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SAP HANA Cockpit 2.0 SP 11
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SAP HANA Cockpit Installation and Update Guide

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Content

1 SAP HANA Cockpit Installation and Update Guide

This guide describes how to install and update the SAP HANA cockpit.

Related Information

SAP Note 2380291

2 About the SAP HANA Cockpit

SAP HANA cockpit is the main administration tool for SAP HANA.

The SAP HANA cockpit provides tools for the administration and monitoring of SAP HANA databases (resources), and for development capabilities through the SAP HANA database explorer. You can manage multiple resources, each running version SAP HANA 1.0 SPS 12, or later. Resources running version SAP HANA 2.0 SPS 01 or later run in multi-container mode, but you can also monitor single-container systems running earlier versions of SAP HANA.

> **i** Note
>
> While the cockpit was an integral part of earlier versions of SAP HANA, the new SAP HANA cockpit for SAP HANA 2.0 is installed separately. This provides more flexibility, as it allows you to manage more than one SAP HANA system in a single administration environment. SAP HANA cockpit runs on an SAP HANA Express database, which is included in the installation. The SAP HANA cockpit can also be installed in an existing SAP HANA system in a separate tenant database (shared database).

The SAP HANA cockpit provides aggregate, system and database administration features, for example, database monitoring, user management, and data backup. Administrators can use the SAP HANA cockpit to start and stop services, to monitor the system, to configure system settings, and to manage users and authorizations. Cockpit pages that allow you to manage separately-installed contexts (for example, SAP HANA dynamic tiering) are only available if they are installed.

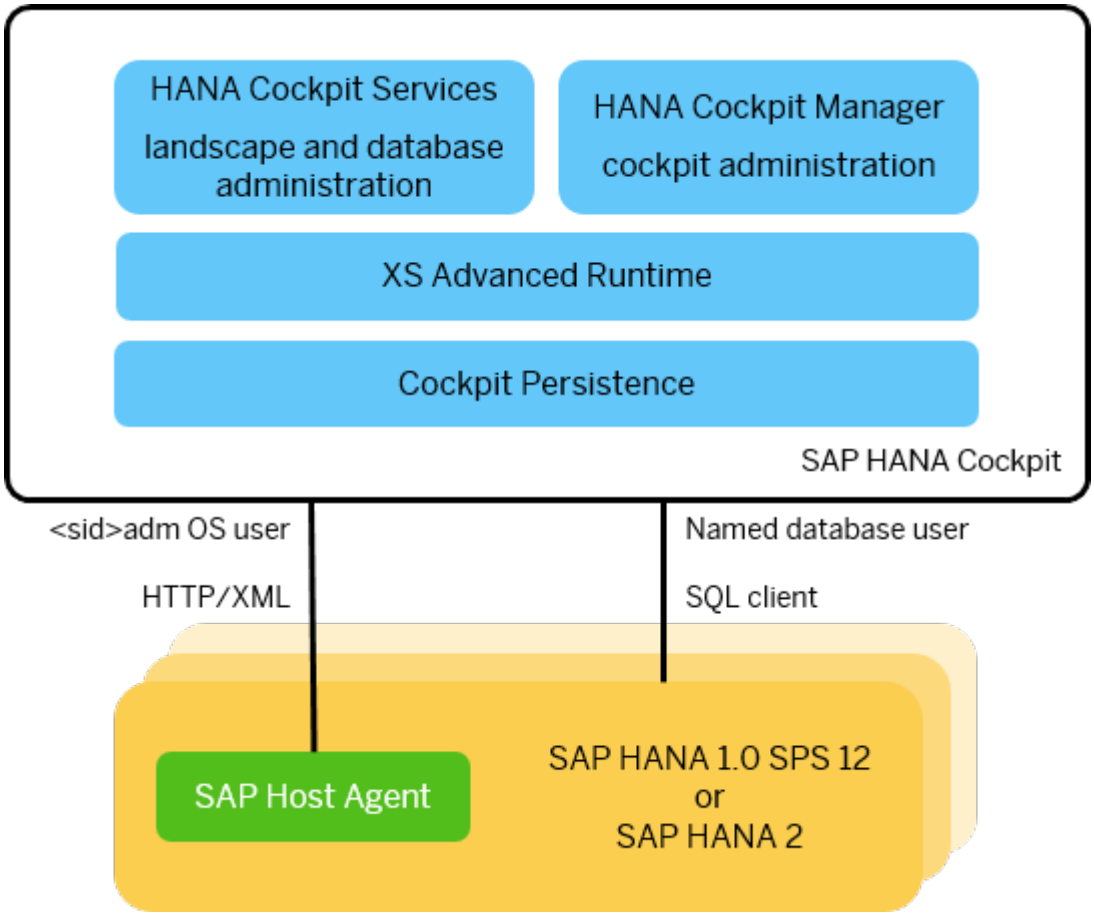
Through the *Cockpit Manager*, you, as the cockpit administrator, need to register resources and create groups of resources that other cockpit users will be able to access with SAP HANA cockpit. A resource is an SAP HANA system, identified by a host and instance number. Suppose that a business unit has set up a new SAP HANA system and wants it to be managed through the cockpit. The first step is to register the SAP HANA system, or resource, in the cockpit.

Initially, the SAP HANA cockpit displays data at a landscape or enterprise level. You can quickly drill down to an overview of an individual resource. Links, data, cards, and different parts of a single tile are drillable, providing access to more detailed information and functions.

Integrated into the cockpit is the SAP HANA database explorer. The database explorer provides the ability to query information about the database using SQL statements, as well as the ability to view information about your database's catalog objects.

The connectivity between SAP HANA cockpit and managed resources includes:

- SAP HANA SQL port (3xx13, 3xx15, ...)
- sapstartsrv (5xx13, 5xx14)
- SDS (3xx26)
- saphostagent (1129)



Related Information

SAP Note 2380291

3 SAP HANA Cockpit Installation and Update Overview

This SAP HANA Cockpit Installation and Update Guide describes how to install or update the SAP HANA cockpit with the SAP HANA database lifecycle manager (HDBLCM).

3.1 SAP HANA Cockpit Hardware and Software Requirements

For SAP HANA cockpit, a number of hardware and software requirements apply.

Supported Hardware Platforms

SAP HANA cockpit is available for:

- Intel-Based Hardware Platforms
- IBM Power Systems

SAP HANA cockpit is not supported for IBM Power systems running Red Hat Enterprise Linux.

Supported Operating Systems

For information about supported operating systems for SAP HANA cockpit, see the *Related Information* in this section.

Hardware Requirements

In production environments, you have the following options to install the SAP HANA cockpit:

- The SAP HANA cockpit can be installed on dedicated hardware. A minimum of 16GB of RAM and 16GB of disk space is required. Additional disk space is required for data generated as the cockpit runs. We recommend that the installation directory is not located in the root file system.
- The SAP HANA cockpit can be installed in an existing SAP HANA system. For sizing guidelines, see SAP Note 2780721 (SAP HANA 2.0 Cockpit Recommended Sizing Guidelines).

> **Example**
>
> Each configuration snapshot consumes about 5 MB of storage. You will therefore need about 1 GB to store 200 snapshots.

> **Note**
>
> The XS advanced runtime environment supplied with the SAP HANA cockpit on dedicated hardware in a separate SAP HANA system cannot be used to deploy XS Advanced applications.

Related Information

SUSE Linux Enterprise Server (SLES)
SAP Note 1944799
SAP Note 1984787
Red Hat Enterprise Linux (RHEL)
SAP Note 2009879
SAP Note 2002167
Supported Hardware Platforms
SAP Note 1943937
SAP Note 2055470
SAP Note 2218464
General Links
SAP Note 52505
SAP Note 2235581
Product Availability Matrix
SAP Note 2780721

3.2 Software Download

In the SAP Software Download Center, you have access to the installation media and components for SAP HANA cockpit. For more information and a link to the SAP Software Download Center, see Related Information.

Prerequisites

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

Context

> **i** Note
>
> It is recommended that you update your system to the latest support package for SAP HANA cockpit. Support packages and patches for SAP HANASAP HANA system.

Procedure

1. Open the *SAP Support Portal Home*.
2. Choose *Download Software*.
3. Choose *INSTALLATIONS & UPGRADES*.
4. Choose *By Alphabetical Index (A-Z)*.
5. Choose *H*.
6. Choose *SAP HANA PLATFORM EDITION*.
7. Choose *DOWNLOADS*.
8. Choose *SAP HANA PLATFORM EDITION 2.0*.
9. Choose *Support Packages and Patches*.
10. Choose *DOWNLOADS*.
11. Choose *SAP HANA COCKPIT 2.0*.
12. Download the installation media.
13. Unpack the installation media using the following command:

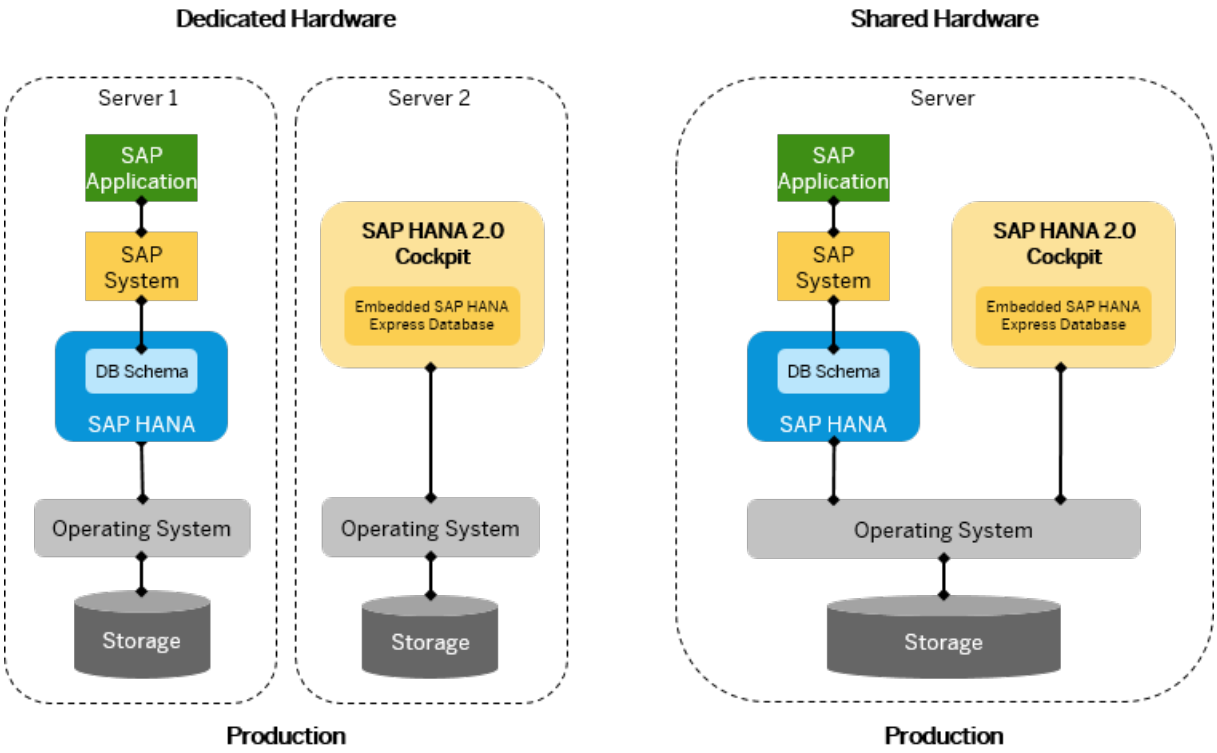
```
SAPCAR -manifest SIGNATURE.SMF -xvf SAPHANACOCKPIT<version number>.SAR
```

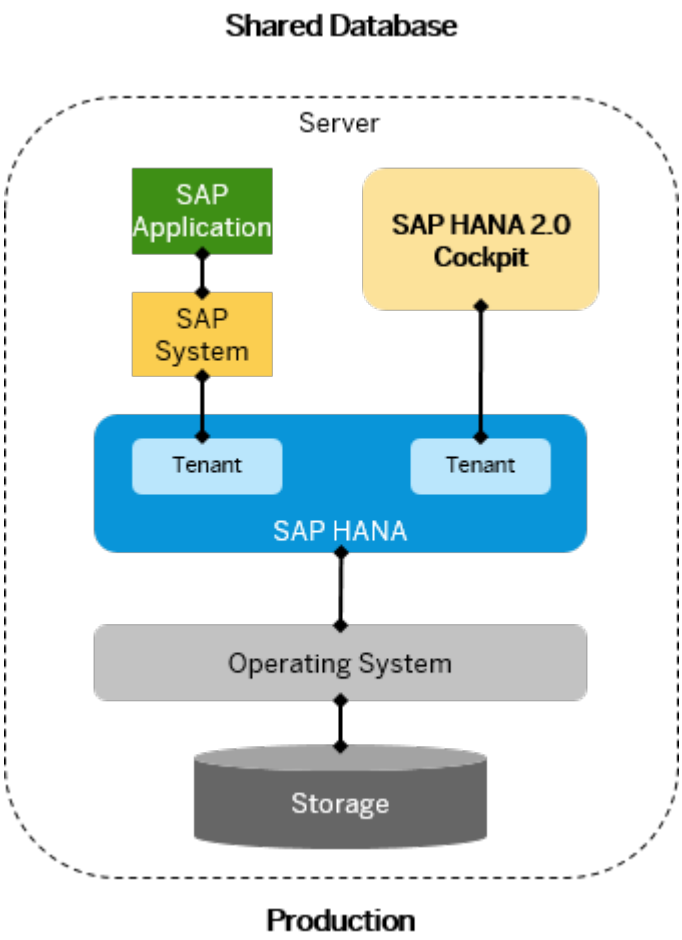
Related Information

SAP Support Portal Home

3.3 SAP HANA Cockpit Deployment Options

SAP HANA cockpit can be deployed on dedicated hardware, on shared hardware, or in an existing SAP HANA system (shared database). All deployment options are approved for production environments, but note that deploying on shared hardware has restrictions.


Dedicated Hardware
Server 1
SAP Application
SAP System
DB Schema
SAP HANA
Operating System
Storage
Server 2
SAP HANA 2.0 Cockpit
Embedded SAP HANA Express Database
Operating System
Storage
Production
Shared Hardware
Server
SAP Application
SAP System
DB Schema
SAP HANA
SAP HANA 2.0 Cockpit
Embedded SAP HANA Express Database
Operating System
Storage
Production


Shared Database
Server
SAP Application
SAP System
SAP HANA 2.0 Cockpit
Tenant
Tenant
SAP HANA
Operating System
Storage
Production

Considerations for Production Environments

SAP HANA Cockpit Considerations for Production Environments

Option	Benefits	Drawbacks
Dedicated Hardware	• Provides maximum performance • Full control of how cockpit is installed	• Requires an additional machine (increases maintenance and cost)
Shared Hardware	• Leverage existing infrastructure	• Contention for computing resources may occur • Need to adjust the global allocation limit of the instances For more information, see *SAP Note 1681092*.
Shared Database	• Leverage existing infrastructure	• SAP HANA system must be properly sized to handle memory requirements for your applications and the cockpit • Requires SAP HANA 2.0 SPS 02 or higher and SAP HANA XS Advanced runtime 1.0.86 or higher

Be sure to implement High Availability (HA) for the cockpit, particularly in a production environment. For information on how to set up HA for the cockpit, please refer to this document: *How To: High Availability for SAP HANA cockpit using SAP HANA system replication*.

Virtualization

The SAP HANA cockpit can be installed in either a dedicated virtual machine, or in a virtual machine that is shared with an SAP HANA system. For best results, a dedicated virtual machine is preferable.

Related Information

SAP Note 1681092

How To: High Availability for SAP HANA cockpit using SAP HANA system replication

4 Installing the SAP HANA Cockpit

The SAP HANA database lifecycle manager (HDBLCM) is used to install the SAP HANA cockpit in a graphical user interface or the command-line interface. The SAP HANA cockpit can be uninstalled using the resident version of the SAP HANA database lifecycle manager (HDBLCM).

Installation Configuration

You can review the existing configuration settings for the SAP HANA cockpit. Installation settings can be found in the `auto_install.cfg` file (standalone installation) or `auto_install_hdb.cfg` file (installation in an existing SAP HANA system) inside the `HDB__LCM_LINUX_X86_64/configurations` or `HDB__LCM_LINUX_PPC64LE/configurations` folder, depending on your hardware platform. The default database server properties can be found inside the `*.ini` files inside the `custom` folder inside the `configurations` folder of the database (`HDB_SERVER_LINUX_X86_64` or `HDB_SERVER_LINUX_PPC64LE`).

Ports

Ports, through which the SAP HANA cockpit and the cockpit manager can be accessed, are assigned automatically by the installer. Once the cockpit installation is successfully completed, information about host and ports is displayed. If this information is no longer available, you can determine the ports through the XS console. For more information, see *Determine Ports for SAP HANA Cockpit and Cockpit Manager*.

You can also assign free ports to SAP HANA cockpit during installation. For more information, see *SAP Note 2389709*.

Batch Mode

You can run the SAP HANA database lifecycle manager (HDBLCM) from the command line in batch mode using default values for unspecified parameters. Every value listed in the `auto_install.cfg` file can be overridden by passing new values in the command line. If mandatory values are omitted or if invalid values are specified, the program issues an error message. For more information on installation parameters, see *Parameter Reference* in the *SAP HANA Server Installation and Update Guide*.

```
./hdblcm.sh --action=install -b
```

Example

Override the default name of the `org_manager_user`:

```
./hdblcm.sh --action=install -b --org_manager_user=XSA_ADMIN
```

Related Information

Install the SAP HANA Cockpit Using the Graphical User Interface [page 13]
Install the SAP HANA Cockpit Using the Command-Line Interface [page 15]
Install the SAP HANA Cockpit in an Existing SAP HANA System Using the Graphical User Interface [page 16]
Install the SAP HANA Cockpit in an Existing SAP HANA System Using the Command-Line Interface [page 18]
Determine Ports for SAP HANA Cockpit and Cockpit Manager [page 22]
SAP Note 2389709

4.1 Install the SAP HANA Cockpit Using the Graphical User Interface

The SAP HANA cockpit can be installed using the SAP HANA database lifecycle manager (HDBLCM) graphical user interface.

Prerequisites

- You are logged in as root user.
- Any user has read and execute permissions for the directory that contains the installation medium.

Context

In standalone cockpit installations, during the installation process, the installer creates a single, fully authorized, administration user, COCKPIT_ADMIN, and associates it with the master password, which you are prompted to enter. Ports, through which the SAP HANA cockpit and the SAP HANA cockpit manager can be accessed, are assigned automatically by the installer. The local host name, ports, and the master password are required to set up the SAP HANA cockpit. Make sure that you pass this information along to the cockpit administrator.

Procedure

1. Change to the directory where you unpacked the SAP HANA cockpit *.SAR archive:

   ```
   cd <installation medium>
   ```

2. Start the SAP HANA database lifecycle manager interactively in the graphical user interface:

   ```
   ./hdblcmgui.sh
   ```

The SAP HANA database lifecycle manager graphical user interface appears.

3. Select *Install New SAP HANA Cockpit System*, then select *Next*.
4. Specify the SAP HANA system properties.

   For a list of all system properties, see *System Properties* in Related Information.
5. After specifying all system properties, review the summary, and select *Install*.

Results

The selected components are installed. A log file is available. The most recent log file is always available under `/var/tmp/hdblcmgui.log`. Additionally, a copy of the log files is archived in the directory `hdb_<SID>_hdblcm_<action>_<date>`.

Next Steps

Configure your firewall to allow access to the host and port of the cockpit-web-app `https://<hostname>:<port>` and `https://<hostname>:3<instance number>32`

After installation, and before other users are able to access the SAP HANA cockpit, there are several steps that you, as a cockpit administrator, have to perform. This includes launching the cockpit manager using the URL created during installation, signing in to the cockpit manager as the COCKPIT_ADMIN user and registering resources. For more details about these and other post-installation steps, see *Set up SAP HANA Cockpit for the First Time* in *SAP HANA Administration with SAP HANA Cockpit*.

Related Information

System Properties [page 20]
Determine Ports for SAP HANA Cockpit and Cockpit Manager [page 22]
SAP Note 2535229
SAP Note 2594513

4.2 Install the SAP HANA Cockpit Using the Command-Line Interface

The SAP HANA cockpit can be installed using the SAP HANA database lifecycle manager (HDBLCM) command-line interface.

Prerequisites

- You are logged in as root user.
- Any user has read and execute permissions for the directory that contains the installation medium.

Context

In standalone cockpit installations, during the installation process, the installer creates a single, fully authorized, administration user, COCKPIT_ADMIN, and associates it with the master password, which you are prompted to enter. Ports, through which the SAP HANA cockpit and the SAP HANA cockpit manager can be accessed, are assigned automatically by the installer. The local host name, ports, and the master password are required to set up the SAP HANA cockpit. Make sure that you pass this information along to the cockpit administrator.

Procedure

1. Change to the directory where you unpacked the SAP HANA cockpit *.SAR archive:

   ```
   cd <installation medium>
   ```

2. Start the SAP HANA database lifecycle manager interactively in the command line:

   ```
   ./hdblcm.sh
   ```

3. Select *Install new SAP HANA Cockpit system*, then select *Enter*.
4. Specify the SAP HANA system properties.
   For a list of all system properties, see *System Properties* in Related Information.
5. After specifying all system properties, review the summary, and select *y*.

Results

The selected components are installed. A log file is available. The most recent log file is always available under `/var/tmp/hdblcm.log`. Additionally, a copy of the log files is archived in the directory `hdb_<SID>_hdblcm_<action>_<date>`.

Next Steps

Configure your firewall to allow access to the host and port of the cockpit-web-app `https://<hostname>:<port>` and `https://<hostname>:3<instance number>32`

After installation, and before other users are able to access the SAP HANA cockpit, there are several steps that you, as a cockpit administrator, have to perform. This includes launching the cockpit manager using the URL created during installation, signing in to the cockpit manager as the COCKPIT_ADMIN user and registering resources. For more details about these and other post-installation steps, see *Set up SAP HANA Cockpit for the First Time* in *SAP HANA Administration with SAP HANA Cockpit*.

Related Information

System Properties [page 20]
Determine Ports for SAP HANA Cockpit and Cockpit Manager [page 22]
SAP Note 2535229
SAP Note 2594513

4.3 Install the SAP HANA Cockpit in an Existing SAP HANA System Using the Graphical User Interface

The SAP HANA cockpit can be installed in an existing SAP HANA system using the SAP HANA database lifecycle manager (HDBLCM) graphical user interface.

Prerequisites

- You are logged in as root or `<sid>adm` user.
- Any user has read and execute permissions for the directory that contains the installation medium.

Context

If the cockpit is installed in an existing SAP HANA system, during the installation process, the installer creates a new tenant database and a separate XS advanced space that is mapped to it. The cockpit XS advanced apps are installed in this space. If you are running the SAP HANA system in high isolation mode, a tenant database must be created manually in advance. A tenant in which cockpit is installed is excluded from the license capacity calculation as long as it is only used for administrative purposes.

Procedure

1. Change to the directory where you unpacked the SAP HANA cockpit *.SAR archive:

   ```
   cd <installation medium>
   ```

2. Start the SAP HANA database lifecycle manager interactively in the graphical user interface:

   ```
   ./hdblcmgui.sh
   ```

   The SAP HANA database lifecycle manager graphical user interface appears.
3. Select *Install on SAP HANA Database* and the system in which you want to install the cockpit, then select *Next*.
4. Select the components you would like to install, then select *Next*.
5. Specify the SAP HANA cockpit system properties.

   For a list of all system properties, see *System Properties* in Related Information.
6. After specifying all system properties, review the summary, and select *Install*.

Results

The selected components are installed. A log file is available. The most recent log file is always available under `/var/tmp/hdblcmgui.log`. Additionally, a copy of the log files is archived in the directory `hdb_<SID>_hdblcm_<action>_<date>`.

Next Steps

Configure your firewall to allow access to the host and port of the cockpit-web-app `https://<hostname>:<port>` and `https://<hostname>:3<instance number>32`

After installation, and before other users are able to access the SAP HANA cockpit, there are several steps that you, as a cockpit administrator, have to perform. This includes launching the cockpit manager using the URL created during installation, signing in to the cockpit manager as the XSA_ADMIN user and registering resources. For more details about these and other post-installation steps, see *Set up SAP HANA Cockpit for the First Time* in *SAP HANA Administration with SAP HANA Cockpit*.

Related Information

System Properties [page 20]
Determine Ports for SAP HANA Cockpit and Cockpit Manager [page 22]
SAP Note 2535229
SAP Note 2594513

4.4 Install the SAP HANA Cockpit in an Existing SAP HANA System Using the Command-Line Interface

The SAP HANA cockpit can be installed in an existing SAP HANA system using the SAP HANA database lifecycle manager (HDBLCM) command-line interface.

Prerequisites

- You are logged in as root or `<sid>adm` user.
- Any user has read and execute permissions for the directory that contains the installation medium.

Context

If the cockpit is installed in an existing SAP HANA system, during the installation process, the installer creates a new tenant database and a separate XS advanced space that is mapped to it. The cockpit XS advanced apps are installed in this space. If you are running the SAP HANA system in high isolation mode, a tenant database must be created manually in advance. A tenant in which cockpit is installed is excluded from the license capacity calculation as long as it is only used for administrative purposes.

Procedure

1. Change to the directory where you unpacked the SAP HANA cockpit *.SAR archive:

   ```
   cd <installation medium>
   ```

2. Start the SAP HANA database lifecycle manager interactively in the command line:

   ```
   ./hdblcm.sh
   ```

3. Select the index for *Install SAP HANA Cockpit on SAP HANA Database version* `<version number>`, then select `Enter`.

4. Select the components you would like to install, then select `Enter`.
5. Specify the SAP HANA cockpit system properties.
   For a list of all system properties, see *System Properties* in Related Information.
6. After specifying all system properties, review the summary, and select *y*.

Results

The selected components are installed. A log file is available. The most recent log file is always available under `/var/tmp/hdblcm.log`. Additionally, a copy of the log files is archived in the directory `hdb_<SID>_hdblcm_<action>_<date>`.

Next Steps

Configure your firewall to allow access to the host and port of the cockpit-web-app `https://<hostname>:<port>` and `https://<hostname>:3<instance number>32`

After installation, and before other users are able to access the SAP HANA cockpit, there are several steps that you, as a cockpit administrator, have to perform. This includes launching the cockpit manager using the URL created during installation, signing in to the cockpit manager as the XSA_ADMIN user and registering resources. For more details about these and other post-installation steps, see *Set up SAP HANA Cockpit for the First Time* in *SAP HANA Administration with SAP HANA Cockpit*.

Related Information

System Properties [page 20]
Determine Ports for SAP HANA Cockpit and Cockpit Manager [page 22]
SAP Note 2535229
SAP Note 2594513

4.5 System Properties

SAP HANA cockpit system properties can be defined during installation. Default values are provided for all properties except for the master password. Some parameters may not apply, depending on your installation scenario.

System Properties

In standalone cockpit installations, during the installation process, the installer creates a single, fully authorized, administration user, COCKPIT_ADMIN, and associates it with the master password, which you are prompted to enter. Ports, through which the SAP HANA cockpit and the SAP HANA cockpit manager can be accessed, are assigned automatically by the installer. The local host name, ports, and the master password are required to set up the SAP HANA cockpit. Make sure that you pass this information along to the cockpit administrator.

SAP HANA Cockpit System Properties

Property	Description
Installation Path	Specifies the path to the installation directory. We recommend that the installation directory is not located in the root file system. The default for this parameter is `/hana/shared`.
Local Host Name	Specifies the host name of the machine. Restrictions apply to host names in SAP HANA systems. Alphanumerical string of lowercase alpha characters [a-z] and digits [0-9] and the hyphen (or minus) character "-" are permitted. Although the newer RFCs permit hostnames beginning with digits, we recommend hostnames to begin with an alpha character. The period character "." is only allowed to delimit components of domain names like (sapc11.sap.com). The default for this parameter is the host name of the current machine.

Property	Description
SAP HANA System ID	Specifies a system ID. The SAP system ID (SID) is the identifier for the SAP HANA system. The default value for this parameter is H4C. **Requirements** • The ID must be unique throughout your organization and consistent throughout your SAP system installation landscape. • If you want to install an additional application server instance, make sure that no gateway instance with the same SAP SID exists in your SAP system landscape. • The ID must consist of exactly three alphanumeric characters. Only uppercase letters are allowed. The first character must be a letter (not a digit). • The following IDs are reserved and cannot be used: ADD ALL AMD AND ANY ARE ASC AUX AVG BIT CDC COM CON DBA END EPS FOR GET GID IBM INT KEY LOG LPT MAP MAX MIN MON NIX NOT NUL OFF OLD OMS OUT PAD PRN RAW REF ROW SAP SET SGA SHG SID SQL SUM SYS TMP TOP UID USE USR VAR.
Instance Number	Specifies the instance number of the SAP HANA system. The instance number must be a two-digit number between 00 and 97. The default value for this parameter is 96, or, if 96 is already in use, the next successive un-used instance number.
Master Password	Specifies the master password for all users created during installation. The master password must contain at least eight characters including at least one upper-case letter and at least one digit.
Cockpit Tenant Database Name	Specifies the cockpit tenant database name (default: COCKPITDB).
Cockpit Tenant Database User Password	Specifies the password for the cockpit tenant database user.

XS Advanced Runtime Properties

XS Advanced Runtime Properties

Property	Description
Automatically assign XS Advanced Runtime roles to the hosts with database roles	Assigns XS_WORKER and XS_STANDBY host roles. The host role XS_WORKER will be assigned to all worker hosts, the host role XS_STANDBY will be assigned to all standby hosts. To create a multiple-host system with dedicated xs_worker and xs_standby hosts, assign host roles to each host individually during installation. Do not choose the option to assign XS Advanced host roles automatically.

Property	Description
Organization Name For Space "SAP"	Sets the name of the customer organization. Organizations enable developers to collaborate by sharing resources, services, and applications. Access to the shared resources, services, and applications is controlled by the organization manager (default: orgname).
Customer Space Name	Sets the name of the customer space for the SAP HANA XS advanced runtime. In an organization, spaces enable users to access shared resources that can be used to develop, deploy, and maintain applications (default: PROD).
Run Applications in Customer Space with Separate OS User	Run applications in customer space with a separate OS user
Routing Mode	Specifies the routing mode to be used for XS advanced runtime installations. For more information on routing configurations, see SAP Note 2245631.
XS Advanced Admin User	Creates an SAP HANA XS advanced runtime admin user. An admin user can add and manage users, view users, edit organization roles, view the organization quota, and perform other administrative tasks (default: COCKPIT_ADMIN).
XS Advanced App Working Path	Specifies the XS advanced runtime app working path for runtime data of application instances. For best performance, specify a local directory, which is then created on all XS_WORKER hosts.
XS Advanced Domain Name	Specifies the domain name of an xs_worker host. The domain name has to resolve to the SAP HANA host which is running the **xscontroller** and **xsuaaserver** service.
XS Advanced SAP Space OS User ID	OS user ID used for running XS advanced runtime applications in SAP space
XS Advanced Customer Space OS User ID	OS user ID used for running XS Advanced applications in customer space
XS Advanced Space for Cockpit	Specifies the name for XS advanced space for the SAP HANA cockpit (default: COCKPIT).

4.6 Determine Ports for SAP HANA Cockpit and Cockpit Manager

The ports for SAP HANA cockpit and the cockpit manager can be determined in the XS console after the cockpit installation.

Prerequisites

- You are logged in as `<sid>adm` user.
- You know the XS organization manager user password. The password matches the master password, which is set during installation.

Context

Ports, through which the SAP HANA cockpit and the cockpit manager can be accessed, are assigned automatically by the installer. Once the cockpit installation is successfully completed, information about host and ports is displayed. If this information is no longer available, you can execute the following commands in the XS console to determine ports.

You can also assign free ports to SAP HANA cockpit during installation. For more information, see *SAP Note 2389709* in Related Information.

Procedure

1. Change to the directory that contains the XS Advanced installation:

   ```
   cd <sapmnt>/<SID>/xs/bin
   ```

   By default, `<sapmnt>` is `/hana/shared`.
2. Log on to the SAP HANA XS advanced runtime. To do this, use the following command:

   ```
   ./xs-admin-login
   ```
3. Enter the XS organization manager user password.
4. Display a list of the applications running in the current space. In the command shell, run the following command:

   ```
   xs apps
   ```

   A list of all running apps is displayed. Information on host and ports are displayed in the `urls` column. The SAP HANA cockpit is listed as `cockpit-web-app`. The cockpit manager is listed as `cockpit-admin-web-app`.

   Output Code

   ```
   Getting apps in org "HANACockpit" / space "SAP" as COCKPIT_ADMIN...
   Found apps:
   name                    requested state   instances   memory
   disk          urls
   ------------------------------------------------------------------------------
   ------------------------------------------
   auditlog-db             STOPPED           0/1         16.0 MB
   <unlimited>   <none>
   auditlog-server         STARTED           1/1         256 MB
   <unlimited>   https://<hostname>:51002
   auditlog-broker         STARTED           1/1         64.0 MB
   <unlimited>   https://<hostname>:51003
   deploy-service          STARTED           1/1         280 MB
   <unlimited>   https://<hostname>:51004
   auditlog-odata          STARTED           1/1         128 MB
   <unlimited>   https://<hostname>:51005
   component-registry-db   STOPPED           0/1         16.0 MB
   <unlimited>   <none>
   auditlog-ui             STARTED           1/1         64.0 MB
   <unlimited>   https://<hostname>:51007
   product-installer       STARTED           1/1         256 MB
   <unlimited>   https://<hostname>:51006
   ```

```
hrtt-service                STARTED           1/1          512 MB
<unlimited>   https://<hostname>:51009
sqlanlz-svc                 STARTED           1/1          256 MB
<unlimited>   https://<hostname>:51010
sqlanlz-ui                  STARTED           1/1          128 MB
<unlimited>   https://<hostname>:51011
hrtt-core                   STARTED           1/1          512 MB
<unlimited>   https://<hostname>:51012
sapui5_fesv2                STARTED           1/1          256 MB
<unlimited>   https://<hostname>:51015
sapui5_fesv3                STARTED           1/1          256 MB
<unlimited>   https://<hostname>:51025
cockpit-adminui-svc         STARTED           1/1          128 MB
<unlimited>   https://<hostname>:51022
cockpit-collection-svc      STARTED           1/1          768 MB
<unlimited>   https://<hostname>:51016
cockpit-hdb-svc             STARTED           1/1          768 MB
<unlimited>   https://<hostname>:51018
cockpit-hdbui-svc           STARTED           1/1          128 MB
<unlimited>   https://<hostname>:51020
cockpit-landscape-svc       STARTED           1/1          128 MB
<unlimited>   https://<hostname>:51019
cockpit-persistence-svc     STARTED           1/1          768 MB
<unlimited>   https://<hostname>:51017
cockpit-telemetry-svc       STARTED           1/1          768 MB
<unlimited>   https://<hostname>:51026
cockpit-xsa-svc             STARTED           1/1          768 MB
<unlimited>   https://<hostname>:51024
cockpit-admin-web-app       STARTED           1/1          128 MB
<unlimited>   https://<hostname>:51023
cockpit-web-app             STARTED           1/1          512 MB
<unlimited>   https://<hostname>:51021
```

Related Information

SAP Note 2389709

5 Configure SSL for the SAP HANA Cockpit

Configure SSL for the SAP HANA cockpit where you have an SAP HANA system installed on a single host with incoming connections from SQLDBC and HTTP clients for database and administrative access.

Prerequisites

- SSL must already be configured on the server
- You must have COCKPIT_ADMIN access to the XSA server of the SAP HANA cockpit system.
- You must be using file-based trust stores (PSEs)
- You must have the INFILE ADMIN system privilege

Context

Use the following procedure for connections via the SAP start service and for XSA applications.

Procedure

1. Import the public-key certificate of the server or the root certificate into the XSA trust store of the SAP HANA system using the following xs CLI command:

   ```
   xs trust-certificate <alias> -c <path>
   ```

   <alias> is an arbitrary name and <path> is the fully-qualified file name of the root certificate, which must be an x.509 certificate in PEM format.
2. Ensure that the *Encrypt the database connection* setting is set for your resource.
   a. In the SAP HANA cockpit, go to the *Resource Directory* and then click *Manage Resources*.
   a. In the *Cockpit Manager* set the *Encrypt the database connection* option either by editing an existing resource or when you're registering a new resource.
3. Specify a client certificate and a private key by setting specific environment variables for SAP HANA cockpit and SAP HANA database explorer.
   a. Set the following environment variables for the SAP HANA cockpit:

   ```
   $ xs set-env cockpit-hdb-svc HANA_CLIENT_CERTIFICATE '"-----BEGIN
   CERTIFICATE-----<ASCII data>-----END CERTIFICATE-----"'
   $ xs set-env cockpit-hdb-svc HANA_CLIENT_KEY '"-----BEGIN PRIVATE KEY-----
   <ASCII data>-----END PRIVATE KEY-----"'
   $ xs restage cockpit-hdb-svc
   $ xs restart cockpit-hdb-svc
   ```

The certificate and private key must be in PEM format and be all on one line.

b. Set the following environment variables for SAP HANA database explorer:

```
$ xs set-env hrtt-svc HANA_CLIENT_CERTIFICATE '"-----BEGIN CERTIFICATE-----
<ASCII data>-----END CERTIFICATE-----"'
$ xs set-env hrtt-svc HANA_CLIENT_KEY '"-----BEGIN PRIVATE KEY-----<ASCII
data>-----END PRIVATE KEY-----"'
$ xs restage hrtt-svc
$ xs restart hrtt-svc
```

The certificate and private key must be in PEM format and be all on one line.

Results

All database connections for the specified resource are encrypted using SSL.

6 Updating the SAP HANA Cockpit

The SAP HANA cockpit can be updated using the SAP HANA database lifecycle manager (HDBLCM).

To update an SAP HANA cockpit, you need to first download the installation files from Service Marketplace (SMP). This can be done manually using the SAP HANA database lifecycle manager (HDBLCM) Web user interface. Once the component packages have been prepared, the system update can be triggered from any of the three SAP HANA database lifecycle manager user interfaces.

> ⚠ Caution
>
> Do not update the SAP HANA cockpit components individually. Always use the SAP HANA database lifecycle manager (HDBLCM) to update the cockpit and all of its components in one step.

Related Information

Update the SAP HANA Cockpit Using the Graphical User Interface [page 27]
Update the SAP HANA Cockpit Using the Command-Line Interface [page 28]
Update the SAP HANA Cockpit Using the Web User Interface [page 34]

6.1 Update the SAP HANA Cockpit Using the Graphical User Interface

The SAP HANA cockpit can be updated using the SAP HANA database lifecycle manager (HDBLCM) graphical user interface.

Prerequisites

- You are updating from an installation medium or you have prepared for update.
- You know the `<sid>adm`, the database administrator, and the XS organization manager user passwords. The passwords of these users match the master password, which is set during installation.

Context

The following procedure describes the update of the SAP HANA cockpit in interactive mode and entering parameters interactively.

Procedure

1. Change to the directory where you unpacked the SAP HANA cockpit *.SAR archive:

   ```
   cd <installation medium>
   ```

2. Run the SAP HANA database lifecycle manager:

   ```
   ./hdblcmgui.sh
   ```

   The SAP HANA database lifecycle manager graphical user interface appears.
3. Select *Update Existing System*, and choose the SID from the drop-down menu. Then select *Next*.
4. Select the components you would like to update, then select *Next*.
5. Specify the SAP HANA authorization information.
6. After specifying all system properties, review the summary, and select *Update*.

Related Information

Download Components from SAP Support Portal Using the Web User Interface [page 29]
Prepare the Software Archive for the Update [page 31]

6.2 Update the SAP HANA Cockpit Using the Command-Line Interface

The SAP HANA cockpit can be updated using the SAP HANA database lifecycle manager (HDBLCM) command-line interface.

Prerequisites

- You are updating from an installation medium or you have prepared for update.
- You know the `<sid>adm`, the database administrator, and the XS organization manager user passwords. The passwords of these users match the master password, which is set during installation.

Context

The following procedure describes the update of the SAP HANA cockpit in interactive mode and entering parameters interactively.

Procedure

1. Change to the directory where you unpacked the SAP HANA cockpit *.SAR archive:

   ```
   cd <installation medium>
   ```

2. Run the SAP HANA database lifecycle manager:

   ```
   ./hdblcm.sh
   ```

3. Select the index for the system to be updated, then select `Enter`.
4. Select the components you would like to update as a comma-separated list, then select `Enter`.
5. Specify the SAP HANA authorization information.
6. After specifying all system properties, review the summary, and select *y*.

Related Information

Download Components from SAP Support Portal Using the Web User Interface [page 29]
Prepare the Software Archive for the Update [page 31]

6.3 Download Components from SAP Support Portal Using the Web User Interface

You can use your SAP HANA database lifecycle manager (HDBLCM) Web user interface to check for available software component updates and download them from SAP Support Portal.

Prerequisites

- The SAP HANA cockpit is up and running.
- The SAP HANA cockpit has access to the Internet.

  > **i** Note
  >
  > Alternatively, you can download the components to a shared location to which the SAP HANA cockpit has access or copy the downloaded components to the SAP HANA cockpit host manually.

You should verify that the following prerequisites are fulfilled before trying to access the SAP HANA database lifecycle manager from a Web browser.

- The communication port 1129 is open.
  Port 1129 is required for the SSL communication with the SAP Host Agent in a standalone browser via HTTPS.

- The following Web browser requirements are fulfilled:
  - Microsoft Windows
    - Internet Explorer - Version 9 or higher
      If you are running Internet Explorer version 9, make sure that your browser is not running in compatibility mode with your SAP HANA host. You can check this in your browser by choosing *Tools* > *Compatibility View Settings*.
    - Microsoft Edge
    - Mozilla Firefox - Latest version and Extended Support Release
    - Google Chrome - Latest version
  - SUSE Linux - Mozilla Firefox with XULRunner 10.0.4 ESR
  - Mac OS - Safari 5.1 or higher

  > **i Note**
  >
  > For more information about supported Web browsers for the SAP HANA database lifecycle manager Web interface, see the browser support for `sap.m` library in the *SAPUI5 Developer Guide* in Related Information.
- You are logged on as the system administrator user `<sid>`adm.

Procedure

1. Access the SAP HANA HDBLCM Web user interface.

   Enter the SAP HANA database lifecycle manager (HDBLCM) URL in an HTML5-enabled browser:

   ```
   https://<hostname>:1129/lmsl/HDBLCM/<SID>/index.html
   ```

   > **i Note**
   >
   > The URL is case sensitive. Make sure you enter upper and lower case letters correctly.
2. Select the *Download Components* tile.
3. Specify the download mode. Then select *Next*.

   You can choose between downloading the software archives to the SAP HANA host or via the Web browser to your local computer. If you choose to download the archives to your local computer, you will have to copy them to the host manually.
4. Specify the HTTPS proxy properties. Then select *Next*.
5. Provide the SAP Support Portal credentials, then select *Next*.
6. Select the components for download. Then select *Next*.

   Note that you can also select and download SAP HANA core components which are not currently, but can be installed on the system. To display all components available for download, select *Show Components (Only Updates)* and then select *All*.
7. Specify the download properties. Then select *Next*.
8. Select *Download* to download the components.
9. Once the downloads have finished, select *Close* to return to the main screen.

Next Steps

After downloading components from the SAP Support Portal using the SAP HANA database lifecycle manager (HDBLCM) Web user interface, prepare the software archive so that it is detected by the SAP HANA database lifecycle manager during update. For more information about preparing the software archive, see Related Information.

Related Information

SAPUI5 Developer Guide
Prepare the Software Archive for the Update [page 31]
Upload and Extract SAP HANA Components Using the Web User Interface [page 32]

6.4 Prepare the Software Archive for the Update

After downloading the software components from SAP Support Portal, the software archive must be prepared for the update.

Prerequisites

- You are logged in as root user.
- You have downloaded the software components from SAP Support Portal (SAP Service Marketplace) using the SAP HANA studio or the SAP HANA database lifecycle manager (HDBLCM) Web user interface.
- You have copied the download directory to the SAP HANA host or in case it is a shared file system, make sure it is accessible from the SAP HANA host.

Procedure

1. Change to the SAP HANA resident HDBLCM directory:

   ```
   cd <sapmnt>/<SID>/hdblcm
   ```

   By default, `<sapmnt>` is `/hana/shared`.
2. Start the SAP HANA database lifecycle manager interactively in the command line:

   ```
   ./hdblcm --action=extract_components
   ```
3. Enter the location of the SAP HANA component archives which you want to prepare for the update.

4. Enter the target directory to extract the software component archives to. The target directory must be empty.
5. Review the summary, and select *y* to finalize the configuration.

Next Steps

You can now update the SAP HANA system with the SAP HANA database lifecycle manager.

If the SAP HANA database lifecycle manager doesn't detect the installation kit, you should run it with the parameter `component_root` specifying the root directory displayed at the end of the `hdblcm_prepare.sh` script:

```
./hdblcmgui --component_root=<component root directory>
```

or

```
./hdblcm --component_root=<component root directory>
```

6.5 Upload and Extract SAP HANA Components Using the Web User Interface

You can upload and extract SAP HANA component archives that were downloaded from the SAP Service Marketplace for installation or update using the SAP HANA database lifecycle manager (HDBLCM) Web user interface.

Prerequisites

- The SAP HANA cockpit is up and running.

You should verify that the following prerequisites are fulfilled before trying to access the SAP HANA database lifecycle manager from a Web browser.

- The communication port 1129 is open.
  Port 1129 is required for the SSL communication with the SAP Host Agent in a standalone browser via HTTPS.
- The following Web browser requirements are fulfilled:
  - Microsoft Windows
    - Internet Explorer - Version 9 or higher
      If you are running Internet Explorer version 9, make sure that your browser is not running in compatibility mode with your SAP HANA host. You can check this in your browser by choosing *Tools* > *Compatibility View Settings*.
    - Microsoft Edge

    - Mozilla Firefox - Latest version and Extended Support Release
    - Google Chrome - Latest version
  - SUSE Linux - Mozilla Firefox with XULRunner 10.0.4 ESR
  - Mac OS - Safari 5.1 or higher

> **i Note**
>
> For more information about supported Web browsers for the SAP HANA database lifecycle manager Web interface, see the browser support for `sap.m` library in the *SAPUI5 Developer Guide* in Related Information.

- You are logged on as the system administrator user `<sid>`adm.

Procedure

1. Access the SAP HANA HDBLCM Web user interface.

   Enter the SAP HANA database lifecycle manager (HDBLCM) URL in an HTML5-enabled browser:

   ```
   https://<hostname>:1129/lmsl/HDBLCM/<SID>/index.html
   ```

   > **i Note**
   >
   > The URL is case sensitive. Make sure you enter upper and lower case letters correctly.

2. Select the *Upload/Extract Components* tile.
3. Select the upload method.

Option	Description
The Archives are Accessible from the SAP HANA Host	Use this option if the archives are located on a file system accessible from the SAP HANA host. Specify the directory which contains the component archives under *Location of SAP HANA Component Archives*. Then select *Next*.
Upload Archives to the SAP HANA Host	Use this option if the archives are accessible only from your local machine. Select one or more component archives that you want to upload to the SAP HANA host. Then select *Upload*.

4. Specify an empty target directory to extract the software component archives to under *Temporary Extract Directory*. Then select *Next*.
5. After specifying all system properties, review the summary, and select *Extract*.

Related Information

SAPUI5 Developer Guide

6.6 Update the SAP HANA Cockpit Using the Web User Interface

A standalone installation of SAP HANA cockpit can be updated using the SAP HANA database lifecycle manager (HDBLCM) Web user interface.

Prerequisites

You should verify that the following prerequisites are fulfilled before trying to access the SAP HANA database lifecycle manager from a Web browser.

- The communication port 1129 is open.
  Port 1129 is required for the SSL communication with the SAP Host Agent in a standalone browser via HTTPS.
- The following Web browser requirements are fulfilled:
  - Microsoft Windows
    - Internet Explorer - Version 9 or higher
      If you are running Internet Explorer version 9, make sure that your browser is not running in compatibility mode with your SAP HANA host. You can check this in your browser by choosing *Tools* > *Compatibility View Settings*.
    - Mozilla Firefox - Latest version and Extended Support Release
    - Google Chrome - Latest version
  - SUSE Linux - Mozilla Firefox with XULRunner 10.0.4 ESR
  - Mac OS - Safari 5.1 or higher

  > **i Note**
  >
  > For more information about supported Web browsers for the SAP HANA database lifecycle manager Web interface, see the browser support for `sap.m` library in the *SAPUI5 Developer Guide* in Related Information.

- You are logged on as the system administrator user `<sid>adm`.
- The installation medium must be owned by the root user and should not have write permissions for the group (except for when the group ID is 0) and others.
- You are updating from an installation medium or you have prepared for update.
- You know the `<sid>adm`, the database administrator, and the XS organization manager user passwords. The passwords of these users match the master password, which is set during installation.

Context

The following procedure describes the update of the SAP HANA cockpit using the SAP HANA database lifecycle manager (HDBLCM) Web user interface.

Procedure

1. Access the SAP HANA HDBLCM Web user interface.

   Enter the SAP HANA database lifecycle manager (HDBLCM) URL in an HTML5-enabled browser:

   ```
   https://<hostname>:1129/lmsl/HDBLCM/<SID>/index.html
   ```

   > **i** Note
   >
   > The URL is case sensitive. Make sure you enter upper and lower case letters correctly.

2. Select the *Update System and Components* tile.
3. Enter the file path of the installation medium in the location field:

Option	Description
Intel-Based Hardware Platforms	`<installation medium>/HDB_SERVER_LINUX_X86_64`
IBM Power Systems	`<installation medium>/HDB_SERVER_LINUX_PPC64`

   If you downloaded the components to a different directory, enter the file path to the directory where you unpacked the server archive.

4. Select *Proceed with Update*.

   The SAP HANA database lifecycle manager (HDBLCM) detects all available components for the given file path.
5. Select the components you would like to update, or install if they are not already available on your system. The select *Next*.
6. Specify the SAP HANA authorization information.
7. After specifying all system properties, review the summary, and select *Update*.

Related Information

SAPUI5 Developer Guide

7 Uninstalling the SAP HANA Cockpit

If required, you can uninstall the previously installed SAP HANA cockpit by running either the SAP HANA database lifecycle manager (HDBLCM) from the SAP HANA resident HDBLCM directory.

Related Information

Uninstall the SAP HANA Cockpit Using the Graphical User Interface [page 36]
Uninstall the SAP HANA Cockpit Using the Command-Line Interface [page 37]

7.1 Uninstall the SAP HANA Cockpit Using the Graphical User Interface

You can uninstall the SAP HANA cockpit using the SAP HANA database lifecycle manager (HDBLCM) graphical user interface.

Prerequisites

- You are logged in as root user.

Context

> ⚠ Caution
>
> Uninstalling the SAP HANA cockpit removes all data volumes and log volumes associated with the persistence of SAP HANA cockpit. It is a permanent action that cannot be undone! The persistencies of the managed SAP HANA systems, including the system hosting the cockpit, are not affected by this action.

Procedure

1. Change to the SAP HANA resident HDBLCM directory:

```
cd <sapmnt>/<SID>/hdblcm
```

By default, `<sapmnt>` is `/hana/shared`.

2. Start the SAP HANA database lifecycle manager interactively in the graphical user interface:

   ```
   ./hdblcmgui --action=uninstall --components=all
   ```

   The SAP HANA database lifecycle manager graphical user interface appears.
3. Select *Uninstall SAP HANA Cockpit Components* from the activity options. Then select *Next*.
4. Select *Uninstall SAP HANA Database and all other components* from the components options. Then select `Next`.
5. Review the summary, and select *Uninstall* to finalize the configuration.

Results

The SAP HANA cockpit is uninstalled. A log file is available.

7.2 Uninstall the SAP HANA Cockpit Using the Command-Line Interface

You can uninstall the SAP HANA cockpit using the SAP HANA database lifecycle manager (HDBLCM) command-line interface.

Prerequisites

- You are logged in as root user.

Context

> ⚠ Caution
>
> Uninstalling the SAP HANA cockpit removes all data volumes and log volumes associated with the persistence of SAP HANA cockpit. It is a permanent action that cannot be undone! The persistencies of the managed SAP HANA systems, including the system hosting the cockpit, are not affected by this action.

Procedure

1. Change to the SAP HANA resident HDBLCM directory:

   ```
   cd <sapmnt>/<SID>/hdblcm
   ```

   By default, `<sapmnt>` is `/hana/shared`.
2. Start the SAP HANA database lifecycle manager interactively in the command line:

   ```
   ./hdblcm --action=uninstall --components=all
   ```
3. Review the summary, and select *y* to finalize the configuration.

Results

The SAP HANA cockpit is uninstalled. A log file is available.

7.3 Uninstall the SAP HANA Cockpit from an Existing SAP HANA System Using the Graphical User Interface

You can uninstall the SAP HANA cockpit from an existing SAP HANA system using the SAP HANA database lifecycle manager (HDBLCM) graphical user interface.

Prerequisites

- You are logged in as root or `<sid>adm` user.

Context

> ⚠ Caution
>
> Uninstalling the SAP HANA cockpit removes all data volumes and log volumes associated with the persistence of SAP HANA cockpit. It is a permanent action that cannot be undone! The persistencies of the managed SAP HANA systems, including the system hosting the cockpit, are not affected by this action.

Procedure

1. Change to the SAP HANA resident HDBLCM directory:

   ```
   cd <sapmnt>/<SID>/hdblcm
   ```

   By default, `<sapmnt>` is `/hana/shared`.
2. Start the SAP HANA database lifecycle manager interactively in the graphical user interface:

   ```
   ./hdblcmgui --action=uninstall
   ```

   The SAP HANA database lifecycle manager graphical user interface appears.
3. Select *Uninstall SAP HANA Database Components* from the activity options. Then select *Next*.
4. Select *Uninstall SAP HANA Cockpit Stack* from the components options. Then select `Next`.
5. Specify the SAP HANA cockpit system properties.

   For a list of all system properties, see *System Properties* in Related Information.
6. Review the summary, and select *Uninstall* to finalize the configuration.

Results

The SAP HANA cockpit is uninstalled. A log file is available.

Related Information

System Properties [page 20]

7.4 Uninstall the SAP HANA Cockpit from an Existing SAP HANA System Using the Command-Line Interface

You can uninstall the SAP HANA cockpit from an existing SAP HANA system using the SAP HANA database lifecycle manager (HDBLCM) command-line interface.

Prerequisites

- You are logged in as root or `<sid>adm` user.

Context

> ⚠ Caution
>
> Uninstalling the SAP HANA cockpit removes all data volumes and log volumes associated with the persistence of SAP HANA cockpit. It is a permanent action that cannot be undone! The persistencies of the managed SAP HANA systems, including the system hosting the cockpit, are not affected by this action.

Procedure

1. Change to the SAP HANA resident HDBLCM directory:

   ```
   cd <sapmnt>/<SID>/hdblcm
   ```

   By default, `<sapmnt>` is `/hana/shared`.
2. Start the SAP HANA database lifecycle manager interactively in the command line:

   ```
   ./hdblcm --action=uninstall
   ```
3. Select the index for *cockpit*, then select `Enter`.
4. Specify the SAP HANA cockpit system properties.

   For a list of all system properties, see *System Properties* in Related Information.
5. Review the summary, and select *y* to finalize the configuration.

Results

The SAP HANA cockpit is uninstalled. A log file is available.

Related Information

System Properties [page 20]

8 Important SAP Notes

SAP Notes contain important information that can help you to successfully install, update, administer, and work with an SAP HANA system.

SAP Note Number	Title
1514967	SAP HANA: Central Note
2380229	SAP HANA Platform 2.0 - Central Note
2656575	SAP HANA Platform 2.0 SPS 04 Release Note
2757584	SAP HANA 2.0 SPS 04 Database Revision 040
2372809	Guideline for Upgrading a SAP HANA 1.0 to SAP HANA 2.0 System
1948334	SAP HANA Database Update Paths for Maintenance Revisions
2503043	Global temporary ROW table could not be dropped
2378962	SAP HANA 2.0 Revision and Maintenance Strategy
2380291	SAP HANA 2.0 Cockpit Central Release Note
2373065	SAP HANA 2.0 Database Explorer Release Notes
2714742	SAP Web IDE for SAP HANA 2.0 SPS 04 - Central Release Note
2078425	Troubleshooting note for SAP HANA platform lifecycle management tool hdblcm
2000003	FAQ: SAP HANA
2235581	SAP HANA: Supported Operating Systems
1944799	SAP HANA Guidelines for SLES Operating System
2009879	SAP HANA Guidelines for Red Hat Enterprise Linux (RHEL)
2055470	HANA on POWER Planning and Installation Specifics - Central Note
2218464	Supported products when running SAP HANA on IBM Power Systems

SAP Note Number	Title
52505	Support after end of mainstream/extended maintenance
1681092	Support for multiple SAP HANA databases on a single SAP HANA appliance
1976729	Application Component Hierarchy for SAP HANA
1661202	Support for multiple applications on SAP HANA
1927949	Standard Behavior for SAP Logon Tickets
1906576	HANA client and server cross-version compatibility
1637145	SAP BW on HANA: Sizing SAP HANA Database
1793345	Sizing for Suite on HANA
2428875	Full-text index creation runs endlessly in Preprocessor service.
2435642	Deprecation of legacy text mining implementation.

Check the current SAP Notes for the various parts of SAP HANA by searching for any of the following application areas:

SAP HANA Native Applications

- *HAN-APP* SAP HANA Native Applications
- *HAN-APP-DCI* Please use HAN-APP-IOA
- *HAN-APP-DWS* SAP HANA Data Warehouse Services
- *HAN-APP-DWS-DDO* Data Warehousing Scheduler
- *HAN-APP-DWS-DLM* SAP HANA Data Lifecycle Manager
- *HAN-APP-DWS-DSO* DataStore Object
- *HAN-APP-DWS-DWS* SAP HANA Data Warehouse Services
- *HAN-APP-IOA* SAP IT Operations Analytics

SAP HANA Application Services

- *HAN-AS* SAP HANA Application Services
- *HAN-AS-INA* SAP HANA InA Tools and Infrastructure
- *HAN-AS-INA-FL* SAP HANA InA File Loader
- *HAN-AS-INA-SVC* SAP HANA InA Service
- *HAN-AS-INA-UI* SAP HANA InA Toolkit, Fiori Search UI
- *HAN-AS-MDS* SAP HANA Multidimensional Service
- *HAN-AS-RPO* SAP HANA Repository
- *HAN-AS-RST* SAP HANA Development Environment REST API
- *HAN-AS-RUL* SAP HANA Rules Framework
- *HAN-AS-XS* SAP HANA Extended Application Services
- *HAN-AS-XS-ADM* SAP HANA XS Administration

- *HAN-AS-XS-JOB* SAP HANA XS Scheduled Jobs
- *HAN-AS-XSA* SAP HANA XS Basis Applications
- *HAN-AS-XSA-LIB* Please use HAN-AS-XS
- *HAN-AS-XSA-SHN* SAP HANA Interactive Education (SHINE Model)
- *HAN-AS-XSA-TM* SAP HANA Task management
- *HAN-AS-XSA-WF* SAP HANA Workflow (Deprecated)

SAP HANA Accelerator for SAP ASE

- *HAN-ASE* SAP HANA Accelerator for SAP ASE

SAP HANA Adaptive Transaction Processing

- *HAN-ATP* SAP HANA Adaptive Transaction Processing

HANA Cloud Services

- *HAN-CLS* HANA Cloud Services
- *HAN-CLS-CPT* HANA Cockpit as a Service (Cloud Service)
- *HAN-CLS-DB* HANA Database as a Service
- *HAN-CLS-FPS* File processing as a service for SCP CF
- *HAN-CLS-SRC* Enterprise Search as a Service

SAP HANA Cockpit

- *HAN-CPT* SAP HANA Cockpit
- *HAN-CPT-ADM* SAP HANA Administration Core
- *HAN-CPT-ASE* SAP HANA Accelerator for SAP ASE Administration
- *HAN-CPT-BAC* SAP HANA Backup and Recovery
- *HAN-CPT-CNR* SAP HANA Workload Capture and Replay
- *HAN-CPT-CPT2* SAP HANA Cockpit version 2
- *HAN-CPT-CPT2-ADM* SAP HANA Cockpit 2 (Administration Core)
- *HAN-CPT-CPT2-ASE* SAP HANA Cockpit 2 (Accelerator for SAP ASE Administration)
- *HAN-CPT-CPT2-BAC* SAP HANA Cockpit 2 (Backup and Recovery)
- *HAN-CPT-CPT2-CNR* SAP HANA Cockpit 2 (Capture and Replay)
- *HAN-CPT-CPT2-DBX* SAP HANA Cockpit 2 (Database Explorer)
- *HAN-CPT-CPT2-DYT* SAP HANA Cockpit 2 (Dynamic Tiering Administration)
- *HAN-CPT-CPT2-EWA* SAP HANA Cockpit Early Watch Alert Support
- *HAN-CPT-CPT2-LA* SAP HANA Cockpit Landscape Administration
- *HAN-CPT-CPT2-MGC* SAP HANA Cockpit Manager
- *HAN-CPT-CPT2-PM* SAP HANA Cockpit 2 (Performance Monitoring)
- *HAN-CPT-CPT2-SA* SAP HANA Cockpit 2 (SQL Analyzer)
- *HAN-CPT-CPT2-SDA* SAP HANA Cockpit 2 (Smart Data Access)
- *HAN-CPT-CPT2-SDI* SAP HANA Cockpit 2 (Smart Data Integration)
- *HAN-CPT-CPT2-SDS* SAP HANA Cockpit 2 (Smart Data Streaming Administration)
- *HAN-CPT-CPT2-SEC* SAP HANA Cockpit 2 (Security)
- *HAN-CPT-CPT2-SR* SAP HANA Cockpit 2 (System Replication)
- *HAN-CPT-CPT2-TEL* HANA Express Telemetry
- *HAN-CPT-CPT2-WA* SAP HANA Cockpit 2 (Workload Analyzer)

- *HAN-CPT-DCC* SAP DB Control Center
- *HAN-CPT-DP* Please use HAN-DP-SDI
- *HAN-CPT-DYT* SAP HANA Dynamic Tiering Administration
- *HAN-CPT-SDS* SAP HANA Smart Data Streaming Administration
- *HAN-CPT-SEC* SAP HANA Cockpit Security
- *HAN-CPT-WA* HANA Workload Analyzer

SAP HANA Database

- *HAN-DB* SAP HANA Database
- *HAN-DB-AFL* Please use subcomponents, see SAP Note 2198403
- *HAN-DB-AFL-DQ* SAP HANA Data Quality Library
- *HAN-DB-AFL-GEN* SAP HANA AFL Shipment and general AFL topics
- *HAN-DB-AFL-HIE* SAP HANA AFL Hierarchies
- *HAN-DB-AFL-PAL* SAP HANA Predictive Analysis Library
- *HAN-DB-AFL-POS* SAP HANA On-Shelf Availability
- *HAN-DB-AFL-SAL* SAP HANA Self Service Analytics Library
- *HAN-DB-AFL-SCA* SAP HANA Supply Chain Algorithm Library
- *HAN-DB-AFL-SOP* SAP HANA Sales and Operations Planning
- *HAN-DB-AFL-TEC* SAP HANA AFL Technology and SDK
- *HAN-DB-AFL-UDF* SAP HANA Unified Demand Forecast
- *HAN-DB-AFL-VCH* Variant Configuration Library (VCH AFL)
- *HAN-DB-ANO* SAP HANA Data Anonymization
- *HAN-DB-BAC* SAP HANA Backup and Recovery
- *HAN-DB-CDS* SAP HANA Activation of HDBDD-files (CDS Definitions)
- *HAN-DB-CLI* SAP HANA Clients (JDBC, ODBC)
- *HAN-DB-DI* HANA Deployment Infrastructure (HDI)
- *HAN-DB-ENG* SAP HANA DB Engines
- *HAN-DB-ENG-BW* SAP HANA BW Engine
- *HAN-DB-ENG-ESH* SAP HANA Enterprise Search Engine
- *HAN-DB-ENG-GPH* SAP HANA Graph Engine
- *HAN-DB-ENG-IM* Please use HAN-DB-SDQ
- *HAN-DB-ENG-PLE* SAP HANA Planning Engine
- *HAN-DB-ENG-SPA* SAP HANA Spatial Engine
- *HAN-DB-ENG-TRX* TREX API for Hana database
- *HAN-DB-ENG-TXT* SAP HANA Text Engine
- *HAN-DB-EPM* SAP HANA Enterprise Performance Management Platform
- *HAN-DB-EPM-PLT* SAP HANA EPM Platform
- *HAN-DB-EPM-XSL* SAP HANA EPM XSJS library
- *HAN-DB-HA* SAP HANA High Availability (System Replication, etc.)
- *HAN-DB-LVC* SAP HANA integrated liveCache
- *HAN-DB-MDX* SAP HANA MDX Engine/Excel Client
- *HAN-DB-MON* SAP HANA Monitoring
- *HAN-DB-NSE* HANA Native Storage Extension
- *HAN-DB-PER* SAP HANA Database Persistence
- *HAN-DB-R* SAP HANA Integration with R

- *HAN-DB-SCR* SAP HANA SQL Script
- *HAN-DB-SDA* SAP HANA Smart Data Access
- *HAN-DB-SDQ* Information Mgmt Platform - smart data quality
- *HAN-DB-SEC* SAP HANA Security and User Management

Dynamic Edge Processing

- *HAN-DEP* Dynamic Edge Processing
- *HAN-DEP-CTE* Core to Edge processing

SAP HANA Data Provisioning Services

- *HAN-DP* SAP HANA Data Provisioning Services
- *HAN-DP-DS* SAP Data Services
- *HAN-DP-DXC* SAP HANA Direct Extractor Connector
- *HAN-DP-ESS* SAP HANA Enterprise Semantic Services (ESS)
- *HAN-DP-LTR* SAP Landscape Transformation Replication Server
- *HAN-DP-REP* SAP Sybase Replication Server
- *HAN-DP-SDI* SAP HANA smart data integration

SAP HANA Dynamic Tiering

- *HAN-DYT* SAP HANA Dynamic Tiering

SAP HANA Lifecycle Management

- *HAN-LM* SAP HANA Lifecycle Management
- *HAN-LM-APP* SAP HANA Application Lifecycle Management
- *HAN-LM-INS* SAP HANA Installation
- *HAN-LM-INS-DB* Installation of HANA Database
- *HAN-LM-INS-SAP* Installation of SAP Systems on HANA
- *HAN-LM-PLT* SAP HANA Platform Lifecycle Management
- *HAN-LM-UPG* SAP HANA Upgrade
- *HAN-LM-UPG-DB* Upgrade of HANA Database
- *HAN-LM-UPG-SAP* Upgrade of SAP Systems on HANA

SAP HANA Smart Data Streaming

- *HAN-SDS* SAP HANA Smart Data Streaming

SAP HANA Studio (Eclipse)

- *HAN-STD* SAP HANA Studio (Eclipse)
- *HAN-STD-ADM* SAP HANA Studio (Eclipse) Tooling
- *HAN-STD-ADM-BAC* SAP HANA Backup and Recovery (Studio)
- *HAN-STD-ADM-DBA* SAP HANA Studio (Eclipse) Admin Tooling
- *HAN-STD-ADM-PVZ* SAP HANA Plan Visualizer
- *HAN-STD-ADM-SEC* SAP HANA Security and User Management (Studio)
- *HAN-STD-DEV* SAP HANA Development Tools
- *HAN-STD-DEV-CDS* SAP HANA Core Data Services Tools
- *HAN-STD-DEV-CDS-GRA* Please use HAN-STD-DEV-CDS

- *HAN-STD-DEV-DP* SAP HANA Data Provisioning Modeler
- *HAN-STD-DEV-EPM* SAP HANA EPM Modeler
- *HAN-STD-DEV-MOD* SAP HANA Analytical Modeling
- *HAN-STD-DEV-MOD-CLT* SAP HANA Analytical Modeling Client Component
- *HAN-STD-DEV-MOD-SRV* SAP HANA Analytical Modeling Server Component
- *HAN-STD-DEV-REF* SAP HANA Tools for Where-used, Refactoring, and Mass Copy
- *HAN-STD-DEV-RUL* SAP HANA Rules Editor
- *HAN-STD-DEV-SCR* SAP HANA SQL Script Editor/Debugger
- *HAN-STD-DEV-TP* SAP HANA Tools Platform / Team Provider
- *HAN-STD-DEV-TP-CM* SAP HANA Development Change Management
- *HAN-STD-DEV-UIS* SAP HANA UI Integration Services
- *HAN-STD-DEV-UIS-FLP* SAP HANA UI Integration Services
- *HAN-STD-DEV-XS* SAP HANA XS Editors and Wizards

SAP HANA Web IDE

- *HAN-WDE* SAP HANA Web IDE
- *HAN-WDE-BLD* SAP Web IDE for Hana building applications
- *HAN-WDE-BLD-HDB* SAP Web IDE for Hana HDB Build
- *HAN-WDE-CPS* SAP Web IDE for Hana user and project settings
- *HAN-WDE-DBG* SAP Web IDE for Hana debugging applications
- *HAN-WDE-DBX* Database Explorer in WebIDE for HANA
- *HAN-WDE-DOC* SAP Web IDE for Hana documentation
- *HAN-WDE-EDT* SAP Web IDE for Hana editor
- *HAN-WDE-EDT-CDS* SAP Web IDE for Hana editor for Core Data Services
- *HAN-WDE-EDT-GCDS* Graphical Editor for HANA CDS
- *HAN-WDE-EDT-JAVA* SAP WebIDE for HANA > Java Support
- *HAN-WDE-EDT-MOD* SAP Web IDE editor for HANA Analytical Modeling
- *HAN-WDE-EDT-NJS* SAP Web IDE for Hana Node.js Tools
- *HAN-WDE-EIM* Flowgraph, RepTasks and other SDA Tools
- *HAN-WDE-FPM* SAP Web IDE for Hana feature management
- *HAN-WDE-GIT* SAP Web IDE for Hana GIT
- *HAN-WDE-INS* Installation SAP Web IDE for HANA
- *HAN-WDE-MTA* Multi Targeted Application in Web IDE
- *HAN-WDE-PLF* SAP Web IDE for Hana platform
- *HAN-WDE-RTT* SAP Web IDE for Hana Runtime and SQL Tools
- *HAN-WDE-RUN* SAP Web IDE for Hana running applications
- *HAN-WDE-RUN-UI* SAP Web IDE for Hana - Run web and SAP Fiori applications
- *HAN-WDE-SA* SAP HANA SQL Analyzer
- *HAN-WDE-SDS* Smart Data Streaming Tools
- *HAN-WDE-SRC* Search
- *HAN-WDE-TPL* Project creation, template and wizards
- *HAN-WDE-XSC* Old SAP HANA Web IDE
- *HAN-WDE-XSC-EIM* Flowgraph, RepTasks and other SDA Tools
- *HAN-WDE-XSC-MOD* Modeling
- *HAN-WDE-XSC-PVZ* Performance Visualization Plugin

SAP HANA XS Advanced

- *BC-XS* XS Advanced - Please use one of the subcomponents
- *BC-XS-ADM* Admin Tools
- *BC-XS-APR* XSA / CF AppRouter (NOT SAP Router)
- *BC-XS-CDX* CDS Toolkit for SAP Cloud Platform
- *BC-XS-JAV* Java Runtime
- *BC-XS-JAV-SRV* Cloud Extension SDK for Service Development
- *BC-XS-JS* Javascript runtime
- *BC-XS-RT* OP Runtime / XS Controller
- *BC-XS-SEC* UAA and Security for XS engine
- *BC-XS-SL* Software Logistics - Please use one of the subcomponents
- *BC-XS-SL-DS* MTA lifecycle management operations
- *BC-XS-SL-PI* XSA App Installation and Update via xs install/HALM
- *BC-XS-SRV* Services - Please use subcomponents
- *BC-XS-SRV-ADT* Audit Log Service for XS advanced
- *BC-XS-SRV-GIT* Git/Gerrit
- *BC-XS-SRV-HSB* HANA Service Broker
- *BC-XS-SRV-JBS* Job Scheduler
- *BC-XS-SRV-MSG* Messaging Clients
- *BC-XS-SRV-ODT* OData Service - Please use subcomponents
- *BC-XS-SRV-ODT-JA* OData Service (Java)
- *BC-XS-SRV-ODT-JS* OData Node.js (XSOData XS Classic use HAN-AS-XS)
- *BC-XS-SRV-PTL* Hana XS Advanced Portal Services (for Fiori Launchpad)
- *BC-XS-TLS* Tools - Please use one of the subcomponents
- *BC-XS-TLS-MIG* XSC to XSA Migration Assistant tooling

SAP HANA Database (CCMS, Porting and DB Interface)

- *BC-DB-HDB* Use HAN-DB*. Here CCMS, Porting, DB Interface issues only
- *BC-DB-HDB-PFW* Parallelization Framework
- *BC-DB-HDB-SYS* Database Interface/DBMS for SAP HANA
- *BC-DB-HDB-CCM* CCMS / Database Monitors for SAP HANA
- *BC-DB-HDB-POR* DB Porting for SAP HANA

End User Clients

- *BI-BIP* Business intelligence platform (formerly known as BOE)
- *BI-BIP-CMC* Central Management Console (CMC)
- *BI-BIP-CRS* SAP Crystal Reports Server
- *BI-BIP-IDT* Information design tool
- *BI-RA-AO-XLA* MS Excel Add-In
- *BI-RA-CR* SAP Crystal Reports
- *BI-RA-EXP* SAP BusinessObjects Explorer
- *BI-RA-WBI* Web Intelligence
- *BI-RA-XL* Dashboard Designer

The search also supports using the wildcard asterisk (*), so you can, for example, also search for BC-DB-HDB* or similar and you will get results for all subcomponents.

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If you encounter any problems with the software, report an incident at http://support.sap.com/incident.

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When reporting an incident, you can choose from the above list of components for the relevant software part.

For information about the capabilities available for your license and installation scenario, refer to the Feature Scope Description for SAP HANA.

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