server(s)
- IP Address of the Router

### 2.4.2 Required CD-ROMs/DVDs

- Solaris 10 Jumpstart DVD
- ServiceAssure 3.1.3 Software Installation and Documentation CD
- Oracle 10g for Solaris DVD
- Oracle 10g for Windows CD

- Business Objects 6.5.1 - 3 CDs (optional)

### 2.4.3 File Systems

The following file systems are recommended for the installation of ServiceAssure. Specific third party software is installed in each file system.

**Note:** Table 7 is an example of a file system used in a standalone system. The system seen here is a SunFire V440 with four 72GB disks. The Size column is used to record the size of the partition created during the installation. Refer to the Technical Architecture Specification document you have been provided with, which details your specific file system layout.

**Table 7: Filesystems**

<i>Filesystem</i>	<i>Software</i>	<i>Size or ZFS quota</i>	<i>Disk Location</i>
/	Operating System	8192	c1t0d0s0 or LVM metadvice
swap	Operating System	8192	c1t0d0s1 or LVM metadvice
/var	Operating System	4096	c1t0d0s3 or LVM metadvice
/appl	Oracle and ServiceAssure	30720	c1t0d0s4 or ZFS storage pool
/export/home	Users Home Accounts	2048	c1t0d0s5 or ZFS storage pool
/oradata01	Oracle Storage Location 1	34816	c1t1d0s0 or ZFS storage pool
/oradata02	Oracle Storage Location 2	34816	c1t1d0s1 or ZFS storage pool
/oradata03	Oracle Storage Location 3	34816	c1t2d0s0 or ZFS storage pool
/oradata04	Oracle Storage Location 4	34816	c1t2d0s1 or ZFS storage pool
/oralogs1	Oracle Redo Log Loc 1	16384	c1t3d0s0 or ZFS storage pool
/oralogs2	Oracle Redo Log Loc 2	16384	c1t3d0s1 or ZFS storage pool
/oradump	Oracle Dump Location	4096	c1t3d0s7 or ZFS storage pool
/data/download1	Downloaded data 1	8192	c1t3d0s3 or ZFS storage pool
/data/download2	Downloaded data 2	8192	c1t3d0s4 or ZFS storage pool
/data/trace_log1	Trace Log Location	8192	c1t3d0s5 or ZFS storage pool
/data/trace_archive1	Trace Archive Location	8192	c1t3d0s6 or ZFS storage pool

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System Configuration

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## 3 Operating System Installation

### 3.1 Installing Solaris 10

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**Note:** The Solaris 10 Operating System may be installed prior to the ServiceAssure deployment. If so, this chapter does not need to be executed and the person installing the system can proceed directly to [The Platform Package](#) on page 17.

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**Note (Distributed Install):** In a distributed system, the procedure described in this chapter should be performed on each ServiceAssure Server.

---

Before you begin the installation of the Solaris 10 Operating System, the following Server information should be collected for the ServiceAssure Server(s):

- Host Name on the Server(s)
- IP Address of the Server(s)
- Default Router address of the Server(s) This information is available from the on-site system administrator.

#### 3.1.1 Solaris 10 Jumpstart Installation

Complete the following procedure to perform the Solaris 10 Jumpstart installation.

1. Insert the DVD entitled SOLARIS 10 (SPARC) JUMPSTART.
2. If the Server is not at the `ok>` prompt, type `stop A` to bring the Server to the `ok>` prompt. If `stop A` is not available on the keyboard and the Server is not at the `ok>` prompt, type the following as user `root`:  

```
# /usr/sbin/shutdown -i0 -g0 -y
```
3. When the Server is at the `ok>` prompt, type the following command to Jumpstart the Server:  

```
ok> boot cdrom
```
4. As the machine starts to power up, Jumpstart may present the user with a list of Terminal Types, select OPTION 3 (VT100) from the list.
5. Press ENTER to continue.

You are required to enter the following information:

- Enter the Hostname
- Enter the IP Address
- Enter the Router IP Address

---

**Note:** Ignore the Failed to mount /dev/\* readlink error and Could not enable logging for /cdrom/cdrom0\*, filesystem is mounted readonly error on bootup before or after Jumpstart.

---

The complete Jumpstart output is detailed in Appendix C.

6. A default password is set for the root user. This password is `root01`. After the system has rebooted, login as user `root`.
7. To change the root password, log into the system as user `root`, using the default password and execute the following command:  

```
# passwd
```
8. Re-enter the password when requested. Log out and log back in again to ensure the password is correctly set.

### 3.1.2 Netmask Settings

Jumpstart defaults the netmask to `255.255.255.0`. If the netmask is not `255.255.255.0`, change the netmask after Jumpstart completes.

To reset the netmask, complete the following:

- As user `root` edit the `/etc/netmasks` file and change the `255.255.255.0` value to match the new netmask.

### 3.1.3 Time Zone Settings

Jumpstart defaults the time zone to GMT. If the time zone is not GMT, change the time zone after Jumpstart completes.

To reset the time zone, complete the following:

- As user `root` edit the `/etc/TIMEZONE` file:

Change:

```
TZ=GMT
```

To:

```
TZ=<timezone>
```

`<timezone>` is the name of the time zone. A list of time zones is detailed in the `/usr/share/lib/zoneinfo` directory.

### 3.1.4 DHCP

Jumpstart sometimes configures Servers to use DHCP.

To check if Jumpstart has implemented DHCP, complete the following:

- Check if the `/etc/dhcp` directory exists. If the directory/file exists then execute the following commands as user `root` on the Server:

```
# cd /etc
```

```
# rm -rf dhcp*
```

### 3.1.5 Server Reboot

After the updates to the system files are made, it is necessary to reboot the Server.

To reboot the Server, complete the following:

- Execute the following as user `root`:  

```
# /usr/sbin/shutdown -i6 -g0 -y
```

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Operating System Installation

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## 4 The Platform Package

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**Note:** The chapter below should be completed on all Servers. The platform package is part of the ServiceAssure SA3.1.3.8.05 patch.

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This chapter details the installation of several software components necessary for ServiceAssure. These are not Vallent products and are not distributed by Vallent. Installation of these products is a required pre-requisite for installing the ServiceAssure software. The products are:

- Oracle database system - version 10g
- Sun Directory Server (LDAP server)
- IMQ Server

Vallent provides scripts to help with the installation of these packages for ServiceAssure. These scripts in addition with other system administration functions are contained in the Vallent platform package provided with your software distribution. This package consists of a number of files:

- `vallent-vt-plat-install.install`
- `vallent-vt-plat-install.remove`
- `vallent-vt-plat-install.sw`

To install the platform package, complete the following as user `root`:

1. Unzip the package by running the command:

```
# gunzip vallent-sa-plat-install-PLATx.y.z.a.tar.gz
```

2. Untar the package by running the command:

```
# tar -xvf vallent-sa-plat-install-PLATx.y.z.a.tar
```

3. Execute the installation script by running the command:

```
# ./vallent-vt-plat-install.install now
```

This will install the platform package under the following `/var/install` directory. The name of the package is `vallent-sa-plat-install-PLATx.y.z.a.tar.gz`.

`x`, `y` and `z` denote the actual version numbers in your distribution.

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The Platform Package

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---

---

# 5 Creating User and Group Accounts

---

**Note (Distributed Install):** In a distributed system, the procedure described in this chapter should be performed on each ServiceAssure Server.

---

## 5.1 Creating Users and Setting up Profiles

### 5.1.1 Setting Up User Accounts

The following users and associated groups must be created, as well as their home directories and profile settings:

**Table 8:** User Accounts and Profile Settings

<i>User Name</i>	<i>User ID</i>	<i>Primary Group ID</i>	<i>Secondary Group ID</i>	<i>Home Account</i>
oracle	100	dba, 100	-	/export/home/oracle
saserver	110	sa, 110	-	/export/home/saserver

---

**Note:** The following procedure uses the information in Table 8 to create the two users: `oracle` and `saserver` with their associated groups and home accounts. If you use different values, ensure you use these values throughout the creation process. Ensure the User IDs, "100" and "110" are not already in use on the system. If they are, different User IDs should be selected and used throughout the creation steps.

---

**Note (Distributed Install):** In a distributed system, it is important User IDs are uniform across all the ServiceAssure Servers. This is especially true if users already exist on the system, for example the `oracle` user

---

To create the correct users and groups, complete the following:

1. Execute the command below as user `root` on the ServiceAssure Server:

```
# /var/install/sbin/setup_users -product serviceassure
# chown oracle:dba /ora*
# chown saserver:sa /data/*
```

2. Setup User Passwords - execute the commands below as user `root` on the ServiceAssure Server to create the user passwords and re-enter the passwords when prompted:

```
# passwd oracle
# passwd saserver
```

---

**Note:** The ServiceAssure configuration uses a default password of `Saserver01` for the `saserver` user. If the password is not being set to `Saserver01`, ensure the correct password is used when asked to confirm the `saserver` password during the installation.

---

---

**Note (Distributed Install):** Ensure that the passwords are uniform across all ServiceAssure Servers.

---

## 5.2 Setting Up Domain Names

The ServiceAssure servers should be setup on a common domain.

To setup the domain name, complete the following:

1. As user `root` on the Server(s), check to see if the domain name is set by executing the following command as user `root`:

```
# domainname
```

If nothing is returned, the domain is not set.

2. To set the domain, execute the following .

```
# domainname <domain>
```

<domain> is the selected domain name for the system, for example: `vallent.com`

3. Create the file `/etc/defaultdomain` and update it with the domain name by executing the following command:

```
# echo "<domain>" > /etc/defaultdomain
```

<domain> is the selected domain name for the system in Step 2 above.

4. Edit the `/etc/hosts` file and change the `<hostname>.domainname` entry to the local hostname appended with the domainname. The entry in `/etc/hosts` should be similar to the following:

```
1.1 appserver.vallent.com appserver loghost
```

5. A force save is needed when saving the file. To force save a file in the vi Editor, use the following command:

```
wq!
```

---

**Note (Distributed Install):** Update the `/etc/hosts` file on each ServiceAssure Server with the IP, hostname and domain name of each of the distributed Servers.

---

### 5.3 *Setting Up the Hostname*

If a distributed install is being performed the hostname of each Server must be present in the `/etc/hosts` file of each Server. As user `root` on each Server modify the `/etc/hosts` and ensure the hostname and IP Address of the Application Server, Database Server and the Gateway Server are present in the `/etc/hosts` file.

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Creating User and Group Accounts

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# 6 Oracle Software Installation

---

**Note (Distributed Install):** In a distributed system, each section in this chapter should be performed on the Server housing the Database component only.

---

## 6.1 Oracle 10g Software Installation

### 6.1.1 Oracle Software Installation

Before installing the Oracle you must know the location of the following:

- Oracle 10.2.0 software
- Oracle 10.2.0.3 patchset
- Oracle 10.2.0 one-off patches

1. Execute the following commands as user `root` on the ServiceAssure Server(s):

```
# /var/install/sbin/oracle10gR2_install
```

The install conducts a number of checks:

```
Check Oracle User exists...
```

```
.... Done
```

```
Check oinstall group exists...
```

```
.... Done
```

```
Check dba group exists...
```

```
.... Done
```

```
-----  
Please select the Type of Install you wish to execute
```

```
by entering the number associated with the Install Type :
```

```
Full Install (Oracle 10.2.0.1 + 10.2.0.3 patch set) (1)
```

```
10.2.0.3 patch set Install (2)
```

```
-----  
[ 1 / 2 ] :
```

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Oracle Software Installation

---

2. The installation will ask the user to accept the type of installation required. Select option 1 above.
3. The installation will ask the user to specify the location of the Oracle Software and the location where the Oracle software is to be installed. Enter the paths to the Oracle software distribution, as requested.
4. Enter the destinations for the Oracle software. The defaults are acceptable, in most cases.  
When the Oracle Software installation is finished, the installation will continue on to execute the Oracle `root.sh` script.

---

**Note:** If Oracle is previously installed on this Server you may have to respond to the on-screen questions. Default values will be displayed and it is recommended that you select to overwrite the files if they already exist.

---

5. When asked if you want to install the Oracle Companion software, answer No.

```
Would you like to install the Oracle companion software? [y,n,?] n
Running post-install steps....
... Running root.sh - Please Respond to the Onscreen Questions if required
Running Oracle10 root.sh script...
The following environment variables are set as:
ORACLE_OWNER= oracle
ORACLE_HOME= /appl/oracle/product/10.2.0/db_1
Enter the full pathname of the local bin directory: [/usr/local/bin]:
The file "dbhome" already exists in /usr/local/bin. Overwrite it? (y/n)
[n]: y
The file "oraenv" already exists in /usr/local/bin. Overwrite it? (y/n)
[n]: y
The file "coraenv" already exists in /usr/local/bin. Overwrite it? (y/n)
[n]: y
Entries will be added to the /var/opt/oracle/oratab file as needed by the
Database Configuration Assistant when a database is created
Finished running generic part of root.sh script.
```

6. Next, the Oracle installation will proceed to install the 10.2.0.3 patch set, and one-off patches. These will be packaged in the Oracle 10.2.0.3 Enterprise Edition 64 Bit DVD for Solaris DVD under a `patch` directory. When prompted enter the location of the Oracle patch set:

```
Please enter the location of the Oracle 10.2.0.3 patch set [/cdrom/cdrom0/
patches/patchset/Disk1]:
Checking Running Oracle Processes...
.... no running oracle processes
.... no running oracle listeners
done
```

```
....  
Running post-patch install steps ....  
... Running root.sh - Please Respond to the Onscreen Questions if required  
Running Oracle10 root.sh script...  
The following environment variables are set as:  
ORACLE_OWNER= oracle  
ORACLE_HOME= /appl/oracle/product/10.2.0/db_1  
Enter the full pathname of the local bin directory: [/usr/local/bin]:  
The file "dbhome" already exists in /usr/local/bin. Overwrite it? (y/n)  
[n]:  
The file "oraenv" already exists in /usr/local/bin. Overwrite it? (y/n)  
[n]:  
The file "coraenv" already exists in /usr/local/bin. Overwrite it? (y/n)  
[n]: y  
Entries will be added to the /var/opt/oracle/oratab file as needed by  
Database Configuration Assistant when a database is created  
Finished running generic part of root.sh script.  
Now product-specific root actions will be performed.  
....done
```

**7. When prompted enter the location of the Oracle oneoff patches:**

```
Please enter the location of the Oracle 10.2.0.3 one-off patches [/cdrom/  
cdrom0/patches/oneoff]:  
Installing Oracle patch 3748430...done.  
Installing Oracle patch 5579055...done.  
Installing Oracle patch 5195356...done.  
Installing Oracle patch 5752399...done.  
Running changePerm.sh script to relax permissions on Oracle Home...  
.... Done  
Setting up oracle User Profile  
.... Done
```

The Oracle Patch installation will take approximately 20 minutes. The Oracle Installation log output can be found in: \$WMROOT/admin/logs/sa\_install.log.

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Oracle Software Installation

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---

# 7 ServiceAssure Software Installation

## 7.1 *Installing Sun Directory Server and Sun Java System Messaging Queue*

---

**Note:** The section below should be completed on a Consolidated Server or an Application Server only.

---

Before installing the ServiceAssure software it is necessary to download and install Sun Directory Server version 5.2 Patch 4 and Sun Java System Messaging Queue version 3.6 from Sun Microsystems' website at <http://www.sun.com>. Automated installers are provided for these as part of the Platform package.

After the Sun Director Server and Sun Java System Messaging Queue software is downloaded, complete the following to install the Sun Directory Server:

1. Execute the following command as user `root`:

```
# /var/install/sbin/ds_install -wmcrc <target directory> -product  
serviceassure
```

2. Respond to the on-screen questions, including the request for the location of the Directory Server package and file name.

3. Execute the following command as user `root`:

```
# /var/install/sbin/imq_install -product serviceassure
```

4. Respond to the on-screen questions, including the request for the location of the Java Messaging Queue package and file name.

## 7.2 *Installing the ServiceAssure Package*

The sections below detail the installation of the ServiceAssure software package.

To start the installation, complete the following:

- As user `root`, execute the following commands on the ServiceAssure Server(s).

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```
# cd <target directory>
# ksh sa_install -wmcrc <target directory>/sa -a <adapter name/type>
<target_directory> is the directory where the ServiceAssure software is going to be
installed.
<adapter name/type> refers to customer specific adapters.
Output and user interaction are as follows:
# ksh sa_install -wmcrc /appl/sa -a atktest
Making ServiceAssure top-level directory: /appl/sa
Making installation tasks record: /appl/sa/admin/install_tasks
Making software archive directories: under /appl/sa/admin/software
..
..
```

### 7.2.1 ServiceAssure System Type

The installation will ask what kind of system is being installed. Enter the number of your choice.

```
What Type of ServiceAssure System Are you Installing ?
-----
Please select the type of ServiceAssure System you are installing by
entering the number associate with the system type :
All Inclusive (1)
Application (2)
Database (3)
Gateway (4)
-----
[ 1 / 2 / 3 / 4 ] :
1
```

### 7.2.2 ServiceAssure Package Location

The installation will ask for the location of the ServiceAssure software packages.

```
Please enter the location of the ServiceAssure Software packages [/appl]:
Unzipping the core-sw-SA3.1.3.x.tar.gz file
Successfully unzipped the core-sw-*.tar.gz file
Untarring the core-sw-SA3.1.3.x.tar file
x core-sw.install, 77422 bytes, 152 tape blocks
x core-sw.license, 23721 bytes, 47 tape blocks
x core-sw.remove, 53959 bytes, 106 tape blocks
x core-sw.sw, 59791360 bytes, 116780 tape blocks
Successfully untarred the core-sw-SA3.1.3.x.tar file
Deploying the core-sw package
```

..  
..

---

### 7.2.3 ServiceAssure Core Environment

---

**Note (Distributed Install):** In a distributed system, this section does not need to be performed on the the Database Server.

---

The installation will display a list of ServiceAssure core environment variables. It will ask you if you want to change any of them, answer and follow the on-screen instructions.

The following is a list of the default ServiceAssure Variables :

1. BODBHOST=demostation1
2. BODBSID=repos
3. OPERATOR=Company1
4. ORACLEPORT=1521
5. SADBHOST=demostation1
6. SADBSID=sadb
7. SAGWHOST=demostation1
8. SAHOST=demostation1
9. SALOGDIR=/appl/sa/logs/
10. SAVARDIR=/appl/sa/var/
11. SAPROVDIR=/appl/sa/var/provision
12. WMCROOT=/appl/sa
13. SALOCATION=Cork
14. WEBI\_HOST=WebiHost
15. WEBI\_PORT=WebiPort
16. BODB\_USERNAME=repuser
17. BODB\_PASSWORD=Repuser01
18. SADB\_USERNAME=saserver
19. SADB\_PASSWORD=Saserver01
20. SAPMONPORT=9009
21. MAIL\_USERNAME=saserver
22. MAIL\_PASSWORD=Saserver01
23. MAILHOST=demostation1
24. LDAPHOST=demostation1
25. LDAPPOR=1389
26. LDAPSPORT=1636
27. LDAPROOT=dc=comnitel,dc=com
28. LDAP\_PASSWORD=Saserver01
29. OMPOR=9008
30. BOUMGTHOST=demostation1
31. BOUMGTPOR=8090
32. BOUMGTSYNC=false

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---

```
To accept these values enter 'Y' else enter 'N' to modify the values (Y/N)
Y
Commencing configure of /appl/sa/conf files ...
..
..
```

## 7.2.4 Directory Server Schema

---

**Note:** The section below should only be completed on a Consolidated Server or Application Server.

---

The installation will ask if the Directory Server configuration should be installed. Answer yes.

```
Do you want to install Sun Java System Directory Server Configuration ?
[Yes]
```

The installation will display a list of the Directory Server environment variables. It will ask you if you want to change any of them, answer and follow the on-screen instructions.

```
The following is a list of the default ServiceAssure Variables :
1. LDAPROOT=dc=comnitel,dc=com
To accept these values enter 'Y' else enter 'N' to modify the values (Y/N)
Y
Commencing configure of /appl/sa/conf files ...
..
..
```

The installation will ask you once more for the Directory Server passwords. Defaults are given, and may be used.

```
Please enter the password for 'system', the Directory Server User
[Saserver01]:
Directory Server "system" user password set to "Saserver01"
Please enter the password for 'useradm', the Directory Server User
[Useradm01]:
Directory Server "useradm" user administrator password set to "Useradm01"
Please enter the password for 'ldapadm', the Directory Server User
[Ldapadm01]:
Directory Server "ldapadm" user administrator password set to "Ldapadm01"
```

The installation will ask for final confirmation of the Directory Server schema creation. Answer Y.

```
Do you want to create the Directory Server Schema now (Y/N)
Y
Configuring Directory Server Schema ...
..
..
```

---

## 7.2.5 Message Broker Configuration

---

**Note:** The section below should only be completed on a Consolidated Server or Application Server.

---

The installation will ask if the Message Broker configuration should be installed, answer yes.

```
Do you want to install Sun Java System Message Queue Configuration ? [Yes]
.....
..Sun Java System Message Queue Configuration...
.....
..
..
```

The installation will display a list of the Message Broker environment variables. It will ask you if you want change any of them, answer and follow the on-screen instructions.

```
The following is a list of the default ServiceAssure Variables :
1. BROKER1HOST=<machine name>
2. BROKER1PORT=7681
3. BROKER2HOST=<machine name>
4. BROKER2PORT=7680
5. OMPORT=9008
To accept these values enter 'Y' else enter 'N' to modify the values (Y/N)
Y
Commencing configure of /appl/sa/conf files ...
..
..
```

---

## 7.2.6 Socket Daemon Environment

---

**Note:** The section below should only be completed on a Consolidated Server or Application Server.

---

The installation will display a list of the Socket Daemon environment variables. It will ask you if you want to change any of them, answer and follow the on-screen instructions.

```
The following is a list of the default ServiceAssure Variables :
1. SERVER_IP_ADDRESS=192.168.1.53
2. SHORT_IP_ADDRESS=192.168.1
To accept these values enter 'Y' else enter 'N' to modify the values (Y/N)
Y
Commencing configure of /appl/sa/conf files ...
..
..
```

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The installation will display a list of the Socket Daemon environment variables once more. It will ask you if you want to change any of them, answer and follow the on-screen instructions.

```
The following is a list of the default ServiceAssure Variables :
1. SHORT_IP_ADDRESS=192.168.1
To accept these values enter 'Y' else enter 'N' to modify the values (Y/N)
Y
Commencing configure of /appl/sa/conf files ...
```

### 7.2.7 Application Server Environment

---

**Note:** The section below should only be completed on a Consolidated Server or Application Server.

---

The installation will display a list of the Application Server environment variables. It will ask you if you want to change any of them, answer and follow the on-screen instructions.

```
The following is a list of the default ServiceAssure Variables :
1. TOMCAT_SERVER_PORT=8093
2. HTTP_PORT=8092
3. HTTPS_PORT=8094
To accept these values enter 'Y' else enter 'N' to modify the values (Y/N)
Y
Commencing configure of /appl/sa/conf files ...
..
..
```

**Note:** For procedures to configure security features, refer to chapter 7 of the *ServiceAssure System Administration Guide*.

---

### 7.2.8 ServiceAssure Core Database

---

**Note:** The section below should only be completed on a Consolidated Server or Database Server.

---

The installer will ask for the following:

- Database type.
- Oracle SID.
- The size of the database.
- Passwords for the sys and system users.

---

The default values for the above are usually suitable with the exception of the database size, which should be selected in accordance with system requirements and machine specification.

The installation will ask you if the ServiceAssure core database should be created. If the ServiceAssure core database exists, answer no. If the ServiceAssure core database does not exist, answer yes.

```
Would you like to perform task SA_DB_INSTALL ? [yes/no] >yes
Creating and starting Oracle instance
..
..
```

## 7.2.9 ServiceAssure Repository Database

---

**Note:** The section below should only be completed on a Consolidated Server or Database Server.

---

The installation will ask if the ServiceAssure repository database should be created. If the ServiceAssure repository database exists, or if it is not required, answer no. If the ServiceAssure repository database does not exist and is required, answer yes.

```
Would you like to perform task REP_DB_INSTALL ? [yes/no] >yes
Creating and starting Oracle instance
..
..
```

## 7.2.10 ServiceAssure Core Database Schema

---

**Note:** The section below should only be completed on a Consolidated Server or Database Server.

---

The installation will ask if the ServiceAssure core database schema should be created. If the ServiceAssure core database schema exists, answer no. If the ServiceAssure core database schema does not exist, answer yes.

```
Would you like to perform task CORE_SCHEMA_INSTALL ? [yes/no] >yes
-----
Database SID set to "sadb"
..
..
```

## 7.2.11 ServiceAssure Core Cron Jobs

The installation will ask if the ServiceAssure core cron jobs should be installed. Answer yes.

```
Would you like to perform task CORE_CRON_INSTALL ? [yes/no] >yes
```

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---

Configuring core cronjobs.....

The installation will ask what kind of system is being installed. Enter the number of your choice.

What Type of ServiceAssure System Are you Installing ?

-----  
Please select the type of ServiceAssure System you are installing by entering the number associate with the system type :

All Inclusive (1)

Application (2)

Database (3)

Gateway (4)

-----  
[ 1 / 2 / 3 / 4 ] :

**1**

The installation will ask for some system configuration information:

Please enter the location of the ORACLE\_HOME Directory [/appl/oracle/product/10.2.0/db\_1]:

Please enter the location of the sadb Database Archive Directory [/oradump/sadb]:

**/oradump**

Please enter the location of the repos Database Archive Directory [/oradump/repos]:

**/oradump**

Please enter the location of the IMQ Software Directory [/appl/imq]:

**/**

Please enter the location of the Directory Server Software Directory [/appl/ds]:

**/appl/ds**

Please enter the location of the ServerAssure Log Directory [/data/trace\_log1]:

Please enter the location of the ServerAssure Archive Logs Directory [/data/trace\_archive1]:

## 7.2.12 ServiceAssure Adapters

---

**Note:** The section below should be completed on all Servers.

---

The installation will ask if the ServiceAssure Adapters should be installed. Answer Yes if adapter packages are available for installation at this time. Otherwise, answer No.

Would you like to perform task ADAPTER\_INSTALL ? [yes/no] >**yes**

..

..

---

**Note:** The adapters may be installed at a later time using the following command as user root:  
# <target directory>/sa/admin/common/install/scripts/deploy-pkgs -wmcr  
<target directory>/sa -type <adapter type>. The following commands should now be  
executed: #svcadm disable sapmgr-sa followed by # svcadm enable sapmgr-sa.

---

The installation will ask what kind of system is being installed. Enter the number of your choice.

```
What Type of ServiceAssure System Are you Installing ?
-----
Please select the type of ServiceAssure System you are installing by
entering the number associate with the system type :
All Inclusive (1)
Application (2)
Database (3)
Gateway (4)
-----
[ 1 / 2 / 3 / 4 ] :
1
```

The installation will ask for the location of the ServiceAssure Adapter software packages.

```
Please enter the location of the ServiceAssure Software packages [/appl]:
Unzipping the atktest-db-SA3.1.3.x.tar.gz file
Successfully unzipped the atktest-db-*.tar.gz file
Untarring the atktest-db-SA3.1.3.x.tar file
x atktest-db.install, 45231 bytes, 89 tape blocks
x atktest-db.license, 93 bytes, 1 tape blocks
x atktest-db.remove, 33671 bytes, 66 tape blocks
x atktest-db.sw, 307200 bytes, 600 tape blocks
Successfully untarred the atktest-db-SA3.1.3.x.tar file
Deploying the atktest-db package
..
..
```

The installation will display a list of the Adapter environment variables. It will ask you if you want to change any of them, answer and follow the on-screen instructions.

```
The following is a list of the default ServiceAssure Variables :
1. FTP_USERNAME=saserver
2. FTP_PASSWORD=Saserver01
3. FTP_PORT_NUM=21
4. SADB_USERNAME=saserver
5. SADB_PASSWORD=Saserver01
To accept these values enter 'Y' else enter 'N' to modify the values (Y/N)
Y
```

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---

```
Commencing configure of /appl/sa/conf files ...
```

```
..  
..
```

### 7.2.13 ServiceAssure Adapter Database Schema

---

**Note:** The section below should only be completed on a Consolidated Server or Database Server.

---

The installation will ask if the ServiceAssure adapter database schema should be created. If adapter packages were installed in the previous section, answer yes. If adapter packages were not installed in the previous section, answer no.

```
Would you like to perform task ADAPTER_SCHEMA_INSTALL ? [yes/no] >yes
```

```
-----
```

```
Database SID set to "sadb"
```

```
..  
..
```

**Note:** The adapter database schema may be installed at a later time using the following command as user root: # <target directory>/sa/admin/oracle/install/scripts/database\_schema -wmcr <target directory>/sa -type <adapter type> -sid <SA database SID>

---

### 7.2.14 ServiceAssure Adapter Cron Jobs

---

**Note:** The section below should be completed on all Servers.

---

The installation will ask if the ServiceAssure Adapter cron jobs should be installed. Answer yes.

```
Would you like to perform task ADAPTER_CRON_INSTALL ? [yes/no] >yes
```

```
..  
..
```

**Note:** The adapter cron jobs may be installed at a later time using the following command as user root: # <target directory>/sa/admin/common/install/scripts/cron\_install -wmcr <target directory>/sa -type <adapter type>

---

---

## 7.2.15 Installing COTS Packages

---

**Note:** The section below should be completed on all Servers.

---

The installation will ask you if you want to install COTS packages. Answer yes or no as appropriate.

```
Would you like to perform task COTS_INSTALL ? [yes/no]
```

```
..  
..
```

---

## 7.2.16 Encoding of ServiceAssure System Passwords

---

**Note:** The section below should only be completed on the Application and Gateway Servers.

---

The installation will ask if the ServiceAssure system password should be encoded. Answer yes.

```
Would you like to perform task ENCODE_PASSWORDS ? [yes/no] >yes  
Replacing all passwords with encoded passwords...
```

```
..  
..
```

---

## 7.2.17 ServiceAssure Provisioning

---

**Note:** The Database Server should be installed to complete provisioning on the Application Server. If the Database Server is installed the section below should only be completed on the Application Server.

---

**Note:** Provisioning should not be performed at this time if ServiceAssure adapters packages have not been installed.

---

The installation will ask if it should provision the system. If the system is to be provisioned at this time, answer yes. If the system is not to be provisioned at this time, answer no.

```
Would you like to perform task PROVISION ? [yes/no] >yes  
Provisioning system...
```

```
..  
..
```

```
BUILD SUCCESSFUL  
Total time: 18 minutes 24 seconds  
Provisioning done.
```

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---

**Note:** The system may be provisioned at a later time using the following commands as user `saserver`: `$sap start domain` after this command has executed run `$provision -s`. If provisioning is run at a later time, the system will also need to be enabled using the following command as user `root`: `# svcadm enable sap-sa`.

---

The installation is now complete.

## 8 Configuring and Starting ServiceAssure

### 8.1 Socks Proxy

---

**Note (Distributed Install):** In a distributed system, this section should be performed on the Server housing the Application component only.

---

The socks proxy configuration should be updated if the GUI Clients reside on a different network or sub network to the Proxy Server. To see if this is the case, obtain the IP address of the Proxy Server and the GUI Clients.

If the network or the subnet of the GUI Client is different from the subnet of the Proxy Server, changes need to be made. For example:

- Different Networks:
  - Proxy Server IP Address = 192.168.1.23
  - GUI Client IP Address = **144.125.1.34**
- Different Subnets:
  - Proxy Server IP Address = 192.168.1.23
  - GUI Client IP Address = 192.168.**15**.34

If differences exist, as user `saserver` modify the `$WMCROOT/conf/socks/sockd.conf`. Insert the correct short IP address into the `client pass` section and the `pass` section of the file. By following the example above, the entries would read as follows:

Different Network:

```
client pass {  
  
    from: 144.0.0.0/8 port 1-65535 to: 192.168.1.0/24  
  
    {  
  
    pass {
```

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```
    from: 144.0.0.0/8 port 1-65535 to: 192.168.1.0/24
}
Different Sub-network:
client pass {
    from: 192.168.15.0/8 port 1-65535 to: 192.168.1.0/24
}
pass {
    from: 192.168.15.0/8 port 1-65535 to: 192.168.1.0/24 }
```

## 8.2 *Inputting the Business Objects Details (Optional)*

---

**Note (Distributed Install):** In a distributed system, this section should be performed on the Server housing the Application component only.

---

This section should only be executed if Business Objects are being used. The relevant property files relating to Business Objects should be updated as user `saserver` on the ServiceAssure Server with the following:

- The name of the BO Key.
- The name of the Server hosting the Business Objects Database.
- The username and password of the Business Objects database user.

To make these updates, complete the following:

**1.** Locate the Business Objects properties file:

```
$WMCROOT/conf/connector/businessobjects.properties
```

**2.** Update the line:

```
com.comnitel.reporttool.bo.bokey=bomain
```

`bomain` is the name of the generated Business Objects main key.

**3.** Locate the file:

```
/appl/sa/conf/environment/default.properties
```

**4.** Update the following lines:

```
comnitel.env.BODDBHOST=<BOSEVERNAME>
```

```
comnitel.env.BODBSID=<repos>
```

```
comnitel.env.WEBI_HOST=< WEBI_HOST IP address>
```

```
comnitel.env.WEBI_PORT=<8085>
```

<BOSERVERNAME> is the hostname or IP address of the Server hosting the Business Objects database.

<repos> is the Oracle SID of the Business Object database.

<WEBI\_HOST IP address> is the IP address of the Business Objects web Server.

<8085> is the Business Objects web Server port.

**5. Locate the file:**

```
/appl/sa/conf/dbconnection/extreporttooldb.properties
```

**6. Update the following lines:**

```
com.comnitel.dbconnection.user=<repuser>
```

```
com.comnitel.dbconnection.password=<Repuser01>
```

<repuser> is the Business Objects database username.

<Repuser01> is the Business Objects database users password.

## 8.3 Server Reboot

To start all processes, a reboot should be performed to ensure all the processes start automatically and correctly.

To reboot the Server, complete the following:

- Execute the following as user `root` on the ServiceAssure Server:

```
# /usr/sbin/shutdown -i6 -g0 -y
```

---

**Note (Distributed Install):** In a distributed system, the ServiceAssure Servers must be rebooted in the following order: Application component, Gateway component and Database component.

---

### 8.3.1 Process Checks

After the ServiceAssure Server(s) is rebooted a few checks are required to ensure all the processes have started successfully.

#### Database Check

To complete a database check, execute the following:

---

**Note (Distributed Install):** In a distributed system, this section should be performed on the Server housing the Database component only.

---

- As user `root` on the ServiceAssure Server, execute the command:

```
# ps -ef | grep pmon
```

Process `ora_pmon_sadb` should be returned.

Process `ora_pmon_repos` will also be returned if the repos database is installed.

#### Listener Check

To complete a Listener check, execute the following:

---

**Note (Distributed Install):** In a distributed system, this section should be performed on the Server housing the Database component only.

---

- As user `root` on the ServiceAssure Server, execute the command:

```
# ps -ef | grep tns
```

Process `$ORACLE_HOME/bin/tnslsnr LISTENER -inherit` should be returned.

### **Directory Server Check**

To complete a Directory Server check, execute the command:

---

**Note (Distributed Install):** In a distributed system, this section should be performed on the Server housing the Application component only.

---

1. As user `root` on the ServiceAssure Server, execute the command:

```
# ps -ef | grep slapd
```

One `slapd` process should be returned.

2. As user `root` on the ServiceAssure Server, execute the command:

```
# ps -ef | grep admin-serv
```

Three `admin-serv` processes should also be returned.

### **IMQ Check**

To complete an IMQ check, execute the following:

---

**Note (Distributed Install):** In a distributed system, this section should be performed on the Server housing the Application component only.

---

- As user `root` on the ServiceAssure Server, execute the command:

```
# ps -ef | grep imq
```

Four IMQ processes should be returned.

### **Sapmon Check**

To complete a SAPMON check, execute the following:

---

**Note (Distributed Install):** In a distributed system, this section should be performed on the Server(s) housing the Application component and the Gateway component.

---

- As user `root` on the ServiceAssure Server(s), execute the command:

```
# /usr/ucb/ps -auwwx | grep -w sapmon | grep -v grep
```

One Process should be returned.

## **8.4 ServiceAssure Check**

---

**Note (Distributed Install):** In a distributed system, this section should be performed on the Server housing the Application component only.

---

The ServiceAssure Framework processes are started automatically on a reboot.

To check ServiceAssure processes, complete the following:

1. Execute the following commands as user `saserver` on the ServiceAssure Server to check their status:

```
$ sap disp
```

The adapter processes may report a failed state. This is because they must be provisioned before they are started. The adapter processes must therefore be stopped, before the provisioning.

2. To provision the adapter processes, execute the following command as user `saserver`:

```
$ sap stop adapters
```

Process log files are located in whatever the `SALOGDIR` value is set to in the `$WMCROOT/conf/environment/default.properties` file.

3. Ensure no exceptions have occurred in these files. If the process has started successfully each process logfile should return the line `Process Startup done` when it has started successfully.

## 8.5 SMF Services Check

---

**Note:** The section below should be completed on all Servers.

---

Check that the ServiceAssure SMF services are online.

- Execute the following command as user `root`:

```
# svcs '*-sa*'
STATE STIME FMRI
online 11:30:41 svc:/application/serviceassure/socks-sa:sa
online 11:30:39 svc:/application/serviceassure/traprouter-sa:sa
online 11:30:46 svc:/application/serviceassure/sap-sa:sa
online 14:57:09 svc:/application/serviceassure/database-sa:global
online 17:24:02 svc:/application/serviceassure/sapmgr-sa:sa
online 17:24:54 svc:/application/serviceassure/sapmon-sa:sa
online 18:04:36 svc:/application/serviceassure/imq1-sa:sa
online 18:04:42 svc:/application/serviceassure/imq2-sa:sa
online 18:16:19 svc:/application/serviceassure/ldap-sa:sa
```

## 8.6 *Stopping and Starting ServiceAssure using SMF*

Stop and start the ServiceAssure system using the SMF facility by completing the following:

- To stop ServiceAssure, execute the command below as user `root`:

```
# svcadm disable socks-sa traprouter-sa sap-sa sapmgr-sa sapmon-sa imq1-  
sa imq2-sa ldap-sa database-sa
```

- To start ServiceAssure, execute the command below as user `root`:

```
# svcadm enable database-sa ldap-sa imq1-sa imq2-sa sapmon-sa sapmgr-sa  
sap-sa traprouter-sa socks-sa
```

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## Appendix A: ServiceAssure Installation Output

This appendix details the output associated with the installation of ServiceAssure. Sample input is used to respond to on-screen questions.

### *ServiceAssure Software Installation*

---

**Note:** If following error: X: usermod: ERROR: group oinstall does not exist.Choose another. is displayed on a ServiceAssure Server which is not running Oracle it can be safely ignored.

---

Execute the following command as user root:

```
• # ksh sa_install -wmcr /appl/sa -a atktest
Making ServiceAssure top-level directory: /appl/sa
Making installation tasks record: /appl/sa/admin/install_tasks
Making software archive directories: under /appl/sa/admin/software
..
..
Looking for bootstrap package
Found common-SA3.1.3.x.tar.gz
Extracting and running bootstrap package
Looking for bootstrap script
Running common.install
Copyright 2006 by Vallent Technologies Ireland Ltd, All Rights Reserved
Software license silently accepted via command-line option.
Running pre-install commands...
~~~~~
Running Pre-Installation Steps
```

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```
~~~~~
Checking user saserver prior to install
.... Done
~~~~~
Finished Pre-Installation Steps
~~~~~
~~~~~
Installing ServiceAssure Software
~~~~~
Backing up old versions of non-shared files to be installed...
Creating installation directories...
Installing software...
Checking configuration files...
Updating file permissions...
Setting up init scripts...
Running post-install commands...
~~~~~
Running Post-Installation Steps
~~~~~
.....
...Updating SA File Permissions...
.....
....done
.....
..Creating ServiceAssure Version File..
.....
....done
Setting up saserver User Profile
....done
....done
....done
~~~~~
Finished Post-Installation Steps
~~~~~
Completed ServiceAssure Software Installation
```

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---

SA Package Installation logs can be seen in /appl/sa/admin/logs/  
sa\_install.log

Installation is complete.

What Type of ServiceAssure System Are you Installing ?

-----  
Please select the type of ServiceAssure System you are installing by  
entering the number associate with the system type :

All Inclusive (1)

Application (2)

Database (3)

Gateway (4)

-----  
[ 1 / 2 / 3 / 4 ] :

**1**

Please enter the location of the ServiceAssure Software packages [/appl]:

Unzipping the core-sw-SA3.1.3.x.tar.gz file

Successfully unzipped the core-sw-\*.tar.gz file

Untarring the core-sw-SA3.1.3.x.tar file

x core-sw.install, 77422 bytes, 152 tape blocks

x core-sw.license, 23721 bytes, 47 tape blocks

x core-sw.remove, 53959 bytes, 106 tape blocks

x core-sw.sw, 59791360 bytes, 116780 tape blocks

Successfully untarred the core-sw-SA3.1.3.x.tar file

Deploying the core-sw package

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Software license silently accepted via command-line option.

Running pre-install commands...

~~~~~

Running Pre-Installation Steps

~~~~~

Checking user saserver prior to install

.... Done

~~~~~

Finished Pre-Installation Steps

~~~~~

~~~~~

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Installing ServiceAssure Software

~~~~~

Backing up old versions of non-shared files to be installed...

Creating installation directories...

Installing software...

Checking configuration files...

Updating file permissions...

Setting up init scripts...

Running post-install commands...

~~~~~

Running Post-Installation Steps

~~~~~

.....

...Updating SA File Permissions....

.....

....done

Importing /tmp/traprouter-sa.xml into SMF repository... done

Importing /tmp/socks-sa.xml into SMF repository... done

Importing /tmp/sapmon-sa.xml into SMF repository... done

Importing /tmp/sapmgr-sa.xml into SMF repository... done

Importing /tmp/sap-sa.xml into SMF repository... done

Generating sapmgr startup scripts ....

....done

Generating sap startup scripts ....

....done

....done

~~~~~

Finished Post-Installation Steps

~~~~~

Completed ServiceAssure Software Installation

SA Package Installation logs can be seen in /appl/sa/admin/logs/  
sa\_install.log

Installation is complete.

Successfully installed the core-sw package

Unzipping the core-conf-SA3.1.3.x.tar.gz file

Successfully unzipped the core-conf-\*.tar.gz file

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```
Untarring the core-conf-SA3.1.3.x.tar file
x core-conf.install, 56156 bytes, 110 tape blocks
x core-conf.license, 23721 bytes, 47 tape blocks
x core-conf.remove, 40856 bytes, 80 tape blocks
x core-conf.sw, 368640 bytes, 720 tape blocks
Successfully untarred the core-conf-SA3.1.3.x.tar file
Deploying the core-conf package
Copyright 2006 by Vallent Technologies Ireland Ltd, All Rights Reserved
Software license silently accepted via command-line option.
Running pre-install commands...
~~~~~
Running Pre-Installation Steps
~~~~~
Checking user saserver prior to install
.... Done
~~~~~
Finished Pre-Installation Steps
~~~~~
~~~~~
Installing ServiceAssure Software
~~~~~
Backing up old versions of non-shared files to be installed...
Creating installation directories...
Installing software...
Checking configuration files...
Updating file permissions...
Setting up init scripts...
Running post-install commands...
~~~~~
Running Post-Installation Steps
~~~~~
.....
...Updating SA File Permissions....
.....
....done
.....
```

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---

.Updating SA Environment Variables..

.....  
Sun Microsystems Inc. SunOS 5.9 Generic May 2002  
[ DEV Development CORK Solaris 10 ]

demostation1

Vallent UNIX Server

Note: local filesystems are not backed up

The following is a list of the default ServiceAssure Variables :

1. BODBHOST=demostation1
2. BODBSID=repos
3. OPERATOR=Company1
4. ORACLEPORT=1521
5. SADBHOST=demostation1
6. SADBSID=sadb
7. SAGWHOST=demostation1
8. SAHOST=demostation1
9. SALOGDIR=/appl/sa/logs/
10. SAVARDIR=/appl/sa/var/
11. SAPROVDIR=/appl/sa/var/provision
12. WMCROOT=/appl/sa
13. SALOCATION=Cork
14. WEBI\_HOST=WebiHost
15. WEBI\_PORT=WebiPort
16. BODB\_USERNAME=repuser
17. BODB\_PASSWORD=Repuser01
18. SADB\_USERNAME=saserver
19. SADB\_PASSWORD=Saserver01
20. SAPMONPORT=9009
21. MAIL\_USERNAME=saserver
22. MAIL\_PASSWORD=Saserver01
23. MAILHOST=demostation1
24. LDAPHOST=demostation1
25. LDAPPOR=1389
26. LDAPSPORT=1636
27. LDAPROOT=dc=comnitel,dc=com
28. LDAP\_PASSWORD=Saserver01

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---

29. OMPORT=9008

30. BOUMGTHOST=demostation1

31. BOUMGTPORT=8090

32. BOUMGTSYNC=false

To accept these values enter 'Y' else enter 'N' to modify the values (Y/N)

**Y**

Commencing configure of /appl/sa/conf files ...

Replacing --BODDBHOST-- with demostation1 in /appl/sa/conf/environment/default.properties

Replacing --BODBSID-- with repos in /appl/sa/conf/environment/default.properties

Replacing --OPERATOR-- with Company1 in /appl/sa/conf/environment/default.properties

Replacing --ORACLEPORT-- with 1521 in /appl/sa/conf/environment/default.properties

Replacing --SADBHOST-- with demostation1 in /appl/sa/conf/environment/default.properties

Replacing --SADBSID-- with sadb in /appl/sa/conf/environment/default.properties

Replacing --SAGWHOST-- with demostation1 in /appl/sa/conf/environment/default.properties

Replacing --SAHOST-- with demostation1 in /appl/sa/conf/environment/default.properties

Replacing --SALOGDIR-- with /appl/sa/logs/ in /appl/sa/conf/environment/default.properties

Replacing --SAVARDIR-- with /appl/sa/var/ in /appl/sa/conf/environment/default.properties

Replacing --SAPROVDIR-- with /appl/sa/var/provision in /appl/sa/conf/environment/default.properties

Replacing --WMCROOT-- with /appl/sa in /appl/sa/conf/environment/default.properties

Replacing --SALOCATION-- with Cork in /appl/sa/conf/environment/default.properties

Replacing --WEBI\_HOST-- with WebiHost in /appl/sa/conf/environment/default.properties

Replacing --WEBI\_HOST-- with WebiHost in /appl/sa/tomcat/jnlp/list.xml

Replacing --WEBI\_PORT-- with WebiPort in /appl/sa/conf/environment/default.properties

Replacing --WEBI\_PORT-- with WebiPort in /appl/sa/tomcat/jnlp/list.xml

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```
Replacing --BODB_USERNAME-- with repuser in /appl/sa/conf/dbconnection/
extreporttooldb.properties

Replacing --BODB_PASSWORD-- with Repuser01 in /appl/sa/conf/
dbconnection/extreporttooldb.properties

Replacing --SADB_USERNAME-- with saserver in /appl/sa/conf/dbconnection/
livedb.properties

Replacing --SADB_USERNAME-- with saserver in /appl/sa/conf/dbconnection/
reportdb.properties

Replacing --SADB_PASSWORD-- with Saserver01 in /appl/sa/conf/
dbconnection/livedb.properties

Replacing --SADB_PASSWORD-- with Saserver01 in /appl/sa/conf/
dbconnection/reportdb.properties

Replacing --SAPMONPORT-- with 9009 in /appl/sa/conf/environment/
default.properties

Replacing --MAIL_USERNAME-- with saserver in /appl/sa/conf/service/dom/
oss.properties

Replacing --MAIL_PASSWORD-- with Saserver01 in /appl/sa/conf/service/
dom/oss.properties

Replacing --MAILHOST-- with demostation1 in /appl/sa/conf/environment/
default.properties

Replacing --LDAPHOST-- with demostation1 in /appl/sa/conf/environment/
default.properties

Replacing --LDAPPORT-- with 1389 in /appl/sa/conf/environment/
default.properties

Replacing --LDAPSSPORT-- with 1636 in /appl/sa/conf/environment/
default.properties

Replacing --LDAPROOT-- with dc in /appl/sa/conf/environment/
default.properties

Replacing --LDAP_PASSWORD-- with Saserver01 in /appl/sa/conf/ldap/
default.properties

Replacing --OMPORT-- with 9008 in /appl/sa/conf/environment/
default.properties

Replacing --BOUMGTHOST-- with demostation1 in /appl/sa/conf/auth/
bo.properties

Replacing --BOUMGTPORT-- with 8090 in /appl/sa/conf/auth/bo.properties
Replacing --BOUMGTSYNC-- with false in /appl/sa/conf/auth/bo.properties
....done
....done
.... log can be seen in /appl/sa/admin/logs/sa_install.log
.....
```

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---

```
... Finished SA Environment Variables Updates
.....
....done
~~~~~

Finished Post-Installation Steps
~~~~~

Completed ServiceAssure Software Installation
SA Package Installation logs can be seen in /appl/sa/admin/logs/
sa_install.log
Installation is complete.
Successfully installed the core-conf package
Unzipping the ds-SA3.1.3.x.tar.gz file
Successfully unzipped the ds-*.tar.gz file
Untarring the ds-SA3.1.3.x.tar file
x ds.install, 27337 bytes, 54 tape blocks
x ds.license, 23721 bytes, 47 tape blocks
x ds.remove, 23313 bytes, 46 tape blocks
x ds.sw, 77122560 bytes, 150630 tape blocks
Successfully untarred the ds-SA3.1.3.x.tar file
Deploying the ds package
Copyright 2006 by Vallent Technologies Ireland Ltd, All Rights Reserved
Software license silently accepted via command-line option.
Running pre-install commands...
~~~~~

Running Pre-Installation Steps
~~~~~

Checking user saserver prior to install
.... Done
~~~~~

Finished Pre-Installation Steps
~~~~~

Installing ServiceAssure Software
~~~~~

Backing up old versions of non-shared files to be installed...
Creating installation directories...
```

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```
Installing software...
Checking configuration files...
Updating file permissions...
Setting up init scripts...
Running post-install commands...
~~~~~
Running Post-Installation Steps
~~~~~
.....
...Updating SA File Permissions...
.....
....done
Do you want to install Sun Java System Directory Server ? [Yes]
.....
..Sun Java System Directory Server Install..
.....
.... Performing pre Directory Server installation steps
Done
Please enter a password for 'cn=Directory Manager', the Directory Server
User [Dirmgr01]:
Directory Server "cn=Directory Manager" user password set to "Dirmgr01"
Please enter a password for 'system', the Directory Server User
[Saserver01]:
Directory Server "system" user password set to "Saserver01"
Please enter a password for 'useradm', the Directory Server User
[Useradm01]:
Directory Server "ldapadm" user administrator password set to
"Useradm01"
Please enter a password for 'ldapadm', the Directory Server User
[Ldapadm01]:
Directory Server "ldapadm" user administrator password set to
"Ldapadm01"
.... Updating Sun Java System Directory Server Response File...
....done
....done
.... log can be seen in /apl/sa/admin/logs/sa_install.log
Importing /tmp/ldapserviceassure-sa.xml into SMF repository... done
```

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```
.... Directory Server process running, restarting now, please wait
.... Sun DS Process Stopped
.... Sun DS Process Started
Performing Post Directory Server installation steps
....done
.... Directory Server process running, restarting now, please wait
.... Sun DS Process Stopped
.... Sun DS Process Started
....done
.... log can be seen in /appl/sa/admin/logs/sa_install.log
.....
... Finished Sun Java System Directory Server Install
.....
Do you want to install Sun Java System Directory Server Configuration ?
[Yes]
.....
..Sun Java System Directory Server Configuration...
.....
.....
..Updating SA Environment Variables..
.....
Sun Microsystems Inc. SunOS 5.9 Generic May 2002
[ DEV Development CORK Solaris 10 ]
demostation1
Vallent UNIX Server
Note: local filesystems are not backed up
The following is a list of the default ServiceAssure Variables :
1. LDAPROOT=dc=comnitel,dc=com
To accept these values enter 'Y' else enter 'N' to modify the values (Y/
N)
Y
Commencing configure of /appl/sa/conf files ...
Replacing --LDAPROOT-- with dc in /appl/sa/admin/ds/schema/schema.ldif
Replacing --LDAPROOT-- with dc in /appl/sa/admin/ds/schema/
useradmin.ldif
Replacing --LDAPROOT-- with dc in /appl/sa/admin/ds/schema/
userpolicy.ldif
```

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```
Replacing --LDAPROOT-- with dc in /appl/sa/admin/ds/schema/
usermigrate231.ldif
Replacing --LDAPROOT-- with dc in /appl/sa/admin/ds/schema/system.ldif
....done
....done
.... log can be seen in /appl/sa/admin/logs/sa_install.log
.....
... Finished SA Environment Variables Updates
.....
.... Performing pre Directory Server installation steps
Done
Please enter the password for 'cn=Directory Manager', the Directory
Server User [Dirmgr01]:
Directory Server "cn=Directory Manager" user password set to "Dirmgr01"
Please enter the password for 'system', the Directory Server User
[Saserver01]:
Directory Server "system" user password set to "Saserver01"
Please enter the password for 'useradm', the Directory Server User
[Useradm01]:
Directory Server "useradm" user administrator password set to
"Useradm01"
Please enter the password for 'ldapadm', the Directory Server User
[Ldapadm01]:
Directory Server "ldapadm" user administrator password set to
"Ldapadm01"
Configuring Directory Server Schema
Do you want to create the Directory Server Schema now (Y/N)
Y
Configuring Directory Server Schema ...
.... Schema created successfully
.... Plugins registered successfully
Configuring Directory Server User Administrator Schema ...
.... User Administrator Schema created successfully
Configuring Directory Server System Schema ...
.... System Schema created successfully
Configuring Directory Server System User Policy ...
.... User Policy created successfully
....done
```

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```
.... log can be seen in /appl/sa/admin/logs/sa_install.log
.....
... Finished Sun Java System Directory Server Configuration
.....
....done
~~~~~
Finished Post-Installation Steps
~~~~~
Completed Software Installation
SA Package Installation logs can be seen in /appl/sa/admin/logs/
sa_install.log
Installation is complete.
Successfully installed the ds package
Unzipping the jre-SA3.1.3.x.tar.gz file
Successfully unzipped the jre-*.tar.gz file
Untarring the jre-SA3.1.3.x.tar file
x jre.install, 145717 bytes, 285 tape blocks
x jre.license, 23721 bytes, 47 tape blocks
x jre.remove, 87705 bytes, 172 tape blocks
x jre.sw, 82529280 bytes, 161190 tape blocks
Successfully untarred the jre-SA3.1.3.x.tar file
Deploying the jre package
Copyright 2006 by Vallent Technologies Ireland Ltd, All Rights Reserved
Software license silently accepted via command-line option.
Running pre-install commands...
~~~~~
Running Pre-Installation Steps
~~~~~
Checking user saserver prior to install
.... Done
~~~~~
Finished Pre-Installation Steps
~~~~~
~~~~~
Installing ServiceAssure Software
~~~~~
```

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---

```
Backing up old versions of non-shared files to be installed...
Creating installation directories...
Installing software...
Checking configuration files...
Updating file permissions...
Setting up init scripts...
Running post-install commands...
~~~~~
Running Post-Installation Steps
~~~~~
....done
~~~~~
Finished Post-Installation Steps
~~~~~
Completed Software Installation
SA Package Installation logs can be seen in /appl/sa/admin/logs/
sa_install.log
Installation is complete.
Successfully installed the jre package
Unzipping the java-libs-SA3.1.3.x.tar.gz file
Successfully unzipped the java-libs-*.tar.gz file
Untarring the java-libs-SA3.1.3.x.tar file
x java-libs.install, 31413 bytes, 62 tape blocks
x java-libs.license, 23721 bytes, 47 tape blocks
x java-libs.remove, 25158 bytes, 50 tape blocks
x java-libs.sw, 25579520 bytes, 49960 tape blocks
Successfully untarred the java-libs-SA3.1.3.x.tar file
Deploying the java-libs package
Copyright 2006 by Vallent Technologies Ireland Ltd, All Rights Reserved
Software license silently accepted via command-line option.
Running pre-install commands...
~~~~~
Running Pre-Installation Steps
~~~~~
Checking user saserver prior to install
.... Done
```

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```
~~~~~
Finished Pre-Installation Steps
~~~~~
~~~~~
Installing ServiceAssure Software
~~~~~
Backing up old versions of non-shared files to be installed...
Creating installation directories...
Installing software...
Checking configuration files...
Updating file permissions...
Setting up init scripts...
Running post-install commands...
~~~~~
Running Post-Installation Steps
~~~~~
~~~~~
Finished Post-Installation Steps
~~~~~
Completed Software Installation
SA Package Installation logs can be seen in /appl/sa/admin/logs/
sa_install.log
Installation is complete.
Successfully installed the java-libs package
Unzipping the imq-SA3.1.3.x.tar.gz file
Successfully unzipped the imq-*.tar.gz file
Untarring the imq-SA3.1.3.x.tar file
x imq.install, 27181 bytes, 54 tape blocks
x imq.license, 23721 bytes, 47 tape blocks
x imq.remove, 23148 bytes, 46 tape blocks
x imq.sw, 52705280 bytes, 102940 tape blocks
Successfully untarred the imq-SA3.1.3.x.tar file
Deploying the imq package
Copyright 2006 by Vallent Technologies Ireland Ltd, All Rights Reserved
Software license silently accepted via command-line option.
Running pre-install commands...
```

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```
~~~~~
Running Pre-Installation Steps
~~~~~

Checking user saserver prior to install
.... Done
~~~~~

Finished Pre-Installation Steps
~~~~~
~~~~~

Installing ServiceAssure Software
~~~~~

Backing up old versions of non-shared files to be installed...
Creating installation directories...
Installing software...
Checking configuration files...
Updating file permissions...
Setting up init scripts...
Running post-install commands...
~~~~~

Running Post-Installation Steps
~~~~~

.....
...Updating SA File Permissions....
.....

....done

Do you want to install Sun Java System Message Queue ? [Yes]
Yes

.....
..Sun Java System Message Queue Install...
.....

Creating imq directory structure...
....done

Installing Sun Java System Message Queue files...
....done

Importing /tmp/imq1-sa.xml into SMF repository... done
Importing /tmp/imq2-sa.xml into SMF repository... done
```

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```
Starting Sun Java Message Queues
....running, restarting IMQ brokers now, please wait
....done
.... log can be seen in /appl/sa/admin/logs/sa_install.log
.....
... Finished Sun Java System Message Queue Install
.....
Do you want to install Sun Java System Message Queue Configuration ?
[Yes]
.....
..Sun Java System Message Queue Configuration...
.....
.....
..Updating SA Environment Variables..
.....
Sun Microsystems Inc. SunOS 5.9 Generic May 2002
[ DEV Development CORK Solaris 10 ]
demostation1
Vallent UNIX Server
Note: local filesystems are not backed up
The following is a list of the default ServiceAssure Variables :
1. BROKER1HOST=demostation1
2. BROKER1PORT=7681
3. BROKER2HOST=demostation1
4. BROKER2PORT=7680
5. OMPORT=9008
To accept these values enter 'Y' else enter 'N' to modify the values (Y/
N)
Y
Commencing configure of /appl/sa/conf files ...
Replacing --BROKER1HOST-- with demostation1 in /appl/sa/admin/imq/conf/
queue_factory/default.properties
Replacing --BROKER1HOST-- with demostation1 in /appl/sa/admin/imq/conf/
topic_factory/default.properties
Replacing --BROKER1PORT-- with 7681 in /appl/sa/admin/imq/conf/
queue_factory/default.properties
```

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Replacing --BROKER1PORT-- with 7681 in /appl/sa/admin/imq/conf/topic\_factory/default.properties

Replacing --BROKER2HOST-- with demostation1 in /appl/sa/admin/imq/conf/topic\_factory/ceb\_slastatus.properties

Replacing --BROKER2PORT-- with 7680 in /appl/sa/admin/imq/conf/topic\_factory/ceb\_slastatus.properties

Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/report.properties

Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/kqi.properties

Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/resourcetype.properties

Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/senalarm.properties

Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/party.properties

Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/resourcegroup.properties

Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/schedule.properties

Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/ceb\_slastatus.properties

Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/slat.properties

Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/alarm.active.properties

Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/evalalarm.properties

Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/log.properties

Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/evalsnmp.properties

Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/admin.properties

Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/evalemail.properties

Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/technologycategory.properties

Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/sla.management.properties

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```
Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/
resources.properties
Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/
evalstatus.properties
Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/
category.properties
Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/
kqimodel.properties
Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/
gi.properties
Replacing --OMPORT-- with 9008 in /appl/sa/admin/imq/conf/topic/
systemlog.properties
....done
....done
.... log can be seen in /appl/sa/admin/logs/sa_install.log
.....
... Finished SA Environment Variables Updates
.....
Configuring Sun Java System Message Queue and topic factory files ...
Configuring Sun Java Message Topics and Factory Queues
08:54:55,415 [main] DEBUG logging - Created Logging Directory : /appl/sa/
logs/config_imq
.... Sun Java System Message Queue Topic and Factory Configure Completed
successfully
....done
.... log can be seen in /appl/sa/admin/logs/sa_install.log
.....
... Finished Sun Java System Message Queue Configuration
.....
....done
~~~~~
Finished Post-Installation Steps
~~~~~
Completed Software Installation
SA Package Installation logs can be seen in /appl/sa/admin/logs/
sa_install.log
Installation is complete.
Successfully installed the imq package
```

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```
Unzipping the ant-SA3.1.3.x.tar.gz file
Successfully unzipped the ant-*.tar.gz file
Untarring the ant-SA3.1.3.x.tar file
x ant.install, 449479 bytes, 878 tape blocks
x ant.license, 23721 bytes, 47 tape blocks
x ant.remove, 247511 bytes, 484 tape blocks
x ant.sw, 37007360 bytes, 72280 tape blocks
Successfully untarred the ant-SA3.1.3.x.tar file
Deploying the ant package
Copyright 2006 by Vallent Technologies Ireland Ltd, All Rights Reserved
Software license silently accepted via command-line option.
Running pre-install commands...
~~~~~
Running Pre-Installation Steps
~~~~~
Checking user saserver prior to install
.... Done
~~~~~
Finished Pre-Installation Steps
~~~~~
~~~~~
Installing ServiceAssure Software
~~~~~
Backing up old versions of non-shared files to be installed...
Creating installation directories...
Installing software...
Checking configuration files...
Updating file permissions...
Setting up init scripts...
Running post-install commands...
~~~~~
Running Post-Installation Steps
~~~~~
~~~~~
Finished Post-Installation Steps
~~~~~
```

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---

```
Completed Software Installation
SA Package Installation logs can be seen in /appl/sa/admin/logs/
sa_install.log
Installation is complete.
Successfully installed the ant package
Unzipping the gcc-rtl-SA3.1.3.x.tar.gz file
Successfully unzipped the gcc-rtl-*.tar.gz file
Untarring the gcc-rtl-SA3.1.3.x.tar file
x gcc-rtl.install, 24665 bytes, 49 tape blocks
x gcc-rtl.license, 23721 bytes, 47 tape blocks
x gcc-rtl.remove, 21863 bytes, 43 tape blocks
x gcc-rtl.sw, 6440960 bytes, 12580 tape blocks
Successfully untarred the gcc-rtl-SA3.1.3.x.tar file
Deploying the gcc-rtl package
Copyright 2006 by Vallent Technologies Ireland Ltd, All Rights Reserved
Software license silently accepted via command-line option.
Running pre-install commands...
~~~~~
Running Pre-Installation Steps
~~~~~
Checking user saserver prior to install
.... Done
~~~~~
Finished Pre-Installation Steps
~~~~~
~~~~~
Installing ServiceAssure Software
~~~~~
Backing up old versions of non-shared files to be installed...
Creating installation directories...
Installing software...
Checking configuration files...
Updating file permissions...
Setting up init scripts...
Running post-install commands...
~~~~~
```

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Running Post-Installation Steps

~~~~~  
~~~~~

Finished Post-Installation Steps

~~~~~

Completed Software Installation

SA Package Installation logs can be seen in /apl/sa/admin/logs/  
sa\_install.log

Installation is complete.

Successfully installed the gcc-rtl package

Unzipping the socks-SA3.1.3.x.tar.gz file

Successfully unzipped the socks-\*.tar.gz file

Untarring the socks-SA3.1.3.x.tar file

x socks.install, 25148 bytes, 50 tape blocks

x socks.license, 23721 bytes, 47 tape blocks

x socks.remove, 22050 bytes, 44 tape blocks

x socks.sw, 527360 bytes, 1030 tape blocks

Successfully untarred the socks-SA3.1.3.x.tar file

Deploying the socks package

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Software license silently accepted via command-line option.

Running pre-install commands...

~~~~~

Running Pre-Installation Steps

~~~~~

Checking user saserver prior to install

.... Done

~~~~~

Finished Pre-Installation Steps

~~~~~

~~~~~

Installing ServiceAssure Software

~~~~~

Backing up old versions of non-shared files to be installed...

Creating installation directories...

Installing software...

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```
Checking configuration files...
Updating file permissions...
Setting up init scripts...
Running post-install commands...
~~~~~
Running Post-Installation Steps
~~~~~
....done
Sun Microsystems Inc. SunOS 5.9 Generic May 2002
[ DEV Development CORK Solaris 10 ]
demostation1
Vallent UNIX Server
Note: local filesystems are not backed up
The following is a list of the default ServiceAssure Variables :
1. SERVER_IP_ADDRESS=192.168.1.53
2. SHORT_IP_ADDRESS=192.168.1
To accept these values enter 'Y' else enter 'N' to modify the values (Y/
N)
Y
Commencing configure of /appl/sa/conf files ...
Replacing --SERVER_IP_ADDRESS-- with 192.168.1.53 in /appl/sa/conf/
socks/sockd.conf
Replacing --SHORT_IP_ADDRESS-- with 192.168.1 in /appl/sa/conf/socks/
sockd.conf
....done
Sun Microsystems Inc. SunOS 5.9 Generic May 2002
[ DEV Development CORK Solaris 10 ]
demostation1
Vallent UNIX Server
Note: local filesystems are not backed up
The following is a list of the default ServiceAssure Variables :
1. SHORT_IP_ADDRESS=192.168.1
To accept these values enter 'Y' else enter 'N' to modify the values (Y/
N)
Y
Commencing configure of /appl/sa/conf files ...
```

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---

```
Replacing --SHORT_IP_ADDRESS-- with 192.168.1 in /appl/sa/conf/socks/
sockd.conf
....done
~~~~~

Finished Post-Installation Steps
~~~~~

Completed Software Installation
SA Package Installation logs can be seen in /appl/sa/admin/logs/
sa_install.log
Installation is complete.
Successfully installed the socks package
Unzipping the tomcat-SA3.1.3.x.tar.gz file
Successfully unzipped the tomcat-*.tar.gz file
Untarring the tomcat-SA3.1.3.x.tar file
x tomcat.install, 39081 bytes, 77 tape blocks
x tomcat.license, 23721 bytes, 47 tape blocks
x tomcat.remove, 30203 bytes, 59 tape blocks
x tomcat.sw, 5713920 bytes, 11160 tape blocks
Successfully untarred the tomcat-SA3.1.3.x.tar file
Deploying the tomcat package
Copyright 2006 by Vallent Technologies Ireland Ltd, All Rights Reserved
Software license silently accepted via command-line option.
Running pre-install commands...
~~~~~

Running Pre-Installation Steps
~~~~~

Checking user saserver prior to install
.... Done
~~~~~

Finished Pre-Installation Steps
~~~~~
~~~~~

Installing ServiceAssure Software
~~~~~

Backing up old versions of non-shared files to be installed...
Creating installation directories...
```

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---

---

```
Installing software...
Checking configuration files...
Updating file permissions...
Setting up init scripts...
Running post-install commands...
~~~~~
Running Post-Installation Steps
~~~~~
Sun Microsystems Inc. SunOS 5.9 Generic May 2002
[ DEV Development CORK Solaris 10 ]
demostation1
Vallent UNIX Server
Note: local filesystems are not backed up
The following is a list of the default ServiceAssure Variables :
1. TOMCAT_SERVER_PORT=8093
2. HTTP_PORT=8092
3. HTTPS_PORT=8094
To accept these values enter 'Y' else enter 'N' to modify the values (Y/
N) Y
Commencing configure of /appl/sa/conf files ...
Replacing ñTOMCAT_SERVER_PORT-- 8093 in /appl/sa/tomcat/conf/server.xml
Replacing ñHTTP_PORT-- with 8092 in /appl/sa/tomcat/conf/server.xml
Replacing ñHTTPS_PORT-- with 8094 in /appl/sa/tomcat/conf/server.xml
....done
~~~~~
Finished Post-Installation Steps
~~~~~
Completed Software Installation
SA Package Installation logs can be seen in /appl/sa/admin/logs/
sa_install.log
Installation is complete.
Successfully installed the tomcat package
Unzipping the security-SA3.1.3.x.tar.gz file
Successfully unzipped the security-*.tar.gz file
Untarring the security-SA3.1.3.x.tar file
x security.install, 23047 bytes, 46 tape blocks
```

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```
x security.license, 23721 bytes, 47 tape blocks
x security.remove, 21751 bytes, 43 tape blocks
Successfully untarred the security-SA3.1.3.x.tar file
Deploying the security package
Copyright 2006 by Vallent Technologies Ireland Ltd, All Rights Reserved
Software license silently accepted via command-line option.
Running pre-install commands...
Backing up old versions of non-shared files to be installed...
Creating installation directories...
Installing software...
Checking configuration files...
Updating file permissions...
Setting up init scripts...
Running post-install commands...
Calling SSL setup routine...
Sun Microsystems Inc. SunOS 5.9 Generic May 2002
[ DEV Development CORK Solaris 10 ]
demostation1
Vallent UNIX Server
Note: local filesystems are not backed up
08:59:44,442 [main] DEBUG logging - Created Logging Directory : /appl/sa/
logs/conf_read
Generate CA DB ...
Generating key. This may take a few moments...
ca-cert CTu,Cu,cu
Generate Web keystore ...
Alias name: tomcat
Creation date: Mar 23, 2007
Entry type: keyEntry
Certificate chain length: 1
Certificate[1]:
Owner: CN=demostation1, OU=Architecture, O=Vallent Technologies Inc.,
L=Cork, ST=Cork, C=IE
Issuer: CN=demostation1, OU=Architecture, O=Vallent Technologies Inc.,
L=Cork, ST=Cork, C=IE
Serial number: 46039708
```

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Valid from: Fri Mar 23 08:59:52 GMT 2007 until: Mon Mar 20 08:59:52 GMT 2017

Certificate fingerprints:

MD5: 83:C2:4E:2A:91:CE:BE:F3:99:99:B8:C8:BD:9F:DF:3E

SHA1: BE:5A:51:85:84:DE:7B:32:38:47:51:29:39:BE:BE:12:B6:CE:DD:85

Sign Web certificate ...

Import CA certificates ...

Certificate was added to keystore

Certificate was added to keystore

Certificate reply was installed in keystore

Keystore type: jks

Keystore provider: SUN

Your keystore contains 1 entry

Alias name: sa.demostation1

Creation date: Mar 23, 2007

Entry type: trustedCertEntry

Owner: CN=SA CA, OU=Architecture, O=Vallent Technologies Inc., L=Cork, ST=Cork, C=IE

Issuer: CN=SA CA, OU=Architecture, O=Vallent Technologies Inc., L=Cork, ST=Cork, C=IE

Serial number: 858a88e1

Valid from: Fri Mar 23 08:59:48 GMT 2007 until: Fri Jun 23 09:59:48 IST 2017

Certificate fingerprints:

MD5: 73:7A:AF:FC:1F:9D:C3:FF:D6:F5:62:79:39:17:B2:B0

SHA1: 35:1D:C1:A7:88:E2:DC:95:6C:27:75:5F:2C:68:4E:0A:C4:D1:10:57

\*\*\*\*\*

\*\*\*\*\*

Keystore type: jks

Keystore provider: SUN

Your keystore contains 2 entries

Alias name: root

Creation date: Mar 23, 2007

Entry type: trustedCertEntry

Owner: CN=SA CA, OU=Architecture, O=Vallent Technologies Inc., L=Cork, ST=Cork, C=IE

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Issuer: CN=SA CA, OU=Architecture, O=Vallent Technologies Inc., L=Cork, ST=Cork, C=IE

Serial number: 858a88e1

Valid from: Fri Mar 23 08:59:48 GMT 2007 until: Fri Jun 23 09:59:48 IST 2017

Certificate fingerprints:

MD5: 73:7A:AF:FC:1F:9D:C3:FF:D6:F5:62:79:39:17:B2:B0

SHA1: 35:1D:C1:A7:88:E2:DC:95:6C:27:75:5F:2C:68:4E:0A:C4:D1:10:57

\*\*\*\*\*

\*\*\*\*\*

Alias name: tomcat

Creation date: Mar 23, 2007

Entry type: keyEntry

Certificate chain length: 2

Certificate[1]:

Owner: CN=demostation1, OU=Architecture, O=Vallent Technologies Inc., L=Cork, ST=Cork, C=IE

Issuer: CN=SA CA, OU=Architecture, O=Vallent Technologies Inc., L=Cork, ST=Cork, C=IE

Serial number: 858a88f1

Valid from: Fri Mar 23 08:59:56 GMT 2007 until: Fri Jun 23 09:59:56 IST 2017

Certificate fingerprints:

MD5: 39:5E:A6:4F:08:D9:4B:7A:62:50:3A:AF:61:0C:01:A6

SHA1: EE:9A:84:5F:25:8E:D6:93:88:DA:3B:87:B1:F6:6C:B4:72:A5:28:E6

Certificate[2]:

Owner: CN=SA CA, OU=Architecture, O=Vallent Technologies Inc., L=Cork, ST=Cork, C=IE

Issuer: CN=SA CA, OU=Architecture, O=Vallent Technologies Inc., L=Cork, ST=Cork, C=IE

Serial number: 858a88e1

Valid from: Fri Mar 23 08:59:48 GMT 2007 until: Fri Jun 23 09:59:48 IST 2017

Certificate fingerprints:

MD5: 73:7A:AF:FC:1F:9D:C3:FF:D6:F5:62:79:39:17:B2:B0

SHA1: 35:1D:C1:A7:88:E2:DC:95:6C:27:75:5F:2C:68:4E:0A:C4:D1:10:57

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```
Generating Directory Server keystore...
Generating Directory Server certificate signing request...
Generating key. This may take a few moments...
Signing the Directory Server certificate...
Importing signed certificate to the Directory Server keystore...
Importing CA certificate to the Directory Server keystore...
server-cert Pu,u,u
ca-cert CT,,
Configuring the Directory Server for LDAPS...
adding new entry cn=RSA, cn=encryption, cn=config
modifying entry cn=encryption, cn=config
modifying entry cn=config
Stopping Directory Server...
Starting Directory Server...
Done.
OK.
Installation is complete.
Successfully installed the security package
Unzipping the help-SA3.1.3.x.tar.gz file
Successfully unzipped the help-*.tar.gz file
Untarring the help-SA3.1.3.x.tar file
x help.install, 474745 bytes, 928 tape blocks
x help.license, 23721 bytes, 47 tape blocks
x help.remove, 253776 bytes, 496 tape blocks
x help.sw, 26475520 bytes, 51710 tape blocks
Successfully untarred the help-SA3.1.3.x.tar file
Deploying the help package
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Software license silently accepted via command-line option.
Running pre-install commands...
~~~~~
Running Pre-Installation Steps
~~~~~
Checking user saserver prior to install
.... Done
~~~~~
```

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Finished Pre-Installation Steps

~~~~~  
~~~~~

Installing ServiceAssure Software

~~~~~

Backing up old versions of non-shared files to be installed...

Creating installation directories...

Installing software...

Checking configuration files...

Updating file permissions...

Setting up init scripts...

Running post-install commands...

~~~~~

Running Post-Installation Steps

~~~~~  
~~~~~

Finished Post-Installation Steps

~~~~~

Completed Software Installation

SA Package Installation logs can be seen in /appl/sa/admin/logs/  
sa\_install.log

Installation is complete.

Successfully installed the help package

Unzipping the db-install-SA3.1.3.x.tar.gz file

Successfully unzipped the db-install-\*.tar.gz file

Untarring the db-install-SA3.1.3.x.tar file

x db-install.install, 27426 bytes, 54 tape blocks

x db-install.license, 23721 bytes, 47 tape blocks

x db-install.remove, 23370 bytes, 46 tape blocks

x db-install.sw, 71680 bytes, 140 tape blocks

Successfully untarred the db-install-SA3.1.3.x.tar file

Deploying the db-install package

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Software license silently accepted via command-line option.

Running pre-install commands...

~~~~~

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Running Pre-Installation Steps

~~~~~

Checking user saserver prior to install

.... Done

~~~~~

Finished Pre-Installation Steps

~~~~~

~~~~~

Installing ServiceAssure Software

~~~~~

Backing up old versions of non-shared files to be installed...

Creating installation directories...

Installing software...

Checking configuration files...

Updating file permissions...

Setting up init scripts...

Running post-install commands...

~~~~~

Running Post-Installation Steps

~~~~~

.....

...Updating SA File Permissions....

.....

....done

....done

....done

~~~~~

Finished Post-Installation Steps

~~~~~

Completed Software Installation

SA Package Installation logs can be seen in /apl/sa/admin/logs/  
sa\_install.log

Installation is complete.

Successfully installed the db-install package

Unzipping the db-conf-SA3.1.3.x.tar.gz file

Successfully unzipped the db-conf-\*.tar.gz file

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---

```
Untarring the db-conf-SA3.1.3.x.tar file
x db-conf.install, 74892 bytes, 147 tape blocks
x db-conf.license, 23721 bytes, 47 tape blocks
x db-conf.remove, 50672 bytes, 99 tape blocks
x db-conf.sw, 2109440 bytes, 4120 tape blocks
Successfully untarred the db-conf-SA3.1.3.x.tar file
Deploying the db-conf package
Copyright 2006 by Vallent Technologies Ireland Ltd, All Rights Reserved
Software license silently accepted via command-line option.
Running pre-install commands...
~~~~~
Running Pre-Installation Steps
~~~~~
Checking user saserver prior to install
.... Done
~~~~~
Finished Pre-Installation Steps
~~~~~
~~~~~
Installing ServiceAssure Software
~~~~~
Backing up old versions of non-shared files to be installed...
Creating installation directories...
Installing software...
Checking configuration files...
Updating file permissions...
Setting up init scripts...
Running post-install commands...
~~~~~
Running Post-Installation Steps
~~~~~
.....
...Updating SA File Permissions....
.....
....done
....done
```

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```
....done
~~~~~
Finished Post-Installation Steps
~~~~~

Completed Software Installation
SA Package Installation logs can be seen in /appl/sa/admin/logs/
sa_install.log
Installation is complete.
Successfully installed the db-conf package
Please view /appl/sa/admin/logs/sa_install.log for package installation
logs
Would you like to perform task SA_DB_INSTALL ? [yes/no] >yes
Creating and starting Oracle instance
1% complete
2% complete
3% complete
7% complete
Creating database files
8% complete
9% complete
10% complete
11% complete
12% complete
13% complete
14% complete
15% complete
Creating data dictionary views
17% complete
20% complete
22% complete
23% complete
24% complete
25% complete
26% complete
27% complete
32% complete
```

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```
34% complete
37% complete
39% complete
Adding Oracle JVM
51% complete
62% complete
74% complete
77% complete
Completing Database Creation
80% complete
82% complete
84% complete
91% complete
98% complete
100% complete
Look at the log file "/appl/oracle/product/10.2.0/db_1/cfgtoollogs/dbca/
sadb/sadb0.log" for further details.
... done
Configuring Oracle Net
....done
Importing /appl/sa/admin/oracle/install/startup/database-sa.xml into SMF
repository... done
Would you like to perform task REP_DB_INSTALL ? [yes/no] >yes
Creating and starting Oracle instance
2% complete
3% complete
5% complete
12% complete
Creating database files
13% complete
15% complete
25% complete
Creating data dictionary views
28% complete
32% complete
36% complete
```

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```
37% complete
38% complete
39% complete
40% complete
41% complete
42% complete
43% complete
44% complete
45% complete
52% complete
56% complete
60% complete
61% complete
64% complete
Completing Database Creation
67% complete
71% complete
75% complete
86% complete
97% complete
100% complete
Look at the log file "/appl/oracle/product/10.2.0/db_1/cfgtoollogs/dbca/
repos/repos0.log" for further details.
... done
Creating repos database user
.... repos User Creation done
.... Log file is located in /appl/sa/admin/logs/db_createusers_repos.log
.... stopping the listener
....done
Configuring Oracle Net
....done
Importing /appl/sa/admin/oracle/install/startup/database-sa.xml into SMF
repository... done
Pausing to let the listener initialize... OK.
Would you like to perform task CORE_SCHEMA_INSTALL ? [yes/no] >yes
-----
```

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```
Database SID set to "sadb"
Database user sys password set to "Sysdb01"
Database user system password set to "Sysdb01"
Database user saowner password set to "Saowner01"
Database user saserver password is set to "Saserver01"
.... Starting Database User Creation
Creating database users in SID 'sadb'.
.... sadb Users Creation completed successfully
.... Log file is located in /appl/sa/admin/logs/db_createusers_sadb.log
.... Starting Database Schema 'core' Creation
Configuring database sql files ...
.... /appl/sa/admin/oracle/schema/core/upgrade/rel3.1_to_rel3.1.1/
upgrade_tab.ddl > Done
.... /appl/sa/admin/oracle/schema/core/sqm/sqm_tab.ddl > Done
.... /appl/sa/admin/oracle/schema/core/shared/shared_tab.ddl > Done
.... /appl/sa/admin/oracle/schema/core/slm/slm_tab.ddl > Done
Creating database schema 'core' in SID 'sadb'.
.... sadb Schema Creation completed successfully
.... Log file is located in /appl/sa/admin/logs/
db_createschema_saserver.log
.... Starting Database Schema Validation
Validating the Database Schema
.... sadb Schema Validation completed successfully
.... Log file is located in /appl/sa/admin/logs/
db_validateschema_saserver.log
Would you like to perform task CORE_CRON_INSTALL ? [yes/no] >yes
Configuring core cronjobs.....
What Type of ServiceAssure System Are you Installing ?
-----
Please select the type of ServiceAssure System you are installing by
entering the number associate with the system type :
All Inclusive (1)
Application (2)
Database (3)
Gateway (4)
-----
[ 1 / 2 / 3 / 4 ] :
```

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```
1
Please enter the location of the ORACLE_HOME Directory [/appl/oracle/
product/10.2.0/db_1]:
Please enter the location of the sadb Database Archive Directory [/
oradump/sadb]:
/oradump
Please enter the location of the repos Database Archive Directory [/
oradump/repos]:
/oradump
Please enter the location of the IMQ Software Directory [/appl/sa/imq]:
Please enter the location of the Directory Server Software Directory [/
appl/sa/ds]:
Please enter the location of the ServerAssure Log Directory [/data/
trace_log1]:
Please enter the location of the ServerAssure Archive Logs Directory [/
data/trace_archive1]:
Setting up CRON environment ...
Filtering old CRON jobs ...
.... Done
Setting up root cronjobs ...
Finished setting up roots cronjobs ....
Setting up saserver user cronjobs ...
Finished setting up saserver's crontab ....
Restarting Cron ...
.... cron process stopped
.... cron process started
Please view /appl/sa/admin/logs/sa_install.log for install details
Would you like to perform task ADAPTER_INSTALL ? [yes/no] >yes
What Type of ServiceAssure System Are you Installing ?
-----
Please select the type of ServiceAssure System you are installing by
entering the number associate with the system type :
All Inclusive (1)
Application (2)
Database (3)
Gateway (4)
-----
```

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[ 1 / 2 / 3 / 4 ] :

**1**

```
Please enter the location of the ServiceAssure Software packages [/appl]:
Unzipping the atktest-db-SA3.1.3.x.tar.gz file
Successfully unzipped the atktest-db-*.tar.gz file
Untarring the atktest-db-SA3.1.3.x.tar file
x atktest-db.install, 45231 bytes, 89 tape blocks
x atktest-db.license, 93 bytes, 1 tape blocks
x atktest-db.remove, 33671 bytes, 66 tape blocks
x atktest-db.sw, 307200 bytes, 600 tape blocks
Successfully untarred the atktest-db-SA3.1.3.x.tar file
Deploying the atktest-db package
Copyright 2005 by Vallent Technologies Ireland, All Rights Reserved
Software license silently accepted via command-line option.
Running pre-install commands...
.....
..Running Pre-Installation Steps..
.....
Checking user oracle exists prior to install
... OK
Checking user saserver exists prior to install
... OK
Backing up old versions of non-shared files to be installed...
Creating installation directories...
Installing software...
Checking configuration files...
Updating file permissions...
Setting up init scripts...
Running post-install commands...
~~~~~
Running Post-Installation Steps
~~~~~
~~~~~
Finished Post-Installation Steps
~~~~~
Completed ServiceAssure Software Installation
```

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---

```
Atktest Package Installation logs can be seen in /appl/sa/admin/logs/
sa_install.log
Installation is complete.
Successfully installed the atktest-db package
Unzipping the atktest-install-SA3.1.3.x.tar.gz file
Successfully unzipped the atktest-install-*.tar.gz file
Untarring the atktest-install-SA3.1.3.x.tar file
x atktest-install.install, 24969 bytes, 49 tape blocks
x atktest-install.license, 93 bytes, 1 tape blocks
x atktest-install.remove, 22091 bytes, 44 tape blocks
x atktest-install.sw, 15360 bytes, 30 tape blocks
Successfully untarred the atktest-install-SA3.1.3.x.tar file
Deploying the atktest-install package
Copyright 2005 by Vallent Technologies Ireland, All Rights Reserved
Software license silently accepted via command-line option.
Running pre-install commands...
.....
..Running Pre-Installation Steps..
.....
Checking user oracle exists prior to install
... OK
Checking user saserver exists prior to install
... OK
Backing up old versions of non-shared files to be installed...
Creating installation directories...
Installing software...
Checking configuration files...
Updating file permissions...
Setting up init scripts...
Running post-install commands...
~~~~~
Running Post-Installation Steps
~~~~~
~~~~~
Finished Post-Installation Steps
~~~~~
```

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```
Completed ServiceAssure Software Installation
Atktest Package Installation logs can be seen in /appl/sa/admin/logs/
sa_install.log
Installation is complete.
Successfully installed the atktest-install package
Unzipping the atktest-sw-SA3.1.3.x.tar.gz file
Successfully unzipped the atktest-sw-*.tar.gz file
Untarring the atktest-sw-SA3.1.3.x.tar file
x atktest-sw.install, 29913 bytes, 59 tape blocks
x atktest-sw.license, 93 bytes, 1 tape blocks
x atktest-sw.remove, 24942 bytes, 49 tape blocks
x atktest-sw.sw, 844800 bytes, 1650 tape blocks
Successfully untarred the atktest-sw-SA3.1.3.x.tar file
Deploying the atktest-sw package
Copyright 2005 by Vallent Technologies Ireland, All Rights Reserved
Software license silently accepted via command-line option.
Running pre-install commands...
.....
..Running Pre-Installation Steps..
.....
Checking user oracle exists prior to install
... OK
Checking user saserver exists prior to install
... OK
Backing up old versions of non-shared files to be installed...
Creating installation directories...
Installing software...
Checking configuration files...
Updating file permissions...
Setting up init scripts...
Running post-install commands...
~~~~~
Running Post-Installation Steps
~~~~~
~~~~~
Finished Post-Installation Steps
```

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---

```
~~~~~
Completed ServiceAssure Software Installation
Atktest Package Installation logs can be seen in /appl/sa/admin/logs/
sa_install.log
Installation is complete.
Successfully installed the atktest-sw package
Unzipping the atktest-conf-SA3.1.3.x.tar.gz file
Successfully unzipped the atktest-conf-*.tar.gz file
Untarring the atktest-conf-SA3.1.3.x.tar file
x atktest-conf.install, 42239 bytes, 83 tape blocks
x atktest-conf.license, 93 bytes, 1 tape blocks
x atktest-conf.remove, 34502 bytes, 68 tape blocks
x atktest-conf.sw, 250880 bytes, 490 tape blocks
Successfully untarred the atktest-conf-SA3.1.3.x.tar file
Deploying the atktest-conf package
Copyright 2005 by Vallent Technologies Ireland, All Rights Reserved
Software license silently accepted via command-line option.
Running pre-install commands...
.....
..Running Pre-Installation Steps..
.....
Checking user oracle exists prior to install
... OK
Checking user saserver exists prior to install
... OK
Backing up old versions of non-shared files to be installed...
Creating installation directories...
Installing software...
Checking configuration files...
Updating file permissions...
Setting up init scripts...
Running post-install commands...
~~~~~
Running Post-Installation Steps
~~~~~
The following is a list of the default ServiceAssure Variables :
```

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1. FTP\_USERNAME=saserver
2. FTP\_PASSWORD=Saserver01
3. FTP\_PORT\_NUM=21
4. SADB\_USERNAME=saserver
5. SADB\_PASSWORD=Saserver01

To accept these values enter 'Y' else enter 'N' to modify the values (Y/N)

**Y**

Commencing configure of /appl/sa/conf files ...

Replacing --FTP\_USERNAME-- with saserver in /appl/sa/conf/adapter/collector/atktestreg\_mtd.properties

Replacing --FTP\_USERNAME-- with saserver in /appl/sa/conf/adapter/collector/atktestran.properties

Replacing --FTP\_USERNAME-- with saserver in /appl/sa/conf/adapter/collector/atktestreg.properties

Replacing --FTP\_USERNAME-- with saserver in /appl/sa/conf/adapter/collector/atkcdr2.properties

Replacing --FTP\_USERNAME-- with saserver in /appl/sa/conf/adapter/collector/atktestreg\_bf.properties

Replacing --FTP\_USERNAME-- with saserver in /appl/sa/conf/adapter/collector/atkcdr3.properties

Replacing --FTP\_USERNAME-- with saserver in /appl/sa/conf/adapter/collector/atktestran\_fw.properties

Replacing --FTP\_USERNAME-- with saserver in /appl/sa/conf/adapter/collector/atkcdr1.properties

Replacing --FTP\_PASSWORD-- with Saserver01 in /appl/sa/conf/adapter/collector/atktestreg\_mtd.properties

Replacing --FTP\_PASSWORD-- with Saserver01 in /appl/sa/conf/adapter/collector/atktestran.properties

Replacing --FTP\_PASSWORD-- with Saserver01 in /appl/sa/conf/adapter/collector/atktestreg.properties

Replacing --FTP\_PASSWORD-- with Saserver01 in /appl/sa/conf/adapter/collector/atkcdr2.properties

Replacing --FTP\_PASSWORD-- with Saserver01 in /appl/sa/conf/adapter/collector/atktestreg\_bf.properties

Replacing --FTP\_PASSWORD-- with Saserver01 in /appl/sa/conf/adapter/collector/atkcdr3.properties

Replacing --FTP\_PASSWORD-- with Saserver01 in /appl/sa/conf/adapter/collector/atktestran\_fw.properties

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```
Replacing --FTP_PASSWORD-- with Saserver01 in /appl/sa/conf/adapter/
collector/atkcdrl.properties
Replacing --FTP_PORT_NUM-- with 21 in /appl/sa/conf/adapter/collector/
atktestreg_mtd.properties
Replacing --FTP_PORT_NUM-- with 21 in /appl/sa/conf/adapter/collector/
atktestran.properties
Replacing --FTP_PORT_NUM-- with 21 in /appl/sa/conf/adapter/collector/
atktestreg.properties
Replacing --FTP_PORT_NUM-- with 21 in /appl/sa/conf/adapter/collector/
atktestreg_bf.properties
Replacing --FTP_PORT_NUM-- with 21 in /appl/sa/conf/adapter/collector/
atktestran_fw.properties
Replacing --SADB_USERNAME-- with saserver in /appl/sa/conf/dbconnection/
sasmadapter1.properties
Replacing --SADB_USERNAME-- with saserver in /appl/sa/conf/dbconnection/
monitoradapter1.properties
Replacing --SADB_PASSWORD-- with Saserver01 in /appl/sa/conf/
dbconnection/sasmadapter1.properties
Replacing --SADB_PASSWORD-- with Saserver01 in /appl/sa/conf/
dbconnection/monitoradapter1.properties
....done
....done
~~~~~
Finished Post-Installation Steps
~~~~~
Completed ServiceAssure Software Installation
Atktest Package Installation logs can be seen in /appl/sa/admin/logs/
sa_install.log
Installation is complete.
Successfully installed the atktest-conf package
Please view /appl/sa/admin/logs/sa_install.log for package installation
logs
Would you like to perform task ADAPTER_SCHEMA_INSTALL ? [yes/no] >yes
-----
Database SID set to "sadb"
Database user sys password set to "Sysdb01"
Database user system password set to "Sysdb01"
Database user saowner password set to "Saowner01"
Database user saserver password is set to "Saserver01"
```

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```
.... Starting Database Schema 'atktest' Creation
Configuring database sql files ...
.... /appl/sa/admin/oracle/schema/atktest/sasm/kpi_tab.ddl > Done
.... /appl/sa/admin/oracle/schema/atktest/cdr/kpi_tab.ddl > Done
.... /appl/sa/admin/oracle/schema/atktest/reg/kpi_tab.ddl > Done
.... /appl/sa/admin/oracle/schema/atktest/cdrmonitor/kpi_tab.ddl > Done
.... /appl/sa/admin/oracle/schema/atktest/temip/kpi_tab.ddl > Done
.... /appl/sa/admin/oracle/schema/atktest/ran/kpi_tab.ddl > Done
.... /appl/sa/admin/oracle/schema/atktest/sasm/kpi_tab.ddl > Done
.... /appl/sa/admin/oracle/schema/atktest/cdr/kpi_tab.ddl > Done
.... /appl/sa/admin/oracle/schema/atktest/reg/kpi_tab.ddl > Done
.... /appl/sa/admin/oracle/schema/atktest/cdrmonitor/kpi_tab.ddl > Done
.... /appl/sa/admin/oracle/schema/atktest/temip/kpi_tab.ddl > Done
.... /appl/sa/admin/oracle/schema/atktest/ran/kpi_ind.ddl > Done
.... /appl/sa/admin/oracle/schema/atktest/ran/kpi_tab.ddl > Done
.... /appl/sa/admin/oracle/schema/atktest/ran/kpi_con.ddl > Done
Creating database schema 'atktest' in SID 'sadb'.
.... sadb atktest Schema Creation completed successfully
.... Log file is located in /appl/sa/admin/logs/
db_createschema_atktest.log
.... Starting Database Schema Validation
Validating the Database Schema
.... sadb Schema Validation completed successfully
.... Log file is located in /appl/sa/admin/logs/
db_validateschema_saserver.log
Would you like to perform task ADAPTER_CRON_INSTALL ? [yes/no] >yes
There are no atktest crontabs to configure
Would you like to perform task ENCODE_PASSWORDS ? [yes/no] >yes
Replacing all passwords with encoded passwords...
Encoding values in /appl/sa/conf/dbconnection/livedb.properties
Encoding values in /appl/sa/conf/dbconnection/extreporttooldb.properties
Encoding values in /appl/sa/conf/dbconnection/sasadapter1.properties
Encoding values in /appl/sa/conf/dbconnection/monitoradapter1.properties
Encoding values in /appl/sa/conf/dbconnection/reportdb.properties
Encoding values in /appl/sa/conf/adapter/collector/
atktestreg_mtd.properties
Encoding values in /appl/sa/conf/adapter/collector/atktestran.properties
```

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```
Encoding values in /appl/sa/conf/adapter/collector/atktestreg.properties
Encoding values in /appl/sa/conf/adapter/collector/atkcdr2.properties
Encoding values in /appl/sa/conf/adapter/collector/
atktestreg_bf.properties
Encoding values in /appl/sa/conf/adapter/collector/atkcdr3.properties
Encoding values in /appl/sa/conf/adapter/collector/
atktestran_fw.properties
Encoding values in /appl/sa/conf/adapter/collector/atkcdr1.properties
Encoding values in /appl/sa/conf/service/dom/oss.properties
Encoding values in /appl/sa/conf/ldap/default.properties
Enabling system services... done.
Would you like to perform task PROVISION ? [yes/no] >yes
Provisioning system...
Pausing to let the appserver initialize... OK. Starting domain...
Sun Microsystems Inc. SunOS 5.9 Generic May 2002
[ DEV Development CORK Solaris 10 ]
demostation1
Vallent UNIX Server
Note: local filesystems are not backed up
14:31:07,947 [main] DEBUG logging - Created Logging Directory : /appl/sa/
logs/sap_cli
rmom exec
rmom init
rmom starting
rmom STARTED
kmom exec
kmom init
kmom starting
kmom STARTED
partyom exec
partyom init
partyom starting
partyom STARTED
slatom exec
slatom init
slatom starting
slatom STARTED
```

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```
slaom exec
slaom init
slaom starting
slaom STARTED
auditom exec
auditom init
auditom starting
auditom STARTED
reportom exec
reportom init
reportom starting
reportom STARTED
Pausing to let the appserver initialize... OK. Provisioning...
Sun Microsystems Inc. SunOS 5.9 Generic May 2002
[ DEV Development CORK Solaris 10 ]
demostation1
Vallent UNIX Server
Note: local filesystems are not backed up
Buildfile: /appl/sa/admin/provision/build.xml
tasks:
regn-task:
atktest-task:
[wmcInit] 14:36:02,787 [main] DEBUG logging - Created Logging Directory :
/appl/sa/logs/atktest-task
resourceGen:
[mkdir] Created dir: /appl/sa/var/provision/atktest
[xslt] Transforming into /appl/sa/admin/provision/install/customer
[xslt] Processing /appl/sa/var/provision/atktest/customers.xml to /appl/
sa/admin/provision/install/customer/regn_package.xml
[xslt] Loading stylesheet /appl/sa/admin/provision/stylesheet/
ResourceGen.xslt
install:
[concat] ServiceAssure Provisioning Install
[mkdir] Created dir: /appl/sa/var/provision/install/broker/mediation
[xslt] Transforming into /appl/sa/var/provision/install/broker/mediation
```

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```
[xslt] Processing /appl/sa/admin/provision/install/mediation/
any_package.xml to /appl/sa/var/provision/install/broker/mediation/
any_request.xml

[xslt] Loading stylesheet /appl/sa/admin/provision/stylesheet/
install.xslt

[xslt] Processing /appl/sa/admin/provision/install/mediation/
atkcommon_package.xml to /appl/sa/var/provision/install/broker/
mediation/atkcommon_request.xml

[broker] 1 file(s) have been successfully validated.
[broker] 1 file(s) have been successfully validated.
[broker] Successfully processed 2 files
[info] Level <mediation> installed successfully
[mkdir] Created dir: /appl/sa/var/provision/install/broker/technology
[xslt] Transforming into /appl/sa/var/provision/install/broker/
technology

[xslt] Processing /appl/sa/admin/provision/install/technology/
sasm_package.xml to /appl/sa/var/provision/install/broker/technology/
sasm_request.xml

[xslt] Loading stylesheet /appl/sa/admin/provision/stylesheet/
install.xslt

[xslt] Processing /appl/sa/admin/provision/install/technology/
temip_package.xml to /appl/sa/var/provision/install/broker/technology/
temip_request.xml

[broker] 1 file(s) have been successfully validated.
[broker] 1 file(s) have been successfully validated.
[broker] Successfully processed 2 files
[info] Level <technology> installed successfully
[mkdir] Created dir: /appl/sa/var/provision/install/broker/service
[xslt] Transforming into /appl/sa/var/provision/install/broker/service
[mkdir] Created dir: /appl/sa/var/provision/install/broker/customer
[xslt] Transforming into /appl/sa/var/provision/install/broker/customer
[xslt] Processing /appl/sa/admin/provision/install/customer/
atkcdr_package.xml to /appl/sa/var/provision/install/broker/customer/
atkcdr_request.xml

[xslt] Loading stylesheet /appl/sa/admin/provision/stylesheet/
install.xslt

[xslt] Processing /appl/sa/admin/provision/install/customer/
atkcdrmonitor_package.xml to /appl/sa/var/provision/install/broker/
customer/atkcdrmonitor_request.xml
```

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```
[xslt] Processing /appl/sa/admin/provision/install/customer/
atkran_package.xml to /appl/sa/var/provision/install/broker/customer/
atkran_request.xml

[xslt] Processing /appl/sa/admin/provision/install/customer/
atksummaggcdr_package.xml to /appl/sa/var/provision/install/broker/
customer/atksummaggcdr_request.xml

[xslt] Processing /appl/sa/admin/provision/install/customer/
regn_package.xml to /appl/sa/var/provision/install/broker/customer/
regn_request.xml

[broker] 1 file(s) have been successfully validated.
[broker] Successfully processed 5 files
[info] Level <customer> installed successfully
regn:
[mkdir] Created dir: /appl/sa/var/provision/regn/current
[regn] First time creation of regionalization model from external
artifacts
[regn] Updates written to /appl/sa/var/provision/regn/broker/
1174661051053_request.xml
[broker] 1 file(s) have been successfully validated.
[broker] Successfully processed 1 file
[copy] Copying 4 files to /appl/sa/var/provision/regn/current
adhoc:
[broker] 1 file(s) have been successfully validated.
[broker] Successfully processed 1 file
all:
BUILD SUCCESSFUL
Total time: 18 minutes 24 seconds
Provisioning done.
```

## Appendix B: Environment Variables

**Table 9:** Environment Variable Definitions

| <i>Environment Variable</i> | <i>Default Value</i>    | <i>Description</i>                                                      | <i>Distributed Server</i>     |
|-----------------------------|-------------------------|-------------------------------------------------------------------------|-------------------------------|
| BODBHOST                    | <BOSERVER<br>NAME>      | Hostname or IP of<br>Server hosting the<br>Business Objects<br>Database | Database Server<br>(optional) |
| BODBSID                     | repos                   | Oracle SID of the<br>Business Object<br>Database                        | Database Server<br>(optional) |
| LDAPHOST                    | Server Host Name        | Hostname or IP of<br>Server hosting the<br>Sun ONE Directory<br>Server  | Application Server            |
| LDAPPORT                    | 1389                    | Port of Sun ONE<br>Directory Server                                     | Application Server            |
| LDAPROOT                    | dc=comni-<br>tel,dc=com | Root directory struc-<br>ture of Sun ONE<br>Directory Server            | Application Server            |
| MAILHOST                    | Server Host Name        | Hostname or IP of<br>Mail Server                                        | Mail Server                   |
| OMPORT                      | 9008                    |                                                                         | Application Server            |
| OPERATOR                    | Company1                |                                                                         | Application Server            |
| ORACLEPORT                  | 1521                    | Oracle Port                                                             | Database Server               |
| SADBHOST                    | <DBSERVER<br>NAME>      | Hostname or IP of<br>ServiceAssure Data-<br>base Server                 | Database Server               |
| SADBSID                     | sadb                    | Oracle SID of the<br>ServiceAssure Data-<br>base                        | Database Server               |

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**Table 9:** Environment Variable Definitions (Continued)

| <i>Environment Variable</i> | <i>Default Value</i> | <i>Description</i>                                                    | <i>Distributed Server</i>         |
|-----------------------------|----------------------|-----------------------------------------------------------------------|-----------------------------------|
| SAGWHOST                    | <GWSERVER NAME>      | Hostname or IP of ServiceAssure Gateway Server                        | Gateway Server                    |
| SAHOST                      | <APPSERVER NAME>     | Hostname or IP of ServiceAssure Application Server                    | Application Server                |
| SALOGDIR                    | /appl/sa/logs        | ServiceAssure Logging Directory                                       | Application Server                |
| SAVARDIR                    | /appl/sa/var         | ServiceAssure Var directory                                           | Application Server                |
| SAPROVDIR                   | /appl/sa/var         | ServiceAssure? Provisioning Directory                                 | Application Server                |
| WMCROOT                     | /appl/sa             | Root directory of ServiceAssure Software                              | Application Server                |
| BOUMGTSYNC                  | false                | Business Object User Management Synchronisation option                | Business Object Server (optional) |
| BOUMGTHOST                  | <BOSERVER NAME>      | Hostname or IP of Server hosting the Business Objects User Management | Business Object Server (optional) |
| BOUMGTPORT                  | 8090                 | Business Objects User Management Port                                 | Business Object Server (optional) |
| BOAPP_USERNAME              | saserver             | Business Objects Application username                                 | Business Object Server (optional) |
| BOAPP_PASSWORD              | Saserver01           | Business Objects Application user's password                          | Business Object Server (optional) |
| BODB_USERNAME               | repuser              | Business Objects database username                                    | Database Server (optional)        |
| BODB_PASSWORD               | repuser              | Business Objects database user's password                             | Database Server (optional)        |

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**Table 9:** Environment Variable Definitions (Continued)

| <i>Environment Variable</i> | <i>Default Value</i> | <i>Description</i>                                      | <i>Distributed Server</i>         |
|-----------------------------|----------------------|---------------------------------------------------------|-----------------------------------|
| BO_MAINKEY                  | SABO                 | Main Business Objects Key (generated by BO Application) | Business Object Server (optional) |
| SADB_USERNAME               | saowner              | ServiceAssure Database username                         | Database Server                   |
| SADB_PASSWORD               | Saowner01            | ServiceAssure Database user's password                  | Database Server                   |
| SAPMONPORT                  | 9009                 | ServiceAssure Monitoring Port                           | Application Server                |
| LDAP_PASSWORD               | System01             | ONE Directory Server User Password                      | Application Server                |
| BROKER1HOST                 | <APPSERVER NAME>     | Sun ONE Directory Server Broker Host                    | Application Server                |
| BROKER1PORT                 | 7681                 | Sun ONE Directory Server Broker Port                    | Application Server                |
| MAIL_USERNAME               | saserver             | Mail Server Username                                    | Mail Server                       |
| MAIL_PASSWORD               | Saserver01           | Mail Server User password                               | Mail Server                       |

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## Appendix C: Jumpstart Output

### *Sample Jumpstart Output*

The following section details the output from a Jumpstart session.

```
Constructing generic part of Jumpstart profile... done.  
Completing Jumpstart profile...  
8092MB of core installed."  
Using clt0d0s0 for /, 10240MB  
Using clt0d0s1 for swap, 8192MB  
Using clt0d0s3 for /var, 4096MB  
Jumpstart profile built. Proceeding...
```

```
The configuration is unable to continue as it requires more information"  
Please enter this now .....
```

```
Hostname unavailable, please enter it now  
Hostname : bantry  
You have entered bantry  
Is this correct (y/n): Y  
Setting nodename  
Setting hostname  
Setting up network settings  
Setting hostname  
IP Address of bantry is unavailable, please enter it now  
IP Address : 192.168.1.88  
You have entered 192.168.1.88  
Is this correct (y/n): Y  
Setting localhost  
Setting hostname  
Setting netmask  
Setting up NIC  
Router IP Address is unavailable,please enter it now  
Router IP Address : 192.168.1.240
```

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You have entered 192.168.1.240

Is this correct (y/n): Y

Setting Default Router IP

Setting Subnet Mask to 255.255.255.0

Setting hostname to bantry

Setting IP address to 192.168.1.88

Setting router IP address to 192.168.1.240

Processing profile

- Opening Flash archive
- Validating Flash archive
- Selecting all disks
- Configuring boot device
- Configuring / (c1t0d0s0)
- Configuring swap (c1t0d0s1)
- COnfiguring /var (c1t0d0s3)

Verifying disk configuration

- WARNING: Unused disk space (c1t0d0)

Verifying space allocation

Configuring disk (c0t0d0)

- Creating Solaris disk label (VTOC)

Creating and checking UFS file systems

- Creating / (c1t0d0s0)
- Creating /var (c1t0d0s3)

Beginning Flash archive processing

Extracting archive: solaris-os.flx

Extracted 0.00 MB ( 0% of 2156.74 MB archive)

..  
..  
..

Extracted 2156.74 MB (100% of 2156.74 MB archive)

Extraction complete

Customizing system files

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```
- Mount points table (/etc/vfstab)

fd - /dev/fd fd - no -
/proc - /proc proc - no -
/dev/dsk/clt0d0s1 - - swap - no -
/dev/dsk/clt0d0s0 /dev/rdisk/clt0d0s0 / ufs 1 no -
/dev/dsk/clt0d0s3 /dev/rdisk/clt0d0s3 /var ufs 1 no -
/devices - /devices devfs - no -
ctfs - /system/contract ctfs - no -
objfs - /system/object objfs - no -
swap - /tmp tmpfs - yes -
- Network host addresses (/etc/hosts)
- Network host addresses (/etc/hosts)
- Environment variables (/etc/default/init)
Cleaning devices

Customizing system devices
- Physical devices (/devices)
- Logical devices (/dev)

Installing boot information
- Installing boot blocks (clt0d0s0)
```

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# Glossary of Terms

Table 10: Glossary

| <i>Acronym</i>    | <i>Description</i>                      |
|-------------------|-----------------------------------------|
| BO                | Business Objects                        |
| CD                | Compact Disk                            |
| DVD               | Digital Video Disk                      |
| GB                | Gigabytes                               |
| GUI               | Graphical User Interface                |
| KSH               | Korn Shell                              |
| PC                | Personal Computer                       |
| RAM               | Random Access Memory                    |
| ROM               | Read Only Memory                        |
| SAPMG<br>R        | ServiceAssure Process Manager           |
| SAPMO<br>N        | ServiceAssure Process Monitor           |
| ServiceA<br>ssure | Service Quality Management Software     |
| Solaris           | SUN Microsystems implementation of UNIX |

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