

SAP SCM 7.0 EHP 2 and higher – Standalone Engine SAP liveCache Technology 7.9: UNIX



Document History

Caution

Before you start the implementation, make sure you have the latest version of this document that is available on the SAP Service Marketplace at service.sap.com/instguides.

The following table provides an overview on the most important document changes:

Table 1

Version	Date	Description
1.02	2015-05-28	Updated version

Table 2

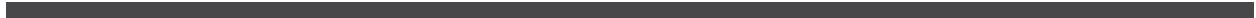
Version	Date	Description
1.01	2015-01-28	Updated version

Table 3

Version	Date	Description
1.00	2013-10-09	Initial version

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1 Introduction

This documentation describes how to upgrade an SAP liveCache instance from at least Release 7.5 to Release 7.9. SAP liveCache is used in SAP Supply Chain Management (SCM).

Caution

Make sure you have the **latest version of this document**. See the version number on the front page. You can always find the latest version at:

► service.sap.com/instguides ► SAP Business Suite Applications ► SAP SCM ► SAP SCM Server ► Using SAP enhancement package <version> for SAP SCM 7.0 Server ►

If you have a high-availability (HA) liveCache with a cluster environment, see SAP Note [2113981](#) for more information before starting the upgrade.

For more information about SAP SCM technology, see ► service.sap.com/scm ► Technology ►

1.1 Before You Start

Make sure that you read the following sections before you start the upgrade:

- [SAP Notes for the Upgrade \[page 5\]](#)
- [Information Available on SAP Service Marketplace \[page 6\]](#)
- [Naming Conventions \[page 6\]](#)

1.1.1 SAP Notes for the Upgrade

Read the following SAP Notes, which you can find at service.sap.com/notes:

Table 4

Note Number	Title
1566982	Enhancements to the upgrade to liveCache 7.9
498036	Overview note: Importing MaxDB/liveCache versions
1567117	Parameter values for liveCache version 7.9
337445	liveCache and Memory Management
487972	Operating system parameterization of liveCache
829408	Upgrading a database in the UNIX cluster

Note Number	Title
1248891	SAP SCM Upgrade on liveCache OneDB
2113981	SAP MaxDB / liveCache / Content Server Maintenance in High Availability System Environment
2158713	Strategy for resetting an SAP MaxDB to an older database version

Caution

Before you begin the upgrade, make sure that you read **SAP Note 1072392** because it contains current information and corrections essential to the upgrade.

1.1.2 More Information on SAP Service Marketplace

You can find more information on SAP Service Marketplace as follows:

Table 5

Description	Address
liveCache Upgrade Guide	▶ service.sap.com/instguides ▶ <i>SAP Business Suite Applications</i> ▶ <i>SAP SCM</i> ▶ <i>SAP SCM Server</i> ▶ <i>Using SAP enhancement package <version> for SAP SCM Server 7.0</i> ▶
Product Availability Matrix (PAM)	service.sap.com/pam
SAP Notes	service.sap.com/notes

1.1.3 Naming Conventions

Release Names

Where release descriptions are used in the following documentation, they correspond to the following SAP SCM Releases:

Table 6

Release of SAP Web Application Server or SAP NetWeaver	Release of SAP SCM
6.40	4.1
7.0	5.0, 2007 (5.1)
7.01	7.0
7.02	7.01
7.03	7.02, 7.03

SAP System

The SAP system name is called `SAPSID` below. Follow the notation in pointed brackets. If `<SAPSID>` is used, insert your SAP system name, for example `PRD`.

<SAPSID> User Name

The user name is written in uppercase and abbreviated with `<SAPSID>ADM`.



Caution

Always enter the user name `<sapsid>adm` in lowercase for the standalone database server.

liveCache Application Routines

The liveCache application routines are called “liveCache applications”. The application area is BC-DB-LCA, where the abbreviations have the following meanings:

- BC means Basis components
- DB means database
- LCA means liveCache applications

2 Planning

To plan the upgrade, you need to do the following:

1. You [check the software requirements \[page 8\]](#).
2. You [choose an upgrade strategy \[page 9\]](#).
3. If you are using SCM 5.1 or lower, you can use the liveCache DVD in the SCM 7.0 EHP2 package.

2.1 Checking Software Requirements

Procedure

1. Check that:
 - SAP liveCache is ready to run.
 - The system tables have been loaded at least once for the existing instance.
 - The database parameters of the database instance that you want to upgrade have not changed since the last restart.
 - The starting version of SAP liveCache (that is, before the upgrade) is at least **7.5**.
2. Check your operating system release.

For the most up-to-date release information on the database and operating system of your product, check the SAP Product Availability Matrix (PAM) as follows:

1. Go to service.sap.com/pam.
2. Search for your SCM release.



Example

EHP2 for SAP SCM 7.0

3. Choose **Technical Release Information**.
4. In the table, choose **Details** in the row **SAP LiveCache** and column **Operating Systems**.
5. Click **Display** in the column **Additional Information** to see the number of the note with additional information on required operating system patch levels and patches for C++ RTE.

For additional operating system requirements, see the following SAP Notes:

- [337445](#) *liveCache and Memory Management*
- [487972](#) *Operating System Parameterization of liveCache*

You can find these notes at:

service.sap.com/notes

2.2 Choosing an Upgrade Strategy

The upgrade strategy you choose depends on your existing release of SAP liveCache, your start release, and your target release of the SAP system.

Prerequisites

The upgrade strategies differ as follows:

- **Inplace upgrade**
Inplace upgrade does not change the structure, as occurs when the start and target releases for the SAP system or the SAP liveCache database are different. Therefore, only the SAP liveCache software is updated during an inplace upgrade.
- **SCM Extract / Load Upgrade**
With the SCM extract / load upgrade, transaction data is backed up using ABAP reports during the SCM system upgrade, that is, **before** the SAP liveCache upgrade. This type of upgrade overwrites data files and devspaces from SCM Release 4.1, 5.0, or 5.1 during the installation of the new SAP liveCache software. You do not need to first deinstall anything. Finally, the SAP liveCache instance is recreated and initialized.

Note

SCM Release 4.0 is **not** supported as a start release for the upgrade.

Caution

Use the SCM extract / load upgrade strategy **only** for an **SCM upgrade** to 7.0 EHP2 or higher (which uses SAP liveCache 7.9) when your SCM start release is 4.1, 5.0, or 5.1.

Procedure

Choose your upgrade strategy in one of the following ways:

- Follow the instructions in the relevant SAP system upgrade documentation.
- Use the tables below to determine your upgrade strategy.

Table 7: SAP liveCache Upgrade **During** an SCM Upgrade

SCM Start Releases	SCM Target Release	SAP liveCache Kernel Start Release	Upgrade Strategy
4.1, 5.0, 2007 (5.1)	7.0 or higher	>=7.5	SCM extract / load upgrade
7.0 or higher	7.0 EHP1 or higher	7.7	Inplace upgrade

Table 8: SAP liveCache Upgrade **Without** an SAP System Upgrade or an SCM Enhancement Package Installation

SAP liveCache Kernel Start Release	SAP liveCache LCA Start Release	Upgrade Strategy
7.7	7.0	Inplace upgrade

For the second table shown above, the SAP SCM start release is 7.0 or 7.0 EHP1 and the SCM target release is 7.0 EHP2 or higher, which is called *SAP LC/LCAPPs 10.0* in the Software Distribution Center (SWDC).

3 Preparation

You complete the upgrade preparations [page 10].

3.1 Completing the Upgrade Preparations

Procedure

SCM Extract / Load Upgrade

i Note

The report /SAPAPO/OM_LC_UPGRADE_70 issues a message when it is time to upgrade liveCache.

1. Make sure that, during the REQ_APOUPG phase of the SCM upgrade, the SAP liveCache transaction data is downloaded to the SCM database.

i Note

You **cannot** start the upgrade without a successful download. You do **not** need to copy the master data to the SCM database, because master data – unlike transaction data – is already present in the SCM database (this is true for the SCM system at all times).

2. Make sure that you stop SAP liveCache in the REQ_APOUPG phase.
3. If an SCM instance or another SAP MaxDB instance is running on the SAP liveCache server, stop it.
4. Stop the server for Remote SQL using the command:
x_server stop.
5. Stop all DBMGUIs and all DBMCLI sessions.

Inplace Upgrade

1. Stop SAP liveCache with transaction LC10.
2. If an SCM instance or another SAP MaxDB instance is running on the SAP liveCache server, stop it.
3. Stop the server for Remote SQL using the command:
x_server stop.
4. Stop all DBMGUIs and all DBMCLI sessions.

4 Upgrading liveCache

Procedure

1. Log on as user `root`
2. Start the upgrade tool with the liveCache DVD or with the downloaded software from the Software Distribution Center (SWDC):
 - liveCache DVD
 1. Load and mount the liveCache DVD.
 2. Start the upgrade tool from the liveCache DVD as follows:

```
<liveCache DVD>/DATA_UNITS/LC_UPDATE/LCUPDATE.SH
```
 - SWDC

Start the upgrade tool from the downloaded and extracted file as follows:

```
SDBUPD
```
3. Enter or (if you are using SDBUPD) select the SAP liveCache name, DBM user, and DBM password (that is, for the control user).

5 Post-Upgrade

You perform the following post-upgrade steps:

1. You [perform post-upgrade activities \[page 12\]](#).
2. You [set up a liveCache user \[page 14\]](#).
3. You [install or upgrade Database Studio \[page 14\]](#).

5.1 Performing Post-Upgrade Activities

Procedure

1. Check the setting of `OMS_HEAP_LIMIT` as described in [SAP Note 1567117](#).

Caution

It is essential that the SAP liveCache parameter `OMS_HEAP_LIMIT` is set to a value greater than zero. The unit for this parameter is KB. If you have to change this parameter, restart the SAP liveCache instance so that the change takes effect.

2. Check the instructions in [SAP Note 1567117](#) to parameterize the SAP liveCache Release 7.9 server.
3. Check the following prerequisites before you upgrade the SAP central or dialog instance:
 - If the liveCache instance is on the same host as the SCM instance, you do not need to update the client software.
 - For the client software upgrade for liveCache, you need to stop the central and dialog instance.
 - If other SAP MaxDB instances are running on the central or dialog instance server, stop them.
4. Upgrade the database client software for the host where the SAP central and dialog instances are running, depending on whether your client is running on UNIX or Windows:

Note

You do **not** need to update the client software if:

- The database instance is on the same host as the SAP instance
- Your client software is already release 7.9 or higher – but in this case we recommend you to always use the latest client software

Your Client is Running on UNIX

1. Log on as the `root` user.
2. Stop the SAP central or dialog instances.
3. Start the client software upgrade with the liveCache DVD or with the downloaded software from the Software Distribution Center (SWDC):
 - liveCache DVD

```
<liveCache DVD>/DATA_UNITS/LC_UPDATE/LCUPDATE.SH -client
```

- SWDC

```
SDBINST -profile "Runtime For SAP AS"
```

4. Log on as the <sapsid>adm user.



Caution

Make sure that you log on from the beginning, because the environment of <sapsid>adm has been changed.

5. Restart the SAP instance:

```
startsap r3
```

6. If you stopped other SAP MaxDB instances, restart them.

Your Client is Running on Windows

1. Log on as a user with administrator rights.
2. Stop the SAP central and dialog instances.
3. Stop the server for Remote SQL:

```
x_server stop
```

4. Start the client software upgrade with the liveCache DVD or with the downloaded software from the Software Distribution Center (SWDC):

- liveCache DVD

```
<liveCache DVD>:\LC_UPDATE\LCUPDATE.BAT -s <SAPSID> -client
```

- SWDC

```
SDBINST -profile "Runtime For SAP AS"
```

5. Log on again as a user with administrator rights.

Note

Make sure that you log on from the beginning because the user environment has been changed.

6. Restart the SAP instance service SAP<SID>_<instance number>.
7. Start the SAP instance using the Microsoft Management Console.
8. If you stopped other SAP MaxDB instances, restart them and also restart the server for Remote SQL using the following command:

```
x_server start
```

Your Client is Running on IBM i

1. Log on as the <sapsid>ADM user.
2. Stop the SAP central or dialog instances by entering this command:

```
STOPSAP
```

3. Log on as user QSECOFR.
4. Switch to the PASE shell by entering this command:

```
CALL QP2TERM
```

5. Start the client software upgrade with the liveCache DVD or with the downloaded software from the Software Distribution Center (SWDC):
 - liveCache DVD
 - `<liveCache DVD>/DATA_UNITS/LC_UPDATE/LCUPDATE.SH -client`
 - SWDC
 - `SDBINST -profile "Runtime For SAP AS"`
 6. Log on as the <sapsid>ADM user.
 7. Restart the SAP instance by entering this command:
 - STARTSAP**
 8. If you stopped other SAP MaxDB instances, restart them.
5. If you are performing an upgrade with the SCM extract/load [upgrade strategy \[page 9\]](#), follow the SCM upgrade documentation and section C of report /SAPAPO/OM_LC_UPGRADE_70. There you can find descriptions of when to restart liveCache and when to perform a complete liveCache backup.
 6. If you are performing an upgrade with the Inplace [upgrade strategy \[page 9\]](#):
 1. Start the server for Remote SQL using the command `x_server start`.
 2. If you need to import a new SAP liveCache version as part of the SAP liveCache upgrade, do this now. You can find the newest versions of SAP liveCache at:
 - ▶ [service.sap.com/patches](#) ▶ [A-Z Index](#) ▶ [S](#) ▶ [SAP SCM](#) ▶ [SAP SCM ENHANCE PACKAGE](#) ▶ [<Release> FOR SAP SCM 7.0](#) ▶ [Entry by Component](#) ▶ [SAP LiveCache](#) ▶ [SAP LC/LCAPPS 10.0](#) ▶ [<OS>](#) ▶
 3. Start the SCM and SAP liveCache instances using transaction LC10.
 4. Perform a complete backup of the liveCache data so that you can recover the new liveCache if necessary.

5.2 Setting Up a liveCache Super User

Process

You need to create a liveCache and liveCache applications super user for liveCache administration. Assign the roles SAP_APO_LC_ALL or SAP_LCA_ALL and SAP_BC_LVC_SUPERUSER to the user, as these roles already contain all required privileges

If you want to create users with limited privileges for transaction LC10 see [SAP Note 452745](#) for more information about the authorization concept for transaction LC10.

5.3 Installing or Upgrading Database Studio for SAP MaxDB

This section describes how to install or upgrade Database Studio for SAP MaxDB and SAP liveCache on Windows front ends. Database Studio is the database administration tool for SAP MaxDB.

For more information about Database Studio, see:

▶ [help.sap.com](#) ▶ [Database](#) ▶ [SAP MaxDB](#) ▶ [SAP MaxDB 7.9](#) ▶ [English](#) ▶ [Tools](#) ▶ [Database Studio](#) ▶

i Note

Database Studio replaces Database Manager GUI and SQL Studio, which were available in previous releases. The use of Database Studio for SAP liveCache is optional. If you do not want to use it, skip this section.

For up-to-date information on installing Database Studio, see SAP Note [1360996](#).

Prerequisites

- You can install Database Studio on Linux or Windows in your network, even if your database runs on a different operating system. You can then remotely administer the database on a different host.

The instructions below refer mainly to the Windows version.

i Note

To run Database Studio on Linux, you need to meet the requirements for the SAP MaxDB database server.

- Your PC must meet the following **minimum** requirements:

- Software requirements:

Table 9: Operating System Requirements for Database Studio

Operating System	Version
Windows 2008	IA64 and X64
Windows 2008 R2	IA64 and X64
Windows Vista	IA32 and X64
Windows 7	IA32 and X64

- Hardware requirements:

- RAM: 512 MB (recommended RAM: 1 GB)
- Processor speed: 1.5 GHz
- Free disk space: 200 MB
- Monitor: 1024x768 pixels, 256 colors

- You can obtain the required files from one of the following:

- The media for the SAP MaxDB RDBMS or SAP liveCache
- By downloading from:

[▶ support.sap.com/patches](#) ▶ *Database and Database Patches* ▶ *SAP MaxDB* ▶ *Database Patches* ▶ *MAXDB GUI COMPONENTS/TOOLS* ▶ *MAXDB DATABASE STUDIO 7.9* ▶

- You need Java version 5 (also known as 1.5) or higher.

To check your Java version, enter the following command:

```
java -version
```

To download Java, go to [java.com/en/download](#).

Procedure

1. Start the installation or upgrade as follows (the paths shown are for the 32-bit installation):
 - If you are using the **SAP MaxDB RDBMS media**:
`<media>/DATA_UNITS/MAXDB_LINUX_I386/DBSTUDIO/SDBSETUP`
 - If you are using the **SAP liveCache media**:
`<media>/DATA_UNITS/LC_LINUX_I386/DBSTUDIO/SDBSETUP`
 - If you are using the downloaded files, simply execute the downloaded `SDBSETUP` file.
The *Installation Manager* starts.
2. Choose *Start Installation/Upgrade* and then *Custom*.
You see a list of the components to be installed.
3. Deselect all components except *Database Studio*.
4. Choose *Install*.
The installation manager installs Database Studio.
5. If you are prompted to restart your computer after the installation, make sure that you first shut down any databases that are running.

More Information

For more information about Database Studio, including troubleshooting, see SAP Note [1097311](#) .

6 Additional Information

6.1 Operating Information for liveCache

If you manually reinitialize liveCache with transaction LC10, make sure that you **first delete all administration reports**, especially /SAPAPO/DELETE_LC_ANCHORS and SLCA_INIT_FOLLOW_UP, from the definition of the logical liveCache LCA connection.

6.2 Secure Sockets Layer Protocol for Database Server Communication

The SAP MaxDB database server supports the Secure Sockets Layer (SSL) protocol. You can use this protocol to communicate between the database server and its client, here the Application Server (AS). SSL guarantees encrypted data transfer between the SAP MaxDB database server and its client applications. In addition, the server authenticates itself to the client. The SAP cryptographic library is already installed by the installer.



Caution

There is a performance cost for SSL since the data has to be encrypted, which requires time and processing power.

To use SSL you need to [generate the personal security environment \[page 17\]](#) (PSE) on the server (SSL Server PSE) and on the client (SSL Client PSE):

6.2.1 Generating the Personal Security Environment

The information required by the database server or client application to communicate using Secure Sockets Layer are stored in the Personal Security Environment (PSE). The required information differs according to whether SSL PSE is for the server or client:

- SSL Server PSE

This PSE contains the security information from the database server, for example, the public-private cryptographic key pair and certificate chain. To install the SSL Server PSE, you need to generate the PSE. You can either do this for a single database server or system-wide. The SSL Server PSE is called `SDBSSL.S.exe`.

- SSL Client PSE

The client requires an anonymous certificate called `SDBSSLA.exe`, which contains the list of the public keys of trustworthy database servers.

Procedure

Generating the SSL Server PSE

Note

You need to know the naming convention for the distinguished name of the database server. The syntax of the distinguished name, which you enter in the procedure below, depends on the Certification Authority (CA) that you are using.

1. Change to the `<global programs>\lib` directory.
2. Set up the following environment variable:
`SECUDIR=<global data>\sec`
3. Create a SSL Server PSE, `SDBSSLS.pse`, and generate a certificate request file, `certreq`, in the directory defined by `SECUDIR` (see previous step):

```
sapgenpse gen_pse -v -r <SECUDIR>\certreq -p SDBSSLS.pse "<your distinguished name>"
```

For each database server that uses a server-specific PSE, you must set up a unique certificate request. If you are using a valid system-wide SSL Server PSE, you only need to set up a single certificate request for all servers.

4. Send the certificate request to the CA for signing. You can either send it to the SAP CA or to another CA. You must make sure that the CA offers a certificate corresponding to the PKCS#7 certificate chain format. Thawte CA at www.thawte.com offers a suitable certificate, either SSL Chained CA Cert or PKCS#7 certificate chain format.

The CA validates the information contained in the certificate request, according to its own guidelines, and sends a reply containing the public key certificate.

5. After you have received the reply from the CA, make sure that the contents of the certificate request have not been destroyed during download.

For example, if you requested the certificate on a UNIX system and stored it on a Windows front end, the formatting (that is, line indents and line breaks) is affected.

To check the contents, open the certificate request with a text editor (such as Notepad) and repair the line indents and the line breaks.



Example

This is an example of a certificate request:

```
-----BEGIN CERTIFICATE REQUEST-----  
  
MIIBPzCBqQIBADAAMIGfMA0GCSqGSIb3DQEBAQUAA4GNADCBiQKBgQD/302IT+/Y  
wpignSw7U9FWneyWz3Wil0S18aFCYkRo00wCpD8UwcaC4dds4uGT6h12WlJ0/FOtUg  
+EQxonZbaRrk9sTalkn1mqx3YAUE/gEaGdf1wvuYkb0gjMk81iM/  
jb9BJd8srMPyoBy9jMC7v5u7+TZWmWa6RjnvC1vYGmMwIDAQABAAAwDQYJKoZIhvcNAQEFBQADgYEAx2z  
uaTAOKPdGmxUKY1WdasUpim4vhfaHa7ZDBwipvKJ8akYCT  
+dpmVjhcp9E7cUjL80/6Rup5cnLAAO5FhVt5MS6zNJa9YYSN9XP+5/  
MPF6Q4ayJ0VryTkSpbbPrWLBKh1Dds97LQVuQ/myKIAHECwyW6t7sAFJWn4P0fdxmKo=  
  
-----END CERTIFICATE REQUEST-----
```

6. Import the reply to the SSL Server PSE:
 1. Copy the text to a temporary file called `srcert`.

2. Enter the following command:

```
sapgenpse import_own_cert -c srcert -p SDBSSL.S.pse
```

You have generated the SSL Server PSE. You can now start the XServer as usual (if it is already running, you must stop and restart it).

7. To check whether the SSL functionality is working correctly, view the trace file `niserver_<local computer name>.trace` in the `<global data>\wrk` directory.

Generating the SSL Client PSE

1. Change to the `<global programs>\lib` directory.

2. Set up the following environment variable:

```
SECUDIR=<global data>\sec
```

3. Enter `<global program>/lib` in the environment variable `LD_LIBRARY_PATH`.

4. Create an anonymous client SSL Client PSE, `SDBSSLA.pse` in the directory defined by `SECUDIR` (see previous step):

```
sapgenpse gen_pse -v -noreq -p SDBSSLA.pse
```

You can leave the distinguished name empty.

Before you can establish an SSL connection to a database server, the server certificate must be entered in the PK list of the anonymous client certificate.

5. To see the database server certificate, enter the following command:

```
„x_ping -n <servermode> -c[apture]
```

You can check whether to trust the database server certificate. The client certificate is not affected by this.

6. Start the import with this command:

```
„x_ping -n <servermode> -i[import]
```

7. To administer the PSE, use the configuration tool `sapgenpse`. For more information, enter the following command:

```
sapgenpse -h
```

i Note

For applications such as SQL Studio replace the global data or global program in the above description with the relevant installation directory.

6.3 Database Directory Structure

You can set up several database instances with different releases in one user environment. For this the database services are split into the following areas:

i Note

As of SAP MaxDB version 7.8, with the introduction of the isolated installation, the database directory structure in SAP installations has changed. This section describes the new structure.

- Global programs path: `GlobalProgPath`

This area contains all services that are only allowed to exist once per computer and are downward compatible (for example, installation tools and the global listener, `sdbgloballistener`). Therefore, only programs of the most recent installed version exist here.

You can check the path for `GlobalProgPath` with the following `dbmcli` command:

```
dbmcli dbm_getpath GlobalProgPath
```

By default, `GlobalProgPath` is set as follows for the installation:

```
/sapdb/programs
```

- Global data path: `GlobalDataPath`

This area contains all data necessary for an instance with version 7.7 or lower, including run directories and their parameter files. The directory containing this data is called the `GlobalDataPath`.

You can check the path for `GlobalDataPath` with the following `dbmcli` command:

```
dbmcli dbm_getpath GlobalDataPath
```

By default, `GlobalDataPath` is set as follows for the installation:

```
/sapdb/data
```

- Private data path: `PrivateDataPath`

This area contains all data necessary for an instance with version 7.8 or higher, including run directories and their parameter files. The directory containing this data is called the `PrivateDataPath`.

You can check the path for `PrivateDataPath` with the following `dbmcli` command:

```
dbmcli -s inst_enum <InstallationPath>
```

By default, `PrivateDataPath` is set as follows for the installation:

- SAP MaxDB server software installations:

```
/sapdb/<DBSID>/data
```
- SAP MaxDB client software installations:

```
/sapdb/clients/<SAPSID>/data
```

- Installation path: `InstallationPath`

This area contains all programs necessary for a running database instance or for client software.

`InstallationPath` of server software (for a database instance):

The programs must all correspond to the instance version and are installed once per instance. The programs include, for example, `kernel`, `console`, `dbmsrv`, and so on. The storage location is known as the `InstallationPath` of the instance.

`InstallationPath` of a client software:

This area contains shared libraries and DLLs required by SAP clients at runtime connecting to database instances of version 7.8 or higher, including SQLDBC, JDBC, ODBC, and so on. The client software is installed on each computer, for each SAP instance separately.

The installation sets up the directory as follows:

- SAP MaxDB server software installations:

```
/sapdb/<DBNAME>/db
```
- SAP MaxDB client software installations:

```
/sapdb/clients/<SAPSID>
```

You can display instance names and the associated `InstallationPath` on a computer with the following `dbmcli` command:

```
dbmcli db_enum
```

You can display the `InstallationPath` of installed software on a computer with the following `dbmcli` command:

```
dbmcli inst_enum
```

6.4 Log Files for Troubleshooting

All steps of the upgrade and the associated software installation are logged in the file with the following name:

```
/var/tmp/SDBUPD.log
```

If the directory `<independent_data_path>` is not known at the time of failure, the log is written to the current directory.




i Note

If you are updating the SAP MaxDB client software, you can find the log files here instead:

```
/var/tmp/SDBINST.log
```

Typographic Conventions

Table 10

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
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 
<i>Example</i>	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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

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