Operations Guide | PUBLIC
Software Provisioning Manager 1.0 SP43
Document Version: 4.4 – 2025-02-10

System Rename for SAP Systems Based on Application Server Java of SAP NetWeaver 7.5 , and SAP Solution Manager 7.2 SR2 Java, on UNIX

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Content

Document History

> **Note**
>
> Before you start reading, make sure you have the latest version of this system rename guide, which is available at https://support.sap.com/sltoolset > *System Provisioning* > *Rename a System using Software Provisioning Manager* > *Rename Option of Software Provisioning Manager 1.0 SP* .

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

Version	Date	Description
4.4	2025-02-10	Updated version for software provisioning manager 1.0 SP43 (SL Toolset 1.0 SP43)
4.3	2024-10-07	Updated version for software provisioning manager 1.0 SP42 (SL Toolset 1.0 SP42)
4.2	2024-05-27	Updated version for software provisioning manager 1.0 SP41 (SL Toolset 1.0 SP41)
4.1	2024-02-12	Updated version for software provisioning manager 1.0 SP40 (SL Toolset 1.0 SP40)
4.0	2023-10-09	Updated version for software provisioning manager 1.0 SP39 (SL Toolset 1.0 SP39) Windows operating systems no longer supported for software provisioning manager 1.0 SP39 and higher, according to SAP Note 2998013, have been removed.
3.9.1	2023-10-09	Updated version for software provisioning manager 1.0 SP38 (SL Toolset 1.0 SP38): Last version containing information about no longer supported Windows operating systems according to SAP Note 3346502.
3.9	2023-05-26	Updated version for software provisioning manager 1.0 SP38 (SL Toolset 1.0 SP38)
3.8	2023-02-13	Updated version for software provisioning manager 1.0 SP37 (SL Toolset 1.0 SP37)
3.7	2022-10-10	Updated version for software provisioning manager 1.0 SP36 (SL Toolset 1.0 SP36) Operating systems and CPU architectures no longer supported according to SAP Note 2998013 have been removed.
3.6.1	2022-10-10	Updated version for software provisioning manager 1.0 SP35 (SL Toolset 1.0 SP35): Last version containing information about no longer supported operating systems and CPU architectures according to SAP Note 2998013.
3.6	2022-05-24	Updated version for software provisioning manager 1.0 SP35 (SL Toolset 1.0 SP35)
3.5	2022-02-14	Updated version for software provisioning manager 1.0 SP34 (SL Toolset 1.0 SP34)
3.4	2021-10-11	Updated version for software provisioning manager 1.0 SP33 (SL Toolset 1.0 SP33)

Version	Date	Description
3.3	2021-06-21	Updated version for software provisioning manager 1.0 SP32 (SL Toolset 1.0 SP32)
3.2	2021-02-15	Updated version for software provisioning manager 1.0 SP31 (SL Toolset 1.0 SP31)
3.1	2020-10-05	Updated version for software provisioning manager 1.0 SP30 (SL Toolset 1.0 SP30)
3.0	2020-06-08	Updated version for software provisioning manager 1.0 SP29 (SL Toolset 1.0 SP29)
2.9	2020-01-20	Updated version for software provisioning manager 1.0 SP28 (SL Toolset 1.0 SP28)
2.8	2019-09-16	Updated version for software provisioning manager 1.0 SP27 (SL Toolset 1.0 SP27) • New Features: • Oracle 18 c or higher: Support of Transparent Data Encryption (TDE), documented in: *New Features*, *SAP System Database Parameters*, *Support of Oracle Transparent Data Encryption (Oracle TDE)*
2.7	2019-05-27	Updated version for software provisioning manager 1.0 SP26 (SL Toolset 1.0 SP26)
2.6	2019-01-21	Updated version for software provisioning manager 1.0 SP25 (SL Toolset 1.0 SP25)
2.5	2018-09-17	Updated version for software provisioning manager 1.0 SP24 (SL Toolset 1.0 SP24)
2.4	2018-05-07	Updated version for software provisioning manager 1.0 SP23 (SL Toolset 1.0 SP23)

Version	Date	Description

2.3	2018-01-15	Updated version for software provisioning manager 1.0 SP22 (SL Toolset 1.0 SP22)
		• New Features:
		  • Software provisioning manager Log Files Improvements, documented in: *New Features*, *Useful Information about the Software Provisioning Manager*, *Troubleshooting with the Software Provisioning Manager*
		  • Enabling IPv6, documented in: *New Features*, *Prerequisites for Running the Software Provisioning Manager*
		• *New Features* section restructured: As of SP22, a dedicated subsection for each new SP has been created. New features below SP22 remain in a common table.
		• The Java SDT GUI - which was in the SP21 version still available in parallel to the SL-UI - has been deprecated with SP22. As of SP22, SL-UI is the only available GUI of the software provisioning manager:
		  • The following sections which were explicitely related to Java SDT GUI were completely removed from this documentation: *Performing a Remote Installation Remote Processing of the Software Provisioning Manager (Java SDT GUI only)*, *Starting the Java SDT GUI Separately*, *Running the Software Provisioning Manager in Accessibility Mode* (general accessibility information was moved to *Useful Information About the Software Provisioning Manager*).
		  • The Java SDT GUI-specific information was removed from the common software provisioning manager sections: *Running the Software Provisioning Manager*, *Useful Information About the Software Provisioning Manager*, *Interrupted Processing of the Software Provisioning Manager*, *Troubleshooting with the Software Provisioning Manager*
		• New section *Using the Step State Editor (SAP Support Experts Only)* was added to section *Additional Information About the Software Provisioning Manager*
		• Option to install the SCS instance with an embedded SAP Web Dispatcher , documented in: *New Features*, *SCS Instance with Embedded SAP Web Dispatcher*, *Additional Parameters for an SAP Web Dispatcher Installation Embedded in the SCS Instance (Optional)*
		Note
		This feature was retroactively released on 2018-02-12.

2.2	2017-09-11	Updated version for software provisioning manager 1.0 SP21 (SL Toolset 1.0 SP21) • New Features: • Media Signature Check, documented in: *New Features*, *Running the Software Provisioning Manager*, *Preparing the System Rename Media* .

Version	Date	Description

2.1	2017-05-22	Updated version for software provisioning manager 1.0 SP20 (SL Toolset 1.0 SP20)
		• New Features:
		  • New SAPUI5-based graphical user interface (GUI) "SL-UI", documented in: *Prerequisites for Running the Software Provisioning Manager*, *Running the Software Provisioning Manager*, *Useful Information About the Software Provisioning Manager*
		  • Cleanup of operating system users, documented in: *SAP System Parameters*, *Creating Operating System Users and Groups*

2.0	2017-02-06	Updated version for software provisioning manager 1.0 SP19 (SL Toolset 1.0 SP19) • New Features: Verification of the integrity of data units in Software Provisioning Manager, documented in: *New Features*, *Downloading the Software Provisioning Manager Archive*
1.9	2016-10-07	Updated version for software provisioning manager 1.0 SP18 (SL Toolset 1.0 SP18)
1.8	2016-06-06	Updated version for software provisioning manager 1.0 SP17 (SL Toolset 1.0 SP17)
1.7	2016-02-15	Updated version for software provisioning manager 1.0 SP10 (SL Toolset 1.0 SP16)
1.61	2015-11-13	Updated version for software provisioning manager 1.0 SP09 (SL Toolset 1.0 SP15)
1.6	2015-10-12	Updated version for software provisioning manager 1.0 SP09 (SL Toolset 1.0 SP15)
1.5	2015-09-14	Updated version for software provisioning manager 1.0 SP09 (SL Toolset 1.0 SP14)
1.4	2015-04-27	Updated version for software provisioning manager 1.0 SP08 (SL Toolset 1.0 SP13)
1.3	2014-11-24	Updated version for software provisioning manager 1.0 SP07 (SL Toolset 1.0 SP12)
1.2	2014-07-07	Updated version for software provisioning manager 1.0 SP06 (SL Toolset 1.0 SP11)
1.1	2014-03-17	Updated version for software provisioning manager 1.0 SP05 (SL Toolset 1.0 SP10)
1.0	2013-10-28	Initial version

1 About this Document

This document describes how to rename SAP systems using the software provisioning manager 1.0 SP43, which is part of SL Toolset 1.0 SP43. It is valid for SAP systems based on Application server Java of SAP NetWeaver 7.5, and SAP Solution Manager 7.2 SR2 Java, on UNIX .

> ### Note
>
> SAP products based on SAP NetWeaver AS Java 7.10 to 7.40 SR2 are only supported in mainstream maintenance until the end of 2020. Extended maintenance will **not** be provided.
>
> For more information, see SAP Note 2980160.
>
> You can download the last published version of the guide set for the last Software Provisioning Manager 1.0 SP30 for out-of-maintenance products (`SWPM10RMSP30_<Version>.SAR`) from SAP Note 2980160. The guide set attached to SAP Note 2980160 covers only the SAP product versions which have reached end of maintenance.

For information about SAP system products and releases covered by this guide, see SAP Products Based on SAP NetWeaver 7.5, and SAP Solution Manager 7.2 SR2 Java, Supported for System Rename Using Software Provisioning Manager 1.0 [page 11].

For information about software provisioning manager 1.0, see About Software Provisioning Manager 1.0 [page 10].

For information about supported operating system and database platforms, see the Product Availability Matrix at https://apps.support.sap.com/sap/support/pam.

> ### Note
>
> As an alternative to using Software Provisioning Manager, you can rename your system with a completely automated end-to-end framework available using SAP Landscape Management. For more information, see SAP Note 1709155 and https://help.sap.com/docs/SAP_LANDSCAPE_MANAGEMENT_ENTERPRISE.

> ### Caution
>
> You should only perform a system rename using the software provisioning manager 1.0 if your SAP system is installed with standard SAP tools according to the documentation available at https://support.sap.com/sltoolset > *System Provisioning*.
>
> Any deviations from this documentation are at your own risk. Be aware that additional consulting effort might be necessary.

Related Information

Use Cases of System Rename [page 9]

1.1 Use Cases of System Rename

This section describes which system parameters you can adapt using system rename.

You can adapt one or more of the following parameters of an SAP system using the system rename procedure:

- SAP system ID (<SAPSID>)
- Database ID (<DBSID>)
- Instance numbers of the instances on the SAP system
- Host names

You can perform system rename in the following cases:

- You want to rename existing systems:
  - Systems installed by using the standard SAP tools.
  - Systems created by using SAP Landscape Management
  - Systems provided as virtual appliance
  - Cloned systems (virtual to virtual, virtual to physical, or physical to virtual)
- You performed a system copy by copying the file system [page 33] of a source SAP system and its database and want to rename the target system.

> **Note**
>
> For production systems, the rename procedure should only be performed by experienced system administrators or consultants and should be tested beforehand – especially for the conversion of logic system names, the corresponding aspects outlined in **SAP Note** 121163 have to be considered.

More Information

For more information about offerings, methods, use cases and technical details of the system rename procedure, see http://scn.sap.com/docs/DOC-32851.

1.2 How to Use this Guide

This documentation comprises the description of the system rename procedure and system rename-specific steps.

Context

For general installation or system copy-specific information, see the installation or system copy guides [page 19].

Procedure

1. You decide on the system parameters you want to change in the rename process.
   For more information, see Use Cases of System Rename [page 9].
2. You follow the steps in each phase:
   - Planning [page 21]
   - Preparation [page 23]
   - Renaming [page 52]
   - Follow-Up Activities [page 76]

1.3 About Software Provisioning Manager 1.0

The software provisioning manager 1.0 is the successor of the product- and release-specific delivery of provisioning tools, such as “SAPinst”. We strongly recommend that you always download the latest version of the software provisioning manager 1.0. The software provisioning manager 1.0 is part of the Software Logistics Toolset 1.0 (“SL Toolset” for short). This way, you automatically get the latest fixes and supported processes. For more information about the software provisioning manager as well as products and releases supported by it, see SAP Note 1680045 and http://scn.sap.com/docs/DOC-30236.

“SAPinst” has been renamed to “software provisioning manager” in this documentation, but the terms “SAPinst” and “sapinst” are still used in:

- The name of the technical framework of the software provisioning manager. For more information about the SAPinst Framework, see SAP Note 2393060.
- Texts and screen elements in the the software provisioning manager GUI (SL Common GUI)
- Names of executables, for example `sapinst`
- Names of command line parameters, for example **`SAPINST_HTTPS_PORT`**
- Names of operating system user groups, such as the additional group `sapinst`

In the following, we generally refer to the software provisioning manager 1.0 as the “software provisioning manager”. We only use the term “software provisioning manager 1.0” if this is required for technical reasons.

Related Information

Preparing the System Rename Media [page 44]

1.4 SAP Products Based on SAP NetWeaver 7.5, and SAP Solution Manager 7.2 SR2 Java, Supported for System Rename Using Software Provisioning Manager 1.0

Here you can find a list of SAP products based on SAP NetWeaver 7.5, and Solution Manager 7.2 SR2 Java, Java that are supported for system rename using Software Provisioning Manager 1.0, on the specific operating system and database combination described in this guide.

SAP Product	Based on the following SAP NetWeaver Release
SAP S/4HANA 2025 Java	SAP NetWeaver 7.5
SAP S/4HANA 2023 Java	SAP NetWeaver 7.5
SAP S/4HANA 2022 Java	SAP NetWeaver 7.5
SAP S/4HANA 2021 Java	SAP NetWeaver 7.5
SAP S/4HANA 2020 Java	SAP NetWeaver 7.5
SAP S/4HANA 1909 Java	SAP NetWeaver 7.5
SAP S/4HANA 1809 Java	SAP NetWeaver 7.5
SAP S/4HANA 1709 Java	SAP NetWeaver 7.5
SAP S/4HANA 1610 Java (Out of Maintenance since December 2021) ⚠ Caution The options for this product have been removed from software provisioning manager 1.0 as of SP37. These options are still available in the “frozen” software provisioning manager 1.0 SP35 (see SAP Note 3220901)	SAP NetWeaver 7.5

SAP Product	Based on the following SAP NetWeaver Release
SAP S/4HANA ON-PREMISE 1511 Java (Out of Maintenance since December 2020) **⚠ Caution** The options for this product have been removed from software provisioning manager 1.0 as of SP37. These options are still available in the "frozen" software provisioning manager 1.0 SP35 (see SAP Note 3220901))	SAP NetWeaver 7.5
SAP Business Suite 7i 2016: • EHP4 for SAP CRM 7.0 Java • EHP8 for SAP ERP 6.0 Java • EHP4 for SAP SRM 7.0 Java	SAP NetWeaver 7.5
SAP Business Suite 7i 2013 Support Release 2: • EHP3 for SAP CRM 7.0 Java Support Release 2 (**exception:** SAP CRM Application Server Java not supported on SAP NetWeaver 7.5) • EHP7 for SAP ERP 6.0 Java Support Release 2 (**exception:** SAP XECO not supported on SAP NetWeaver 7.5) • EHP3 for SAP SRM 7.0 Java Support Release 2	SAP NetWeaver 7.5
SAP Business Suite 7i 2011 Java: • EHP2 for SAP CRM 7.0 Java (**exception:** SAP CRM Application Server Java not supported on SAP NetWeaver 7.5) • EHP6 for SAP ERP 6.0 Java (**exception:** SAP XECO not supported on SAP NetWeaver 7.5) • EHP2 for SAP SRM 7.0 Java	SAP NetWeaver 7.5
SAP Business Suite 7i 2010 Java: • EHP1 for SAP CRM 7.0 Java (**exception:** SAP CRM Application Server Java not supported on SAP NetWeaver 7.5) • EHP5 for SAP ERP 6.0 Java (**exception:** SAP XECO not supported on SAP NetWeaver 7.5)	SAP NetWeaver 7.5
SAP Business Suite 7 Java: • SAP CRM 7.0 Java (**exception:** SAP CRM Application Server Java not supported on SAP NetWeaver 7.5) • EHP4 for SAP ERP 6.0 Java (**exception:** SAP XECO not supported on SAP NetWeaver 7.5)	SAP NetWeaver 7.5

SAP Product	Based on the following SAP NetWeaver Release
SAP NetWeaver 7.5 **Note** SAP NetWeaver 7.5 Java is also contained in the following optional standalone units: • Advanced Adapter Engine • Advanced Adapter Engine Extended (AEX) • Process Orchestration	SAP NetWeaver 7.5
SAP Solution Manager 7.2 Support Release 2	SAP NetWeaver 7.5

1.5 Naming Conventions

- "usage type", "technical usage", and "product instance"
  As of software provisioning manager 1.0 SP07 (SL Toolset 1.0 SP12), the term "product instance" replaces the terms " usage type" and "technical usage" .
- "SAP system" refers to "SAP NetWeaver system" or "SAP system based on SAP NetWeaver".
  "SAP system" also refers to the standalone engines supported for system rename with software provisioning manager 1.0, such as SAP Web Dispatcher, SAP liveCache, and standalone gateway.
- "SAP liveCache" refers to "SAP MaxDB liveCache".
- "SAP liveCache client" refers to "SAP MaxDB liveCache client".

1.6 New Features

This section provides an overview of the new features in software provisioning manager 1.0.

Make sure that you also read the *Release Notes* for your SAP product at https://help.sap.com ▶ `<Search your SAP Product>` ▶ `<Select your SAP Product Version>` ▶ *What's New* ▶.

Feature	Description	Availability
Certificate revocation list (CRL) required for SAPinst framework	Due to security requirements, a certificate revocation list (CRL) is required for the SAPinst framework of software provisioning manager. For more information, see SAP Note 3207613 and Prerequisites for Running Software Provisioning Manager [page 53].	Software provisioning manager 1.0 SP42 (SL Toolset 1.0 SP42)

Feature	Description	Availability
New SAPinst Framework Version 753	The SAPinst framework patch level has been upgraded from version 749 (SAP Note 2393060 *SAPinst Framework 749 Central Note*) to 753. For more information, see SAP Note 3207613 *SAPinst Framework 753 Central Note*.	software provisioning manager 1.0 SP36 (SL Toolset 1.0 SP36)
Support of AIX 7.3	AIX 7.3 is now supported for all software lifecycle management options from software provisioning manager. For more information, see SAP Note 3104875.	software provisioning manager 1.0 SP34 (SL Toolset 1.0 SP34)
Switch from 7.21_EXT Kernel to 7.22_EXT Kernel	Kernel 7.21 has reached end of maintenance. In addition, some issues have been fixed with the new 7.22_EXT kernel media.	software provisioning manager 1.0 SP31 (SL Toolset 1.0 SP31)
Support of SAP HANA SSL Certificates	Software Provisioning Manager 1.0 supports SAP HANA SSL Certificates for configuring secure access to the SAP HANA database. For more information, see the installation guide for SAP systems based on SAP HANA [page 19].	software provisioning manager 1.0 SP29 (SL Toolset 1.0 SP29)
Support of Oracle 19	You can now perform all software provisioning manager 1.0 tasks (installation, system copy, system rename) for SAP systems with the Oracle 19 database. For more information, see and https://apps.support.sap.com/sap/support/pam.	software provisioning manager 1.0 SP28 (SL Toolset 1.0 SP28)
Oracle 18 c or higher: Support of Transparent Data Encryption (TDE)	Software provisioning manager 1.0 supports Oracle Transparent Data Encryption (TDE) for SAP NetWeaver-based systems. For more information, see Support of Oracle Transparent Data Encryption (Oracle TDE) [page 80].	software provisioning manager 1.0 SP27 (SL Toolset 1.0 SP27)
Support of Secure Connection to SAP HANA database.	Software Provisioning Manager 1.0 supports configuring the SAP system to be installed to access the SAP HANA database using encryption. For more information, see the installation guide for SAP systems based on SAP HANA [page 19].	software provisioning manager 1.0 SP26 (SL Toolset 1.0 SP26)
New Look and Feel of SL-UI	As of version 1.0 SP24 Patch Level (PL) 5, the software provisioning manager comes with a new look and feel of the SL-UI. For more information, see https://blogs.sap.com/2018/11/10/new-look-for-software-provisioning-manager/.	software provisioning manager 1.0 SP24, PL05 (SL Toolset 1.0 SP24)
software provisioning manager Log Files Improvements	software provisioning manager log files are now available immediately after software provisioning manager has been started, that is **before** a product has been selected on the *Welcome* screen. For more information, see Useful Information about Software Provisioning Manager [page 63] and Troubleshooting with Software Provisioning Manager [page 73].	software provisioning manager 1.0 SP22 (SL Toolset 1.0 SP22)

Feature	Description	Availability
Media Signature Check	The digital signature of media is checked **automatically** by the software provisioning manager during the *Define Parameters* phase while processing the *Media Browser* screens. The software provisioning manager only accepts media whose digital signature has been checked. For more information, see Preparing the System Rename Media [page 44] and Running the software provisioning manager [page 57].	software provisioning manager 1.0 SP21 (SL Toolset 1.0 SP21)
Support of Oracle 12.2	software provisioning manager (the "software provisioning manager") now supports system rename for SAP systems with Oracle 12.2.	software provisioning manager 1.0 SP21 (SL Toolset 1.0 SP21)
SL-UI with SAPINST 7.49	With the new software provisioning manager framework version SAPINST 7.49, you can now use the new SAPUI5-based graphical user interface (GUI) "SL-UI". For more information, see Useful Information about Software Provisioning Manager [page 63], Running Software Provisioning Manager [page 57].	software provisioning manager 1.0 SP20 (SL Toolset 1.0 SP20)
Cleanup of Operating System Users	You can now specify during the *Define Parameters* phase that the operating system users are to be removed from group `sapinst` after the execution of software provisioning manager has completed. For more information, see Creating Operating System Users and Groups [page 23].	software provisioning manager 1.0 SP20 (SL Toolset 1.0 SP20)
Verification of Integrity of Data Units in software provisioning manager	The integrity of data units extracted from the software provisioning manager archive is verified. For more information, see Downloading and Extracting the Software Provisioning Manager 1.0 Archive [page 45] . In addition, check SAP Note 1680045 whether additional information is available.	software provisioning manager 1.0 SP19 (SL Toolset 1.0 SP19)
SAP HANA, Db2 for z/OS only: Support of Linux on IBM Power Systems (little endian)	software provisioning manager supports as of now Linux on IBM Power Systems (little endian) as operating system platform for SAP systems based on **SAP NetWeaver 7.5** and higher on SAP HANA. For more information, see SAP Note 2378874.	software provisioning manager 1.0 SP19 (SL Toolset 1.0 SP19)

Feature	Description	Availability
System Provisioning for SAP NetWeaver 7.5 and SAP NetWeaver 7.5-based Products	All system provisioning tasks (installation, system copy, system rename) are available for the new SAP NetWeaver 7.5 release. The Dual Stack option, which integrates an AS ABAP and AS Java in a single system (common System ID `<SAPSID>`, common startup framework, common database), is no longer supported in SAP systems based on SAP NetWeaver 7.5. 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 *Upgrade Master Guide - SAP NetWeaver 7.5* at: https://help.sap.com/nw75 > *Installation and Upgrade*	software provisioning manager 1.0 SP09 (SL Toolset 1.0 SP15)
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)
Usage Type Library Deprecation for SAP Systems Based on SAP NetWeaver 7.3 EHP1 and Higher	software provisioning manager 1.0 no longer uses the "Usage Types" definitions in its business logic for SAP systems based on SAP NetWeaver 7.3 EHP1 and higher. This is done to unify modeling and terminology across all SAP tools used during the planning, installation and maintenance activities. The "Product Instance" definition replaces "Usage Types" regarding product modeling. For more information, see SAP Notes 1970349 and 1877731.	software provisioning manager 1.0 SP07 (SL Toolset 1.0 SP12)
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. For more information, see Prerequisites for Running Software Provisioning Manager [page 53].	software provisioning manager 1.0 SP07 (SL Toolset 1.0 SP12)
Option *Verify Signed Media*	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 1979965.	software provisioning manager 1.0 SP06 (SL Toolset 1.0 SP11)

1.7 Constraints

- Effective immediately, the software provisioning manager no longer supports the deprecated CPU architectures and/or operating system versions listed in SAP Note 2998013.

  > **Note**
  >
  > - If your current operating system is listed as deprecated in SAP Note 2998013, we strongly recommend that you migrate to a supported platform.
  > - If you continue to run Software Provisioning Manager on the deprecated CPU architectures and/or operating system versions listed in SAP Note 2998013, you do so at your own risk and without support from SAP. The software provisioning manager 1.0 SP36 and higher will still run on the deprecated CPU architectures and/or operating system versions listed in SAP Note 2998013 but it may run into an error. When you start the software provisioning manager, you will see a warning like the following: *"Platform Support : Support for SAP JVM on PPC64 big endian for Linux ends June 30 th, 2022. See SAP note 2998013."* If you run into an issue, you must use the "frozen" software provisioning manager **1.0 SP35** software and the related system rename guide. For more information, see SAP Note 3220901.

- System Rename is only supported for SAP systems based on SAP NetWeaver 7.0 and higher: SAP ERP 6.0 and higher, SAP CRM 7.0 and higher, SAP SRM 7.0 and higher, SAP SCM 7.0 and higher.
  For a detailed list of all supported SAP system products and releases, see SAP Note 2595196.
  For information about supported operating system and database platforms, see the Product Availability Matrix at https://apps.support.sap.com/sap/support/pam.
- As for renaming standalone engines and clients using software provisioning manager 1.0, only SAP Web Dispatcher, SAP liveCache, and standalone gateway are supported and documented in this guide. If you want to rename other standalone engines or clients, you have to reinstall them from scratch.
  For more information, see 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>* > *Installation Guides - Standalone Engines and Clients*
  System rename is also not supported for the Diagnostics Agent.
  For more information and guidance see the *Diagnostics Agent Maintenance Procedures* article at http://wiki.scn.sap.com/wiki/x/n4efFg.
- System rename is **not** supported for MCOD systems.
- SAP system ID (<SAPSID>):
  Make sure that your SAP system ID:
  - Is unique throughout your organization. Do not use an existing <SAPSID>.
  - 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.
- Database ID (<DBSID>):
  The <DBSID> identifies the database instance. It can be the same as the <SAPSID>.
  Make sure that your database ID:
  - Is unique throughout your organization

    - 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.
- SAP systems with SAP HANA database: You can use the software provisioning manager only for renaming the application server instances, and the central services instance. You **cannot** use the software provisioning manager for renaming the SAP HANA database. If you want to rename the SAP HANA database, you have to do this as a separate step in advance, using SAP HANA database-specific tools. See also SAP HANA Database-Specific Preparation Steps [page 43].
- For a comprehensive list of supported operating system and database releases, see the Product Availability Matrix (PAM) at https://apps.support.sap.com/sap/support/pam.
  Search for `SL Toolset` and then check the system rename-specific information.
- You **cannot** use system rename to perform a domain change for your SAP system. Instead, you can accomplish this by performing a system copy.

Database-Specific Restrictions

Oracle Database

- **System Rename is only partially supported for ASM database installations**
  System Rename does only partly work for an Automatic Storage Management (ASM) installation of the Oracle database. You cannot use system rename to change the `<SAPSID>` or the `<DBSID>` – in addition, using System Rename for changing only the host name, the instance name, or the instance number for an ASM installation of the Oracle database only works as of SL Toolset 1.0 SP11 (software provisioning manager 1.0 SP06). This is because there is a different `ORACLE_HOME` and the `ora<dbsid>` user is missing in the ASM environment.
- **Renaming the database schema is not supported**
  If you want to rename the database schema, perform a system copy.

IBM Db2 for Linux, UNIX, and Windows

IBM Db2 for Linux, UNIX, and Windows versions lower than 9.7 are **not** supported

SAP MaxDB

System Rename is not supported for SAP MaxDB versions lower than 7.8

If you try to rename an SAP system with an SAP MaxDB version lower than 7.8, several errors are reported.

There is no workaround to overcome this restriction. Instead, you first have to upgrade to SAP MaxDB version 7.8 or 7.9. For more information about the upgrade, see SAP Notes 1353266 or 1492467, depending on your SAP MaxDB target release.

SAP HANA

Rename of the SAP HANA database schema is not supported.

You can only rename the DBSID of the SAP HANA database, but you cannot rename the schema of the SAP HANA database.

IBM Db2 for Linux, UNIX, and Windows

Rename of the IBM Db2 for Linux, UNIX, and Windows database schema is not supported.

More Information

For more constraints, see SAP Note 1619720.

1.8 SAP Notes for the System Rename

Read the following SAP Notes before you start the system rename procedure. These SAP Notes contain the most recent information on system rename as well as corrections to the relevant documentation. Make sure that you have the most recent version of each SAP Note.

.

SAP Notes for System Rename

SAP Note Number	Title	Description
1680045	Release Note for Software Provisioning Manager 1.0	Software provisioning manager 1.0 with installation, system copy, system rename and dual-stack split for SAP NetWeaver-based systems
1619720	System Rename for SAP Systems based on SAP NetWeaver	Problems discovered after the publication of the System Rename guide

1.9 Accessing the Installation Guides and System Copy Guides

The references to the “installation guide” and “system copy guide” in this system rename guide always refer to the following location on the SAP Support Portal, where you can access or download the installation guide and the system copy guide for your operating system platform, database, and technical stack:

- The “ installation guide” for your operating system platform and database 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> > *Installation Guides - Application Server Systems* > *Installation Guides - Application Server Systems - Software Provisioning Manager 1.0* > *SAP Application Server Systems Based on SAP NetWeaver* >

In the table, filter for the following: *Database* = `<Your Target Database>`, *Product Release* = *SAP NetWeaver 7.X*, *Operating System Platform* = `<Your Target OS Platform>`, *Technical Stack* = `<Your Technical Stack>`.

- The “system copy guide” for your operating system platform at:.
  https://support.sap.com/sltoolset > *System Provisioning* > *Copy a System using Software Provisioning Manager* > *System Copy Option of Software Provisioning Manager 1.0 SP*`<Current Number>` > *System Copy Guides - Software Provisioning Manager 1.0* > *System Copy - Target Databases Other than SAP HANA* > *SAP Application Server Systems Based on SAP NetWeaver*
  In the table, filter for the following: *Product Release* = *SAP NetWeaver 7.X*, *Operating System Platform* = `<Your Target OS Platform>`, *Technical Stack* = `<Your Technical Stack>`.

1.10 Accessing the SAP Library

The references to the **SAP NetWeaver Library** documentation in this guide always refer to the following on SAP Help Portal. When you come across a reference to SAP Library documentation in this guide, you always have to add the path of this reference to the basic URL for the SAP NetWeaver release your SAP product is based on, as given in the list below:

- SAP systems based on SAP NetWeaver 7.5:
  http://help.sap.com/nw75 > *Application Help* > *SAP NetWeaver Library: Function-Oriented View*
- **SAP Solution Manager 7.2 SR2 only:**
  SAP systems based on SAP NetWeaver 7.4:
  http://help.sap.com/nw74 > *Application Help* > *SAP NetWeaver Library: Function-Oriented View*

2 Planning

This section includes the planning steps that you have to perform when you want to rename an SAP system.

- Check the product version and platform coverage using the product availability matrix at: https://apps.support.sap.com/sap/support/pam
- The system rename procedure is valid for the following environments:
  - ABAP
  - Java
  - Dual-stack (ABAP and Java)
  - SAP Web Dispatcher, SAP liveCache, and standalone gateway.
- You can perform the system rename on both central and distributed systems.
- Make sure that you check requirements and restrictions for the SAP system parameters that you want to rename (see section *Basic Installation Parameters* in the installation guide [page 19] for your operating system platform and database:
  - SAP system ID
  - Database ID
  - Instance numbers of the instances on the SAP system
    With the system rename procedure, you can rename the following instances:
    - Database instance
    - Primary application server instance
    - Central Services instance (SCS instance)
    - Enqueue Replication Server instance

    > **Note**
    >
    > You **cannot** use the software provisioning manager to rename additional application server instances.
    >
    > If you have installed additional application server instances, you have to do the following:
    >
    > 1. Delete the additional application server instances manually [page 34] from the system **before** the system rename.
    > 2. Reinstall the additional application server instances on the system after the system rename.
  - Host names
- Users that already exist in the SAP system are not deleted. They are available after the rename of your system. If a required user does not exist, it is created during the system rename procedure.
  During the *Define Parameters* phase of the software provisioning manager, you can specify that the operating system users are to be removed **automatically** from the group `sapinst` **after** the execution of the software provisioning manager has completed. For more information, see section *Basic SAP System Installation Parameters* in the installation guide [page 19] for your operating system platform and database.

> **Note**
>
> The removal of the operating system users from the `sapinst` group is only accomplished in the renamed **target system**, whereas the operating system users in the source system keep their assignment to the `sapinst` group. See also Creating Operating System Users and Groups [page 23].

- **Oracle Database only:** If your source system to be renamed has Oracle Database Vault, make sure that you have read SAP Note 2218115.

3 Preparation

3.1 Preparation Checklist

This section includes the preparation steps that you have to perform when you want to rename an SAP system.

1. The software provisioning manager checks whether the required users and groups already exist. If not, it creates new users and groups as necessary. If you do not want the software provisioning manager to create operating system users and groups automatically, you can choose to create them before running the system rename procedure.
   For more information, see Creating Operating System Users and Groups [page 23]
2. If additional application server instances are installed on your system, delete them before you start the rename procedure.
   For more information, see Deleting Additional Application Server Instances [page 34].
3. Perform the preparation steps required for your database.
   For more information, see Database-Specific Preparation [page 35].
4. Prepare the media required for the system rename.
   For more information, see Preparing the System Rename Media [page 44].
5. You make the global file system with the renamed `<SAPSID>` available on the instance hosts of the system that you plan to rename.
   For more information, see Preparing the File System [page 50].
6. We strongly recommend that you perform a full system backup before starting the rename procedure, if you do not have other means to restore the original system in case of problems.

3.2 Creating Operating System Users and Groups

During the installation, the software provisioning manager checks all required accounts (users, groups) and services on the local machine. The software provisioning manager checks whether the required users and groups already exist. If not, it creates new users and groups as necessary.

The `sapinst_instdir` directory belongs to a group named `sapinst`. If this group is not available, it is created automatically as a local group.

Only valid for 'Platform': z/OS

> **Note**
>
> **IBM Db2 for z/OS only:**
>
> Users and groups that need to be created on z/OS need to be created manually **before** the installation is started. For more information, see Necessary z/OS Group and User IDs [page 31].

End of 'Platform': z/OS

If you do not want the software provisioning manager to create operating system users, groups, and services automatically, you can optionally create them **before** the installation is started. This might be the case if you use central user management such as Network Information System (NIS).

> ⚠ Caution
>
> The user ID (UID) and group ID (GID) of SAP users and groups must be identical for all servers belonging to an SAP system.
>
> This does not mean that all users and groups have to be installed on all SAP servers.

Only valid for 'Platform': z/OS

IBM Db2 for z/OS only:

End of 'Platform': z/OS

Only valid for 'Platform': z/OS

On z/OS, instead of NIS, RACF may be used. For more information, see section *Security Settings for z/OS* in the *Security Guide for SAP on IBM Db2 for z/OS*, which is available on the SAP Help Portal at http://help.sap.com/viewer/db2_security_guide.

End of 'Platform': z/OS

The software provisioning manager checks if the required services are available on the host and creates them if necessary. See the log messages about the service entries and adapt the network-wide (NIS) entries accordingly.

The software provisioning manager checks the NIS users, groups, and services using NIS commands. However, the software provisioning manager does **not** change NIS configurations.

> → Recommendation

If you want to use global accounts that are configured on a separate host, you can do this in one of the following ways:

- You start the software provisioning manager and choose *System Rename* > *Preparation* > *Operating System Users and Groups*.
  For more information, see Running Software Provisioning Manager [page 57].
- You create operating system users and groups manually. Check the settings for these operating system users.

User Settings

- Only valid for 'Platform': Oracle Solaris
  Oracle Solaris: If your operating system is Oracle Solaris 10 or higher, follow the parameter recommendations for SAP applications in SAP Note 724713.
  End of 'Platform': Oracle Solaris
- 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, Oracle Solaris: Make sure that you have set the limits listed below for operating system users root, `<sapsid>`adm, and your database-specific operating system users (see also section *Creating Operating System Users and Groups* and *Running the Software Provisioning Manager* in the installation guide).
  Linux: Starting with SUSE Linux Enterprise Server 15, Red Hat Enterprise Linux 8, and Oracle Linux 8, and the respective SAP kernel patch levels, native support for the software suite systemd for Linux is available for SAP systems. If you use Linux with systemd, ignore the following procedures for setting limits because there's no need to change the limits. Make sure that polkit is installed. systemd requires polkit for authorization checks for the `<sapsid>`adm user. For more information about Linux with systemd, see SAP Note 3139184.
  If you are still using a Linux version or an SAP kernel patch that is not released for native systemd support with SAP systems (see 3139184), proceed as follows: Make sure that you have set the limits as outlined below for operating system users root, `<sapsid>`adm, and your database-specific operating system users (see also section *Creating Operating System Users and Groups* and *Running the Software Provisioning Manager* 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 `csh` 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
cputime	unlimited
filesize	unlimited
datasize	unlimited
stacksize	8192 KB
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

- All users **must** have identical environment settings. Any change to the environment – such as variables, or paths – is at your own responsibility.
- If you have multiple operating system users with user ID (`UID`) 0, you must assign the `sapinst` group to all of them.
- Do **not** delete any shell initialization scripts in the home directory of the operating system users. This applies even if you do not intend to use the shells that these scripts are for.
- **Oracle Database only:**
  If you use `NFS-V4` file system, you have to create the `ora<dbsid>` user and - if your database release is Oracle 12 - the `oracle` user on the NFS server. You can do this either manually or by running *Operating System Users and Groups*. This user must have the same user ID as the `ora<dbsid>` user and - if your database release is Oracle 12 - the `oracle` user on the database server.
  Otherwise, you see the error message `FSL-02098 Could not change owner of ...` during the installation of the database instance.
- **SAP MaxDB only:**
  If you create the `sdb` user manually, make sure that you **lock** it for the installation. In most cases, the software provisioning manager locks this user after it has been created.
- If you install an SAP system with instances over several hosts, make sure that the following requirements are met:
  - The user ID (UID) and group ID (GID) of each operating system user must be unique and the same on each instance host that belongs to the same SAP system.
  - Make sure that the group ID of group `sapinst` is always different from the group ID of any other group (for example, of group `sapsys`) used during the installation.
    For example, if you want to install an additional application server instance for an existing SAP system, you must make sure that the group ID of group `sapinst` created on the host of the additional application server instance is different from the group ID of any other group on the primary application server instance host of the existing SAP system.
  - If you use local operating system user accounts instead of central user management (for example, NIS), users `<sapsid>adm`, `sapadm`, and the database operating system user must have the same password on all hosts.

- **SAP HANA Database only:**
  If you use local operating system user accounts, make sure that you install your SAP system in *Custom* mode and specify suitable IDs for user `<sapsid>adm` and group `sapsys` on all hosts. The IDs have to be the same on all hosts. If you choose *Typical* mode, you are not asked to specify the user and group IDs.

- If you create operating system users manually or use already existing operating system users, make sure that the home directory for each of these users is **not** the root directory (`/`) .
- Make sure that the home directory of user `<sapsid>adm` is not critical for recursive changes on permissions.
  When operating system users are created by the software provisioning manager, the permissions on the home directories of these users are changed recursively. This can cause unpredictable errors if you define a critical home directory.
  For example, the home directory must **not** be `/` or `/usr/sap`.
- Only valid for 'Platform': HP-UX
  HP-UX: To prevent terminal query errors in the `<sapsid>adm` environment, comment out the line `eval 'tset -s -Q -m ':?hp'` in the `/etc/skel/.login` script. For more information, see SAP Note 1038842.
  End of 'Platform': HP-UX

Operating System Users and Groups

The software provisioning manager chooses available operating system user IDs and group IDs unless you are installing an additional application server instance. On an additional application server instance you have to enter the same IDs as on the host of the primary application server instance.

If you have multiple operating system users with user ID (`UID`) 0, you must assign the `sapinst` group to all of them.

> → Recommendation
>
> For security reasons, we recommend that you remove the operating system users from the group `sapinst` **after** the software provisioning manager has completed.
>
> We recommend that you specify this “cleanup” already during the *Define Parameters* phase on the *Cleanup Operating System Users* screen. Then, the removal of the operating system users from the group `sapinst` is done automatically.
>
> Note that the removal of the operating system users from the group `sapinst` is only accomplished in the renamed **target system**, whereas the operating system users in the source system keep their assignment to the `sapinst` group.

IBM Db2 for z/OS:

Users and Their Groups

User	Primary Group	Secondary Groups
`<sapsid>adm`	`sapsys`	`sapinst`

User	Primary Group	Secondary Groups
root	sapsys	sapinst

Groups and Members

Groups	Members
sapsys	• <sapsid>adm • root
sapinst	• <sapsid>adm • root

SAP MaxDB and SAP HANA Database:

Users and Groups

User	Primary Group	Additional Group	Description
root	None	sapinst	Superuser of the UNIX operating system
<sapsid>adm	sapsys	sapinst	SAP system administrator
SAP MaxDB only: sqd<dbsid>	sapsys	sapinst, sdba	Owner of database instance <DBSID>
SAP MaxDB only: sdb	sdba		Database software owner

Groups and Members

Groups	Members
sapsys	**SAP MaxDB:** <sapsid>adm, sqd<dbsid> **SAP HANA database:** <sapsid>adm
sapinst	**SAP MaxDB:** root, <sapsid>adm, sqd<dbsid> **SAP HANA database:** root, <sapsid>adm
SAP MaxDB only: sdba	sqd<dbsid>, sdb

IBM Db2 for Linux, UNIX, and Windows:

Users and Groups

User	Primary Group
Superuser of the UNIX operating system `root`	No primary group is assigned by the software provisioning manager (additional group is `sapinst`)
SAP system administrator`<sapsid>adm`	`sapsys` (`db<dbsid>ctl` as secondary group)
Java connect user `sap<sapsid>db` **Note** Only used on the database host.	`db<dbsid>mon`
`db2<dbsid>` **Note** Only used on the database host.	`db<dbsid>adm` (`sapinst` as secondary group)

Groups and Members

Groups	Members
`sapsys`	`<sapsid>adm`
`sapinst`	`root, <sapsid>adm, db2<dbsid>`
`db<dbsid>ctl`	`<sapsid>adm`
`db<dbsid>adm`	`db2<dbsid>`
`db<dbsid>mon`	**Java** connect user `sap<sapsid>db`

Oracle:

SAP System Users and Groups

User	Primary Group	Additional Groups	Comment
`root`	No primary group assigned by the software provisioning manager.	`sapinst`	Superuser of the UNIX operating system
`<sapsid>adm`	`sapsys`	`oper, dba, sapinst` The following groups are always required for Oracle 12 and higher: `asmoper`, `asmdba`	SAP system administrator and for Oracle 12 and higher the default database administrator

User	Primary Group	Additional Groups	Comment
ora<dbsid>	dba	oper, sapinst, oinstall	Database administrator This user is only required on the host where the database instance runs.
oracle	dba	oper, sapinst, asmoper, asmadmin, asmdba, oinstall	Oracle Software Owner and database administrator This user is only required on the host where the database instance runs. This user is only required for **Oracle 12** and higher.

SAP System Groups and Members

Groups	Members
sapsys	<sapsid>adm
oper	<sapsid>adm, ora<dbsid>, oracle (always required for Oracle 12 and higher)
dba	<sapsid>adm, ora<dbsid>, oracle (always required for Oracle 12 and higher)
sapinst	root, <sapsid>adm, ora<dbsid>, oracle (always required for Oracle 12 and higher)
asmoper	<sapsid>adm (always required for Oracle 12 and higher), oracle
asmadmin	oracle (always required for Oracle 12 and higher)
asmdba	<sapsid>adm (always required for Oracle 12 and higher), oracle
oinstall (always required for Oracle 12 and higher)	oracle (always required for Oracle 12 and higher), ora<dbsid>

SAP Adaptive Server Enterprise:

Users and Groups

User:	Primary Group:
UNIX superuser **root**	No primary group assigned by SAPinst (group *sapinst* is assigned as secondary group).

User:	Primary Group:
SAP system administrator **<sapsid>adm**	*sapsys* (*sapinst* as secondary group)
syb<dbsid>	*sapsys*

SAP Host Agent:

User and Groups of the SAP Host Agent

User	Primary Group	Additional Group	Comment
`sapadm`	`sapsys`	–	SAP Host Agent administrator **Note** If `sapadm` does not exist, it is created during the SAP Host Agent installation using `/bin/false` shell. Make sure that `/bin/false` can be used as a login shell. Only valid for 'Platform': AIX **AIX:** Add `/bin/false` to the list of valid login shells (attribute `shells`) in `/etc/security/login.cfg`. End of 'Platform': AIX

Groups and Members of the SAP Host Agent User

Groups	Members
`sapsys`	`sapadm`
`sapinst`	`sapadm`

3.3 Necessary z/OS Group and User IDs

The following are lists of the group and z/OS user IDs necessary for your SAP system on z/OS. If these group or user IDs do not already exist in your system, you must create them.

For more information, see https://help.sap.com/viewer/db2_security_guide

Users and Groups for z/OS

Necessary z/OS Group and User IDs

Group/User ID	Description	Usage Type
Database Administration User ID	Temporary user needed for the SAP installation.	AS Java
DB Connect User ID for AS Java	Permanent user needed for the database connection. You are free to choose the name of this user. If you are installing both usage types, we advise you to choose different names for the user IDs for AS Java.	AS Java
Group ID for Java Schema	Permanent group needed for the Java schema. This group ID must be the same as the name of the Java schema that you specify during installation. If you are installing both usage types, you must choose different names for the group IDs for Java schema.	AS Java

Users and Groups for z/OS UNIX System Services

Before the installation, you must create each of the following groups and users in RACF for your SCS or ASCS instance on z/OS UNIX System Services.

For each group and user listed in the following table, you must create an entry in the table `/etc/ualiastable`, to ensure that each group and user can be used in both upper and lowercase.

For more information, see https://help.sap.com/viewer/db2_security_guide.

Necessary z/OS UNIX System Services Group and User IDs

Group/User ID	Description	Usage Type
`sapsys` Group ID	Permanent group needed for the central services instance on z/OS.	Diagnostics Agent SAP Host Agent
`<sapsid>adm` User ID	Permanent user needed for the central services instance on z/OS.	AS Java
User ID to install an SAP central services instance on z/OS	Temporary user needed for the SAP central services instance installation.	AS Java Diagnostics Agent SAP Host Agent
`sapinst` Group ID	Permanent group needed for the central services instance on z/OS.	AS Java Diagnostics Agent

Group/User ID	Description	Usage Type
<dasid>adm User ID	Permanent user needed by the Diagnostics Agent.	AS Java Diagnostics Agent
sapadm User ID	Permanent user needed by the SAP Host Agent.	AS Java Diagnostics Agent SAP Host Agent

> ⚠ Caution
>
> The user ID (UID) and group ID (GID) of SAP users and groups must be identical for all servers belonging to an SAP system.
>
> This does not mean that all users and groups have to be installed on all SAP servers.

Enhanced ASCII Setup on z/OS

To enable enhanced ASCII support, see the procedure in the *Planning Guide for SAP on IBM Db2 for z/OS*, section *ASCII/EBCDIC Considerations*, which you can find under https://help.sap.com/viewer/db2_planning_guide.

3.4 Performing a System Copy by Copying the File System

You can duplicate a source SAP system by copying the file system, and then rename the target system to obtain two separate SAP systems. This section describes how to copy the file system of a source SAP system and its database.

Prerequisites

- You have shut down the SAP system including the database and the instance agents.
  - To check that they are stopped, enter the following command:
    `ps -ef | grep <source_SAPSID>`
  - In addition, you can also make sure that the services of the system instances are stopped by executing the following command as user <sapsid>adm:
    `sapcontrol -nr <InstanceNumber> -function StopService`
- **SAP MaxDB; SAP liveCache; IBM Db2 for Linux, UNIX, and Windows:**
  The target host must be different from the source host.

Procedure

- > **Note**
  >
  > Make sure that during the copy of the file system, the links are not dereferenced.
- If you have a **central** system, proceed as follows:
  a. On the target host, copy `/usr/sap/<SAPSID>` to `/usr/sap/<Target SAPSID>`.
  b. On the target global host, copy `/<sapmnt>/<SAPSID>` to `/<sapmnt>/<Target SAPSID>`.
- If you have a **distributed** system, proceed as follows:
  a. Export the file system under `/<sapmnt>/<Target SAPSID>` including its subdirectories `exe`, `global`, and `profile` from the global host.
  b. Mount the exported file system `/<sapmnt>/<Target SAPSID>` on all other hosts of the distributed system.
  c. Remove the directories of the source system, which have been moved from the list of NFS exported file systems under `/<sapmnt>/<Source SAPSID>`.

3.5 Deleting Additional Application Server Instances

The system rename procedure does not implicate additional application server instances. Therefore, if additional application server instances are installed on your system, delete them before you start the rename procedure, and reinstall additional application server instances as required after the system rename.

Prerequisites

- You have installed your SAP system with standard SAP tools according to the installation documentation.
- You have made the media available that you used for installing the system on the additional application server instance host that you want to delete.

Context

> **Note**
>
> You cannot delete an additional application server instance remotely. You have to run the tool to delete them locally on each additional application server instance host.

All file systems and subdirectories of the selected additional application server instance are deleted during the uninstall process.

The uninstall process is designed to remove as much of the additional application server instance as possible. If an item cannot be removed, a message informs you that you have to remove this item manually. As soon as you confirm the message, the uninstall process continues.

Procedure

1. Start the tool as described in Running Software Provisioning Manager [page 57].
2. On the *Welcome* screen, choose *Generic Options* > `<your Database>` > *Uninstall* > *Uninstall - SAP Systems or Single Instances*.
3. Follow the instructions in the input dialogs to delete an additional application server instance.

> **Note**
>
> For more information about the input parameters, place the cursor on the relevant field and press F1.

3.6 Database-Specific Preparation

You have to do some preparation steps in the database of the system you want to rename.

Make sure you have completed the preparation steps for your database as described in the relevant section below.

Performing Preparation Steps for IBM Db2 for Linux, UNIX, and Windows [page 36]
: This section describes prerequisites and preparation steps that you have to perform for IBM Db2 for Linux, UNIX, and Windows before starting the system rename procedure.

Performing IBM Db2 for z/OS – Specific Preparation Steps [page 39]
: This section describes the prerequisites and preparation steps that you have to perform for IBM Db2 for z/OS before starting the system rename procedure.

Performing Oracle-Specific Preparation Steps [page 40]
: This section describes prerequisites and preparation steps that you have to perform for the Oracle database before starting the system rename procedure.

Performing SAP ASE -Specific Preparation Steps [page 41]
: This section describes the prerequisites and preparation steps that you have to perform for SAP ASE before starting the system rename procedure. If your database version is SAP HANA Cloud, ASE you only have to stop the SAP system.

Performing SAP MaxDB-Specific Preparation Steps [page 42]
: This section describes the prerequisites and preparation steps that you have to perform for SAP MaxDB before starting the system rename procedure.

Performing SAP HANA Database-Specific Preparation Steps [page 43]
: This section describes the prerequisites and preparation steps that you have to perform forSAP HANA database before starting the system rename procedure.

3.6.1 Performing Preparation Steps for IBM Db2 for Linux, UNIX, and Windows

This section describes prerequisites and preparation steps that you have to perform for IBM Db2 for Linux, UNIX, and Windows before starting the system rename procedure.

Prerequisites

- The database instance must be either stopped or - if it is running - there must not be any database connections.
  During the procedure it will be started and stopped automatically if required. After the preparation it will be stopped.
- The patch level of the `brdb6brt` tool is patch level 32 or higher.
  If tool `brdb6brt` does not exist within the `/sapmnt/<SAPSID>/exe` directory, download and install it as described in SAP Note 511323. Information about the latest patches of tool `brdb6brt` you can find in SAP Note 867914.
- **IBM Db2 for Linux, UNIX, and Windows V10.1 and Higher only:**
  Make sure that your `<sapsid>adm` user has execute permission for function `sysproc.admin_get_storage_paths` by running the following command on your source system as user `db2<dbsid>`:
  `db2 "grant execute on specific function sysproc.admin_get_storage_paths to user <sapsid>adm"`
- The version of SAP Host Agent must be 7.21 PL 26 or higher.
- Only valid for 'Platform': Oracle Solaris
  If your operating system is **Solaris SPARC** or **Solaris X86_64**, the database version must be 9.7 FP7 or higher.
  End of 'Platform': Oracle Solaris

Procedure

1. Make sure that the SAP system is stopped.
2. Create the `relocate.template` file as described below. This file is required in the tool dialog phase.
   a. On the source system, log on as user `db2<dbsid>` and create the directory `sapdbctrl-config` under `/tmp`. This does not apply if the directory already exists.

   > **Note**
   > If directory `/tmp` does not exist, you must create it before you perform the steps listed below.

   Proceed as follows:

   1. Execute `cd /tmp`.
   2. Execute `mkdir ./sapdbctrl-config`

3. Log off from the system.

b. Log on again as user `root` on the source system.

c. Execute `cd /usr/sap/hostctrl/exe`.

d. Execute **`./saphostctrl -function PrepareDatabaseCopy -dbname <DBSID> -dbtype db6 -dbconfdir /tmp/sapdbctrl-config/ -dbinstance db2<dbsid> -copymethod Offline -dostatechange`**.

The system creates the `relocate.template` file in the `/tmp/sapdbctrl-config` directory.

Check if the file `relocate.template` contains one or more entries for `CONT_PATH` or `STORAGE_PATH`. If not you must not start the system rename procedure.

This is an example of the files created in the `sapdbctrl-config` directory:

```
root@db6xen008[Linux]/tmp/sapdbctrl-config > ls -la total 28
drwxr-x--- 2 db2ph5 dbph5adm 4096 Oct  6 23:51 .
drwxr-xr-x 9 db2ph5 dbph5adm 4096 May 16 13:36 ..
-rw-r----- 1 db2ph5 dbph5adm 2584 Oct 11 09:23 db2ph5.cfg
-rw-r--r-- 1 root   root       46 Oct 11 09:23 db2ph5.net
-rw-r--r-- 1 root   root     8810 Oct 11 09:23 relocate.template
```

3. Provide all database-related directories on the target system. This includes the following directories:
   - `/db2/<DBSID>/`
   - The file system of the home directory of `db2sid` (default:`/db2/db2<dbsid>`).

   To provide the required directories, use one of the following methods:

   > **Note**
   >
   > The commands below are given as an example if your home directory is `db2<dbsid>`. You have to adjust them for all required directories.

   - If the source and the target system are located on one and the same host, proceed as follows:
     If you want to adjust or rename your SAP system on the same host, keep all directories at their locations.
     The tool will find and move them to the correct directory and set the required ownerships and permissions.

     > **Note**
     >
     > If `/db2/db2<dbsid>` or `/db2/<DBSID>` is a mount point or there are mount points under these directories (for example `/db2/<DBSID>/sapdata1` is a mount point), proceed as follows:
     >
     > 1. Stop the SAP system including its instance agents.
     > 2. Unmount the mount points.
     > 3. Before you start the system rename, mount the file systems under the target `<DBSID>` or `db2<dbsid>`.

   - If the source and the target system are located on different hosts, proceed in one of the following ways:
     - Mount all file systems manually on the target system

       > **→ Recommendation**
       >
       > This is the recommended option.

> **Note**
>
> If `/db2/db2<dbsid>` or `/db2/<DBSID>` is a mount point or there are mount points under these directories (for example `/db2/<DBSID>/sapdata1` is a mount point), then mount the file systems under the target `<DBSID>` or `db2<dbsid>`.

- Copy the directories using the copy command of the operating system.

  > **Note**
  >
  > When you provide required database related directories on the target host, use the source `<DBSID>` within the directory names. The tool will find and move them to the correct location and set the required ownerships and permissions.

  To keep the current ownership of the directory and softlinks, use an archiving tool as follows:

```
source host:~ # tar -cpf /tmp/db2<dbsid_source>.tar /db2/db2<dbsid_source>
source host:~ # tar -cpf /tmp/<DBSID_source>.tar /db2/<DBSID_source>

source host:~ # scp /tmp/db2<dbsid_source>.tar <user>@<dbsid_source>:/tmp
source host:~ # scp /tmp/<DBSID_source>.tar <user>@<target host>:/tmp

target host:~ # tar -xvf /tmp/db2<dbsid_source>.tar /db2/db2<dbsid_source>
target host:~ # tar -xvf /tmp/<DBSID_source>.tar /db2/<DBSID_source>
```

4. Make sure the contents of the `db6_update_db.SAR` archive attached to SAP Note 1365982 are available in the `sapdbctrl-config` directory.

   > **Note**
   >
   > Make sure the permissions of file `db6_update_db.sh` and `db6_update_db.jar` are `rwxr-xr-x`. To check the file permissions, enter the following command:
   >
   > **`ls -l db6_update_db.sh db6_update_db.jar`**.
   >
   > To change the file permission enter the following command:
   >
   > **`chmod 755 db6_update_db.sh db6_update_db.jar`**.

5. Make sure that you stop all system and database processes before you start the system rename procedure. To check that they are stopped, enter the following command: **`ps -ef | grep db2`**

3.6.2 Performing IBM Db2 for z/OS – Specific Preparation Steps

This section describes the prerequisites and preparation steps that you have to perform for IBM Db2 for z/OS before starting the system rename procedure.

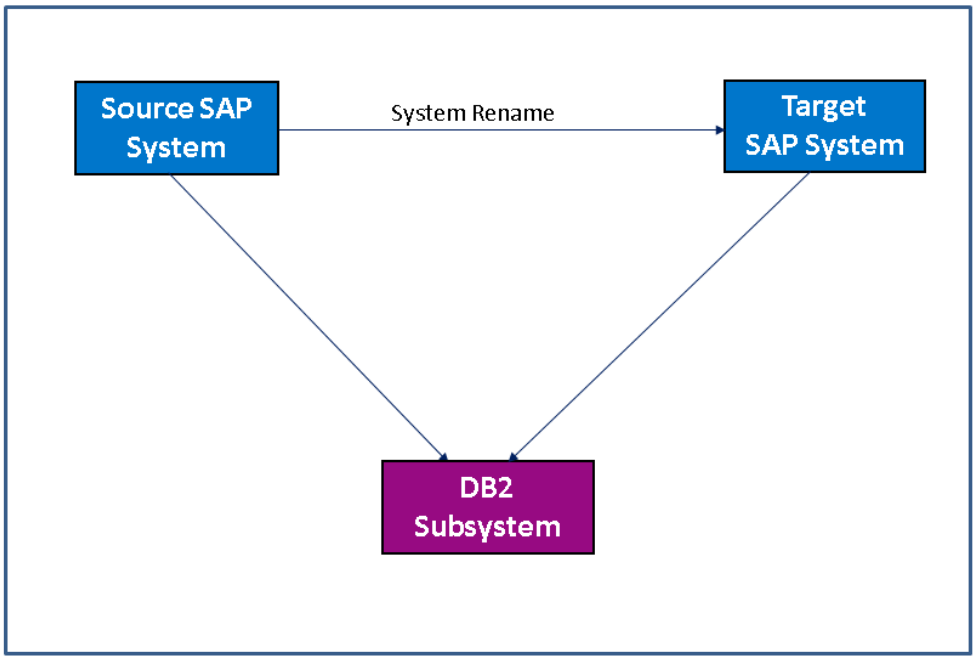
Context

No rename actions are performed on the database subsystem itself.

There are two types of renaming:

Procedure

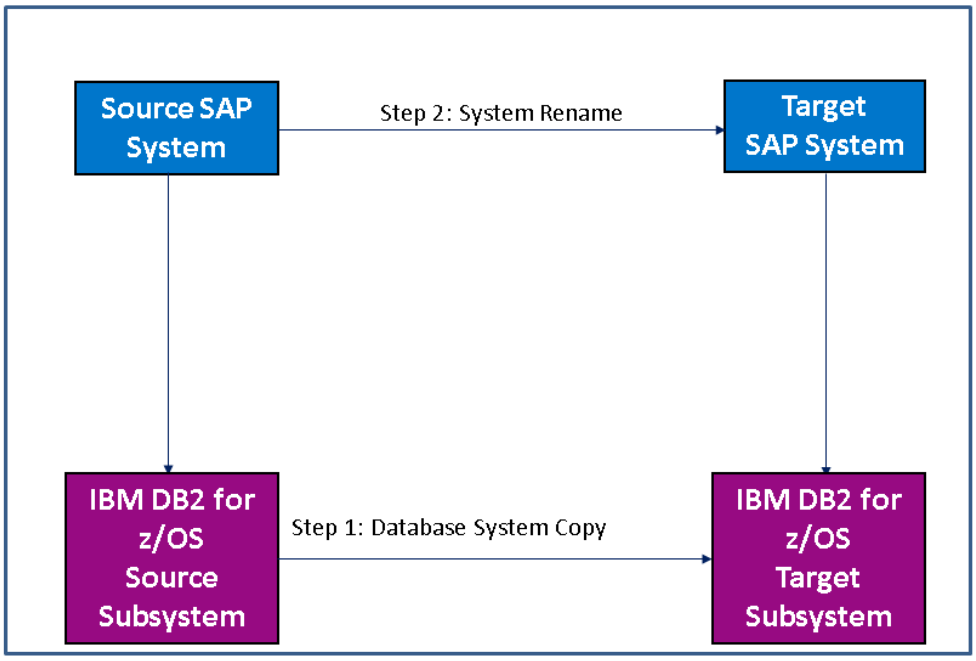
- Rename of an SAP system without copying the IBM Db2 for z/OS subsystem:
  - The application server is renamed; no changes are made on the IBM Db2 for z/OS subsystem.
  - The renamed SAP system stays connected to the original IBM Db2 for z/OS subsystem



Rename of an SAP System without copying the IBM Db2 for z/OS Subsystem

- Rename of an SAP system after copying the IBM Db2 for z/OS subsystem.

  Before running the tool , you have to copy your IBM Db2 for z/OS database using the offline system copy method.



Rename of an SAP System after copying the IBM Db2 for z/OS Subsystem

For more information about the system copy procedure, see the **SAP Note** 680746.

3.6.3 Performing Oracle-Specific Preparation Steps

This section describes prerequisites and preparation steps that you have to perform for the Oracle database before starting the system rename procedure.

Procedure

1. For the offline backup method, we recommend that you shut down the database. Alternatively, the software provisioning manager can also make an instance recovery of the database if it has not been shut down before the copy process. For the online backup method, you have to set the database to a backup mode and the backup control files and the Oracle archives will be copied to an existing shared directory. You can set the database to a backup mode using the following command:

```
saphostctrl -function PrepareDatabaseCopy -dbname <DBSID> -dbtype ora -dbconfdir
<shared_directory> -copymethod Online -timeout -1
```

After the database backup has finished, you have to set the database back to a normal mode using the following command:

```
saphostctrl -function FinalizeDatabaseCopy -dbname <DBSID> -dbtype ora
-dbconfdir <shared_directory> -copymethod Online -timeout -1
```

2. Copy the required files and directories contained under the `/oracle` directory from the source host to the target host. These are at least the following directories with all contained subdirectories and files: `<DBSID>`, `stage`, `oraInventory`, `client`
   - Make sure that all Oracle files, especially the control files, are stored under `SAPDATA_HOME`. If the control files are not located in `SAPDATA_HOME`, it is not possible to set the permissions for them.
   - If `/oracle/<DBSID>` is a mount point or there are mount points under `/oracle/<DBSID>` (for example `/oracle/<DBSID>/sapdata1` is a mount point), proceed as follows:
     1. Stop the SAP system including its instance agents.
     2. Unmount the mount points.
     3. Before you start the system rename, mount the file systems under the new database ID (`<DBSID>`).

3.6.4 Performing SAP ASE -Specific Preparation Steps

This section describes the prerequisites and preparation steps that you have to perform for SAP ASE before starting the system rename procedure. If your database version is SAP HANA Cloud, ASE you only have to stop the SAP system.

Procedure

1. Stop the SAP system.

   SAP HANA Cloud, ASE only:

   Stop processes connected to the database as OS user `<sapsid>adm` as follows:
   1. List the OS `crontab` with the following command:
      ```
      crontab -l
      ```
   2. If there is an entry with `/usr/sap/<source_SID>/SYS/global/syb/linuxx86_64/sybisql/asejobs.sh`, edit the `crontab` with the following command:
      ```
      crontab -e
      ```
      Then remove the line.
   3. To check which processes have to be stopped, enter the following command:
      ```
      ps -ef | grep /usr/sap/$SAPSYSTEMNAME/SYS/global/syb/linuxx86_64/sybisql
      ```
   4. Terminate these processes with the following command:
      ```
      kill [pid]
      ```
2. **SAP ASE 16.0 only:** Stop the source database server.
3. **SAP ASE 16.0 only:** Prepare the filesystem for the system rename. You can apply one of the following scenarios:

> **Note**
>
> The commands below are given as an example. We assume that your home directory is `/sybase/<DBSID>`. You must adjust them according to your needs for all required directories.

- Adjust or rename an SAP System on the same host with **no** mount points:
  If you want to adjust or rename your SAP system on the same host and there are **no** mount points under `/sybase/<DBSID>`, keep all directories at their locations. The software provisioning manager will find and move them to the correct directory and set the required ownerships and permissions.
- Adjust or rename an SAP System on the same host with mount points:
  If you want to adjust or rename your SAP system on the same host and there are mount points under `/sybase/<DBSID_Source>`, you must remount all file system at the new location `/sybase/<DBSID_Target>`.

  > **Note**
  >
  > If `/sybase/<DBSID>` is a mount point or there are mount points under `/sybase/<DBSID>` - for example, `/sybase/<DBSID>/sapdata_1` is a mount point - proceed as follows:
  >
  > 1. Unmount the mount points.
  > 2. Mount the file systems under the new SAP system ID.

- Create a copy system on the same host:
  If you want to create a copy of the system on the same host, use the following command to copy the directories keeping the current ownerships and permissions:
  `cp -pPr /sybase/<DBSID_Source> /sybase/<DBSID_Target>`
- Create a copy system on a different target host:
  If the source and the target system are located on different hosts, proceed in one of the following ways:
  - If mount points are involved, mount all file systems manually on the target system
  - If no mount points are involved, copy the directories using the copy command of the operating system.
    `source host:~ # scp -r /sybase/<DBSID_Source> <User>@<Target_Host>:/sybase/<DBSID_Target>`

3.6.5 Performing SAP MaxDB-Specific Preparation Steps

This section describes the prerequisites and preparation steps that you have to perform for SAP MaxDB before starting the system rename procedure.

Procedure

1. On the target host, create the SAP MaxDB OS group `sdba` and the SAP MaxDB OS user `sdb`. The group and the user must have the same IDs as on the source host.
2. Make available the entire SAP MaxDB file system content from the source host on the target host with the following directories (if available), while **keeping the ownership and access permissions**:

   `/sapdb/<SOURCE_DBSID>/`

`/sapdb/clients/`

`/sapdb/programs`

`/sapdb/data`

`/etc/opt/sdb`

`/usr/spool/sql`

`/var/lib/sdb`

3. If the directories are implemented on the mount points, pay attention to the following:
   - The directory `/sapdb/<SRC>` is implemented as a mount point.
     In this case, the rename procedure creates directory `/sapdb/<TRG>`, which does not contain a mounted file system. The procedure transfers the contents of `/sapdb/<SRC>` to `/sapdb/<TRG>`. You must therefore make sure that there is enough space in file system `/sapdb/` to store the contents of `/sapdb/<SRC>`.
   - The mount points below directory `/sapdb/<SRC>/` are subject to the same restrictions.
   - SAP Note 2346237 describes the process for configuring mount points during the system name procedure.
4. Check free space in the SAP MaxDB directories:
   - The `/sapdb/<SOURCE_DBSID>/` directory must contain enough space to locate the archives of the following subdirectories:
     `db`
     `data`
   - The `/sapdb/clients/<SOURCE_DBSID>` directory must contain enough free space to locate the archives of all subdirectories.
5. Make sure that you stop all system and database processes before you start the rename procedure. You can check this by using the following call: **`ps -efa | grep sdb`**

3.6.6 Performing SAP HANA Database-Specific Preparation Steps

This section describes the prerequisites and preparation steps that you have to perform forSAP HANA database before starting the system rename procedure.

Context

The software provisioning manager cannot rename the System ID (SID) of the SAP HANA database. If you want to rename the SAP HANA database, you have to do this as a separate step in advance.

> **Note**
>
> In a *Standard System*, all mandatory SAP system instances except the SAP HANA database and database instance are installed on one host. This means, that the primary application server (PAS) instance and any additional application server (AAS) instance are installed one host, whereas the SAP HANA database and

database instance need to be installed on a dedicated SAP HANA host. Only if your operating system is Linux, you can alternatively install the SAP HANA database and database instance on the same host as the primary application server (PAS) instance and any additional application server (AAS) instance.

> ⓘ Note
>
> In a *Distributed System*, all mandatory SAP system instances except the SAP HANA database and database instance can be installed on several host. This means, that the primary application server (PAS) instance and any additional application server (AAS) instance can be installed on several hosts, whereas the SAP HANA database and database instance need to be installed on a dedicated SAP HANA host.

Procedure

1. If required, you perform the rename for the SAP HANA database as described in section *Change the SID of an SAP HANA System* in the *SAP HANA Administration Guide for SAP HANA Platform* at http://help.sap.com/hana_platform ▶ *System Administration* ▶.
2. If a database administration user other than SYSTEM is to be used, make sure it exists before starting the software provisioning manager. For a rename, the user must at least have the following privileges: CATALOG READ, INIFILE ADMIN and USER ADMIN
3. Execute all the software provisioning manager rename activities, including the Database Instance when executing a distributed rename. The database information requested by the software provisioning manager will processed as the target database for the system rename.

3.7 Preparing the System Rename Media

This section describes how to prepare the media required for the system rename procedure.

In addition to the Software Provisioning Manager archive, for the rename of the primary application server instance you also have to provide the Java components media for your SAP system product.

- You normally obtain the physical installation media as part of the installation package.
- You can also download the installation media apart from https://me.sap.com/softwarecenter.

> ⓘ Note
>
> The digital signature of media is checked **automatically** by the software provisioning manager during the *Define Parameters* phase while processing the *Media Browser* screens. The software provisioning manager only accepts media whose digital signature has been checked.

Downloading and Extracting the Software Provisioning Manager 1.0 Archive [page 45]
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.

Using the Physical Media from the Installation Package [page 47]
For the rename of the primary application server instance, you have to provide the Java components media for your SAP system product.

Downloading Complete Installation Media [page 48]
This section describes how you can download complete media from the SAP Software Download Center.

3.7.1 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. You need the SAPCAR tool to be able to unpack and verify software component archives (*.SAR files). *.SAR is the format of software lifecycle media and tools that you can download from the SAP Software Download Center.

  > **Note**
  >
  > An older SAPCAR version might extract archive files in a wrong way and this could prevent the software provisioning manager from working consistently.

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

  1. Go to https://me.sap.com/softwarecenter > *SUPPORT PACKAGES & PATCHES* > *By Category* > *SAP TECHNOLOGY COMPONENTS* > *SAPCAR*.
  2. Select the SAPCAR for your operating system and download it to an empty directory.
  3. Even if you have the latest SAPCAR already available, we strongly recommend that you verify its digital signature anyway, unless you downloaded it directly from https://me.sap.com/softwarecenter/ yourself. You can do this by verifying the checksum of the downloaded SAPCAR tool:
     1. Depending on what operating system you are using, compute a hash of the downloaded SAPCAR tool, using the SHA-256 algorithm used by SAP .
     2. Now verify the digital signature of the downloaded SAPCAR tool by comparing the hash with the checksum (generated by SAP using the SHA-256 algorithm) from the *Content Info* button in the *Related Info* column on the right-hand side of the place where you downloaded the SAPCAR tool.
  4. To improve usability, we recommend that you rename the executable to **`sapcar`**.

  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. Using the latest version of SAPCAR, you can verify the digital signature of the downloaded `SWPM10SP<Support_Package_Number>_<Version_Number>.SAR` archive as follows:
   a. Get the latest version of the `SAPCRYPTOLIB` archive to your installation host as follows:
      1. Go to https://me.sap.com/softwarecenter > *SUPPORT PACKAGES & PATCHES* > and search for "**`sapcryptolib`**".
      2. Select the archive file for your operating system and download it to the same directory where you have put the SAPCAR executable.
      3. Use the following command to extract the `SAPCRYPTOLIB` archive to the same directory where you have put the SAPCAR executable:
         `SAPCAR –xvf sapcryptolibp_84…sar –R <target directory>`
      4. Download the Certificate Revocation List from https://tcs.mysap.com/crl/crlbag.p7s and move it to the same directory.
   b. Verify the digital signature of the downloaded `SWPM10SP<Support_Package_Number>_<Version_Number>.SAR` archive by executing the following command:

      > **Note**
      >
      > Check SAP Notes 2178665 and 1680045 whether additional information is available.

      ```
      /<Path to SAPCAR>/SAPCAR -tvVf <Path to Download Directory>/
      SWPM10SP<Support_Package_Number>_<Version_Number>.SAR -crl<file name of
      revocation list>
      ```

3. 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>
   ```

   > **Note**
   >
   > Make sure that all users have at least read permissions for the directory to which you unpack the Software Provisioning Manager archive.

   > **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.

3.7.2 Using the Physical Media from the Installation Package

For the rename of the primary application server instance, you have to provide the Java components media for your SAP system product.

Procedure

1. Identify the required media for the system rename as listed in the following table:

SAP Instance to be Renamed	Required Media
Central Services (SCS) instance, database instance, additional application server instance	Software Provisioning Manager archive
Primary application server instance	• Software Provisioning Manager archive • Java Components

2. Make the required media available on each installation host as follows:
   a. Download and unpack the latest version of Software Provisioning Manager as described in Downloading and Extracting the Software Provisioning Manager 1.0 Archive [page 45].
   b. Make the media for the rename of the primary application server instance available.

      You can do this in one of the following ways:

      - Copy the required media folders directly to theprimary application server instance host.
      - Mount the media on a central media server that can be accessed from the installation hosts.

      > ⚠ Caution
      >
      > - Mount the media locally. We do **not** recommend you to use Network File System (NFS), because reading from media mounted with NFS might fail.
      > - If you copy the media to disk, make sure that the paths to the destination location of the copied media do not contain any blanks and commas.
      > - If you perform a local installation and there is only one media drive available on your installation host, you must copy at least the Installation Master medium to the local file system.

3.7.3 Downloading Complete Installation Media

This section describes how you can download complete 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 45].
2. You identify the required media as listed in Using the Physical Media from the Installation Package [page 47] .
3. Identify **all** download objects that belong to one medium according to one of the following:

   > ⓘ 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://me.sap.com/softwarecenter/ ▶ ▶ *SUPPORT PACKAGES & PATCHES* ▶ *By Category* ▶ *ADDITIONAL COMPONENTS* ▶ *SAP KERNEL* ▶ *SAP KERNEL 64-BIT UNICODE* ▶ *SAP KERNEL* `<Version>` *64-BIT UNICODE* ▶ `<Select your OS>` ▶.
       - Select ▶ *#DATABASE INDEPENDENT* ▶ to download the database-independent parts of the kernel.

         > ✤ Example
         >
         > ```
         > SAPEXE_1110-80002623.SAR
         > Kernel Part I (753) (*)
         > ```
         >
         > SAPEXE_1118-80002612.SAR

       - Select ▶ `<Your DB>` ▶ to download the database-independent parts of the kernel.

         > ✤ Example
         >
         > ```
         > SAPEXEDB_1110-80002623.SAR
         > Kernel Part II (753) (*)
         > ```

   > ⓘ Note
   >
   > You can only download complete kernel media for kernel release 7.22, which can only be used for provisioning of SAP products based on SAP NetWeaver 7.3 EHP1. For all remaining SAP products, you have to download kernel media from https://me.sap.com/softwarecenter/.

- To download the remaining media required for your SAP product, you can use one of the following navigation paths:
  - https://me.sap.com/softwarecenter *INSTALLATIONS & UPGRADES* > *By Category* > *SAP NETWEAVER AND COMPLEMENTARY PRODUCTS* > `<Product>` > `<Product Release>`
  - https://me.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:
  `<Kernelpart>_<Sequence Number>-<Material Number>`

  Example

  ```
  SAPEXE_1110-80002623.SAR
  Kernel Part I (753) (*)
  SAPEXE_1111-80002623.SAR
  Kernel Part I (753) (*)
  SAPEXE_1112-80002623.SAR
  Kernel Part I (753) (*)
  ```

  Example

  ```
  SAPEXEDB_1110-80002623.SAR
  Kernel Part II (753) (*)
  SAPEXEDB_1111-80002623.SAR
  Kernel Part II (753) (*)
  SAPEXEDB_1112-80002623.SAR
  Kernel Part II (753) (*)
  ```

- 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.

4. Download the objects to the download directory.
5. 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.

3.8 Preparing the File System

Use this step to make the file system available on the system that you plan to rename.

Prerequisites

You have performed the database specific preparation steps.

> ⓘ Note
>
> You have to mount the file system **before** you start the system rename procedure.

Procedure

- If your system is a **central system (all system instances reside on one host)** and the `/usr/sap/<SAPSID>` and `/<sapmnt>/<SAPSID>` directories are mount points, proceed as follows:
  a. Stop the SAP system including its instance agents.
     - To check that they are stopped, enter the following command:
       `ps -ef | grep <source_SAPSID>`
     - In addition, you can also make sure that the services of the system instances are stopped by executing the following command as user `<sapsid>adm`:
       `sapcontrol -nr <InstanceNumber> -function StopService`
  b. Unmount the mount points `/usr/sap/<source_SAPSID>` and `/<sapmnt>/<source_SAPSID>`.

     > ⚠ Caution
     >
     > The mount point and the directory for the `<source_SAPSID>` must be removed, otherwise a problem occurs during the system rename rename process.

  c. Before you start the system rename, mount the file system, which you have unmounted in the previous step, under the new `<SAPSID>`.
- If your system is a **distributed system**, proceed as follows:
  a. Stop all SAP system instances including their instance agents.
     - To check that they are stopped, enter the following command:
       `ps -ef | grep <source_SAPSID>`
     - In addition, you can also make sure that the services of the system instances are stopped by executing the following command as user `<sapsid>adm`:
       `sapcontrol -nr <InstanceNumber> -function StopService`
  b. Unmount `/<sapmnt>/<Source_SAPSID>/*` directories on all system hosts.
  c. Remove `/<sapmnt>/<Source_SAPSID>/*` from the list of mounted file systems on all system hosts.
  d. Move `/<sapmnt>/<Source_SAPSID>/*` to `/<sapmnt>/<Target_SAPSID>` on all hosts.
  e. Adapt the file system exports on the global host. You can do this using a tool for your operating system, such as `YaST2` on SuSE Linux. Proceed as follows:

1. Remove `/<sapmnt>/<Source_SAPSID>/*` from the list of export file systems.
2. Add `/<sapmnt>/<Target_SAPSID>/*` to the list of export file systems.

f. Export the file system.

g. Mount `/<sapmnt>/<Target_SAPSID>/*` on all system hosts. Make sure that the file system will also be mounted after a reboot. You can do that using a tool for your operating system, such as `YaST2` on SuSE Linux.

Related Information

Database-Specific Preparation [page 35]
Running Software Provisioning Manager [page 57]

4 System Rename Procedure

4.1 System Rename Procedure Checklist

This section includes the renaming steps that you have to perform for the following options:

- Standard system
- Distributed system

The software provisioning manager adapts the SAP system on an operating system level. The system parameters are adapted offline.

The software provisioning manager automatically starts the following instances during the system rename:

- Database
- Instance agents of a UNIX operating system
- Central services instance (SCS instance)

Central System

> ⓘ Note
>
> In a *Standard System*, all mandatory SAP system instances except the SAP HANA database and database instance are installed on one host. This means, that the primary application server (PAS) instance and any additional application server (AAS) instance are installed one host, whereas the SAP HANA database and database instance need to be installed on a dedicated SAP HANA host. Only if your operating system is Linux, you can alternatively install the SAP HANA database and database instance on the same host as the primary application server (PAS) instance and any additional application server (AAS) instance.

You check the Prerequisites for Running Software Provisioning Manager [page 53] and run the software provisioning manager to rename the system as described in Running Software Provisioning Manager [page 57].

Distributed and High-Availability System

> ⓘ Note
>
> In a *Distributed System*, all mandatory SAP system instances except the SAP HANA database and database instance can be installed on several host. This means, that the primary application server (PAS) instance and any additional application server (AAS) instance can be installed on several hosts, whereas the SAP HANA database and database instance need to be installed on a dedicated SAP HANA host.

> **Note**
>
> See also table *System Rename Options and Sequence how to Execute Them* in Running Software Provisioning Manager [page 57].

1. You check the Prerequisites for Running Software Provisioning Manager [page 53] and run the software provisioning manager to rename the ASCS instance (if your system has it) and the SCS instance as described in Running Software Provisioning Manager [page 57].
2. You make sure that the global directories (`exe`, `profile`, `global`) are exported to the instance hosts of the SAP system to be renamed.
   If the SCS instance host is the SAP global host of the system, you export the global directories to the database instance host and to the primary application server instance host.
   For more information, see Preparing the File System [page 50].
3. You check the Prerequisites for Running Software Provisioning Manager [page 53] and run the software provisioning manager to rename the database instance as described in Running Software Provisioning Manager [page 57].
4. You check the Prerequisites for Running Software Provisioning Manager [page 53] and run the software provisioning manager to rename the primary application server instance as described in Running Software Provisioning Manager [page 57].
5. **Optional:** You check the Prerequisites for Running Software Provisioning Manager [page 53] and run the software provisioning manager to rename existing standalone Gateway instances as described in Running Software Provisioning Manager [page 57].
6. **Optional:** You check the Prerequisites for Running Software Provisioning Manager [page 53] and run the software provisioning manager to rename the SAP Web Dispatcher instance as described in Running Software Provisioning Manager [page 57].

Next Steps

You perform follow-up activities [page 76]

4.2 Prerequisites for Running Software Provisioning Manager

Make sure you fulfil the following prerequisites before running the software provisioning manager.

- For the SL-UI, 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-UI:
    - 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-UI 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-UI.

> ⚠ Caution
>
> The software provisioning manager uses a self-signed certificate, which is used temporarily only while the software provisioning manager is running. This certificate is not trusted by the browser unless it is imported manually by the user running the software provisioning manager. This behavior is intentionally designed in this way because - unlike ordinary public web servers - the software provisioning manager has different usage patterns. You must configure your browser do trust the self-issued certificate of the software provisioning manager after carefully performing the "thumbprint" verification described in Running Software Provisioning Manager [page 57]. For more information about adding trusted certificates, see the documentation of your browser.

For more information about the SL-UI, see Useful Information about Software Provisioning Manager [page 63].

- The SAPinst framework of software provisioning manager checks certificates for the software provisioning manager, archives and media and therefore uses a certificate revocation list (CRL). Make sure that this CRL is available. For more information, see SAP Note 3207613.
- The software provisioning manager 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 software provisioning manager. For more information about recommended login shells, see SAP Note 202227.
  - If user `<sapsid>adm` already exists and uses `csh`, before you start the software provisioning manager, execute the following command as user `<sapsid>adm` to make sure that the `csh` scripts are up-to-date, depending on your UNIX OS platform:
    `/bin/csh -c "source /home/<sapsid>adm/.cshrc;env"` or **`/bin/csh -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 700 MB of free space in the installation directory for each installation option. In addition, you need 700 MB free space for the software provisioning manager executables. If you cannot provide 700 MB free space in the temporary directory, you can set one of the environment variables `TEMP`, `TMP`, or `TMPDIR` to another directory with 700 MB free space for the software provisioning manager 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 Software Provisioning Manager [page 63].
- Make sure that `umask` is set to **`022`** for the user with `root` permissions that you want to use for running the software provisioning manager.
  As the user with `root` permissions that you want to use for running the software provisioning manager, 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

  Linux: On Linux, starting with SLES 15, RHEL 8 and Oracle Linux 8, and respective recent SAP kernel patch levels, there is native integration into systemd. In this case, limits for operating system users root, `<sapsid>adm`, and your database-specific operating system users do not need to be set any longer. Make sure that polkit is installed. systemd requires polkit for authorization checks for the `<sapsid>adm` user. For older Linux versions and SAP kernel patch levels, however, you must still set these limits. For more information about how to proceed for older Linux versions, see the following instructions. For more information about Linux with systemd and the relevant SAP kernel patch levels, see SAP Note 3139184.
  HP-UX, Oracle-Solaris, Linux (versions lower than SLES 15, RHEL 8 and Oracle Linux 8 or lower SAP kernel patch levels): 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 Software Provisioning Manager* 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 `csh` 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 15 (x86_64).

Output	Properties
cputime	unlimited
filesize	unlimited
datasize	unlimited
stacksize	8192 KB
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 15 (x86_64).

Output sh	Output ksh	Properties
cpu time (seconds)	cpu time (seconds)	unlimited

Output sh	Output ksh	Properties
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 software provisioning manager and the SL-UI.
    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 software provisioning manager 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>`
- If you want to change the host name of your system, change the computer name and the host name on OS level and make sure that the host name resolution and UNC paths work.
  For more information, see SAP Note 129997.
  If you want to change the virtual host name, see SAP Note 962955.
- **SAP ASE 16.0 only:** Make sure the system and database are not running when starting the software provisioning manager.
- **IBM Db2 for z/OS**: Check that your hosts meet the requirements for the software provisioning manager options that you want to perform.

4.3 Running Software Provisioning Manager

This section describes how to run the software provisioning manager to perform the system rename .

Prerequisites

For more information, see Prerequisites for Running Software Provisioning Manager [page 53].

Context

The software provisioning manager has a web browser-based GUI named “SL-UI of the software provisioning manager” - “SL-UI” for short.

This procedure describes an installation where you run the software provisioning manager and use the SL-UI, that is you can control the processing of the software provisioning manager from a browser running on any device.

For more information about the SL-UI, see Useful Information about Software Provisioning Manager [page 63].

Procedure

1. Log on to the host where you want to run the software provisioning manager.

   Make sure that you log on as a user with `root` permissions.

   > ⚠ Caution
   >
   > Make sure that this user has not set any environment variables for a different SAP system or database.

   > ⚠ Caution
   >
   > Do not use an existing `<sapsid>adm` user or built-in administrator.

   If your security policy requires that the person running the software provisioning manager is not allowed to know the credentials of a user with `root` permissions on the host where the software provisioning manager is to perform the system rename , 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. Make the required media available.

   For more information, see Preparing the System Rename Media [page 44].

→ Recommendation

Make the installation media available **locally** . For example, if you use Network File System (NFS), reading from media mounted with NFS might fail.

Only valid for 'Platform': Oracle Solaris

Note

If you mount installation media, make sure that you do this with option **`nomaplcase`**.

End of 'Platform': Oracle Solaris

3. Start the software provisioning manager as follows:

   Open a command prompt and enter the following command:

   `/<Path_To_Unpack_Directory>/sapinst`

   The software provisioning manager GUI starts automatically by displaying the *Welcome* screen.

   Note

   If you want to use a virtual host name, start the software provisioning manager with the software provisioning manager property `SAPINST_USE_HOSTNAME` as follows:

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

   Caution

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

4. The software provisioning manager now starts and waits for the connection with the SL-UI.

   You can find the URL you require to access the SL-UI at the bottom of the shell from which you are running the software provisioning manager.

```
...
************************************************************************
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 software provisioning manager as described in Useful Information about Software Provisioning Manager [page 63].
   2. Restart the software provisioning manager 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 Software Provisioning Manager [page 53]) installed on the host where you run the software provisioning manager, 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 software provisioning manager.
>   Proceed as follows to get the certificate fingerprint or thumbprint from the server certificate printed in the software provisioning manager console:
>   1. Go to the `sapinst_exe.xxxxxx.xxxx` directory in the temporary directory to which the software provisioning manager 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-UI opens in the browser by displaying the *Welcome* screen.

5. In the *Welcome* screen, proceed according to your system variant:

   - If your system is a **standard system** , choose ▶ *System Rename* ▶ *Standard System* ▶ *System Rename* ▶.
   - If your system is a **distributed system**, choose ▶ *System Rename* ▶ *Distributed System* ▶ `<System_Rename_Option>` ▶.
     Choose the system rename options as required and in the order they appear.

     > ⓘ Note
     >
     > Products with the addition “SAP internal only” are only for SAP internal purposes and may not be used outside of this purpose.

     System Rename Options and Sequence how to Execute Them

Option	Description	When to Execute	Execution Order
System Rename for SCS Instance	Executes system rename for the SCS instance	First option for systems with AS Java	First step for systems with AS Java

Option	Description	When to Execute	Execution Order
System Rename for ERS Instance	Executes system rename for the ERS instance	If your system does not have an ERS instance, skip this option.	Execute this option after you have performed the rename options for the SCS instance above, as required
System Rename for Database Instance	Executes system rename for the database instance	Execute in any case (even if you change the SAP system ID, the host name or the instance number)	Execute this option after you have performed the rename options for the SCS instance and the ERS instance above, as required
System Rename for the Primary Application Server Instance	Executes system rename for the primary application server instance	Execute this option after renaming the database instance.	Execute this option after you have performed the rename options for the SCS instance, the ERS instance, and the database instance above, as required
System Rename for a Gateway Instance	Executes system rename for a standalone Gateway instance	If your system host does not have a standalone Gateway instance, skip this option.	Execute this option after you have performed the rename options for the SCS instance, the ERS instance, the database instance, and the primary application server instance above, as required
System Rename for Web Dispatcher Instance	Executes system rename for the SAP Web Dispatcher instance	If your system does not have an SAP Web Dispatcher instance, skip this option.	Execute this as last option

6. Choose *Next*.

> **Note**
>
> If there are errors during the self-extraction process of the software provisioning manager, you can find the log file `dev_selfex.out` in the temporary directory.

7. Follow the instructions in the software provisioning manager input screens and enter the required parameters.

> **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.

> ⚠ Caution
>
> The digital 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 digital signature is not checked again.
>
> For more information, see SAP Note 2393060.

8. After you have entered all requested input parameters, the software provisioning manager displays the *Parameter Summary* screen. This screen shows both the parameters that you entered and those that the software provisioning manager set by default.

   If required, you can revise the parameters before starting the system rename procedure.

9. To start the execution, choose *Next*.

   The software provisioning manager starts the rename procedure and displays its progress on the *Task Progress* screen.

   When the system rename option has finished successfully, the software provisioning manager displays the message *Execution of* `<Rename_Option>` *has completed*.

10. If required, delete directories with the name `sapinst_exe.xxxxxx.xxxx` after the software provisioning manager has finished. Sometimes these remain in the temporary directory.

    > → Recommendation
    >
    > Keep all software provisioning manager directories until you are sure that the system, including all instances, is completely and correctly installed. Once the system is completely and correctly installed, make a copy of the software provisioning manager directories with all their contents. Save the copy to a physically separate medium, such as a medium or a USB drive that is separate from your installation hosts.
    >
    > This might be useful for analyzing any issues that might occur later when using the system. For security reasons, do **not** keep the software provisioning manager directories on hosts where you processed it, but make sure that you delete them after saving them separately.

11. If you copied installation media to your hard disk, you can delete these files when the software provisioning manager has successfully completed.

12. For security reasons, we recommend that you delete the `.sapinst` directory within the home directory of the user with which you ran the software provisioning manager:

    `<User_Home>/.sapinst/`

13. For security reasons, we recommend that you remove the operating system users from the group `sapinst` **after** you have completed the installation.

    > ⓘ 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 software provisioning manager has completed.

14. The software provisioning manager 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 software provisioning manager log files in the `sapinst_instdir` directory. For more information, see Useful Information about Software Provisioning Manager [page 63].

Related Information

Useful Information about Software Provisioning Manager [page 63]
Restarting Interrupted Processing of Software Provisioning Manager [page 69]
Troubleshooting with Software Provisioning Manager [page 73]

4.4 Additional Information about Software Provisioning Manager

The following sections provide additional information about the software provisioning manager.

Useful Information about Software Provisioning Manager [page 63]
This section contains some useful technical background information about the software provisioning manager and the software provisioning manager's SL-UI.

System Provisioning Using an Input Parameter File [page 65]
Provisioning with software provisioning manager, for example installation, of SAP systems in unattended mode with an input parameter file.

Restarting Interrupted Processing of Software Provisioning Manager [page 69]
Here you find information about how to restart the software provisioning manager if its processing has been interrupted.

Troubleshooting with Software Provisioning Manager [page 73]
This section tells you how to proceed when errors occur while the software provisioning manager is running.

Using the Step State Editor (SAP Support Experts Only) [page 74]
This section describes how to use the `Step State Editor` available in the software provisioning manager.

4.4.1 Useful Information about Software Provisioning Manager

This section contains some useful technical background information about the software provisioning manager and the software provisioning manager's SL-UI.

- The software provisioning manager has a framework named “SAPinst”. For more information about the current SAPinst Framework version and its features, see SAP Note 3207613 (*SAPinst Framework 753 Central Note*).
- The software provisioning manager has the web browser-based “SL-UI of the software provisioning manager” - “SL-UI” for short.
  The SL-UI 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, the software provisioning manager comes with a new look and feel of the SL-UI. For more information, see https://blogs.sap.com/2018/11/10/new-look-for-software-provisioning-manager/.
  The SL-UI 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-UI the software provisioning manager provides a pre-generated URL at the bottom of the shell from which you are running the software provisioning manager . If you have a supported web browser installed on the host where you run the software provisioning manager, you can start the SL-UI directly from this URL. Otherwise, open a web browser supported by the SL-UI on any device and run the URL from there.
  For more information about supported web browsers see Prerequisites for Running Software Provisioning Manager [page 53].
  If you need to run the **SL-UI** in **accessibility mode**, apply the standard accessibility functions of your web browser.
- As soon as you have started the `sapinst` executable, the software provisioning manager 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 software provisioning manager.
  After you have reached the *Welcome* screen and selected the relevant software provisioning manager option for the SAP system to be renamed , the software provisioning manager creates a directory `sapinst_instdir` where it keeps its log files, and which is located directly below the temporary directory. The software provisioning manager 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 software provisioning manager 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 software provisioning manager.

Shell Used	Command
Bourne shell (sh)	`TEMP=<Directory>` `export TEMP`
C shell (csh)	`setenv TEMP <Directory>`
Korn shell (ksh)	`export TEMP=<Directory>`

> ⚠ 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 software provisioning manager records its progress in the `keydb.xml` file located in the `sapinst_instdir` directory. Therefore, if required, you can continue with the software provisioning manager 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 software provisioning manager. 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 software provisioning manager extracts itself to the temporary directory. These executables are deleted again after the software provisioning manager has stopped running.
  Directories called `sapinst_exe.xxxxxx.xxxx` sometimes remain in the temporary directory after the software provisioning manager 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 software provisioning manager, which might be useful if an error occurs.

  > ⚠ Caution
  >
  > If the software provisioning manager cannot find a temporary directory, the installation terminates with the error `FCO-00058`.

- To see a list of all available software provisioning manager properties (command line options) and related documentation, start the software provisioning manager as described above with command line parameter `-p`:
  ```
  ./sapinst -p
  ```
- If required, stop the software provisioning manager by choosing the *Cancel* button.

  > ⓘ Note
  >
  > If you need to terminate the software provisioning manager, press `Ctrl` + `C`.

4.4.2 System Provisioning Using an Input Parameter File

Provisioning with software provisioning manager, for example installation, of SAP systems in unattended mode with an input parameter file.

Prerequisites

Provisioning of SAP systems can also be done in unattended mode without the user interface of software provisioning manager. This means that, after inserting the required parameters into a parameter-file and running the sapinst executable by providing the path to this parameter-file , the installation will run in the background and no further user interaction is required.

Context

This section describes the steps that you need to execute in addition to the procedure described in this guide, when running software provisioning manager in unattended mode using an input parameter file.

Since the new Web-based SL-UI (see Useful Information about Software Provisioning Manager [page 63]) was introduced in 2017 there are two ways to run the unattended mode: "`observer mode`" and "`non-observer mode`".

Observer Mode

If you are running an installation in unattended mode but you are sitting in front of the screen, you might want to check the progress from time to time. In this case the "`observer mode`" makes sense.

Start the installation as described below in the Solution section, using the following parameters:

```
SAPINST_INPUT_PARAMETERS_URL=<path_to_your_parameterfile>
SAPINST_EXECUTE_PRODUCT_ID=<product-id for the installation>
SAPINST_SKIP_DIALOGS=true
```

The software provisioning manager will start the installation in the background AND start a Web Dispatcher and provide an URL to access the SL-UI. The user who has started the installation can now connect to the URL and observe the progress of the installation, for example to look at the logfiles in the Web browser. However, all parameters will be taken from the input parameter file and can not be changed in the Web browser.

Non-Observer Mode

Choose that mode if you want to run a "scripted" or by other means automated scenario, for example overnight. In that case it is crucial that the process is started without a Web Dispatcher and therefore without the software provisioning manager's SL-UI. Otherwise, the automation could be stuck if software provisioning manager encounters a situation that requires user interaction.

Start the installation as described below in the Solution section, using the following parameters (use the same parameters like for Observer Mode, but provide **`SAPINST_START_GUISERVER=false`** in addition):

```
SAPINST_INPUT_PARAMETERS_URL=<path_to_your_parameterfile>
SAPINST_EXECUTE_PRODUCT_ID=<product-id for the installation>
```

```
SAPINST_SKIP_DIALOGS=true
SAPINST_START_GUISERVER=false
```

This will start the installation but this time **NO** Web Dispatcher will be started and no URL to access the SL-UI will be provided either. So the user can not follow the processing of the installation in a Web browser and the installation will run completely in the background.

If the process runs into an error, the software provisioning manager will abort and you have to check for the reason in the log files.

Restrictions

In exceptional cases, parameters prompted or displayed in the Software Provisioning Manager UI are not maintainable in the input parameter file. If one of those parameters, that are only available in the UI mode of the Software Provisioning Manager, is needed for your unattended installations, you should create a ticket in the best fitting component below BC-INS to get the issue analyzed.

Must Know about the Input Parameter File

- The input parameter file only contains values that you entered in the software provisioning manager's SL-UI.
- With the `SAPinst 749.0.69` or by other means patch we provide a better encryption of passwords in software provisioning manager files:
  If the input parameter file has parameters which are encrypted with Des25 encryption, the `instkey.pkey` file available in the installation directory contains the key for the encryption. The `instkey.pkey` file must be always located in the same directory as the input parameter file and is used to decrypt the values of the encrypted parameters. If you need to copy an input parameter file to another directory, you must also copy the `instkey.pkey` file to this directory.
- Not explicitly set parameters are documented as comments in the generated input parameter file.
- Each parameter has got a documentation assigned as a comment on top.

  Example

  Example for a parameter that is not used and therefore commented out:

  ```
  # Specify whether software provisioning manager is to drop the schema if
  it exists. <= Documentation
  # HDB_Schema_Check_Dialogs.dropSchema = false
  ```

  Example

  Example for a parameter that is used:

  ```
  # The name of the database schema. <= Documentation
  HDB_Schema_Check_Dialogs.schemaName = SAPABAP2
  ```

- You have to manually provide the media information, using the following convention:

  ```
  SAPINST.CD.PACKAGE.<unique_media_name>=<location>
  ```

  - For each media location you must **manually** insert a dedicated line in your input parameter file. The software provisioning manager does not automatically take over the media locations you entered while processing the *Media Browser* dialog.
  - For `<media_name>` you can choose any value, but the `<location>` must be unique.

- To find out the required media entries, open the summary.html file which you can find in the installation directory and go to the *Dialog "Media"* section.
- Make sure that you enter the full paths to all required media, relative paths are not sufficient.

> **Example**
>
> Example on UNIX:
>
> ```
> SAPINST.CD.PACKAGE.KERNEL = /mnt/KERNEL
> SAPINST.CD.PACKAGE.LOAD = /mnt/LOAD
> SAPINST.CD.PACKAGE.RDBMS = /mnt/RDBMS
> ```

> **Example**
>
> Example on Windows:
>
> ```
> SAPINST.CD.PACKAGE.KERNEL = C:\sapdvds\KERNEL
> SAPINST.CD.PACKAGE.LOAD = C:\sapdvds\LOAD
> SAPINST.CD.PACKAGE.RDBMS =C:\sapdvds\RDBMS
> ```

- If one media contains several subfolders, you can specify it in one of the following ways:

> **Example**
>
> The SAP Export DVDs/media:
>
> ```
> Installation Master    /usr/local/TESI/SWPM/slinst_d_stream/
> IM_OS400_PPC64
> Installation Export NW73 (folder EXP1)    /sapmnt/mediaserver2/
> arch04_6/51042309/DATA_UNITS/EXP1
> Installation Export NW73 (folder EXP3)    /sapmnt/mediaserver2/
> arch04_6/51042309/DATA_UNITS/EXP3
> Installation Export NW73 (folder EXP2)    /sapmnt/mediaserver2/
> arch04_6/51042309/DATA_UNITS/EXP2
> ```

  - By specifying each subfolder:

    ```
    SAPINST.CD.PACKAGE.ExportNW73EXP1=/sapmnt/mediaserver2/
    arch04_6/51042309/DATA_UNITS/EXP1

    SAPINST.CD.PACKAGE.ExportNW73EXP2=/sapmnt/mediaserver2/
    arch04_6/51042309/DATA_UNITS/EXP3

    SAPINST.CD.PACKAGE.ExportNW73EXP3=/sapmnt/mediaserver2/
    arch04_6/51042309/DATA_UNITS/EXP3
    ```

  - By specifying only the root-folder:

    ```
    SAPINST.CD.PACKAGE.ExportNW73=/sapmnt/mediaserver2/arch04_6/51042309
    ```

- **Restriction:** Currently you can only specify complete media, not paths to single files like `*.SAR` archives.
- When performing a system copy, you need to add one additional media path:

```
SAPINST.CD.PACKAGE.JMIG = <full path to Java Export media>
```

- **Caution:**
  If you want to use archives for your installation, you must copy all files that are to be used to a single directory. In the input parameter file you must specify this directory as a download basket, using the `archives.downloadBasket` parameter.
  Make sure that there is only one version of the same archive in the directory, for example SAPEXE_`<Version>`.SAR

Procedure

1. You plan and prepare the run as described in Planning [page 21] and Preparation Checklist [page 23].
2. Create your input parameter file as follows:
   1. Start software provisioning manager as described in Running Software Provisioning Manager [page 57].
   2. Choose the option you want to run, and follow the instructions on the screens by entering all parameter values.
   3. Stop after the *Parameter Summary* screen has been displayed.
   4. Find the input parameter file named "`inifile.params`" in the installation directory.
      - In the same directory, you will also find the `instkey.pkey` file with the keys for the encrypted parameters. For more information, see *Must Know about the Input Parameter File* above.
      - In the same directory, you will also find the `summary.html` file with the required media locations. For more information, see *Must Know about the Input Parameter File* above.
   5. If required, you can rename the "`inifile.params`" file as you wish.
3. Adjust the values of the input parameter file as follows:
   1. Edit your input parameter file and modify the parameters according to your needs.
   2. Add required media or archives information line by line.
4. Identify the Product-ID:
   - To start in unattended mode, you need to know the component ID for the option that are required for your provisioning scenario.
     Proceed as follows:
     1. Open the `sapinst_dev.log` in the installation directory.
     2. Check for the "product-id"

        Example

        ```
        product-id=NW_ABAP_ASCS:NW750.ADA.ABAP
        ```
   - Alternatively, you can check the header of the generated input parameter file.

     Example

     ```
     product id 'NW_ABAP_ASCS:NW750.ADA.ABAP'
     ```
5. Run the software provisioning manager [page 57] with the parameters required for unattended mode:
   - Make sure that the `instkey.pkey` file with the keys for the encrypted parameters is available in the same directory as the input parameter file. Otherwise the encrypted parameters cannot be decrypted. For more information, see *Must Know about the Input Parameter File* above.

- **In observer mode:** Start the sapinst executable from an empty directory with the following parameters:

```
SAPINST_INPUT_PARAMETERS_URL=<path_to_your_parameterfile>
SAPINST_EXECUTE_PRODUCT_ID=<product-id for the installation>
SAPINST_SKIP_DIALOGS=true
```

- **In non-observer mode**: Start the sapinst executable from an empty directory with the following parameters:

```
SAPINST_INPUT_PARAMETERS_URL=<path_to_your_parameterfile>
SAPINST_EXECUTE_PRODUCT_ID=<product-id for the installation>
SAPINST_SKIP_DIALOGS=true
SAPINST_START_GUISERVER=false
```

6. After software provisioning manager has completed, perform follow-up activities as described in Follow-Up Activities Checklist [page 76].

Related Information

SAP Note 2230669 Provisioning with software provisioning manager - for example installation - of SAP systems in unattended mode with an input parameter file.

SAP Note 2849054 Software Update Manager Automation with software provisioning manager

SAP Note 2742212 Unattended installation fails with "Empty directory name is not allowed." message

SAP Note 2626837 'isUnicode': Radio group contains an invalid value ''. Valid values are: false|true|

4.4.3 Restarting Interrupted Processing of Software Provisioning Manager

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

Context

The processing of the software provisioning manager might be interrupted for one of the following reasons:

- An error occurred during the *Define Parameters* or *Execute* phase:
  The software provisioning manager 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 software provisioning manager by choosing *Cancel* in the SL-UI.

> ⚠ 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
Retry	The software provisioning manager retries the installation from the point of failure without repeating any of the previous steps. This is possible because the software provisioning manager records its progress in the `keydb.xml` file. We recommend that you view the entries in the log files, try to solve the problem, and then choose *Retry*. If the same or a different error occurs, the software provisioning manager displays the same dialog box again.
Stop	The software provisioning manager stops the installation, closing the dialog box and the software provisioning manager's SL-UI. The software provisioning manager records its progress in the `keydb.xml` file. Therefore, you can continue with the software provisioning manager from the point of failure without repeating any of the previous steps. See the procedure below.
Continue	The software provisioning manager continues the installation from the current point.
View Log	Access installation log files.

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 Software Provisioning Manager [page 57] .
2. Make sure that the media required for the system rename are still available.

   For more information, see Preparing the System Rename Media [page 44] .

   > → 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

> ⓘ Note
>
> **Oracle Solaris:** If you mount installation media, make sure that you do this with option **`nomaplcase`**.

End of 'Platform': Oracle Solaris

3. Make sure that the media required for the system rename are still available.

   For more information, see Preparing the System Rename Media [page 44] .

> → 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

> ⓘ Note
>
> **Oracle Solaris:** If you mount installation media, make sure that you do this with option **`nomaplcase`**.

End of 'Platform': Oracle Solaris

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

   `<Path_To_Unpack_Directory>/sapinst`

5. The software provisioning manager is restarting.

   You can find the URL you require to access the SL-UI at the bottom of the shell from which you are running the software provisioning manager.

```
...
************************************************************************
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 software provisioning manager as described in Useful Information about Software Provisioning Manager [page 63].
> 2. Restart the software provisioning manager 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 Software Provisioning Manager [page 53]) installed on the host where you run the software provisioning manager, 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 software provisioning manager.
>   Proceed as follows to get the certificate fingerprint or thumbprint from the server certificate printed in the software provisioning manager console:
>   1. Go to the `sapinst_exe.xxxxxx.xxxx` directory in the temporary directory to which the software provisioning manager 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-UI 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

Perform a new run	The software provisioning manager does not continue the interrupted system rename option. Instead, it moves the content of the old software provisioning manager directory and all software provisioning manager-specific files to a backup directory. Afterwards, you can no longer continue the old option.
	The following naming convention is used for the backup directory:
	`log_<Day>_<Month>_<Year>_<Hours>_<Minutes>_<Seconds>`
	Example
	`log_01_Oct_2016_13_47_56`
	Note
	All actions taken by the system rename before you stopped it (such as creating directories or users) are not revoked.
	Caution
	The software provisioning manager 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.

Continue with the existing one	The software provisioning manager continues the interrupted system rename from the point of failure.

4.4.4 Troubleshooting with Software Provisioning Manager

This section tells you how to proceed when errors occur while the software provisioning manager is running.

Context

If an error occurs, the software provisioning manager:

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

Procedure

1. Check SAP Note SAP Note 3207613 (*SAPinst Framework 753 Central Note*) for known software provisioning manager 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 software provisioning manager log files (`sapinst.log` and `sapinst_dev.log`) for errors, choose the *LOG FILES* tab.

       > **Note**
       >
       > The *LOG FILES* tab is only available if you have selected on the *Welcome* screen the relevant software provisioning manager option for the SAP system to be renamed .
       >
       > 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 software provisioning manager.
       >
       > For more information, see Useful Information about Software Provisioning Manager [page 63].

     - To check the log and trace files of the software provisioning manager's SL-UI for errors, go to the directory `<User_Home>/.sapinst/`
     - Then continue by choosing *Retry*.
   - If required, abort the software provisioning manager by choosing *Cancel* in the tool menu and restart the software provisioning manager. For more information, see Restarting Interrupted Processing of Software Provisioning Manager [page 69].
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.

4.4.5 Using the Step State Editor (SAP Support Experts Only)

This section describes how to use the `Step State Editor` available in the software provisioning manager.

> **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 software provisioning manager meets the requirements listed in Prerequisites for Running Software Provisioning Manager [page 53].

Procedure

1. Start the software provisioning manager from the command line as described in Running Software Provisioning Manager [page 57] with the additional command line parameter **`SAPINST_SET_STEPSTATE=true`**
2. Follow the instructions on the software provisioning manager 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 software provisioning manager during the *Execute Service* phase. By default all steps are in an initial state. Underneath each step, you see the assigned software provisioning manager 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 software provisioning manager to pause.
   - Mark the checkbox in front of the *Skip* option of the steps which you want the software provisioning manager 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 software provisioning manager 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 software provisioning manager.
5. Continue until you have run through all the steps of the *Execute Service* phase of the software provisioning manager.

5 Follow-Up Activities

5.1 Follow-Up Activities Checklist

Procedure

1. Start the primary application server instance.

   For more information, see Starting the SAP System [page 79].

   The software provisioning manager has only started the following instances during the system rename:

   - Database
   - Instance agents of a UNIX operating system
   - Central services instance (SCS instance)
2. Perform general follow-up activities.

   For more information, see General Follow-Up Activities [page 76].
3. **Java Systems using ABAP UME only:** Reconfigure the UME back-end connection
4. Perform follow-up activities for your database.

   For more information, see Database-Specific Follow-Up Activities [page 77].
5. Restart the renamed SAP system completely.

   For more information, see Starting the SAP System [page 79].

5.1.1 General Follow-Up Activities

This section refers to the general follow-up activities that you have to perform after the rename of your SAP system.

- Potentially, all follow-up activities for a system copy are also valid for the rename of your SAP system and therefore you have to check which of them apply for your special situation and use case. For more information, see the system copy guide [page 19] for your operating system platform and database . Generally, due to the high variety of use cases, no rule which of the potential follow-up activities are valid can be given.

  > ### Example
  >
  > To identify potential follow-up activities regarding logical system names, answer to the following question:
  >
  > Does the renamed SAP system use logical system names?

- If not, this aspect is not relevant for your use case.
- If yes, answer to the following question:
  What naming convention was used for the logical system names?
  The default convention is `<SAPSID>CLNT<Client_Number>`, but it might have been adapted individually. If your logical system names contain attributes that were renamed as part of this procedure, see **SAP Note** 121163 for information about how to convert logical system names.

- Post-copy activities automated as part of SAP Landscape Management can also be used to perform the follow-up activities after a system rename, so you can profit from an easier, faster and more reliable process. For more information, see https://help.sap.com/docs/Java%20Post-Copy%20Automation.

5.1.2 Java Systems Using ABAP UME: Reconfigure UME Back-End Connection

If you changed a host name or instance number of an ABAP system that is used for the UME of an AS Java system, you have to reconfigure the User Management Engine (UME) back-end connection as follows:

Procedure

1. Start the `ConfigTool` from the `/usr/sap/<SAPSID>/<Primary_Application_Server_Instance_Name>/j2ee/configtool/` directory
2. Choose *Tools* > *Configuration Editor* > *Configurations* > *Destinations* > *RFC*.
3. Select the *UMEBackendConnection* propertysheet.
4. Adjust the values of the properties **`jco.client.ashost`** and **`jco.client.sysnr`** according to the new values.

5.1.3 Database-Specific Follow-Up Activities

Performing Follow-Up Activities for IBM Db2 for Linux, UNIX, and Windows [page 78]
This section contains follow-up steps required for IBM Db2 for Linux, UNIX, and Windows after the system rename has completed.

Performing Follow-Up Activities for SAP HANA Database [page 78]
This section contains follow-up steps required for SAP HANA after the system rename has completed.

Performing Follow-Up Activities for SAP ASE 16.0 [page 78]
This section contains follow-up steps required for SAP ASE 16.0 after the system rename has completed.

Performing Follow-Up Activities for Db2 for z/OS [page 79]
After the system rename, you have to perform the steps listed in this section.

5.1.3.1 Performing Follow-Up Activities for IBM Db2 for Linux, UNIX, and Windows

This section contains follow-up steps required for IBM Db2 for Linux, UNIX, and Windows after the system rename has completed.

Procedure

Currently there are no follow-up steps required.

5.1.3.2 Performing Follow-Up Activities for SAP HANA Database

This section contains follow-up steps required for SAP HANA after the system rename has completed.

Procedure

Currently there are no follow-up steps required.

5.1.3.3 Performing Follow-Up Activities for SAP ASE 16.0

This section contains follow-up steps required for SAP ASE 16.0 after the system rename has completed.

Procedure

Currently there are no follow-up steps required.

5.1.3.4 Performing Follow-Up Activities for Db2 for z/OS

After the system rename, you have to perform the steps listed in this section.

Procedure

After the system rename, you must change the value of the **`dbs/db2/dsn_alias`** entry in the instance profiles from the source `<SAPSID>` to the value of the target `<SAPSID>`.

5.1.4 Starting the SAP System

After the system rename procedure has finished you have to start the primary application server instance of the renamed system. Then, after you have performed all follow–up activities, you have to restart all instances of the renamed system.

For more information about how to start and restart an SAP system, see *Additional Information* > *Starting and Stopping SAP System Instances* in the installation guide [page 19] for your operating system platform and database or the SAP Library [page 20] at:

SAP Release and SAP Library Quick Link	SAP Library Path (Continued)
• **SAP Solution Manager 7.2 SR2 only:** SAP NetWeaver 7.4 http://help.sap.com/nw74 • SAP NetWeaver 7.5 http://help.sap.com/nw75	*Application Help* > *Function-Oriented View* > *Solution Life Cycle Management* > *Starting and Stopping SAP Systems Based on SAP NetWeaver*

6 Additional Information

6.1 Support of Oracle Transparent Data Encryption (Oracle TDE)

Oracle Transparent Data Encryption (TDE) for Oracle 18c is supported as of software provisioning manager 1.0 SP27 for SAP systems based on SAP NetWeaver.

Prerequisites

- Oracle database 18c or higher
- software provisioning manager 1.0 SP 27 or higher
- SAP system is based on SAP NetWeaver 7.0 or higher
- If you perform a system copy or a database refresh with `Jload`, the Oracle database on the target system does not need to have the same encryption type as the Oracle database on the source system. You can always change the encryption type when the Oracle database or the Oracle tablespaces are recreated, and the data are reloaded again in the Oracle database by `Jload`.

Constraints

- Oracle Database 18c only supports TDE tablespace encryption, but not yet TDE full database encryption. For more information, see SAP Note 2485122.
- With the software provisioning manager 1.0 you cannot configure TDE and encrypt tablespaces in the database of an already existing SAP System. You have to do this manually.
  - You can manually configure TDE in an SAP system that already exists.
  - You can manually convert a non-encrypted Oracle SAP database into an encrypted Oracle SAP database.
- With the software provisioning manager 1.0 you cannot deconfigure TDE and decrypt the data in the database of an existing SAP system. You have to do this manually.

For more information, see SAP Note 2485122.

Supported Software Provisioning Manager 1.0 Scenarios

- SAP system installation from scratch
  See section *Support of Oracle Transparent Data Encryption (Oracle TDE)* in the installation guide [page 19].

- SAP system copy
  When you copy an SAP system with the software provisioning manager 1.0, there are two options for copying the database. From a security perspective, the first option is the preferred option as the SAP data remains security encrypted during the whole system copy process.
  See section *Multitenant Database Installation of Oracle Database 12c or Higher* in the system copy guide [page 19].
- SAP system rename
- SAP system database refresh
  See section *Support of Oracle Transparent Data Encryption (Oracle TDE)* in the system copy guide [page 19].

For more information, see SAP Note 2485122.

Supported Oracle 18c Configuration Scenarios

- Oracle single instance installation
  Software keystore is located in filesystem
- Real Application Clusters (RAC)
  See section *Installing Oracle Real Application Clusters* in the installation guide [page 19].
  Software keystore is shared (in ASM or shared filesystem)
- Automatic Storage Management (ASM)
  See section *Database Instance Installation on Oracle Automatic Storage Management* in the installation guide [page 19].
  Software keystore is located in ASM
- Oracle Database Vault
  Oracle TDE and Oracle DV can be combined together.

For more information, see SAP Note 2485122.

Supported TDE Encryption Algorithms

- The software provisioning manager 1.0 allows you to choose which encryption key to use.
- Default Encryption is TDE or AES128.
- NOTDE is the value for No Transparent Data Encryption.
- Currently only user tablespaces can be encrypted.
- Tablespaces `System`, `Psaptemp`, and `Sysaux` are not supported.

Log und SQ files in installation directory for TDE

During the installation, Database Refresh and Systemcopy with `Jload` with the software provisioning manager 1.0 the TDE will be set and installed when the *Install Oracle TDE* checkbox is marked.

For a database rename, the wallet is already available with the same master key as before. Only the Auto Login Wallet will be reset. The following log and sql files are created in the installation directory for TDE.

- CreateKeystore.log & CreateKeystore.sql
  - Create keystore log and sql file
  - During the installation or system copy the keystore is created in `$SAPDATA_HOME/orawallet/tde`
- CreateKSKey.log & CreateKSKey.sql
  - Create keystore key log and sql file
  - The Master Key is written to the keystore file `ewallet.p12` and a backup file `ewallet_<number>.p12` is created as well.
- CreateKSAutologin.log & CreateKSAutologin.sql
  - Create keystore auto login log and sql file
  - During startup the wallet will be open automatically. The `Auto Login Wallet` file is `cwallet.sso` in the keystore.

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Example Code

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