Getting Started with SAP S/4HANA 1709 FPS01 Fully-Activated Appliance

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1   Solution Information

1.1 Introduction

This guide provides information about the "SAP S/4HANA 1709 (FPS01) - Fully Activated Appliance" on SAP Cloud Appliance Library (SAP CAL).

The appliance contains an SAP S/4HANA 1709 FPS01 system (incl. the add-on SAP S/4HANA for Customer Management 1.0) with pre-configured SAP Best Practices and demo scenarios. Typical use cases are trial system, sandboxing, proof-of-concept, or scoping exercises.

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).

A general introduction into the appliance and the usage as trial or sandbox system for SAP S/4HANA 1709 can be found on https://blogs.sap.com/?p=564532 .

Known issues will be continuously updated in this blog: https://blogs.sap.com/?p=575308.

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 1709 FPS01 appliance (but another SAP solution appliance), however, the concepts are the same.

1.2 Installed Products

You get access to a system landscape that has been built using the following components (see picture below).
1. SAP NetWeaver 7.52 application server ABAP incl. SAP S/4HANA 1709 (FPS01) and SAP S/4HANA for Customer Management 1.0 add-on
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 SP4 (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.

SAP S/4HANA 1709 FPS01 Fully-Activated Appliance
Technical components

Technical Components of the Appliance

SAP S/4HANA, On-Premise 1709 FPS01 Software Appliance

(1) SAP S/4HANA

ABAP Server

1709 FPS01	CRM add-on	Gateway /Fiori

SAP NetWeaver 7.52

SAP Best Practices

SAP HANA 2.0

(2) SAP NW JAVA / ADS

JAVA Server

Adobe Document Services

SAP NetWeaver JAVA 7.50

SAP Sybase ASE 16.0

(3) Remote Desktop *Optional*

Windows Remote Desktop

Mozilla Firefox
SAP GUI 7.40
ABAP Dev Tools / HANA Studio
SAP Lumira
SAP Design Studio

(4) BI Platform *Optional*

SBOP BOE

SBOP BI Platform 4.2
Lumira Server (BOE)
Design Studio Server (BOE)
BI Best Practice Content

Remote desktop & BI Platform only via SAP CAL *

* Note:
· BI Platform and remote desktop are only available when using the SAP Cloud Appliance Library (SAP CAL), not for download / Blu-Ray shipment
· BI Platform and remote desktop are optional in CAL (will decrease hosting fee if you opt out).
Both are included by default but you can opt-out in the Advanced Mode of instance creation. This can not be undone unless you create a new instance that has them in again.

1.3 Business Scenarios

The *SAP S/4HANA 1709 FPS01 Fully Activated Appliance* uses SAP Best Practices as main business content (see chart below for the business areas you can expect in it):

SAP Best Practices for SAP S/4HANA 1709

Details: https://rapid.sap.com/bp/#/BP_OP_ENTPR

Streamlined Procure to Pay	Accelerated Plan to Product	Optimized Order to Cash	HR Connectivity	Core Finance	Database and Data Management	Application Platform and Infrastructure
Collaborative Sourcing and Contract Management	Project Control and Product Development	Order and Contract Management	Time Recording	Accounting and Closing Operations	Enterprise Information Management	Process Management and Integration
Supplier Management	Product Engineering	Inventory and Basic Warehouse Management		Cost Management and Profitability Analysis		Content and Collaboration
Operational Purchasing	Production Planning	Receivables Processing		Treasury Management *		
Inventory and Basic Warehouse Management	Production Operations			Receivables Management *		
Invoice and Payables Management	Quality Management					
Procurement Analytics	Inventory and Basic Warehouse Management					
	Maintenance Management					

* LoB Finance

The SAP Best Practices configuration content is available for 25 countries, the suggested demo walkthroughs (incl. demo data) in the appliance are configured for USA only, though:

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

Multiple ABAP clients are configured in the appliance.

Client 100 is the primary demo client that contains the pre-configured scenarios.

Client	Business Content	Sample users (all with password *Welcome1*)
000 Standard delivery client	• None (standard customizing only)	*BPINST*
100 Trial & Exploration client	• Pre-activated SAP Best Practices for SAP S/4HANA 1709 (Germany & US, sample demo flow localized for US) * • 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) <u>Note on the users:</u> 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	*S4H_AA_DEM / S4H_AA* (Asset Accounting) *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)

Client	Business Content	Sample users (all with password *Welcome1*)
	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_DDR_DEM* (Demand-Driven Replenishment) *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 1709 (all 25 localizations) • Based on the <u>white-list</u> approach	*BPINST*
400 SAP Best Practices reference client (merged-000-client)	• Pre-activated SAP Best Practices for SAP S/4HANA 1709 (all 25 localizations) without transactional data • Based on the <u>merged-client</u> 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 1709, please visit
https://rapid.sap.com/bp/#/BP_OP_ENTPR

For information on the 'white-list' and 'merged-client' approach, please see here

For the Administrator Guide of SAP Best Practices for SAP S/4HANA 1709 FPS01, please visit:
https://help.sap.com/viewer/product/SAP_S4HANA_ON-PREMISE/1709%20001/en-US → Additional Information → Administration Guide for Implementation

* 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. productive purposes, you must replace the sample jurisdiction codes and rates with your own user defined jurisdiction codes and actual tax rates. If you prefer to use an external tax provider, you must configure the required settings.

(2) The organizational structure and chart of accounts are activated in client 100 and client 300/500 as SAP Best Practices content provided. Client 200 & 400 don't contain these settings.

1.4 More Information & Support

1.4.1 More Information

Overview blog in SAP Community:
https://blogs.sap.com/?p=564532

Known issues blog in SAP Community:
https://blogs.sap.com/?p=575308

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=PLWV533hWWvDmww3OX9YPhjjS1I1n6o-H2

1.4.2 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.
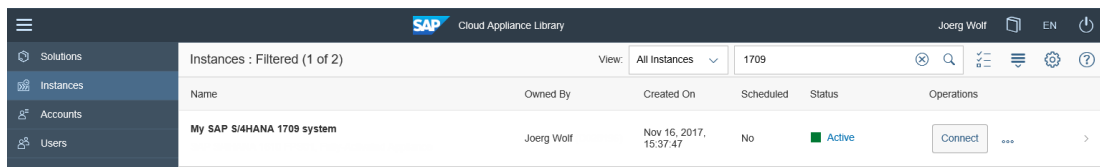
2. *In the pop-up, click* Connect *in the "RDP Virtual Machine: Windows Remote Desktop" line.*
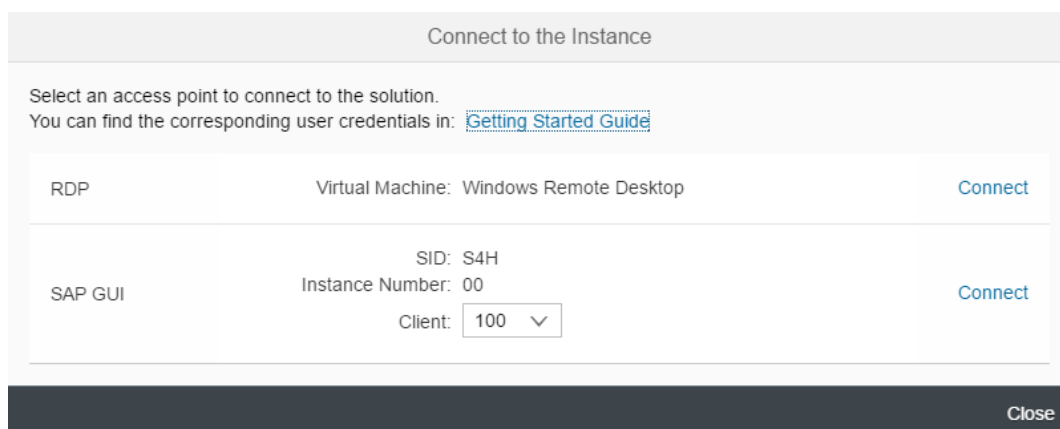
3. Confirm the pop-up window to allow Remote Desktop Connection (click on "Connect").
Enter user *Administrator* (local domain of the remote desktop) and your <Master Password> that you specified during the instance creation in the SAP CAL console.
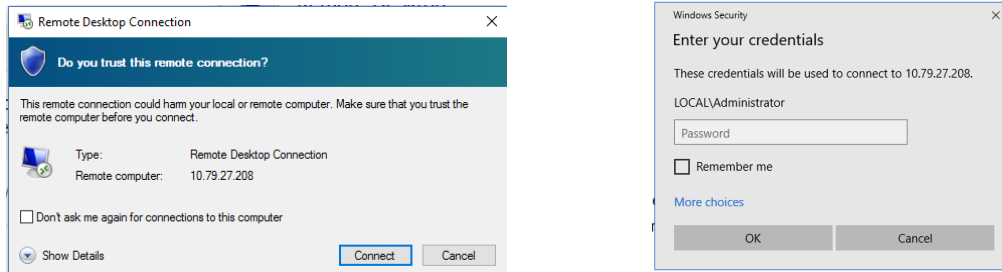
4. Next you will see the pre-configured Windows Frontend Server. Follow the information on the Welcome page (start link also on desktop if it doesn't come up automatically) to logon to the SAP S/4HANA system, and to run sample scenarios. More details on system connectivity can be found in section 3.3.

   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).
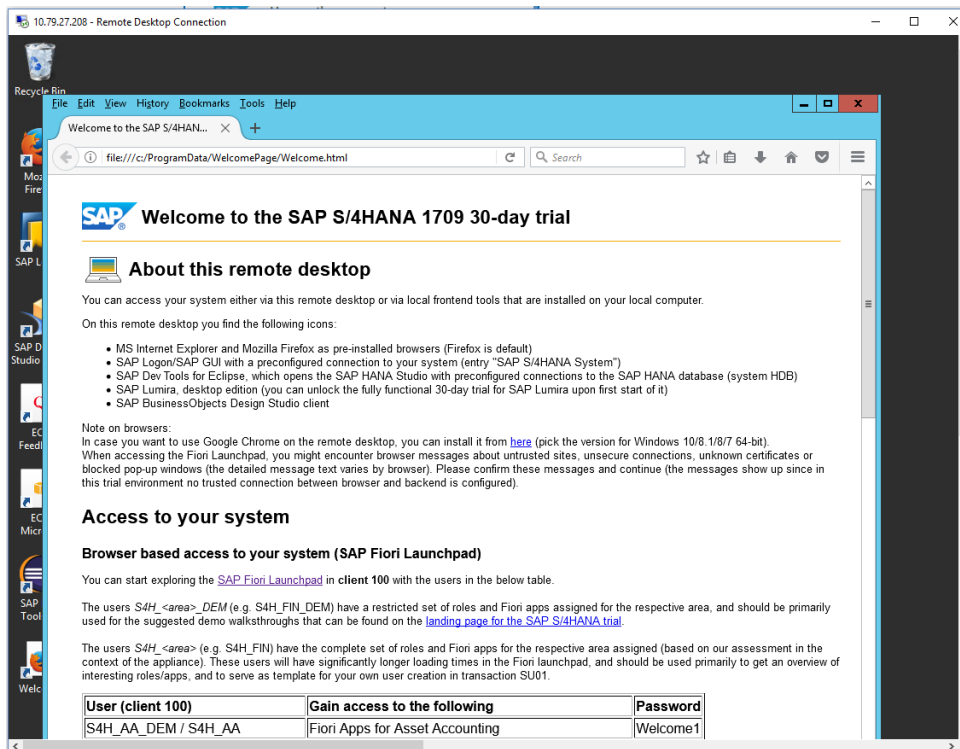
2.3   Option 2: System access via local PC

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://vhcals4hci.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:
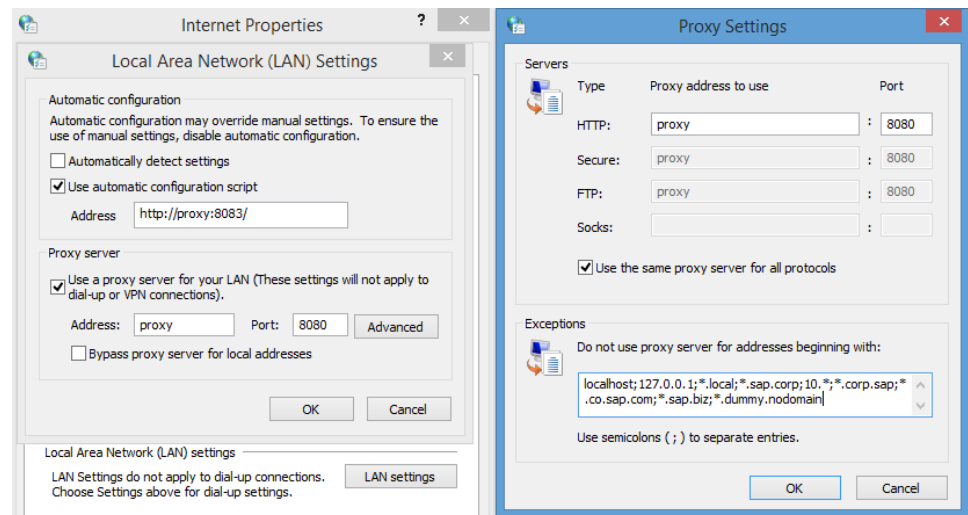
2.4 Users & passwords for the system components

2.4.1   SAP S/4HANA ABAP application server

Connect to SAP S4H using the information in the table below.

Name	Value	Description
SID	S4H	System ID of the SAP system
Instance Number	00	The instance number of the central instance (CI)

Name	Value	Description
Clients	000,100,200,300,400	These are the pre-configured clients, see section "Business Scenarios" for details
Password for users DDIC & SAP*	<Master Password> in client 000. Welcome1 in other clients	The initial master password of the system you provided in the SAP Cloud Appliance Library when creating the instance.
ABAP administrator name	s4hadm	Additional user for ABAP lifecycle management – start/stop, administration,
ABAP administrator password	<Master Password>	The initial master password of the system you provided in the SAP Cloud Appliance Library when creating the instance.
SAP Web Dispatcher administrator name (default)	bpinst	
SAP Web Dispatcher administrator password (default)	Welcome1	
Technical user for HANA DB connectivity (schema user)	saphanadb	
Technical user for HANA DB connectivity (password)	<Master Password>	

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	Standard HANA system user

Name	Value	Description
HANA SYSTEM user password	<Master Password>	The initial master password of the system you provided in the SAP Cloud Appliance Library when creating the instance.
HANA administrator name	HDBADM	Additional user for HANA lifecycle management – start/stop, administration functions, recovery.
HANA administrator password	<Master Password>	The initial master password of the system you provided in the SAP Cloud Appliance Library when creating the instance.
Generic HANA DB user	BPINST	Generic user that can be used to access HANA DB (standard password Welcome1)

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	Standard HANA system user
HANA SYSTEM user password	<Master Password>	The initial master password of the system you provided in the SAP Cloud Appliance Library when creating the instance.
HANA administrator name	HDBADM	Additional user for HANA lifecycle management – start/stop, administration functions, recovery.
HANA administrator password	<Master Password>	The initial master password of the system you provided in the SAP Cloud Appliance Library when creating the instance.
Generic HANA DB user	BPINST	Generic user that can be used to access HANA DB (standard password Welcome1)

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	Additional user for ASE lifecycle management – start/stop, administration.
ASE administrator password	<Master Password>	The password is the same as the master password provided during instance creation in the SAP Cloud Appliance Library.
JAVA administrator name	Administrator	Additional user for JAVA lifecycle management – start/stop, administration, functions, recovery.
JAVA administrator password	<Master Password>	The password is the same as the master password provided during instance creation in the SAP Cloud Appliance Library.
Additional JAVA user	BPINST	Password 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	Use for all administrative functions of the BI platform
Administrator password	Welcome1	
BI Power User	BPINST	
BI Power User password	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)
User	Administrator	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.
Password	<Master Password>	The initial master password of the system you provided in the SAP Cloud Appliance Library when creating the instance.

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.

For all browsers, you need to once add the Fiori launchpad to the trusted sites since the certificates in this trial are not signed/trusted. 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   Backend operating system

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

2.4.6.1   Accessing Your Instance on OS Level

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)?

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 Post-deployment steps

Once you can access your solution, you need to perform the following steps to ensure full functionality.

3.1 Adapt user credentials for LiveCache connectivity

During the instance creation, the standard passwords for administrative users are replaced by the instance master password that you specified.

One of these users is the SAPHANADB user that is needed for LiveCache connections into the SAP HANA database. LiveCache is used e.g. for scenarios in Production Planning / Detailed Scheduling (PP/DS).

Due to technical reasons, your master password for the user SAPHANADB can not be applied to the database calls that are made from the ABAP stack for LiveCache scenarios (see DBACOCKPIT → System Landscape → Database connections → SAP HANA Database → LCA/LDA/LEA).

Since the user SAPHANADB would be locked by those DB calls with a wrong password, a dummy user (called JOHNDOE) is configured in the initial delivery of the appliance.

Therefore, for usage of LiveCache scenarios you need to replace the JOHNDOE user with the user SAPHANADB and *<your instance master password>*.

The steps are as follows:

1. Connect to the SAP ABAP system via SAPGUI
2. Logon to client 100 with user BPINST, password Welcome1
3. Launch transaction DBACOCKPIT
4. Select System Landscape → Database Connections
5. Locate the SAP HANA database connections: LCA, LDA and LEA.
6. Select "Change User Credentials" for each of those connections and update them with User Name SAPHANADB and Password *<your instance master password>*
7. Click *Login*, and test the connection.
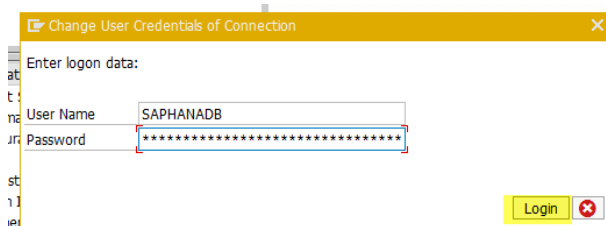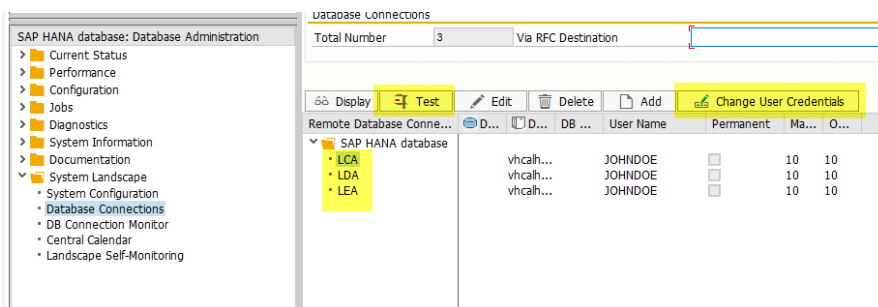
4 Licenses

4.1 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.

4.2 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)

4.2.1 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.

4.2.2 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.

- S/4HANA Finance for cash mgmt.
- S/4HANA Finance for receivables mgmt.
- 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

4.2.2.1   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 1709*	*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* *…*

5   General Security Aspects in SAP CAL

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	Used for access of a local web browser to appliance (Fiori Launchpad of SAP S/4HANA)
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	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
ABAP = SAP NetWeaver 7.51 AS ABAP incl. SAP S/4HANA
BIP = SAP BusinessObjects BI Platform 4.2
WIN = MS Windows Remote Desktop

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.

6 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.

7 Appendix

7.1 Installed Technical Component Details

7.1.1 SAP NetWeaver 7.52 application server ABAP incl. SAP S/4HANA 1709 FPS01 & SAP S/4HANA for Customer Management 1.0 add-on

Component	Release	SP Level	Support Package	Short Description of component
SAP_BASIS	752	1	SAPK-75201INSAPBASIS	SAP Basis Component
SAP_ABA	75C	1	SAPK-75C01INSAPABA	Cross-Application Component
SAP_GWFND	752	1	SAPK-75201INSAPGWFND	SAP Gateway Foundation 7.40
SAP_UI	752	2	SAPK-75202INSAPUI	User Interface Technology 7.40
ST-PI	740	7	SAPK-74007INSTPI	SAP Solution Tools Plug-In
SAP_BW	752	1	SAPK-75201INSAPBW	SAP Business Warehouse
UIBAS001	300	1	SAPK-30001INUIBAS001	UI for Basis Applications 1.0
MDG_FND	802	1	SAPK-80201INMDGFND	MDG Foundation
S4FND	102	1	SAPK-10201INS4FND	Foundation 102
MDG_APPL	802	1	SAPK-80201INMDGAPPL	MDG Applications
MDG_UX	802	1	SAPK-80201INMDGUX	MDG Applications
S4CORE	102	1	SAPK-10201INS4CORE	S4CORE
SAP_HR	608	47	SAPKE60847	Human Resources
SAP_HRCAE	608	47	SAPK-60847INSAPHRCAE	Subcomponent SAP_HRCAE of SAP_HR
SAP_HRCAR	608	47	SAPK-60847INSAPHRCAR	Subcomponent SAP_HRCAR of SAP_HR
SAP_HRCAT	608	47	SAPK-60847INSAPHRCAT	Subcomponent SAP_HRCAT of SAP_HR
SAP_HRCAU	608	47	SAPK-60847INSAPHRCAU	Subcomponent SAP_HRCAU of SAP_HR

Component	Release	SP Level	Support Package	Short Description of component
SAP_HRCBE	608	47	SAPK-60847INSAPHRCBE	Subcomponent SAP_HRCBE of SAP_HR
SAP_HRCBG	608	47	SAPK-60847INSAPHRCBG	Subcomponent SAP_HRCBG of SAP_HR
SAP_HRCBR	608	47	SAPK-60847INSAPHRCBR	Subcomponent SAP_HRCBR of SAP_HR
SAP_HRCCA	608	47	SAPK-60847INSAPHRCCA	Subcomponent SAP_HRCCA of SAP_HR
SAP_HRCCH	608	47	SAPK-60847INSAPHRCCH	Subcomponent SAP_HRCCH of SAP_HR
SAP_HRCCL	608	47	SAPK-60847INSAPHRCCL	Subcomponent SAP_HRCCL of SAP_HR
SAP_HRCCN	608	47	SAPK-60847INSAPHRCCN	Subcomponent SAP_HRCCN of SAP_HR
SAP_HRCCO	608	47	SAPK-60847INSAPHRCCO	Subcomponent SAP_HRCCO of SAP_HR
SAP_HRCCZ	608	47	SAPK-60847INSAPHRCCZ	Subcomponent SAP_HRCCZ of SAP_HR
SAP_HRCDE	608	47	SAPK-60847INSAPHRCDE	Subcomponent SAP_HRCDE of SAP_HR
SAP_HRCDK	608	47	SAPK-60847INSAPHRCDK	Subcomponent SAP_HRCDK of SAP_HR
SAP_HRCEG	608	47	SAPK-60847INSAPHRCEG	Subcomponent SAP_HRCEG of SAP_HR
SAP_HRCES	608	47	SAPK-60847INSAPHRCES	Subcomponent SAP_HRCES of SAP_HR
SAP_HRCFI	608	47	SAPK-60847INSAPHRCFI	Subcomponent SAP_HRCFI of SAP_HR
SAP_HRCFR	608	47	SAPK-60847INSAPHRCFR	Subcomponent SAP_HRCFR of SAP_HR
SAP_HRCGB	608	47	SAPK-60847INSAPHRCGB	Subcomponent SAP_HRCGB of SAP_HR
SAP_HRCGR	608	47	SAPK-60847INSAPHRCGR	Subcomponent SAP_HRCGR of SAP_HR
SAP_HRCHK	608	47	SAPK-60847INSAPHRCHK	Subcomponent SAP_HRCHK of SAP_HR
SAP_HRCHR	608	47	SAPK-60847INSAPHRCHR	Subcomponent SAP_HRCHR of SAP_HR
SAP_HRCHU	608	47	SAPK-60847INSAPHRCHU	Subcomponent SAP_HRCHU of SAP_HR
SAP_HRCID	608	47	SAPK-60847INSAPHRCID	Subcomponent SAP_HRCID of SAP_HR
SAP_HRCIE	608	47	SAPK-60847INSAPHRCIE	Subcomponent SAP_HRCIE of SAP_HR

Component	Release	SP Level	Support Package	Short Description of component
SAP_HRCIN	608	47	SAPK-60847INSAPHRCIN	Subcomponent SAP_HRCIN of SAP_HR
SAP_HRCIT	608	47	SAPK-60847INSAPHRCIT	Subcomponent SAP_HRCIT of SAP_HR
SAP_HRCJP	608	47	SAPK-60847INSAPHRCJP	Subcomponent SAP_HRCJP of SAP_HR
SAP_HRCKR	608	47	SAPK-60847INSAPHRCKR	Subcomponent SAP_HRCKR of SAP_HR
SAP_HRCKW	608	47	SAPK-60847INSAPHRCKW	Subcomponent SAP_HRCKW of SAP_HR
SAP_HRCKZ	608	47	SAPK-60847INSAPHRCKZ	Subcomponent SAP_HRCKZ of SAP_HR
SAP_HRCMX	608	47	SAPK-60847INSAPHRCMX	Subcomponent SAP_HRCMX of SAP_HR
SAP_HRCMY	608	47	SAPK-60847INSAPHRCMY	Subcomponent SAP_HRCMY of SAP_HR
SAP_HRCNL	608	47	SAPK-60847INSAPHRCNL	Subcomponent SAP_HRCNL of SAP_HR
SAP_HRCNO	608	47	SAPK-60847INSAPHRCNO	Subcomponent SAP_HRCNO of SAP_HR
SAP_HRCNZ	608	47	SAPK-60847INSAPHRCNZ	Subcomponent SAP_HRCNZ of SAP_HR
SAP_HRCOM	608	47	SAPK-60847INSAPHRCOM	Subcomponent SAP_HRCOM of SAP_HR
SAP_HRCPH	608	47	SAPK-60847INSAPHRCPH	Subcomponent SAP_HRCPH of SAP_HR
SAP_HRCPL	608	47	SAPK-60847INSAPHRCPL	Subcomponent SAP_HRCPL of SAP_HR
SAP_HRCPT	608	47	SAPK-60847INSAPHRCPT	Subcomponent SAP_HRCPT of SAP_HR
SAP_HRCQA	608	47	SAPK-60847INSAPHRCQA	Subcomponent SAP_HRCQA of SAP_HR
SAP_HRCRO	608	47	SAPK-60847INSAPHRCRO	Subcomponent SAP_HRCRO of SAP_HR
SAP_HRCRU	608	47	SAPK-60847INSAPHRCRU	Subcomponent SAP_HRCRU of SAP_HR
SAP_HRCSA	608	47	SAPK-60847INSAPHRCSA	Subcomponent SAP_HRCSA of SAP_HR
SAP_HRCSE	608	47	SAPK-60847INSAPHRCSE	Subcomponent SAP_HRCSE of SAP_HR
SAP_HRCSG	608	47	SAPK-60847INSAPHRCSG	Subcomponent SAP_HRCSG of SAP_HR
SAP_HRCSI	608	47	SAPK-60847INSAPHRCSI	Subcomponent SAP_HRCSI of SAP_HR

Component	Release	SP Level	Support Package	Short Description of component
SAP_HRCSK	608	47	SAPK-60847INSAPHRCSK	Subcomponent SAP_HRCSK of SAP_HR
SAP_HRCTH	608	47	SAPK-60847INSAPHRCTH	Subcomponent SAP_HRCTH of SAP_HR
SAP_HRCTR	608	47	SAPK-60847INSAPHRCTR	Subcomponent SAP_HRCTR of SAP_HR
SAP_HRCTW	608	47	SAPK-60847INSAPHRCTW	Subcomponent SAP_HRCTW of SAP_HR
SAP_HRCUA	608	47	SAPK-60847INSAPHRCUA	Subcomponent SAP_HRCUA of SAP_HR
SAP_HRCUN	608	47	SAPK-60847INSAPHRCUN	Subcomponent SAP_HRCUN of SAP_HR
SAP_HRCUS	608	47	SAPK-60847INSAPHRCUS	Subcomponent SAP_HRCUS of SAP_HR
SAP_HRCVE	608	47	SAPK-60847INSAPHRCVE	Subcomponent SAP_HRCVE of SAP_HR
SAP_HRCZA	608	47	SAPK-60847INSAPHRCZA	Subcomponent SAP_HRCZA of SAP_HR
SAP_HRGXX	608	47	SAPK-60847INSAPHRGXX	Subcomponent SAP_HRGXX of SAP_HR
SAP_HRRXX	608	47	SAPK-60847INSAPHRRXX	Subcomponent SAP_HRRXX of SAP_HR
EA-DFPS	802	1	SAPK-80201INEADFPS	SAP Enterprise Extension Defense Forces & Public Security
EA-HR	608	47	SAPK-60847INEAHR	SAP Enterprise Extension HR
EA-HRCAE	608	47	SAPK-60847INEAHRCAE	Subcomponent EA-HRCAE of EA-HR
EA-HRCAR	608	47	SAPK-60847INEAHRCAR	Subcomponent EA-HRCAR of EA-HR
EA-HRCAT	608	47	SAPK-60847INEAHRCAT	Subcomponent EA-HRCAT of EA-HR
EA-HRCAU	608	47	SAPK-60847INEAHRCAU	Subcomponent EA-HRCAU of EA-HR
EA-HRCBE	608	47	SAPK-60847INEAHRCBE	Subcomponent EA-HRCBE of EA-HR
EA-HRCBG	608	47	SAPK-60847INEAHRCBG	Subcomponent EA-HRCBG of EA-HR
EA-HRCBR	608	47	SAPK-60847INEAHRCBR	Subcomponent EA-HRCBR of EA-HR
EA-HRCCA	608	47	SAPK-60847INEAHRCCA	Subcomponent EA-HRCCA of EA-HR
EA-HRCCH	608	47	SAPK-60847INEAHRCCH	Subcomponent EA-HRCCH of EA-HR
EA-HRCCL	608	47	SAPK-60847INEAHRCCL	Subcomponent EA-HRCCL of EA-HR

Component	Release	SP Level	Support Package	Short Description of component
EA-HRCCN	608	47	SAPK-60847INEAHRCCN	Subcomponent EA-HRCCN of EA-HR
EA-HRCCO	608	47	SAPK-60847INEAHRCCO	Subcomponent EA-HRCCO of EA-HR
EA-HRCCZ	608	47	SAPK-60847INEAHRCCZ	Subcomponent EA-HRCCZ of EA-HR
EA-HRCDE	608	47	SAPK-60847INEAHRCDE	Subcomponent EA-HRCDE of EA-HR
EA-HRCDK	608	47	SAPK-60847INEAHRCDK	Subcomponent EA-HRCDK of EA-HR
EA-HRCEG	608	47	SAPK-60847INEAHRCEG	Sub component EA-HRCEG of EA-HR
EA-HRCES	608	47	SAPK-60847INEAHRCES	Subcomponent EA-HRCES of EA-HR
EA-HRCFI	608	47	SAPK-60847INEAHRCFI	Subcomponent EA-HRCFI of EA-HR
EA-HRCFR	608	47	SAPK-60847INEAHRCFR	Subcomponent EA-HRCFR of EA-HR
EA-HRCGB	608	47	SAPK-60847INEAHRCGB	Subcomponent EA-HRCGB of EA-HR
EA-HRCGR	608	47	SAPK-60847INEAHRCGR	Subcomponent EA-HRCGR of EA-HR
EA-HRCHK	608	47	SAPK-60847INEAHRCHK	Subcomponent EA-HRCHK of EA-HR
EA-HRCHR	608	47	SAPK-60847INEAHRCHR	Subcomponent EA-HRCHR of EA-HR
EA-HRCHU	608	47	SAPK-60847INEAHRCHU	Subcomponent EA-HRCHU of EA-HR
EA-HRCID	608	47	SAPK-60847INEAHRCID	Subcomponent EA-HRCID of EA-HR
EA-HRCIE	608	47	SAPK-60847INEAHRCIE	Subcomponent EA-HRCIE of EA-HR
EA-HRCIN	608	47	SAPK-60847INEAHRCIN	Subcomponent EA-HRCIN of EA-HR
EA-HRCIT	608	47	SAPK-60847INEAHRCIT	Subcomponent EA-HRCIT of EA-HR
EA-HRCJP	608	47	SAPK-60847INEAHRCJP	Subcomponent EA-HRCJP of EA-HR
EA-HRCKR	608	47	SAPK-60847INEAHRCKR	Subcomponent EA-HRCKR of EA-HR
EA-HRCKW	608	47	SAPK-60847INEAHRCKW	Subcomponent EA-HRCKW of EA-HR
EA-HRCKZ	608	47	SAPK-60847INEAHRCKZ	Subcomponent EA-HRCKZ of EA-HR

Component	Release	SP Level	Support Package	Short Description of component
EA-HRCMX	608	47	SAPK-60847INEAHRCMX	Subcomponent EA-HRCMX of EA-HR
EA-HRCMY	608	47	SAPK-60847INEAHRCMY	Subcomponent EA-HRCMY of EA-HR
EA-HRCNL	608	47	SAPK-60847INEAHRCNL	Subcomponent EA-HRCNL of EA-HR
EA-HRCNO	608	47	SAPK-60847INEAHRCNO	Subcomponent EA-HRCNO of EA-HR
EA-HRCNZ	608	47	SAPK-60847INEAHRCNZ	Subcomponent EA-HRCNZ of EA-HR
EA-HRCOM	608	47	SAPK-60847INEAHRCOM	Subcomponent EA-HRCOM of EA-HR
EA-HRCPH	608	47	SAPK-60847INEAHRCPH	Subcomponent EA-HRCPH of EA-HR
EA-HRCPL	608	47	SAPK-60847INEAHRCPL	Subcomponent EA-HRCPL of EA-HR
EA-HRCPT	608	47	SAPK-60847INEAHRCPT	Subcomponent EA-HRCPT of EA-HR
EA-HRCQA	608	47	SAPK-60847INEAHRCQA	Subcomponent EA-HRCQA of EA-HR
EA-HRCRO	608	47	SAPK-60847INEAHRCRO	Subcomponent EA-HRCRO of EA-HR
EA-HRCRU	608	47	SAPK-60847INEAHRCRU	Subcomponent EA-HRCRU of EA-HR
EA-HRCSA	608	47	SAPK-60847INEAHRCSA	Subcomponent EA-HRCSA of EA-HR
EA-HRCSE	608	47	SAPK-60847INEAHRCSE	Subcomponent EA-HRCSE of EA-HR
EA-HRCSG	608	47	SAPK-60847INEAHRCSG	Subcomponent EA-HRCSG of EA-HR
EA-HRCSI	608	47	SAPK-60847INEAHRCSI	Subcomponent EA-HRCSI of EA-HR
EA-HRCSK	608	47	SAPK-60847INEAHRCSK	Subcomponent EA-HRCSK of EA-HR
EA-HRCTH	608	47	SAPK-60847INEAHRCTH	Subcomponent EA-HRCTH of EA-HR
EA-HRCTR	608	47	SAPK-60847INEAHRCTR	Subcomponent EA-HRCTR of EA-HR
EA-HRCTW	608	47	SAPK-60847INEAHRCTW	Subcomponent EA-HRCTW of EA-HR
EA-HRCUA	608	47	SAPK-60847INEAHRCUA	Subcomponent EA-HRCUA of EA-HR
EA-HRCUN	608	47	SAPK-60847INEAHRCUN	Subcomponent EA-HRCUN of EA-HR

Component	Release	SP Level	Support Package	Short Description of component
EA-HRCUS	608	47	SAPK-60847INEAHRCUS	Subcomponent EA-HRCUS of EA-HR
EA-HRCVE	608	47	SAPK-60847INEAHRCVE	Subcomponent EA-HRCVE of EA-HR
EA-HRCZA	608	47	SAPK-60847INEAHRCZA	Subcomponent EA-HRCZA of EA-HR
EA-HRGXX	608	47	SAPK-60847INEAHRGXX	Subcomponent EA-HRGXX of EA-HR
EA-HRRXX	608	47	SAPK-60847INEAHRRXX	Subcomponent EA-HRRXX of EA-HR
EA-PS	802	1	SAPK-80201INEAPS	SAP Enterprise Extension Public Services
S4CRM	100	1	SAPK-10001INS4CRM	CRM@S/4HANA
ECC-SE	802	1	SAPK-80201INECCSE	ECC-SE
ERECRUIT	802	1	SAPK-80201INERECRUIT	E-Recruiting
FI-CAX	802	1	SAPK-80201INFICAX	FI-CA Extended
INSURANCE	802	1	SAPK-80201ININSURANC	SAP Insurance
IS-H	802	1	SAPK-80201INISH	SAP Healthcare
IS-M	802	1	SAPK-80201INISM	SAP MEDIA
IS-OIL	802	1	SAPK-80201INISOIL	IS-OIL
IS-PRA	802	1	SAPK-80201INISPRA	SAP IS-PRA
IS-PS-CA	802	1	SAPK-80201INISPSCA	IS-PUBLIC SECTOR CONTRACT ACCOUNTING
IS-UT	802	1	SAPK-80201INISUT	SAP Utilities/Telecommunication
LSOFE	802	1	SAPK-80201INLSOFE	SAP Learning Solution Front-End
GBX01HR	600	8	SAPK-60008INGBX01HR	FIORI X1 HCM
GBX01HR5	605	5	SAPK-60505INGBX01HR5	FIORI X1 HCM
SAPUIFT	100	0	-	SAP UI Frontend Implementation Technology
SRA004	600	10	SAPK-60010INSRA004	Create Travel Request OData Integration
UIAPFI70	500	1	SAPK-50001INUIAPFI70	UI SFIN
UIS4HOP1	300	1	SAPK-30001INUIS4HOP1	UI for S/4HANA On Premise
UIX01CA1	200	5	SAPK-20005INUIX01CA1	UI for Cross-Applications
BSNAGT	200	2	SAPK-20002INBSNAGT	BSN AGENT

Component	Release	SP Level	Support Package	Short Description of component
MSGPMCON	200	2	SAPK-20002INMSGPMCON	msg.PM Connection
PERSONAS	300	5	SAPK-30005INPERSONAS	PERSONAS - SAP GUI PERSONALISATION
ST-A/PI	01S_731	3	SAPKITAB9T	Servicetools for SAP Basis 731

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

Product Name	Name	Version	Vendor	Description
SAP NETWAVER J2EE	7.50	04	sap.com	SAP NETWEAVER 7.5: Adobe Document Services
SAP NETWAVER J2EE	7.50	04	sap.com	SAP NETWEAVER 7.5: Application Server Java

7.1.3   Windows Remote Desktop

- o   ABAP Development Tools
- o   BW Modeling Tools
- o   SAPUI5 Tools
- o   SAP GUI for Windows
- o   SAP BusinessObjects DesignStudio Client
- o   SAP Lumira Desktop edition

7.1.4   SAP BusinessObjects BI Platform 4.2

- o   SBOP BI PLATFORM 4.2 SP04 SERVER LINUX (64B)
- o   SAP Lumira Server for BI Platform 1.31 Linux (64B)
- o   SP04 for DESIGN STUDIO BIP ADD ON 1.6