



PUBLIC

SAP HANA Platform 2.0 SPS 03

Document Version: 1.1 – 2018-10-31

SAP HANA Client Installation and Update Guide

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1 SAP HANA Client Installation and Update Guide

This guide describes how to install the SAP HANA database clients (for connecting applications).

2 Introduction

SAP HANA provides client interfaces for connecting applications as part of the SAP HANA client software package. The SAP HANA client can be installed on UNIX, Linux, macOS, and Microsoft Windows operating systems, as well as on an SAP HANA server host during server installation.

2.1 Supported Platforms

The SAP HANA client software can be installed on various platforms.

The following platform types are supported:

- AIX
- HP-UX (IA64)
- Linux (x86, x86_64, Power PC BE and LE, zSeries 64-bit)
- Microsoft Windows (x86, x64)
- Solaris (x64, SPARC)
- macOS

Related Information

[SAP Product Availability Matrix \(PAM\)](#) 

[SAP Note 2499500](#) 

2.2 Software Download

In the SAP Software Downloads, you have access to the installation media and components for SAP HANA.

⚠ Caution

It is essential to keep a copy of all installation media which may be required, for example, for disaster recovery purposes. Installation media which has been superseded is routinely removed from the Software Center and there is no guarantee that all database revisions will be permanently available.

Installation Media and Components for SAP HANA

Installation Media for an SAP HANA SPS

1. Open the [SAP Software Downloads](#).
2. Go to [INSTALLATIONS & UPGRADES](#), if not already chosen.
3. Open [> By Alphabetical Index \(A-Z\)](#).
4. Choose [H](#).
5. Choose [SAP HANA PLATFORM EDITION](#).
6. Go to [DOWNLOADS](#), if not already opened.
7. Choose [SAP HANA PLATFORM EDITION 2.0](#).
8. Open [DOWNLOADS](#), if not already opened.
9. Choose [INSTALLATION](#).
10. Download the items you need.

→ Remember

The items you have downloaded must be available on the host where the SAP HANA system will be installed or already is installed.

Support Packages and Patches for SAP HANA

1. Open the [SAP Software Downloads](#).
2. Choose [SUPPORT PACKAGES & PATCHES](#), if not already chosen.
3. Open [> By Alphabetical Index \(A-Z\)](#).
4. Choose [H](#).
5. Choose [SAP HANA PLATFORM EDITION](#).
6. Choose [DOWNLOADS](#), if not already chosen.
7. Choose [SAP HANA PLATFORM EDITION 2.0](#).
8. Choose [DOWNLOADS](#), if not already chosen.
9. Open the required component and download the items you need.

→ Remember

The items you have downloaded must be available on the host where the SAP HANA system will be installed or is already installed.

Responsibilities

The responsibility for acquiring and installing SAP HANA depends on the chosen deployment model:

- If a customer chooses the **SAP HANA Tailored Datacenter Integration**, then the components of SAP HANA must be installed on validated hardware by a certified administrator or official SAP HANA hardware partner.
- If a customer chooses an **SAP HANA appliance**, then the components of SAP HANA can only be installed by certified hardware partners on validated hardware running a specific operating system. Any other system or content developed with systems of this type is not supported by SAP. For more information, see

the information page for the product version. Support Package Stacks (SPS) can be downloaded and applied to appliances in accordance with agreements with the respective hardware partner.

i Note

The SAP HANA Client is also available separately under the terms of the SAP Developer License Agreement, from the SAP Development Tools public download site. The Developer Agreement licenses the software "as is", without warranty or any other obligations on the part of SAP. Other than what is made available on the SAP Community Website (SCN) by SAP at its sole discretion and by SCN members, SAP does not offer support for software that is the subject of the Developer Agreement.

Related Information

[SAP Software Downloads](#) 

[SAP Developer License Agreement](#)

[SAP Development Tools](#)

3 SAP HANA Client on UNIX, macOS, or Linux

The SAP HANA client can be installed or uninstalled on supported UNIX, macOS, and Linux operating systems.

3.1 Planning an SAP HANA Client Installation on UNIX, macOS, or Linux

Before installing the SAP HANA client on a supported UNIX, macOS, or Linux operating system, review the available supported clients and the default installation paths.

3.1.1 Available Clients on UNIX, macOS, or Linux

When you install the SAP HANA client software package, supported clients are installed and available.

The clients available on UNIX and Linux platforms are as follows:

- SQLDBC
- ODBC
When using unixODBC, install release 2.3.0 or higher (check with command `isql --version`).
- JDBC
- Python (PyDBAPI)
- Go
- Node.js

Related Information

[SAP Note 1577128](#) 

3.1.2 Default Installation Paths for UNIX, macOS, or Linux

The SAP HANA client software is unpacked to a default path during installation, depending on the platform type and user. Change the default value can by using the `path` call option.

i Note

If you do not specify an installation path during installation, then the following default values apply:

Platform	Package Version	Installation Path
Linux x86, 32-bit	32-bit	<code>/usr/sap/hdbclient</code>
Linux x86, 64-bit	64-bit	<code>/usr/sap/hdbclient</code>
Linux x86, 64-bit	32-bit	<code>/usr/sap/hdbclient32</code>
macOS	-	<code>/Applications/sap/hdbclient</code>
Other platforms	-	<code>/usr/sap/hdbclient</code>

When installing the SAP HANA client without administrative rights, the installed SAP HANA client is only available to the user who installed it, and the default installation folder is `<$HOME>/sap/hdbclient`.

Related Information

[Command and Call Option Reference \[page 21\]](#)

3.2 Installing the SAP HANA Client on UNIX, macOS, or Linux

The SAP HANA client can be installed from a graphical user interface or on the command line.

You can perform the install as root user or without administrative rights so that it is only available to the user who installed it.

3.2.1 Install the SAP HANA Client on UNIX, macOS, or Linux

Install the SAP HANA client from a graphical user interface or on the command line.

Prerequisites

If you plan to use the GUI option, `hdbsetup`, then you need a local X11 graphical environment and an X server on the machine where you perform the installation.

Procedure

1. Download and extract the software to an empty directory.
2. Open a shell and go to the directory where you unpacked the software.
3. Call the program `hdbsetup` (GUI installation) or `hdbinst` (command-line installation) by entering one of the following commands:

Option	Description
GUI	<code>./hdbsetup [-a client]</code>
Command line	<code>./hdbinst [-a client] [<option list>]</code>

You can omit the call option `-a client` if you only have one installation kit (one installation variant) on your system.

4. Follow the instructions displayed by the installation tool.
5. For the environment of users that will use the client, including the user `<sid>adm`, add the installation path to the library path and path environment variables. The library path environment variable differs according to the operating system:

Operating System	Library Path Environment Variable
AIX	<code>LIBPATH</code>
HP-UX	<code>SHLIB_PATH</code>
Linux	<code>LD_LIBRARY_PATH</code>
Solaris	<code>LD_LIBRARY_PATH</code>
macOS	<code>DYLIB_LIBRARY_PATH</code>

For information on how to set environment variables, see your operating system documentation.

Results

The client software is installed.

Related Information

[Command and Call Option Reference \[page 21\]](#)

3.2.2 Logging the Installation on UNIX, macOS, or Linux

The SAP HANA client installation is logged by the system.

The following log files are written during installation.

- *.log: can be read using a text editor
- *.msg: XML format for the display in the installation tool with the graphical user interface

The log files are stored in `/var/tmp/hdb_client_<timestamp>`.

3.3 Uninstalling the SAP HANA Client on UNIX, macOS, or Linux

Each installation has its own uninstallation tool. Use the `hdbuninst` program of the software package for which you want to uninstall the client software.

3.3.1 Uninstall on UNIX, macOS, or Linux in Interactive Mode

Each installation has its own uninstallation tool.

Prerequisites

You are logged on to the host where the client software is installed.

Context

Use the `hdbuninst` program of the software package for which you want to uninstall the client software. Interactive mode requires call options to be accepted or changed during installation. Defaults are offered for some call options.

Procedure

1. Open a shell and go to the directory in which the client is installed.
2. Enter the following command:
`install/hdbuninst`
3. Press `y` to finalize the configuration.

Results

The client software is removed from this host.

3.3.2 Uninstall on UNIX, macOS, or Linux in Batch Mode

Each installation has its own uninstallation tool.

Context

Use the `hdbuninst` program of the software package for which you want to uninstall the client software. Batch mode runs the installation without interaction. Required call options must be specified with the command; defaults are accepted for all unspecified call options.

To call the `hdbuninst` program in batch mode, specify the installation path of the client software by using the `-path` option.

If you omit the installation path, then the program does not run in batch mode but instead queries the installation ID.

Procedure

1. Open a shell and go to the directory in which the client is installed.

2. Enter the following command:

```
install/hdbuninst --path <installation path> -b
```

Results

The client software is removed from this host.

4 SAP HANA Client on Microsoft Windows

The SAP HANA client can be installed or uninstalled on supported Microsoft Windows operating systems.

4.1 Planning an SAP HANA Client Installation on Microsoft Windows

Before installing the SAP HANA client on Microsoft Windows, review the available supported clients and the default installation paths.

4.1.1 Available Clients on Microsoft Windows

When you install the SAP HANA client software package, supported clients are installed and available.

The following clients are available on Microsoft Windows platforms:

- SQLDBC
- ODBO
- ODBC
- JDBC
- Microsoft ADO.NET
- Python (PyDBAPI)
- Go (golang)
- Node.js

i Note

To access the SAP HANA database from Microsoft Excel, you can install the 32-bit or 64-bit SAP HANA client for Microsoft Excel. This is a self-extracting archive, which you can install independently of the other Microsoft Windows clients. It uses an ODBC driver. If you are using Microsoft Excel 64-bit, then you also need to install the 64-bit SAP HANA client for Microsoft Windows.

Related Information

[SAP Note 1577128](#) 

4.1.2 Default Installation Paths for Microsoft Windows

The SAP HANA client software is unpacked to a default path during installation, depending on the platform type and user. The default value can be changed by using the `path` call option.

i Note

If you do not specify an installation path during installation, then the following default values apply:

Platform	Package Version	Installation Path
Microsoft Windows x86, 32-bit	32-bit	C:\Program Files\SAP\hdbclient
Microsoft Windows x86, 64-bit	64-bit	C:\Program Files\SAP\hdbclient
Microsoft Windows x86, 64-bit	32-bit	C:\Program Files (x86)\SAP\hdbclient

When installing the SAP HANA client without administrative rights, the installed SAP HANA client is only available to the user who installed it, and the default installation folder is `<%USERPROFILE%>\SAP\hdbclient`.

Related Information

[Command and Call Option Reference \[page 21\]](#)

4.2 Installing the SAP HANA Client on Microsoft Windows

The SAP HANA client can be installed from a graphical user interface or on the command line.

An administrator can perform the installation of the SAP HANA client. If the SAP HANA client is installed by a user without administrative rights, then it is only available to the user who installed it.

4.2.1 Install the SAP HANA Client on Microsoft Windows

Install the SAP HANAClient from a graphical user interface or on the command line.

Procedure

1. Download and extract the software to an empty directory.
2. Open a command prompt and go to the directory where you unpacked the software.
3. Call the program `hdbsetup` (GUI installation) or `hdbinst` (command-line installation) by entering one of the following commands:

Option	Description
GUI	<code>hdbsetup [-a client]</code>
Command line	<code>hdbinst [-a client] [<option-list>]</code>

If you only have one installation kit (one installation variant) on your system, then you can omit the call option `-a client`.

4. Follow the instructions displayed by the installation tool.
5. Add the installation path to the `PATH` environment variable.
For information on setting environment variables, see the documentation for your operating system.
6. To install the SAP HANA client for Microsoft Excel, double-click the self-extracting file `SAP_HANA_client_package_for_MS_Excel.exe` and follow the instructions in the installation manager. If you are using Microsoft Excel 64-bit, then you must also install the 64-bit SAP HANA client for Microsoft Windows.

Results

The client software is installed.

Related Information

[Command and Call Option Reference \[page 21\]](#)

4.2.2 Logging the Installation on Microsoft Windows

The SAP HANA client installation is logged by the system. There are two log files written during installation.

- *.log: can be read using a text editor
- *.msg: XML format for the display in the installation tool with the graphical user interface

The log files are stored in %TEMP%\hdb_client_<time stamp>.

4.3 Uninstall the SAP HANA Client on Microsoft Windows

Each installation has its own uninstallation tool. Use the hdbuninst program of the software package for which you want to uninstall the client software.

Procedure

1. Open a command prompt and go to the directory where you unpacked the software for this installation.
2. Enter the following command:
`hdbuninst`
3. Enter the installation ID assigned to the client software installation and press .

Results

The client software is removed from this host.

i Note

You can also use the standard Microsoft Windows functionality ► [Start](#) ► [Control Panel](#) ► [Add or remove programs](#) ► to remove the client software.

5 Configuring the Client for Client-Side Encryption and LDAP

To use client-side encryption, ensure that your interface meets the following requirements.

SQLDBC	For SQLDBC-based clients, you must use CommonCryptoLib to use client-side encryption. Check the <code>/client</code> folder of the installation package to see if <code>COMMONCRYPTOLIB.TGZ</code> is present. If not, you can download CommonCryptoLib separately. For instructions on how to download CommonCryptoLib, see <i>Download and Install SAP Common Crypto Library</i> in the <i>SAP HANA Client Installation and Update Guide</i> .	
JDBC	JDK Version	If you are using JDK 7, then use update 134 or later. Using JDK 7 versions with an earlier update number results in a key generation error.
	JDK Policy Files	<p>Update the JDK policy files to support unlimited strength encryption. Failure to update the policy files results in a decryption error.</p> <p>Update the policy files as follows:</p> <ul style="list-style-type: none">• For JDK 6, download the files here: http://www.oracle.com/technetwork/java/javase/downloads/jce-6-download-429243.html ➤• For JDK 7, download the files here: http://www.oracle.com/technetwork/java/javase/downloads/jce-7-download-432124.html ➤• For JDK 8, update 150 and earlier, download the files here: http://www.oracle.com/technetwork/java/javase/downloads/jce8-download-2133166.html ➤• For JDK 8, update 151 and later, and JDK 9, edit the file <code>conf/security/java.security</code> and uncomment the line <code>crypto.policy=unlimited</code>.

Related Information

[Download and Install SAP Common Crypto Library \[page 18\]](#)

6 Download and Install SAP Common Crypto Library

Download SAP Common Crypto Library from SAP Software Downloads and install it locally to encrypt communication between your SAP HANA client and the SAP HANA server.

Prerequisites

The SAP Common Crypto Library must be installed on the host where the SAP HANA client will be installed or already is installed.

To install SAP Common Crypto Library, use the SAPCAR utility, which is included in your SAP HANA client installation.

Context

You must use SAP Common Crypto Library if you are using client-side encryption or LDAP authentication.

Procedure

1. Download SAP Common Crypto Library from SAP Software Downloads.
 - a. Navigate to the [SAP ONE Support Launchpad](#).
 - b. Click [Software Downloads](#).
 - c. Click [INSTALLATIONS & UPGRADES](#).
 - d. Open [By Alphabetical Index \(A-Z\) > C](#).
 - e. Click [SAP CRYPTOGRAPHIC SOFTWARE > SAPCRYPTOLIB](#).
 - f. Click [COMMONCRYPTOLIB 8 > DOWNLOADS](#).
 - g. Select your operating system from the dropdown menu, and download the desired .SAR file.
2. Install SAP Common Crypto Library on your local computer.
 - a. Using the SAPCAR utility, navigate to the directory where you downloaded the SAP Common Crypto Library and run the following command to unpack the .SAR file:

```
sapcar -xvf <sar-filename>.SAR
```
 - b. Set the SECUDIR environment variable to the directory where the extracted files are located and ensure that the following criteria are met:
 - On Windows, the directory to which the files were extracted is included in the PATH variable.

- On Unix, the directory to which the files were extracted is included in the LD_LIBRARY_PATH variable.

Results

You have successfully downloaded and installed the SAP Common Crypto Library.

6.1 Use the SAP Common Crypto Library

Use the SAP Common Crypto Library (CommonCryptoLib) for client communication encryption.

Set the <SECUDIR> and the <PATH>/<LD_LIBRARY_PATH> environment variables to the SAP HANA client install directory. Replace the path to the SAP HANA client as necessary in the following table:

Operating system	Method	Command
Linux/UNIX/macOS	bash	<p>Set the environment variables temporarily in a bash shell by running the following commands:</p> <pre>export PATH=/usr/sap/ hdbclient:\${PATH}</pre> <pre>export SECUDIR=/usr/sap/ hdbclient</pre> <pre>export LD_LIBRARY_PATH=/usr/sap/ hdbclient:\${ LD_LIBRARY_PATH}</pre> <p>Refer to the Operating System documentation to set the environment variables for your login user or service.</p>

Operating system	Method	Command
	csh	<p>Set the environment variables temporarily in a csh shell by running the following commands:</p> <pre>setenv PATH=/usr/sap/ hdbclient:\${PATH}</pre> <pre>setenv SECUDIR=/usr/sap/ hdbclient</pre> <pre>setenv LD_LIBRARY_PATH=/usr/sap/ hdbclient:\${ LD_LIBRARY_PATH}</pre>
Windows	Command-prompt	<p>Set the environment variables using the command-line as follows (temporary setting):</p> <pre>set "PATH=C:\Program Files\sap\hdbclient; %PATH%"</pre> <pre>set "SECUDIR=C:\Program Files\sap\hdbclient"</pre> <div> <p>Note</p> <p>To set the environment variables permanently for all users, use the Windows Environment Variables system setting. If you are using client communication encryption, then the <code><SECUDIR></code> environment variable must contain the location of <code>sapcli.pse</code>.</p> </div>

Related Information

[Download and Install SAP Common Crypto Library \[page 18\]](#)

7 Command and Call Option Reference

The SAP HANA installation tool, hdbinst, can be called on the command line in combination with call options.

Commands

Operating System	Syntax
UNIX/Linux/macOS	<pre>./hdbinst [-a client] [<option-list>]</pre> <pre><option list> :: = <option> <option> ...</pre>
Microsoft Windows	<pre>hdbinst [-a client] [<option-list>]</pre> <pre><option-list> :: = <option> <option> ...</pre>

Use the following call options with hdbinst.

archive_dir

Description

Specifies the installation variant - a directory containing the installation kit.

Syntax

In the command line, the following syntax is used:

```
--archive_dir=<dir>
```

or, in short form:

```
-a <dir>
```

Remarks

The default for this parameter is --archive_dir=server. If the server installation kit is not present, default values are (in order): client, studio.

batch

Description

Runs the SAP HANA lifecycle management tool from the command line in batch mode using default values for unspecified parameters. If mandatory values are omitted or if invalid values are specified, the program issues an error message.

Syntax

In the command line, the following syntax is used:

```
--action=[extract_components|install|update] --batch
```

or, in short form:

```
-b
```

check_files

Description

Checks whether components of the installation kit are already installed on this host.

Syntax

In the command line, the following syntax is used:

```
--check_files
```

configfile

Description

Loads a configuration file of call option key-value pairs to be passed to the SAP HANA lifecycle management program.

Syntax

In the command line, the following syntax is used:

```
--action=[extract_components|install|update] --  
configfile=<file path>
```

Remarks

The configuration file makes installation and configuration tasks more efficient and reliable. For more information, see Related Information.

This complement to this call option is the call option `dump_configfile_template`.

dump_configfile_template

Description

Specifies a file path to which a template configuration file is exported. The call options in the template configuration file are set to their default values, and can be edited.

Syntax

In the command line, the following syntax is used:

```
--action=[extract_components|install|update] --  
dump_configfile_template=<file path>
```

Remarks

The configuration file makes installation and configuration tasks more efficient and reliable. For more information, see Related Information.

This complement to this call option is the call option `configfile`.

help

Description

Displays the inline help information.

Syntax

In the command line, the following syntax is used:

```
--action=[extract_components|install|update] --help
```

or, in short form:

```
-h
```

Remarks

A general help output is available for all SAP HANA lifecycle management programs. Task-specific help output is available for some programs. Refer to the task documentation for more details.

hostname

Description

Specifies the host name of the machine.

Syntax

In the command line, the following syntax is used:

```
--action=[install|update] --hostname=<host name>
```

or, in short form:

```
-H <host name>
```

Remarks

Restrictions apply to host names in SAP systems. For more information, see SAP Note 661361.

The default for this parameter is the host name of the current machine.

`ignore`

Description

Ignores failing prerequisite checks. Refer to the inline help output for program-specific checks that can be ignored.

Syntax

In the command line, the following syntax is used:

```
--action=[install|update] --ignore=<check1>[,<check2>]...
```

`list_packages`

Description

Displays available software components and their versions.

Syntax

In the command line, the following syntax is used:

```
--list_packages
```

or, in short form:

```
-l
```

`list_systems`

Description

Displays a list of the installed SAP HANA systems on the current host, including the SAP system ID (SID), instance number, version number, and hosts.

Syntax

In the command line, the following syntax is used:

```
--action=[extract_components|install] --list_systems
```


or, in short form:

```
-L
```

no_debug_packages

Description

Suppresses the installation of debug packages.

Syntax

In the command line, the following syntax is used:

```
--no_debug_packages
```

path

Description

Specifies the installation path of a client or studio installation.

Syntax

In the command line, the following syntax is used:

```
--path=<path>
```

or, in short form:

```
-p <path>
```

Remarks

The default for this parameter is `--path=/usr/sap/hdbclient` or `--path=/usr/sap/hdbstudio`.

This parameter is available in interactive mode.

sapmnt

Description

Specifies the path to the SAP mount directory, which can be used as a shared directory between multiple hosts.

Syntax

In the command line, the following syntax is used:

```
--action=install --sapmnt=<installation path>
```

Remarks

The default for this parameter is `--sapmnt=/hana/shared`.

sid

Description

Specifies a system ID. The SAP system ID (SID) is the identifier for the SAP HANA system.

Syntax

In the command line, the following syntax is used:

```
--action=[install|update] --sid=<SID>
```

or, in short form:

```
-s <SID>
```

version

Description

Displays the version of the SAP HANA lifecycle management tool.

Syntax

In the command line, the following syntax is used:

```
--action=[extract_components|install|update] --version
```

or, in short form:

```
-v
```

Related Information

[Default Installation Paths for UNIX, macOS, or Linux \[page 8\]](#)

[Default Installation Paths for Microsoft Windows \[page 14\]](#)

Important Disclaimer for Features in SAP HANA Platform



For information about the capabilities available for your license and installation scenario, refer to the Feature Scope Description (FSD) for your specific SAP HANA version on the [SAP HANA Platform webpage](#).

Important Disclaimers and Legal Information

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