Sun N1 Service Provisioning System User's Guide for SAP Plug-In 1.0

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Preface

This book explains how to use the Sun N1™ Service Provisioning System software to deploy SAP applications and files.

Who Should Use This Book

The main audience for the Sun N1 Service Provisioning System User's Guide for SAP Plug-In 1.0 includes system administrators and operators of Sun N1 Service Provisioning System software who want to be able to incorporate SAP functionality with Sun N1 Service Provisioning System software. These users are expected to be familiar with the following information:

- The Sun N1 Service Provisioning System product
- Standard UNIX® and Windows commands and utilities
- The general concepts and management features available in the SAP product

Before You Read This Book

If you are not already familiar with using the Sun N1 Service Provisioning System software, read the following books:

- *Sun N1 Service Provisioning System 5.2 System Administration Guide*
- *Sun N1 Service Provisioning System 5.2 Operation and Provisioning Guide*
- *Sun N1 Service Provisioning System 5.2.1 Release Notes*
- *Sun N1 Service Provisioning System 5.2 Installation Guide*
- *Sun N1 Service Provisioning System 5.2 Command-Line Interface Reference Manual*

How This Book Is Organized

- Chapter 1 provides an overview of the plug-in solution.
- Chapter 2 describes late-breaking news and known issues with the SAP plug-in.
- Chapter 3 explains how to install and configure the plug-in.
- Chapter 4 explains how to capture and deploy applications and files through the plug-in and describes the specific component types that are provided with the plug-in.

Related Third-Party Web Site References

Third-party URLs are referenced in this document and provide additional, related information.

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Documentation, Support, and Training

The Sun web site provides information about the following additional resources:

- Documentation (`http://www.sun.com/documentation/`)
- Support (`http://www.sun.com/support/`)
- Training (`http://www.sun.com/training/`)

Typographic Conventions

The following table describes the typographic conventions that are used in this book.

TABLE P–1 Typographic Conventions

Typeface	Meaning	Example
`AaBbCc123`	The names of commands, files, and directories, and onscreen computer output	Edit your `.login` file. Use `ls -a` to list all files. `machine_name% you have mail.`
`AaBbCc123`	What you type, contrasted with onscreen computer output	`machine_name%` **`su`** `Password:`
aabbcc123	Placeholder: replace with a real name or value	The command to remove a file is `rm` *filename.*

TABLE P–1 Typographic Conventions *(Continued)*

Typeface	Meaning	Example
AaBbCc123	Book titles, new terms, and terms to be emphasized	Read Chapter 6 in the *User's Guide*. A *cache* is a copy that is stored locally. Do *not* save the file. **Note:** Some emphasized items appear bold online.

Shell Prompts in Command Examples

The following table shows the default UNIX system prompt and superuser prompt for the C shell, Bourne shell, and Korn shell.

TABLE P–2 Shell Prompts

Shell	Prompt
C shell	`machine_name%`
C shell for superuser	`machine_name#`
Bourne shell and Korn shell	`$`
Bourne shell and Korn shell for superuser	`#`

◆ ◆ ◆ CHAPTER 1

Overview of SAP Plug-In

This chapter explains general information about using the Sun N1 Service Provisioning System to provision SAP applications. This chapter includes the following information:

- "Purpose of the SAP Plug-In" on page 13
- "What the SAP Plug-In Includes" on page 14
- "Session Variables" on page 18
- "Requirements for Using the SAP Plug-In" on page 18
- "For More Information About SAP Software" on page 18

Purpose of the SAP Plug-In

Importing the SAP plug-in into the Sun N1 Service Provisioning System enables you to maintain SAP systems in the Sun Cluster, SAP Adaptive Computing (AC), and default environments. The SAP plug-in provides the following functionality:

- Creating and deleting SAP components in the SPS database, which are referred to as *markOnly* tasks
- Starting and stopping SAP components
- Viewing all SAP components
- Determining the online and offline status of SAP components
- Provisioning the SAP Application Server with a default exception file
- Creating a custom exception file component
- Provisioning the SAP Application Server with a custom exception file

---

Note – The default environment is one in which additional software like Sun Cluster or SAP AC is not utilized.

What the SAP Plug-In Includes

The SAP Plug-In creates the `/com/sun/sap` directory.

For details about using the plans and components, and the host set, host types, and host searches listed in the following sections, see Chapter 4.

SAP Plug-In Components

The SAP Plug-In component's are:

- AppServerWithDefault ExceptionFile
- DefaultExceptionFile

For more information about components, see Chapter 2, "Components," in *Sun N1 Service Provisioning System 5.2 Plan and Component Developer's Guide*.

SAP Plug-In Component Types

For more information about component types, see Chapter 3, "Built-in Component Types," in *Sun N1 Service Provisioning System 5.2 Plan and Component Developer's Guide*.

- AppServerWithExceptionFile
- ExceptionFile
- GDSResourceType
- Generic

SAP Plug-In Resource Types

A resource type contains the definition for an object. The resource type for Oracle server defines what needs to be done when you start the Oracle database server, for example, call `svrmgr` to start up the database server. The resource type for a logical host defines what needs to be done when you start the logical host, for example, plumb and up the IP address. Resource types are modeled as components in the SAP plug-in.

AppServer	This component defines the SAP application server's variables and actions that can be taken for an SAP Application Server. Users can deploy (create) a new SAP Application Server or delete it. You can start and stop an SAP Application Server. You can also move an SAP Application Server from one machine to another through the Sun N1 Advanced Architecture for SAP Solutions GUI. You can check SAP Application Server status through the isOnline and isOffline plans.
CentralInstance	This component defines the SAP Central Instance's variables and actions that can be taken for a SAP Central Instance. You cannot use the SAP plug-in to deploy (create) a central instance. However, once the central instance is created

	on the OS level, you can use the plug–in to create the SPS component (markOnly) in the SPSdatabase. After that, you can start and stop an SAP Central Instance. You can also move an SAP Central Instance through Sun N1 Advanced Architecture for SAP Solutions GUI. You can check status through the isOnline and isOffline plans.
EnqueueServer	This component defines the SAP Enqueue Server's variables and actions that can be taken for an SAP Enqueue Server. You cannot use the plug–in to deploy (create) an enqueue server. However, once the enqueue server is created (on the OS level), you can use the plug–in to create the SPS component (markonly) in the SPS database. After that, you can start and stop an SAP Enqueue Server. You can check status through the isOnline and isOffline plans.
Group	This component defines the group's variables and actions that can be taken for a group. Except for the Sun Cluster environment, there is no actual group entity at the OS level that corresponding to the group component in SPS. It is a logical entity that contains other components and operations that can be carried out for all the components in a group. A group can be an empty group. You can start or stop a group and all the components in it. You can relocate the group through the Sun N1 Advanced Architecture for SAP Solutions GUI. Status checks can only be done for a group through the Sun N1 Advanced Architecture for SAP Solutions GUI. You can also delete the group in SPS, or you can delete in SPS and at the OS level.
HAStoragePlus	This component defines storage management's variables and actions can be taken for it. The plug–in does not create the device groups nor does the plug-in create the `/etc/vfstab` file at the OS level. However, you can create the HAStoragePlus component which captures the storage management information and you can use the plug–in to import the device groups and mount the file systems. You can also mount the file system and deport the device group through this component. You can check status through the isOnline and isOffline plans.
LogicalHost	This component defines the logical host's variables and actions can be taken for it. The physical interface has to be plumbed first. You can then use this component to plumb the logical host on a single interface or via an `ipmp` group. You can also unplumb the logical host. The plug–in safeguards the scenarios in which the same logical host is already up on a different machine. You can check status through the isOnline and isOffline plans.
MessageServer	This component defines the SAP Message Server's variables and actions that can be taken for an SAP Message Server. You cannot use the plug–in to deploy (create) a message server. However, once the SAP Message Server is created on the OS level, you can use the plug–in to create the SPS component (markOnly) in the SPS database. After that, you can start and stop an SAP Message Server. You can check status through the isOnline and isOffline plans.

NFSMount	This component defines the variables needed for NFS mount. You can start, mount, the file system or stop, umount, the file systems. You can check status through the isOnline and isOffline plans.
NFSShare	This component defines the variables needed for NFS share. You can start, share, the file system or stop, unshare, the file systems. You can check status through the isOnline and isOffline plans.
Oracle	This component defines the variables needed for the Oracle server and listener. The plug–in does not create (deploy) the Oracle server at the OS level. You can create the Oracle component which captures the information for the Oracle server and listener. You can start and stop the server and listener. You can move the Oracle server and listener through the Sun N1 Advanced Architecture for SAP Solutions GUI. You can check status through the isOnline and isOffline plans.

SAP Plug-In Plans

For more information about plans, see Chapter 4, "Plans," in *Sun N1 Service Provisioning System 5.2 Plan and Component Developer's Guide*.

- CreateAppServerPlan
- CreateCIPlan
- CreateEnqueueServerPlan
- CreateGroupPlan
- CreateHASPlan
- CreateLogicalHostPlan
- CreateMessageServerPlan
- CreateNFSMountPlan
- CreateNFSPlan
- CreateOracleDBPlan
- DeleteAppServerPlan
- DeleteCIPlan
- DeleteEnqueueServerPlan
- DeleteGroupPlan
- DeleteHASPlan
- DeleteLogicalHostPlan
- DeleteMessageServerPlan
- DeleteNFSMountPlan
- DeleteNFSPlan
- DeleteOracleDBPlan
- GetSAPGroupsPlan
- GetSAPInstancesPlan
- InstallASWithDefault ExcptFilePlan
- IsAppServerOfflinePlan
- IsAppServerOnlinePlan

- IsCIOfflinePlan
- IsCIOnlinePlan
- IsEnqueueServerOfflinePlan
- IsEnqueueServerOnlinePlan
- IsHASOfflinePlan
- IsHASOnlinePlan
- IsLogicalHostOfflinePlan
- IsLogicalHostOnlinePlan
- IsMessageServerOfflinePlan
- IsMessageServerOnlinePlan
- IsNFSMountOfflinePlan
- IsNFSMountOnlinePlan
- IsNFSShareOfflinePlan
- IsNFSShareOnlinePlan
- IsOracleDBOfflinePlan
- IsOracleDBOnlinePlan
- ModifySAPGroupsPlan
- RelocateGroupPlan
- StartAppServerPlan
- StartCIPlan
- StartEnqueueServerPlan
- StartGroupPlan
- StartHASPlan
- StartLogicalHostPlan
- StartMessageServerPlan
- StartNFSMountPlan
- StartNFSPlan
- StartOracleDBPlan
- StopAppServerPlan
- StopCIPlan
- StopEnqueueServerPlan
- StopGroupPlan
- StopHASPlan
- StopLogicalHostPlan
- StopMessageServerPlan
- StopNFSMountPlan
- StopNFSPlan
- StopOracleDBPlan
- UninstallASWithDefaultExcptFilePlan

SAP Plug-In System Services

For more information about system services, see "System Services Concepts" in *Sun N1 Service Provisioning System 5.2 Plan and Component Developer's Guide*.

- AccSS
- AppServerSS
- CentralInstanceSS
- OracleSS
- SAPCentralServicesSS
- SupportComponentSS
- UtilSS

Session Variables

The following is a list of the session variables for the SAP plug-in.

`SAP_DEFAULT_AC_ADMIN_PASSWORD`	Character string (text is not visible)
`SAP_DEFAULT_AC_ADMIN_USER`	Character string
`SAP_DEFAULT_AC_PORT`	Numeric
`SAP_DEFAULT_AC_SERVER`	Character string
`AUTHENTICATE_ACC_SERVER_CERT`	Boolean

Requirements for Using the SAP Plug-In

Any host on which you intend to deploy the SAP plug-in must meet the following requirements:

SAP software	See SAP documentation.
Operating system	Solaris 9 (SPARC) and Solaris 10 (SPARC)

The SAP Web Application Server (AS) consists of one or more SAP Web AS instances and the underlying database management system (DBMS) seen as a single entity. Often SAP *system* is used as a synonym.

For More Information About SAP Software

Using this plug-in presumes that you are familiar with the SAP software. For more information about this product, see the following SAP information:

- General information at SAP Software (`http://www.sap.com`)
- Information on SAPS (`http://www.sapdb.org/7.4/sap_db_benchmarks.html#Definition`)

◆ ◆ ◆ CHAPTER 2

Release Notes

This chapter describes late-breaking news and know issues with the SAP plug-in.

- "Installation Issues" on page 19
- "Runtime Issues" on page 19

Installation Issues

There are no known installation issues.

Runtime Issues

Group Start Fails When Remote Agent Runs In UTF-8 or EUC Locales

The SAP Central Instance group fails to start when the Remote Agent on Central Instance system is running in either the UTF-8 or EUC locale. Group start works if the Remote Agent runs in the following locales:

- C
- de_DE.ISO8859-1
- de_DE.ISO8859-15

This also happens when starting database or Application Server groups.

Workaround: If your environment is in either UTF-8 or EUC locales, you need to change the locale to either C, en_US, or ISO* single-byte locales to run the SAP Remote Agents.

◆ ◆ ◆ CHAPTER 3

Installing and Configuring the SAP Plug-In

This chapter explains how to install and configure the SAP plug-in. This chapter discusses the following topics:

- "Before Installing the SAP Plug-In" on page 21
- "Acquiring the SAP Plug-In" on page 22
- "Importing the SAP Plug-In" on page 23
- "Customizing the Solution for Your Environment" on page 24
- "After Installing the SAP Plug-In" on page 26
- "Deleting the SAP Plug-In" on page 28
- "Patching the SAP Plug-In" on page 29

Before Installing the SAP Plug-In

The general tasks you need to do before installing the SAP plug-in are:

1. Install the SPS Master Server (MS), Remote Agent (RA), and Command Line Interface (CLI) on the Master Server host.

   For more information, see the *Sun N1 Service Provisioning System 5.2 Installation Guide*.

2. Install the SPS Remote Agent (RA) on all SAP machines and prepare them.

   For more information, see "Non-Interactive Installation of a Remote Agent on Linux and UNIX Systems" in *Sun N1 Service Provisioning System 5.2 Installation Guide*.

3. Install all SAP central instances and Oracle databases.

   Note – Make sure they are virtualized.

   For more information, see the SAP HA Switchover Document for an overview of virtualization and "How to Enable Failover SAP Instances to Run in a Cluster" in *Sun Cluster Data Service for SAP Guide for Solaris OS*.

4. For instances that are under the control of Sun Cluster, perform the following steps:

a. Ensure that the clusters are installed and set up correctly.
b. Ensure that all Sun Cluster data services are installed.
c. Ensure that all Sun Cluster resource groups and resources are set up correctly.

For more information, see *Sun Cluster Software Installation Guide for Solaris OS*.

5. For instances that are under the control of SAP AC, make sure the server is installed and set up correctly.
6. Although the following items can be managed locally on the file system, they should be managed by NIS, NIS+, or LDAP.
   - Update all SAP machines' `/etc/services` file with port information for all SAP instances.
   - Ensure that all SAP users, (*sid*adm) are present on the system. Users are defined locally in `/etc/password`.
   - Ensure that all logical host names are present on the system. Logical host are defined in `/etc/hosts`.
   - Group information must be maintained. Groups are defined in `/etc/group`.
   - An appropriate project must be created for each resource. See the `project`(4) man page for more details on the project file and related information on creating a project.
7. Directories for SAP must be present on the servers. You can create these directories in one of the following methods:
   - Use the plug-in `nfsshare` or `nfsmount` components
   - Mount manually through NFS
   - Create the directories manually on each target servers
   - Use automounter

Note – Management of the automounter map is required.

Acquiring the SAP Plug-In

Acquiring the SAP plug-in is a two-step process. First, you must add the package file that contains the SAP plug-in JAR file to your system. Then you must import the SAP plug-in JAR file.

The SAP plug-in is packaged as a *plug-in* to the Sun N1 Service Provisioning System software. The plug-in files for the SAP plug-in are available from the Sun N1 Service Provisioning System 5.2 Supplement CD or from the Sun Download Center.

1. Add the file containing the JAR file:
   - "Adding the SAP Plug-In for Solaris" on page 23
2. Import the JAR file - "Importing the SAP Plug-In" on page 23.

Adding the SAP Plug-In for Solaris

The SAP plug-in is contained in the `SUNWspssap` package.

▼ To Add the SAP Plug-In Package for Solaris

1. **Log in to Master Server.**
2. **Become superuser.**
3. **Move to the directory containing the plug-in package.**
4. **Type the following command and press Return.**

   `# pkgadd -d` *package_directory* **`SUNWspssap`**

   The JAR file is in the `/opt/SUNWn1sps/plugins/com.sun.sap/` directory.

Importing the SAP Plug-In

To make a given plug-in known to the Sun N1 Service Provisioning System product, you need to import the plug-in.

To import a plug-in, follow these steps as explained in detail in Chapter 5, "Plug-In Administration," in *Sun N1 Service Provisioning System 5.2 System Administration Guide*.

▼ How to Import the SAP Plug-In Using the Browser Interface

1. **In the Administrative section of the browser interface main window, click Plug-ins.**
2. **In the Action Column of the Plug-ins page, click Import.**
3. **Click the Browse button and navigate to the location of the JAR file.**
4. **Select the JAR file and click Open.**
5. **Click the Continue to Import button.**

   When the import completes successfully, a plug-in details page appears and shows you the objects that the plug-in provides.

▼ How to Import the SAP Plug-In Using the CLI

You can also import a plug-in archive file by using the command line.

◗ **To import a plug-in file from the CLI, type:**

```
% cr_cli -cmd plg.p.add -path plugin-filename -u username -p password
```

Customizing the Solution for Your Environment

After the plug-in is imported, perform the following steps:

▼ How to Configure the Master Server

These steps should be performed prior to importing the SAP plug-in.

1 **Review the `ReadMe.txt` file to make sure that all configuration tasks have been completed.**

2 **Create session variables.**

These variables are used when maintaining SAP instances in the SAP AC environment and creating SAP users or logical hosts in LDAP.

- `SAP_DEFAULT_AC_ADMIN_PASSWORD`
- `SAP_DEFAULT_AC_ADMIN_USER`
- `SAP_DEFAULT_AC_PORT`
- `SAP_DEFAULT_AC_SERVER`
- `AUTHENTICATE_ACC_SERVER_CERT`

For more information about session variables, see "How to Create Session Variables" on page 25.

3 **Create a virtual host with the Master Server as its parent.**

This is created for the purpose of running the SPS CLI.

Note – If virtual host cliHost exists and its host type is com.sun.was#cliHT, do not create another cliHost.

For more information, see "Virtual Hosts" in *Sun N1 Service Provisioning System 5.2 System Administration Guide*.

a. **In the Host Setup section of the browser interface main window, click Hosts.**

b. **Type `cliHost` in the Host field.**

c. **Select the com.sun.sap#cliHT host type.**

d. Click Create.

e. Select the Virtual Host option.

f. Modify the cliLoc attribute to the fully qualified path of the CLI.
For example, */SPS–INSTALL–PATH*/`cli/bin/cr_cli`.

g. Set the Master Server as the Virtual Host parent.

i. Click the Select From List link.

ii. Select the host from the Current Found Host list.

iii. Click Add Host to Main Window.

h. Click Save.

4 Add the following lines to the */SPS–INSTALL–PATH*/`/server/config/config.properties` **file:**

```
config.allowSessionIDOnHosts=masterserver
pe.defaultPlanTimeout=6000
pe.nonPlanExecNativeTimeout=2400
```

The `config.allowSessionIDOnHosts` line lets the plug-in communicate with the Master Server through the Sun N1 Service Provisioning System Remote Agent/CLI interface.

The `pe.defaultPlanTimeout` line is in seconds. Add this line if your site needs to increase the default plan from its 30 minute, 1800 second, value.

The `pe.nonPlanExecNativeTimeout` line is in seconds. Add this line if your site needs to increase the time for `execNative` time outs.

The `config.properties` file is in the *SPS–INSTALL–PATH*`/server/config` directory.

5 Restart the Master Server after the changes have been made to the `config.properties` **file.**

▼ How to Create Session Variables

Repeat this procedure for each session variable that you create.

Before You Begin Session variables need to be set only if you have an SAP AC environment and you intend to administer components by using this plug-in.

1 From the Common Tasks page, click the Session Variables link.

2 Click the Create link.

3. **Create the session variable.**
   a. **Type the session variable name.**
   b. **(Optional) Select the Display As Password check box.**
   c. **(Optional) Type a description.**
   d. **Type the value of the session variable.**
   e. **Type the admin user password.**
4. **Click Save.**

After Installing the SAP Plug-In

After you have installed the SAP plug-in, perform the tasks in this section.

▼ How To Create SAP Hosts

1. **In the Common Tasks section of the N1 SPS browser interface, click Hosts.**
2. **Click Create.**
3. **Type the host name.**
4. **Set the Host Type to** `com.sun.sap#SAPHT`**.**
5. **Type a comma-delimited list of the environment types that can exist on this Remote Agent in the** `envType` **field.**
6. **(Optional) Type the SAPS value.**
7. **Select the Include Remote Agent on This Physical Host check box.**
8. **Select a connection type.**
9. **Type the IP address or name.**
10. **Type a port number.**

11 **Click Save.**

For more information, see Chapter 2, "Managing Hosts, Host Types, Host Sets, and Host Searches," in *Sun N1 Service Provisioning System 5.2 System Administration Guide*.

▼ How To Create the Post Installation Environment

The following should be performed to establish the environment for the SAP plug-in:

Before You Begin Create SAP Hosts. For more information, see "How To Create SAP Hosts" on page 26.

1 **Prepare the Master Server and Remote Agents.**

For more information, see "How to Prepare a Physical Host" in *Sun N1 Service Provisioning System 5.2 System Administration Guide*.

2 **Perform any of the Utilities for SAP group tasks, as necessary.**

3 **Create a group component.**

Other components set dependency on the group component.

For more information, see "Creating and Managing Groups" on page 35.

4 **Add a logical host component to the group.**

For more information, see "Creating and Managing Logical Hosts" on page 40

5 **Add a storage management component to the group for groups that also contain an SAP Central Instance or database components.**

For more information, see "Creating and Managing HA Storage Devices" on page 45.

6 **Add an NFS share component to the group for groups that also contain an SAP Central Instance or database components.**

For more information, see "Sharing and Managing Network File Systems" on page 50.

7 **Add a Central Instance or Oracle component to the group.**

For more information, see "Creating and Managing SAP Central Instances" on page 65 or "Creating and Managing Oracle Databases" on page 59.

8 **Add an NFS Mount component for groups that also contain SAP Application Server.**

See "Mounting and Managing Network File Systems" on page 55.

Deleting the SAP Plug-In

This section describes how to delete a plug-in from the Sun N1 Service Provisioning System. For more information, see "Deleting Plug-Ins" in *Sun N1 Service Provisioning System 5.2 System Administration Guide*.

- "How to Delete the SAP Plug-In" on page 28
- "How to Delete the SAP Plug-In From the Command Line" on page 28

▼ How to Delete the SAP Plug-In

1. **Delete all objects created by all versions of the plug-in.**

   These objects include the system services that are installed automatically when a host is prepared.

2. **In the Common Tasks section of the N1 SPS browser interface, click Plans.**

3. **Navigate to the RemoveSAPSystemServicePlan plan.**

4. **Click the Details link.**

5. **Click Run.**

6. **Select target host or target host set.**

7. **Click the Run Plan (Includes Preflight) button.**

▼ How to Delete the SAP Plug-In From the Command Line

◗ **From the CLI directory, type the following command.**

```
./cr_cli -cmd plg.p.del -ID plugin-ID -u admin -p password
```

For example, **`./cr_cli -cmd plg.p.del -ID 010011242111-1146106455699-00215-1170512625 -u admin -p admin`**

Patching the SAP Plug-In

Check the SunSolve site for available patches for the SAP plug-in. To apply a patch, follow the instructions in the patch README file.

◆ ◆ ◆ CHAPTER 4

Using the SAP Plug-In

Importing the SAP plug-in into the Sun N1 Service Provisioning System enables you to maintain SAP systems in the Sun Cluster, SAP AC, and default environments. You can also provision the SAP Application Server instances through the Sun N1 Service Provisioning System software.

SAP plug-in provides a number of specific component types and provides easy access to functions for working with SAP applications. This chapter describes the following information:

- "Managing SAP Groups" on page 31
- "Configuring SCS" on page 34
- "Creating and Managing Groups" on page 35
- "Creating and Managing Logical Hosts" on page 40
- "Creating and Managing HA Storage Devices" on page 45
- "Sharing and Managing Network File Systems" on page 50
- "Mounting and Managing Network File Systems" on page 55
- "Creating and Managing Oracle Databases" on page 59
- "Creating and Managing SAP Central Instances" on page 65
- "Creating and Managing SAP Enqueue Servers" on page 70
- "Creating and Managing SAP Message Servers" on page 76
- "Creating, Managing and Installing SAP Application Servers" on page 81
- "User Exits" on page 95
- "Component Types" on page 95
- "Troubleshooting" on page 104
- "Exception File Example" on page 105

Managing SAP Groups

The SAP Tasks page of the software provides links to create and manage SAP groups.

This section describes the following tasks:

- "How to List SAP Instances In a Group" on page 32
- "How to List SAP Groups" on page 32

- "How to Modify an SAP Group" on page 33

How to List SAP Instances In a Group

This procedure generates a list of SAP instances in an SAP logon group or Remote Function Call (RFC) logon group. The output is written to the `STDOUT` file.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Utilities for SAP Groups section of the SAP Tasks page, click Get SAP Instances.**
3. **Click Run.**
4. **Select the target host or target host set.**
5. **Provide the plan variables.**

Group identifier	This is a required field. Type `L` for login group or type `S` for server group. Default value: `L`.
Logical host name for SAP system	This is a required field.
SAP SID	This is a required field. A three–character alphanumeric identifier.
SAP instance number	This is a required field. A two–digit number.
SAP RFC client that runs RFC calls	This is a required field. A three–digit number. Default value: `000`.
SAP user that runs RFC calls	This is a required field. SAP userid. Default value: `sap*`.
RFC user password	This is a required field.
SAP logon group or RFC server group name	This is a required field.

6. **Click the Run Plan (Includes Preflight) button.**

   The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to List SAP Groups

This task retrieves SAP logon or server groups for an SAP instance. The results are in `stdout`.

Before You Begin For the plan to run successfully, the file systems on the target host must be mounted.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Utilities for SAP Groups section of the SAP Tasks page, click Get SAP Group.**
3. **Click Run.**
4. **Select the target host or target host set.**
5. **Provide the plan variables.**

Group identifier	This is a required field. Type `L` for login group or type `S` for server group. Default value: `L`.
Logical host name for SAP system	This is a required field.
SAP SID	This is a required field. A three–character alphanumeric identifier.
SAP instance number	This is a required field. A two–digit number.
SAP RFC client that runs RFC calls	This is a required field. Default value: `000`.
SAP user that runs RFC calls	This is a required field. Default value: `sap*`.
RFC user password	This is a required field.
SAP logon group or RFC server group name	This is a required field.

6. **Click the Run Plan (Includes Preflight) button.**

   The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to Modify an SAP Group

An SAP group can be a logon group or a server group. Modifying an SAP group either adds an instance to the group or removes an instance from the group.

The following plan parameters identify which SAP system we will call the RFC to list or modify the logon or server group.

- Logical Host Name for SAP System
- SAP Instance Number
- SAP SID

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Utilities for SAP Groups section of the SAP Tasks page, click Modify SAP Group.**
3. **Click Run.**

4 Select the target host or target host set.

5 Provide the plan variables.

Group identifier
This is a required field. Type `L` for login group or type `S` for server group. Default value: `L`.

Logical host name for SAP system
This is a required field.

SAP SID
This is a required field. A three–character alphanumeric identifier.

SAP instance to modify
Instance name that corresponds to the SAP instance name.

SAP groups containing SAP instance to modify
This is a required field. Group names should be comma-delimited.

I to insert the instance, R to remove the instance from the group
Default value: `I`.

RFC client
Default value: `000`.

RFC user
Default value: `ddic`.

RFC user password
This is a required field.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

Results are in `STDOUT`.

Configuring SCS

In SAP version 6.40, the two ways to configure SAP Central Services (SCS) are:

- Standalone Enqueue Server – The enqueue server can start and stop independent of the message server.
- Combined SCS – In this scenario, the enqueue server and the message server are started and stopped together.

For more information on setting up SPS SCS, see the SAP Installation Guide and the Sun Cluster 3.1 Update 4 Sun Cluster Data Service for SAP Web Application Server Guide for Solaris OS.

▼ To Create a Standalone SCS

1 **Create a group component.**

See "Creating and Managing Groups" on page 35.

2 **Create an SAP Enqueue Server component.**

See "Creating and Managing SAP Enqueue Servers" on page 70.

▼ To Create a Combined SCS

1 **Create a group component.**

See "Creating and Managing Groups" on page 35.

2 **Create SAP Central Instance component.**

See "Creating and Managing SAP Central Instances" on page 65.

Creating and Managing Groups

The Tasks page of the software enables you to create and manage groups. Groups are created to allow the user to manage resource as a single unit.

This section describes the following tasks:

- "How to Create a Group Component" on page 35
- "How to Delete a Group Component" on page 37
- "How to Start a Group Component" on page 37
- "How to Stop a Group Component" on page 38
- "How to Relocate a Group Component" on page 38
- "How to View All Group Components" on page 39

▼ How to Create a Group Component

Groups are created for the purpose of organizing hosts that work with the same SAP application.

Note – This task is a markOnly task.

---

1 **In the Common Tasks section of the N1 SPS browser interface, click SAP.**

2 **In the Group section of the SAP Tasks page, click Create.**

3 **Click Run.**

4 In the Plan Parameters table, select the variable settings for the `Group` component.

- If the variable settings have been created for this component, select the appropriate settings from the drop-down menu.
- If the variable settings are not available from the drop-down menu:
  a. Click Select From List.

     The Select Variable Settings From List window displays.

     - To create a new variable settings set, click Create Set and type a Set Name.

       The following list provides commonly updated variables for the `Group` component. To create a value for the component variable, click the check box in the component variable's row.

       Note – For information about component variables ending in `UserExit`, see "User Exits" on page 95.

`groupName`	This is a required field. **Note –** In the Sun Cluster environment, the groupName must equal the Sun Cluster resource group name.
`groupDescription`	A description of the group.
`envType`	Identifies whether this component will be deployed to a Default, Sun Cluster, or SAP AC environment. Value can be either **`ac`**, **`sc`**, or **`default`**.
`createdBy`	Identifies the installer of the component.

  b. Click Save.
- To use component variables from another component, click Import Set.

  For more information about importing variable sets, see "How to Run a Plan" in *Sun N1 Service Provisioning System 5.2 Operation and Provisioning Guide*.

5 Select the target host or target host set.

6 Provide the plan variable.

List of nodes on which this group can run	This is a list of the nodes on which it has been pre-determined that the resources in the group will run. This list can be one or more nodes delimited by a comma. If left blank, the default is the target host value.

7 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to Delete a Group Component

This task removes the group component entry from the SPS database.

Note – This task is a markOnly task. However, should an application server be a member of the group, the application server is uninstalled unless the markOnly delete check box is selected.

---

1 **In the Common Tasks section of the N1 SPS browser interface, click SAP.**

2 **In the Group section of the SAP Tasks page, click Delete.**

3 **Click Run.**

4 **Select the target host or target host set.**

5 **Provide the plan variables.**

Group name	This is a required field.
markOnly delete (default environment only)	If this check box is selected, an application server in the group is not uninstalled from the host.

Note – This option only applies to the default environment. This option has no effect in the Sun Cluster and SAP AC environments.

---

6 **Click the Run Plan (Includes Preflight) button.**

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to Start a Group Component

This task calls the start control block in the group component to start all resources in the group. The status for all resources in the group is refreshed when you list the resource group or resource.

1 **In the Common Tasks section of the N1 SPS browser interface, click SAP.**

2 **In the Group section of the SAP Tasks page, click Start.**

3 **Click Run.**

4 **Select the target host or target host set.**

5 **Provide the plan variables.**

Group name	This is a required field
Force start the resources in the group	This option is required when the target host does not meet the SAPS requirement to start the SAP instance. See the SAP installation guide for minimum requirements for starting the SAP instance.

Note – This option applies to the `default` and SAP AC environment.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to Stop a Group Component

This task calls the stop control block in the group component to stop all resources in the group. The status for all resources in the group is refreshed when you list the resource group or resource.

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Group section of the SAP Tasks page, click Stop.

3 Click Run.

4 Select the target host or target host set.

5 Provide the plan variables.

Group name	This is a required field.
Shutdown mode for database	The possible values are: `normal`, `immediate`, and `abort`. Default value: `immediate`.
Force stop resources after graceful stop failed	This option is selected by default.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to Relocate a Group Component

When you relocate a group, you are moving all the components in the group from one physical host to another.

Note – This task does not apply to the default environment.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Group section of the SAP Tasks page, click Relocate.**
3. **Click Run.**
4. **Select the target host or target host set.**
5. **Provide the plan variables.**

   Group name
   This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

   Destination host name
   This is a required field. If no value is provided, the plan errors.

   Force start the SAP Central Instance on a small server
   This option is required when the target host does not meet the SAPS requirement to start the SAP instance. See the SAP installation guide for minimum requirements for starting the SAP instance.

   Note – This option is only applicable in the SAP AC environment.

6. **Click the Run Plan (Includes Preflight) button.**

   The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to View All Group Components

This task displays a table listing all the group components with install paths.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Group section of the SAP Tasks page, click View All.**

   The Hosts Where Installed table is displayed.

Creating and Managing Logical Hosts

A logical host name is the name given to an IP address that can be plumbed on a host machine. Later it can be unplumbed on the original host and plunbed on another host machine.

The Tasks page of the SAP plug-in enables you to create and manage logical hosts.

Note – The SAP AC environment is not supported.

This section describes the following tasks:

- "How to Create a Logical Host" on page 40
- "How to Delete a Logical Host" on page 42
- "How to Start a Logical Host" on page 42
- "How to Stop a Logical Host" on page 43
- "How to View All Logical Hosts" on page 43
- "How to Check the Online Status of a Logical Host" on page 44
- "How to Check the Offline Status of a Logical Host" on page 44

▼ How to Create a Logical Host

Note – This task is a markOnly task.

---

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Logical Host section of the SAP Tasks page, click Create.

3 Click Run.

4 In the Plan Parameters table, select the variable settings for the `LogicalHost` component.

Note – You must create or import a variable set other than default. If you use the default variable set, the plan errors because some variables depend on other variables being set.

- If the variable settings have been created for this component, select the appropriate settings from the drop-down menu.
- If the variable settings are not available from the drop-down menu:
  a. Click Select From List.

     The Select Variable Settings From List window displays.
     - To create a new variable settings set, click Create Set and type a Set Name.

The following list provides commonly updated variables for the Logical Host component. To create a value for the component variable, click the check box in the component variable's row.

Note – For information about component variables ending in `UserExit`, see "User Exits" on page 95.

`groupName`	This is a required field. **Note –** In the Sun Cluster environment, the `groupName` must equal the Sun Cluster resource group name.
`groupDescription`	A description of the group.
`resourceName`	Required in the Sun Cluster environment. The `resourceName` must equal the Sun Cluster resource name for the Sun Cluster `envType`. **Note –** The value of `resourceName` in the default environment must be the logical hostname.
`envType`	Identifies if this component will be deployed to a default, Sun Cluster, or SAP AC environment. Value can be **`ac`**, **`sc`**, or **`default`**.
`createdBy`	Identifies the installer of the component.
`ipAddress`	Required for the default environment.
`This task is a markOnly task.`	Required for the default environment. For more information, see the `netmasks`(4) man page.
`interface`	Required for the default environment. Use this field to enter one interface or ipmpgroup value. For example, hme0.
`broadcast`	Required for the default environment. This is the broadcast IP address. For more information, see the `ifconfig`(1M) man page.
`ipmpgroup`	IPMP group name. Use this field to enter the interface values. For more information, see the *Sun N1 Advanced Architecture for SAP Solutions 5.2.1 Implementation Guide*.

b. Click Save.

- To use component variables from another component, click Import Set.

  For more information about importing variable sets, see "How to Run a Plan" in *Sun N1 Service Provisioning System 5.2 Operation and Provisioning Guide*.

5 Select a target host or target host set.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to Delete a Logical Host

This task calls the uninstall control block of the Logical Host component.

Note – This task is a markOnly task.

---

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Logical Host section of the SAP Tasks page, click Delete.

3 Click Run.

4 Select a target host or target host set.

5 Provide the plan variable.

Install path of the logical host	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to Start a Logical Host

This task calls the start control block of the Logical Host component.

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Logical Host section of the SAP Tasks page, click Start.

3 Click Run.

4 **Select a target host or target host set.**

5 **Provide the plan variable.**

Install path of the logical host component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 **Click the Run Plan (Includes Preflight) button.**

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to Stop a Logical Host

This task calls the stop control block of the Logical Host component.

1 **In the Common Tasks section of the N1 SPS browser interface, click SAP.**

2 **In the Logical Host section of the SAP Tasks page, click Stop.**

3 **Click Run.**

4 **Select a target host or target host set.**

5 **Provide the plan variable.**

Install path of the logical host component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 **Click the Run Plan (Includes Preflight) button.**

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to View All Logical Hosts

This task displays all the hosts on which the Logical Host component is installed.

1 **In the Common Tasks section of the N1 SPS browser interface, click SAP.**

2 **In the Logical Host section of the SAP Tasks page, click View All.**

The Hosts Where Installed table is displayed.

How to Check the Online Status of a Logical Host

This task calls the system service `isOnlineDefaultLh`, which determines whether the logical host is online. The status is checked by using the `ping` or `netstat` command.

To determine whether a logical host is online, the IP address is checked.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Logical Host section of the SAP Tasks page, click Online Status.**
3. **Click Run.**
4. **Select a target host or target host set.**
5. **Provide the plan variable.**

Install path of the logical host component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6. **Click the Run Plan (Includes Preflight) button.**

   The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to Check the Offline Status of a Logical Host

This task calls the system service `isOnlineDefaultLh`, which determines whether the logical host is online. The status is checked by using the `ping` or `netstat` command.

To determine whether a logical host is offline, the IP address is checked.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Logical Host section of the SAP Tasks page, click Offline Status.**
3. **Click Run.**
4. **Select a target host or target host set.**
5. **Provide the plan variable.**

Install path of the logical host component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 **Click the Run Plan (Includes Preflight) button.**

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

Creating and Managing HA Storage Devices

The SAP Tasks page of the software enables you to create and manage storage.

Note – The SAP AC environment is not supported.

This section describes the following tasks:

- "How to Create HA Storage Devices" on page 45
- "How to Delete HA Storage Devices" on page 47
- "How to Start HA Storage Devices" on page 47
- "How to Stop HA Storage Devices" on page 48
- "How to View All HA Storage Devices" on page 49
- "How to Check the Online Status of HA Storage Device" on page 49
- "How to Check the Offline Status of HA Storage Device" on page 49

▼ How to Create HA Storage Devices

This task creates the Highly Available Storage (HAS) targetable component in a resource group.

Note – This task is a markOnly task.

---

1 **In the Common Tasks section of the N1 SPS browser interface, click SAP.**

2 **In the Storage Management section of the SAP Tasks page, click Create.**

3 **Click Run.**

4 **In the Plan Parameters table, select the variable settings for the `HAStoragePlus` component.**

- If the variable settings have been created for this component, select the appropriate settings from the drop-down menu.
- If the variable settings are not available from the drop-down menu:
  a. click Select From List.

     The Select Variable Settings From List window displays.

     - To create a new variable settings set, click Create Set and type a Set Name.

The following list provides commonly updated variables for the HAStoragePlus component. To create a value for the component variable, click the check box in the component variable's row.

Note – For information about component variables ending in `UserExit`, see "User Exits" on page 95.

`groupName`	This is a required field. **Note –** In the Sun Cluster environment, the groupName must equal the Sun Cluster resource group name.
`groupDescription`	A description of the group.
`resourceName`	Required in the Sun Cluster environment. The resourceName must equal the Sun Cluster resource name for the Sun Cluster envType.
`envType`	This is a required field. Identifies if this component will be deployed to a default, Sun Cluster, or SAP AC environment. Value can be : ac, sc, or default. Default value: `default`.
`createdBy`	Identifies the installer of the component.
`volumeManager`	There are two possible values: `vxvm` for Veritas and `svm` for Solaris Volume Manager. **Note –** If you are going to type a value in the Device Groups to be Imported plan variable, then you must enter a value for the `volumeManager` component variable.
dgForceStartOptions	Options to use if you need to forcefully bring the device group online. Default is set to force options for vxvm. Default value: `-Ct`
`targetRefName`	Virtual host name.

b. Click Save.

- To use component variables from another component, click Import Set.

  For more information about importing variable sets, see "How to Run a Plan" in *Sun N1 Service Provisioning System 5.2 Operation and Provisioning Guide*.

5 Select a target host or target host set.

6 Provide the plan variable.

Device groups to be imported	Comma separated list. Device group is a free format string. For example, cidg, dbdg. The plug–in imports the device groups to the current machine (targetHost).

Note – If this variable is set, you must set the `volumeManager` component variable.

7 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to Delete HA Storage Devices

Plan to delete High Availability Storage (HAS) component.

Note – This task is a markOnly task.

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Storage Management section of the SAP Tasks page, click Delete.

3 Click Run.

4 Select a target host or target host set.

5 Provide the plan variable.

Install path of the HAS component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to Start HA Storage Devices

Prior to starting the HA Storage , the plug-in does not check any dependencies. After startup, the plug-in verifies that the main process is running. The main process for the SAP Application Server is the main dispatcher process.

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Storage Management section of the SAP Tasks page, click Start.

3 **Click Run.**

4 **Select a target host or target host set.**

5 **Provide the plan variables.**

Install path of the HAS component
This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

Force start the HAS component after normal start failed in the default environment
For more information, see the vxdg(1M) man page.

Caution – Make sure the device groups are not being used on another machine.

6 **Click the Run Plan (Includes Preflight) button.**

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to Stop HA Storage Devices

This task calls the `stop` control block of the HAS component.

1 **In the Common Tasks section of the N1 SPS browser interface, click SAP.**

2 **In the Storage Management section of the SAP Tasks page, click Stop.**

3 **Click Run.**

4 **Select a target host or target host set.**

5 **Provide the plan variable.**

Install path of the HAS component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 **Click the Run Plan (Includes Preflight) button.**

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to View All HA Storage Devices

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Storage Management section of the SAP Tasks page, click View All.**
   The Host Where Installed table is displayed.

How to Check the Online Status of HA Storage Device

Plan to check the online status of a High Availability Storage (HAS) component. Status is checked through corresponding volume manager commands.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Storage Management section of the SAP Tasks page, click Online Status.**
3. **Click Run.**
4. **Select a target host or target host set.**
5. **Provide the plan variables.**

Install path of the HAS component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6. **Click the Run Plan (Includes Preflight) button.**
   The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to Check the Offline Status of HA Storage Device

Plan to check the offline status of the High Availability Storage (HAS) component. Status is checked through corresponding volume manager commands.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Storage Management section of the SAP Tasks page, click Offline Status.**
3. **Click Run.**
4. **Select a target host or target host set.**
5. **Provide the plan variables.**

Install path of the HAS component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 **Click the Run Plan (Includes Preflight) button.**

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

Sharing and Managing Network File Systems

This section describes the following tasks:

- "How to Create Shared Network File Systems" on page 50
- "How to Delete Shared Network File Systems" on page 51
- "How to Share Network File Systems" on page 52
- "How to Unshare Network File Systems" on page 53
- "How to View All Network File Systems" on page 53
- "How to Check the Shared Status of Network File Systems" on page 54
- "How to Check the Unshared Status of Network File Systems" on page 54

Note – The SAP AC environment is not supported.

▼ How to Create Shared Network File Systems

This task creates the network file system (NFS) share component.

Note – This task is a markOnly task.

---

1 **In the Common Tasks section of the N1 SPS browser interface, click SAP.**

2 **In the Network File System (NFS) Share section of the SAP Tasks page, click Create.**

3 **Click Run.**

4 **In the Plan Parameters table, select the variable settings for the `NFSShare` component.**

- If the variable settings have been created for this component, select the appropriate settings from the drop-down menu.
- If the variable settings are not available from the drop-down menu,
  a. click Select From List.

     The Select Variable Settings From List window displays.
     - To create a new variable settings set, click Create Set and type a Set Name.

The following list provides commonly updated variables for the `NFSShare` component. To create a value for the component variable, click the check box in the component variable's row.

Note – For information about component variables ending in `UserExit`, see "User Exits" on page 95.

`groupName`	This is a required field. **Note –** In the Sun Cluster environment, the groupName must equal the Sun Cluster resource group name.
`groupDescription`	A description of the group.
`resourceName`	Required for the Sun Cluster environment. The `resourceName` must equal the Sun Cluster resource name for the Sun Cluster `envType`.
`envType`	Identifies into which environments this component will be deployed. Either default or Sun Cluster. Value can be : default or sc.
`createdBy`	Identifies the installer of the component.
`targetRefName`	Virtual host name. Derived from other variables.

b. Click Save.

- To use component variables from another component, click Import Set.

  For more information about importing variable sets, see "How to Run a Plan" in *Sun N1 Service Provisioning System 5.2 Operation and Provisioning Guide*.

5 Select a target host or target host set.

6 Provide the plan variables.

Absolute path of NFS shares	Required for the default environment. A comma-delimited list.
NFS share options	Required for the default environment. Default value: `rw`.

7 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to Delete Shared Network File Systems

This task describes how to delete a Network File System (NFS) share component.

Note – This task is a markOnly task.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Network File System (NFS) Share section of the SAP Tasks page, click Delete.**
3. **Click Run.**
4. **Select a target host or target host set.**
5. **Provide the plan variable.**

Install path of the NFS share component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6. **Click the Run Plan (Includes Preflight) button.**

   The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to Share Network File Systems

The NFS targetable component contains information about the file systems being shared via NFS. Because the file systems being shared are stored as a virtual host variable, you can add file systems to be shared after the component has been installed.

The virtual host name will be set to the same value as `installPath` of the NFS component.

This task calls the system service `startNfs` which does the following:

- In the default environment, share the file systems by using the UNIX `share` command.
- In the Sun Cluster environment, call the Sun Cluster `scswitch -ej` command to start the NFS.
- In the SAP AC environment, it is not applicable.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Network File System (NFS) Share section of the SAP Tasks page, click Share.**
3. **Click Run.**
4. **Select a target host or target host set.**
5. **Provide the plan variable.**

Install path of the NFS share component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to Unshare Network File Systems

This task calls the system service `stopNfs`, which does the following:

- In the default environment, calls the `unshare` command to stop the NFS resource.
- In the Sun Cluster environment, calls the Sun Cluster `scswitch -nj` command to stop the NFS resource.
- In the SAP AC environment, this is not applicable.

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Network File System (NFS) Share section of the SAP Tasks page, click Unshare.

3 Click Run.

4 Select a target host or target host set.

5 Provide the plan variable.

Install path of the NFS share component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to View All Network File Systems

This task displays all the hosts on which the Network File Systems component is installed.

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Network File System (NFS) Share section of the SAP Tasks page, click View All.

The Hosts Where Installed table is displayed.

How to Check the Shared Status of Network File Systems

This task determines whether the file system is shared.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Network File System (NFS) Share section of the SAP Tasks page, click Share Status.**
3. **Click Run.**
4. **Select a target host or target host set.**
5. **Provide the plan variable.**

Install path of the NFS share component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6. **Click the Run Plan (Includes Preflight) button.**

   The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to Check the Unshared Status of Network File Systems

This task identifies the file systems that are not shared.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Network File System (NFS) Share section of the SAP Tasks page, click Unshare Status.**
3. **Click Run.**
4. **Select a target host or target host set.**
5. **Provide the plan variable.**

Install path of the NFS share component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6. **Click the Run Plan (Includes Preflight) button.**

   The Deployment Results page is displayed. If the plan fails, error messages are displayed.

Mounting and Managing Network File Systems

The `NfsMount` component contains information about which file systems are being mounted via NFS. This information cannot be modified once the component is installed.

Note – The Sun Cluster and SAP AC environments are not supported.

This section describes the following tasks:

- "How to Create Network File System Mounts" on page 55
- "How to Delete Network File System Mounts" on page 56
- "How to Mount Network File Systems" on page 57
- "How to Unmount Network File Systems" on page 57
- "How to View All Mounted Network File Systems" on page 58
- "How to Check Network File Systems Mount Status" on page 58
- "How to Check Network File Systems Unmount Status" on page 59

▼ How to Create Network File System Mounts

This task creates the network file system (NFS) mount component.

Note – This task is a markOnly task.

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1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**

2. **In the Network File System (NFS) Mount section of the SAP Tasks page, click Create.**

3. **Click Run.**

4. **In the Plan Parameters table, select the variable settings for the `NFSMount` component.**

   - If the variable settings have been created for this component, select the appropriate settings from the drop-down menu.
   - If the variable settings are not available from the drop-down menu,
     a. click Select From List.

        The Select Variable Settings From List window displays.

        - To create a new variable settings set, click Create Set and type a Set Name.

          The following list provides commonly updated variables for the `NFSShare` component. To create a value for the component variable, click the check box in the component variable's row.

Note – For information about component variables ending in `UserExit`, see "User Exits" on page 95.

`groupName`	This is a required field. **Note –** In the Sun Cluster environment, the groupName must equal the Sun Cluster resource group name.
`groupDescription`	A description of the group.
`resourceName`	Required for the Sun Cluster environment. The `resourceName` must equal the Sun Cluster resource name for the Sun Cluster `envType`.
`envType`	The environment type can only be default.
`createdBy`	Identifies the installer of the component.
`nfsServerName`	Required for the default environment. The logical host name for the NFS server.
`fileSystemMountPoint`	Required for the default environment. A comma-delimited list of directories.

b. Click Save.

- To use component variables from another component, click Import Set.

  For more information about importing variable sets, see "How to Run a Plan" in *Sun N1 Service Provisioning System 5.2 Operation and Provisioning Guide*.

5 Select the target host or target host set.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to Delete Network File System Mounts

This task describes how to delete a network file system (NFS) mount component.

Note – This task is a markOnly task.

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Network File System (NFS) Mount section of the SAP Tasks page, click Delete.

3. **Click Run.**
4. **Select target host or target host set.**
5. **Provide the plan variable.**

Install path of the NFS mount component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6. **Click the Run Plan (Includes Preflight) button.**

   The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to Mount Network File Systems

This task calls the system service `startNfsMount` which does the following:

- In the default environment, this task shares the file systems by using the UNIX `mount` command.
- In the Sun Cluster environment, the appropriate Sun Cluster command is called.
- In the SAP AC environment, this task is not applicable.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Network File System (NFS) Mount section of the SAP Tasks page, click Mount.**
3. **Click Run.**
4. **Select target host or target host set.**
5. **Provide the plan variable.**

Install path of the NFS mount component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6. **Click the Run Plan (Includes Preflight) button.**

   The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to Unmount Network File Systems

This task calls system service `stopNfsMount` which does the following:

- In the default environment, this task calls the `umount` command to stop the NFS mount resource.

- In Sun Cluster environment, the appropriate Sun Cluster command is called.
- In SAP AC environments, this task is not applicable.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Network File System (NFS) Mount section of the SAP Tasks page, click Unmount.**
3. **Click Run.**
4. **Select target host or target host set.**
5. **Provide the plan variable.**

Install path of the NFS mount component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.
Force unmounting the filesystem	This check box is selected by default.

6. **Click the Run Plan (Includes Preflight) button.**
   The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to View All Mounted Network File Systems

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Network File System (NFS) Mount section of the SAP Tasks page, click View All.**
   The Hosts Where Installed table is displayed.

▼ How to Check Network File Systems Mount Status

Plan to verify the network file systems (NFS) are mounted.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Network File System (NFS) Mount section of the SAP Tasks page, click Mount Status.**
3. **Click Run.**
4. **Select target host or target host set.**
5. **Provide the plan variable.**

Install path of the NFS mount component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to Check Network File Systems Unmount Status

Plan to verify the network file systems (NFS) are mounted.

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Network File System (NFS) Mount section of the SAP Tasks page, click Unmount Status.

3 Click Run.

4 Select target host or target host set.

5 Provide the plan variable.

Install path of the NFS mount component	Required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

Creating and Managing Oracle Databases

The Tasks page of the SAP plug-in enables you to create and manage Oracle databases.

This section describes the following tasks:

- "How to Create the Oracle Database" on page 60
- "How to Delete the Oracle Database" on page 61
- "How to Start the Oracle Database" on page 62
- "How to Stop the Oracle Database" on page 63
- "How to View All Oracle Databases" on page 63
- "How to Check the Online Status of an Oracle Database" on page 63
- "How to Check the Offline Status of an Oracle Database" on page 64

▼ How to Create the Oracle Database

This task creates the Oracle database component. This does not create anything at the OS level.

Note – This task is a markOnly task.

---

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Oracle Database section of the SAP Tasks page, click Create.

3 Click Run.

4 In the Plan Parameters table, select the variable settings for the `Oracle` component.

- If the variable settings have been created for this component, select the appropriate settings from the drop-down menu.
- If the variable settings are not available from the drop-down menu:
  a. Click Select From List.

     The Select Variable Settings From List window displays.

     - To create a new variable settings set, click Create Set and type a Set Name.

       The following list provides commonly updated variables for the `Oracle` component. To create a value for the component variable, click the check box in the component variable's row.

Note – For information about component variables ending in `UserExit`, see "User Exits" on page 95.

`groupName`	This is a required field. **Note –** In the Sun Cluster environment, the groupName must equal the Sun Cluster resource group name.
`groupDescription`	A description of the group.
`resourceName`	Required for the Sun Cluster environment. The `resourceName` must equal the Sun Cluster Oracle Server resource name for the Sun Cluster `envType`.
`envType`	Identifies whether this component will be deployed to a default, Sun Cluster, or SAP AC environment. Value can be : ac, sc, or default. Default value: `default`.
`createdBy`	Identifies the installer of the component.

`dbLhName`	Required for the default environment. Logical host name for the database.
`oracleSid`	Required for the default environment. System ID (SID) for the database.
`oracleEnvFile`	Required for the default environment. Absolute path of the Oracle environment file. For example, /oracle/*SID*.dbenv_*host*.sh.
`listenerName`	Required for the Sun Cluster environment. Oracle listener name. Default value: `LISTENER`.
`listenerResourceName`	The `listenerResourceName` must equal the Sun Cluster Oracle Listener resource name for the Sun Cluster `envType`
`accServiceID`	Required for the SAP AC environment. The service ID of the Oracle instance (only applicable in the SAP AC environment.)
`srmProject`	The Solaris Resource Management (SRM) project name. Default value: default.

b. Click Save.

- To use component variables from another component, click Import Set.

  For more information about importing variable sets, see "How to Run a Plan" in *Sun N1 Service Provisioning System 5.2 Operation and Provisioning Guide*.

5 Select a target host or target host set.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to Delete the Oracle Database

This task deletes the Oracle database component. This does not delete anything at the OS level.

Note – This task is a markOnly task.

---

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Oracle Database section of the SAP Tasks page, click Delete.

3 Click Run.

4 Select a target host or target host set.

5 Provide the plan variable.

Install path of the Oracle component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to Start the Oracle Database

Prior to starting the Oracle database, the plug-in does not check any dependencies. After the startup, the plug-in verifies that the main processes are running. The main processes for the Oracle database are:

- At least one `oracle`*SID* process
- `ora_pmon_`*SID* process

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Oracle Database section of the SAP Tasks page, click Start.

3 Click Run.

4 Select a target host or target host set.

5 Provide the plan variables.

Install path of the Oracle component to start	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.
Force start the Oracle database	This option is required when the target host does not meet the SAPS requirement to start the SAP instance. See the SAP installation guide for minimum requirements for starting the SAP instance.

Note – This option is only applicable in the SAP AC environment.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to Stop the Oracle Database

If the SAP Oracle component is offline, the plan will successfully complete without any further action. If the SAP Oracle component is not offline, the plan stops the SAP component. If a normal stop fails and you have selected the Force Stop option, the plan will perform a hard stop by killing the main process. The plan then verifies that the SAP Oracle component is offline. If it is, the plan successfully completes. If the SAP component is not offline, the plan fails. The processes used to determine the status are:

- At least one `oracle`*SID* process
- `ora_pmon_`*SID* process

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Oracle Database section of the SAP Tasks page, click Stop.

3 Click Run.

4 Select a target host or target host set.

5 Provide the plan variables.

Install path of the Oracle component to stop	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.
Shutdown mode	Some valid shutdown modes are: normal, immediate, and abort. Default value: `immediate`.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to View All Oracle Databases

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Oracle Database section of the SAP Tasks page, click View All.

The Hosts Where Installed table is displayed.

How to Check the Online Status of an Oracle Database

If the main processes are present on the system, the resource is considered online. If any of the main processes are not present on the system, the plug-in identifies the resource as offline.

The main processes are:

- At least one `oracle`*SID* process
- `ora_pmon_`*SID* process

This task checks the online status of Oracle databases.

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Oracle Database section of the SAP Tasks page, click Online Status.

3 Click Run.

4 Select a target host or target host set.

5 Provide the plan variable.

Install path of the Oracle component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to Check the Offline Status of an Oracle Database

If the main processes are present on the system, the resource is considered online. If any of the main processes are not present on the system, the plug-in identifies the resource as offline.

The main processes are:

- At least one `oracle`*SID* process
- `ora_pmon_`*SID* process

This task checks the offline status of Oracle databases.

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Oracle Database section of the SAP Tasks page, click Offline Status.

3 Click Run.

4 Select a target host or target host set.

5 Provide the plan variable.

Install path of the Oracle component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 **Click the Run Plan (Includes Preflight) button.**

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

Creating and Managing SAP Central Instances

The Common Tasks page of the software enables you to create and manage SAP Central Instances.

This section describes the following tasks:

- "How to Create an SAP Central Instance" on page 65
- "How to Delete an SAP Central Instance" on page 67
- "How to Start an SAP Central Instance" on page 67
- "How to Stop an SAP Central Instance" on page 68
- "How to View All SAP Central Instances" on page 69
- "How to Check the Online Status of SAP Central Instances" on page 69
- "How to Check the Offline Status of SAP Central Instances" on page 70

▼ How to Create an SAP Central Instance

This task creates the SAP Central Instance component.

Note – This task is a markOnly task.

---

1 **In the Common Tasks section of the N1 SPS browser interface, click SAP.**

2 **In the SAP Central Instance section of the SAP Tasks page, click Create.**

3 **Click Run.**

4 **In the Plan Parameters table, select the variable settings for the `CentralInstance` component.**

- If the variable settings have been created for this component, select the appropriate settings from the drop-down menu.
- If the variable settings are not available from the drop-down menu:
  a. Click Select From List.

     The Select Variable Settings From List window displays.
     - To create a new variable settings set, click Create Set and type a Set Name.

The following list provides commonly updated variables for the `CentralInstance` component. To create a value for the component variable, click the check box in the component variable's row.

Note – For information about component variables ending in `UserExit`, see "User Exits" on page 95.

`groupName`	This is a required field. **Note –** In the Sun Cluster environment, the groupName must equal the Sun Cluster resource group name.
`groupDescription`	Description of the group.
`resourceName`	Required for the Sun Cluster environment. The `resourceName` must equal the Sun Cluster resource name for the Sun Cluster `envType`.
`envType`	Identifies if this component will be deployed to a Default, Sun Cluster, or SAP AC environment. Value can be ac, sc, or default.
`createdBy`	Identifies the installer of the component.
`ciLhName`	Required field. Logical host name for the SAP Central Instance.
`sapSid`	Required field. The SAP system ID consists of three uppercase alphanumeric characters. The first character must be alphabetic.
`systemInstanceNumber`	Required field. The SAP Central Instance number consists of two digits.
`accServiceID`	Required for the SAP AC environment. The service ID of the SAP Central Instance (only applicable in the SAP AC environment).
`srmProject`	The Solaris Resource Management (SRM) project name. Default value: `default`.

b. Click Save.

- To use component variables from another component, click Import Set.

  For more information about importing variable sets, see "How to Run a Plan" in *Sun N1 Service Provisioning System 5.2 Operation and Provisioning Guide*.

5 Select a target host or target host set.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

Note – There is no code verification to enforce the required fields for the Sun Cluster and SAP AC environments when the components are created in the Sun N1 Service Provisioning System.

▼ How to Delete an SAP Central Instance

This task deletes the SAP Central Instance component in the SPS database. It does not delete anything at the OS level.

Note – This task is a markOnly task.

---

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the SAP Central Instance section of the SAP Tasks page, click Delete.

3 Click Run.

4 Select a target host or target host set.

5 Provide the plan variable.

Install path where the Central Instance is installed

This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to Start an SAP Central Instance

Prior to starting the SAP Central Instance, the plug-in does not check any dependencies. After the startup, the plug-in verifies that the main processes are running. The main processes for the SAP Central Instance are:

- `main dispatcher`
- `message server`
- two `dw` child processes from the main dispatcher

The plug-in starts the SAP CI instance by calling the SAP script `startsap_DVEBMGS_`*instance-num*`_`*logical-host*. If the default installation did not create this script, you need to create this script manually in the home directory of user *sid*`adm`.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the SAP Central Instance section of the SAP Tasks page, click Start.**
3. **Click Run.**
4. **Select a target host or target host set.**
5. **Provide the plan variables.**

Install path of the Central Instance component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.
Force start the SAP Central Instance	This option is required when the target host does not meet the SAPS requirement to start the SAP instance. See the SAP installation guide for minimum requirements for starting the SAP instance.

Note – This is only applicable in the SAP AC environment.

6. **Click the Run Plan (Includes Preflight) button.**

   The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to Stop an SAP Central Instance

If the SAP component is offline, the plan will complete successfully without any further action. If the SPS component is not offline, the plan stops the SAP component. If a normal stop fails and you have selected the Force Stop option, the plan will perform a hard stop by killing the main processes. The plan then verifies that the SAP component is offline. If it is, the plan completes successfully. If the SAP component is not offline, the plan fails. The processes used to determine the status are:

- `main dispatcher`
- `message server`
- At least two `dw` child processes

The plug–in stops the SAP CI instance by calling the SAP script `stopsap_DVEBMGS_`*instance-num–logical-host.*

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the SAP Central Instance section of the SAP Tasks page, click Stop.**

3 Click Run.

4 Select a target host or target host set.

5 Provide the plan variables.

Install path of the Central Instance component
: This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

Force stop SAP Central Instance after the graceful stop failed in the default environment
: This option is selected by default. In SC and AC environments, the corresponding Sun Cluster command or SAP AC command is called to start the component.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to View All SAP Central Instances

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the SAP Central Instance section of the SAP Tasks page, click View All.

The Hosts Where Installed table is displayed.

How to Check the Online Status of SAP Central Instances

If the main processes are present on the system, the resource is considered online. If any of the main processes are not present on the system, the plug-in identifies the resource as offline.

The main processes are:

- `main dispatcher`
- `message server`

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the SAP Central Instance section of the SAP Tasks page, click Online Status.

3 Provide the plan variable.

Install path of the SAP Central Instance component
: This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

4 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to Check the Offline Status of SAP Central Instances

If the main processes are present on the system, the resource is considered online. If any of the main processes are not present on the system, the plug-in identifies the resource as offline.

The main processes are:

- `main dispatcher`
- `message server`

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the SAP Central Instance section of the SAP Tasks page, click Offline Status.

3 Provide the plan variable.

Install path of the SAP Central Instance component
This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

4 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

Creating and Managing SAP Enqueue Servers

To guarantee high availability for your SAP System for all software and hardware components, use the standalone enqueue. The use of the standalone enqueue server means that the crucial enqueue server with lock table is kept as small as possible. Instead of the entire application server with enqueue work process and lock table, you have one slimline central instance consisting of the enqueue server and the message server only. Making this one central instance a high availability (HA) solution.

The standalone enqueue server provides the following benefits:

- The enqueue clients (SAP application servers) and the enqueue server communicate directly. The work process has a TCP connection to the enqueue server.
- You can implement the standalone enqueue server as part of the high availability enqueue server solution with replication server. The enqueue server is then more reliable.

Note – SAP AC is not supported.

This section describes the following tasks:

- "How to Create an SAP Enqueue Server" on page 71
- "How to Delete an SAP Enqueue Server" on page 72
- "How to Start an SAP Enqueue Server" on page 73
- "How to Stop an SAP Enqueue Server" on page 74
- "How to View All SAP Enqueue Servers" on page 74
- "How to Check the Online Status of an SAP Enqueue Server" on page 74
- "How to Check the Offline Status of an SAP Enqueue Server" on page 75

How to Create an SAP Enqueue Server

This task creates an SAP Enqueue Server component in the SPS database. The SAP Enqueue Server is created by the user at the OS level outside of the SAP plug–in.

Note – This task is a markOnly task.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the SAP Enqueue Server section of the SAP Tasks page, click Create.**
3. **Click Run.**
4. **In the Plan Parameters table, select the variable settings for the `Enqueue Server` component.**
   - If the variable settings have been created for this component, select the appropriate settings from the drop-down menu.
   - If the variable settings are not available from the drop-down menu:
     a. Click Select From List.

        The Select Variable Settings From List window displays.

        - To create a new variable settings set, click Create Set and type a Set Name.

          The following list provides commonly updated variables for the `Enqueue Server` component. To create a value for the component variable, click the check box in the component variable's row.

          Note – For information about component variables ending in `UserExit`, see "User Exits" on page 95.

          `groupName` This is a required field.

	Note – In the Sun Cluster environment, the `groupName` must equal the Sun Cluster resource group name.
`groupDescription`	A description of the group.
`resourceName`	This is a required field. The `resourceName` must equal the Sun Cluster resource name for the Sun Cluster `envType`.
`envType`	This is a required field. Identifies whether this component is deployed to a default or Sun Cluster environment. Value can be `default` or `sc`. Default value: `default`.
`createdBy`	Identifies the installer of the component.
`sapSid`	Required for the default and Sun Cluster environment. The SAP system ID consists of three uppercase alphanumeric characters. The first character must be a letter.
`instanceNumber`	Required for the default and Sun Cluster environment. The SAP Central Instance number consists of two digits.
`enqueueServerProfile`	Required for the default and Sun Cluster environment. The full path to the SAP Enqueue Server profile.
`stopSignal`	The signal used to stop the SAP Enqueue Server. Default value: `2`
`srmProject`	The Solaris Resource Management (SRM) project name. Default value: `default`.

b. Click Save.

- To use component variables from another component, click Import Set.

  For more information about importing variable sets, see "How to Run a Plan" in *Sun N1 Service Provisioning System 5.2 Operation and Provisioning Guide*.

5 Select a target host or a target host set.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to Delete an SAP Enqueue Server

This task deletes an SAP Enqueue Server component in SPS database. The SAP Enqueue Server created by the user at the OS level will not be deleted.

Note – This is a markOnly task.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the SAP Enqueue Server section of the SAP Tasks page, click Delete.**
3. **Click Run.**
4. **Select a target host or a target host set.**
5. **Provide the plan variable.**

Install path of the enqueue server	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6. **Click the Run Plan (Includes Preflight) button.**

   The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to Start an SAP Enqueue Server

Prior to starting the SAP Enqueue Server, the plug-in does not check any dependencies. After the startup, the plug-in verifies that the main process is running. The main process for the SAP Enqueue Server is the `enserver` process.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the SAP Enqueue Server section of the SAP Tasks page, click Start.**
3. **Click Run.**
4. **Select a target host or target host set.**
5. **Provide plan variable.**

Install path of the enqueue server component.	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6. **Click the Run Plan (Includes Preflight) button.**

   The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to Stop an SAP Enqueue Server

If the SAP component is offline, the plan will complete successfully without any further action. If the SAP component is not offline, the plan stops the SAP component.

If a normal stop fails and you have selected the Force Stop option, the plan will perform a hard stop by killing the main process. The plan then verifies that the SAP component is offline. If it is offline, the plan completes successfully. If the SAP component is not offline, the plan fails. The process used to determine the status is the `enserver` process.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the SAP Enqueue Server section of the SAP Tasks page, click Stop.**
3. **Click Run.**
4. **Select a target host or target host set.**
5. **Provide the plan variables.**

   Install path of the SAP enqueue server component
   This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

   Force stop SAP Enqueue Server after the graceful stop failed in the default environment.
   This option is selected by default.

How to View All SAP Enqueue Servers

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the SAP Enqueue Server section of the SAP Tasks page, click View All.**

   The Hosts Where Installed table is displayed.

How to Check the Online Status of an SAP Enqueue Server

If the main processes are present on the system, the resource is considered online. If any of the main processes are not present on the system, the plug-in identifies the resource as offline.

The main process is the `enserver` process.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**

2 **In the SAP Enqueue Server section of the SAP Tasks page, click Online Status.**

3 **Click Run.**

4 **Select a target host or a target host set.**

Note – Only select one host.

---

5 **Provide the plan variable.**

Install path of the enqueue server component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 **Click the Run Plan (Includes Preflight) button.**

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to Check the Offline Status of an SAP Enqueue Server

If the main processes are present on the system, the resource is considered online. If any of the main processes are not present on the system, the plug-in identifies the resource as offline.

The main process is the `enserver` process.

1 **In the Common Tasks section of the N1 SPS browser interface, click SAP.**

2 **In the SAP Enqueue Server section of the SAP Tasks page, click Offline Status.**

3 **Click Run.**

4 **Select a target host or a target host set.**

Note – Only select one host.

---

5 **Provide the plan variable.**

Install path of the enqueue server component.	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 **Click the Run Plan (Includes Preflight) button.**

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

Creating and Managing SAP Message Servers

The SAP Message Server is responsible for communication between the application servers. The SAP Message Server passes requests from one application server to another within the system.

The SAP Message Server also contains information about application server groups and the current load balancing within them. The SAP Message Server uses this information to choose an appropriate server when a user logs on to the system.

Note – SAP AC is not supported.

This section describes the following tasks:

- "How to Create an SAP Message Server" on page 76
- "How to Delete an SAP Message Server" on page 78
- "How to Start an SAP Message Server" on page 78
- "How to Stop an SAP Message Server" on page 79
- "How to View All SAP Message Server" on page 80
- "How to Check the Online Status of an SAP Message Server" on page 80
- "How to Check the Offline Status of an SAP Message Server" on page 80

▼ How to Create an SAP Message Server

This task creates an SAP Message Server component in SPS database. The SAP Message Server is created by the user at the OS level outside the SPS plug–in.

Note – This task is a markOnly task.

---

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the SAP Message Server section of the SAP Tasks page, click Create.

3 Click Run.

4 In the Plan Parameters table, select the variable settings for the `Message Server` component.

- If the variable settings have been created for this component, select the appropriate settings from the drop-down menu.
- If the variable settings are not available from the drop-down menu:
  a. Click Select From List.

     The Select Variable Settings From List window displays.
     - To create a new variable settings set, click Create Set and type a Set Name.

The following list provides commonly updated variables for the `Enqueue Server` component. To create a value for the component variable, click the check box in the component variable's row.

Note – For information about component variables ending in `UserExit`, see "User Exits" on page 95.

`groupName`	This is a required field. **Note –** In the Sun Cluster environment, the groupName must equal the Sun Cluster resource group name.
`groupDescription`	A description of the group.
`resourceName`	Required for default and Sun Cluster environment. The `resourceName` must equal the Sun Cluster resource name for the Sun Cluster `envType`.
`envType`	Identifies whether this component will be deployed to a default or Sun Cluster environment. Value can be `sc` or `default`. Default value: `default`.
`createdBy`	Identifies the installer of the component.
`sapSid`	Required for the default and Sun Cluster environment. The SAP system ID consists of three uppercase alphanumeric characters. The first character must be a letter.
`msgLhName`	Required for the default and Sun Cluster environment. Logical host name for the message server.
`instanceName`	Required for the default and Sun Cluster environment. Name of the instance (INSTANCE_NAME in SAP start profile). The name must contain at least three uppercase alpha characters and two numeric characters. For example, `ABC01`.
`srmProject`	The Solaris Resource Management (SRM) project name. Default value: `default`.

b. Click Save.

- To use component variables from another component, click Import Set.

  For more information about importing variable sets, see "How to Run a Plan" in *Sun N1 Service Provisioning System 5.2 Operation and Provisioning Guide*.

5 Select target host or target host set.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

Note – There is no code verification to enforce the required fields for the Sun Cluster environment when the components are created in the Sun N1 Service Provisioning System.

▼ How to Delete an SAP Message Server

Plan to delete an SAP Message Server component in the SPS database. The SAP Message Server created by the user at the OS level is not deleted.

Note – This is a markOnly task.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the SAP Message Server section of the SAP Tasks page, click Delete.**
3. **Click Run.**
4. **Select target host or target host set.**
5. **Provide the plan variable.**

Install path of the message server	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6. **Click the Run Plan (Includes Preflight) button.**

   The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to Start an SAP Message Server

Prior to starting the SAP Message Server, the plug-in does not check any dependencies. After the startup, the plug-in verifies that the main process is running. The main process for the SAP Message Server is the `message server` process.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the SAP Message Server section of the SAP Tasks page, click Start.**
3. **Click Run.**
4. **Select target host or target host set.**
5. **Provide the plan variable.**

Install path of the message server component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to Stop an SAP Message Server

If the SAP component is offline, the plan will complete successfully without any further action. If the SAP component is not offline, the plan stops the SAP component.

If a normal stop fails and you have selected the Force Stop option, the plan will perform a hard stop by "killing" the main process. The plan then verifies that the SAP component is offline. If it is, the plan completes successfully.

If the SAP component is not offline, the plan fails. The process used to determine the status is the `message server` process.

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the SAP Message Server section of the SAP Tasks page, click Stop.

3 Click Run.

4 Select target host or target host set.

5 Provide the plan variables.

Install path of the SAP message server component
: This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

Force stop SAP Message Server after the graceful stop failed in the default environment
: This option is selected by default.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to View All SAP Message Server

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the SAP Message Server section of the SAP Tasks page, click View All.**

   The Hosts Where Installed table is displayed.

▼ How to Check the Online Status of an SAP Message Server

If the main processes are present on the system, the resource is considered online. If any of the main processes are not present on the system, the plug-in identifies the resource as offline.

The main process for the SAP Message Server is the `message server` process.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the SAP Message Server section of the SAP Tasks page, click Online Status.**
3. **Click Run.**
4. **Select a target host or target host set.**
5. **Provide the plan variable.**

   Install path of the SAP message server component
   This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.
6. **Click the Run Plan (Includes Preflight) button.**

   The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to Check the Offline Status of an SAP Message Server

If the main processes are present on the system, the resource is considered online. If any of the main processes are not present on the system, the plug-in identifies the resource as offline.

The main process for the SAP Message Server is the `message server` process.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the SAP Message Server section of the SAP Tasks page, click Offline Status.**

3 **Click Run.**

4 **Select a target host or target host set.**

5 **Provide the plan variable.**

Install path of the SAP message server component
This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 **Click the Run Plan (Includes Preflight) button.**

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

Creating, Managing and Installing SAP Application Servers

The Common Tasks page of the software enables you to create and manage instances of SAP Application Servers.

This section presents the tasks necessary to create SAP Application Servers and to install SAP Application Servers:

- "Application Server Creation and Management" on page 81
- "Installing Application Servers" on page 87

Application Server Creation and Management

The following procedures install, uninstall, and manage the SAP Application Server.

- "How To Create an Application Server" on page 81
- "How To Delete an Application Server" on page 83
- "How To Start an Application Server" on page 84
- "How To Stop an SAP Application Server" on page 85
- "How To View All Application Server Instances" on page 85
- "How To Check the Online Status of an Application Server Instance" on page 86
- "How To Check the Offline Status of an Application Server Instance" on page 86

▼ How To Create an Application Server

This task creates an SAP Application Server entry in the SPS database.

Note – This task is a markOnly task.

---

1 **In the Common Tasks section of the N1 SPS browser interface, click SAP.**

2 **In the Application Server section of the SAP Tasks page, click Create.**

3 Click Run.

4 In the Plan Parameters table, select the variable settings for the `AppServer` component.

- If the variable settings have been created for this component, select the appropriate settings from the drop-down menu.
- If the variable settings are not available from the drop-down menu:
  a. Click Select From List.

     The Select Variable Settings From List window displays.

     - To create a new variable settings set, click Create Set and type a Set Name.

       The following list provides commonly updated variables for the `AppServer` component. To create a value for the component variable, click the check box in the component variable's row.

Note – For information about component variables ending in `UserExit`, see "User Exits" on page 95.

`groupName`	This is a required field. **Note –** In the Sun Cluster environment, the `groupName` must equal the Sun Cluster resource group name.
`groupDescription`	A description of the group.
`resourceName`	Required for the Sun Cluster environment.
`envType`	Identifies whether this component will be deployed to a default, Sun Cluster, or SAP AC environment. Value can be `ac`, `sc`, or `default`.
`createdBy`	Identifies the installer of the component.
`ciLhName`	Required for default install only. This value names the Central Instance logical host.
`asLhName`	Required for the default environment. This value names the Application Server logical host.
`sapSid`	Required for the default environment. The SAP system ID consists of three uppercase alphanumeric characters. The first character must be a letter.
`asSystemInstanceNumber`	Required for the default environment. Application Server instance number. Generate from variable input.
`instanceSize`	Application Server instance size which is generated from variable input. Possible values are small, medium, or big. Default value: `medium`.

`accServiceID`	Required for the SAP AC environment. The service ID of the SAP Application Server instance (only applicable in the SAP AC environment).
`srmProject`	The Solaris Resource Management (SRM) project name. Default value: `default`.
`ciInstanceName`	Required for the default environment. The Central Instance name (as in the SAP Central Instance start profile).
`isNewSapVersion`	Required for the default environment. `TRUE` means the central scripts are used to start and stop the application server. `FALSE` means instance–specific start and stop scripts from the SAP user home directory will be used to start and stop the application server. Default value: `TRUE`.

b. Click Save.

- To use component variables from another component, click Import Set.

  For more information about importing variable sets, see "How to Run a Plan" in *Sun N1 Service Provisioning System 5.2 Operation and Provisioning Guide*.

5 Select the target host or target host set.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How To Delete an Application Server

This task deletes an SAP Application Server entry from the SPS database.

Note – This task is a markOnly task.

---

1 In the Common Tasks section of the Sun N1 SPS browser interface, click SAP.

2 In the Application Server section of the SAP Tasks page, click Delete.

3 Click Run.

4 Select the target host or target host set.

5 Provide the plan variable.

InstallPath of the AppServer component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How To Start an Application Server

Prior to starting the SAP Application Server, the plug-in does not check any dependencies. After the startup, the plug-in verifies that the main processes are running. The main processes for the SAP Application Server are:

- `main dispatcher`
- two `dw` processes which are children of the main dispatcher process

If the SAP Application Server is installed with the central script to start and stop it, then the plug in starts the application server instance by using the central SAP script like the following:

`startsap r3 D`*instance-num_logical-host*

If the SAP Application Server is installed without the central script, then the plug–in starts it by using the following script in the home directory of user *sid*`adm`:

`startsap_D`*instance-num_logical-host*

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Application Server section of the SAP Tasks page, click Start.

3 Click Run.

4 Select the target host or target host set.

5 Provide the plan variables.

InstallPath of the SAP application server component to start

This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

Force start the application server instance on a small server (currently only applicable for the SAP AC environment)

This option is required when the target host does not meet the SAPS requirement to start the SAP instance. See the SAP Installation Guide for the minimum requirements for starting the SAP instance.

Note – This option is only applicable in the SAP AC environment.

---

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How To Stop an SAP Application Server

If the SAP component is offline, the plan will complete successfully without any further action. If the SAP component is not offline, the plan stops the SAP component.

If a normal stop fails and the user has selected the Force Stop option, the plan will perform a hard stop by killing the main process. The plan then verifies that the SAP component is offline. If it is, the plan completes successfully. If the SAP component is not offline, the plan fails. The processes used to determine the status follow:

- `main dispatcher`
- two `dw` processes which are children of the main dispatcher process

If the SAP Application Server is installed with the central script to start and stop it, then the plug–in stops the application server instance by using the central SAP script, as the following:

`stopsap r3 D`*instance-num_logical-host*

If the SAP Application Server is installed without the central script, then the plug–in stops it by using the following script in the home directory of user *sid*`adm`:

`stopsap_D`*instance-num_logical-host*

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Application Server section of the SAP Tasks page, click Stop.

3 Click Run.

4 Select the target host or target host set.

5 Provide the plan variables.

InstallPath of the SAP application server component to stop
This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

Force stop SAP application server after the graceful stop failed in the default environment
This option is selected by default.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How To View All Application Server Instances

When executing this task, the Hosts Where Installed table is displayed with entries for each SAP Application Server installation.

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 **In the Application Server section of the SAP Tasks page, click View All.**

The Hosts Where Installed table is displayed.

How To Check the Online Status of an Application Server Instance

If the main processes are present on the system, the resource is considered online. If any of the main processes are not present on the system, the plug-in identifies the resource as offline.

Note – SAP AC is not supported.

The main processes are:

- `main dispatcher`
- two `dw` processes which are children of the main dispatcher process

1 **In the Common Tasks section of the N1 SPS browser interface, click SAP.**

2 **In the Application Server section of the SAP Tasks page, click Online Status.**

3 **Click Run.**

4 **Select the target host or target host set.**

5 **Provide the plan variable.**

InstallPath of the application server component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 **Click the Run Plan (Includes Preflight) button.**

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How To Check the Offline Status of an Application Server Instance

If the main processes are present on the system, the resource is considered online. If any of the main processes are present on the system, the plug-in identifies the resource as not offline. If none of the main sap processes are present on the system, the plug-in identifies the resource as offline.

The main processes are:

- `main dispatcher`
- two `dw` processes which are children of the main dispatcher process

---

Note – SAP AC is not supported.

---

1 **In the Common Tasks section of the N1 SPS browser interface, click SAP.**

2 **In the Application Server section of the SAP Tasks page, click Offline Status.**

3 **Click Run.**

4 **Select the target host or target host set.**

5 **Provide the plan variable.**

InstallPath of the application server component	This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

6 **Click the Run Plan (Includes Preflight) button.**

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

Installing Application Servers

The two different installations are:

- "Installing the Application Server With a Default Exception File" on page 87
- "Installing the Application Server With a Custom Exception File" on page 90

Installing the Application Server With a Default Exception File

The SAP Plug-In comes with an SAP Application Server default exception file. This default exception file has all the necessary component variables to perform a default installation.

- "How to Install an SAP Application Server With a Default Exception File" on page 87
- "How to Uninstall an SAP Application Server With a Default Exception File" on page 89
- "How to View All SAP Application Server Instances With a Default Exception File" on page 90

▼ How to Install an SAP Application Server With a Default Exception File

In order for the application server deployment to succeed, the superuser must have read/write privileges for SAP file systems on the machine where the new instance of application server is to be deployed. The SAP file systems must be shared by using one of the following options:

- **`rw,anon=0`**
- **`rw,root=`***client1:client2:client3*

1 **In the Common Tasks section of the N1 SPS browser interface, click SAP.**

2 **In the Application Server With Default Exception File section of the SAP Tasks page, click Install.**

3 **Click Run.**

4 In the Plan Parameters table, select the variable settings for the `AppServerWithDefaultExceptionFile` component.

- If the variable settings have been created for this component, select the appropriate settings from the drop-down menu.
- If the variable settings are not available from the drop-down menu,
  a. Click Select From List.

     The Select Variable Settings From List window displays.

     - To create a new variable settings set, click Create Set and type a Set Name.

       The following list provides commonly updated variables for the `AppServerWithDefaultExceptionFile` component. To create a value for the component variable, click the check box in the component variable's row.

Note – For information about component variables ending in `UserExit`, see "User Exits" on page 95.

`resourceName`	Required for the Sun Cluster environment.
`groupName`	This is a required field. **Note –** In the Sun Cluster environment, the `groupName` must equal the Sun Cluster resource group name.
`installPath`	Install location. This path can be modified by the user.
`ciLhName`	Required for the default environment installation. This value names the Central Instance logical host.
`asLhName`	Required for the default environment. The value names the Application Server logical host.
`sapSid`	Required for the default environment. The SAP system ID consists of three uppercase alphanumeric characters. The first character must be a letter.
`asSystemInstanceNumber`	Required for the default environment. The Application Server instance number.
`ciInstanceName`	This is a required field. Central Instance number, which is generated from variable input.
`instanceSize`	Application Server instance size. Possible value are `small`, `medium`, and `large`. Default value: `medium`.
`envType`	Identifies whether this component will be deployed to a default, Sun Cluster, or SAP AC environment. Value can be `ac`, `sc`, or `default`. Default value: `default`.

`accServiceID`	This SAP AC service ID is required for the SAP AC environment.
`srmProject`	The Solaris Resource Management (SRM) project name. Default value: `default`.
`isNewSapVersion`	This is a required field. `TRUE` means the central scripts are used to start and stop the application server. `FALSE` means instance–specific start and stop scripts from the SAP user home directory will be used to start and stop the application server. Default value: `default`.
createdBy	Identifies the installer of the component.

b. Click Save.

- To use component variables from another component, click Import Set.

  For more information about importing variable sets, see "How to Run a Plan" in *Sun N1 Service Provisioning System 5.2 Operation and Provisioning Guide*.

5 Select the target host or target host set.

6 Click the Run Plan (Includes Preflight) button.

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

How to Uninstall an SAP Application Server With a Default Exception File

Plan to uninstall the SAP Application Server along with the default exception file.

1 In the Common Tasks section of the N1 SPS browser interface, click SAP.

2 In the Application Server With Default Exception File section of the SAP Tasks page, click Uninstall.

3 Click Run.

4 Select the target host or target host set.

5 Provide the plan variable.

Install path for the application server installed with default exception file
: This is a required field. If you do not know the install path, return to the SAP Tasks page and click the View All link.

markOnly delete
: Selecting the `markOnly delete` check box deletes the Application Server component from the SPS database. If the `markOnly delete` check box is selected, the Application Server component is deleted from the SPS database and the Application Server is deleted at the OS level.

6 **Click the Run Plan (Includes Preflight) button.**

The Deployment Results page is displayed. If the plan fails, error messages are displayed.

▼ How to View All SAP Application Server Instances With a Default Exception File

1 **In the Common Tasks section of the N1 SPS browser interface, click SAP.**

2 **In the Application Server With Default Exception File section of the SAP Tasks page, click View All.**

The Host Where Installed table is displayed.

Installing the Application Server With a Custom Exception File

A custom exception file enables you to create a unique set of variables by which to deploy an application server.

This section describes the following tasks:

- "How to View All Exception File Components" on page 92
- "How to Create Application Server Components" on page 92
- "How to View All Application Server Components" on page 94
- "How to Create an Application Server With Custom Exception File Install Plan" on page 94

▼ How to Create Custom Exception File Components

The custom exception file enables you to provide and check in a custom exception file to SPS. You can then use the custom exception file to deploy the application server instead of the default exception file which is provided by the plug–in.

Before You Begin The custom exception file must be available on the machine where the custom exception file component is created.

1 **Create the custom exception file.**

For more information, see "Exception File Example" on page 105

2 **In the Common Task ssection of the N1 SPS browser interface, click SAP.**

3 **In the Application Server With Custom Exception File section of the SAP Tasks page, click Create Component.**

4 **Provide the component information.**

Component	This is a required field. This is the component name.
Type	Leave this value as `com.sun.sap#AppServerWithExceptionFile`.
Platform	Select a specific platform or leave the default value of `system#any`.

Label	Short description of the component.
Description	A description of the component.

5 Import Exception File from host.

a. Click the Select From List link.

b. Select a host from the Current Hosts Found list.

c. Click the Add Host to Main Window button.

d. Click Refresh.

e. Navigate to the exception file and click to select it.

6 Select additional options if desired.

- force check in when items have not changed
- remember the user that owns this item
- remember the group that owns this item
- path of the resource descriptor file

  For more information about the resource descriptor file, see "Using a Resource Descriptor File" in *Sun N1 Service Provisioning System 5.2 XML Schema Reference Guide*.

7 Click the Check In Selected Item button.

The Check In window is displayed.

8 Specify the component name.

You can change the component name if you wish. For example, **`MyCustomExceptionFileComponent`**.

9 Click the Change Folder link.

10 Change to the `/com/sun/n1aa/exceptionfiles` directory.

For more information, see Chapter 6, "Setting Up Folders," in *Sun N1 Service Provisioning System 5.2 System Administration Guide*.

11 Click the Change To Selected Folder button.

12 Click the Continue to Check In button.

The Components table is displayed.

How to View All Exception File Components

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Application Server With Custom Exception File section of the SAP Tasks page, click View All Components.**
3. **Click the View Current Component Check-Ins button.**

   The Default Exception File and any previously checked in Custom Exception files are displayed.

   If you do not see the components you checked in, click on the Change Folder link and change the folder to the one in which you created the components.

How to Create Application Server Components

This task creates an SAP Application Server component in the SPS database. This SAP Application Server is used by the Sun N1 Advanced Architecture for SAP Solutions to deploy and create a new SAP Application Server at the OS level.

1. **In the Common Tasks section of the N1 SPS browser interface, click SAP.**
2. **In the Application Server With Custom Exception File section of the SAP Tasks page, click Create Component.**
3. **Populate the component information.**

Note – For information about component variables ending in `UserExit`, see "User Exits" on page 95.

`Component`	This is a required field. This is the component name. The format of the component name is ASWith*custom-exception-filename*, where *custom-exception-filename* is the previously created component. For example, **`ASWithMyCustomExceptionFile`**. This component needs to be in the `/com/sun/n1aa/exceptionfiles` directory.
`Type`	Leave this value as `com.sun.sap#AppServerWithExceptionFile`.
`Platform`	Select a specific platform or leave the default value of `system#any`.
`Label`	A short description.
`Description`	An description of the component.
`Referenced Components`	a. Click the Reference Existing link for the Exception File component. b. Select the exception file.

c. Click the Reference Checked Components button.

The Add Component Variables table appears.

Note – This table will be empty if there are no component variables

d. Click the Continue to Reference Components button.

4 Populate the Component Variables.

`resourceName`	Required for the Sun Cluster environment.
`groupName`	This is a required field. **Note –** In the Sun Cluster environment, the `groupName` must equal the Sun Cluster resource group name.
`installPath`	Install location.
`ciLhName`	Required for the default environment installation. Central instance logical host.
`asLhName`	Required for the default environment. Application server logical host.
`sapSid`	Required for the default environment. SAP system ID (3 upper case alphanumeric.) The first character must be an alphabetic letter.
`asSystemInstanceNumber`	Required for the default environment. Application Server instance number.
`ciInstanceName`	This is a required field. Central Instance number. Generated from variable input.
`instanceSize`	Application Server instance size. Default value: `medium`.
`envType`	Identifies if this component will be deployed to a Default, Sun Cluster, or SAP AC environment. Value can be ac, sc, or default. Default value: `default`.
`accServiceID`	Required for the SAP AC environment. SAP AC service ID.
`srmProject`	The Solaris Resource Management (SRM) project name. Default value: default.
`isNewSAPVersion`	This is a required field. `TRUE` means the central scripts are user to start and stop the application server. `FALSE` means instance specific start and stop scripts from the SAP user home directory will be used to start and stop the application server. Default value: `TRUE`
`createdBy`	Identifies the installer of the component.

5 **Click Check In.**

6 **Click Continue to Check In.**

You have completed the creation of the application server with custom exception file component.

How to View All Application Server Components

1 **In the Common Tasks section of the N1 SPS browser interface, click SAP.**

2 **In the Application Server With Custom Exception File section of the SAP Tasks page, click View All Components.**

The components table is displayed.

How to Create an Application Server With Custom Exception File Install Plan

1 **Select the Application Server with Custom Exception File component.**

Perform one of the following options to begin the plan creation task:

- If you are in the Components Details window.
  a. Select default: install
- If you enter from the Common Tasks page.
  a. In the Common Tasks section of the N1 SPS browser interface, click SAP.
  b. In the Application Server With Custom Exception File section of the SAP Tasks page, click View All Components.
  c. Select the appropriate application server with custom exception file component.
  d. Select the `default:install` procedure from the component procedures table.

2 **Click Generate Plan With Checked Procedures.**

The plans details advanced edit page appears.

3 **Type the plan name**

The format of the plan name is **`Install`***component-name***`Plan`**. For example, `InstallASWithMyCustomExceptionFilePlan`.

4 **Edit the plan definition.**

a. Delete `<paramList>` **through** `</paramList>`

b. Delete `<argList>` **through** `</argList>`

5 **Click the Check In button.**

The Plans Details Edit Check In window appears.

Note – The following warning might appear and can be ignored.

```
warning – plan names and/or paths differ
```

---

6 **Click the Continue To Check In button.**

The Plans Details window appears.

7 **Click Done.**

The Plans table is displayed.

User Exits

The following user exits can be found in many of the variable settings of plans. The values of these component variables are absolute paths to the respective script file. The scripts need to be on the machines from which they are called. They can be any executables, for example, scripts or binaries.

`preStartUserExit`	Custom script users would like to run before starting the resource.
`postStartUserExit`	Custom script users would like to run after starting the resource.
`preStopUserExit`	Custom script users would like to run before stopping the resource.
`postStopUserExit`	Custom script users would like to run after stopping the resource.
`preRelocateUserExit`	Custom script users would like to run before relocating the resource.
`postRelocateUserExit`	Custom script users would like to run after relocating the resource.

Component Types

The SAP plug-in includes several specific component types. These component types enable you to quickly model many of the most common application components and to automatically associate install, uninstall, export, and snapshot behavior with a particular resource. Many of the component types are used by the software when you create and manage servers and clusters. As a result, there are only a few component types that you work with directly.

The GDS Component

The following plans are necessary for operating the Generic Data Service (GDS) component at the group level through the Sun N1 Advanced Architecture for SAP Solutions software.

- "How to Create a GDS Component Using the `GDSResourceType`" on page 96
- "How to Generate a Create Plan for a GDS Resource" on page 97
- "How to Generate a Delete Plan for a GDS Resource" on page 98
- "How to Generate a Start Plan for a GDS Resource" on page 99
- "How to Generate a Stop Plan for a GDS Resource" on page 101
- "How to Generate an isOnline Plan for a GDS Resource" on page 102
- "How to Generate an isOffline Plan for a GDS Resource" on page 103

Caution – The naming convention for the plans must follow the examples. If they do not, the plan will fail.

▼ How to Create a GDS Component Using the `GDSResourceType`

1. **In the Application Deployment section of the N1 SPS browser interface, click Components.**
2. **Change the folder to /com/sun/n1aa/GDS.**
3. **Click on create link for creating the component.**
4. **Enter the name of the component.**
5. **Select the type as untyped.**
6. **Insert the following text before the ending component element, `</component>`:**

```
<extends>
    <type name="com.sun.sap#GDSResourceType"></type>
</extends>

<installList>
    <installSteps name="createDependency" access="PROTECTED">
    <paramList>
           <param name="grpInstallPath"/>
    </paramList>
    <try>
        <block>
        <!-- Replace dependency name, RunLevel1, with your desired run-level. -->
        <!-- Following are the pre-defined dependency names -->
            <createDependency name="RunLevel1">
                <installedComponent name="Group" path="/com/sun/sap/resourcetypes"
```

```
                    installPath=":[grpInstallPath]"></installedComponent>
            </createDependency>
        </block>
        <catch>
            <raise message="Error in creating dependency: :[grpInstallPath]"/>
        </catch>
    </try>
    </installSteps>
</installList>
```

7 **Change the dependency name on line containing** `<createDependency>` **element.**

Valid dependency names are:

`RunLevel1` through `RunLevel5`
`NFSMount2Group`
`RunLevel7` through `RunLevel11`
`HAStoragePlus2Group`
`RunLevel13` through `RunLevel17`
`LogicalHost2Group`
`RunLevel19` through `RunLevel23`
`Oracle2Group`
`RunLevel25` through `RunLevel29`
`CentralInstance2Group`
`RunLevel31` through `RunLevel35`
`EnqueueServer2Group`
`RunLevel37` through `RunLevel41`
`MessageServer2Group`
`RunLevel43` through `RunLevel47`
`AppServerWithExceptionFile2Group`
`RunLevel49` through `RunLevel53`
`AppServer2Group`
`RunLevel55` through `RunLevel59`
`NFSShare2Group`
`RunLevel61` through `RunLevel65`

8 **Click Check In.**

9 **Click Continue to Check In.**

▼ How to Generate a Create Plan for a GDS Resource

This is a markOnly task.

Note – This plan does not have any plan parameters.

---

1. **In the Application Deployment section of the N1 SPS browser interface, click Components.**
2. **Change the folder to** `/com/sun/n1aa/GDS`**.**
3. **Click on the details link of the created GDS component.**
4. **Select the check box for the** `install:default` **procedure.**

   You can also select the check box for the `install:markOnly` procedure.

Note – Both default and markOnly installs are the same unless you overwrite the `installSteps` in the GDS component ?

---

5. **Click the Generate Plan With Checked Procedures link.**
6. **Type the name of the plan as Create***gds-component-name***Plan.**

   Where *gds-component-name* is the name of the component created in the task "How to Create a GDS Component Using the `GDSResourceType`" on page 96.
7. **In the XML text, in** `<executionPlan>` **element, change the name of the attribute to Create***gds-component-name***Plan.**
8. **Click Check In.**
9. **Click Continue to Check In.**

How to Generate a Delete Plan for a GDS Resource

This is a markOnly task.

Note – The `installPath` is the only plan parameter.

---

1. **In the Application Deployment section of the N1 SPS browser interface, click Components.**
2. **Change the folder to** `/com/sun/n1aa/GDS`**.**
3. **Click on the details link of the created GDS component.**
4. **Select the check box for the** `uninstall:default` **procedure.**

   You can also select the check box for the `uninstall:markOnly` procedure.

5 **Click on the Generate Plan With Checked Procedures link.**

6 **Enter the name of the plan as Delete*gds-component-name*Plan.**

Where *gds-component-name* is the name of the component created in section "How to Create a GDS Component Using the GDSResourceType" on page 96.

7 **In the XML text `<executionPlan>` element, change the name of the attribute to Delete*gds-component-name*Plan.**

8 **Before the `<simpleSteps>` element, add the `installPath` as the plan parameter.**

For example, include the following text to insert the plan parameter:

```
<paramList>
        <param name="installPath" default="" prompt="Install path of the GDS component"></param>
    </paramList>
```

9 **Add the `installPath=':[installPath]'` attribute to the `<installedComponent>` element in the XML text.**

For example:

Before adding the `installPath`.

```
<uninstall blockName='default'>
    <installedComponent name='gds' versionOp='=' version='1.0'
        path='/com/sun/n1aa/GDS'></installedComponent>
</uninstall>
```

After adding the `installPath`.

```
<uninstall blockName='default'>
    <installedComponent name='gds' versionOp='=' version='1.0'
    path='/com/sun/n1aa/GDS' installPath=':[installPath]'></installedComponent>
</uninstall>
```

10 **Click Check In.**

11 **Click Continue to Check In.**

▼ How to Generate a Start Plan for a GDS Resource

Note – The `installPath` is the only plan parameter.

1 **In the Application Deployment section of the N1 SPS browser interface, click Components.**

2 **Change the folder to `/com/sun/n1aa/GDS`.**

3. **Click on the details link of the created GDS component.**

4. **Select the check box for the `start` procedure.**

5. **Click on the Generate Plan With Checked Procedures link.**

6. **Enter the name of the plan as Start*gds-component-name*Plan.**

   Where *gds-component-name* is the name of the component created in section "How to Create a GDS Component Using the GDSResourceType" on page 96.

7. **In the XML text, in the `<executionPlan>` element, change the name of the attribute to Start*gds-component-name*Plan.**

8. **Before the `<simpleSteps>` element, delete the `<paramList>` entry containing forceStart parameter.**

9. **Before the `<simpleSteps>` element, add the `installPath` as the plan parameter.**

   For example, include the following text to insert the plan parameter:

```
<paramList>
    <param name="installPath" default=""
        prompt="Install path of the GDS component"></param>
</paramList>
```

10. **Delete arguments to start control, by deleting the `<argList>` line after `<call blockName='start'>`.**

11. **Add the `installPath=':[installPath]'` attribute to the `<installedComponent>` element in the XML text.**

    For example, before adding the `installPath`.

```
<call blockName='start'>
    <installedComponent name='gds' versionOp='=' version='1.0'
        path='/com/sun/n1aa/GDS'></installedComponent>
</call>
```

    After added the `installPath`.

```
<call blockName='start'>
    <installedComponent name='gds' versionOp='=' version='1.0'
        path='/com/sun/n1aa/GDS' installPath=':[installPath]'></installedComponent>
</call>
```

12. **Click Check In.**

13. **Click Continue to Check In.**

▼ How to Generate a Stop Plan for a GDS Resource

Note – The `installPath` is the only plan parameter.

1. **In the Application Deployment section of the N1 SPS browser interface, click Components.**
2. **Change the folder to** `/com/sun/n1aa/GDS`**.**
3. **Click on the details link of the created GDS component.**
4. **Select the check box for the** `stop` **procedure.**
5. **Click the Generate Plan With Checked Procedures link.**
6. **Enter the name of the plan as Stop***gds-component-name***Plan.**

   Where *gds-component-name* is the name of the component created in section "How to Create a GDS Component Using the `GDSResourceType`" on page 96.
7. **In the XML text, in the** `<executionPlan>` **element, change the name of the attribute to Stop***gds-component-name***Plan.**
8. **Before the** `<simpleSteps>` **element, delete the** `paramList` **element containing the** `shutdownMode` **and** `forceStop` **parameters.**
9. **Before the** `<simpleSteps>` **element, add the** `installPath` **as the plan parameter.**

   For example, include the following text to insert the plan parameter:

   ```
   <paramList>
       <param name="installPath" default=""
           prompt="Install path of the GDS component"></param>
   </paramList>
   ```
10. **Delete arguments to stop control, by deleting the** `<argList>` **line after** `<call blockName='stop'>`**.**
11. **Add the** `installPath=':[installPath]'` **attribute to the** `<installedComponent>` **element in the XML text.**

    For example,

    Before adding the `installPath`.

    ```
    <call blockName='stop'>
         <installedComponent name='gds' versionOp='=' version='1.0'
              path='/com/sun/n1aa/GDS'></installedComponent>
    </call>
    ```

After adding the `installPath`.

```
<call blockName='stop'>
    <installedComponent name='gds' versionOp='=' version='1.0'
        path='/com/sun/n1aa/GDS' installPath=':[installPath]'></installedComponent>
</call>
```

12 Click Check In.

13 Click Continue to Check In.

▼ How to Generate an isOnline Plan for a GDS Resource

Note – The `installPath` is the only plan parameter.

1 In the Application Deployment section of the N1 SPS browser interface, click Components.

2 Change the folder to `/com/sun/n1aa/GDS`.

3 Click on the details link of the created GDS component.

4 Select the check box for the isOnline procedure.

5 Click on the Generate Plan With Checked Procedures link.

6 Enter the name of the plan as Is*gds-component-name*OnlinePlan.

Where *gds-component-name* is the name of the component created in section "How to Create a GDS Component Using the `GDSResourceType`" on page 96.

7 In the XML text, in the `<executionPlan>` element, change the name of the attribute to Is*gds-component-name*OnlinePlan.

8 Before the `<simpleSteps>` element, add the `installPath` as the plan parameter.

For example, include the following text to insert the plan parameter:

```
<paramList>
    <param name="installPath" default=""
        prompt="Install path of the GDS component"></param>
</paramList>
```

9 **Add the `installPath=':[installPath]'` attribute to the `<installedComponent>` element in the XML text.**

For example, before adding the `installPath`.

```
<call blockName='isOnline'>
    <installedComponent name='gds' versionOp='=' version='1.0'
        path='/com/sun/n1aa/GDS'></installedComponent>
</call>
```

After adding the `installPath`.

```
<call blockName='isOnline'>
    <installedComponent name='gds' versionOp='=' version='1.0'
        path='/com/sun/n1aa/GDS' installPath=':[installPath]'></installedComponent>
</call>
```

10 **Click Check In.**

11 **Click Continue to Check In.**

▼ How to Generate an isOffline Plan for a GDS Resource

Note – The `installPath` is the only plan parameter.

1 **In the Application Deployment section of the N1 SPS browser interface, click Components.**

2 **Change the folder to `/com/sun/n1aa/GDS`.**

3 **Click on the details link of the created GDS component.**

4 **Select the check box for the `isOffline` procedure.**

5 **Click on the Generate Plan With Checked Procedures link.**

6 **Enter the name of the plan as Is*gds-component-name*OfflinePlan.**

Where *gds-component-name* is the name of the component created in section "How to Create a GDS Component Using the `GDSResourceType`" on page 96.

7 **In the XML text, in the `<executionPlan>` element, change the name of the attribute to Is*gds-component-name*OfflinePlan.**

8. **Before the** `<simpleSteps>` **element, add the** `installPath` **as the plan parameter.**

   For example, include the following text to insert the plan parameter:

```
<paramList>
    <param name="installPath" default=""
        prompt="Install path of the GDS component"></param>
</paramList>
```

9. **Add the** `installPath=':[installPath]'` **attribute to the** `<installedComponent>` **element in the XML text.**

   For example, before adding the `installPath`:

```
<call blockName='isOffline'>
    <installedComponent name='gds' versionOp='=' version='1.0'
        path='/com/sun/n1aa/GDS'></installedComponent>
</call>
```

   After adding the `installPath`:

```
<call blockName='isOffline'>
    <installedComponent name='gds' versionOp='=' version='1.0'
        path='/com/sun/n1aa/GDS' installPath=':[installPath]'></installedComponent>
</call>
```

10. **Click Check In.**

11. **Click Continue to Check In.**

Troubleshooting

If you are experiencing problems managing your SAP plug-in through the provisioning software, messages will likely appear on the screen to tell you that a problem exists.

For example, if you try to create a local zone for a target host that is not known to be a global zone, then you see a message similar to the following:

```
Problems encountered during plan run or preflight

The plan (or preflight) "/system/autogen/Container-inst-create-1098225529078"
finished with 1 failed host(s).

The specified target host "masterserver" was not in the required host set
"com.sun.solaris#global_zones" for component "/com/sun/solaris/Container".
```

Although the message in this example is easily deciphered, not all messages are this straightforward. To find out more information about the specific problem, follow the Details links.

Exception File Example

```
# List of all parameters that are different between the application
# instance and the central instance
#
# Parameters listed without an assigned value are deleted.
#
# The following character strings are substituted:
#
# @SID@ with actual SID
# @SAPSYS@ with systemname + number of application instance (e.g. D01)
# @SYSNUM@ with systemnumber of application instance
# @LHOST@ with logical hostname of application instance
#
# The parameters in section [COMMON] are valid for all application instances,
# The parameters in the additional sections refer to the corresponding
# selected profile size
#
#

[COMMON]
SAPSYSTEMNAME = @SID@
INSTANCE_NAME = @SAPSYS@
SAPSYSTEM = @SYSNUM@
SAPLOCALHOST = @LHOST@
SAPLOCALHOSTFULL =
icm/server_port_0 =
icm/server_port_1 =
icm/server_port_2 =
rdisp/myname =
rdisp/wp_no_enq =
rslg/send_daemon/listen_port = 37@SYSNUM@
rslg/send_daemon/talk_port = 13@SYSNUM@
DIR_ROLL =
DIR_PAGING =
DIR_DATA =
DIR_REORG =
DIR_TEMP =
DIR_SORTTMP =

[SMALL]
rdisp/wp_no_vb =
rdisp/wp_no_vb2 =
rdisp/wp_no_btc =
em/initial_size_MB = 1024

[MEDIUM]
```

```
rdisp/wp_no_vb = 2
rdisp/wp_no_vb2 =
rdisp/wp_no_btc =
em/initial_size_MB = 2048

[LARGE]
rdisp/wp_no_vb = 3
rdisp/wp_no_vb2 =
rdisp/wp_no_btc =
em/initial_size_MB = 3072
```

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