



Installation Guide | PUBLIC

Software Provisioning Manager 1.0 SP33

Document Version: 3.5 – 2021-10-11

# Installation of SAP liveCache Technology 7.9 on UNIX

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# Document History

## i Note

Before you start reading, make sure you have the latest version of this installation guide, which is available at <https://support.sap.com/sltoolset> >>> *System Provisioning* > *Install a System using Software Provisioning Manager* > *Installation Option of Software Provisioning Manager 1.0 SP* <Current Number> > .

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

Version	Date	Description
3.5	2021-10-11	Updated version for Software Provisioning Manager 1.0 SP33 (SL Toolset 1.0 SP33)
3.4	2021-06-21	Updated version for Software Provisioning Manager 1.0 SP32 (SL Toolset 1.0 SP32)
3.3	2021-02-15	Updated version for Software Provisioning Manager 1.0 SP31 (SL Toolset 1.0 SP31)
3.2	2020-10-05	Updated version for Software Provisioning Manager 1.0 SP30 (SL Toolset 1.0 SP30)
3.1	2020-06-08	Updated version for Software Provisioning Manager 1.0 SP29 (SL Toolset 1.0 SP29)
3.0	2020-01-20	Updated version for Software Provisioning Manager 1.0 SP28 (SL Toolset 1.0 SP28)
2.9	2019-09-16	Updated version for Software Provisioning Manager 1.0 SP27 (SL Toolset 1.0 SP27)
2.8	2019-05-27	Updated version for Software Provisioning Manager 1.0 SP26 (SL Toolset 1.0 SP26)

Version	Date	Description
2.7	2019-01-21	Updated version for Software Provisioning Manager 1.0 SP25 (SL Toolset 1.0 SP25)
2.6	2018-09-17	Updated version for Software Provisioning Manager 1.0 SP24 (SL Toolset 1.0 SP24)
2.5	2018-05-07	Updated version for software provisioning manager 1.0 SP23 (SL Toolset 1.0 SP23)
2.4	2018-01-15	Updated version for software provisioning manager 1.0 SP22 (SL Toolset 1.0 SP22)
2.3	2017-09-11	Updated version for software provisioning manager 1.0 SP21 (SL Toolset 1.0 SP21)
2.2	2017-05-22	Updated version for software provisioning manager 1.0 SP19 (SL Toolset 1.0 SP19)
2.1	2017-02-07	Updated version for software provisioning manager 1.0 SP19 (SL Toolset 1.0 SP19)
2.0	2016-10-07	Updated version for software provisioning manager 1.0 SP18 (SL Toolset 1.0 SP18)
1.9	2016-01-22	Updated version for SAP enhancement package 4 for SAP Supply Chain Management 7.0
1.8	2015-04-27	Updated version for software provisioning manager 1.0 SP08 (SL Toolset 1.0 SP13)
1.7	2014-11-24	Updated version for software provisioning manager 1.0 SP07 (SL Toolset 1.0 SP12)
1.6	2014-07-07	Updated version
1.5	2014-03-17	Updated version
1.4	2013-10-28	Updated version

<b>Version</b>	<b>Date</b>	<b>Description</b>
1.3	2013-10-10	Updated version
1.2	2013-04-10	Updated version
1.1	2012-11-28	Updated version
1.0	2012-08-06	Initial version

# 1 About this Document

This documentation explains how to install or rename the server for SAP liveCache Technology using Software Provisioning Manager 1.0 SP33, which is part of SL Toolset 1.0 SP33.

SAP liveCache is used in SAP Supply Chain Management (SCM). SAP liveCache is the SAP memory-resident object management technology that enables higher levels of performance in business processing for SAP Supply Chain Management (SCM). For more information on how to plan your SAP liveCache installation, see [Options for the Installation of SAP liveCache \[page 12\]](#).

The installation tool is the software provisioning manager (“installer” for short).

## ⚠ 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:

<https://support.sap.com/sltoolset> ► *System Provisioning* ► *Installation Option of Software Provisioning Manager* ► *Installation Guides - Standalone Engines and Clients* ► *SAP liveCache Technology* ►

For more information about SAP SCM technology, see:

<https://help.sap.com/scm> ►

If you have already installed OneDB with SAP SCM, you **only** need to perform the [post-installation steps \[page 27\]](#) described in this guide. For more information about the OneDB installation, see the relevant SAP SCM guide at:

<https://help.sap.com/scm> ►

## 1.1 Before You Start

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

[SAP Notes for the Installation \[page 8\]](#)

Make sure that you have read the following SAP Notes.

[Online Information from SAP \[page 8\]](#)

Here you can find online information.

[Naming Conventions \[page 9\]](#)

We use the following naming conventions in this documentation.

## 1.1.1 SAP Notes for the Installation

Make sure that you have read the following SAP Notes.

Note Number	Title
<a href="#">1651606</a>	liveCache 7.9 Installation
<a href="#">1567117</a>	Parameter values liveCache version 7.9
<a href="#">305634</a>	RFC destination for global working on the liveCache
<a href="#">429215</a>	UNIX Settings for File Systems and Trace Files > 2 GB
<a href="#">687696</a>	Procedure for installing an APO One DB Server
<a href="#">649814</a>	Updating SAP MaxDB / liveCache client software
<a href="#">822271</a>	FAQ: SAP MaxDB client software

## 1.1.2 Online Information from SAP

Here you can find online information.

Description	Address
SAP liveCache Installation Guide	<a href="https://support.sap.com/slttoolset">https://support.sap.com/slttoolset</a> > System Provisioning > Installation Option of Software Provisioning Manager 1.0 > Installation Guides - Standalone Engines and Clients > SAP liveCache Technology
Product Availability Matrix (PAM)	<a href="https://support.sap.com/pam">https://support.sap.com/pam</a>
SAP Notes	<a href="https://support.sap.com/en/my-support/knowledge-base.html">https://support.sap.com/en/my-support/knowledge-base.html</a>



## 1.1.3 Naming Conventions

We use the following naming conventions in this documentation.

Variable	Description
INST_DIR	Installation directory
LC_HOST	Domain or server name where the liveCache is installed
LC_NAME	Name of liveCache instance consisting of <b>three capital letters</b>

## 1.2 New Features

This section provides an overview of the new features in Software Provisioning Manager 1.0 (the "installer" for short).

Make sure that you also read the [Release Notes](https://help.sap.com) for your SAP product at <https://help.sap.com> <Search your SAP Product> > <Select your SAP Product Version> > [What's New](#) >.

Feature	Description	Availability
New Look and Feel of SL Common GUI	As of version 1.0 SP24 Patch Level (PL) 5, Software Provisioning Manager comes with a new look and feel of the SL Common GUI. For more information, see <a href="https://blogs.sap.com/2018/11/10/new-look-for-software-provisioning-manager/">https://blogs.sap.com/2018/11/10/new-look-for-software-provisioning-manager/</a> .	Software Provisioning Manager 1.0 SP24, PL05 (SL Toolset 1.0 SP24)
Installer Log Files Improvements	Installer log files are now available immediately after the installer has been started, that is <b>before</b> a product has been selected on the <a href="#">Welcome</a> screen. For more information, see <a href="#">Useful Information about the Installer [page 39]</a> and <a href="#">Troubleshooting with the Installer [page 45]</a> .	Software Provisioning Manager 1.0 SP22 (SL Toolset 1.0 SP22)
Signature Check of Installation Archives	The signature of installation archives is checked <b>automatically</b> by the installer during the <a href="#">Define Parameters</a> phase while processing the <a href="#">Software Package Browser</a> screens. As of now the installer only accepts archives whose signature has been checked. For more information, see .	Software Provisioning Manager 1.0 SP22 (SL Toolset 1.0 SP22)
Enabling IPv6	You can now set up a new SAP system or SAP system instance using Internet Protocol Version 6 (IPv6).  For more information, see <a href="#">Prerequisites for Running the Installer [page 20]</a> .	Software Provisioning Manager 1.0 SP22 (SL Toolset 1.0 SP22)

Feature	Description	Availability
Media Signature Check	<p>The signature of media is checked <b>automatically</b> by the installer during the <i>Define Parameters</i> phase while processing the <i>Media Browser</i> screens. As of now the installer only accepts media whose signature has been checked. See also the description of this new security feature in SAP Note <a href="#">2393060</a>.</p> <p>For more information, see <a href="#">Preparing the Installation Media [page 16]</a> and <a href="#">Running the Installer [page 23]</a>.</p>	Software Provisioning Manager 1.0 SP21 (SL Toolset 1.0 SP21)
SL Common GUI with SAPINST 7.49	<p>With the new installer framework version SAPINST 7.49, you can now use the new SAPUI5-based graphical user interface (GUI) "SL Common GUI". For more information, see <a href="#">Useful Information about the Installer [page 39]</a>, <a href="#">Running the Installer [page 23]</a>.</p>	Software Provisioning Manager 1.0 SP20 (SL Toolset 1.0 SP20)
Cleanup of Operating System Users	<p>You can now specify during the <i>Define Parameters</i> phase that the operating system users are to be removed from group <code>sapinst</code> after the execution of the installer has completed.</p> <p>For more information, see <i>Operating System Users</i> in .</p>	Software Provisioning Manager 1.0 SP20 (SL Toolset 1.0 SP20)
Verification of Integrity of Data Units in Software Provisioning Manager	<p>The integrity of data units extracted from the Software Provisioning Manager archive is verified. For more information, see <a href="#">Downloading and Extracting the Software Provisioning Manager 1.0 Archive [page 17]</a>.</p> <p>In addition, check SAP Note <a href="#">1680045</a> whether additional information is available.</p>	Software Provisioning Manager 1.0 SP19 (SL Toolset 1.0 SP19)
System Provisioning for SAP NetWeaver 7.5 and SAP NetWeaver 7.5-based Products	<p>All system provisioning tasks (installation, system copy, system rename) are available for the new SAP NetWeaver 7.5 release.</p> <p>The Dual Stack option, which integrates an AS ABAP and AS Java in a single system (common System ID <code>&lt;SAPSID&gt;</code>, common startup framework, common database), is no longer supported in SAP systems based on SAP NetWeaver 7.5.</p> <ul style="list-style-type: none"> <li>After upgrading to SAP NetWeaver 7.5 PI, you first have to split the still existing dual stack-system before you can use SAP NetWeaver 7.5 PI productively. For more information, see the <i>Upgrade Master Guide - SAP NetWeaver 7.5</i> at: <a href="http://help.sap.com/nw75">http://help.sap.com/nw75</a> <b>Installation and Upgrade</b></li> <li>SAP NetWeaver 7.5 is Unicode only</li> <li>The primary application server instance directory has been renamed from <code>/usr/sap/&lt;SAPSID&gt;/DVEBMGS&lt;Instance_Number&gt;</code> to <code>/usr/sap/&lt;SAPSID&gt;/D&lt;Instance_Number&gt;</code>.</li> <li>Declustering and depooling of tables during the installation is enabled by default. For more information, see SAP Note <a href="#">1892354</a>.</li> </ul>	Software Provisioning Manager 1.0 SP09 (SL Toolset 1.0 SP15)

Feature	Description	Availability
System Provisioning for SAP Solution Manager 7.2	All system provisioning tasks (installation, system copy, system rename) are available for the new SAP Solution Manager 7.2 release. Compared to previous SAP Solution Manager releases, SAP Solution Manager 7.2 is no longer provided as a classical dual-stack system (ABAP system with Java Add-in), but consists of a separate ABAP and Java stack.	Software Provisioning Manager 1.0 SP09 (SL Toolset 1.0 SP15)
Feedback Evaluation Form	SAP SE's aim is to provide fast and efficient procedures. To evaluate the procedure you just carried out, we need information generated by the tool during process execution and your experience with the tool itself. A new evaluation form contains a simple questionnaire and XML data generated during the procedure.  Port 4239 is used for displaying the feedback evaluation form.	Software Provisioning Manager 1.0 SP07 (SL Toolset 1.0 SP12)
Option <i>Verify Signed Media</i>	The digital signature ensures that the signatory of a digital document can be identified unambiguously and signatory's name is documented together with the signed document, the date, and the time.  For more information, see SAP Note <a href="#">1979965</a> .	Software Provisioning Manager 1.0 SP06 (SL Toolset 1.0 SP11)

# 2 Planning

## Procedure

To plan the installation you need to:

1. Choose which of the [Options for the Installation of SAP liveCache \[page 12\]](#) you want to use.
2. [Check the software requirements \[page 14\]](#).
3. Check the hardware requirements by using the Quick Sizer tool, which you can find at <https://sap.com/sizing>

## 2.1 Options for the Installation of SAP liveCache

You have the following options to install SAP liveCache:

- SAP liveCache is integrated in the SAP HANA Database, so that SAP liveCache and SCM Server are running on the **same** database instance.  
Valid for:
  - SAP enhancement package 4 for SAP Supply Chain Management 7.0
  - SAP enhancement package 3 for SAP Supply Chain Management 7.0
  - SAP enhancement package 2 for SAP Supply Chain Management 7.0, version for SAP HANA
- SCM Server is installed on the SAP HANA Database or another SAP-supported database, while SAP liveCache is installed on a **separate** server using SAP MaxDB technology.  
Valid for:
  - SAP enhancement package 4 for SAP Supply Chain Management 7.0

### i Note

The configuration “SCM Server on HANA with an external liveCache” is no longer supported for new installations. However, upgrades from previous SCM EhPs based on this configuration are still supported. (also known as SAP LCA, LCAPPS-Plugin or

- SAP enhancement package 3 for SAP Supply Chain Management 7.0
- SAP enhancement package 2 for SAP Supply Chain Management 7.0, version for SAP HANA
- SAP enhancement package 2 for SAP Supply Chain Management 7.0

## SAP liveCache and SCM Server on the Same SAP HANA Database Instance

### i Note

SAP liveCache applications for SAP HANA (also known as LCAPPS) are no longer released as part of SAP HANA Platform Edition. For more information, see SAP Note [2223318](#).

If SCM Server and SAP liveCache are to be located on the same SAP HANA Database instance, proceed with the installation as follows:

1. Install the SAP HANA Database plus the SAP liveCache Applications.  
For more information on installing the SAP HANA Database, see the *SAP HANA Server Installation and Update Guide* at [http://help.sap.com/hana\\_appliance](http://help.sap.com/hana_appliance) >> *Installation and Upgrade Information* >  
For more information on installing the SAP liveCache Applications, see section *Installing or Updating SAP HANA Components* of the *SAP HANA Server Installation and Update Guide* at [http://help.sap.com/hana\\_appliance](http://help.sap.com/hana_appliance) >> *Installation and Upgrade Information* >.  
In this configuration, the following scenarios are possible:
  - Integrated SAP liveCache, single-node scenario  
The SAP HANA Database is running on a single node including SAP liveCache  
For more information about issues that might occur during the installation of this scenario, see SAP Note [1830427](#) for SCM 712 and SAP Note [1871831](#) for SCM 713 and higher.
  - Integrated SAP liveCache, scale-out scenario  
SAP liveCache is running on a dedicated, separate node in SAP HANA
2. Install one of the following using the relevant Support Package:
  - SAP enhancement package 4 for SAP Supply Chain Management 7.0 (SCM 714)
  - SAP enhancement package 3 for SAP Supply Chain Management 7.0 (SCM 713)
  - SAP enhancement package 2 for SAP Supply Chain Management 7.0 (SCM 712)

#### i Note

While installing SAP SCM using Software Provisioning Manager (the “ installer” for short), select the checkbox *Use SAP liveCache integrated in SAP HANA*, in step 2, >> *Define Parameters* > *SAP HANA liveCache* >.

3. If necessary, migrate data from your SAP SCM system that ran on a non-HANA database to the SAP SCM system running on an SAP HANA Database.

## SAP liveCache and SCM Server on Separate Database Instances

#### i Note

As of SCM 7.14 the configuration “SCM Server on HANA with an external liveCache” is no longer supported for new installations. However, upgrades from previous SCM EhPs based on this configuration are still supported.

If SCM Server and SAP liveCache are to be located on two separate database instances, with SCM Server on SAP HANA Database or some other SAP-supported database, and SAP liveCache on SAP MaxDB technology, proceed with the installation as follows:

1. Only relevant if you are installing SCM Server on SAP HANA Database:  
Install SAP HANA Database without installing SAP liveCache  
For more information, see the *SAP HANA Server Installation Guide* at [http://help.sap.com/hana\\_appliance](http://help.sap.com/hana_appliance) >> *Installation and Upgrade Information* >.
2. Install one of the following using the relevant Support Package:
  - SAP enhancement package 4 for SAP Supply Chain Management 7.0 (SCM 714)

- SAP enhancement package 3 for SAP Supply Chain Management 7.0 (SCM 713)
  - SAP enhancement package 2 for SAP Supply Chain Management 7.0, version for SAP HANA (SCM 712)
  - SAP enhancement package 2 for SAP Supply Chain Management 7.0 (SCM 702)
3. Install SAP liveCache on a separate server, as described in this installation guide.

## 2.2 Software Requirements Check

For the most up-to-date information on the operating system of your product, check the SAP Product Availability Matrix (PAM)

For the most up-to-date information on the operating system of your product, check the SAP Product Availability Matrix (PAM) at <https://support.sap.com/pam>.

Only valid for 'Platform': AIX

**AIX:** There you can also find additional information on required operating system patch levels for C++ RTE.

End of 'Platform': AIX

# 3 Preparation

You have to complete the following preparations before installing SAP liveCache.

## Prerequisites

You have completed [planning the installation \[page 12\]](#).

## Procedure

1. You [choose a liveCache system name \[page 15\]](#).
2. You [create liveCache file systems \[page 16\]](#).
3. You [prepare the installation media \[page 16\]](#).

## 3.1 Choosing a SAP liveCache System Name

You need to choose a SAP liveCache system name.

## Procedure

Choose a liveCache name, `<LC_NAME>`, noting the following restrictions:

- Is unique throughout your organization. Do not use an existing `<SAPSID>` when installing a new SAP system.
- Consists of exactly three alphanumeric characters
- Contains only uppercase letters
- Has a letter for the first character
- Does not include any of the reserved IDs listed in [SAP Note 1979280](#).

### ⚠ Caution

Choose your SAP system ID carefully. Renaming is difficult and might require a system reinstallation.

## 3.2 Creating SAP liveCache File Systems

You need to set up file systems on your SAP liveCache host.

### → Recommendation

We recommend using **raw devices** as volumes. Raw devices are faster and more secure than files.

### Procedure

- **Creating File Systems for Raw Devices**

If you are using raw devices you need to create the following file system:

File System Name	Description	Recommendation
/sapdb	liveCache software + LCA objects	400 MB
	Additional trace files for problem analysis	3 GB

- **Creating Normal File Systems**

If you do not want to use raw devices, you need to create the following file systems:

File System Name	Description	Recommendation
/sapdb	liveCache software + LCA objects	400 MB
	Additional trace files for problem analysis	3 GB
/sapdb/<IC_NAME>/sapdata	Data Volumes	2 x RAM, minimum 3 GB
/sapdb/<IC_NAME>/saplog	Log Volume	2 GB

## 3.3 Preparing the Installation Media

This section describes how to prepare the installation media.

Installation media are available as follows:

- The Software Provisioning Manager 1.0 archive containing the installer  
You always have to download the latest version of the Software Provisioning Manager 1.0 archive.  
For more information, see [Downloading and Extracting the Software Provisioning Manager 1.0 Archive \[page 17\]](#).



- The SAP liveCache Installation Media

You can provide them in one of the following ways:

- Use the physical liveCache installation medium as part of the installation package of your SAP system.
- Download the liveCache installation package from the SAP Software Download Center.

For more information, see [Downloading Installation Media \[page 18\]](#).

### i Note

The signature of **installation media** is checked **automatically** by the installer during the *Define Parameters* phase while the *Media Browser* screens are processed (see also [Running the Installer \[page 23\]](#) ). The installer only accepts media whose signature has been checked. For more information, see SAP Note [2393060](#).

## 3.3.1 Downloading and Extracting the Software Provisioning Manager 1.0 Archive

You must always download and extract the Software Provisioning Manager 1.0 archive from the SAP Software Download Center because you must use the latest version.

### Prerequisites

- Make sure that you are logged on as a user with `root` authorizations, and that the download directory has at least the permissions `755`.
- Make sure that you use the **latest** version of the `SAPCAR` tool when manually extracting the Software Provisioning Manager archive.

### i Note

An older `SAPCAR` version might extract archive files in a wrong way and this could prevent the installer from working consistently.

Proceed as follows to get the latest version of `SAPCAR`:

1. Go to <https://launchpad.support.sap.com/#/softwarecenter> > [SUPPORT PACKAGES & PATCHES](#) > [By Category](#) > [SAP TECHNOLOGY COMPONENTS](#) > [SAPCAR](#).
2. Select the archive file for your operating system and download it to an empty directory.
3. To check the validity of the downloaded executable, right-click the executable and choose *Properties*. On the *Digital Signatures* tab you can find information about the SAP signature with which the executable was signed.
4. Rename the executable to `sapcar.exe`.

For more information about `SAPCAR`, see SAP Note [212876](#).

## Procedure

1. Download the latest version of the Software Provisioning Manager 1.0 archive SWPM10SP<Support\_Package\_Number>\_<Version\_Number>.SAR from:  
<https://support.sap.com/sltoolset> >>> System Provisioning > Download Software Provisioning Manager >
2. Unpack the Software Provisioning Manager archive to a local directory using the following command:

```
/<Path to SAPCAR>/sapcar -xvf <Path to Download Directory>/  
SWPM10SP<Support_Package_Number>_<Version_Number>.SAR -R <Path to Unpack  
Directory>
```

### i Note

Make sure that all users have at least read permissions for the directory to which you unpack the installer.

### ⚠ Caution

Make sure that you unpack the Software Provisioning Manager archive to a dedicated folder. Do not unpack it to the same folder as other installation media.

## 3.3.2 Downloading Installation Media

This section describes how you can download media from the SAP Software Download Center.

## Procedure

1. Download and unpack the latest version of Software Provisioning Manager as described in [Downloading and Extracting the Software Provisioning Manager 1.0 Archive \[page 17\]](#).
2. Create a download directory on the host where you want to run the installer.
3. You identify the required media as listed in [Preparing the Installation Media \[page 16\]](#).
4. Identify **all** download objects that belong to one medium according to one of the following:

### i Note

Installation media might be split into several files. In this case, you have to reassemble the required files after the download.

- Download path or location:
  - To download the complete kernel media, go to <https://support.sap.com/sltoolset> >>> System Provisioning > Software Provisioning Manager 1.0 SP<Current Version> > Download Kernel releases delivered for SL Toolset > SL TOOLSET 1.0 (INSTALLATIONS AND UPGRADES) > KERNEL FOR INSTALLATION/SWPM >.

- To download all media required for your SAP product, you can use one of the following navigation paths:
  - <https://launchpad.support.sap.com/#/softwarecenter> **INSTALLATIONS & UPGRADES** *By Category* **SAP NETWEAVER AND COMPLEMENTARY PRODUCTS** *<Product>* *<Product Release>*
  - <https://launchpad.support.sap.com/#/softwarecenter> **INSTALLATIONS & UPGRADES** *By Alphabetical Index (A-Z)* *<First Letter of Product>* *<Product>* *<Product Release>*

- Material number  
All download objects that are part of an installation medium have the same material number and an individual sequence number:  
*<Material\_Number>\_<Sequence\_Number>*

**Example**

```
51031387_1
51031387_2
...
```

- Title  
All objects that are part of an installation medium have the same title, such as *<Solution><Media\_Name><OS>* or *<Database>RDBMS<OS>* for database media.

5. Download the objects to the download directory.
6. To correctly re-combine the media that are split into small parts, unpack all parts into the same directory.  
In the unpacking directory, the system creates a subdirectory with a short text describing the medium and copies the data into it. The data is now all in the correct directory, the same as on the medium that was physically produced. For more information, see SAP Note [1258173](#) .

**Caution**

Make sure that you unpack each installation media to a separate folder. Do not unpack installation media to the same folder where you unpack the Software Provisioning Manager archive.

Do not unpack installation media to the same folder where you unpack the SAP kernel archives for archive-based installation.

# 4 Installation

This section describes how to run the installation of SAP liveCache using Software Provisioning Manager (the “installer” for short).

## Procedure

1. You [check the prerequisites for running the installer \[page 20\]](#)
2. You [you run the installer to install SAP liveCache \[page 23\]](#)

## 4.1 Prerequisites for Running the Installer


Make sure you fulfil the following prerequisites before running the installer.

- For the SL Common GUI, make sure that the following web browser requirements are met:
  - You have one of the following supported browsers on the device where you want to run the SL Common GUI:
    - Google Chrome (recommended)
    - Mozilla Firefox
    - Microsoft Edge
    - Microsoft Internet Explorer 11 or higher.Always use the latest version of these web browsers.
  - If you copy the SL Common GUI URL manually in the browser window, make sure that you open a new Web browser window in private browsing mode (Internet Explorer), incognito mode (Chrome) or private browsing mode (Firefox). This is to prevent Web browser plugins and settings from interfering with the SL Common GUI.

### Caution

The installer uses a self-signed certificate, which is used temporarily only while the installer is running. This certificate is not trusted by the browser unless it is imported manually by the user running the installer. This behavior is intentionally designed in this way because - unlike ordinary public web servers - the installer has different usage patterns. You must configure your browser do trust the self-issued certificate of the installer after carefully performing the “thumbprint” verification described in [Running the Installer \[page 23\]](#) . For more information about adding trusted certificates, see the documentation of your browser.

For more information about the SL Common GUI, see [Useful Information about the Installer \[page 39\]](#).

- The installer uses shell scripts to obtain the environment for user `<sapsid>adm`.
  - If user `<sapsid>adm` does not yet exist, a working `/bin/csh` must be available on the host where you run the installer. For more information about recommended login shells, see SAP Note [202227](#) .


- If `<sapsid>` already exists and uses `csch`, before you start the installer, execute the following command as user `<sapsid>` to make sure that the `csch` scripts are up-to-date, depending on your UNIX OS platform:
 

```
/bin/csch -c "source /home/<sapsid>adm/.cschrc;env" or /bin/csch -c "source /home/<sapsid>adm/.login;env"
```
- Make sure that your operating system does not delete the contents of the temporary directory `/tmp` or the contents of the directories to which the variables `TEMP`, `TMP`, or `TMPDIR` point, for example by using a `crontab` entry.
 

Make sure that the temporary directory has the permissions `755`.
- Make sure that you have at least 300 MB of free space in the installation directory for each installation option. In addition, you need 300 MB free space for the installer executables. If you cannot provide 300 MB free space in the temporary directory, you can set one of the environment variables `TEMP`, `TMP`, or `TMPDIR` to another directory with 300 MB free space for the installer executables.
 

You can set values for the `TEMP`, `TMP`, or `TMPDIR` environment variable to an alternative installation directory as described in section [Useful Information About the Installer \[page 39\]](#).
- Make sure that `umask` is set to `022` for the user with `root` permissions that you want to use for running the installer.
 

As the user with `root` permissions that you want to use for running the installer, enter the following command: `umask 022`
- Only valid for 'Platform': AIX

**AIX:** Make sure that you have set the limits for operating system users as described in SAP Note [323816](#) .

End of 'Platform': AIX
- Only valid for 'Platform': HP-UX, Linux, Oracle Solaris

**HP-UX, Linux, Oracle-Solaris:** Make sure that you have set the limits for operating system users `root`, `<sapsid>adm`, and your database-specific operating system users (see also sections *Creating Operating System Users and Groups* and *Running the Installer* in the installation guide).

### Caution

Caution: the `limit` mechanism supports hard- and soft-limits. The soft-limit cannot be bigger than the hard-limit. The hard-limit can be set/increased by the root user like: `limit -h <limit> <new_value>`, for example `limit -h datasize unlimited`.

- Using `csch` shell, the output of command `limit` needs to be at least as follows:

### Example

The following table lists example output taken from SUSE Linux Enterprise Server 11 (x86\_64).

Output	Properties
<code>cputime</code>	<code>unlimited</code>
<code>filesize</code>	<code>unlimited</code>
<code>datasize</code>	<code>unlimited</code>
<code>stacksize</code>	<code>8192 KB</code>

Output	Properties
coredumpsize	unlimited
descriptors	8192
memoryuse	unlimited

- Using `sh` or `ksh` shell, the output of command `ulimit -a` needs to be at least as follows:

❖ Example

The following table lists example output taken from SUSE Linux Enterprise Server 11 (x86\_64).

Output sh	Output ksh	Properties
cpu time (seconds)	cpu time (seconds)	unlimited
file size (blocks)	file size (blocks)	unlimited
data seg size (kbytes)	data size (Kibytes)	unlimited
stack size (kbytes)	stack size (Kibytes)	8192 KB
core file size (blocks)	core file size (blocks)	unlimited
open files	nofile	8192
max memory size (kbytes)	max memory size (Kibytes)	unlimited

End of 'Platform': HP-UX, Linux, Oracle Solaris

- Make sure that the following ports are not used by other processes:
  - Port 4237 is used by default as HTTPS port for communication between the installer and the SL Common GUI.  
If this port cannot be used, you can assign a free port number by executing `sapinst` with the following command line parameter:  
**SAPINST\_HTTPS\_PORT=<Free Port Number>**
  - Port 4239 is used by default for displaying the feedback evaluation form at the end of the installer processing.  
The filled-out evaluation form is then sent to SAP using HTTPS.  
If this port cannot be used, you can assign a free port number by executing `sapinst` with the following command line parameter:  
**SAPINST\_HTTP\_PORT=<Free Port Number>**

## 4.2 Running the Installer

This section describes how to run the installer.

### Prerequisites

For more information, see [Prerequisites for Running the Installer \[page 20\]](#).

### Context

The installer has a web browser-based GUI named “SL Common GUI of the Software Provisioning Manager” - “SL Common GUI” for short.

This procedure describes an installation where you run the installer and use the SL Common GUI, that is you can control the processing of the installer from a browser running on any device.

For more information about the SL Common GUI, see [Useful Information About the Installer \[page 39\]](#).

### Procedure

1. Log on to the installation host as a user with `root` permissions.

#### Caution

Make sure that the user with `root` permissions that you want to use for running the installer has not set any environment variables for a different SAP system or database.

If your security policy requires that the person running the installer is not allowed to know the credentials of a user with `root` permissions on the installation host, you can specify another operating system user for authentication purposes. You do this using the `SAPINST_REMOTE_ACCESS_USER` parameter when starting the `sapinst` executable from the command line. You must confirm that the user is a trusted one. For more information, see SAP Note [1745524](#).

2. Start the installer from the directory to which you unpacked the Software Provisioning Manager archive by entering the following command:

```
<Path_To_Unpack_Directory>/sapinst
```

#### Note

```
<Path_To_Unpack_Directory>/sapinst SAPINST_USE_HOSTNAME=<Virtual_Host_Name>
```

3. The installer is starting up.

The installer now starts and waits for the connection with the SL Common GUI.

You can find the URL you require to access the SL Common GUI at the bottom of the shell from which you are running the installer.

```
...
*****
Open your browser and paste the following URL address to access the GUI
https://[<hostname>]:4237/sapinst/docs/index.html
Logon users: [<users>]
*****
...
```

### Note

If the host specified by `<hostname>` cannot be reached due to a special network configuration, proceed as follows:

1. Terminate the installer as described in [Useful Information about the Installer \[page 39\]](#).
2. Restart the installer from the command line with the `SAPINST_GUI_HOSTNAME=<hostname>` property.  
You can use a fully-qualified host name.

If you have a supported web browser (see [Prerequisites for Running the Installer \[page 20\]](#)) installed on the host where you run the installer, you can open this URL directly in the shell. Otherwise, open the URL in a supported web browser that runs on another device.

### Caution

After opening the browser URL, make sure that the URL in the browser starts with “https://” to avoid security risks such as SSL stripping .

Before you reach the [Welcome](#) screen, your browser warns you that the certificate of the `sapinst` process on this computer could not be verified.

Proceed as follows to avoid security risks such as a man-in-the-middle attack:

1. Click on the certificate area on the left hand side in the address bar of your browser, and view the certificate.
2. Open the certificate fingerprint or thumbprint, and compare all hexadecimal numbers to the ones displayed in the console output of the installer.

Proceed as follows to get the certificate fingerprint or thumbprint from the server certificate printed in the installer console:

1. Go to the `sapinst_exe.xxxxxx.xxxx` directory in the temporary directory to which the installer has extracted itself:  
`<User_Home>/ .sapinst/`
2. In the `sapinst_exe.xxxxxx.xxxx` directory, execute the `sapgenpse` tool with the command line option `get_my_name -p`.

As a result, you get the server fingerprint or thumbprint from the server certificate.

3. Accept the warning to inform your browser that it can trust this site, even if the certificate could not be verified.

The SL Common GUI opens in the browser by displaying the [Welcome](#) screen.

4. On the [Welcome](#) screen, choose the required option:



- To install an SAP liveCache **server**, choose **SAP Business Suite <Version>** > **<SAP SCM ABAP Product Version>** > **Database** > **Installation** > **Standalone Engines** > **SAP liveCache** > **liveCache Server Installation** .

The installer creates a subdirectory for the chosen installation service below the current working directory.

- To install an SAP liveCache **client**, choose **SAP Business Suite <Version>** > **<SAP SCM ABAP Product Version>** > **Database** > **Installation** > **Standalone Engines** > **SAP liveCache** > **SAP liveCache Client Installation** .

### i Note

If you intend to use SAP liveCache with a server running a database other than SAP MaxDB, you need to install the liveCache client software for the host where the SAP central or dialog instance runs. If the server is running on SAP MaxDB, this is not necessary.

- If you want to rename an **SAP liveCache** system or client , choose the relevant option under **System Rename** > **SAP liveCache** .

### 5. Choose *Next*.

### i Note

If there are errors during the self-extraction process of the installer, you can find the log file `dev_selfex.out` in the temporary directory.

### 6. Follow the instructions on the installer screens and enter the required parameters.

### i Note

To find more information on each parameter during the *Define Parameters* phase, position the cursor on the required parameter input field , and choose either **F1** or the *HELP* tab. Then the available help text is displayed in the *HELP* tab.

### i Note

If you are performing the target system installation in the context of a system copy with parallel export/import using the Migration Monitor and the target database is declustered - that is you started the installer for the target database instance installation with command line option **SUPPORT\_DECLUSTERING=true** as described above - add the following load options parameter in the *SAP System Advanced Load Configuration* screen:

```
-datacodepage <datacodepage_of_source_system>
```

The advanced screen for load configuration only appears if you run the installer in *Custom* parameter mode. You can check the parameter within the `import_monitor_cmd.properties` file located in the installation directory, in the `loadArgs` entry.

For more information, see the system copy guides at <http://support.sap.com/slttoolset> > > **System Provisioning** > **System Copy Option** > **Guide for Systems Based on SAP NetWeaver 7.1 & Higher** > .

### ⚠ Caution

The signature of installation media and installation archives is checked **automatically** during the *Define Parameters* phase while processing the *Media Browser* and - if you perform an archive-based installation - the *Software Package Browser* screens.

Note that this automatic check is only committed once and **not** repeated if you modify artifacts such as SAR archives or files on the media **after** the initial check has been done. This means that - if you modify artefacts later on either during the remaining *Define Parameters* phase or later on during the *Execute Service* phase - the signature is not checked again.

For more information, see SAP Note [2393060](#).

After you have entered all requested input parameters, the installer displays the *Parameter Summary* screen. This screen shows both the parameters that you entered and those that the installer set by default. If required, you can revise the parameters before starting the installation.

7. To start the installation, choose *Next*.

The installer starts the installation and displays the progress of the installation. When the installation has finished, the installer shows the message: Execution of `<Option_Name>` has completed.

8. If required, delete directories with the name `sapinst_exe.xxxxxx.xxxx` after the installer has finished. Sometimes these directories remain in the temporary directory.
9. If you copied the installer software to your hard disk, you can delete these files when the installation has successfully completed.
10. For security reasons, we recommend that you remove the operating system users from the group `sapinst` **after** you have completed the installation.

### i Note

This step is only required, if you did **not** specify during the *Define Parameters* phase that the operating system users are to be removed from the group `sapinst` **after** the execution of the installer has completed.

11. For security reasons, we recommend that you delete the `.sapinst` directory within the home directory of the user with which you ran the installer:

```
<User_Home>/ .sapinst/
```

12. The installer log files contain IP addresses and User IDs such as the ID of your S-User. For security, data protection, and privacy-related reasons we strongly recommend that you delete these log files once you do not need them any longer.

You find the installer log files in the `sapinst_instdir` directory. For more information, see [Useful Information about the Installer \[page 39\]](#).

# 5 Post-Installation

You perform the following post-installation steps.

## Context

### ⚠ Caution

If you are performing a new installation of liveCache during an SCM 5.1 upgrade, to change from an unsupported operating system for liveCache – such as Windows 32-bit – to a supported operating system, do **not** perform the steps listed below.

The exception to this is the step [Installing or Upgrading Database Studio for SAP MaxDB \[page 30\]](#), which you can still perform if required.

The required liveCache post-installation activities – setup of the logical database connection with transaction LC10 and the loading of the master and transaction data – occur in phase REQ\_LCUPG of the SCM upgrade. For more information, see *SAP Supply Chain Management 5.1 ABAP: <Your Operating System and Database>*, which you can find as follows:

<https://help.sap.com/scm> >> > Version 5.1 > Installation and Upgrade >

### i Note

If you have already installed OneDB with SAP SCM, you **only** need to perform the post-installation steps described below to complete the OneDB installation.

## Procedure

1. You [perform common post-installation activities \[page 31\]](#).
2. You [install or upgrade Database Studio for SAP MaxDB \[page 30\]](#).
3. If required, you [install Secure Sockets Layer \(SSL\) protocol for database server communication \[page 31\]](#).

## 5.1 Common Post-Installation Activities

You **always** need to perform the common post-installation activities listed below, regardless of the server with which you intend to use liveCache.

## 5.1.1 Configuring the SAP liveCache Instance

This section describes how to configure the SAP liveCache Instance.

### Procedure

1. Start the SAP instances:
  - Windows application server
    1. Start service `SAP<SID>_<instno>`.
    2. Start the SAP central instance using Microsoft Management Console (if not already running).
  - UNIX application server  
Restart all SAP central and dialog instances running on UNIX.
2. Log on to the SAP System as user `DDIC` (production client).
3. Execute the program `/SAPAPO/OM_SETUP` and follow the instructions.
4. Create a backup.

For more information about backups, see the *Application Operations Guide* at <https://help.sap.com/scm>

▶▶ <Version> ▶ Operations ▶

## 5.1.2 Checking the SAP liveCache Instance

### Procedure

Call transaction `LCA03` in a liveCache-relevant client. For more information, see [Configuring the liveCache Instance \[page 28\]](#), step 3.

This transaction performs a liveCache check, consisting of a configuration check and a functional check. This also checks whether all required periodic jobs are scheduled. If there are open issues during the configuration check, the transaction guides you to fix them immediately.

If you receive errors during the functional check, open an OSS message for the component `BC-DB-LCA`.

## 5.1.3 Changing Passwords of Created Users

You need to change the passwords of the users that the installer creates during the installation. The table below lists these users. You also need to remove the contents of the installation directory and store them securely because otherwise they might represent a security risk.

### ⚠ Caution

Make sure that you perform this procedure **before** the newly installed SAP system goes into production.

## Procedure

1. Change the passwords of these users.

For the users listed below, take the precautions described in the relevant SAP security guide.

You can find the security guide in the *Security* section of the product page for your SAP product at <https://help.sap.com/>.

User Type	User	Comment
Operating system user	<lcid>adm	live Cache instance administrator

For more information about how to change the passwords for the following liveCache users, see **SAP Note 25591**.

User Type	User	Comment
liveCache users	SAP<LC_NAME>	liveCache database owner (that is, the owner of the database tables)
	<b>i Note</b> This name is a suggestion. If required, you can change it during the installation.	
	CONTROL	liveCache database manager operator
	SUPERDBA	liveCache system administrator

2. Remove the contents of the installation directory and store them securely.

### 5.1.4 Setting Up a liveCache Super User

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.

## 5.2 Installing or Upgrading Database Studio for SAP MaxDB

This section describes how to install or upgrade Database Studio for SAP MaxDB and SAP liveCache. Database Studio is the database administration tool for SAP MaxDB. With Database Studio you can administer MaxDB databases version 7.6 and newer.

### 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.

#### 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:

Operating System Requirements for Database Studio 7.9

Operating System	Database Studio 7.9.08	Database Studio 7.9.09
Windows 2008	X64	X64
Windows 2008 R2	X64	X64
Windows Vista	IA32 and X64	X64
Windows 7	IA32 and X64	X64
Windows 8	IA32 and X64	X64
Windows 10	IA32 and X64	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 by downloading them from:  
<https://launchpad.support.sap.com/#/softwarecenter> > Databases > SAP MaxDB > Database Patches > MAXDB GUI COMPONENTS/TOOLS > MAXDB DATABASE STUDIO 7.9 >
- Database Studio 7.9.09 comes with the SAP Java Runtime SAPJVM. You no longer need to download the Java runtime.

- Database Studio 7.9.08 is still available for downloading.  
To check your Java version, enter the following command:  
`java -version`  
To download Java, go to <http://java.com/en/download> .

## Context

For more information about Database Studio, see <https://help.sap.com/maxdb/<Version>> > *Application Help* > *SAP MaxDB Library* > *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 about installing Database Studio, see SAP Note [1097311](#) .

For more information about Database Studio, including troubleshooting, see SAP Note [1097311](#) and [1795588](#) .

## Procedure

1. Start the installation or upgrade by simply executing the downloaded `SDBSETUP.EXE` (Windows clients) or `SDBSETUP` (Linux clients) file.  
The *Installation Manager* starts.
2. Follow the Installation Manager steps to install or upgrade Database Studio.
3. If you are prompted to restart your computer after the installation, make sure that you first shut down any databases that are running.

## 5.3 Secure Sockets Layer Protocol for Database Server Communication

The SAP MaxDB database server supports the Secure Sockets Layer (SSL) / Transport Layer Security (TLS) 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. You need to install SAP's cryptographic library - SAPCRYPTOLIB. For more information on software versions, see SAP Note [2243688](#) .

### ⚠ 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 [install the SAP Cryptographic Library \[page 32\]](#) and [generate the personal security environment \[page 34\]](#) (PSE) on the server (SSL Server PSE) and on the client (SSL Client PSE). In addition, you need to [configure the SSL communication between the application server and the database server \[page 37\]](#).

## Related Information

[Installing the SAP Cryptographic Library \[page 32\]](#)

[Generating the Personal Security Environment \[page 34\]](#)

[Configuring the SSL Communication between the Application Server and the Database Server \[page 37\]](#)

## 5.3.1 Installing the SAP Cryptographic Library

This section describes how to install the SAP Cryptographic Library.

### Prerequisites

#### Prerequisites

Download the appropriate installation package for your operating system and liveCache version from:

<https://launchpad.support.sap.com/#/softwarecenter>  [Support Packages & Patches](#)  [SAP TECHNOLOGY COMPONENTS](#)  [SAPCRYPTOLIB](#)  [COMMONCRYPTOLIB <version>](#) 

### Context

The SAP Cryptographic Library supplies the cryptographic functions required to build a database server-client connection using the Secure Sockets Layer (SSL) protocol. Therefore, you need to install the SAP Cryptographic Library on the host machine of the SAP MaxDB database server and the SAP Application Server (AS).

The installation package consists of the following:

- The SAP Cryptographic Library:
  - SAP liveCache >= 7.9.09: CommonCryptoLib (CCL)
  - SAP liveCache < 7.9.09: SAPCRYPTOLIB



- Configuration tool `sapgenpse.exe`

The installation package is called `SAPCRYPTOLIBP_<patch_level>-<platform_id>.SAR`. For example, CCL 8.4.45 on 64-bit AIX is called `SAPCRYPTOLIBP_8445-20011699.SAR`.

For more information on the CCL, see SAP Note [1848999](#).

You use the configuration tool to generate key pairs and PSEs.

## Procedure

1. Unpack the installation package for the SAP Cryptographic Library using `sapcar.exe`, which you can find for example on your installation master media, using the following command:

```
sapcar -xvf <name of your package>
```

### Note

The remainder of the procedure (as described below) does not apply to client applications such as SQL Studio, which do not recognize an **independent** directory. In this case, you must copy the `sapcrypto` installation package to the installation directory of the application

2. Copy the `sapcrypto` library to the `lib` subdirectory of the **independent program** directory.

You can find the value of the independent program directory by entering the following command:

```
dbmcli dbm_getpath IndepProgPath
```

### Example

The independent program directory might be called the following:

```
/sapdb/programs/lib
```

3. Copy the configuration tool `sapgenpse.exe` to the directory `<independent program>\lib`.
4. Create a subdirectory called `sec` under the **independent data** directory.

### Example

The result might look as follows:

```
/sapdb/data/sec
```

5. Make sure that the directory and the files that the `sec` directory contains – including the SSL Server PSE – belong to the user `lcown` and the group `lcadm`, and that the rights are restricted to `0660`.

## 5.3.2 Generating the Personal Security Environment

This section describes how to generate the SSL Server PSE and the SSL Client PSE.

### Context

The information required by the database server or client application to communicate using Secure Sockets Layer is 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 `SDBSSLS.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

1. You [generate the SSL Server PSE \[page 34\]](#)
2. You [generate the SSL Client PSE \[page 36\]](#)

### 5.3.2.1 Generating the SSL Server PSE

Proceed as follows to generate the SSL Server PSE.

### Context

#### i 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.

## Procedure

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 a SSL Server PSE, `SDBSSLS.pse`, and generate a certificate request file, `certreq`, in the directory defined by `SECUDIR` (see step 2):

```
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.

5. 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 the Thawte website 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.

6. 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:

#### ☰ Sample Code

```
-----BEGIN CERTIFICATE REQUEST-----
MIIBPzCBqQIBADAAMIGfMA0GCSqGSIb3DQEBAQUAA4GNADCBiQKBgQD/302IT+/Y
wpignSw7U9FWneyWz3Wl10S18aFCYkRo00wCpD8UwcaC4dds4uGT6h12WlJ0/FOtUg
+EQxonZbaRrk9sTalknlmqx3YAUE/gEaGdf1wvuYkb0gjMk81iM/
jb9BJd8srMPyoBy9jMC7v5u7+TZWmWa6RjnvClvYGgMwIDAQABAAAwDQYJKoZIhvcNAQEFBQ
ADgYEA
x2zuaTAOKPdGmxUKY1WdasUpim4vhfaHa7ZDBwipvKJ8akYCT
+dpmVjhcp9E7cUjL80/6Rup5cnLAAO5FhVt5MS6zNJa9YYSN9XP+5/
MPF6Q4ayJ0VryTkSpbbPrWLBKh1Dds97LQVuQ/myKIAHECwyW6t7sAFJWn4P0fdxmKo=
-----END CERTIFICATE REQUEST-----
```

7. Import the reply to the SSL Server PSE:
  - a. Copy the text to a temporary file called `srcert`.
  - b. Enter the following import command:

```
sapgenpse import_own_cert -c srcert -p SDBSSLS.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).

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

## 5.3.2.2 Generating the SSL Client PSE

Proceed as follows to generate the SSL Client PSE.

### Procedure

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.

## 5.3.3 Configuring the SSL Communication between the Application Server and the Database Server

Set the connection information for each database connection for which SSL is to be used.

### Procedure

Using transaction `dbco`, set the connection information for each database connection for which SSL is to be used as follows:

- Connection information for database connection `<name>`  
`maxdb:remotes://<host>/database/<SID>-<SID>`
- Connection information for database connection `<name>+`  
`@DBM_SSL:<host>-<SID>`

For more information, see SAP Note [2190094](#).

### Example

Database connection: `Test`

`<host>: lu12345`

`<SID>: WB9`

Connection information for database connection `Test`:

`maxdb:remotes://lu12345/database/WB9-WB9`

Connection information for `Test+`:

`@DBM_SSL:lu12345-WB9`

# 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 Uninstalling SAP liveCache

This section describes how to uninstall SAP liveCache.

### Prerequisites

Stop liveCache with transaction LC10 in the SAP system.

### Procedure

1. Log on to the liveCache server as user <lc\_name>adm.
2. Drop the database instance:  

```
dbmcli -d <LC_NAME> -u <dbm_user>,<password> db_drop
```
3. Delete integration entries on the SAP server:
  - a. Log on to the SAP System as user DDIC.
  - b. Call transaction LC10.  
The *liveCache: Initial Screen* appears.
  - c. In the *Name of database connection* field, enter **LCA** and choose *Integration*.
  - d. Choose **► Display ► Change ►**
  - e. Choose *Delete the logical link* and confirm the deletion.
  - f. Save your entries.
  - g. Repeat steps b to f for database connections LDA and LEA.
4. Perform the following as UNIX user root:
  - a. Using the steps appropriate for your operating system, delete user <lc\_name>adm along with the home directory and all sub-directories.

- b. If not already deleted automatically, delete the user's home directory.
  - c. If not already deleted automatically, delete user `<lc_name>adm` from group `sapsys`.
  - d. If group `sapsys` is now empty, delete the complete group using the steps appropriate for your operating system.
5. Delete the liveCache software (dependent package) using the SAP MaxDB SDBUNINST tool, as described in [SAP Note 599129](#).

## Results

You have now removed the liveCache instance.

## 6.3 Additional Information about the Installer

The following sections provide additional information about the installer.

### [Useful Information about the Installer \[page 39\]](#)

This section contains some useful technical background information about the installer and the installer GUI.

### [Interrupted Processing of the Installer \[page 41\]](#)

Here you find information about how to restart the installer if its processing has been interrupted.

### [Troubleshooting with the Installer \[page 45\]](#)

This section tells you how to proceed when errors occur while the installer is running.

### [Using the Step State Editor \(SAP Support Experts Only\) \[page 46\]](#)

This section describes how to use the `Step State Editor` available in the installer.

### 6.3.1 Useful Information about the Installer

This section contains some useful technical background information about the installer and the installer GUI.

- Software Provisioning Manager (the “installer” for short) has the web browser-based “SL Common GUI of the Software Provisioning Manager” - “SL Common GUI” for short.  
The SL Common GUI uses the SAP UI Development Toolkit for HTML5 - also known as SAPUI5 - a client-side HTML5 rendering library based on JavaScript. The benefits of this new user interface technology for the user are:
  - Zero foot print, since only a web browser is required on the client
  - New controls and functionality, for example, view logs in web browser.

As of version 1.0 SP24 Patch Level (PL) 5, Software Provisioning Manager comes with a new look and feel of the SL Common GUI. For more information, see <https://blogs.sap.com/2018/11/10/new-look-for-software-provisioning-manager/>.

The SL Common GUI connects the web browser on a client with the `sapinst` executable - which is part of Software Provisioning Manager - running on the installation host using the standard protocol HTTPS.

For the SL Common GUI the installer provides a pre-generated URL at the bottom of the shell from which you are running the installer. If you have a supported web browser installed on the host where you run the installer, you can start the SL Common GUI directly from this URL. Otherwise, open a web browser supported by the SL Common GUI on any device and run the URL from there.

For more information about supported web browsers see [Prerequisites for Running the Installer \[page 20\]](#). If you need to run the **SL Common GUI in accessibility mode**, apply the standard accessibility functions of your web browser.

- As soon as you have started the `sapinst` executable, the installer creates a `.sapinst` directory underneath the `/home/<User>` directory where it keeps its log files. `<User>` is the user with which you have started the installer.

After you have reached the [Welcome](#) screen and selected the relevant installer option for the SAP system or instance to be installed, the installer creates a directory `sapinst_instdir` where it keeps its log files, and which is located directly below the temporary directory. The installer finds the temporary directory by checking the value of the `TEMP`, `TMP`, or `TMPDIR` environment variable. If no value is set for these variables, the installer uses `/tmp` by **default**.

All log files which have been stored so far in the `.sapinst` folder are moved to the `sapinst_instdir` directory as soon as the latter has been created.

If you want the `sapinst_instdir` directory to be created in another directory than `/tmp`, set the environment variable `TEMP`, `TMP`, or `TMPDIR` to this directory before you start the installer.

Shell Used	Command
Bourne shell (sh)	<code>TEMP=&lt;Directory&gt;</code> <code>export TEMP</code>
C shell (csh)	<code>setenv TEMP &lt;Directory&gt;</code>
Korn shell (ksh)	<code>export TEMP=&lt;Directory&gt;</code>

### ⚠ Caution

Make sure that the installation directory is not mounted with NFS, or there might be problems when the Java Virtual Machine is started.

The installer records its progress in the `keydb.xml` file located in the `sapinst_instdir` directory. Therefore, if required, you can continue with the installer from any point of failure, without having to repeat the already completed steps and without having to reenter the already processed input parameters. For security reasons, a variable encryption key is generated as soon as the `sapinst_instdir` directory is created by the installer. This key is used to encrypt the values written to the `keydb.xml` file.

### → Recommendation

We recommend that you keep all installation directories until the system is completely and correctly installed.

- The installer extracts itself to the temporary directory. These executables are deleted again after the installer has stopped running. Directories called `sapinst_exe.xxxxxx.xxxx` sometimes remain in the temporary directory after the installer has finished. You can safely delete them.



The temporary directory also contains the log file `dev_selfex.out` from the self-extraction process of the installer, which might be useful if an error occurs.

#### ⚠ Caution

If the installer cannot find a temporary directory, the installation terminates with the error `FCO-00058`.

- To see a list of all available installer properties, start the installer as described above with the option `-p`:  
`./sapinst -p`
- If required, stop the installer by choosing the *Cancel* button.

#### i Note

If you need to terminate the installer, press `Ctrl` + `C`.

## 6.3.2 Interrupted Processing of the Installer

Here you find information about how to restart the installer if its processing has been interrupted.

### Context

The processing of the installer might be interrupted for one of the following reasons:

- An error occurred during the *Define Parameters* or *Execute* phase:  
The installer does not abort the installation in error situations. If an error occurs, the installation pauses and a dialog box appears. The dialog box contains a short description of the choices listed in the table below as well as a path to a log file that contains detailed information about the error.
- You interrupted the processing of the installer by choosing *Cancel* in the SL Common GUI.

#### ⚠ Caution

If you stop an option in the *Execute* phase, any system or component **installed** by this option is incomplete and not ready to be used. Any system or component **uninstalled** by this option is not completely uninstalled.

The following table describes the options in the dialog box:

Option	Definition
<a href="#">Retry</a>	<p>The installer retries the installation from the point of failure without repeating any of the previous steps.</p> <p>This is possible because the installer records its progress in the <code>keydb.xml</code> file.</p> <p>We recommend that you view the entries in the log files, try to solve the problem, and then choose <a href="#">Retry</a>.</p> <p>If the same or a different error occurs, the installer displays the same dialog box again.</p>
<a href="#">Stop</a>	<p>The installer stops the installation, closing the dialog box, the installer GUI, and the GUI server.</p> <p>The installer records its progress in the <code>keydb.xml</code> file. Therefore, you can continue with the installer from the point of failure without repeating any of the previous steps. See the procedure below.</p>
<a href="#">Continue</a>	The installer continues the installation from the current point.
<a href="#">View Log</a>	Access installation log files.

### i Note

You can also terminate the installer by choosing `Ctrl + C` but we do **not** recommend this because it kills the process immediately.

The following procedure describes the steps to restart an installation, which you stopped by choosing [Stop](#), or to continue an interrupted installation after an error situation.

## Procedure

1. Log on to the installation host as a user with the required permissions as described in [Running the Installer \[page 23\]](#).
2. Make sure that the installation media are still available.

For more information, see [Preparing the Installation Media \[page 16\]](#).

### → Recommendation

Make the installation media available **locally**. For example, if you use remote file shares on other Windows hosts, CIFS shares on third-party SMB-servers, or Network File System (NFS), reading from media mounted with NFS might fail.

Only valid for 'Platform': Oracle Solaris

### i Note

**Oracle Solaris:** If you mount installation media, make sure that you do this with option `nomap1case`.

End of 'Platform': Oracle Solaris

3. Make sure that the installation media are still available.

For more information, see [Preparing the Installation Media \[page 16\]](#) .

### → Recommendation

Make the installation media available **locally**. For example, if you use remote file shares on other Windows hosts, CIFS shares on third-party SMB-servers, or Network File System (NFS), reading from media mounted with NFS might fail.

Only valid for 'Platform': Oracle Solaris

### i Note

**Oracle Solaris:** If you mount installation media, make sure that you do this with option `nomap1case`.

End of 'Platform': Oracle Solaris

4. Restart the installer from the directory to which you unpacked the Software Provisioning Manager archive by executing the following command:

```
<Path_To_Unpack_Directory>/sapinst
```

5. The installer is restarting.

The installer now starts and waits for the connection with the SL Common GUI.

You can find the URL you require to access the SL Common GUI at the bottom of the shell from which you are running the installer.

```
...
*****
Open your browser and paste the following URL address to access the GUI
https://[<hostname>]:4237/sapinst/docs/index.html
Logon users: [<users>]
*****
...
```

### i Note

If the host specified by `<hostname>` cannot be reached due to a special network configuration, proceed as follows:

1. Terminate the installer as described in [Useful Information about the Installer \[page 39\]](#).
2. Restart the installer from the command line with the `SAPINST_GUI_HOSTNAME=<hostname>` property.  
You can use a fully-qualified host name.

If you have a supported web browser (see [Prerequisites for Running the Installer \[page 20\]](#)) installed on the host where you run the installer, you can open this URL directly in the shell. Otherwise, open the URL in a supported web browser that runs on another device.

### ⚠ Caution

After opening the browser URL, make sure that the URL in the browser starts with "https://" to avoid security risks such as SSL stripping .

Before you reach the *Welcome* screen, your browser warns you that the certificate of the `sapinst` process on this computer could not be verified.

Proceed as follows to avoid security risks such as a man-in-the-middle attack:

1. Click on the certificate area on the left hand side in the address bar of your browser, and view the certificate.
2. Open the certificate fingerprint or thumbprint, and compare all hexadecimal numbers to the ones displayed in the console output of the installer.

Proceed as follows to get the certificate fingerprint or thumbprint from the server certificate printed in the installer console:

1. Go to the `sapinst_exe.xxxxxxx.xxxx` directory in the temporary directory to which the installer has extracted itself:  
`<User_Home>/ .sapinst/`
2. In the `sapinst_exe.xxxxxxx.xxxx` directory, execute the `sapgenpse` tool with the command line option `get_my_name -p`.

As a result, you get the server fingerprint or thumbprint from the server certificate.

3. Accept the warning to inform your browser that it can trust this site, even if the certificate could not be verified.

The SL Common GUI opens in the browser by displaying the *Welcome* screen.

6. From the tree structure on the *Welcome* screen, select the installation option that you want to continue and choose *Next*.

The *What do you want to do?* screen appears.

7. On the *What do you want to do?* screen, decide between the following alternatives and continue with *Next*:

Alternative	Behavior
<i>Perform a new run</i>	<p>The installer does not continue the interrupted installation option. Instead, it moves the content of the old installer directory and all installer-specific files to a backup directory. Afterwards, you can no longer continue the old option.</p> <p>The following naming convention is used for the backup directory:</p> <pre>log_&lt;Day&gt;_&lt;Month&gt;_&lt;Year&gt;_&lt;Hours&gt;_&lt;Minutes&gt;_&lt;Seconds&gt;</pre> <div style="background-color: #f0f0f0; padding: 5px;"> <p><b>❖ Example</b></p> <pre>log_01_Oct_2016_13_47_56</pre> </div> <div style="background-color: #f0f0f0; padding: 5px;"> <p><b>i Note</b></p> <p>All actions taken by the installation before you stopped it (such as creating directories or users) are not revoked.</p> </div> <div style="background-color: #f0f0f0; padding: 5px;"> <p><b>⚠ Caution</b></p> <p>The installer moves all the files and folders to a new log directory, even if these files and folders are owned by other users. If there are any processes currently running on these files and folders, they might no longer function properly.</p> </div>
<i>Continue with the existing one</i>	The installer continues the interrupted installation from the point of failure.

## 6.3.3 Troubleshooting with the Installer

This section tells you how to proceed when errors occur while the installer is running.

### Context

If an error occurs, the installer:

- Stops processing
- Displays a dialog informing you about the error

### Procedure

1. Check SAP Note [2393060](#) for known installer issues.
2. If an error occurs during the *Define Parameters* or the *Execute Service* phase, do one of the following:

- Try to solve the problem:
  - To check the installer log files (`sapinst.log` and `sapinst_dev.log`) for errors, choose the *LOG FILES* tab.

#### i Note

The *LOG FILES* tab is only available if you have selected on the *Welcome* screen the relevant installer option for the SAP product to be installed .

If you need to access the log files before you have done this selection, you can find them in the `.sapinst` directory underneath the `/home/<User>` directory, where `<User>` is the user that you used to start the installer.

For more information, see [Useful Information about the Installer \[page 39\]](#).

- To check the log and trace files of the installer GUI for errors, go to the directory `<User_Home>/sapinst/`
  - Then continue by choosing *Retry*.
  - If required, abort the installer by choosing *Cancel* in the tool menu and restart the installer. For more information, see [Interrupted Processing of the Installer \[page 41\]](#).
3. If you cannot resolve the problem, report an incident using the appropriate subcomponent of BC-INS\*. For more information about using subcomponents of BC-INS\*, see SAP Note [1669327](#).

## 6.3.4 Using the Step State Editor (SAP Support Experts Only)

This section describes how to use the `Step State Editor` available in the installer.

#### i Note

Only use the `Step State Editor` if the SAP Support requests you to do so, for example to resolve a customer incident.

### Prerequisites

- SAP Support requests you to use the `Step State Editor`.
- Make sure that the host where you run the installer meets the requirements listed in [Prerequisites for Running the Installer \[page 20\]](#).

### Procedure

1. Start the installer from the command line as described in [Running the Installer \[page 23\]](#) with the additional command line parameter `SAPINST_SET_STEPSTATE=true`

2. Follow the instructions on the installer screens and fill in the parameters prompted during the *Define Parameters* phase until you reach the *Parameter Summary* screen.
3. Choose *Next*.

The `Step State Editor` opens as an additional dialog. Within this dialog you see a list of all steps to be executed by the installer during the *Execute Service* phase. By default all steps are in an initial state. Underneath each step, you see the assigned installer component. For each step you have a *Skip* and a *Break* option.

- Mark the checkbox in front of the *Break* option of the steps where you want the installer to pause.
  - Mark the checkbox in front of the *Skip* option of the steps which you want the installer to skip.
4. After you have marked all required steps with either the *Break* or the *Skip* option, choose *OK* on the *Step State Editor* dialog.

The installer starts processing the *Execute Service* phase and pauses one after another when reaching each step whose *Break* option you have marked. You can now choose one of the following:



- Choose *OK* to continue with this step.
  - Choose *Step State Editor* to return to the `Step State Editor` and make changes, for example you can repeat the step by marking the checkbox in front of the *Repeat* option.
  - Choose *Cancel* to abort the installer.
5. Continue until you have run through all the steps of the *Execute Service* phase of the installer.

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