Getting Started with SAP S/4HANA 1809 (SP00) Fully-Activated Appliance

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1 Solution Information

1.1 Introduction

This guide provides information about the "SAP S/4HANA 1809 (SP00) - Fully Activated Appliance" on SAP Cloud Appliance Library (SAP CAL).

The appliance contains an SAP S/4HANA 1809 SP00 system (incl. the add-on SAP S/4HANA for Customer Management 2.0) with pre-configured SAP Best Practices and demo scenarios.

It can be rapidly brought up as your personal instance with administrative rights either hosted in dedicated cloud providers such as Amazon, MS Azure of Google Cloud Platform (in ~2 hours) or on-premise on your own hardware (in ~2-3 days).

Typical use cases are trial system, sandboxing, proof-of-concept, or scoping exercises.

The usage as a development system in implementation projects is <u>not</u> recommended since the appliance might contain components and configuration settings (some with a separate license) that are conflicting with the later deployment in a quality or production system.

A general introduction into the appliance and the usage as trial or sandbox system for SAP S/4HANA 1809 can be found on https://blogs.sap.com/?p=727457

Known issues will be continuously updated in this blog: https://blogs.sap.com/?p=742365

An extensive demo guide with sample walkthrough scenarios can be found here:
https://www.sap.com/cmp/oth/crm-s4hana/s4hana-on-premise.html

Video tutorials how to create an AWS account and how to launch the appliance can be found here.
They might not necessarily show the creation of the SAP S/4HANA 1809 SP00 appliance (but another SAP solution appliance), however, the concepts are the same.

1.2 Installed Products

When you deploy the appliance (either in CAL or your own on-premise hardware), you get access to a system landscape that has been built using the following components (see picture below).

1. SAP NetWeaver 7.53 application server ABAP incl. SAP S/4HANA 1809 (SP00) and SAP S/4HANA for Customer Management 2.0
2. SAP NetWeaver 7.50 application server JAVA with installed Adobe Document Services.
3. Microsoft Windows Server 2012 (as remote desktop) for easy frontend access.
4. SAP BusinessObjects BI Platform 4.2 SP5 (with pre-defined BI assets for analysis of SAP S/4HANA data)
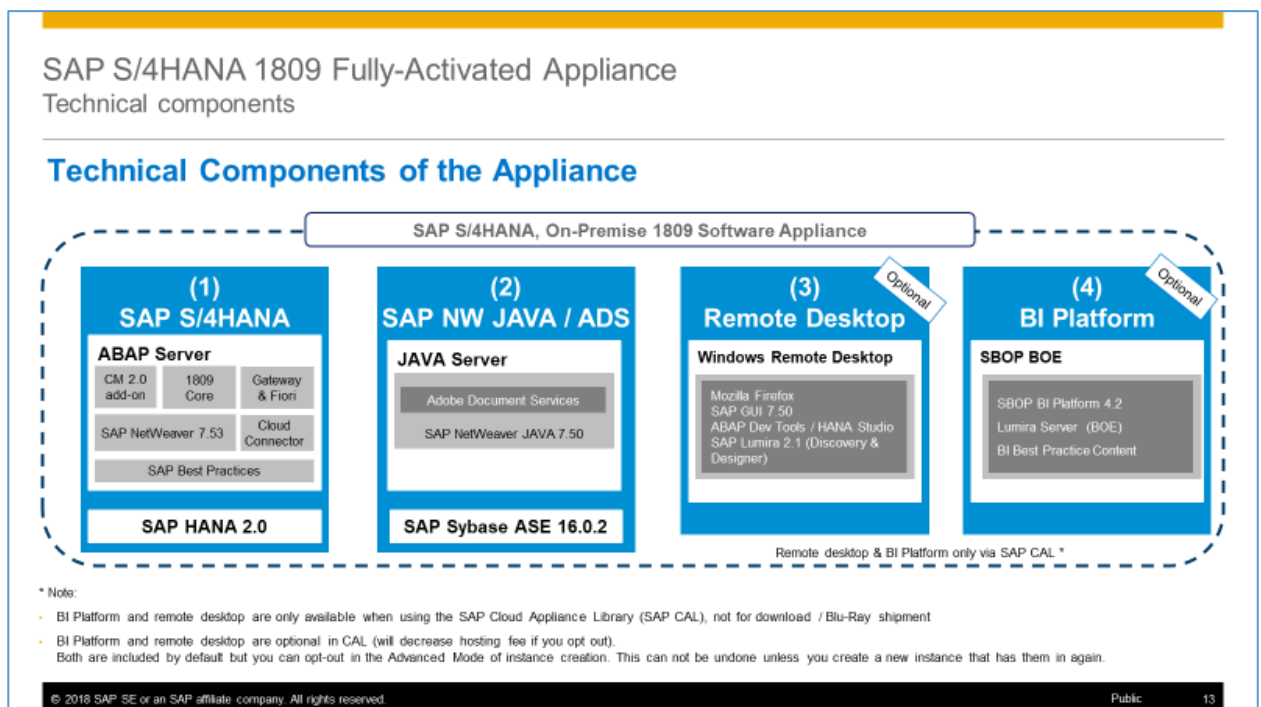
Notes:

- The BI Platform and the remote desktop are optional in CAL. Both are included by default in the landscape, but you can opt-out in the Advanced Mode of the instance creation in the SAP CAL console. Opting out will decrease your hosting fees, but this cannot be undone unless you create a new instance that has these components included again.
- The BI Platform and the remote desktop are only available when using SAP CAL as described in this document. However, you can also receive the appliance for installation on your own on-premise hardware but in that case BI platform and remote desktop are not included. Please see SAP Note 2041140 for the option to install the appliance on your own hardware.

A detailed component list of the appliance can be found in the appendix of this guide.

1.3 Business Scenarios & Localizations

The *SAP S/4HANA 1809 SP00 Fully Activated Appliance* uses SAP Best Practices as main business content.

The chart below summarizes the Best Practices scope for SAP S/4HANA 1809 (details can be found on https://rapid.sap.com/bp/#/browse/packageversions/BP_OP_ENTPR).

In the appliance, the Best Practices have been fully activated, however, there are still areas that require additional configuration to be fully functional.
The integration into other SAP products or 3rd party software is such an example where you need to specify at least the credentials (tenant, account, etc.) of the integration target.
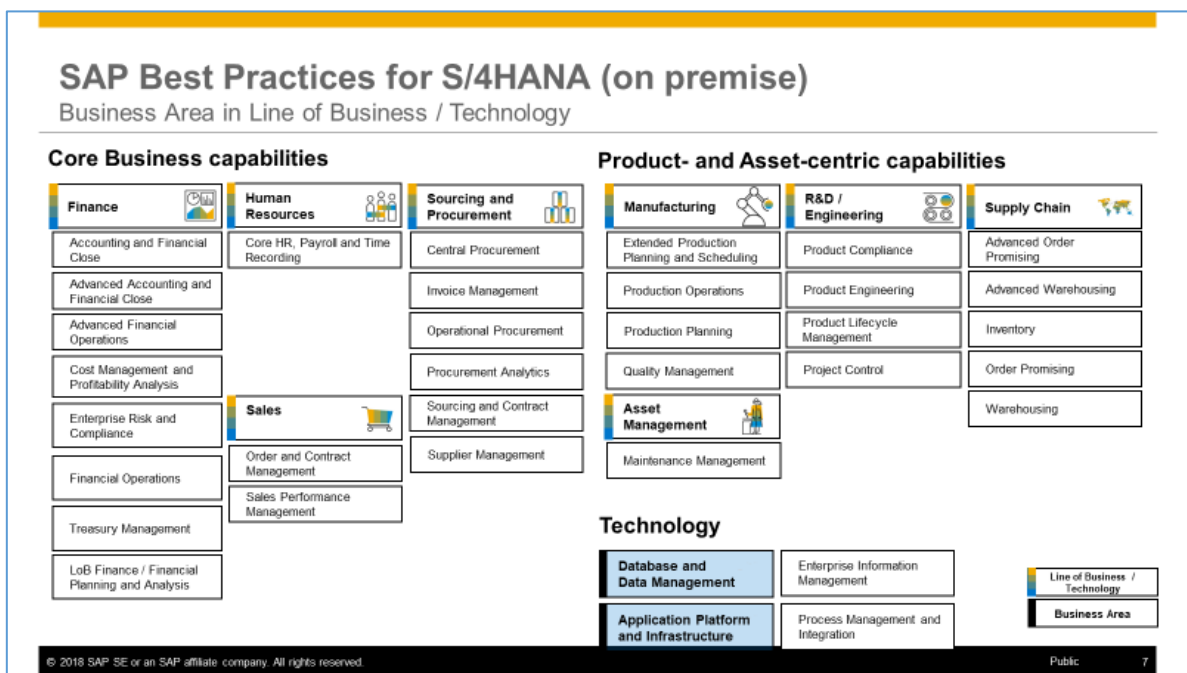
The SAP Best Practices configuration content of SAP S/4HANA 1809 is available for 29 countries and 20 languages:

Australia, Austria, Belgium, Brazil, Canada, China, France, Germany, Great Britain, Hong Kong, Hungary, India (India is not yet configured in the 1809 fully-activated appliance), Ireland, Italy, Japan, Luxembourg, Malaysia, Mexico, Netherlands, New Zealand, Philippines, Singapore, South Africa, Spain, Sweden, Switzerland, Taiwan, United Arab Emirates, USA.

The suggested demo walkthroughs (incl. demo data) in the appliance are configured for USA only.

SAP Best Practices for SAP S/4HANA 1809
Localization
New Best Practices for 1809

29 countries

Australia, **Austria**, Belgium, **Brazil**, Canada, China, France, Hong Kong, Germany, Great Britain, Hungary, **India**, Ireland, Italy, Japan, Luxembourg, Malaysia, **Mexico**, New Zealand, Netherlands, Philippines, Singapore, Spain, South Africa, Sweden, Switzerland, United Arab Emirates, USA, Taiwan

20 languages

Arabic, Chinese (simplified), Chinese (traditional), Danish, Dutch, English, **Finnish**, French, German, Hungarian, Italian, Japanese, Korean, Malay, **Polish**, Portuguese, Norwegian, Russian, Spanish, Swedish

Note: The **India** localization is not yet activated in the appliance, it is planned for the 1809 FPS01 update in Q2 / 2019

1.4 ABAP client structure & business users

Multiple ABAP clients are configured in the appliance.
- 000 serves as standard delivery client (as usual in on-premise deployments)
- 100 is the primary demo client that contains the pre-configured scenarios and sample data.
- 200 can be used to experience the activation of SAP Best Practices on your own (see the SAP Best Practices implementation guide for details)
- 300 contains the activated Best Practices based on the Whitelist approach
- 400 contains the activated Best Practices based on the merged-client-000 approach

An explanation of Whitelist and merged-000 can be found in the *Implementation Guide → Prerequisite Settings → Setting up a new Best Practices Client - Client Setup Alternatives.*

Client	Business Content	Sample users (all password *Welcome1*)
000 Standard delivery client	• None (standard customizing only)	*BPINST*
100 Trial & Exploration client	• Pre-activated SAP Best Practices for SAP S/4HANA 1809 (Germany & US, sample demo flow localized for US) *	*S4H_AA_DEM / S4H_AA* (Asset Accounting)

Client	Business Content	Sample users (all password *Welcome1*)
	• Customizing and transactional data in US company code (CC 1710) • SAP Fiori Apps • Based on the <u>merged-client</u> approach • BW configuration for Integrated Business Planning (IBP) Note on the users: The users *S4H_<area>_DEM* (e.g. S4H_FIN_DEM) have a restricted set of roles and Fiori apps assigned for the respective area, and should be primarily used for the suggested demo walkthroughs that can be found on the landing page for the SAP S/4HANA trial. The users *S4H_<area>* (e.g. S4H_FIN) have the complete set of roles and Fiori apps for the respective area assigned (based on our assessment in the context of the appliance). These users will have significantly longer loading times in the Fiori launchpad, and should be used primarily to get an overview of interesting roles/apps, and to serve as template for your own user creation in transaction SU01.	• *S4H_FIN_DEM / S4H_FIN* (Finance) • *S4H_CASH_DEM / S4H_CASH* (Cash Management) • *S4H_CO_DEM / S4H_CO* (Controlling) • *S4H_MM_DEM / S4H_MM* (Materials Management) • *S4H_PP_DEM / S4H_PP* (Production Planning • *S4H_SD_DEM / S4H_SD* (Sales & Distribution) • *S4H_EXT* (Extensibility) • *S4H_EWM_…* (Warehouse Management) • *S4H_DDR_DEM* (Demand-Driven Replenishment) • *S4H_PPM_…* (Portfolio & Project Management) • *S4H_TM…* (Transportation Management) • *S4H_PAI* (Predictive Analytics) • *S4H_MG* (Data Migration) • *IC_AGENT_SRV / IC_AGENT_SUP* (Interaction Center) • *SERV_EMPL / SERV_MAN / SERV_TECH* (Service Management) • *BPINST* (Generic user. Caution: long loading times in Fiori Launchpad)
200 Ready-to-Activate client (white list)	• Ready-to-Activate client with all pre-activation preparation activities executed	*BPINST*
300 SAP Best Practices reference client (white list)	• Pre-activated SAP Best Practices for SAP S/4HANA 1809 (28 localizations, India not yet done) without transactional data • Based on the <u>white-list</u> approach	*BPINST*

Client	Business Content	Sample users (all password *Welcome1*)
400 SAP Best Practices reference client (merged-000-client)	• Pre-activated SAP Best Practices for SAP S/4HANA 1809 (28 localizations, India not yet done) without transactional data • Based on the merged-client approach	*BPINST*

All above users have the default password *Welcome1.*

Please see chapter 2 for logon procedures and further administrative users/passwords.

For more information about SAP Best Practices for SAP S/4HANA 1809, please visit
https://rapid.sap.com/bp/#/BP_OP_ENTPR

For more background information on the 'white-list' and 'merged-client' approach (besides the implementation guide), please see here.

* Please note the following:

(1) For the US localization, SAP Best Practices are delivered with internal tax calculation. This includes sample jurisdiction codes and sample rates so that you can execute the best practices test scripts.

(2) The organizational structure and chart of accounts are activated in client 100 and client 300/400 as SAP Best Practices sample content provided. Client 200 does not contain these settings.

1.5   More Information & Support

1.5.1   More Information

Overview blog in SAP Community:
https://blogs.sap.com/?p=727457

Known issues blog in SAP Community:
https://blogs.sap.com/?p=742365

SAP S/4HANA Trial Landing Page (containing demo walkthroughs and a Quick Start Guide into SAP CAL)
https://www.sap.com/cmp/oth/crm-s4hana/s4hana-on-premise.html

YouTube playlist (how to create Cloud Provider accounts and start an SAP S/4HANA appliance instance…):
https://www.youtube.com/playlist?list=PLWV533hWWvDmww3OX9YPhjjS1l1n6o-H2

1.5.2   Support

If you run a 30-day trial (i.e. no SAP CAL subscription license), please use the SAP Community.

If you have an SAP CAL subscription license acquired, you can also report an incident.

SAP Community (preferably take SAP CAL as it's very closely monitored):
- SAP CAL: https://answers.sap.com/questions/metadata/24005/sap-cloud-appliance-library.html
- SAP S/4HANA: https://answers.sap.com/questions/metadata/22943/sap-s4hana.html

Incident components (if you have licensed the SAP CAL subscription package)
- BC-VCM-CAL

2 Accessing the Solution

2.1 Overview

The appliance can be accessed via a preconfigured Windows remote desktop (option 1) or via client tools on your local PC (option 2).

For first steps with the appliance, we recommend access via the remote desktop since you only need to have the Windows remote desktop client installed on your PC which in most cases will be the case,

Since UI performance and flexibility are usually better via access from your local PC, please evaluate if you can use this method as standard access. It requires administrator access on your PC and 5 minutes of effort.

2.2 Option 1: System access via embedded Windows Remote Desktop frontend server

1. After your own solution instance is created, click the *Connect* button in the Instances view of the console.
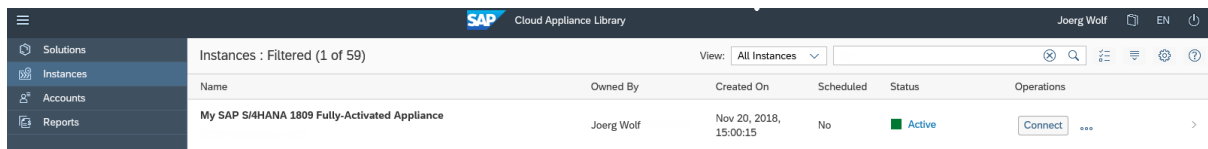
2. In the pop-up, click *Connect* in the "RDP Virtual Machine: Windows Remote Desktop" line.
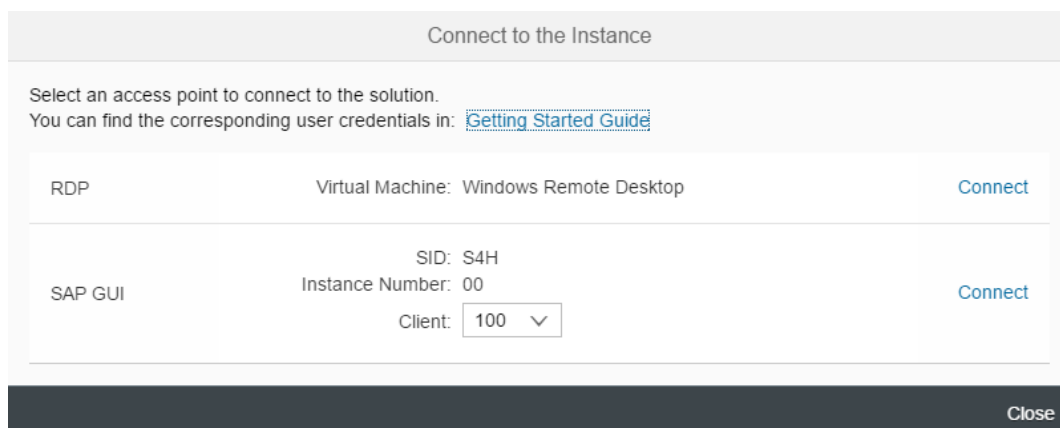
3. Confirm the pop-up window to allow Remote Desktop Connection (click on "Connect").
Enter user *Administrator* (local domain of the remote desktop) and your <Master Password> that you specified during the instance creation in the SAP CAL console.
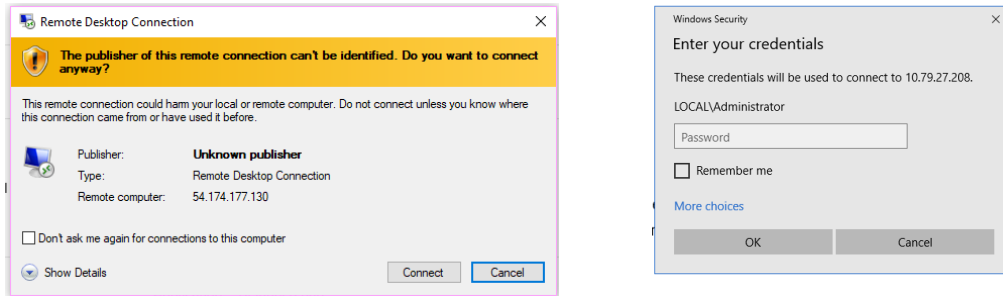
4. Next you will see the pre-configured Windows Frontend Server. Follow the information on the Welcome page (start link also on desktop if it doesn't come up automatically) to logon to the SAP S/4HANA system, and to run sample scenarios. More details on system connectivity can be found in section 3.3.
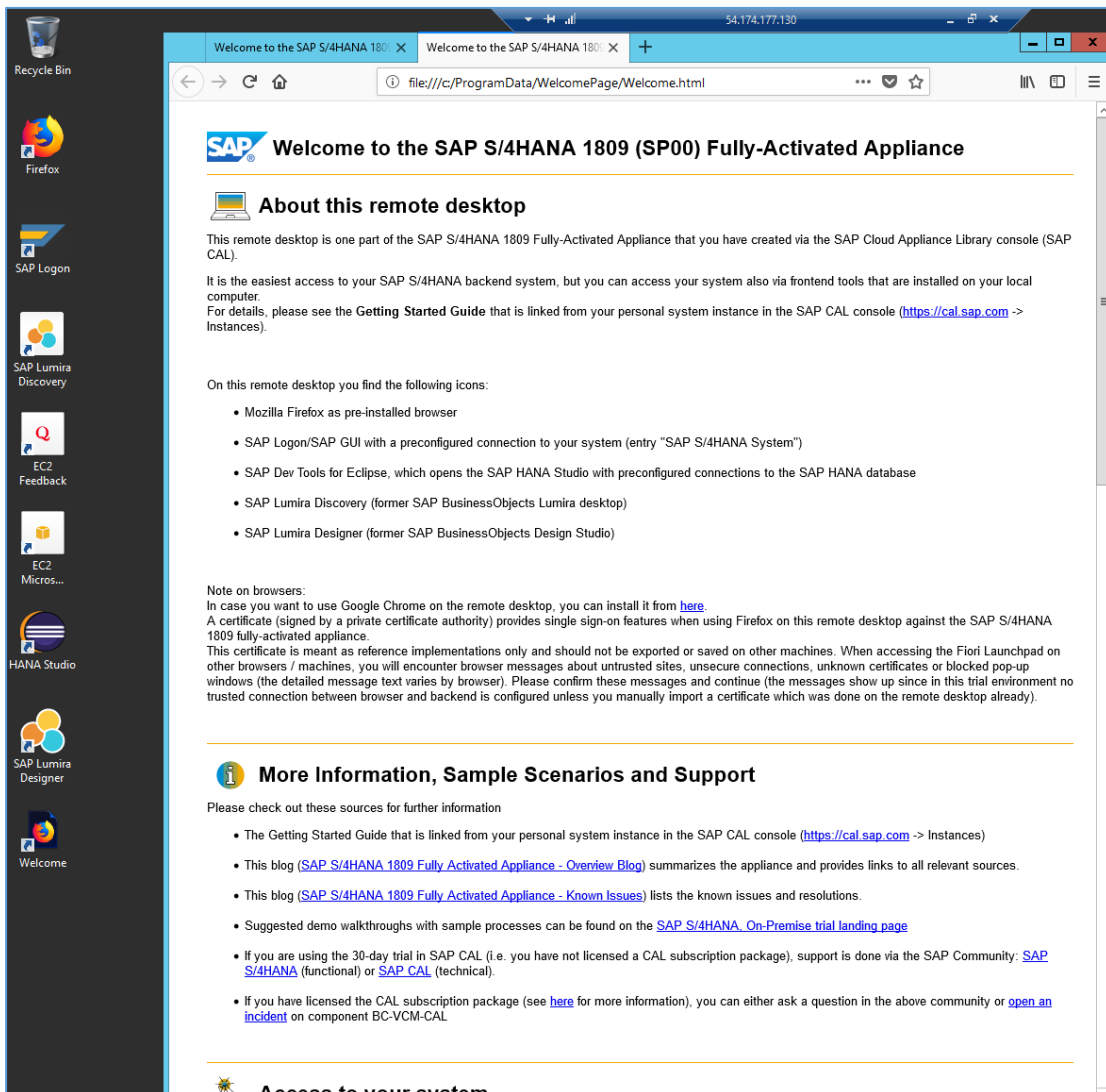
Note: The embedded Windows Remoted Desktop license allows 2 concurrent sessions (one for user Administrator and one for another user that you first would have to create on the remote desktop).

2.3 Option 2: System access via local PC

2.3.1 Mapping your local *hosts* file

To log on to the Fiori Launchpad from your local PC, you need to ensure that you have mapped the IP addresses of your instance against clear text host names. This mapping step is needed since the connection to the cloud providers uses IP addresses, whereas the S/4HANA system needs dedicated host names to work correctly.

After you have done the mapping (by editing a local file on your computer), you will be able to access the Fiori Launchpad of SAP S/4HANA via this URL:
https://vhcals4hcs.dummy.nodomain:44301/sap/bc/ui5_ui5/ui2/ushell/shells/abap/FioriLaunchpad.html

If you cannot map your local hosts file (e.g. you don't have administrator rights on your computer), you can use the IP address of your instance in the URL (https://<IP_Address>:44301/…), however, not all applications and scenarios will work correctly with it e.g. WebGUI or Web Dynpro applications will not display in the browser.

Another option could be to use browser plugins (e.g. Chrome Virtual Host) that simulate the mapping in the browser session only (again, not all scenarios might work correctly with it).

The following describes how to modify the local hosts file on a Windows computer.
Instructions for modifying it on a Mac can be found in the Internet.

1. Open *Notepad* as administrator (search for *Notepad* on your computer, right mouse click, 'Run as administrator'):
2. Click *File → Open* and enter the following path:
   For Windows operating system: `c:\windows\system32\drivers\etc\hosts`
   For Linux operating system: `/etc/hosts`
3. Ensure to select *All Files (*.*)*
4. Open the *hosts* file and add the following lines to it (the IP addresses for the servers are displayed in the CAL console in the instance properties, take the <u>external</u> IP address)**:**
   ```
   # S4H Appliance
   <External IP Address SAP S4HANA/HDB server> vhcals4hci.dummy.nodomain vhcals4hci
   vhcals4hcs.dummy.nodomain vhcals4hcs vhcalhdbdb vhcaldhbdb.dummy.nodomain
   <IP Address SAP NW JAVA/ASE/ADS server> vhcalj2eci.dummy.nodomain vhcalj2eci
   vhcalj2ecs.dummy.nodomain vhcalj2ecs vhcalj2edb vhcalj2edb.dummy.nodomain
   <IP Address SAP BI Platform > bihost bihost.dummy.nodomain
   ```
5. Save the *hosts* file and exit.

2.3.2 Configure ";*.dummy.nodomain" for Web Browser

Working with the <dummy.nodomain> might require changes in your web browser in case there is a web proxy defined (if you are unsure or detect connectivity issues, please contact your network administrator):

1. If you are using Google Chrome as web browser, follow these steps:

    1. Logon to *Chrome → Settings → Show Advanced Settings → Network → Change proxy settings → LAN Settings → Proxy Server → Advanced*

    2. In the *Exceptions*, add **;*.dummy.nodomain** directly at the end of the existing entry.

    3. Click OK.

2. If you are using Internet Explorer as web browser, follow these steps:

    1. Logon to *Internet Explorer → Internet Options → Connections → LAN Settings → Proxy Server → Advanced*

    2. In the *Exceptions*, add **;*.dummy.nodomain** direct at the end of the existing entry.

    3. Click OK.

    See an example in the screenshot below:
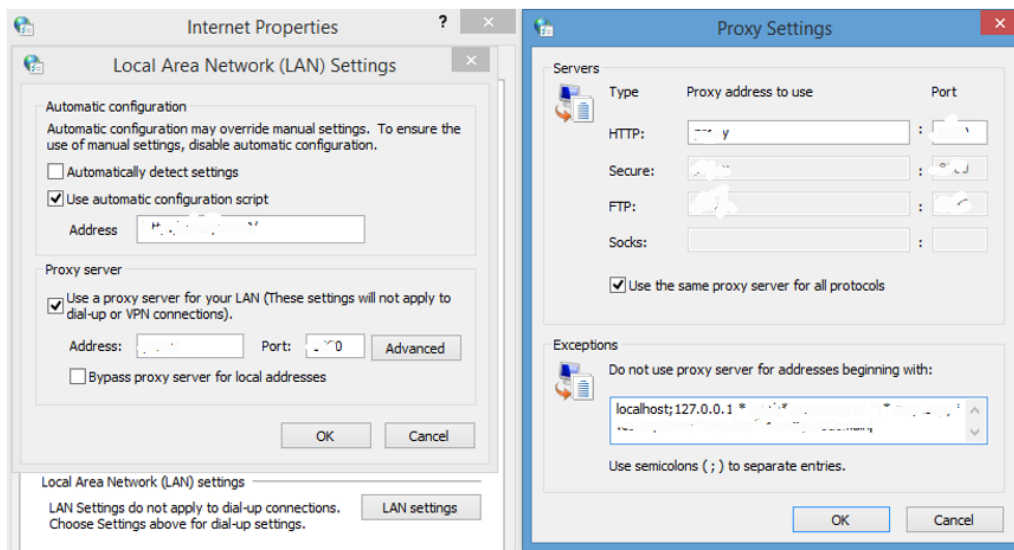
2.4 Users & passwords for the system components

2.4.1   SAP S/4HANA ABAP application server

Connect to SAP S4H using the information in the table below (URLs with the host name vhcal… require hosts file mapping before, see chapter 2.3).

Name	Value	Description
SID	S4H	System ID of the SAP system
Instance Number	00	The instance number of the central instance (CI)
Clients	000,100,200,300,400	These are the pre-configured clients, see section "Business Scenarios & Localizations" for details
Password for users DDIC & SAP*	<Master Password> in client 000. Welcome1 in other clients	The master password is the password that you chose in the SAP Cloud Appliance Library when creating the instance.
ABAP administrator name	s4hadm / <Master Password>	Additional user for ABAP lifecycle management – start/stop, administration,
SAP Web Dispatcher administrator name (default)	BPINST / Welcome1	URL for Web Dispatcher console: https://vhcals4hcs.dummy.nodomain:44301/sap/admin/public/default.html
Technical user for HANA DB connectivity (schema user)	SAPHANADB / <Master Password>	See transaction DBACOCKPIT → System Landscape → Database Connections. Note: In the SAP S/4HANA 1709 FPS01 Fully-Activated Appliance, the password for this user had to be set manually. In the 1809, the password re-set has been automated.
Web Dispatcher Administrator	Administrator / manage	Initial password for the integrated SAP Cloud Connector (access via https://vhcals4hcs,dummy.nodomain:8443)

2.4.2   SAP HANA DB server

Tenant database

Name	Value	Description
HANA DB system	HDB	System ID of the HANA DB
HANA DB Instance Number	02	Instance number of HANA DB
HANA SYSTEM user name	SYSTEM / <Master Password>	Standard HANA system user
HANA administrator name	HDBADM / <Master Password>	Additional user for HANA lifecycle management – start/stop, administration functions, recovery.
Generic HANA DB user	BPINST / Welcome1	Generic user that can be used to access HANA DB

System database

Name	Value	Description
HANA DB system	SYSTEMDB	System ID of the HANA DB
HANA DB Instance Number	02	Instance number of HANA DB
HANA SYSTEM user name	SYSTEM / <Master Password>	Standard HANA system user
HANA administrator name	HDBADM / <Master Password>	Additional user for HANA lifecycle management – start/stop, administration functions, recovery.
Generic HANA DB user	BPINST / Welcome1	Generic user that can be used to access HANA DB

2.4.3 Java Application Server

The administration users for ASE and JAVA on operating system level are defined as follows:

Name	Value	Description
ASE administrator name	sybadm / <Master Password>	Additional user for Sybase ASE lifecycle management – start/stop, administration.
JAVA administrator name	Administrator / <Master Password>	Additional user for JAVA lifecycle management – start/stop, administration, functions, recovery.
Additional JAVA user	BPINST / Welcome1	

Connect to the JAVA server (SAP NetWeaver Administrator) via this URL: https://<server>:50001/nwa.

If you have configured your local hosts file (see chapter 2.3) or use the remote desktop, you can use this URL: https://vhcalj2eci.dummy.nodomain:50001/nwa

2.4.4 SAP BusinessObjects BI platform

The administration users for SAP BusinessObjects BI Platform are defined as follows:

Parameter ID	Parameter Value	Note
Administrator name	Administrator / Welcome1	Use for all administrative functions of the BI platform
BI Power User	BPINST / Welcome1	

In the logon screen (http://bihost:8080/BOE/BI), use *bihost:6400* as system and Enterprise authentication. Usage of the *bihost* alias requires local host file mapping when using local PC access (see section 2.3). The Windows remote desktop has the mapping pre-configured.

2.4.5 Windows Frontend Server Details

Connect to the Frontend server using the information in the table below. You can also configure new users manually on your Remote Desktop client.

For more information, how to connect to the Frontend Server, see Connecting to a Solution Instance.

Name	Value	Description
IP Address	<IP Address>	The IP address of your frontend server instance you created in SAP CAL (use the "external" IP address)

Name	Value	Description
User	Administrator / <Master Password>	User for the Windows frontend server. This is a local user on the remote desktop (if your laptop has a corporate domain configured, please connect as local user). Only one Administrator user can logon at the front-end server at the same point in time.

A note on browsers:

Google Chrome is not pre-installed on this Remote Desktop. If you want to use it, either use a local installation of it or install it on the remote desktop from here (pick the version for Windows 10/8.1/8/7 64-bit).

In the Fiori launchpad, you might find slightly different rendering behaviors depending on the browser version. If you encounter rendering problems, please search for SAP Notes how to potentially fix them.

If you want to access the Fiori Launchpad with a local browser, please be sure to map your local host file as described in section 2.3 of this document or on https://www.sap.com/cmp/oth/crm-s4hana/s4hana-on-premise.html → Quick Start Guide.

A note on certificates:

You may need to once add certain URLs (Fiori launchpad and others) to the trusted sites since the certificate in this trial is self-signed by SAP (and not by a trusted root authority).

If you see messages about unsafe connections, untrusted certificates, etc., please always click on "Proceed" or "I know the risk", etc. (the screens and needed clicks will vary depending on the browser).

2.4.6   Accessing Your Instance on Linux Level

You can access the Linux backend system of your appliance (ABAP / JAVA / BI) as *root* using secure SSH tools, e.g. PuTTY

For information how to access a solution on OS level, go to this FAQ wiki page and check this question: How to connect to a running instance via the secure shell protocol (SSH)?

Parameter ID	Parameter Value	Note
OS User Name	root	The default Linux administrator user
OS Password	<none>	Use the generated private key with SSH tools

Note:

You must use the private key generated in the last step of the Create Instance wizard from SAP Cloud Appliance Library. You can either store the key file attached to your instance within SAP CAL or download it to a local secure file share on your computer.

3 Licenses

3.1 Running the appliance as a trial for a free period

This solution can be used with a Free Trial License Agreement for the configured free period. You will be asked to agree to the Free Trial License Agreement during the instantiation steps.

Once you create the solution instance, the SAP system will generate a temporary license key that is sufficient for exploration purpose. After the expiration of the pre-installed temporary license a valid license is required to keep using the solution instance.

Note that you are not allowed to install license keys under the Free Trial License Agreement. You can continue the solution with the Product License Agreement any time prior to the end of the free period by unlocking it.

3.2 Running the appliance with a product license key

If you want to run the solution beyond the free trial period, you need to obtain two SAP licenses:

1. The SAP Cloud Appliance Library (SAP CAL) subscription package
2. The SAP S/4HANA product license(s)

3.2.1 SAP CAL subscription package

To use the instance created from this solution under your own SAP Product License Agreements, you must unlock the solution in SAP Cloud Appliance Library. As a prerequisite, you must own the required SAP Product licenses and need to purchase the SAP Cloud Appliance Library subscription package. For more information, see Unlocking Solutions.

3.2.2 SAP S/4HANA product license

To use the instance created from this solution under your own SAP Product License Agreements, you must obtain the respective product licenses for SAP S/4HANA.

You will need to apply the following license keys (see 3.2.2.1 for details)

- SAP S/4HANA
- SAP HANA database
- SAP NetWeaver J2EE platform
- Optional: SAP BusinessObjects BI platform

However, please note that the following separately-licensed SAP S/4HANA capabilities are also pre-configured in the appliance.

These capabilities will technically work if you enter the above license keys for SAP S/4HANA and SAP HANA database, but depending on your use case you need to ensure that you comply with SAP's license model.

- SAP S/4HANA Finance for cash mgmt.
- SAP S/4HANA Finance for receivables mgmt.
- SAP S/4HANA for advanced compliance reporting
- SAP Business Planning and Consolidation, add-on for S/4HANA
- SAP S/4HANA for extended planning
- SAP S/4HANA Advanced Available-to-Promise
- SAP S/4HANA for Advanced Variant Configuration, standard
- SAP Portfolio and Project Management for SAP S/4HANA professional

3.2.2.1 License key installation in SAP S/4HANA

After unlocking the solution, you need to apply a valid license key to it with the below parameters.

These parameters need to be entered in the SAP license key application (https://support.sap.com/licensekey).

For more information about how to request and install product license keys, see this blog.

SID	Product	Version	DB	OS	Comment
HDB	SAP HANA, platform edition	SAP HANA 2.0, platform edition	n/a	Linux	License type: SAP In-memory Appliance platform Quantity: 256 GB Memory Volume
S4H	SAP S/4HANA	SAP S/4HANA 1809	SAP HANA database	Linux	N/A
J2E	SAP NetWeaver	SAP NetWeaver 7.5	Sybase ASE	Linux	As license type, select 'J2EE - Web AS JAVA'
BIP	Optional: SAP BusinessObjects Business Intelligence platform	SAP BusinessObjects Business Intelligence platform 4.2	n/a	Linux	Material: Choose SAP BO BI Platform ...

4 General Security Aspects in SAP CAL

4.1 Internet ports for accessing your system

By default, some ports are opened for the security group formed by the server components of your solution instance. The access from your local computer to your system instance happens via those ports (see 'Description' what port is used where).

The list below describes the ports opened for the security group formed by the server components of your solution instance.

You can edit/add/remove ports manually in the instance details (click on the instance link in the CAL console → Edit → Virtual Machine → Access Points).

Virtual Machine*	Protocol	Port (open by default)	Description
ABAP	SSH	22	Used for secure connection to Linux-based server operating system
ABAP	HTTPS	44301, 44300, 50000	Used for access of a local web browser to appliance (Fiori etc.). 44301 is the port for the Web Dispatcher, 44300 is https directly, 50000 is http
ABAP	HTTPS	8443	Access to integrated Cloud Connector (for connectivity services)
ABAP	SAP GUI	3200	Used for access of local SAP GUI to appliance
ABAP	TCP	3300	Used for connection of ABAP Development Tools (Eclipse-based) to SAP S/4HANA ABAP repository
ABAP	TCP	30213 / 30215	Used for connection of SAP HANA Studio to HANA DB
JAVA	SSH	22	Used for secure connection to Linux-based server operating system
JAVA	HTTPS	50001	Used for access to SAP NetWeaver Administrator and other web-based J2EE applications
BIP	SSH	22	Used for secure connection to Linux-based server operating system
BIP	HTTP	8080 & 6400	Used for HTTP connection to BI platform
WIN	RDP	3389	Used for access from MS Windows remote desktop connection

* JAVA = SAP NetWeaver 7.50 AS JAVA incl. ADS (Adobe Document Service)

ABAP = SAP NetWeaver 7.53 AS ABAP incl. SAP S/4HANA

BIP = SAP BusinessObjects BI Platform 4.2

WIN = MS Windows Remote Desktop

4.2 General network considerations

Be aware that creating your instances in the public zone of your cloud computing platform is convenient but less secure than providing it within your corporate network.

If you want to tighten the security, open as few ports as needed (e.g. only port 22 (SSH) for Linux-based solutions and port 3389 (RDP) for the Windows remote desktop). In addition, we also recommend that you limit the access to your instances by defining a specific IP range in the Access Points settings, using CIDR notation.

The more complex but also more secure alternative to public Internet is to set up a virtual private cloud (VPC) with VPN access, which is described in this tutorial on SCN.

You must change the initial user passwords provided by SAP when you log onto the system for the first time.

Note that when using **HANA based appliances**, HANA systems are not installed individually but **cloned from a template system**. Because of this cloning process, the existing root keys are cloned. For more information, see this SAP Note 2134846 - HANA encryption key handling during system cloning.

For more information about security vulnerabilities, see this community page.

4.3 ABAP user roles and profiles

The ABAP business users listed in chapter 1.4 have a large set of roles and extensive authorizations (including the SAP_ALL profile).

If you plan to release the appliance to a larger set of users (especially in the Internet scenario), it is highly recommended to restrict/lock the access with these users, and create your own users with fitting roles and authorizations. This can be done using the standard user management capabilities (e.g. tCode SU01, etc.).

5 Solution Provisioning in SAP Cloud Appliance Library

If you have a user in SAP Cloud Appliance Library, you need to meet the following prerequisites before starting to use the SAP Cloud Appliance library:

Cloud Provider Configurations

You have a valid account in one of the cloud providers supported by SAP Cloud Appliance Library. If you already have an active cloud provider account, you can proceed directly with the next section. Otherwise, navigate to the cloud provider home page and sign up.

For more information about the supported cloud providers, see the FAQ page or this YouTube playlist.

Navigate to SAP Cloud Appliance Library

Open the SAP Cloud Appliance Library in your Web browser using the following link: https://cal.sap.com

For more information about how to use solutions in SAP Cloud Appliance Library, see the official documentation of SAP Cloud Appliance Library (choose *Support* → *Documentation* link and choose ⊞ (expand all) button to see all documents in the structure). You can also use the context help in SAP Cloud Appliance Library by choosing the *Help* panel from the right side.

6 Appendix

6.1 Installed Technical Component Details

6.1.1 SAP NetWeaver 7.53 application server ABAP incl. SAP S/4HANA 1809 SP00 & SAP S/4HANA for Customer Management 1.0 add-on

Component	Release	SP-Level	Support Package	Short Description of Component
SAP_BASIS	753	0000	-	SAP Basis Component
SAP_ABA	75D	0000	-	Cross-Application Component
SAP_GWFND	753	0000	-	SAP Gateway Foundation
SAP_UI	753	0001	SAPK-75301INSAPUI	User Interface Technology
ST-PI	740	0008	SAPK-74008INSTPI	SAP Solution Tools Plug-In
SAP_BW	753	0000	-	SAP Business Warehouse
UIBAS001	400	0000	-	UI for Basis Applications 1.0
MDG_FND	803	0000	-	MDG Foundation
S4FND	103	0000	-	Foundation
MDG_APPL	803	0000	-	MDG Applications
MDG_UX	803	0000	-	MDG Additional User Interface
S4CORE	103	0000	-	S4CORE
SAP_HR	608	0056	SAPKE60856	Human Resources
SAP_HRCAE	608	0056	SAPK-60856INSAPHRCAE	Subcomponent SAP_HRCAE of SAP_HR
SAP_HRCAR	608	0056	SAPK-60856INSAPHRCAR	Subcomponent SAP_HRCAR of SAP_HR
SAP_HRCAT	608	0056	SAPK-60856INSAPHRCAT	Subcomponent SAP_HRCAT of SAP_HR
SAP_HRCAU	608	0056	SAPK-60856INSAPHRCAU	Subcomponent SAP_HRCAU of SAP_HR
SAP_HRCBE	608	0056	SAPK-60856INSAPHRCBE	Subcomponent SAP_HRCBE of SAP_HR
SAP_HRCBG	608	0056	SAPK-60856INSAPHRCBG	Subcomponent SAP_HRCBG of SAP_HR
SAP_HRCBR	608	0056	SAPK-60856INSAPHRCBR	Subcomponent SAP_HRCBR of SAP_HR
SAP_HRCCA	608	0056	SAPK-60856INSAPHRCCA	Subcomponent SAP_HRCCA of SAP_HR

Component	Release	SP-Level	Support Package	Short Description of Component
SAP_HRCCH	608	0056	SAPK-60856INSAPHRCCH	Subcomponent SAP_HRCCH of SAP_HR
SAP_HRCCL	608	0056	SAPK-60856INSAPHRCCL	Subcomponent SAP_HRCCL of SAP_HR
SAP_HRCCN	608	0056	SAPK-60856INSAPHRCCN	Subcomponent SAP_HRCCN of SAP_HR
SAP_HRCCO	608	0056	SAPK-60856INSAPHRCCO	Subcomponent SAP_HRCCO of SAP_HR
SAP_HRCCZ	608	0056	SAPK-60856INSAPHRCCZ	Subcomponent SAP_HRCCZ of SAP_HR
SAP_HRCDE	608	0056	SAPK-60856INSAPHRCDE	Subcomponent SAP_HRCDE of SAP_HR
SAP_HRCDK	608	0056	SAPK-60856INSAPHRCDK	Subcomponent SAP_HRCDK of SAP_HR
SAP_HRCEG	608	0056	SAPK-60856INSAPHRCEG	Subcomponent SAP_HRCEG of SAP_HR
SAP_HRCES	608	0056	SAPK-60856INSAPHRCES	Subcomponent SAP_HRCES of SAP_HR
SAP_HRCFI	608	0056	SAPK-60856INSAPHRCFI	Subcomponent SAP_HRCFI of SAP_HR
SAP_HRCFR	608	0056	SAPK-60856INSAPHRCFR	Subcomponent SAP_HRCFR of SAP_HR
SAP_HRCGB	608	0056	SAPK-60856INSAPHRCGB	Subcomponent SAP_HRCGB of SAP_HR
SAP_HRCGR	608	0056	SAPK-60856INSAPHRCGR	Subcomponent SAP_HRCGR of SAP_HR
SAP_HRCHK	608	0056	SAPK-60856INSAPHRCHK	Subcomponent SAP_HRCHK of SAP_HR
SAP_HRCHR	608	0056	SAPK-60856INSAPHRCHR	Subcomponent SAP_HRCHR of SAP_HR
SAP_HRCHU	608	0056	SAPK-60856INSAPHRCHU	Subcomponent SAP_HRCHU of SAP_HR
SAP_HRCID	608	0056	SAPK-60856INSAPHRCID	Subcomponent SAP_HRCID of SAP_HR
SAP_HRCIE	608	0056	SAPK-60856INSAPHRCIE	Subcomponent SAP_HRCIE of SAP_HR
SAP_HRCIN	608	0056	SAPK-60856INSAPHRCIN	Subcomponent SAP_HRCIN of SAP_HR
SAP_HRCIT	608	0056	SAPK-60856INSAPHRCIT	Subcomponent SAP_HRCIT of SAP_HR
SAP_HRCJP	608	0056	SAPK-60856INSAPHRCJP	Subcomponent SAP_HRCJP of SAP_HR
SAP_HRCKR	608	0056	SAPK-60856INSAPHRCKR	Subcomponent SAP_HRCKR of SAP_HR
SAP_HRCKW	608	0056	SAPK-60856INSAPHRCKW	Subcomponent SAP_HRCKW of SAP_HR
SAP_HRCKZ	608	0056	SAPK-60856INSAPHRCKZ	Subcomponent SAP_HRCKZ of SAP_HR
SAP_HRCMX	608	0056	SAPK-60856INSAPHRCMX	Subcomponent SAP_HRCMX of SAP_HR
SAP_HRCMY	608	0056	SAPK-60856INSAPHRCMY	Subcomponent SAP_HRCMY of SAP_HR
SAP_HRCNL	608	0056	SAPK-60856INSAPHRCNL	Subcomponent SAP_HRCNL of SAP_HR
SAP_HRCNO	608	0056	SAPK-60856INSAPHRCNO	Subcomponent SAP_HRCNO of SAP_HR
SAP_HRCNZ	608	0056	SAPK-60856INSAPHRCNZ	Subcomponent SAP_HRCNZ of SAP_HR
SAP_HRCOM	608	0056	SAPK-60856INSAPHRCOM	Subcomponent SAP_HRCOM of SAP_HR
SAP_HRCPH	608	0056	SAPK-60856INSAPHRCPH	Subcomponent SAP_HRCPH of SAP_HR

Component	Release	SP-Level	Support Package	Short Description of Component
SAP_HRCPL	608	0056	SAPK-60856INSAPHRCPL	Subcomponent SAP_HRCPL of SAP_HR
SAP_HRCPT	608	0056	SAPK-60856INSAPHRCPT	Subcomponent SAP_HRCPT of SAP_HR
SAP_HRCQA	608	0056	SAPK-60856INSAPHRCQA	Subcomponent SAP_HRCQA of SAP_HR
SAP_HRCRO	608	0056	SAPK-60856INSAPHRCRO	Subcomponent SAP_HRCRO of SAP_HR
SAP_HRCRU	608	0056	SAPK-60856INSAPHRCRU	Subcomponent SAP_HRCRU of SAP_HR
SAP_HRCSA	608	0056	SAPK-60856INSAPHRCSA	Subcomponent SAP_HRCSA of SAP_HR
SAP_HRCSE	608	0056	SAPK-60856INSAPHRCSE	Subcomponent SAP_HRCSE of SAP_HR
SAP_HRCSG	608	0056	SAPK-60856INSAPHRCSG	Subcomponent SAP_HRCSG of SAP_HR
SAP_HRCSI	608	0056	SAPK-60856INSAPHRCSI	Subcomponent SAP_HRCSI of SAP_HR
SAP_HRCSK	608	0056	SAPK-60856INSAPHRCSK	Subcomponent SAP_HRCSK of SAP_HR
SAP_HRCTH	608	0056	SAPK-60856INSAPHRCTH	Subcomponent SAP_HRCTH of SAP_HR
SAP_HRCTR	608	0056	SAPK-60856INSAPHRCTR	Subcomponent SAP_HRCTR of SAP_HR
SAP_HRCTW	608	0056	SAPK-60856INSAPHRCTW	Subcomponent SAP_HRCTW of SAP_HR
SAP_HRCUA	608	0056	SAPK-60856INSAPHRCUA	Subcomponent SAP_HRCUA of SAP_HR
SAP_HRCUN	608	0056	SAPK-60856INSAPHRCUN	Subcomponent SAP_HRCUN of SAP_HR
SAP_HRCUS	608	0056	SAPK-60856INSAPHRCUS	Subcomponent SAP_HRCUS of SAP_HR
SAP_HRCVE	608	0056	SAPK-60856INSAPHRCVE	Subcomponent SAP_HRCVE of SAP_HR
SAP_HRCZA	608	0056	SAPK-60856INSAPHRCZA	Subcomponent SAP_HRCZA of SAP_HR
SAP_HRGXX	608	0056	SAPK-60856INSAPHRGXX	Subcomponent SAP_HRGXX of SAP_HR
SAP_HRRXX	608	0056	SAPK-60856INSAPHRRXX	Subcomponent SAP_HRRXX of SAP_HR
EA-DFPS	803	0000	-	SAP Enterprise Extension Defense Forces & Public Security
EA-HR	608	0056	SAPK-60856INEAHR	SAP Enterprise Extension HR
EA-HRCAE	608	0056	SAPK-60856INEAHRCAE	Subcomponent EA-HRCAE of EA-HR
EA-HRCAR	608	0056	SAPK-60856INEAHRCAR	Subcomponent EA-HRCAR of EA-HR
EA-HRCAT	608	0056	SAPK-60856INEAHRCAT	Subcomponent EA-HRCAT of EA-HR
EA-HRCAU	608	0056	SAPK-60856INEAHRCAU	Subcomponent EA-HRCAU of EA-HR
EA-HRCBE	608	0056	SAPK-60856INEAHRCBE	Subcomponent EA-HRCBE of EA-HR
EA-HRCBG	608	0056	SAPK-60856INEAHRCBG	Subcomponent EA-HRCBG of EA-HR
EA-HRCBR	608	0056	SAPK-60856INEAHRCBR	Subcomponent EA-HRCBR of EA-HR
EA-HRCCA	608	0056	SAPK-60856INEAHRCCA	Subcomponent EA-HRCCA of EA-HR
EA-HRCCH	608	0056	SAPK-60856INEAHRCCH	Subcomponent EA-HRCCH of EA-HR
EA-HRCCL	608	0056	SAPK-60856INEAHRCCL	Subcomponent EA-HRCCL of EA-HR
EA-HRCCN	608	0056	SAPK-60856INEAHRCCN	Subcomponent EA-HRCCN of EA-HR

Component	Release	SP-Level	Support Package	Short Description of Component
EA-HRCCO	608	0056	SAPK-60856INEAHRCCO	Subcomponent EA-HRCCO of EA-HR
EA-HRCCZ	608	0056	SAPK-60856INEAHRCCZ	Subcomponent EA-HRCCZ of EA-HR
EA-HRCDE	608	0056	SAPK-60856INEAHRCDE	Subcomponent EA-HRCDE of EA-HR
EA-HRCDK	608	0056	SAPK-60856INEAHRCDK	Subcomponent EA-HRCDK of EA-HR
EA-HRCEG	608	0056	SAPK-60856INEAHRCEG	Subcomponent EA-HRCEG of EA-HR
EA-HRCES	608	0056	SAPK-60856INEAHRCES	Subcomponent EA-HRCES of EA-HR
EA-HRCFI	608	0056	SAPK-60856INEAHRCFI	Subcomponent EA-HRCFI of EA-HR
EA-HRCFR	608	0056	SAPK-60856INEAHRCFR	Subcomponent EA-HRCFR of EA-HR
EA-HRCGB	608	0056	SAPK-60856INEAHRCGB	Subcomponent EA-HRCGB of EA-HR
EA-HRCGR	608	0056	SAPK-60856INEAHRCGR	Subcomponent EA-HRCGR of EA-HR
EA-HRCHK	608	0056	SAPK-60856INEAHRCHK	Subcomponent EA-HRCHK of EA-HR
EA-HRCHR	608	0056	SAPK-60856INEAHRCHR	Subcomponent EA-HRCHR of EA-HR
EA-HRCHU	608	0056	SAPK-60856INEAHRCHU	Subcomponent EA-HRCHU of EA-HR
EA-HRCID	608	0056	SAPK-60856INEAHRCID	Subcomponent EA-HRCID of EA-HR
EA-HRCIE	608	0056	SAPK-60856INEAHRCIE	Subcomponent EA-HRCIE of EA-HR
EA-HRCIN	608	0056	SAPK-60856INEAHRCIN	Subcomponent EA-HRCIN of EA-HR
EA-HRCIT	608	0056	SAPK-60856INEAHRCIT	Subcomponent EA-HRCIT of EA-HR
EA-HRCJP	608	0056	SAPK-60856INEAHRCJP	Subcomponent EA-HRCJP of EA-HR
EA-HRCKR	608	0056	SAPK-60856INEAHRCKR	Subcomponent EA-HRCKR of EA-HR
EA-HRCKW	608	0056	SAPK-60856INEAHRCKW	Subcomponent EA-HRCKW of EA-HR
EA-HRCKZ	608	0056	SAPK-60856INEAHRCKZ	Subcomponent EA-HRCKZ of EA-HR
EA-HRCMX	608	0056	SAPK-60856INEAHRCMX	Subcomponent EA-HRCMX of EA-HR
EA-HRCMY	608	0056	SAPK-60856INEAHRCMY	Subcomponent EA-HRCMY of EA-HR
EA-HRCNL	608	0056	SAPK-60856INEAHRCNL	Subcomponent EA-HRCNL of EA-HR
EA-HRCNO	608	0056	SAPK-60856INEAHRCNO	Subcomponent EA-HRCNO of EA-HR
EA-HRCNZ	608	0056	SAPK-60856INEAHRCNZ	Subcomponent EA-HRCNZ of EA-HR
EA-HRCOM	608	0056	SAPK-60856INEAHRCOM	Subcomponent EA-HRCOM of EA-HR
EA-HRCPH	608	0056	SAPK-60856INEAHRCPH	Subcomponent EA-HRCPH of EA-HR
EA-HRCPL	608	0056	SAPK-60856INEAHRCPL	Subcomponent EA-HRCPL of EA-HR
EA-HRCPT	608	0056	SAPK-60856INEAHRCPT	Subcomponent EA-HRCPT of EA-HR
EA-HRCQA	608	0056	SAPK-60856INEAHRCQA	Subcomponent EA-HRCQA of EA-HR
EA-HRCRO	608	0056	SAPK-60856INEAHRCRO	Subcomponent EA-HRCRO of EA-HR
EA-HRCRU	608	0056	SAPK-60856INEAHRCRU	Subcomponent EA-HRCRU of EA-HR
EA-HRCSA	608	0056	SAPK-60856INEAHRCSA	Subcomponent EA-HRCSA of EA-HR
EA-HRCSE	608	0056	SAPK-60856INEAHRCSE	Subcomponent EA-HRCSE of EA-HR
EA-HRCSG	608	0056	SAPK-60856INEAHRCSG	Subcomponent EA-HRCSG of EA-HR
EA-HRCSI	608	0056	SAPK-60856INEAHRCSI	Subcomponent EA-HRCSI of EA-HR
EA-HRCSK	608	0056	SAPK-60856INEAHRCSK	Subcomponent EA-HRCSK of EA-HR

Component	Release	SP-Level	Support Package	Short Description of Component
EA-HRCTH	608	0056	SAPK-60856INEAHRCTH	Subcomponent EA-HRCTH of EA-HR
EA-HRCTR	608	0056	SAPK-60856INEAHRCTR	Subcomponent EA-HRCTR of EA-HR
EA-HRCTW	608	0056	SAPK-60856INEAHRCTW	Subcomponent EA-HRCTW of EA-HR
EA-HRCUA	608	0056	SAPK-60856INEAHRCUA	Subcomponent EA-HRCUA of EA-HR
EA-HRCUN	608	0056	SAPK-60856INEAHRCUN	Subcomponent EA-HRCUN of EA-HR
EA-HRCUS	608	0056	SAPK-60856INEAHRCUS	Subcomponent EA-HRCUS of EA-HR
EA-HRCVE	608	0056	SAPK-60856INEAHRCVE	Subcomponent EA-HRCVE of EA-HR
EA-HRCZA	608	0056	SAPK-60856INEAHRCZA	Subcomponent EA-HRCZA of EA-HR
EA-HRGXX	608	0056	SAPK-60856INEAHRGXX	Subcomponent EA-HRGXX of EA-HR
EA-HRRXX	608	0056	SAPK-60856INEAHRRXX	Subcomponent EA-HRRXX of EA-HR
EA-PS	803	0000	-	SAP Enterprise Extension Public Services
S4CRM	200	0000	-	CRM@S/4HANA
ECC-SE	803	0000	-	ECC-SE
FI-CAX	803	0000	-	FI-CA Extended
INSURANCE	803	0000	-	SAP Insurance
IS-OIL	803	0000	-	IS-OIL
IS-PRA	803	0000	-	SAP IS-PRA
IS-PS-CA	803	0000	-	IS-PUBLIC SECTOR CONTRACT ACCOUNTING
IS-UT	803	0000	-	SAP Utilities/Telecommunication
GBX01HR	600	0010	SAPK-60010INGBX01HR	FIORI X1 HCM
GBX01HR5	605	0007	SAPK-60507INGBX01HR5	FIORI X1 HCM
SRA004	600	0010	SAPK-60010INSRA004	Create Travel Request OData Integration
UIAPFI70	600	0000	-	UI SFIN
UIS4HOP1	400	0000	-	UI for S/4HANA On Premise
BSNAGT	200	0002	SAPK-20002INBSNAGT	BSN AGENT
MSGPMCON	200	0003	SAPK-20003INMSGPMCON	msg.PM Connection
PERSONAS	300	0007	SAPK-30007INPERSONAS	PERSONAS - SAP GUI PERSONALISATION
ST-A/PI	01T_731	0000	-	Servicetools for SAP Basis 731 and higher

6.1.2 SAP NetWeaver 7.50 application server JAVA with Adobe Document Services installed

Product Name	Name	Version	Vendor	Description
SAP NETWAVER J2EE	7.50	12	sap.com	SAP NETWEAVER 7.5: Adobe Document Services
SAP NETWAVER J2EE	7.50	12	sap.com	SAP NETWEAVER 7.5: Application Server Java

6.1.3 Windows Remote Desktop

o SAP GUI for Windows 7.50
o SAP HANA Studio & ABAP Development Tools (based on Eclipse Oxygen)
o SAP Lumira 2.0 (Discovery & Designer)

6.1.4 SAP BusinessObjects BI Platform 4.2

o SBOP BI PLATFORM 4.2 SP05 SERVER LINUX (64B)
o SAP Lumira Server for BI Platform

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