Installation Guide | PUBLIC
Software Provisioning Manager 1.0 SP33
Document Version: 1.6 – 2021-10-11

Installation of SAP Content Server 7.5 and Higher on UNIX

THE BEST RUN SAP

Content

1 Document History

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

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

Version	Date	Description
1.6	2021-10-11	Updated version for Software Provisioning Manager 1.0 SP33 (SL Toolset 1.0 SP33)
1.5	2021-06-21	Updated version for Software Provisioning Manager 1.0 SP32 (SL Toolset 1.0 SP32)
1.4	2021-02-15	Updated version for Software Provisioning Manager 1.0 SP31 (SL Toolset 1.0 SP31)
1.3	2020-10-05	Updated version for Software Provisioning Manager 1.0 SP30 (SL Toolset 1.0 SP30)
1.2	2020-06-08	Updated version for Software Provisioning Manager 1.0 SP29 (SL Toolset 1.0 SP29)
1.1	2020-01-20	Updated version for Software Provisioning Manager 1.0 SP28 (SL Toolset 1.0 SP28)
1.0	2019-09-16	Initial version Software Provisioning Manager 1.0 SP27 (SL Toolset 1.0 SP27)

2 About this Document

This documentation describes how to install an SAP Content Server or SAP Cache Server 7.5 **or higher** on UNIX , using the Software Provisioning Manager 1.0 SP33 [page 5] (“installer” for short), which is part of SL Toolset 1.0 SP33.

> **i Note**
>
> If you want to install an SAP Content Server or SAP Cache Server release **lower than 7.5**, use the documentation *Installation of SAP Content Server (lower than) 7.5 on UNIX* , which is available at https://support.sap.com/sltoolset > *System Provisioning* > *System Provisioning Scenarios* > *Install a System using Software Provisioning Manager* > *Installation Option of Software Provisioning Manager 1.0* `<Current SP>` > *Installation Guides - Standalone Engines and Clients* > *SAP Content Server*

You can find a complete list of the SAP system products that are supported by Software Provisioning Manager 1.0 attached to SAP Note 1680045.

Starting with release 7.5, Content Server is integrated into the SAP Web Dispatcher instead of the Apache (Unix) or Microsoft IIS (Windows) web servers.

SAP Content Server will be installed typically under its own system ID (SAPSID) and with an instance number that is unique within the system. As a result, SAP Content Server instances will now be better integrated in your SAP system landscape (for example, regarding its integration with SAP MC, SAP Solution Manager). For more information, see SAP Note 2786364 .

If SAP Cache Server is not explicitly mentioned, “SAP Content Server” always refers to both SAP Content Server and SAP Cache Server.

> **i Note**
>
> If you want to install an SAP Content Server or Cache Server **lower** than 7.5 , use the documentation *Installation of SAP Content Server on UNIX 7.4 and Lower* 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 - Standalone Engines and Clients* > *SAP Content Server*

2.1 About Software Provisioning Manager 1.0

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 Software Provisioning Manager 1.0. 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 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” (“installer” for short) in this documentation, but the terms “SAPinst” and “sapinst” are still used in:

- The name of the technical framework of Software Provisioning Manager. For more information about the SAPinst Framework, see SAP Note 2393060.
- Texts and screen elements in 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 Software Provisioning Manager 1.0 as the “installer”. We only use the term “Software Provisioning Manager 1.0” if this is required for technical reasons.

Related Information

Preparing the Installation Archives [page 32]

2.2 Description of SAP Content Server

This section contains sub-sections giving a general description of the SAP Content Server, and a specific description of SAP Content Server for UNIX.

SAP Content Server General Description [page 6]

Description of SAP Content Server for UNIX [page 8]

2.2.1 SAP Content Server General Description

SAP Content Server

The SAP Content Server is the server at the core of SAP’s document storage and management concept. It provides the technical infrastructure for all document-centric applications and business scenarios that do not require a long-term document archiving solution. Because the SAP Content Server is included in every SAP solution, a self-contained content server is always available to SAP customers.

Cache Server

The content server infrastructure also includes the cache server. Like the content server, the cache server stores documents and allows them to be accessed via HTTP. The difference is that the cache server is an interim storage facility located close to the client whose main task is to make access to document content quicker and more efficient. It does this by temporarily storing (‘caching’) requested document content, so that the next time that content is requested by a nearby client; the content can be retrieved from the nearest cache server rather than the content server.

This is most advantageous on very large, dispersed networks, where the client and the content server may be located on different continents. It is also particularly useful if the content is required for fast display, such as in a Web browser. Cache servers also reduce the network load and thus enhance network performance.

Client Applications

SAP applications that use the technical infrastructure of the SAP Content Server include the SAP Business Workplace, ArchiveLink, the Document Management System (DMS), and the SAP Knowledge Warehouse.

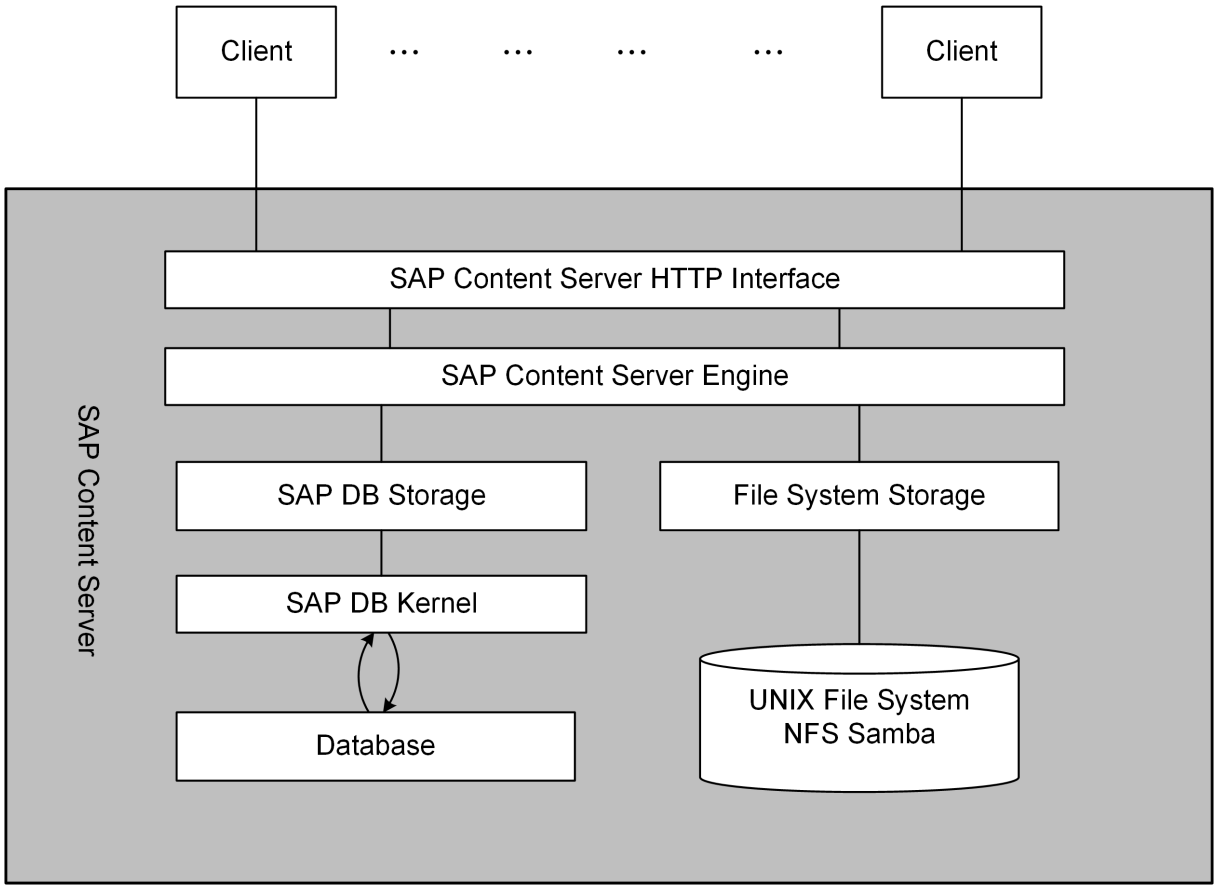
More Information

For further information on Knowledge Provider, the SAP Content Server, and the SAP Cache Server, see the SAP Library at https://help.sap.com/nw ▶ ▶ `<Choose the SAP NetWeaver Release your SAP product is based on>` ▶ *SAP NetWeaver Library: Function-Oriented View* ▶ *Application Server* ▶ *Application Server ABAP* ▶ *Other Services* ▶ *Services for Business Users* ▶ *Knowledge Provider (BC-SRV-KPR)* ▶ *Content Management Service (BC-SRV-KPR)* ▶ *SAP Content Server* ▶

2.2.2 Description of SAP Content Server for UNIX

Architecture

The graphic below shows the architecture of SAP Content Server for UNIX:



Architecture of the SAP Content Server for UNIX

The basis of the SAP Content Server is the content server engine. The engine receives all URLs, checks their validity, and triggers the processing of requests.

The SAP Content Server saves data to the SAP database (SAP DB) or to the file system. However, the Content Server engine does not communicate directly with the storage medium. Instead, it uses an adapter known as the content storage layer, which is implemented either as the SAP DB storage layer or the file system storage layer, depending on the storage medium. The storage layer “hides” the specific access mechanisms of the storage medium behind a consistent, byte stream-oriented interface. This means that one server engine can support several storage media.

Advantages

The new Content Server for UNIX has a number of advantages. The most important of these are:

- Greatly improved resource utilization (RAM, CPU)
  Optimized stream-based design allows the minimum memory footprint.
- Platform-independence
- Highly stable software, virtually maintenance-free – "set up once, run forever"
  The only significant maintenance task is making regular backups.
- Fully compatible with the Windows versions of the content server and cache server
- High flexibility:
  - Documents can be stored either compressed or uncompressed.
  - Both the SAP DB and file system storage are supported.

Constraints

The SAP Content Server (both platform versions) is **not** intended to replace optical storage systems and other storage media for long-term document archiving.

File System

The file system storage layer uses the POSIX (portable operating system interface on UNIX) file system API of the underlying UNIX operating system. The file system repositories take the form of a directory hierarchy in which the documents are stored. The system is designed in such a way that the number of documents in the file system is limited only by the number of available inodes (note that some inodes are needed for the directory structure).

Non-standard file systems (that is, file systems other than the UNIX file system (UFS)), such as SAMBA or a virtual FS, can be used, but they must support the UNIX access rights and be accessible via a valid access path beginning with the root file system. You should also expect substantial performance losses if you use a non-standard file system.

The directory structure of the file system repositories has been designed in such a way as to make efficient, fast, and flexible use of your disks. The main features of file system storage are as follows:

- Flat hierarchy
  The aim of a flat hierarchy is to keep the number of disk accesses required during document retrieval low and consistent (the flatter the hierarchy, the fewer accesses required). A flat hierarchy also increases the potential number of documents that can be stored.
- Efficient usage ratio of the inodes used for structural objects and content objects
  The ratio between inodes used for structural objects and content object does not substantially limit the overall capacity of the repository.
- Portable layout
  File system repositories are accessible from different server hosts and can be transported as backed-up archives. No file system-specific features are utilized, in order to keep the repositories platform-

independent. Therefore, repositories can be mounted onto different computers, and even different operating systems. Also see the next point.

- Self-contained data organization
  No management tables or metadata are required for the following purposes:
  - To ensure that the same repositories are accessible from different storage locations (even concurrently, provided that the NFS locking mechanism works correctly)
  - To ensure that the repositories are robust; that is, that they are not prone to crashing

2.3 Purpose

This section describes the purpose of SAP Content Server.

SAP Content Server for UNIX allows users to run SAP's proven content server technology with the added advantages inherent in UNIX systems: enhanced flexibility, improved resource utilization, platform-independence, and high stability.

The SAP Content Server for UNIX has the following sub-components:

- The SAP Content Server and SAP Cache Server
- The SAP database (SAP MAX DB)

2.4 Constraints

This section lists the constraints valid for SAP Content Server.

SAP Content Server is not an alternative to optical storage systems and other storage media for long-term document archiving.

2.5 Prerequisites

This section describes the prerequisites required for using this guide.

This installation guide assumes that you have a thorough knowledge of the following:

- UNIX administration commands
- Backup tools and procedures o IP network security
- The HTTP protocol
- The general principles of client/server communication
- Documentation

SAP Content Server	○ SAP Content Server documentation on the SAP Help Portal at https://help.sap.com/nw ▶ ▶ `<Choose the SAP NetWeaver Release your SAP product is based on>` ▶ *SAP NetWeaver Library: Function-Oriented View* ▶ *Application Server* ▶ *Application Server ABAP* ▶ *Other Services* ▶ *Services for Business Users* ▶ *Knowledge Provider (BC-SRV-KPR)* ▶ *Content Management Service (BC-SRV-KPR)* ▶ *SAP Content Server* ▶ *SAP Content Server HTTP 4.5 Interface* ▶ ○ For a list of SAP Notes that deal with various aspects of the SAP Content Server, see SAP Notes Relevant for SAP Content Server [page 55].

2.6 SAP Notes for the Installation

You **must** read the following SAP Notes **before** you start the installation. These SAP Notes contain the most recent information on the installation, as well as corrections to the installation documentation.

Make sure that you have the up-to-date version of each SAP Note which you can find at https://support.sap.com/notes.

SAP Notes for the Installation

SAP Note Number	Title	Description
1680045	Release Note for Software Provisioning Manager 1.0	Remarks, annotations, and corrections discovered after publication of the documentation Software Provisioning Manager
2378874	Install SAP Solutions on Linux on IBM Power Systems (little endian)	Information about how to install SAP solutions on Linux on IBM Power Systems (little endian)

2.7 Naming Conventions

In this documentation, the following naming conventions apply:

> **i Note**
>
> From a technical point of view, the SAP Content Server 7.5 or higher is set up like an SAP system with its own SAP system ID (SAPSID), its own operating system users, and its own directory structure.

- “installer” refers to “Software Provisioning Manager 1.0” .
- “SAP system” refers to the “SAP Content Server” as such.
- “instance” refers to the “SAP Content Server instance”.
- If SAP Cache Server is not explicitely mentioned, “SAP Content Server” always refers to both SAP Content Server and SAP Cache Server.

3 Planning

3.1 Installation Prerequisites

Before you start installing SAP Content Server, note the following prerequisites.

General Prerequisites [page 13]

Technical Prerequisites [page 13]

3.1.1 General Prerequisites

SAP Content Server can store documents in SAP MaxDB (separate installation required) or directly on a file system.

You should save the following SAP Content Server sub-components to different hard disks, to ensure maximum performance and data security in the productive system:

- Data (data files of MaxDB or root folder of file system based repositories)
- Log file (MaxDB only)
- Mirrored log file (MaxDB only)

A RAID 5 system with at least 2.5 GB of free hard disk capacity is recommended for storing the data. The hard disks must be set up in NTFS format.

All users, in particular application servers and workstation PCs, must be able to access the Content Server or Cache Server system via HTTP. A workstation PC without direct HTTP access will not be able to execute individual scenarios, or will only have very limited access to individual scenarios.

3.1.2 Technical Prerequisites

Hardware and Software Requirements [page 14]

SAP System [page 21]

This section describes the minimum requirements for the back-end system.

3.1.2.1 Hardware and Software Requirements

> ⚠ Caution
>
> If your hosts do not fully meet the requirements, you might experience problems when working with the SAP system.

Procedure

1. Check the *Product Availability Matrix* at https://support.sap.com/pam for supported operating system releases.
2. If you want to use the SAP Content Server for a **production** system, the values provided by the Prerequisite Checker and the hardware and software requirements checklists are not sufficient. In addition, do the following:
   - You use the hardware sizing information available at https://sap.com/sizing.
   - You contact your hardware vendor, who can analyze the load and calculate suitable hardware sizing depending on:
     - The set of applications to be deployed
     - How intensively the applications are to be used
     - The number of users

3.1.2.1.1 Hardware and Software Requirements Tables

> i Note
>
> The information here is **not** intended to replace the operating system documentation. For more information, see your operating system documentation.

General Installation Information for Your Operating System

Operating System	Information
AIX	Before you start the installation, make sure that you have read SAP Note 1972803. In addition, we also recommend that you check the information available in the *SAP on AIX* space on the SAP Community Network at https://www.sap.com/community/topic/aix.html.
HP-UX	Before you start the installation, make sure that you have read SAP Note 1075118. In addition, we also recommend that you check the information available in the *SAP on HP-UX Best Practices* space on the SAP Community Network at https://www.sap.com/community/topic/hp-ux.html.

Operating System	Information
Linux	Before you start the installation, make sure that you have read the SAP Notes for your Linux distribution listed in the central SAP Note 171356 . In addition, we also recommend that you check the information available in the *SAP on Linux* space on the SAP Community Network at https://www.sap.com/community/topic/linux.html.
Solaris	Before you start the installation, make sure that you have read SAP Note 1669684. In addition, we also recommend that you check the information available in the *SAP on Oracle Solaris* space on the SAP Community Network at https://www.sap.com/community/topic/oracle-solaris.html

Hardware Requirements

Requirement	Values and Activities
Processing units	**For application server instances and database instances**: The number of physical or virtual processing units usable by the operating system image must be equal to or greater than 2. database="sap_ase" os_family="unix_and_linux">SAP HANA Cloud, Adaptive Server Enterprise: **Linux only:** The number of CPUs is specified during SAP ASE service creation. The minimum is 4. Examples of processing units are processor cores or hardware threads (multithreading). In a virtualized environment, ensure that adequate processor resources are available to support the workloads of the running SAP systems.
Optical media drive	ISO 9660 compatible

Hard disk space	• **General Requirements:**
	  ○ 2 GB of temporary disk space for each required physical installation media - or alternatively the downloaded SAP kernel archives - that you have to copy to a local hard disk. For more information, see Preparing the Installation Archives [page 32].
	  ○ 2 GB of temporary disk space for the installation.
	  ○ If an advanced disk array is available (for example, RAID), contact your hardware vendor to make sure that the data security requirements are covered by this technology.

Requirement	Values and Activities
RAM	Only valid for 'Platform': AIX **i Note** **AIX:** Keep in mind that the operating system itself requires about 10% of the available RAM. End of 'Platform': AIX Only valid for 'Platform': HP-UX **HP-UX:** Refer to SAP Note 1112627 for the commands to display the RAM size on HP-UX. End of 'Platform': HP-UX Only valid for 'Platform': Linux **Linux:** Refer to SAP Note 1382721 for the commands to display the RAM size on Linux. End of 'Platform': Linux
AIX: Paging space	
HP-UX: Swap space	
Linux: Swap space	
Oracle Solaris: Swap space	

Software Requirements

Requirement	Values and Activities
AIX: Operating system version	Your operating system platform must be 64-bit. Check the Product Availability Matrix (PAM) at http://support.sap.com/pam for supported operating system versions. Contact your OS vendor for the latest OS patches. Minimal OS requirements for the specific SAP Kernel releases are listed in SAP Note 1780629. You require at least AIX 6.1 TL7 SP10 to be able to run the installer.
HP-UX: Operating system version	Your operating system platform must be 64-bit. Check the Product Availability Matrix (PAM) at http://support.sap.com/pam for supported operating system versions. To check the operating system version on your installation hosts, use the following command: `uname -r` See SAP Note 939891 for information about support time frames of HP-UX.

Requirement	Values and Activities
Linux: Operating system version	Your operating system platform must be 64-bit. Check the Product Availability Matrix (PAM) at http://support.sap.com/pam for supported operating system versions. Contact your OS vendor for the latest OS patches. To check the operating system version on your installation hosts, use the following command: `cat /etc/*-release` Only valid for 'Platform': Linux If you are installing on SUSE Linux Enterprise Server (SLES), see SAP Note 1275776 to prepare SLES for SAP environments. End of 'Platform': Linux
Oracle Solaris: Operating system version	Your operating system platform must be 64-bit. Check the Product Availability Matrix (PAM) at http://support.sap.com/pam for supported operating system versions. To check the operating system version on your installation hosts, use the following command: `/bin/uname -r`
SAP Kernel Releases and Versions	To use regular Software Provisioning Manager (`SWPM10<Version>.SAR`) with SAP kernel 7.49 or higher on RHEL 6 or SLES 11 or Oracle Linux 6, you must install the required `libstdc++` RPM packages. For more information, see SAP Note 2195019.
AIX: Kernel parameters	

Requirement	Values and Activities
HP-UX: Kernel parameters	To run an SAP system, make sure that you check and, if necessary, modify the HP-UX kernel. **⚠ Caution** We recommend that a UNIX system administrator performs all kernel modifications. Proceed as follows: 1. Check SAP Note 172747 for recommendations on current HP-UX kernel parameters. **⚠ Caution** If a kernel value is already larger than the one suggested in the SAP Note, do not **automatically** reduce it to match the SAP requirement. You have to analyze the exact meaning of such a parameter and, if required, to reduce the parameter value. In some cases this might improve the performance of your SAP applications. 2. If necessary, modify the kernel parameters in one of the following ways: ○ Manually, as described in SAP Note 172747. ○ Interactively, using the HP-UX System Administrator Manager (SAM) or System Management Homepage (SMH).
Linux: Kernel parameters	Check SAP Note 2369910 for Linux kernel versions certified by SAP. To check the Linux kernel parameters for your Linux distribution, see one of the following SAP Notes: • SLES 15: SAP Note 2578899 • SLES 12: SAP Note 1984787 • SLES 11: SAP Note 1310037 • RHEL8: SAP Note 2772999 • RHEL7: SAP Note 2002167 • RHEL6: SAP Note 1496410
Oracle Solaris: Kernel parameters	To run an SAP system, you must check and, if necessary, modify the Oracle Solaris kernel parameters or resource controls. • Oracle Solaris 10: SAP Note 724713 • Oracle Solaris 11: SAP Note 1797712
HP-UX: OS patches	To check the minimum required OS patches, see SAP Note 837670.

Requirement	Values and Activities
Oracle Solaris: OS patches	Check the relevant SAP Note for required Oracle Solaris patches: • Sun Solaris 10 on `SPARC`: SAP Note 832871 • Oracle Solaris 11: SAP Note 1797712
AIX: National Language Support (NLS)	Make sure that National Language Support (`NLS`) and corresponding `locales` are installed.

HP-UX: National Language Support (NLS)	Make sure that National Language Support (`NLS`) and corresponding `locales` are installed.
	You can check this as follows:
	• Enter the following commands to check whether National Language Support (NLS) is installed:
	`swlist -v | grep -i nls`
	The output should contain the string `NLS-AUX ...`
	• Enter the following commands to check which locales are available:
	`locale -a`
	The following files must be available: `de_DE.iso88591`, `en_US.iso88591`.

Linux: National Language Support (NLS)	Make sure that National Language Support (`NLS`) and corresponding `locales` are installed. You can check this as follows: • Ensure that the required `locales` such as the following are available: `de_DE, en_US` • Check SAP Note 187864 for information about corrected operating system locales and `SAP blended Code Pages`.
Oracle Solaris: National Language Support (NLS)	Make sure that National Language Support (`NLS`) and corresponding `locales` are installed. Enter the following command to check which locales are available: `locale -a` The following locale must be available: `en_US.ISO8859-1`
System language	For the installation, you must choose English as the operating system language on all hosts that run SAP software.

Other Requirements

Requirement	Values and Activities
Minimum Web Browser	Make sure that you have at least one of the following web browsers installed on the host where you run the installer GUI: • Microsoft Internet Explorer 11 or higher • Microsoft Edge • Mozilla Firefox • Google Chrome Always use the latest version of these web browsers. You need a web browser to be able to run the SL Common GUI, and to display the Evaluation Form and send it to SAP.
AIX: Additional software	Make sure that the following additional file sets are installed: • `bos.adt.*` – Base Application Development • `bos.perf.*` – performance and diagnostics tools • `perfagent.tools` – performance monitoring tools
Host name	To find out **physical** host names, open a command prompt and enter **`hostname`**. For more information about the allowed host name length and characters allowed for SAP system instance hosts, see SAP Note 611361. Only valid for 'Platform': HP-UX For HP-UX, see SAP Note 1503149 in addition. End of 'Platform': HP-UX If you want to use **virtual** host names, see SAP Note 962955.
Login shell	The installer only prompts you for this parameter if you use a login shell other than C shell (csh). For more information, see SAP Note 202227. Only valid for 'Platform': HP-UX For HP-UX, see SAP Note 1038842 in addition. End of 'Platform': HP-UX **SAP Host Agent installation:** • Make sure that `/bin/false` can be used as a login shell. • Only valid for 'Platform': AIX **AIX only:** Add `/bin/false` to the list of valid login shells (attribute `shells`) in `/etc/security/login.cfg`. End of 'Platform': AIX
HP-UX: Mount and file system configuration	For recommendations about block size and mount option configuration, see SAP Note 1077887.

Requirement	Values and Activities
Shared file systems for decentralized systems	If application servers are installed decentralized, a “shared” file system must be installed, for example Network File System (NFS).
AIX: C++ Runtime environment	Minimal C++ runtime requirements for the specific SAP Kernel releases are listed in SAP Note 1780629.
Linux: C compiler	Make sure that the C compiler gcc is installed.

3.1.2.2 SAP System

This section describes the minimum requirements for the back-end system.

- For the content server: release 4.5B or higher of the SAP system (Note that certificates can only be used together with an SAP system release 4.6B or higher.
- For the cache server: release 4.6B or higher (4.6B with Support Package 10) of the SAP system or an SAP system with KW 4.0 or higher (KW 4.0 with Support Package 5)

In order to be able to perform administrative tasks (transaction CSADMIN), you may need a higher version of the SAP system:

- For the content server: at least Release 4.6C or KW 4.0
- For the cache server: at least Release 4.6C

3.2 Basic Installation Parameters

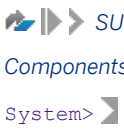
The table below lists the basic input parameters that are prompted by the installer. For all remaining input parameters, use the tool help or the descriptions on the installer screens.

Parameters	Description
SAP System ID <SAPSID>	The SAP System ID <SAPSID> is the technical identifier for your SAP Content Server and SAP Cache Server. You can install SAP Content Server and SAP Cache Server with the same <SAPSID>, but with different instance numbers. ⚠ Caution Choose your SAP system ID carefully. You **cannot** change the SAP system ID after the installation. Make sure that your SAP system 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.
Instance Number for the SAP Content Server	**Instance Number:** Technical identifier for internal processes. Consists of a two-digit number from 00 to 97. The instance number must be unique on a host. That is, if more than one SAP instance is running on the same host, these instances must be assigned different numbers. Only valid for 'Platform': HP-UX ⚠ Caution Do not use 75 for the instance number of the SAP Content Server because this number is already used by the operating system. For more information, see SAP Note 29972. End of 'Platform': HP-UX

Parameters	Description
Virtual Host Name	Virtual host name (network name) of the `SAP<SAPSID>` cluster group You can assign a virtual host name for the instance to be installed, by specifying it in the *Host Name* field of the screen. Then this instance is installed with this virtual host name. After the installation has completed, all application servers can use this virtual host name to connect to the instance. The virtual host name is also a global host name. If you do not provide the virtual host name, the instance is installed automatically using its physical host name. You must have already reserved the virtual host name (network name) and its IP address on a DNS server before you run the installer. For more information, see Using Virtual Host Names [page 32]. **i Note** Fully qualified host names, `IPv4`, `IPv6` are not accepted as virtual host names. Alternatively you can assign virtual host names also by starting the installer with the `SAPINST_USE_HOSTNAME` command line parameter. For more information, see Running the Installer [page 38].

Operating System Users and Groups	The installer processes the operating system users as follows:
	
	• If the operating system users do not exist, the installer creates the following users:
	  ○ The SAP system administrator user `<sapsid>adm`
	  ○ Database administrator users
	  The installer sets the master password for these users by default. You can overwrite and change the passwords either by using the parameter mode Custom or by changing them on the parameter summary screen.
	• If the operating system users already exist, the installer prompts you for the existing password, except if the password of these users is the same as the master password.
	• Make sure that the user ID and group ID of these operating system users are unique and the same on each relevant application server instance host.
	
	During the *Define Parameters* phase of the installer you can specify that the `sapinst` group is to be removed from the group set of the operating system users **after** the execution of the installer has completed.
	
	The `sapinst_instdir` directory belongs to a group named `sapinst`. If this group is not available, it is created automatically as a local group. For security reasons, SAP recommends removing the `sapinst` group from the operating system user groups after the execution of the installer has completed.
	
	For more information about the `sapinst` group, see Creating Operating System Users and Groups [page 26].
	
	For more information about the `sapinst_instdir` directory, see Useful Information about the Installer [page 42].

Parameters	Description
SAP Content Server Configuration	• *Maximum Number of Incoming Concurrent Connections* You can specify a maximum of incoming concurrent connections. Standard configurations are available for: ○ 500 connections: Test configuration, suitable for few concurrent requests ○ 2000 connections: Configuration for small or medium-sized production systems ○ 32000 connections: Configuration for large production systems and load tests The configurations differ in the number of possible parallel connections and resource consumption, such as memory, sockets, and threads. • *HTTP Script* This is the SAP Content Server's or the SAP Cache Server's script name. For SAP Content Server, the default script name is `/sapcs`. For SAP Cache Server, the default script name is `/sapscs`. When migrating an existing SAP Content Server, make sure that you use the same HTTP Script as specified in OAC0. You can also adjust OAC0 to use the same HTTP Script as specified here. • HTTP/HTTPS Ports: ○ *HTTPS Port* The HTTPS port of the SAP Content Server is an entry point to the SAP system. The default is `1091`. ○ *HTTP Port* Optionally you can change the HTTP port number if the port number assigned by default does not suit your needs. The HTTP port of the SAP Content Server is an entry point to the SAP system. The default is `1090`. You can either accept a default value for the HTTP port number or configure the port number as required. **→ Recommendation** For the SAP Content Server, we recommend using HTTP port 1090 and HTTPS port 1091. For the SAP Cache server, we recommend using HTTP port 1095 and HTTPS port 1096. • *Enable AdminSecurity* If you want to enable `AdminSecurity`, provide the *AdminSecurity Group*.

Parameters	Description
SAP Host Agent Upgrade (Optional)	If there already exists an SAP Host Agent on the installation host, the installer asks you if you want to upgrade it to a newer patch level version. If you want the existing version to be upgraded, you must provide the new target version of the `SAPHOSTAGENT<Version>.SAR` archive. To download this archive, go to https://launchpad.support.sap.com/#/softwarecenter  *SUPPORT PACKAGES & PATCHES* > *By Category* > *SAP Technology Components* > *SAP HOST AGENT* > *SAP HOST AGENT 7.21* > `<Operating System>`

4 Preparation

This section describes in detail the steps you need to take before installing your SAP Content Server.

4.1 Creating Operating System Users and Groups

During the installation, the installer checks all required accounts (users, groups) and services on the local machine. The installer 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.

If you do not want the installer 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).

For distributed installations, unless you are using global accounts or NIS, you must create the target users automatically using the installer or manually on the operating system, before starting the installation :

> ⚠ 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.

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

> → Recommendation
>
> For a distributed or a high-availability system, we recommend that you distribute account information (operating system users and groups) over the network, for example by using Network Information Service (NIS).

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 installer and choose *Generic Installation Options* > `<Database>` > *Preparation* > *Operating System Users and Groups* .
  For more information, see Running the Installer [page 38].
- 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, Linux, Oracle Solaris: Make sure that you have set the limits for operating system users root, `<sapsid>`adm, and your database-specific operating system users .

  > ⚠ 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.
- 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 `adm` is not critical for recursive changes on permissions.
  When operating system users are created by the installer, 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 `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

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 installer 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.

Users and Their Primary Groups

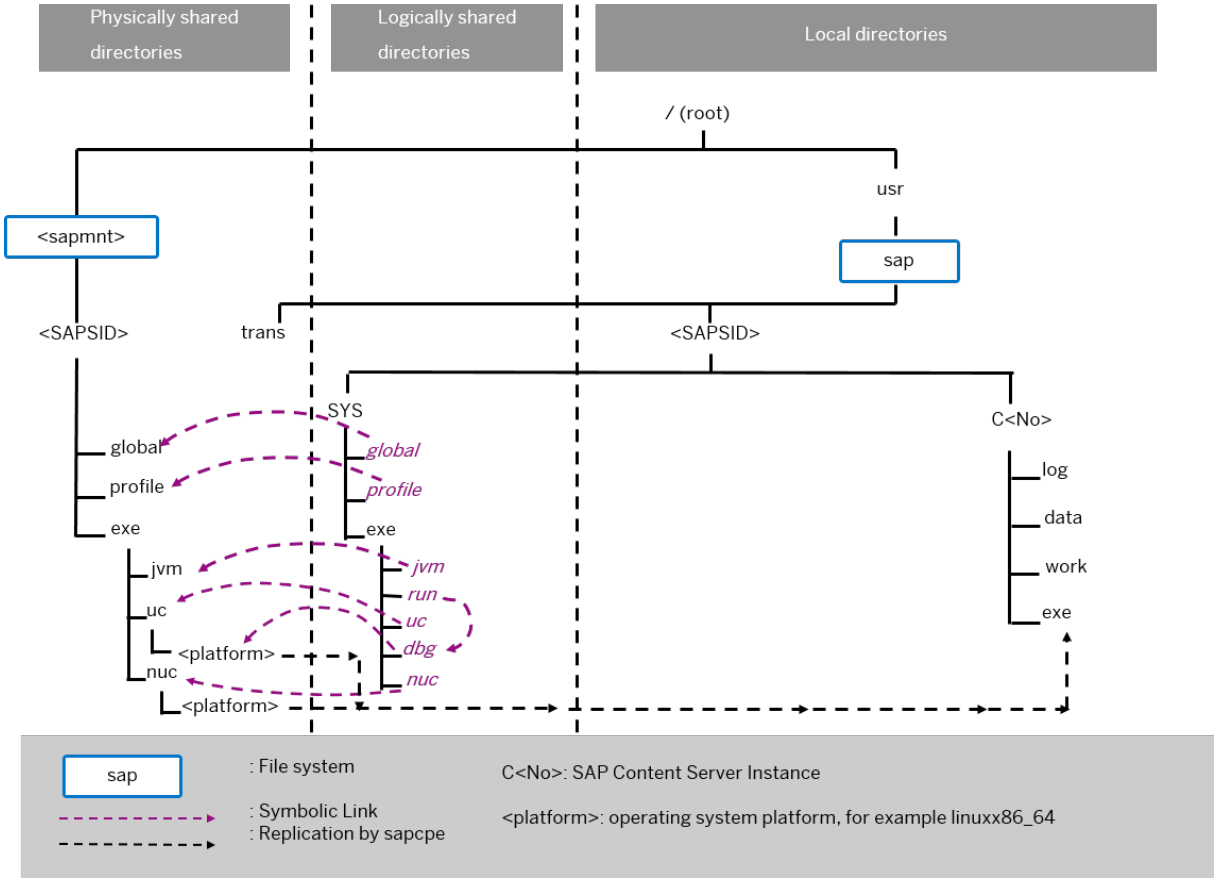
User	Primary Group	Additional Groups	Comment
root	No primary group is assigned by the installer.	sapinst	Superuser of the UNIX Operating system
<sapsid>adm	sapsys	sapinst	SAP system administrator

Groups and Members

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

4.2 SAP Directories

The installer automatically creates the directories listed in the following figures and tables. Before running the installation, you have to set up the required file systems manually. In addition, you have to make sure that the required disk space for the directories to be installed is available on the relevant hard disks. The figure below assumes that you have set up one file system for the SAP system mount directory <sapmnt> and one file system for the /usr/sap directory. However, you have to decide for which directories you want to set up separate file systems. If you do not set up any file system on your installation host, the installer creates all directories in the root directory /. The installer prompts you only for the <sapmnt> directory during the installation.



SAP Directories of an SAP Content Server Instance

The directory of the SAP Content Server instance is `C<Instance_Number>`, for example `C00`.

SAP Directories in Detail

> **i Note**
>
> The listed file system sizes are initial SAP requirements.
>
> Depending on your operating system, you might also have to add space for administrative purposes.

File System Name	Description	Space Required
/<sapmnt>/<SAPSID>	The default name for the SAP system mount directory is sapmnt. • exe Contains executable kernel programs • global Contains log files • profile Contains the start and operations profiles of the SAP Content Server instance	500 MB
/usr/sap/<SAPSID>	This directory contains the following subdirectories: • SYS **i Note** The subdirectories of /usr/sap/<SAPSID>/SYS have symbolic links to the corresponding subdirectories of /<sapmnt>/<SAPSID>, as shown in the figure above. • <INSTANCE> The instance name (instance ID) of the SAP Content Server instance is C<Instance_Number>, for example C00. There are subdirectories of /usr/sap/<SAPSID>/SYS with symbolic links to subdirectories of /<sapmnt>/<SAPSID>:	500 MB
/usr/sap/trans	This directory contains SAP software for the transport of objects between SAP systems .	This value heavily depends on the use of your SAP system. For the installation, it is sufficient to use 200 MB. You can enlarge the file system afterwards if required.

4.3 Using Virtual Host Names

You can use one or more virtual `TCP/IP` host names for SAP servers within an SAP server landscape to hide their physical network identities from each other. This can be useful when quickly moving SAP servers or complete server landscapes to alternative hardware since you do not need to reinstall or reconfigure.

Prerequisites

Make sure that the virtual host name can be correctly resolved in your Domain Name System (DNS) setup.

Context

Procedure

4.4 Preparing the Installation Archives

This section describes how to prepare the installation media.

Installation archives are available as follows:

Installation Archive	Description
`SWPM10SP<Support_Package_Number>_<Version_Number>.SAR`	The Software Provisioning Manager 1.0 archive containing the installer You always have to download the latest version of the Software Provisioning Manager 1.0 archive. You must extract this archive to be able to run the installer. For more information, see Downloading and Extracting the Software Provisioning Manager 1.0 Archive [page 33].

Installation Archive	Description
SAPCS<Release>.SAR	Contains the installation packages for the SAP Content Server and the Cache Server You can download it from https://launchpad.support.sap.com/#/softwarecenter > *SUPPORT PACKAGES & PATCHES* > *By Category* > *SAP TECHNOLOGY COMPONENTS* > *SAP CONTENT SERVER* > *SAP CONTENT SERVER 7.5*<Latest Version>
SAPHOSTAGENT<Release>_<Version>.SAR	Contains the installation packages for the SAP Host Agent You can download it from https://launchpad.support.sap.com/#/softwarecenter > *SUPPORT PACKAGES & PATCHES* > *By Category* > *SAP TECHNOLOGY COMPONENTS* > *SAP HOST AGENT* > *SAP HOST AGENT 7.22* > <Latest Version>

> **i** Note
>
> The signature of **installation media** is checked **automatically** by the installer during the *Define Parameters* phase while the *Media Browser* screens are processed (see also Running the Installer [page 38]). The installer only accepts media whose signature has been checked. For more information, see SAP Note 2393060.

4.4.1 Downloading and Extracting the Software Provisioning Manager 1.0 Archive

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

Prerequisites

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

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

Proceed as follows to get the latest version of SAPCAR:

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

For more information about SAPCAR, see SAP Note 212876.

Procedure

1. Download the latest version of the Software Provisioning Manager 1.0 archive SWPM10SP<Support_Package_Number>_<Version_Number>.SAR from:

   https://support.sap.com/sltoolset > *System Provisioning* > *Download Software Provisioning Manager*

2. Unpack the Software Provisioning Manager archive to a local directory using the following command:

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

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

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

5 Installation

5.1 Prerequisites for Running the Installer

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

- For the SL Common GUI, make sure that the following web browser requirements are met:
  - You have one of the following supported browsers on the device where you want to run the SL Common GUI:
    - Google Chrome (recommended)
    - Mozilla Firefox
    - Microsoft Edge
    - Microsoft Internet Explorer 11 or higher.

    Always use the latest version of these web browsers.
  - If you copy the SL Common GUI URL manually in the browser window, make sure that you open a new Web browser window in private browsing mode (Internet Explorer), incognito mode (Chrome) or private browsing mode (Firefox). This is to prevent Web browser plugins and settings from interfering with the SL Common GUI.

  > ⚠ Caution
  >
  > The installer uses a self-signed certificate, which is used temporarily only while the installer is running. This certificate is not trusted by the browser unless it is imported manually by the user running the installer. This behavior is intentionally designed in this way because - unlike ordinary public web servers - the installer has different usage patterns. You must configure your browser do trust the self-issued certificate of the installer after carefully performing the “thumbprint” verification described in Running the Installer [page 38] . For more information about adding trusted certificates, see the documentation of your browser.

  For more information about the SL Common GUI, see Useful Information about the Installer [page 42].

- If you want to enable Internet Protocol Version 6 (IPv6), make sure that you set **`SAP_IPv6_ACTIVE=1`** in the environment of the user with `root` authorization which you use to start the installer. While running the installer, this setting is then also added to the environment of the `<sapsid>adm` user.

  > ℹ Note
  >
  > By applying this setting the SAP system administrator is responsible for configuring the IP version on each host of the system landscape, before installing any additional instance to it.

- The installer uses shell scripts to obtain the environment for user `adm`.
  - If user `adm` does not yet exist, a working `/bin/csh` must be available on the host where you run the installer. For more information about recommended login shells, see SAP Note 202227.
  - If already exists and uses `csh`, before you start the installer, execute the following command as user to make sure that the `csh` scripts are up-to-date, depending on your UNIX OS platform: **`/bin/csh -c "source /home/adm/.cshrc;env"`** or **`/bin/csh -c "source /home/adm/.login;env"`**

- Make sure that your operating system does not delete the contents of the temporary directory `/tmp` or the contents of the directories to which the variables `TEMP`, `TMP`, or `TMPDIR` point, for example by using a `crontab` entry.
  Make sure that the temporary directory has the permissions `755`.
- Make sure that you have at least 300 MB of free space in the installation directory for each installation option. In addition, you need 300 MB free space for the installer executables. If you cannot provide 300 MB free space in the temporary directory, you can set one of the environment variables `TEMP`, `TMP`, or `TMPDIR` to another directory with 300 MB free space for the installer executables.
  You can set values for the `TEMP`, `TMP`, or `TMPDIR` environment variable to an alternative installation directory as described in section Useful Information About the Installer [page 42].
- Make sure that `umask` is set to **`022`** for the user with `root` permissions that you want to use for running the installer.
  As the user with `root` permissions that you want to use for running the installer, enter the following command: **`umask 022`**
- Only valid for 'Platform': AIX
  AIX: Make sure that you have set the limits for operating system users as described in SAP Note 323816  .
  End of 'Platform': AIX
- Only valid for 'Platform': HP-UX, Linux, Oracle Solaris
  HP-UX, Linux, Oracle-Solaris: Make sure that you have set the limits for operating system users root, `<sapsid>`adm, and your database-specific operating system users (see also sections *Creating Operating System Users and Groups* and *Running the Installer* in the installation guide).

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

  - Using `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

Output	Properties
memoryuse	unlimited

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

  Example

  The following table lists example output taken from SUSE Linux Enterprise Server 11 (x86_64).

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

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

- Make sure that you have defined the most important SAP system parameters as described in Basic Installation Parameters [page 22] **before** you start the installation.
- Make sure that the following ports are not used by other processes:
  - Port 4237 is used by default as HTTPS port for communication between the installer and the SL Common GUI.
    If this port cannot be used, you can assign a free port number by executing `sapinst` with the following command line parameter:
    `SAPINST_HTTPS_PORT=<Free Port Number>`
  - Port 4239 is used by default for displaying the feedback evaluation form at the end of the installer processing.
    The filled-out evaluation form is then sent to SAP using HTTPS.
    If this port cannot be used, you can assign a free port number by executing `sapinst` with the following command line parameter:
    `SAPINST_HTTP_PORT=<Free Port Number>`

5.2 Running the Installer

This section describes how to run the installer.

Prerequisites

For more information, see Prerequisites for Running the Installer [page 35].

Context

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

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

For more information about the SL Common GUI, see Useful Information About the Installer [page 42].

Procedure

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

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

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

2. Make the installation media available.

   executable from the command line. You must confirm that the user is a trusted one. For more information, see SAP Note

   For more information, see Preparing the Installation Archives [page 32] .

   > → 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

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

End of 'Platform': Oracle Solaris

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

   `<Path_To_Unpack_Directory>/sapinst`

   > **i Note**
   >
   > If you need to assign a virtual host name to the instance to be installed and you do not want to assign it by entering it as a parameter using the installer screens (see Basic Installation Parameters [page 22]), you can alternatively assign it as follows:
   >
   > **`<Path_To_Unpack_Directory>/sapinst SAPINST_USE_HOSTNAME=<Virtual_Host_Name>`**

4. The installer is starting up.

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

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

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

   > **i Note**
   >
   > If the host specified by `<hostname>` cannot be reached due to a special network configuration, proceed as follows:
   >
   > 1. Terminate the installer as described in Useful Information about the Installer [page 42].
   > 2. Restart the installer from the command line with the **`SAPINST_GUI_HOSTNAME=<hostname>`** property.
   >   You can use a fully-qualified host name.

   If you have a supported web browser (see Prerequisites for Running the Installer [page 35]) installed on the host where you run the installer, you can open this URL directly in the shell. Otherwise, open the URL in a supported web browser that runs on another device.

   > **⚠ Caution**
   >
   > After opening the browser URL, make sure that the URL in the browser starts with “https://” to avoid security risks such as SSL stripping .
   >
   > Before you reach the *Welcome* screen, your browser warns you that the certificate of the `sapinst` process on this computer could not be verified.

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

1. Click on the certificate area on the left hand side in the address bar of your browser, and view the certificate.
2. Open the certificate fingerprint or thumbprint, and compare all hexadecimal numbers to the ones displayed in the console output of the installer.
   Proceed as follows to get the certificate fingerprint or thumbprint from the server certificate printed in the installer console:
   1. Go to the `sapinst_exe.xxxxxx.xxxx` directory in the temporary directory to which the installer has extracted itself:
      `<User_Home>/.sapinst/`
   2. In the `sapinst_exe.xxxxxx.xxxx` directory, execute the `sapgenpse` tool with the command line option **`get_my_name -p`**.

   As a result, you get the server fingerprint or thumbprint from the server certificate.
3. Accept the warning to inform your browser that it can trust this site, even if the certificate could not be verified.

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

5. On the *Welcome* screen, choose the required option:

   To install SAP Content Server and Cache Server, choose *Generic Options* > *SAP Content Server* > *Content Server and SAP Cache Server (7.5 and Higher)*.

   If you need to create only a database instance and not the complete content server or cache server installation, choose *Generic Options* > *SAP Content Server* > *SAP MaxDB Database Instances*.

   For information about how to install a SAP MaxDB database instance, see the documentation Installation of SAP Systems Based on the Application Server ABAP of SAP NetWeaver 7.0 to 7.03 on UNIX: SAP MaxDB at https://help.sap.com/viewer/swpm10guides > *Installation Option of Software Provisioning Manager 1.0* > *Installation Guides - Application Server Systems - Software Provisioning Manager 1.0* > *Database: SAP MaxDB* > *Product Release: SAP NetWeaver 7.X-based* > `<Operating System Platform>` > `<Technical Stack>`.
6. Choose *Next*.

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

7. Follow the instructions on the installer screens and enter the required parameters.

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

> ⚠ Caution
>
> The signature of installation media and installation archives is checked **automatically** during the *Define Parameters* phase while processing the *Media Browser* and - if you perform an archive-based installation - the *Software Package Browser* screens.
>
> Note that this automatic check is only committed once and **not** repeated if you modify artifacts such as SAR archives or files on the media **after** the initial check has been done. This means that - if you modify artefacts later on either during the remaining *Define Parameters* phase or later on during the *Execute Service* phase - the signature is not checked again.
>
> For more information, see SAP Note 2393060.

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

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

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

Only valid for 'Platform': HP-UX

> ⚠ Caution
>
> **HP-UX only:** If you decided to use 02 as the instance number, the instance fails to start during the installation process. For more information about the cause, see Basic Installation Parameters [page 22]. You must manually change the port number for report `RSLGCOLL` to continue with the installation.
>
> Proceed as follows:
>
> 1. Go to directory `/<sapmnt>/<SAPSID>/profile`.
> 2. Edit `DEFAULT.PFL`.
> 3. Set the parameter `rslg/collect_daemon/listen_port` to a free port number.

End of 'Platform': HP-UX

9. If required, delete directories with the name `sapinst_exe.xxxxxx.xxxx` after the installer has finished. Sometimes these directories remain in the temporary directory.
10. If you want to store documents in SAP MaxDB, you can now install a SAP MaxDB Database Instance.
    a. Restart the installer as described above.
    b. On the Welcome screen, choose *Generic Options* > *SAP Content Server* > *SAP MaxDB Database Instances*.
    c. Follow the instructions on the installer screens and enter the required parameters.
11. If you copied the installer software to your hard disk, you can delete these files when the installation has successfully completed.
12. For security reasons, we recommend that you remove the operating system users from the group `sapinst` **after** you have completed the installation.

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

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

    `<User_Home>/.sapinst/`

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

    You find the installer log files in the `sapinst_instdir` directory. For more information, see Useful Information about the Installer [page 42].

5.3 Additional Information about the Installer

The following sections provide additional information about the installer.

Useful Information about the Installer [page 42]
This section contains some useful technical background information about the installer and the installer GUI.

Interrupted Processing of the Installer [page 44]
Here you find information about how to restart the installer if its processing has been interrupted.

Troubleshooting with the Installer [page 48]
This section tells you how to proceed when errors occur while the installer is running.

Using the Step State Editor (SAP Support Experts Only) [page 49]
This section describes how to use the `Step State Editor` available in the installer.

5.3.1 Useful Information about the Installer

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

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

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

The SL Common GUI connects the web browser on a client with the `sapinst` executable - which is part of Software Provisioning Manager - running on the installation host using the standard protocol HTTPS.
For the SL Common GUI the installer provides a pre-generated URL at the bottom of the shell from which you are running the installer . If you have a supported web browser installed on the host where you run the installer, you can start the SL Common GUI directly from this URL. Otherwise, open a web browser supported by the SL Common GUI on any device and run the URL from there.
For more information about supported web browsers see Prerequisites for Running the Installer [page 35].
If you need to run the **SL Common GUI** in **accessibility mode**, apply the standard accessibility functions of your web browser.

- As soon as you have started the `sapinst` executable, the installer creates a `.sapinst` directory underneath the `/home/<User>` directory where it keeps its log files. `<User>` is the user with which you have started the installer.
  After you have reached the *Welcome* screen and selected the relevant installer option for the SAP system or instance to be installed , the installer creates a directory `sapinst_instdir` where it keeps its log files, and which is located directly below the temporary directory. The installer finds the temporary directory by checking the value of the `TEMP`, `TMP`, or `TMPDIR` environment variable. If no value is set for these variables, the installer uses `/tmp` by **default**.
  All log files which have been stored so far in the `.sapinst` folder are moved to the `sapinst_instdir` directory as soon as the latter has been created.
  If you want the `sapinst_instdir` directory to be created in another directory than `/tmp`, set the environment variable `TEMP`, `TMP`, or `TMPDIR` to this directory before you start the installer.

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

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

- The installer extracts itself to the temporary directory. These executables are deleted again after the installer has stopped running.

Directories called `sapinst_exe.xxxxxx.xxxx` sometimes remain in the temporary directory after the installer has finished. You can safely delete them.
The temporary directory also contains the log file `dev_selfex.out` from the self-extraction process of the installer, which might be useful if an error occurs.

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

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

> i Note
>
> If you need to terminate the installer, press Ctrl + C.

5.3.2 Interrupted Processing of the Installer

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

Context

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

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

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

The following table describes the options in the dialog box:

Option	Definition
Retry	The installer retries the installation from the point of failure without repeating any of the previous steps. This is possible because the installer 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 installer displays the same dialog box again.
Stop	The installer stops the installation, closing the dialog box, the installer GUI, and the GUI server. The installer records its progress in the `keydb.xml` file. Therefore, you can continue with the installer from the point of failure without repeating any of the previous steps. See the procedure below.
Continue	The installer continues the installation from the current point.
View Log	Access installation log files.

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

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

Procedure

1. Log on to the installation host as a user with the required permissions as described in Running the Installer [page 38] .
2. Make sure that the installation media are still available.

   For more information, see Preparing the Installation Archives [page 32] .

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

Only valid for 'Platform': Oracle Solaris

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

End of 'Platform': Oracle Solaris

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

   For more information, see Preparing the Installation Archives [page 32] .

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

Only valid for 'Platform': Oracle Solaris

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

End of 'Platform': Oracle Solaris

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

   `<Path_To_Unpack_Directory>/sapinst`

5. The installer is restarting.

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

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

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

> **i Note**
>
> If the host specified by `<hostname>` cannot be reached due to a special network configuration, proceed as follows:
>
> 1. Terminate the installer as described in Useful Information about the Installer [page 42].
> 2. Restart the installer from the command line with the **`SAPINST_GUI_HOSTNAME=<hostname>`** property.
>   You can use a fully-qualified host name.

If you have a supported web browser (see Prerequisites for Running the Installer [page 35]) installed on the host where you run the installer, you can open this URL directly in the shell. Otherwise, open the URL in a supported web browser that runs on another device.

> ⚠ Caution
>
> After opening the browser URL, make sure that the URL in the browser starts with “https://” to avoid security risks such as SSL stripping .
>
> Before you reach the *Welcome* screen, your browser warns you that the certificate of the `sapinst` process on this computer could not be verified.
>
> Proceed as follows to avoid security risks such as a man-in-the-middle attack:
>
> 1. Click on the certificate area on the left hand side in the address bar of your browser, and view the certificate.
> 2. Open the certificate fingerprint or thumbprint, and compare all hexadecimal numbers to the ones displayed in the console output of the installer.
>   Proceed as follows to get the certificate fingerprint or thumbprint from the server certificate printed in the installer console:
>   1. Go to the `sapinst_exe.xxxxxx.xxxx` directory in the temporary directory to which the installer has extracted itself:
>   `<User_Home>/.sapinst/`
>   2. In the `sapinst_exe.xxxxxx.xxxx` directory, execute the `sapgenpse` tool with the command line option **`get_my_name -p`**.
>
>   As a result, you get the server fingerprint or thumbprint from the server certificate.
> 3. Accept the warning to inform your browser that it can trust this site, even if the certificate could not be verified.

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

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 installer does not continue the interrupted installation option. Instead, it moves the content of the old installer directory and all installer-specific files to a backup directory. Afterwards, you can no longer continue the old option.
	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 installation before you stopped it (such as creating directories or users) are not revoked.
	Caution
	The installer moves all the files and folders to a new log directory, even if these files and folders are owned by other users. If there are any processes currently running on these files and folders, they might no longer function properly.

Continue with the existing one	The installer continues the interrupted installation from the point of failure.

5.3.3 Troubleshooting with the Installer

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

Context

If an error occurs, the installer:

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

Procedure

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

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

    > **i Note**
    >
    > The *LOG FILES* tab is only available if you have selected on the *Welcome* screen the relevant installer option for the SAP product to be installed .
    >
    > If you need to access the log files before you have done this selection, you can find them in the `.sapinst` directory underneath the `/home/<User>` directory, where `<User>` is the user that you used to start the installer.
    >
    > For more information, see Useful Information about the Installer [page 42].

  - To check the log and trace files of the installer GUI for errors, go to the directory `<User_Home>/.sapinst/`
  - Then continue by choosing *Retry*.
- If required, abort the installer by choosing *Cancel* in the tool menu and restart the installer. For more information, see Interrupted Processing of the Installer [page 44].

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.

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

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

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

Prerequisites

- SAP Support requests you to use the `Step State Editor`.
- Make sure that the host where you run the installer meets the requirements listed in Prerequisites for Running the Installer [page 35].

Procedure

1. Start the installer from the command line as described in Running the Installer [page 38] with the additional command line parameter **`SAPINST_SET_STEPSTATE=true`**

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

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

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

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

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

6 Post-Installation

6.1 Post-Installation Steps

After the installer has completed successfully, there are a few more things you have to do before you can use your newly-installed SAP Content Server.

Procedure

1. Set up repositories.
2. Make the repositories known to your SAP system.
3. Issue certificates, if necessary.
4. Change the password for the database users.

   You do steps 1 – 3 in transaction CSADMIN in your SAP system. For detailed information on CSADMIN and the tasks listed above, go to https://help.sap.com/nw ▶ ▶ `<Choose the SAP NetWeaver Release your SAP product is based on>` ▶ *SAP NetWeaver Library: Function-Oriented View* ▶ *Application Server* ▶ *Application Server ABAP* ▶ *Other Services* ▶ *Services for Business Users* ▶ *Knowledge Provider (BC-SRV-KPR)* ▶ *Content Management Service (BC-SRV-KPR)* ▶ *SAP Content Server* ▶ and see the following documentation:

   - Section *Content Server and Cache Server Administration*
     See also SAP Note 329473 for a description of the Content Server and Cache Server configuration file.
   - Section ▶ *Special Measures* ▶ *Changing the Password for Database Access* ▶ describes clearly how to change the password for the database user SAPR3. However, you should also read SAP Note 212394 that lists all the administrative database users and describes an alternative method of changing passwords. If you change the password for the user SAPR3 in the database instance, you must run the report RSCMSPWS. This report asks for the user/ password combination that the content server should use to access the repositories. After you have entered a new combination, RSCMSPWS encrypts the password and sends the user/password combination to the content server. If you forget to change the password with RSCMSPWS all connection attempts from the content server to the database will fail. The composite SAP note for the SAP Content Server for UNIX contains the link to the appropriate SAP Notes that describe the report RSCMSPWS.
5. On a more general level, you should also consult the complete operating manual for SAP Content Server at https://help.sap.com/nw ▶ ▶ `<Choose the SAP NetWeaver Release your SAP product is based on>` ▶ *SAP NetWeaver Library: Function-Oriented View* ▶ *Application Server* ▶ *Application Server*

ABAP ▸ *Other Services* ▸ *Services for Business Users* ▸ *Knowledge Provider (BC-SRV-KPR)* ▸ *Content Management Service (BC-SRV-KPR)* ▸ *SAP Content Server* to learn how to prepare backups, observe and monitor the server, and relocate repositories, among other things. The sections *Content Server and Cache Server Administration*, *Content Server and Cache Server Monitoring*, and the *SAP Content Server Security Guide* are of particular relevance here.

6.2 Installation Check

This section describes how you can perform an installation check

Context

After you have created your repositories (see Post-Installation [page 51]), you might want to run report RSCMST to check that your repositories can be accessed from the SAP system.

6.3 System Configuration

Before you store data on SAP Content Server and start using the system productively, you have to make the system settings described in this section. You can make these settings directly in the SAP System.

Prerequisites

You have to fulfill the technical prerequisites described in SAP System [page 21].

Overview

Make the system settings described in the following sections:

- Content Server Settings [page 53]
- Cache Server Settings [page 54]

The system settings are mainly Customizing settings.

You make the Customizing settings in the SAP System in the Implementation Guide (IMG). The individual Customizing activities are described in the SAP reference IMG under *Application Server* ▸ *Basis Services* ▸ *Knowledge Provider*. In the IMG, simply choose *Execute* to go to the transaction in question. For online help,

choose Documentation. Also, for detailed documentation on SAP Content Server, see the SAP Library at https://help.sap.com/nw ▶ ▶ <Choose the SAP NetWeaver Release your SAP product is based on> ▶ *Application Server* ▶ *Basis Services* ▶ *Knowledge Provider* ▶ *Content Management Service* ▶ and its sub-sections. As the settings are described in detail in the SAP Library, they are only mentioned briefly here.

6.3.1 Content Server Settings

Once you have installed your new Content Server, you need to create content repositories where you can store your content.

Procedure

- **Testing the Connection to the Content Server**
  a. Open a Web browser on a host that is connected to your local network.
  b. Navigate to the following URL:

     http://<hostname>:<port>/sapcs?serverInfo

     > **i** Note
     >
     > Note that the URL is case-sensitive.

     The information on the Content Server that is the result of the test is then displayed. In this information, the status should be `running`.
- **Creating Content Repositories**
  a. In transaction CSADMIN, create at least one content repository for your Content Server.

     Make sure that you change the pre-set ContentStorageName from SDB to the name of the database instance you set during the installation procedure.
  b. Send a certificate to your repository and activate the certificate.
  c. From the tab page *Detail*, call up transaction OAC0, so that you can make the repository known in the SAP System.

     You can use the Customizing icon (a blue arrow) in change mode to jump from transaction CSADMIN to transaction OAC0. In OAC0, you can simply accept the pre-set entries and save them.

     For more information on administrating the Content Server, see the SAP Library at: https://help.sap.com/nw ▶ ▶ <Choose the SAP NetWeaver Release your SAP product is based on> ▶ *SAP NetWeaver Library: Function-Oriented View* ▶ *Application Server* ▶ *Application Server ABAP* ▶ *Other Services* ▶ *Services for Business Users* ▶ *Knowledge Provider (BC-SRV-KPR)* ▶ *Content Management Service (BC-SRV-KPR)* ▶ *SAP Content Server* ▶ *Content Server and Cache Server Administration* ▶
- **Switching Off Access Control for Content Server Administration**

  AdminSecurity is activated by default.

This means that only members of specified groups (and local administrators) can execute administrative commands. To do this, they have to enter their user name and password.

6.3.2 Cache Server Settings

Context

Procedure

- **Testing the Connection to the Cache Server**
  a. Open a Web browser on a host that is connected to your local network.
  b. Enter the following URL in the address field and choose Return:

     ```
     http://<hostname>:<port>/sapcsc?serverInfo
     ```

     > **i** Note
     >
     > Note that the URL is case-sensitive.

     The information on the Cache Server that is the result of the test is then displayed. In this information, the status should be `running` (`serverStatus="running"`).
- **Making the Cache Known to the SAP System**
  a. In transaction SCMSCA, maintain the entries for your Cache Server.
  b. If you are using distributed cache servers, you need to make additional entries.

  For information on this, see both the installation guide (IMG) at *Application Server* > *Basis Services* > *Knowledge Provider* > *Distribution* and the SAP Library at https://help.sap.com/nw > > `<Choose the SAP NetWeaver Release your SAP product is based on>` > *SAP NetWeaver Library: Function-Oriented View* > *Application Server* > *Application Server ABAP* > *Other Services* > *Services for Business Users* > *Knowledge Provider (BC-SRV-KPR)* > *Content Management Service (BC-SRV-KPR)* > *SAP Content Server* > *Distribution*.

7 Additional Information

7.1 SAP Notes Relevant for SAP Content Server

Number	Content
2786364	SAP Content Server and Cache Server 7.5 (and higher)
0586895	SAP Content Server for UNIX (Composite SAP Note)
0093042	Problems with SAPFTP
0119863	SAP DB: Backup Tools
0164203	Problems with SAPHTTP
0181696	Caching
0212394	Initial Password for DBM, DBA, and Domain User
0216419	Multilevel caching and content server proxies
0315604	Customizing the Content Repositories
0319332	Content Server Backup Strategies
0203721	Content Server: Backup Tools
0350067	Administration Content Server/SAP DB
0351647	Cache Server Administration
0352518	Using the SAP Content Server Cache
0361123	SAP Content Server and Security
0376033	Cache Server Knowledge Warehouse 5.1
0389366	Relocating Documents
0308977	Repositories BIE_QMM, BIE_NET and HME_CONTENT
0392242	Multiple Entries in Application Log

Number	Content
0407520	Information on the Cache Server
329473	Description of Content Server and Cache Server configuration file

7.2 Using Virtual Host Names

You can use one or more virtual `TCP/IP` host names for SAP servers within an SAP server landscape to hide their physical network identities from each other. This can be useful when quickly moving SAP servers or complete server landscapes to alternative hardware since you do not need to reinstall or reconfigure.

Prerequisites

Make sure that the virtual host name can be correctly resolved in your Domain Name System (DNS) setup.

Context

Procedure

7.3 Uninstall

Procedure

1. Start the Installer [page 38].
2. On the Welcome screen, choose *Generic Options* > `<Database>` > *Uninstall* > *Uninstall SAP Systems or Single Instances* > .

3. Follow the instructions in the installer screens.

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