Administrator's Guide
SAP Strategy Management Application Server 10.1

Target Audience

- Technical Consultants
- System Administrators
- Solution Consultants
- Support Specialist

CUSTOMER
Document version: 1.0 – 2013-10-01

SAP AG
Dietmar-Hopp-Allee 16
69190 Walldorf
Germany
T +49/18 05/34 34 34
F +49/18 05/34 34 20
www.sap.com

Disclaimer

Document History

CAUTION

Before you start the implementation, make sure you have the latest version of this document. You can find the latest version on the SAP Help Portal at http://help.sap.com/bosm101.

The following table provides an overview of the most important document changes.

Version	Date	Description
1.0	2013-10-01	Initial version

Table of Contents

Chapter 1	**Getting Started**	7
Chapter 2	**Technical System Landscape**	9
Chapter 3	**Monitoring Application Server**	11
3.1	Trace and Log Files	11
3.1.1	Development Tracing	12
3.1.2	Tracing During Runtime	14
3.1.3	Viewing Trace Files	14
3.2	Database Monitors	15
3.3	Activity and Resource Monitors	16
3.3.1	Using Microsoft Process Explorer	16
3.3.2	Monitoring Tools	16
3.3.3	Application Server Monitoring Commands	16
Chapter 4	**Management of Application Server**	19
4.1	Administration Tools of Software Components	19
4.2	Starting and Stopping	19
4.2.1	Using SAP SM Listener Daemon Server on UNIX	19
4.2.2	Starting the SAP SM Listener on Microsoft Windows	21
4.2.3	Modifying the Account Used by Listener	22
4.2.4	Removing Client/Server Session Listings from the Windows Taskbar	23
4.2.5	Stopping the SAP SM Listener Service on Microsoft Windows	23
4.3	Backup and Restore	24
4.3.1	Backing Up	25
4.3.2	Dumping	25
4.3.3	Restoring Backed Up Files	26
4.3.4	Loading a Dumped Database	26
4.4	System Copy	26
4.5	Required Manual Periodic Tasks to Maintain the Application	27
4.5.1	Updating the Latest Date for Data in the Model	27

4.5.2 Maintaining Correct User Status After a Model Update . . . 28
4.5.3 Model Changes and Reports . . . 28
4.6 User Management . . . 29

Chapter 5 High Availability . . . 31
5.1 Architecture Considerations . . . 31
5.2 Recommended Cluster Configuration . . . 31
5.3 Configuration Process . . . 31
5.3.1 Setting Up a Strategy Management Cluster . . . 32
5.3.2 Installing the Strategy Management Services . . . 33
5.3.3 Adding Strategy Management Services to the Cluster . . . 33
5.3.4 Updating the Java System Properties . . . 34
5.3.5 Moving .INI Files to the Shared Disk . . . 34
5.3.6 Updating the Application Server Shortcut . . . 34
5.3.7 Setting Up a Link ID for Certain Implementations . . . 35

Chapter 6 Software Change Management . . . 37
6.1 Transporting Models on Like Systems . . . 37
6.2 Transporting Models on Different Systems . . . 37
6.3 Support Packages and SAP Notes Implementation . . . 38
6.4 Release and Upgrade Management . . . 38

Chapter 7 Testing and Troubleshooting Client/Server Connections . . . 41
7.1 Testing Client/Server Connections on UNIX . . . 41
7.2 Connection for Two Installations of Application Server . . . 42
7.3 Troubleshooting Client/Server Connections on UNIX . . . 42
7.3.1 Reviewing the Log Files . . . 42
7.3.2 Using the Trace Facility . . . 44
7.4 Testing Client/Server Connections on a Microsoft Windows Server . . . 44
7.4.1 Logging Client/Server Connections . . . 44
7.4.2 Testing SAP SM Listener and the TCP/IP Protocol . . . 45
7.4.3 Testing Connections Between the Client and Server . . . 45
7.4.4 Configuring Microsoft Windows User Permissions for Client/Server Connection . . . 46

Chapter 8 Support Desk Management . . . 47
8.1 CA Wily Introscope Integration . . . 47

8.2 Problem Message Handover 48

Chapter 9 Application Server Environment Variables 49
9.1 Application Server Environment Variables on UNIX 49
9.2 UNIX Environment Variables and Shells Scripts 50
9.3 Identifying the Shell Used by a Native UNIX Account 50
9.4 Environment Variables in Native UNIX 51
9.5 Environment Variables in Native UNIX Using the C Shell 52
9.6 Environment Variables in a Client/Server UNIX 53
9.7 Changing File Locations in Lsstcp.sh 53
9.8 Reviewing UNIX File Privileges 54
9.9 Changing File Privileges in UNIX 55
9.10 Modifying the DBHOME Environment Variable 56

Chapter 10 Related Guides 57

1 Getting Started

This guide provides a starting point for managing SAP Strategy Management's Application Server. It contains specific information for various tasks and lists the tools that you can use to implement them. Application Server is a highly scalable, Time-Intelligent™ multidimensional Online Analytical Processing (OLAP) server that brings you the ability to quickly analyze all aspects of your business without having to understand all the data relationships behind the scenes. Application Server is available on Windows and UNIX platforms.

This page is left blank for documents that are printed on both sides.

2 Technical System Landscape

The following table lists information about the technical system landscape that is available on the SAP Help Portal at http://help.sap.com/bosm101.

Topic	Guide or Tool
System Landscape	*Master Guide for SAP Strategy Management*
Installation and configuration	*Installation Guide for SAP Strategy Management*
Security	*Security Guide for SAP Strategy Management*
Administration	Online Help in the Application Server Administrator system.

This page is left blank for documents that are printed on both sides.

3 Monitoring Application Server

3.1 Trace and Log Files

Logging in Application Server can be enabled in the following areas:

- End-to-end tracing
- SAP SM Listener
- For the Application Server sessions

Logging Severity Levels and End-to-End Tracing

You can add the `NCSTRACE=1` parameter to `lsserver.ini` in the [Windows] section to enable end-to-end tracing and heartbeat availability monitoring. This is useful when installing and configuring Solution Manager for diagnostic purposes.

To perform end-to-end tracing, you need to use the SAP Client plug-in for Internet Explorer and start a transaction using the normal procedures for end-to-end tracing.

To enable logging for diagnostic purposes, add the `NCSLOG=INFO | WARNING | ERROR | FATAL` line to `lsserver.ini` in the [Windows] section.

Specify the appropriate severity level by using a value of either *INFO*, *WARNING*, *ERROR*, or *FATAL*. If you specify *INFO*, you get the most information (all *INFO*, *WARNING*, *ERROR*, and *FATAL* status messages). If you set it to *WARNING*, *ERROR*, or *FATAL*, you only get messages of that type.

The generated files are `<uuid>.GLF` files, which you can view using a text editor or SAP's log viewing tool. The files exist in `\Logs` directory of the Application Server installation directory. Since model connections generate their own log or trace file, this setting is useful for pre-production, but not for production systems. To turn off logging, you can comment out the line.

Application Server logs are located in the `\<install-dir>\SAP Strategy Management \ApplicationServer\LOGS` directory.

NOTE

You must restart the JPIP session to allow the changes in `lsserver.ini` to take effect. To do so, access the JPIP session monitor using the *Tools* utility at `http://<nw_server>:<port>/strategy/tools`.

Logging connection information during model development

Information in the SAP SM Listener log file contains connection information. To enable debug output from the SAP SM Listener, you must run regedit and modify the Listener entry in the registry.

1. Open the Start/Run dialog and run regidit.

2. Find the registry key:
   `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\lssagent`
3. Locate the `ImagePath` key and modify the value. At the end of the path for the `lssagent.exe` file, add the following:
   `trace 2 logfile <logfile-path>`
   If you omit the `logfile` parameter and the path, the file is created in the root directory of the `C:` drive and is called `ssmlistener.log`.
4. After updating the `ImagePath` value, restart the SAP SM Listener service to begin logging.

LSSTLD.LOG

When you start the SAP SM Listener daemon on UNIX, the log file `LSSTLD.LOG` is created in the `<install-dir>\lss` directory. This file contains diagnostic messages and tracks client/server connection requests. An entry is added to `LSSTLD.LOG` each time `lsstld` detects a request for a connection. A second line is added listing the requested service name if the connection is successful. If the connection is rejected, a message identifying the cause of the failure is appended to the log.
For more information, see *Using SAP SM Listener Daemon Server on UNIX* [page 19]. For more information about this log file used for troubleshooting, see *Testing and Troubleshooting Client/Server Connections* [page 41].

LSSLOG

`LSSLOG` is created by the `lsstcp` executable in the UNIX user account's Home directory when you make a client/server connection. The `LSSLOG` file contains information about the version, the environment, the process number, and the time of connection. This file also contains error message information if there are problems in establishing a client/server connection.
For more information about this log file used for troubleshooting, see *Testing and Troubleshooting Client/Server Connections* [page 41].

LSSTRACE

You can record all Application Server API calls in a file using the trace facility. You should only use the trace facility for diagnostic purposes because it can slow down processing.
To enable `LSSTRACE`, locate the `lsstcp.sh` script and open it for editing. Change the `LSSTRACE` value from null to the name of the trace file you want to create or to **YES**. Application Server writes client/server API calls to a file called `LSSTRACE` in your Home directory.

3.1.1 Development Tracing

Using the `TRACE` command in Application Server Administrator, you can enable tracing in any Application Server procedure.

Features

SYNTAX

```
TRACE [COMMANDS|TIMING|OUTPUT|BOTH] {<destination> [APPEND]OFF|UPDATE}
```

Keyword	Description
COMMANDS	Copies either commands from the command window or any job to a printer or destination. **NOTE** You can have both TRACE COMMANDS and TRACE BOTH active at one time. For example, you can enter a command in the form TRACE COMMANDS testproc to capture only the commands you enter in the procedure TESTPROC, and a command in the form TRACE BOTH tracecheck to capture both commands and output in the document TRACECHECK. To turn off these commands, you need to enter TRACE COMMANDS OFF and TRACE BOTH OFF.
TIMING	Specifies the time it takes to execute the commands from the command window or any job to a printer or destination. In the output, the timing is displayed first, and then the command. If you specify TRACE TIMING TERMINAL, timing information appears after the command output.
OUTPUT	Copies output (data, error messages, reassurance messages) to destination.
BOTH	Copies both commands and output to the destination (default).
<destination>	One of the following destinations: ■ TERMINAL — Your terminal. ■ PRINTER — The default printer on your system. ■ <setname> [;<database>|;EXTERNAL <setname> — Name of a set. If you copy commands, Application Server creates a procedure. If you copy output or both commands and output, Application Server creates a document. <database> — Name of database where the set is located. If no database is specified, Application Server uses the Use database. EXTERNAL — Indicates the set is a text file not in an Application Server database. If the set is a DOS file, its name cannot have an extension. When specifying a path and filename for the destination on UNIX, make sure that you do not exceed 53 bytes.
APPEND	Overrides the default and adds the trace to the end of an exporting file or set, without overwriting it.
OFF	Turns off a TRACE command. Enter TRACE OFF to end a trace.
UPDATE	When used, each command and its output is sent to the destination when it is executed instead of being buffered.

Example

Issue the following command to trace all commands and output to a text file:

```
TRACE BOTH <setname>; EXTERNAL
```

3.1.2 Tracing During Runtime

You can use tracing while the application is running by turning tracing on or off. There is no severity setting that allows you to just log the errors. The three files that are generated provide different levels of information.

The trace files are named by the username and model you are accessing as follows:

- `<modelname><app_server_user><unique_stamp>_time.txt`
  Contains all commands and the response times to process the commands in the same session
- `<modelname><app_server_user><unique_stamp>_both.txt`
  Contains all commands and the results/output from those commands
- `<modelname><app_server_user><unique_stamp>_cmd.txt`
  Contains all commands issued by the application

Procedure

1. Start the *Tools* utility at this URL:
   `http://<nw_server>:<port>/strategy/tools`
2. Select *Application Tracing*, and then select *Enable* for the *PAS Trace* setting. This enables tracing of the communication between the application and the Application Server model.
3. Select the *Back* function on the Internet Explorer browser window to return to the *Tools* utility.
4. Select *JPIP Session Monitor* and then select *Restart JPIP*. This restarts JPIP to ensure that a new session is established with tracing enabled.

NOTE

When you have finished tracing, select *Disable* to turn off tracing.

More Information

Viewing Trace Files [page 14]

3.1.3 Viewing Trace Files

You can view Application Server trace files in a text editor or using the *PAS Query* tool.

Prerequisites

To view trace files using a text editor, you have access to the server where Application Server is installed.

To view trace files using the *PAS Query* tool, you know the name of the trace file you want to view.

Procedure

1. Start the *Tools* page by issuing this URL in the *Address* box of a Web browser window:

`http://<nw_server>:<port>/strategy/tools`

2. Choose *JPIP Session Monitor*.
3. Restart the JPIP session by clicking *Restart JPIP*.

> **NOTE**
> You restart the JPIP Session to unlock the trace files so you can view them.

4. To view trace files using a text editor, navigate to the `\<install-dir>\ApplicationServer\home` directory on the system where Application Server is installed and open the trace files in a text editor.
5. To view trace files using the *PAS Query* tool, do the following:
   1. Access the *Tools* utility at `http://<nw_server>:<port>/strategy/tools` and choose *PAS Query*.
   2. In the *Context* dropdown list, select the model connection to work with.
   3. At the end of the context string in the *Address* box, enter:

      `DQL=TYPE document <modelname><app_server_user><unique_stamp>_both.txt`

When you are finished capturing, disable the *Pas Trace* using the *Tools* → *Application Tracing* utility.

3.2 Database Monitors

You can monitor the Application Server database using Application Server commands. This table shows the commands you can use:

Application Server Command	Detailed Description
`DIRECTORY`	Displays the sets in a database.
`SHOW DATABASE <database>`	Provides summary information about attached databases.
`SHOW DBSTATS`	Displays statistical information about the current database and buffer setting recommendations.
`SUPERVISOR SHOW DATABASE <database>`	Displays information about databases and their partitions.
`EXHIBIT DATABASES <options>`	Displays information about Application Server databases.
`CREATE DATABASE MULTIPLE <number>`	When creating a database, `MULTIPLE` specifies the number of values that can be added to a time series before the record size is increased. The default is `6`, which means that 6 values can be added to the time series. As these are filled, the database does not change in size. When a seventh point is added, the database almost doubles in size as space is set aside for an additional six points of data. A `MULTIPLE` setting is valid only for variables that are single or double precision floating (4 or 8 bytes, nonsparse).
`XRAY <database>`	Used at the operating system level on the server, this command evaluates all the basic structures within the Application Server database and performs an integrity check. If you suspect that a database is corrupt, `XRAY` might be able to find the location of the corruption.

Application Server Command	Detailed Description
`XRAY -t <database>`	Used at the operating system level on the server, this command provides a complete analysis of the database structure.
`XRAY -s <database>`	Lists information about all internal sets in an Application Server database. Used as a diagnostic tool to determine the structure and content of a model.
`XRAY -f <database>`	Used at the operating system level on the server, this command reclaims lost space in an Application Server database.
`SUPERVISOR XRAY <database> RECORDS | NOTREE`	An Application Server command that validates records in the database. `RECORDS` validates all the records in the database. This option is time consuming for large databases and you should use it with care. If you do not use the `RECORDS` option, Application Server does not check each record, and runs much faster, but provides somewhat less validity checking. `NOTREE` switches off the checking of B-Trees. Use this option to do a brief check on a large database.

3.3 Activity and Resource Monitors

3.3.1 Using Microsoft Process Explorer

Application Server provides a monitor for online display of the current activity at the component level as well as the current utilization of resources and current blocking situations due to locking situations. The following information is available in the Microsoft Sysinternals Process Explorer.

- Peak memory consumption in MB
- CPU consumption in milli sec
- Number of accesses to the persistence layer

Procedure

1. Open the *Process Explorer* window, and select the `lsstcp.exe` process from the list.
2. Click the *Performance* tab to review the performance.

3.3.2 Monitoring Tools

To monitor activity and resources for Application Server, you must use the monitoring tools provided by your operating system, such as Task Manager in Microsoft Windows or the top utility in UNIX/Linux, which displays top CPU-using processes.

3.3.3 Application Server Monitoring Commands

Use the monitoring tools provided by your operating system, such as Task Manager in Microsoft Windows or the top utility in UNIX/Linux, which displays top cpu-using processes.

Use the following commands to monitor system activity as it relates to Application Server databases.

Application Server Command	Detailed Description
`ROLLUP`	Use the Rollup editor to monitor growth in the following ways: ■ Display the quadrants and their rollup instructions and their percentage that they are already consolidated. ■ Remove time-series combinations that Application Server does not need for reporting and analysis to avoid unnecessary consolidation. This reduces the size of the database and increases calculation speeds. ■ Specify that certain member combinations are consolidated on the fly as needed. Combinations are consolidated whenever any commands are issued that require data about the combinations. The aggregations are not saved in the database.
`SHOW SPARSITY`	Shows the sparsity of time series on a variable-by-variable and quadrant-by-quadrant basis
`SHOW DBSTATS`	Displays statistical information about the current database and buffer setting recommendations

This page is left blank for documents that are printed on both sides.

4 Management of Application Server

4.1 Administration Tools of Software Components

Transaction/Tool	Detailed Description	Prerequisites
Application Server Administrator	See the online Help in the Application Server Administrator program for information.	You must be a known user in Application Server to use this program.

4.2 Starting and Stopping

Tool	Detailed Description
`sh tldgo`	Starts the SAP SM Listener daemon service on the UNIX server.
`sh tldstop`	Stops the SAP SM Listener daemon service on the UNIX server.
`NET START LSSAGENT`	Starts the SAP SM Listener service on a Microsoft Windows server from a command prompt.
`NET STOP LSSAGENT`	Stops the SAP SM Listener service on a Microsoft Windows server from a command prompt.
Start	Starts the SAP SM Listener service from the Desktop on the Microsoft Windows server from *Control Panel* → *Administrative Tools* → *Services* program. Right-click on the service and choose *Start* from the floating menu.
Stop	Stops the SAP SM Listener service from the Desktop on the Microsoft Windows server from *Control Panel* → *Administrative Tools* → *Services* program. Right-click on the service and choose *Stop* from the floating menu.

4.2.1 Using SAP SM Listener Daemon Server on UNIX

In the *Installation Guide for SAP Strategy Management*, you were instructed to follow post-installation steps for setting up Application Server after installing the product on UNIX. The first step instructed you to start the *SAP SM Listener* daemon (Listener), called `lsstld`. The Listener program is a UNIX daemon, which is a process that runs continually without being connected to a terminal. In this case, `lsstld` is listening for Application Server TCP/IP connections on the specific port number (the default is 8325). The client machines running Application Server use WINSOCK support for client/server communications to UNIX servers.

You can do the following:

- Start the Listener
- Set up the Listener to automatically start when UNIX is started

- Stop the Listener

Procedure

Starting Listener Daemon Server on UNIX

The following steps start the SAP SM Listener. Once you are sure that the software is installed correctly, you can add the commands to your system's startup files so that the SAP SM Listener starts up automatically whenever the system is restarted.

1. Log on as root to allow the listener process to establish sessions on behalf of the UNIX user accounts.
2. Change to the directory where Application Server is installed. For example:

   ```
   cd /<install-dir>/lss
   ```
3. Run the shell script to start the Listener:

   ```
   sh tldgo
   ```

When `lsstld` is initialized, it creates the log file `LSSTLD.LOG` in the current directory, and displays the following messages:

SYNTAX

```
**********************************************************************
lsstld: daemon initialization started at Mon Dec 20 08:59:15 2010
lsstld: daemon initialization completed at Mon Dec 20 08:59:15 2010
**********************************************************************
```

The `LSSTLD.LOG` file tracks client/server connection requests. An entry is added to `LSSTLD.LOG` each time `lsstld` detects a request for a connection. A second line is added listing the service name if the connection is successful. If the connection is rejected, a message identifying the cause of the failure is appended to the log. In this sample `LSSTLD.LOG`, connection requests to the Application Server service names `LSS80` and `LSSJAPAN` are successful. The last two connection requests fail because a UNIX logon ID/password confirmation was not validated and the service name `LSS80` was not defined.

SYNTAX

```
**********************************************************************
  Application Server TCP/IP listener daemon log
lsstld daemon initialization started at Tue Dec 21 10:46:25 2010
The user name is root, UID=0, GID=3, SHELL=/bin/ksh.
The home directory is /.
The lsserver service was found in /etc/services.
The port number is 8325.
Socket 5 was successfully created.
The listen address is bound to the socket.
The socket is now listening for remote connections.
lsstld daemon initialization completed at Tue Dec 21 10:46:25 2010
**********************************************************************
Connection request from IP address 999.999.99.999, using port 1039
    at Tue Dec 21 10:46:48 2010
Connection request from 999.999.99.999 accepted. Calling service LSS80.
Connection request from IP address 999.999.99.999, using port 1034
    at Tue Dec 21  11:03:01 2010
Connection request from 999.999.99.999 accepted. Calling service LSSJAPAN.
Connection request from IP address 999.999.99.999, using port 1042
```

```
    at Tue Dec 21  13:54:45 2010
The login ID/password combination was rejected by crypt!
Connection request from 999.999.99.999 rejected!
Connection request from IP address 999.999.99.999, using port 1043
    at Tue Dec 21  14:02:40 2010
The LSS80 service was not found in the lssmap file!
```

Setting up Listener Daemon To Start When UNIX Is Started

You can add commands to your system's startup files so that the Application Server listener starts up automatically whenever the system is started.

1. Find the system-specific startup file. Usually, this is located in `/etc`.
2. Add these lines:

   ```
   cd /<install-dir>/lss
   <install-dir>/lss/tldgo > /dev/console
   ```

If the `lsstld` process is not active after system restart, check the `LSSTLD.LOG` file in the directory where Application Server is installed.

Stopping the Listener Daemon

In some situations, you may need to stop the Listener daemon when you need to prevent connections to the UNIX server where Application Server is installed. For example, if you are running a system backup or updating a dimensional model, you might need to stop the Listener. These steps describe how to stop the Listener.

1. Log on as root.
2. Change to the directory where Application Server is installed:

   ```
   cd /<install-dir>/lss
   ```

3. Enter the following command to stop `lsstld`:

   ```
   sh tldstop
   ```

4. The following message appears:

   ```
   Application Server TCP/IP running with Process ID: 99999
   Do you really want to stop this listener (Y/N) [Y]
   ```

5. Press Enter to stop the Listener daemon, or type `N` and then press Enter to cancel the request.

4.2.2 Starting the SAP SM Listener on Microsoft Windows

After the installation of Application Server, the SAP SM Listener service is automatically started by default on the Microsoft Windows server. The Listener program listens for WINSOCK TCP/IP Application Server client connections. The Listener service validates the user's rights to log on to the server and start the data communication process.

Although the Listener is started by default, follow these steps if you ever need to start the SAP SM Listener on your own.

Procedure

Starting the SAP SM Listener Service from the Desktop

1. On your Microsoft Windows Desktop of the Microsoft Windows server, choose ▶ *Start* → *Control Panel* ↵.
2. Choose *Administrative Tools*, and then choose *Services* to display the *Services* window.
3. Right-click on *SAP SM Listener* and choose *Start*.

Starting the SAP SM Listener Service from the Command Prompt

1. Open a Command prompt window.
2. Issue the following command:

```
NET START LSSAGENT
```

4.2.3 Modifying the Account Used by Listener

By default, the SAP SM Listener is installed as a Microsoft Windows service that has the appropriate privileges to use the Microsoft Windows Server Logon API calls. The service uses the LocalSystem account, which has the appropriate privileges by default.

The service is installed with the *Log on as a system account* option. If you set up the SAP SM Listener to log on with an account other than the system account, then you must also make sure that the user has *Log on Locally* rights.

Procedure

1. On your Microsoft Windows Desktop of the Microsoft Windows server, choose ▶ *Start* → *Control Panel* ↵.
2. Choose *Administrative Tools*, and then choose *Services* to display the *Services* window.
3. Right-click on *SAP SM Listener* and choose *Properties* to display the *SAP SM Listener Properties* dialog box
4. Click the *Log On* tab.
5. Change the *Log on as* properties to the account you want the agent to use.
6. Click *OK*.
7. Close the *Services* window. Now that you have changed the agent to use a different account, you must set privileges for the new account.
8. In *Administrative Tools*, choose *Computer Management* to display the *Computer Management* window.
9. Select a user you want the agent to use.
10. Close the *Computer Management* window.
11. In *Administrative Tools*, choose *Local Security Policy* to display the *Local Security Settings* window.
12. In the *Local Policies* folder, choose *User Rights Assignment*.
13. Add the following three rights to the account you have selected for the SAP SM Listener service:
    - *Act as part of the operating system*

- *Replace a process level token*
- *Increase quotas*

4.2.4 Removing Client/Server Session Listings from the Windows Taskbar

By default, the system account is set up with the *Allow the service to interact with the desktop* option. This option displays an icon on the Microsoft Windows server taskbar for every Application Server client/server session. You can remove this option from the toolbar if you do not want it displayed.

Procedure

1. On your Microsoft Windows Desktop of the Microsoft Windows server, choose ▶ *Start* → *Control Panel* ↵.
2. Choose *Administrative Tools*, and then choose *Services* to display the *Services* window.
3. Right-click on *SAP SM Listener* and choose *Properties* to display the *SAP SM Listener Properties* dialog box.
4. Click the *Log On* tab.
5. Deselect the *Allow Service to Interact with Desktop option*.
6. Click *OK*.
7. Restart the *SAP SM Listener* to implement your changes.

4.2.5 Stopping the SAP SM Listener Service on Microsoft Windows

If you make modifications to the Startup parameters of the SAP SM Listener service, then you must restart the SAP SM Listener service to implement your changes.
If you make changes to any of the `LSSERVER.INI` file parameters that affect the SAP SM Listener service, then you must stop and restart the SAP SM Listener service.

Procedure

Stopping the SAP SM Listener Service from the Desktop

1. On your Microsoft Windows Desktop of the Microsoft Windows server, choose ▶ *Start* → *Control Panel* ↵.
2. Choose *Administrative Tools*, and then choose *Services* to display the *Services* window.
3. Right-click on *SAP SM Listener* and choose *Stop*.

Stopping the SAP SM Listener Service from the Command Prompt

1. Start a Command prompt window.
2. Issue the following command:

```
NET STOP LSSAGENT
```

4.3 Backup and Restore

Before making extensive modifications to a model, we recommend using operating system utilities to back up your model.

Backup and restore of Application Server databases can be performed by backing up files at the system level, and using `DUMP` and `LOAD` Application Server commands in the Application Server Administrator.

Data Storage Locations:

Data	Location
Application data	User databases in Application Server `CGLIB` database in Application Server contains user-defined hierarchy information, if implemented
Relational data	Relational data files (in a Hybrid OLAP implementation)
SAP NetWeaver BW cube data	SAP NetWeaver BW cube
User data	`MASTERDB` database in Application Server
Configuration data	`Lsdal.cnf` — located in the `\Microsoft Windows` directory. Contains database connection settings, for example, Microsoft SQL Server, Oracle). Not present on Linux/UNIX. `Lsdal.ini` — located in the \Microsoft Windows directory. On Linux/UNIX, located in the `/<install-dir>/lss` directory. Contains Application Server connection settings to data sources, and BAPI connections to BW. `Lsserver.ini` — located in the `\Microsoft Windows` directory. Contains Application Server directory settings and database settings. Linux/UNIX shell scripts – located in `<install-dir>/lss`.
Logs files	`\<install-dir>\SAP Strategy Management\ApplicationServer\logs` `/<install-dir>/lss` on Linux/UNIX.
Trace files	`\<install-dir>\SAP Strategy Management\ApplicationServer\home` `/<install-dir>/workfile` on Linux/UNIX.

Backup:

Application Server Command	Detailed Description
`DUMP`	Transfers the `Use` database to one or more external text files (dump files).
`SUPERVISOR DUMP`	Creates an external file on your system containing all the Supervisor commands needed to re-create `MASTERDB`. Application Server encrypts user passwords on the dump file.

Restore:

Application Server Command	Detailed Description
`LOAD`	Loads a database from an external dump file of any size.
`SUPERVISOR LOAD`	Restores `MASTERDB` from an external dump file or tape.

4.3.1 Backing Up

Procedure

1. On a Microsoft Windows server, back up the following files located in `\Program Files (x86)\SAP Strategy Management\ApplicationServer\data`. On a Linux/UNIX server, the files are located in the data directory in the installation location.
   - `CGLIB` (Contains User-Defined Hierarchies if using an UDH implementation)
   - `MASTERDB` (Catalog of models, users, and other important system information)
   - Databases created in Application Server
   - Relational files used in a Hybrid OLAP implementation
   - SAP NetWeaver BW cubes used in an SAP NetWeaver BW Connector implementation
2. If you customized any files that are put down by the installation, copy those files to a temporary location. For example, if you created your own timesets in `APLIB`, copy `APLIB` to a temporary location.
3. If you are using the Access LSLink subsystem to retrieve data from a relational data source and you have an `lsdal.ini` file, copy `lsdal.ini` and `lsdal.cnf` to a backup location.
4. If you are running Application Server on a Microsoft Windows client or Microsoft Windows server, back up the `Lsserver.ini` file located in the Microsoft Windows directory.
5. If you are running Application Server on a Linux/UNIX server, copy the following shell scripts to a temporary location:
   - `batchlss.csh`
   - `lsstcp.sh`
   - `runlss.csh`
   - `runlss.ksh`
   - `batchlss.ksh`

4.3.2 Dumping

Procedure

1. If you have manually generated dimensions, review the dimension sets and make sure the `CLASS` and `LEVEL` statements exist before any rules for consolidation in the databases you want to dump. If you do not place the statements properly, the database does not load to the current database version of Application Server. For example, place them directly after the `INPUTS`, `OUTPUTS`, and `RESULT` dimension members and before the first consolidation rule for consolidated members.
2. Log on to Application Server as the administrator. Make sure that you have file privileges to write to the databases in `MASTERDB`.
3. Enter the following commands, where `<database>` is the database you want to dump and `<databasedmp>` is the dump file to contain the contents of the database.

   ```
   USE <database>
   ```

```
DUMP <databasedmp>
```

4. If you want to completely remove the database so that you can do a clean restore, issue the following command:

```
SUPERVISOR REMOVE DATABASE <database>
```

4.3.3 Restoring Backed Up Files

Procedure

1. If you backed up any files, copy them back to their appropriate directories.
2. If running Application Server on a Linux/UNIX server, copy the shell scripts back to their appropriate directories.

4.3.4 Loading a Dumped Database

Prerequisites

You are logged into Application Server as the administrator.

Procedure

1. In Application Server Administrator, create the database you removed by issuing the following command, making sure you use all the correct settings for observations and members:

```
SUPERVISOR CREATE DATABASE <database>
```

2. Enter the following commands to load the dumped data into the database:

```
USE <database>
LOAD <databasedmp>
```

For more information about the `DUMP` and `LOAD` commands, see the Application Server Help on the SAP Help Portal at `http://help.sap.com/bosm101`. Then choose *Application Server Command Reference → Alphabetical listing of Application Server commands → DUMP (Supervisor)*. Go to *Application Server Command Reference → Alphabetical listing of Application Server commands → LOAD (Supervisor)*.

For more information about backing up and restoring, see the *Server Upgrade Guides* on the SAP Help Portal at `http://help.sap.com/bosm101`.

4.4 System Copy

You can perform a system copy by stopping Application Server sessions that access the database and then do a physical backup at the system level.

Optionally, you can use Application Server commands to dump the database to a text file, save the text file, and load it.

If possible, we recommend re-creating your database from source data using Application Server procedures.

See the online Help in the Application Server Administrator program to learn about the DUMP and LOAD commands.

4.5 Required Manual Periodic Tasks to Maintain the Application

This table shows the periodic tasks to be considered when periodically loading new data into your dimensional model:

Task	When to Perform the Task
Load new data into the dimensional model or rebuild the dimensional model For information about loading data into a dimensional model using the LOAD command, see the Application Server Help on the SAP Help Portal at http://help.sap.com/bosm101.	Every organization acquires new data at their own periodicity. This task must be performed whenever you routinely acquire new data, such as weekly, monthly, or quarterly. Whether you periodically load new data into the dimensional model or periodically rebuild the dimensional model to load new data is an individual preference of each organization.
Update the latest date for which there is data in the dimensional model	After you load new data or rebuild the dimensional model with newly acquired data.
Maintain correct user status after a model update or Security procedure update	After you load new data or rebuild the dimensional model with newly acquired data.

4.5.1 Updating the Latest Date for Data in the Model

Certain tabs in the strategy management application depend on the existence of a document in the USE database called LASTDATE. This document contains the latest date for which current data is loaded in the model. For example, if the model contains daily information, and if that information is loaded through the 1st of May, then the contents of the document LASTDATE would be one line containing the string 01 May2011. Every time you update the model with new data, you need to change the date in the LASTDATE document accordingly.

Prerequisites

The dimensional model is built.

Procedure

1. Log on to Application Server.
2. Issue the following command:

   ```
   USE <database>
   DOCUMENT LASTDATE
   ```

   <database> is the name of the dimensional model to set the latest date.

3. In the *Document* editor, type the last date for which there is data in this database. Specify one of the following date formats:
   - dd mmm yyyy
     For example: 01 may 2011
   - yyyy/mm/dd
     For example: 2011/05/01
   - yyyy/mm
     For example: 2011/05

4.5.2 Maintaining Correct User Status After a Model Update

When you update a dimensional model with new data or when you modify the Security procedure, you must perform certain steps to ensure that users remain in sync after the updates.

Prerequisites

You are the strategy management administrator.

Procedure

Do one of the following to remove all Work databases:

- Physically delete the `Work` databases. The dimensional models are typically are stored in the `HOME` directory on the machine where Application Server installed. The database files typically start with `DB*` or have names that are a concatenation of the authenticated user and model name (for example: TOMJUICE).
- Restart Interactive Publisher using the JPIP Session Monitor available in the *Tools* utility at `http://<nw_server>:<port>/strategy/tools`.
  For more information, see the *Administrator's Guide for SAP Strategy Management Interactive Publisher and Application Components*.

4.5.3 Model Changes and Reports

Model Updates That Require You to Re-create Reports

If you modify a dimensional model in any of these ways, users receive errors when opening saved reports or dashboards that use the dimensional model and when using these items in reports:

- Deleting measures
- Removing dimensions or dimension members
- Deleting an attribute that is or is not used in the report

Model Updates That do not Affect Reports

You can modify a dimensional model in the following ways without affecting reports that use the dimensional model:

- Adding attributes
- Adding dimensions

4.6 User Management

User management is performed in Application Server Administrator using the Supervisor commands in this table.

Application Server Commands	Detailed Description
`CREATE USER`	Creates a new user record in `MASTERDB`.
`CHANGE USER`	Creates a new user record in `MASTERDB`.
`REMOVE USER`	Creates a new user record in `MASTERDB`.
`EXHIBIT USER`	Exhibits users in `MASTERDB`.

Use the `pwreset` executable located in the `\Program Files (x86)\SAP Strategy Management \Application Server` directory to reset a forgotten or changed administrator or supervisor password. On Linux/UNIX, `pwreset` is in the same directory as the `lss` executable.

The `pwreset` executable clears the password from MASTERDB so the administrator of Application Server can set a new password. The administrator can log into Application Server as Supervisor without a password and reset the password using the `CHANGE USER` command.

The syntax is:

```
pwreset -inifile <inifile> [-u <username>]
```

if you specify `-u <username>`, the password for that user is cleared from MASTERDB.

If you omit the `-u <username>` keyword, the password for the Supervisor user is cleared from MASTERDB.

The `–inifile` option is not valid for UNIX/Linux.

For example,

`pwreset.exe -inifile lsserver.ini -u tsmith` resets the password for the user tsmith.

This page is left blank for documents that are printed on both sides.

5 High Availability

SAP Strategy Management is meant for large user deployments. To maximize system availability for large user deployments, you can implement a High Availability (HA) configuration. This allows certain system maintenance activities to occur without taking the application offline, and also provides an infrastructure to recover quickly from unexpected machine failures.

While there are many reasons why a high availability configuration is desirable, this section focuses on the configuration and deployment of the strategy management system in a high availability environment.

5.1 Architecture Considerations

The SAP Strategy Management application consists of several components working together. The components with relevance to high availability are Interactive Publisher and Application Server.

5.2 Recommended Cluster Configuration

There are multiple ways to install a high availability configuration of SAP NetWeaver CE. This depends on the number of nodes participating in the cluster as well as the configuration of the database component. For purposes of this discussion, the following specifications are used:

- A 64-bit version of Microsoft Windows Server 2003 for the operating system
- Microsoft SQL Server for the SAP NetWeaver CE System Database
- Microsoft SQL Server installed in a cluster configuration

This scenario adheres to the guidelines of the *Installation Guide for SAP NetWeaver Composition Environment* on Windows: MS SQL Server.

The SAP NetWeaver CE configuration has several options for installation and configuration. The choice of configuration for SAP NetWeaver CE and the SQL Server database should not matter as long as they are valid and supported configurations as defined by the installation guide.

The steps described in this discussion provide guidance for Interactive Publisher and Application Server.

5.3 Configuration Process

To configure your system for high availability, you create a separate resource cluster that collects all the associated strategy management resources together and permits them to be moved from node to node as a group.

Prerequisites

Software

- Microsoft Cluster (MSCS) configuration using the Windows Server family
- Microsoft SQL Server installed a high availability configuration
- SAP NetWeaver on Windows: MS SQL Server using high availability (MSCS) options

Hardware

- Fault Tolerant Disk Subsystem
- Two or more physical nodes

Process

1. Set up the strategy management cluster. For more information, see *Setting Up a Strategy Management Cluster* [page 32].
2. Install strategy management services. For more information, see *Installing the Strategy Management Services* [page 33].
3. Add strategy management services to the strategy management cluster. For more information, see *Adding Strategy Management Services to the Cluster* [page 33].
4. Update the Java System Properties. For more information, see *Updating the Java System Properties* [page 34].
5. Move `.INI` files to the shared disk. For more information, see *Moving .INI Files to the Shared Disk* [page 34].
6. Update the shortcut for the Application Server program. For more information, see *Updating the Application Server Shortcut* [page 34].
7. Set up a Link ID for certain implementations. For more information, see *Setting Up a Link ID for Certain Implementations* [page 35].

5.3.1 Setting Up a Strategy Management Cluster

Install Application Server and Interactive Publisher in their own group, which has a dedicated shared Physical Disk resource and a dedicated IP resource.

Procedure

1. To create a new resource cluster in the *Cluster Administrator*, select *File* → *New* → *Group*. Specify a group name, for example `SSM`, and click *Next*.
2. Select the nodes where the strategy management services run and click *Add* to add them to the group. Then click *Finish*. The *SSM* group is created.
3. Obtain an available IP Address from your network team and assign a unique name for use within your network.

   Create a new IP Address resource cluster in the *Cluster Administrator* by selecting the new `SSM` Group and choosing *File* → *New* → *Resource*.

Select the Resource Type IP Address and enter the other parameters. This example uses the name SAP SSM IP. Click *Next*.

4. Enter the available IP Address and appropriate Subnet mask, and select the appropriate network. Click *Finish*.
5. Repeat the steps for the Physical Disk.

5.3.2 Installing the Strategy Management Services

Procedure

1. Log into one of the physical nodes and bring the new physical disk online using the *Cluster Administrator*.
2. If the *SSM* group is not assigned to your current node, right-click the *SSM* group name and move it to your current node.
3. Run the SSM Service installation (`xSSMSrv0x_0.exe`) and select the disk associated with the SSM physical group as the destination.
4. After installation, move the disk to the alternate node and log onto the second node.
5. Repeat the SSM Service installation and specify the same target disk. It will overwrite the files, but this is expected behavior.

5.3.3 Adding Strategy Management Services to the Cluster

You must make the strategy management services cluster-aware.

Prerequisites

The programs and services are created on each individual node.

Procedure

1. In the *Cluster Administrator*, right-click the *SSM* Group, and create a new resource. In the *New Resource* dialog box, select the resource type *Generic Service*. Assign it the name *SAP SSM Listener*, and click *Next*.
2. Select the possible owners and click *Add*. Then click *Next*.
3. Add the Physical Disk and IP Address as Resource Dependencies, and click *Next*.
4. Enter `lssagent` as the service name and click *Next*.
5. In the Registry Replication dialog, click *Add* and enter the key: `SOFTWARE\Wow6432Node\SAP\SSM\InternetPub`. Then click *Finish*.

5.3.4 Updating the Java System Properties

Procedure

1. Start the SAP NetWeaver Administrator.
2. Log on as administrator with the global password you provided when you installed SAP NetWeaver.
3. Select *Configuration*.
4. Click the *Infrastructure* tab.
5. Select *Java System Properties*.
6. In the *Templates* section, select the template that corresponds to your strategy management installation.
7. Click the *Applications* tab in the *Details* section.
8. In the *Name* column, type **strategy** and press Enter to list the strategy applications.
9. Select the name *xapps~cpm~sm~strategymanagement*.
10. In the *Name* column of *Extended Details*, enter the strategy management network name and press Enter. For example, **pgepmssm**.
11. Change `template.strategy` to the directory on the Cluster Disk. For example, `T:\Program files (x86)\SAP Strategy Management\InternetPub`.

5.3.5 Moving .INI Files to the Shared Disk

Procedure

1. Create the system environment variables `LSLINKINI` and `LSLINKCNF` on both nodes. Specify the directory only, for example, `T:\`.
2. Copy `LSDAL.INI` from the `c:\windows` directory to `T:\`.
3. Copy `LSDAL.CNF` from the `c:\windows` directory to `T:\`
4. Copy `lsserver.ini` from `c:\windows` to the Cluster Disk (e.g. `t:\lsspgx.ini`).
5. In the administration application, update the model connection definition by specifying `t:\lsspgx.ini` as the `INI` file.
   Also update the model connection to specify the SSM Cluster Network Name (e.g. `pgepmssm`) as the *PAS System Name*.

5.3.6 Updating the Application Server Shortcut

Procedure

1. Open the properties for the Application Server program, and add the text `"-inifile t:\lsspgx.ini"` to the strategy management target shortcut on both nodes.
2. Make sure the strategy management cluster is on the local node (this is dependent on the cluster disk resource `T:`).
3. Open `lsspgx.ini` in a text editor, and add this section:

```
[pgepmssm]
tcp_protocol=winsock
username=pipadmin
password=abcd1234
PROTOCOL=TCP
SERVICE=PILOT
CURSOR=LSSCMPTR
```

5.3.7 Setting Up a Link ID for Certain Implementations

If you use Entry and Approval or Model Designer, you must have a special Link ID called *ssm_cb_ea* to use for any of these connections. If you followed the instructions in the Installation Guide, you were instructed to create the special Link ID after installing the strategy management components.
Now you must modify a setting to adapt it for high availability.

Prerequisites

You have set up client access to the SAP NetWeaver System database. For more information, see the *Installation Guide for SAP Strategy Management* on the SAP Help Portal at `http://help.sap.com/bosm101`. Choose *Setting Up Client Access to the SAP NetWeaver System Database*. When using SQL Server as the system database, the 32–bit ODBC drivers for SQL Server are installed on the Windows server where Application Server is installed. The Application Server procedures are copied from the `\Strategy Management \InternetPub\procs\sqlsrvr_procs` directory to the parent directory `\Strategy Management \InternetPub\procs\`.
You have created a special Link ID called *ssm_cb_ea*. For more information, see the *Installation Guide for SAP Strategy Management* on the SAP Help Portal at `http://help.sap.com/bosm101`. Choose *Creating a Link ID for Certain Implementations*.

Procedure

1. In *Administrative Tools*, make a copy of the *Data Sources (ODBC)* shortcut, and name it *Data Sources (ODBC) (32-bit)*.
2. Right-click the 32-bit shortcut and select *Properties*.
3. In the *Data Sources (ODBC) (32-bit)* dialog box, edit the target to be `%SystemRoot%\syswow64 \odbcad32.exe`
4. Repeat the task on the other node(s).
5. When you created the *ssm_cb_ea* link ID in Application Server Administrator, you specified a value in the *WorkStation ID* text box of the *Link ID Properties* dialog box. The default value is the name of the current host.
   Change the value to the name of the cluster resource for SQLServer (for example, *PGEPMSQL*).

This page is left blank for documents that are printed on both sides.

6 Software Change Management

Software Change Management standardizes and automates software distribution, maintenance, and testing procedures for complex software landscapes and multiple software development platforms. These functions support your project teams, development teams, and application support teams. This section provides additional information about the most important software components. The following topics are covered:

- **Transport** — Enables and secures the distribution of software changes from the development environment to the quality assurance and production environment.
- **Support Packages and SAP Notes Implementation** – Provide standardized software distribution and maintenance procedures.
- **Release and Upgrade Management** – Reduces the time, cost, and risk associated with upgrades.

6.1 Transporting Models on Like Systems

Process

1. From the source system where Application Server is installed, copy any customized files to the same location on the destination system using an operating system tool for copying.
2. From the source system where Application Server is installed, copy the dimensional models to the same location on the destination system.
3. On the source system, start the Application Server Administrator and issue the `SUPERVISOR ADD DATABASE` command to add the database to `MASTERDB`.

   

   NOTE

   If you have procedures to recreate databases, then copy the procedures to the destination system, make sure the external data sources and Link IDs are available in the new system, and re-create the databases on the destination system by running the build procedures.

For details, see the *Server Upgrade Guides* on the SAP Help Portal at `http://help.sap.com/bosm101`.

6.2 Transporting Models on Different Systems

You can transport a dimensional model from one system to a different platform (for example, from Solaris to HP or to Microsoft Windows).

Process

1. From the source system where Application Server is installed, copy any customized files to the same location on the destination system using an operating system tool for copying.
2. From the source system where Application Server is installed, issue a `SUPERVISOR SHOW DATABASE` and record all the settings for the database.
3. From the source system where Application Server is installed, dump the databases.
4. Copy the dump files to the destination system using an operating system tool for copying.
5. On the source system, start the Application Server Administrator and issue the `SUPERVISOR CREATE DATABASE` command to create a database for the dumped database. Use all the settings you recorded from the `SUPERVISOR SHOW DATABASE` command.
6. On the source system, load the database by using it and then loading it.

For information about backing up and restoring Application Server by dumping and loading, see the *Server Upgrade Guides* on the SAP Help Portal at http://help.sap.com/bosm101. Then choose *Backup and Restore* [page 24].

6.3 Support Packages and SAP Notes Implementation

You can find the available support packages by going to SAP Service Marketplace at http://service.sap.com/swdc → *Download* → *Support Packages and Patches* → *A — Index* → *S* → *SAP STRATEGY MANAGEMENT* ↵.

The steps to apply a Support Package or a Hot Fix exist in the SAP Note for the Support Package or Hot Fix.

Critical limitations for a release are described in the Restrictions Note. The Central Note, and every Support Package Note and Hot Fix Note have a Related Notes tab that contains a link to the Restrictions Note.

6.4 Release and Upgrade Management

Releases of Application Server are located on SAP Service Marketplace at http://service.sap.com/swdc → *Download* → *Installations and Upgrades* → *Entry by Application Group* → *SAP Application Components* → *SAP Strategy Management* ↵.

For information about using the procedures and commands to upgrade your system from a previous version or to transport from one system to another, see the *Server Upgrade Guides* on the SAP Help Portal at http://help.sap.com/bosm101.

Methods of displaying the Application Server version

- In Application Server, choose *Help* → *About* ↵.
- While logging into Application Server, the startup banner shows the version.

- Use the `VERSION` command in Application Server.
- Using the PAS Query tool (`http://<nw_server>:<port>/strategy/tools`), click *PAS Query*, select the model connection and then specify `&result=version` in the *Address* box.

  Example output:

```
Interactive Publisher
Version <x>.<x>.<x> for Microsoft Windows
Copyright (C) <year> SAP AG
Reference <xxxx> on <date> <time>
Application Server
Version <x>.<x>.<x> for Microsoft Windows
Copyright (C) <year> SAP AG
Reference <xxxx> on <date> <time>
This software program is licensed by SAP AG for
use pursuant to the terms and conditions of a license agreement.
```

This page is left blank for documents that are printed on both sides.

7 Testing and Troubleshooting Client/Server Connections

7.1 Testing Client/Server Connections on UNIX

Once Application Server is installed on the UNIX machine, and you have started the Listener daemon, you must test whether it is possible to run a client/server connection between a client machine and the host on which Application Server is installed. Even before even beginning client/server testing, you should ensure that the product functions correctly in native mode.

These tests run smoothly if you followed the steps to start the Listener daemon. However, there are occasions when problems occur and some troubleshooting is required. This section covers steps to help resolve connection problems.

Procedure

Testing Installation and Connectivity

To test the installation and connectivity, Run the `runlss.csh` or `runlss.ksh` scripts from within a telnet session to make sure the product functions as expected.

Testing the Connectivity by Running Natively on UNIX

If you ran the scripts in a telnet session and a client/server connection does not work, do the following to run `lsstcp.sh` script natively on UNIX and verify whether the scripts are processing correctly:

1. Edit the `lsstcp.sh` script and change the last line so that the `lss` program is executed instead of the `lsstcp` program.
2. Change this line from:

   ```
   exec $LSSHOME/lsstcp $1
   ```

   to

   ```
   exec $LSSHOME/lss
   ```
3. Review the `LSSTLD.LOG` file, which is generated and updated by the Application Server listener daemon. It is created in the same directory as the `lsstld` executable. At the top of this log file is information about when the listener was started, which user started the listener, the socket the listener is listening on, when the listener initialization was completed, and connection attempts by users.

   The following excerpt from a sample log file shows a successful connection attempt. The log file shows the IP address of the user who made the connection, the time of connection, whether the request was accepted, and the service in the `lssmap` file being called.

```
Connection request from IP address 207.41.233.125, using port 2870
at Fri Aug 24 12:06:17 2008
Connection request from 207.41.233.125 accepted. Calling service Application
Server80.
```

4. If the messages in the `LSSTLD.LOG` file show a successful connection, skip the rest of this section. If the messages show an unsuccessful connection, see the section about troubleshooting.

7.2 Connection for Two Installations of Application Server

The file `lssmap` is installed with the Application Server software and contains entries based on the installation. When the Application Server TCP/IP Listener daemon, `lsstld`, receives a request for a connection, it reads the `lssmap` file, searching for an entry that matches the string passed from `SERVICE=entry` in the `LSSERVER.INI` file on the client. The file maps the requested service name to the shell script that is run to set environment variables and execute the Application Server kernel, `lsstcp`. There may be a situation in which you want to add other entries. For example, you might want to be able to connect to two installations of Application Server, one in a production scenario and the other in a test scenario.

The format of `lssmap` entries is:

SYNTAX

```
service name*shell script name
```

where the * delimiter is required.

Example

```
LSS80*<installdir>/lss/lsstcp.sh
LSSTEST*<installdir>/lss/beta/lsstcp.sh
```

In this example, `LSS80` and `LSSTEST` are the names of two services that run shell scripts from two different directories. The Listener daemon executes the script specified for the service.

7.3 Troubleshooting Client/Server Connections on UNIX

This section includes information that might be useful if you have trouble establishing client/server connections. Specifically, it includes information about the Application Server trace facility, the log files `LSSTLD.LOG` and `LSSLOG`, and the `lssmap` file that the Listener daemon uses.

7.3.1 Reviewing the Log Files

If a user has trouble connecting to the UNIX server, check the log files, which may contain diagnostic messages related to connection problems.

Procedure

1. Open the LSSTLD.LOG file in an editor. This file is located in the /<installdir>/lss directory.
2. If the messages in the LSSTLD.LOG file explain a problem, identify the problem, try to correct it, and run the test again.

   The following example shows an entry in the LSSTLD.LOG file that contains an error. The log file excerpt indicates that the connection attempt failed, and the listener provides information about why the connection failed. In this case, the error message indicates that either the UNIX username or password provided by the user is incorrect. That is, the listener could not authenticate the user.

   ```
   Connection request from IP address 207.41.234.130, using port 1058 at Fri Aug 24
   11:14:44 2004
   The login ID/password combination was rejected by crypt!
   Connection request from 207.41.234.130 rejected!
   ```

   The following example shows another problem connection. In this case, the service specified in the user's lsserver.ini file on their client machine is not found in the lssmap file on the host machine.

   ```
   Connection request from IP address 207.41.234.130, using port 1060
   at Fri Aug 24 11:21:57 2004
   The DEVENV service was not found in the lssmap file!
   ```

   There are times when the connection attempt fails and there is no obvious information available in the LSSTLD.LOG file. If everything in the LSSTLD.LOG file appears to be correct but a connection cannot be made, you should review the LSSLOG file. LSSLOG is created by the lsstcp executable in the UNIX user account's home directory when they make a client/server connection. The LSSLOG file contains information about the version, the environment, the process number, and the time of connection. This file also contains error message information if there are problems in establishing a client/server connection.
3. If you still cannot determine any obvious problems in either the LSSTLD.LOG or LSSLOG files, you should insert debugging information into the lsstcp.sh shell script. For example, you can add several lines to lsstcp.sh to determine how far in the file the script execution reaches before failing. Or, send all environment variable information to an external file.

   For example, you might add the following line to send the current date and time to a file called testfile located in the UNIX user account's home directory. You would add this line at the top of the lsstcp.sh script to make it immediately obvious whether the script is being executed:

   ```
   date > testfile
   ```
4. Further down in the file, just before the line that executes lsstcp, you would add the following line. This line appends the current date and time to the same file, testfile, as the first sample line. This second line shows you how far the script is executing.

   ```
   date >> testfile
   ```

5. You can also include in the `lsstcp.sh` script file a line that displays the values of all environment variables that are set. This is useful because it shows you whether items in the `lsstcp.sh` script file are being set correctly. It also shows you whether all needed environment variables are set correctly.
6. You can test this by inserting the following line immediately before the line that executes `lsstcp`:

   ```
   env > testfile
   ```
7. If you continue to experience problems that might be permissions related, you should perform your client/server connection with the UNIX user account root instead of as your regular user. Because the root user on UNIX has no security restrictions, a successful connection by root can rule out any problems not related to permissions.

7.3.2 Using the Trace Facility

If you have problems with Application Server, you can record all Application Server API calls in a file using the trace facility. You should only use the trace facility for diagnostic purposes because it can slow down processing.

Procedure

1. Open the `lsstcp.sh` file in an editor.
2. Change the `LSSTRACE` value from null to the name of the trace file you want to create or to `YES`. For example:

   ```
   LSSTRACE=YES
   ```

Application Server writes client/server API calls to a file called `LSSTRACE` in your Home directory.

7.4 Testing Client/Server Connections on a Microsoft Windows Server

Once Application Server is installed on the Microsoft Windows server machine, you must verify that your connections and processes are running properly. The *Installation Guide for SAP Strategy Management* provides some general steps to test the connections.

This section discusses the following issues that are specific to the Application Server software on the Microsoft Windows Server platforms using the TCP/IP protocol for client/server connections:

- Logging client/server connections
- Testing connections

7.4.1 Logging Client/Server Connections

For information about log files, see *Trace and Log Files* [page 11].

7.4.2 Testing SAP SM Listener and the TCP/IP Protocol

Procedure

1. Verify that the SAP SM Listener service is started. Go to the *Control Panel* and choose *Administrative Tools* → *Services*. Locate the *SAP SM Listener* service and make sure that is started.
2. Verify that the TCP/IP protocol is installed. Go to the *Control Panel* and choose *Administrative Tools* → *Network Connections*. Right click *Local Area Connection* and select *Properties* to determine if TCP/IP Internet Protocol Transport is installed.

7.4.3 Testing Connections Between the Client and Server

Procedure

1. Open the `Lsserver.ini` file in a text editor. It is located in the Microsoft Windows directory.
2. Change the `[<localhost>]` to the name or the IP address of the system you are connecting to.
3. For the `username=` entry, type:

   admin
4. Leave the `EncryptedPassword=` entry empty or type a question mark (**?**). You are prompted for the password when you try to connect.

   ```
   [<localhost>]
   tcp_protocol=winsock
   username=admin
   EncryptedPassword=?
   PROTOCOL=TCP
   SERVICE=PILOT
   CURSOR=LSSCMPTR
   ```
5. Verify that the Application Server Administrator software has been correctly installed on the Microsoft Windows client machine. On your Microsoft Windows Desktop, choose *Start* → *Programs* → *SAP Strategy Management* → *Application Server Administrator*. The program is started and a *Logon* dialog box appears.
6. In the *User* name text box, type the following user name, which is created at installation:

   admin
7. Do not enter any values in the *Password* box.
8. The *Server* box should be filled in with the name you specified for `[<localhost>]`.
9. Click *OK*.
10. Verify that the username and password specified in the client side `Lsserver.ini` file match the entry in the User Manager (or User Manager for Domains) utility. Remember that Microsoft Windows passwords are case sensitive.

NOTE

You can create a remote server connection that stores your password in encrypted format in `Lsserver.ini` rather than allow prompts for your password. See the explanation of the `Lsserver.ini` file in the *Server Configuration Guide for SAP Strategy Management*.

7.4.4 Configuring Microsoft Windows User Permissions for Client/Server Connection

The Microsoft Windows username and password that are specified in the client side `LSSERVER.INI` file require the *Log on Locally* access right on the Microsoft Windows server where Application Server is installed. This is needed to create a client/server process for its session.

If the username that you are using is a locally defined user on the Microsoft Windows server, and is a member of the Users group, then it has this access right by default. If, however, you are using a Microsoft Windows domain username, this is a member of the Domain Users group on the Microsoft Windows server. In this case, you need to assign the *Log on Locally* access right to the individual username, or the Domain Users group.

Procedure

1. In *Administrative Tools*, choose *Local Security Policy* to display the *Local Security Settings* window.
2. In the *Local Policies* folder, choose *User Rights Assignment*.
3. Choose the *Log on locally* policy.
4. Grant either the user, or a group containing the user, the *Log on Locally* access right.

8 Support Desk Management

Support Desk Management enables you to set up an efficient internal support desk for your support organization that seamlessly integrates your users, internal support employees, partners, and SAP Active Global Support specialists with an efficient problem resolution procedure. For support desk management, you need the methodology, management procedures, and tools infrastructure to run your internal support organization efficiently.

8.1 CA Wily Introscope Integration

To enable application analysis (including performance monitoring), CA Wily Introscope (IS) is integrated into SAP Solution Manager Diagnostics (SMD). SAP provides CA Wily IS instrumentation for SAP Strategy Management.

IS for Microsoft .NET is an application management solution for managed .NET applications, running on Microsoft's Common Language Runtime (CLR) environment. CA Wily IS offers Dashboards for performance and stability analysis. In addition, the Investigator provides a detailed view on all applications and environment metrics reported by the IS agent to the IS Enterprise Manager, which is the CA Wily IS server and part of SAP Solution Manager. User-specific interaction can be traced in CA Wily IS using the Transaction Trace.

Metrics, which are collected and reported through `tracers` defined in Probe Builder Directives `.pbd` files, define the information that is collected at runtime. The CA Wily IS .NET agent collects this information and reports it to the Enterprise Manager. The Enterprise Manager stores these metrics in its own database. You can view performance metrics using the IS Workstation or the IS WebView application.

Prerequisites

To enable IS for Strategy Management, install and configure the CA Wily IS .NET agent on the strategy management application server hosts.

For more about information about setting up and configuring CA Wily Introscope for strategy management, see SAP Note 1126554 as well as SAP Note 797147 and its attached FAQ document.

For more information about the installation, configuration, and use of SAP Solution Manager Diagnostics, visit the SAP Service Marketplace at `http://service.sap.com/diagnostics`.

Procedure

1. Log on to Root Cause Analysis workcenter of SAP Solution Manager (transaction code `solman_workcenter`).
2. Select *System Analysis* from the detail navigation menu. Choose the query that contains the Strategy Management system or find it in *All Technical Systems*.
3. Select the Strategy Management system from the systems selection table.
4. Choose *CA Wily Introscope* and log on to the CA Wily IS WebView.
5. Choose *Start Introscope*, then log on to the Introscope WebView.
6. Do any of the following:
   - Select the *Console* tab to view Wily Dashboards.
   - Select the *Investigator* tab to view the Wily Investigator tree.
   - Select the *Transaction Viewer* tab to view Wily Transaction Trace.

8.2 Problem Message Handover

You can log problem messages on the SAP Support Portal on SAP Service Marketplace at `http://service.sap.com/`. Provide a detailed and reproducible problem description.

The following component strings are available:

Component String	Component
`EPM-SM`	SAP Strategy Management
`EPM-SM-APP`	Applications
`EPM-SM-EAI`	Excel Add-In
`EPM-SM-PAS`	Application Server
`EPM-SM-PIP`	Interactive Publisher

9 Application Server Environment Variables

9.1 Application Server Environment Variables on UNIX

Environment variables are set in the `[Microsoft Windows]` section of `LSSERVER.INI` under Microsoft Windows, and by using the appropriate shell syntax under UNIX. Optionally, `DBHOME`, `DBPATH`, `USERNAME`, `PASSWORD`, `LSSFILES`, `SHAREDMEMORY`, and `MAXSETS` variables can be placed in the `[Server]` section of `LSSERVER.INI`. They are exported to the server, which may be Microsoft Windows or UNIX, at startup. These override earlier server settings.

NOTE

`DBHOME`, `DBPATH`, `SHAREDMEMORY`, and `DEFAULTMEMORY` settings are only valid in the `[Microsoft Windows]` section of `LSSERVER.INI` if you are running standalone or if you set these parameters on the server machine running a client/server configuration to NT. If you set this on the client machine, it does not affect the server machine.

Features

Variable	Description
`DBHOME`	Default directory for creating new files. `DBHOME` is searched when external files are referenced. Replaces `HOME`, which was used in earlier releases.
`LSSFILES=n`	Maximum number of files that can be opened. The default is `64`.
`SHAREDMEMORY=NO`	Switch off shared memory headers for `SHARED` and `READ` databases.
`DEFAULTMEMORY=n`	Default memory to use per Application Server session in kilobytes (1024 bytes). If not set, it is infinite. You can override this setting by using the `SET MEMORY` command from the command line, or from within a procedure.
`MAXSETS=`	Increases the maximum number of internal sets that can be used in an across/down list. If you receive a message stating that you have an insufficient number of `STLIB` sets available, then increase the value for `MAXSETS`. The default value is `1,000`.
`DBHOME`	As for Microsoft Windows, it is the default directory for creating new files. `DBHOME` is searched when external files are referenced.
`DBPATH`	Colon-separated list of directories to search for external files (after the current directory and `DBHOME`).
`VISUAL`	The name of the System editor.
`EDITOR`	Alternative name for the System editor.

9.2 UNIX Environment Variables and Shells Scripts

Environment variables define the location of Application Server databases and files. For Application Server to execute properly in a client/server session or in a native UNIX interactive session, environment variables must be set to specify accurate file locations.

You use either of the following UNIX shell scripts to set the values for environment variables.

- In a client/server setup, use the `lsstcp.sh` shell script located in the `<installdir>/lss` directory to set the environment variables required by Application Server. The `lsstcp.sh` script runs when a client/server connection is established. It initializes environment variables and runs the Application Server TCP/IP process.
- In a native UNIX execution, C shell users use the `runlss.csh` script located in the `<installdir>/lss` directory to set the environment variables required by Application Server.
- In a native UNIX execution, Korn and Bourne shell users use the `runlss.ksh` script located in the `<installdir>/lss` directory to set the environment variables required by Application Server.
- Use native UNIX for Application Server production batch jobs that run routine tasks such as data loads and consolidations.

Whatever shell script you use, make sure that the definitions for all databases and external files reflect your installation configuration. The Application Server files are installed in the `<installdir>/lss` directory. In the shell scripts, the environment variable `$LSSHOME` is defined to reference the `<installdir>/lss` directory. The `install.sh` script generates all required scripts with the directory name based on your installation location.

By default, Application Server files such as `MASTERDB` and `TBDB` exist in the <installdir>/lss directory. The `LSSHOME` environment variable is set to the `<installdir>/lss` directory. Environment variables for Application Server databases use `LSSHOME`. When you create a database or move one to another directory, update the environment variable in the UNIX shell script.

9.3 Identifying the Shell Used by a Native UNIX Account

Procedure

1. Log on to the native UNIX account.
2. Enter:

```
echo $SHELL
```

Result

If the Response Is:	The Shell Is:	The Script Is:
`/bin/csh`	C	`runlss.csh`
`/bin/sh`	Bourne	`runlss.ksh`
`/bin/ksh`	Korn	`runlss.ksh`

9.4 Environment Variables in Native UNIX

You can run Application Server in native UNIX using Telnet from a client machine. When you type an Application Server user name and password in the logon screen, a non-Microsoft Windows text-based interactive session begins. Use Application Server in native UNIX for production batch runs of routine tasks such as loading and consolidating data.

The `runlss.ksh` shell script runs under the Korn or Bourne shell to start a native UNIX Application Server session. The `runlss.ksh` shell script sets environment variables for Application Server. Once a variable is defined, it must be exported.

Procedure

1. Run the `runlss.ksh` shell script. The runlss.ksh script sets environment variables for Application Server.
2. In the shell script, define a variable and export it.
   The following lines set the directory Application Server:

   ```
   LSSHOME=<installdir>/lss
   export LSSHOME
   ```

3. If you create a new database or file, you must define its location in an environment variable in the shell scripts. Include a line that specifies the database name and location and a line that exports the database. In the example below, SALES1 is a new database name that is in the default location set by `$LSSHOME`.
   If you put Application Server databases in a directory different from the directory defined by `$LSSHOME`, use the full path to the database in place of the `$LSSHOME` environment variable. In the example below, SALES2 is in the `/proddb` directory rather than `<installdir>/lss`, which is the `LSSHOME` directory.

   ```
   APLIB=$LSSHOME/APLIB
   SALES1=&LSSHOME/SALES1
   SALES2=/proddb/SALES2
   DEMO=$LSSHOME/DEMO
   INITIAL=$LSSHOME/INITIAL
   JUICE=$LSSHOME/JUICE.ENG
   LOCKFILE=$LSSHOME/LSSLOCK
   MASTERDB=$LSSHOME/MASTERDB
   SMREPORT=$LSSHOME/SMREPORT
   TBDB=$LSSHOME/TBDB.ENG
   export APLIB SALES1 SALES2 DEMO INITIAL JUICE LOCKFILE
   export MASTERDB SMREPORT TBDB
   ```

   The following line executes Application Server:

   ```
   exec $LSSHOME/lsstcp
   ```

9.5 Environment Variables in Native UNIX Using the C Shell

You can run Application Server in native UNIX using Telnet from a client machine. When you type an Application Server user name and password in the logon screen, a non-Microsoft Windows text-based interactive session begins. Use Application Server in native UNIX for production batch runs of routine tasks such as loading and consolidating data.

You can run the `runlss.csh` shell script under the C shell to start a native UNIX Application Server session. The `runlss.csh` shell script sets environment variables for Application Server. Once you define a variable, it does not need to be exported.

Procedure

1. Run the `runlss.csh` shell script. `Runlss.csh` sets environment variables for Application Server. The following line sets the location of Application Server:

   ```
   setenv LSSHOME /<installdir>/lss
   ```

2. In the shell script, define a variable as needed.
3. If you create a new database or file, you must define its location in an environment variable in the shell script. Include a line that specifies the database name and location and a line that exports the database. In the example below, SALES1 is a new database name that is in the default location set by `$LSSHOME`.

   If you put Application Server databases in a directory different from the directory defined by `$LSSHOME`, use the full path to the database in place of the `$LSSHOME` environment variable. In the example below, SALES2 is in the `/proddb` directory rather than `<installdir>/lss`, which is the `LSSHOME` directory.

   Use the following lines in the `runlss.csh` shell script to set the location of Application Server databases:

   ```
   setenv APLIB $LSSHOME/APLIB
   setenv SALES1 $LSSHOME/SALES1
   setenv SALES2 /proddb/SALES2
   setenv INITIAL $LSSHOME/INITIAL
   setenv JUICE $LSSHOME/JUICE.ENG
   setenv LIBDB $LSSHOME/LIBDB
   setenv LOCKFILE $LSSHOME/LSSLOCK
   setenv MASTERDB $LSSHOME/MASTERDB
   setenv SMREPORT $LSSHOME/SMREPORT
   setenv TBDB $LSSHOME/TBDB.ENG
   ```

   The following line executes Application Server:

   ```
   $LSSHOME/lss
   ```

9.6 Environment Variables in a Client/Server UNIX

Use the `lsstcp.sh` shell script located in the `<installdir>/lss` directory to set the environment variables required by Application Server and export the variables in a client/server UNIX configuration. The `lsstcp.sh` script runs when a client/server connection is established. It initializes environment variables and runs the Application Server TCP/IP process.

The `lsstcp.sh` shell script contains the `LSSTRACE` and `LSSLOG` environment variables, used for logging diagnostic information.

If the `LSSTRACE` file that Application Server creates in the UNIX account's home directory has a file name value or a value of `TRUE`, Application Server traces each internal function call. This can be useful if you are working with Customer Support to analyze unexplained behavior. However, when `LSSTRACE=TRUE`, the size of the log file increases rapidly and performance is degraded.

If `LSSLOG` is uncommented and has a file name value or a value of `TRUE`, Application Server provides a log that is a duplicate of the LSSLOG already in the UNIX account's home directory.

9.7 Changing File Locations in Lsstcp.sh

Procedure

1. Run the `lsstcp.sh` shell script. The `lsstcp.sh` script sets environment variables for Application Server.
2. In the shell script, define a variable and export it.
   The following lines set the directory for Application Server:
   ```
   LSSHOME=/<installdir>/lss
   export LSSHOME
   ```
3. If you create a new database or file, you must define its location in an environment variable in the shell scripts. Include a line that specifies the database name and location and a line that exports the database. In the example below, SALES1 is a new database name that is in the default location set by `$LSSHOME`.
   If you put Application Server databases in a directory different from the directory defined by `$LSSHOME`, use the full path to the database in place of the `$LSSHOME` environment variable. In the example below, SALES2 is in the `/proddb` directory rather than `/<installdir>/lss`, which is the `LSSHOME` directory.
   ```
   APLIB=$LSSHOME/APLIB
   SALES1=&LSSHOME/SALES1
   SALES2=/proddb/SALES2
   DEMO=$LSSHOME/DEMO
   INITIAL=$LSSHOME/INITIAL
   JUICE=$LSSHOME/JUICE.ENG
   LOCKFILE=$LSSHOME/LSSLOCK
   ```

```
MASTERDB=$LSSHOME/MASTERDB
SMREPORT=$LSSHOME/SMREPORT
TBDB=$LSSHOME/TBDB.ENG
export APLIB SALES1 SALES2 DEMO INITIAL JUICE LOCKFILE
export MASTERDB SMREPORT TBDB
```

The following line executes Application Server:

```
exec $LSSHOME/lsstcp $1
```

9.8 Reviewing UNIX File Privileges

The UNIX file access options are read, write, and execute. These privileges are assigned for the distinct domains of user (the owner), group, and other.

This section summarizes the default permissions:

- All installed databases allow read and write access to all users.
- `TBDB` is the Application Server system database. It contains system components such as diagnostic information and messages, and must not be changed. `TBDB` is read-only.
- Executable modules `lsstcp`, `lsstld`, `lss`, and `xray` are installed with read and execute access for all users.
- When you create a new database, the default access is `rw-r--r--`. The owner has read and write access to the file and all others have read-only access. To allow others to access the database, you must change the privileges.
- All generated scripts have read, write, and execute access for all users.

Make sure that the correct permissions are set on all of the Application Server files and that appropriate permissions are set all the way up the directory chain from where Application Server is installed. For example, all users must be able to write to `MASTERDB` to log on to Application Server. However, even if the specific file permissions allow this, if the directory in which `MASTERDB` resides does not allow all users write access, you will have problems. Check this before attempting to connect client/server with an Application Server session on UNIX.

Procedure

You can check the file privileges by entering:

```
cd <installdir>/lss
ls -l
```

UNIX displays file information, including access privileges, similar to these default permissions set by the Application Server installation script:

SYNTAX

```
-rw-rw-rw-  1 root sys 2667008 2010-12-20 19:29 APLIB
-rw-rw-rw-  1 root sys 2664960 2010-12-20 19:29 APLIB.ANSI
-rw-rw-rw-  1 root sys  147456 2010-12-20 19:29 CGLIB
```

```
-rw-rw-rw-  1 root sys  147456 2010-12-20 19:29 CGLIB.ANSI
-rw-rw-rw-  1 root sys  184320 2010-12-20 19:29 INITIAL
-rw-rw-rw-  1 root sys  184320 2010-12-20 19:29 INITIAL.ANSI
-rw-rw-rw-  1 root sys 4374528 2010-12-20 19:29 JUICE.ENG
-rw-rw-rw-  1 root sys 4374528 2010-12-20 19:29 JUICE.ENG.ANSI
-rw-rw-rw-  1 root sys 4767744 2010-12-20 19:30 JUICE.JPN
-rw-rw-rw-  1 root sys 4423680 2010-12-20 19:30 JUICE.JPN.SHIFTJIS
-rw-rw-rw-  1 root sys       0 2010-12-20 19:29 LSSLOCK
-rw-rw-rw-  1 root sys       0 2010-12-20 19:29 LSSLOCK.ANSI
-rw-rw-rw-  1 root sys   50176 2010-12-20 19:29 MASTERDB
-rw-rw-rw-  1 root sys   50176 2010-12-20 19:29 MASTERDB.ANSI
-rw-rw-rw-  1 root sys  147456 2010-12-20 19:29 SMREPORT
-rw-rw-rw-  1 root sys  147456 2010-12-20 19:29 SMREPORT.ANSI
-r--r--r--  1 root sys  364544 2010-12-20 19:30 TBDB.DEU
-r--r--r--  1 root sys  362496 2010-12-20 19:30 TBDB.DEU.ISO8859-1
-r--r--r--  1 root sys  339968 2010-12-20 19:29 TBDB.ENG
-r--r--r--  1 root sys  339968 2010-12-20 19:29 TBDB.ENG.ANSI
-r--r--r--  1 root sys  361472 2010-12-20 19:30 TBDB.FRA
-r--r--r--  1 root sys  357376 2010-12-20 19:29 TBDB.FRA.ISO8859-1
-r--r--r--  1 root sys  339968 2010-12-20 19:30 TBDB.JPN
-r--r--r--  1 root sys  339968 2010-12-20 19:30 TBDB.JPN.SHIFTJIS
-rwxrwxrwx  1 root sys      90 2010-12-20 20:38 batch1
-rwxrwxrwx  1 root sys     638 2010-12-20 20:38 batchlss.csh
-rwxrwxrwx  1 root sys     703 2010-12-20 20:38 batchlss.ksh
-r-xr-xr-x  1 root sys 3906131 2010-12-20 19:29 lss
-rwxrwxrwx  1 root sys      84 2010-12-20 20:38 lssmap
-r-xr-xr-x  1 root sys 3811127 2010-12-20 19:29 lsstcp
-rwxrwxrwx  1 root sys    1015 2010-12-20 20:38 lsstcp.sh
-r-xr-xr-x  1 root sys   28537 2010-12-20 19:29 lsstld
-rwxrwxrwx  1 root sys     617 2010-12-20 20:38 runlss.csh
-rwxrwxrwx  1 root sys     678 2010-12-20 20:38 runlss.ksh
-rwxr-xr-x  1 root sys 3830516 2010-12-20 19:29 sgtrans
-rwxr-xr-x  1 root sys 3739220 2010-12-20 19:29 sgttcp
-rwxrwxrwx  1 root sys     493 2010-12-20 20:38 tldgo
-rwxrwxrwx  1 root sys     757 2010-12-20 20:38 tldstop
-rwxr-xr-x  1 root sys  352514 2010-12-20 19:29 upgradedb
drwxrwxrwx  2 root sys    4096 2010-12-20 20:38 workfile
-r-xr-xr-x  1 root sys  355588 2010-12-20 19:29 xray
```

The first column in the list represents the file protections for the owner, the group, and all others. The first character position indicates a file (-) or a directory (d). The other 9 positions are divided into 3-character sections. Each section has a location for defining access for read (r), write (w), and execute (x) privileges. A dash (-) means that type of access is denied. For example, a file with privileges `-rw-rw-rw-` has read and write access for all users on the UNIX system, owner, group, and all others.

9.9 Changing File Privileges in UNIX

Default access privileges for Application Server are enough for most sites. If you need to change privileges, be careful not to block access to certain files. All users must always have read/write access to `MASTERDB` and `LSSLOCK` or else logon attempts fail.

Procedure

You can change the file access in native UNIX using the `chmod` command:

SYNTAX

```
chmod <entity ><operator ><privilege ><filename>
```

Variable	Description
<entity>	Specifies whom you are changing the access privileges for. Entity can be either u (user), g (group), o (other), or a (all).
<operator>	Specifies whether you are adding or removing the access privilege. Operator can be + (add) or - (remove).
<privilege>	Specifies the access privilege you are changing. Privilege can be either r (read), w (write), or x (execute).
<filename>	Specifies the file whose access you are changing.

The following commands change the file access of the TESTDB database. Write access is added for group and read access is removed for other. TESTDB now has access privileges of -rw-rw--.

```
chmod g+w TESTDB
chmod o-r TESTDB
```

9.10 Modifying the DBHOME Environment Variable

The DBHOME environment variable defines the Application Server home directory, which is the location of external files such as output buffer files, trace files, database dump files, and Work databases. By default, the installation creates the DBHOME environment variable and specifies a path of /<installdir>/lss/workfile. If you want to change the workfile location to a different path, you can modify DBHOME in the lsstcp.sh script.

Procedure

Modify the following information in lsstcp.sh:

```
DBHOME=/<installdir>/<newlocation>/workfile
export DBHOMEexport DBHOME
```

10 Related Guides

You can find more information about installation and configuration in the Master Guide, Installation Guide, and Upgrade Guide. For more information, see the SAP Help Portal at http://help.sap.com/bosm101.

Typographic Conventions

Example	Description
<Example>	Angle brackets indicate that you replace these words or characters with appropriate entries to make entries in the system, for example, “Enter your <User Name>”.
Example → Example	Arrows separating the parts of a navigation path, for example, menu options
Example	Emphasized words or expressions
Example	Words or characters that you enter in the system exactly as they appear in the documentation
http://www.sap.com	Textual cross-references to an internet address
/example	Quicklinks added to the internet address of a homepage to enable quick access to specific content on the Web
123456	Hyperlink to an SAP Note, for example, SAP Note 123456
Example	■ Words or characters quoted from the screen. These include field labels, screen titles, pushbutton labels, menu names, and menu options. ■ Cross-references to other documentation or published works
Example	■ Output on the screen following a user action, for example, messages ■ Source code or syntax quoted directly from a program ■ File and directory names and their paths, names of variables and parameters, and names of installation, upgrade, and database tools
EXAMPLE	Technical names of system objects. These include report names, program names, transaction codes, database table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE
EXAMPLE	Keys on the keyboard

SAP AG
Dietmar-Hopp-Allee 16
69190 Walldorf
Germany
T +49/18 05/34 34 34
F +49/18 05/34 34 20
www.sap.com