

Getting Started with the SAP S/4HANA 2021 (SP00) Fully-Activated Appliance



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1 Appliance Template information

1.1 Introduction

This guide provides information about the “SAP S/4HANA 2021 (SP00) Fully Activated Appliance” on SAP Cloud Appliance Library (SAP CAL, <https://cal.sap.com>).

The appliance template contains an SAP S/4HANA 2021 (SP00) system with pre-configured SAP Best Practices and demo scenarios.

It can be rapidly brought up as your personal appliance with administrative rights either hosted in dedicated cloud providers such as Amazon, MS Azure or 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 not recommended since the appliance template 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 template and the usage as trial or sandbox system can be found on <https://blogs.sap.com/?p=727457>

Known issues will be continuously updated in this blog: <https://blogs.sap.com/?p=1440551> .

Post-installation steps and extensive demo guides with sample walkthrough scenarios can be found here: <https://blogs.sap.com/2019/04/23/sap-s4hana-fully-activated-appliance-demo-guides/>.

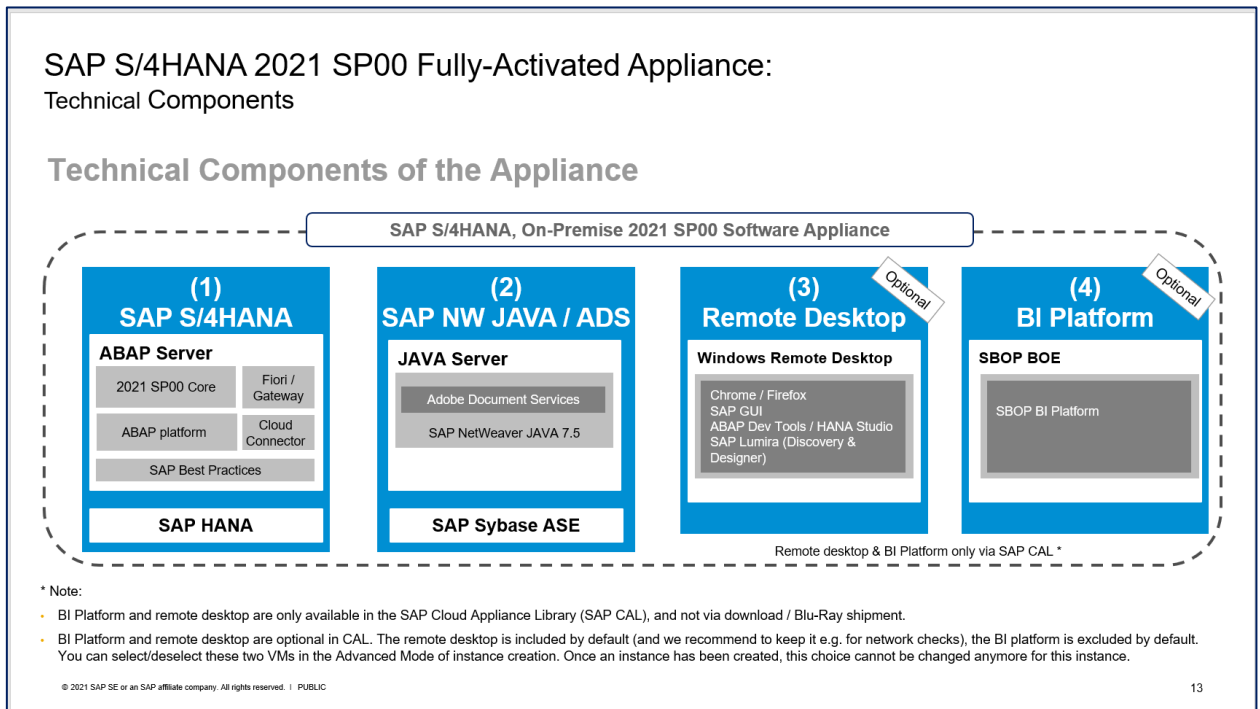
Video tutorials how to create an AWS account and how to launch the appliance can be found [here](#).

They might not necessarily show the creation of the SAP S/4HANA 2021 appliance (but another SAP appliance template), however, the concepts are the same.

1.2 Installed products

When you deploy the appliance template (either in Cloud Appliance Library 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 S/4HANA 2021 SP00 (on SAP HANA database)
2. SAP NetWeaver 7.50 JAVA with Adobe Document Services (on Sybase ASE database)
3. Optional: Microsoft Windows Server 2016 (as remote desktop) for easy frontend access.
4. Optional: SAP BusinessObjects BI Platform 4.3 SP1



Notes:

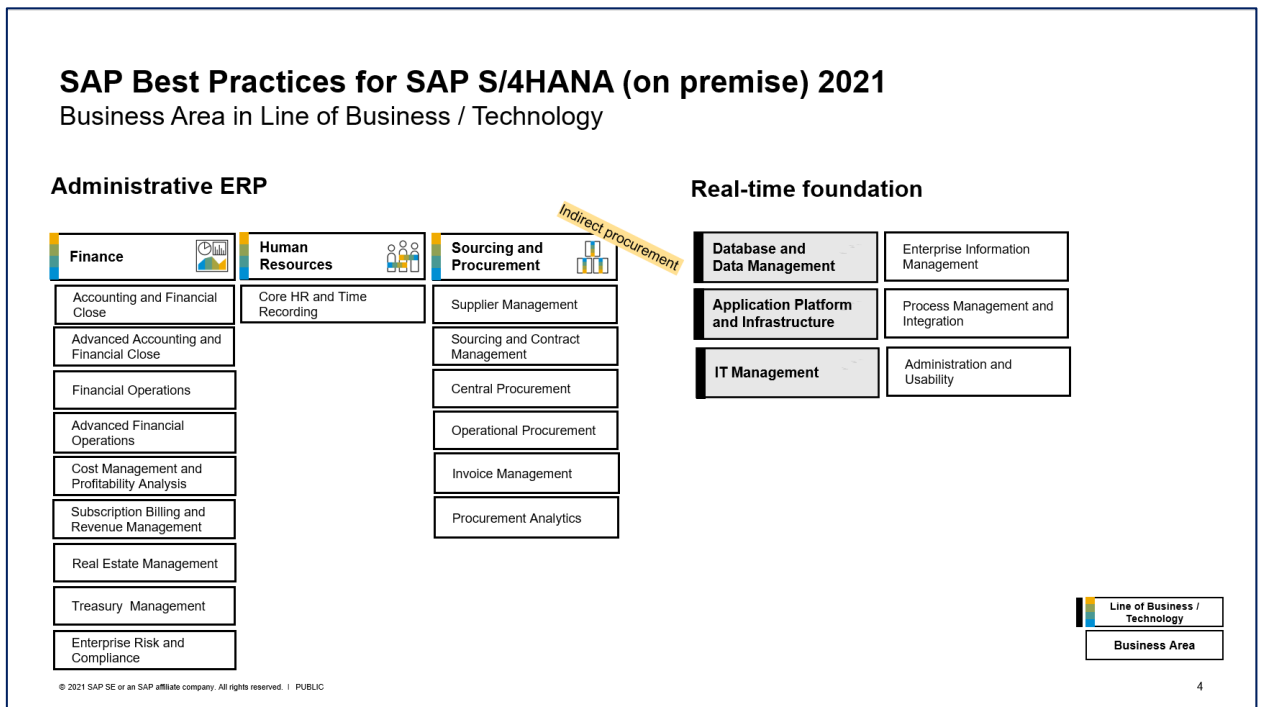
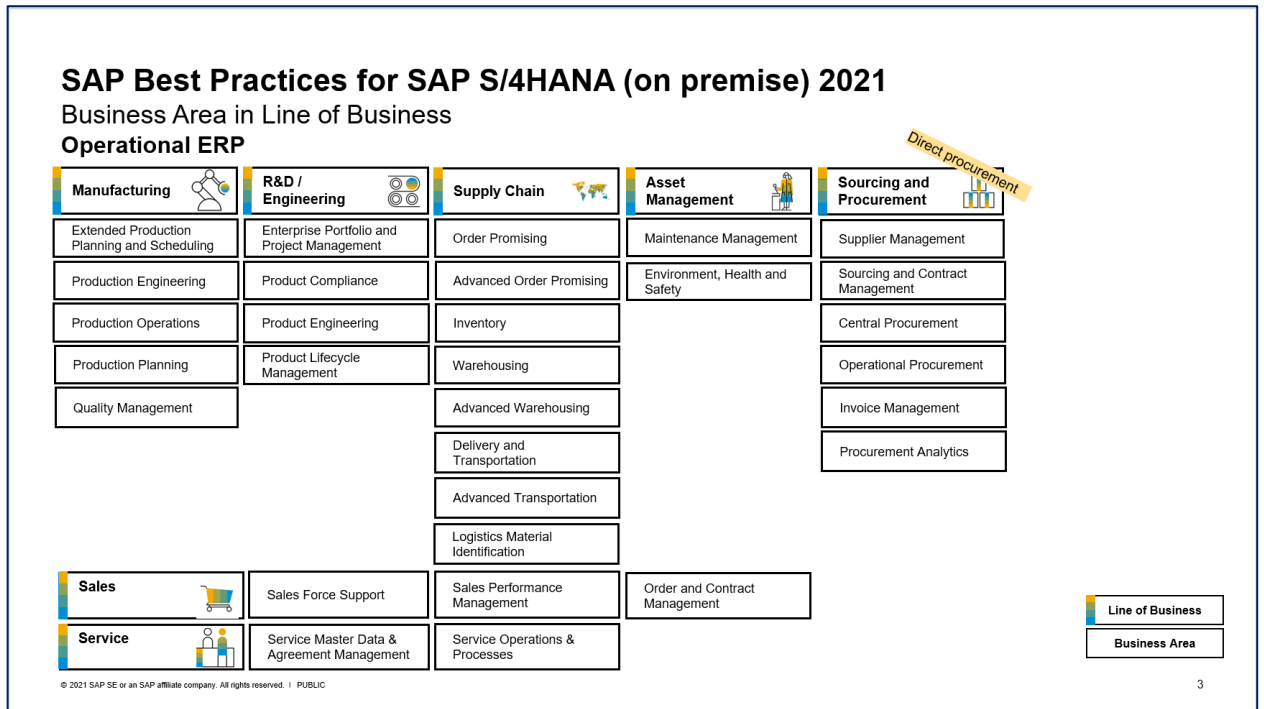
- The virtual machines (VMs) for the BI Platform and the remote desktop (RDP) are optional in Cloud Appliance Library. You can deselect these two VMs in the Advanced Mode of the appliance creation. Once an appliance has been created, this choice cannot be changed anymore for this appliance.
- The BI Platform and the remote desktop are only available when using SAP Cloud Appliance Library as described in this document. However, you can also receive the virtual 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 virtual appliance on your own hardware.

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

1.3 Business scenarios & localizations

The appliance template uses SAP Best Practices as main business content.

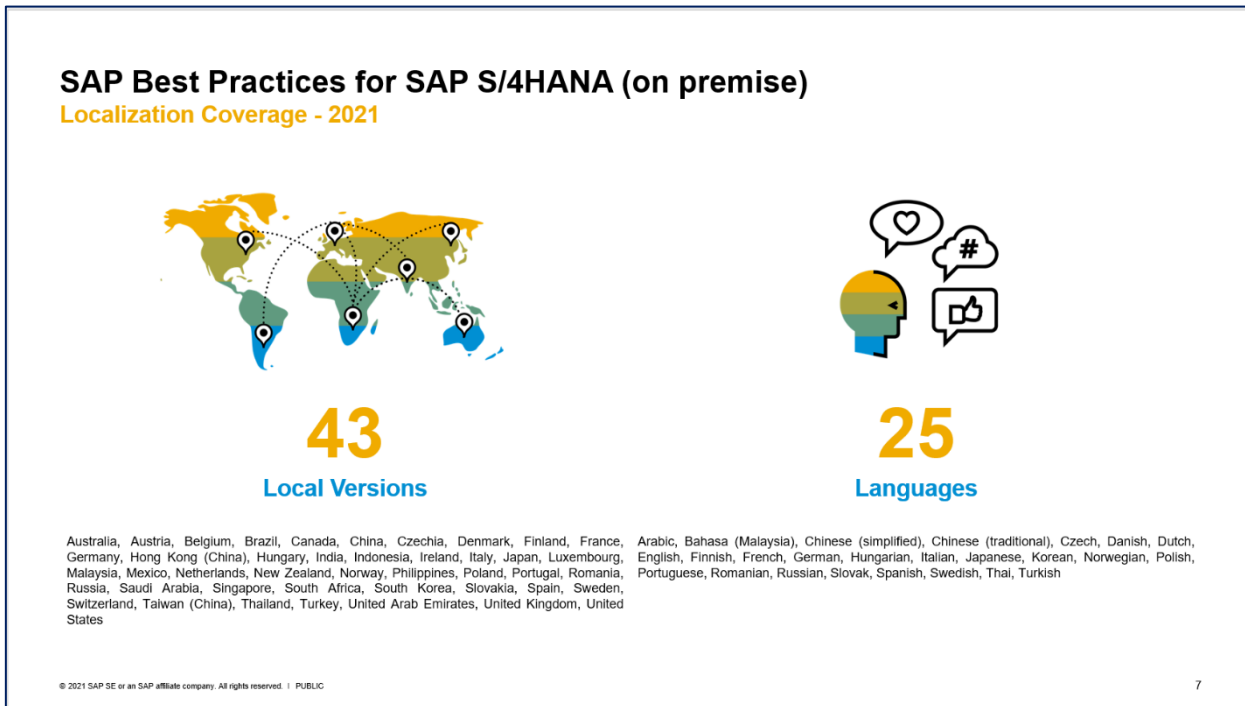
The charts below summarize the Best Practices scope for SAP S/4HANA 2021 (details can be found on https://rapid.sap.com/bp/BP_OP_ENTPR).



In the appliance template, 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 2021 is available for 43 local versions and 25 languages (see below slide).



In the appliance template, all available localizations are activated in client 400 (see the section *ABAP client structure & business users* later in this guide), however, the suggested demo walkthroughs incl. demo data in the appliance template are configured for USA only, using the company code 1710.

Besides the languages for SAP Best Practices, further language packages are installed in the system, but the configuration content might not be fully translated into those.

1.4 ABAP client structure & business users

Multiple ABAP clients are configured in the appliance template:

- 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 for activating the SAP Best Practices on your own.
Please see the [SAP Best Practices implementation guide](#) for details. Be aware that some of the SAP Notes and settings mentioned in the guide still need to be applied depending on what country or scope you activate (e.g., the parameter `rdisp/scheduler/prio_high/max_runtime` is not set accordingly yet as required by the guide).
- 400 contains the activated Best Practices based on the Best Practices client approach

SAP S/4HANA 2021 Fully-Activated Appliance

What client is used for what ?

ABAP Client	Description
100 Trial & exploration client (merged-000-client setup **)	<ul style="list-style-type: none"> • Pre-activated SAP Best Practices for SAP S/4HANA 2021 (Germany & US, demo flow localized for US) • Additional configuration for end-to-end sample business process • Customizing and transactional data in US company code (1710) • SAP Fiori Apps • Based on the merged-000-client approach
200 Ready-to-Activate client (Best Practice client setup **)	<ul style="list-style-type: none"> • Technical preparation activities prior to Best Practices content activation done • No SAP Best Practices activations done yet • Use case: sandbox for activating customer-specific SAP Best Practices scope
400 SAP Best Practices reference client (Best Practice client setup**)	<ul style="list-style-type: none"> • SAP S/4HANA 2021 Best Practices activation (43 localizations*) • This is the standard delivery state of Best Practices (no additional configuration, no corrections applied) • Use case: Explore/compare customizing for specific countries

(*) There are 43 localizations contained in the SAP S/4HANA 2021 Best Practices:

Australia, Austria, Belgium, Brazil, Canada, China, Czechia, Denmark, Finland, France, Germany, Hong Kong, Hungary, India, Indonesia, Ireland, Italy, Japan, Luxembourg, Malaysia, Mexico, Netherlands, New Zealand, Norway, Philippines, Poland, Portugal, Romania, Russia, Saudi Arabia, Singapore, Slovakia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, United Kingdom, United States

(**) For information on the Best Practice and merged-000 client approach, please see [here](#)

Client 300 is not delivered in the SAP S/4HANA 2021 Fully-Activated Appliance.

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Please see chapter 2 for default users and logon procedures.

(*) 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. **The organizational structure and chart of accounts** are activated with SAP Best Practices sample content. Client 200 does not contain these settings.

(**) For information on the Best Practice and merged-000 client, please see [here](#).

1.5 Sample demo walkthroughs

Once you have created an appliance in SAP Cloud Appliance Library you will have a principally working S/4HANA system that you can explore and change on your own.

To give you a jump-start into the contained scenarios, we have documented a wide range of example scenarios that we recommend as starting point to get more familiar with the system.

Please see this blog (<https://blogs.sap.com/2019/04/23/sap-s4hana-fully-activated-appliance-demo-guides/>) for the available demo guides (choose the applicable release).

1.6 Recommended post-installation steps

As said above, your appliance will be a working system, however, there are certain settings that you might need to adapt depending on your use case, for example:

1. Open the **MM inventory management period** for the current month if you intend to post goods movements. The above [blog with the sample demo scenarios](#) explains how to do this in section C .
2. **Check your customer/partner specific licenses and apply license keys.**
Please see chapter 3 of this guide for details, in summary you will need to consider two timelines:
 - If you intend to use the system beyond **30** days, you will need to possess [licenses](#) for SAP S/4HANA and the SAP CAL
 - If you intend to use the system beyond **90** days, you will need to generate and apply your own [license keys](#) to the HANA DB, S/4HANA, and JAVA
3. **Check further time-dependent settings if you face issues** (this could be certain finance periods or tasks, time-dependent production windows, and so on).
4. **Create own business users if the pre-configured demo users are too “heavy”.** The pre-configured S/4HANA demo users (see section 3.4.1.1.) often have many roles and tiles assigned to enable them for a broad business scenario. However, if these users are too broad for your specific project, you could either create your own users in tCode SU01 (there is no contractual limit for user numbers during the trial period) or use the SAP Fiori Rapid Activation to create user with tailored role assignments (see the demo walkthrough page in the User Experience section for the respective guide).
The reduction of role assignments for a specific user will also improve the performance of SAP Fiori.

1.7 More information & support

1.7.1 More information

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

Known issues blog in SAP Community: <https://blogs.sap.com/?p=1440551>

Post installation steps and sample demo walkthroughs:

(<https://blogs.sap.com/2019/04/23/sap-s4hana-fully-activated-appliance-demo-guides/>)

SAP S/4HANA Trial Landing Page (also containing a “Quick Start Guide” how to set up the appliance)
<https://www.sap.com/cmp/oth/crm-s4hana/s4hana-on-premise.html>

Video tutorials (how to create Cloud Provider accounts and start an SAP S/4HANA appliance):

<https://blogs.sap.com/2021/03/19/sap-cal-learning-videos-update/>

1.7.2 Support

If you run a 30-day trial (i.e., no SAP Cloud Appliance Library subscription license), please use the **SAP Community** (preferably take SAP Cloud Appliance Library as it’s closely monitored):

- SAP Cloud Appliance Library (for Cloud Appliance Library usage, access, etc.):
<https://answers.sap.com/tags/67837800100800004473>
- SAP S/4HANA (for S/4 specific functional questions): <https://answers.sap.com/tags/73554900100800000266>

If you have an SAP Cloud Appliance Library subscription license acquired, you can also [report an incident](#) (component BC-VCM-CAL).

2 Accessing Appliance Template

2.1 Overview

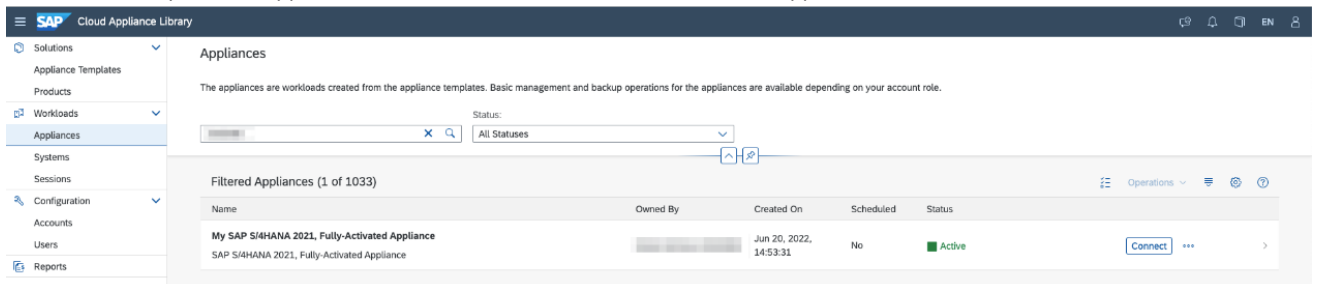
The appliance template can be accessed via a preconfigured Windows remote desktop (option 1) or via client tools on your local PC (option 2).

For first steps with the appliance template, 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,

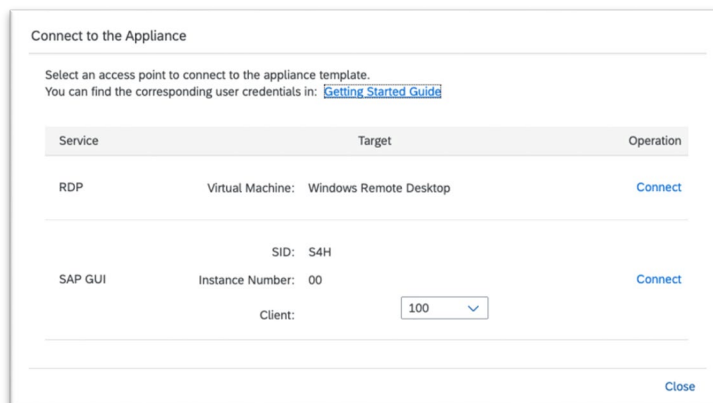
Since UI performance is usually better via access from your local PC, please evaluate if you can use this method as standard access. It requires administrator access on your PC and 5 minutes of effort.

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

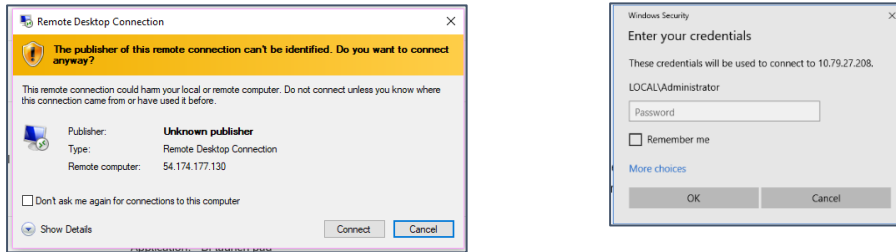
1. After your own appliance is created, click the **Connect** button in the Appliances view of the console.



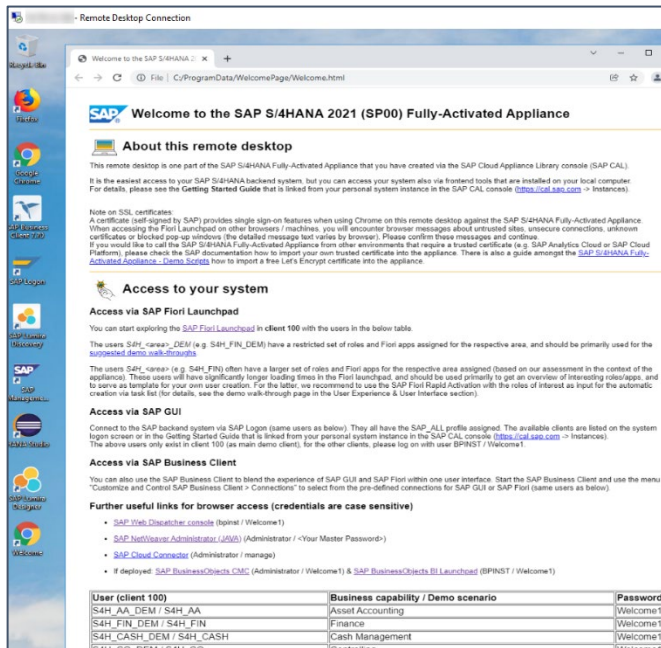
2. In the pop-up, click **Connect** in the “RDP Virtual Machine: Windows Remote Desktop” line .



- 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 appliance creation in the SAP Cloud Appliance Library console.



- Next you will see the pre-configured Windows RDP server.
Follow the information on the Welcome page to log on to the SAP S/4HANA system (Fiori link, SAP GUI/HANA Studio are pre-installed on the desktop, etc.). The Welcome page shortcut on the desktop points to *C:/ProgramData/WelcomePage/Welcome.html*.
More details on system connectivity can be found in section 3.3.



- Further remarks:
 - The embedded Windows Remoted Desktop license allows 2 concurrent sessions (e.g., one for the existing user Administrator and one for another user that you can create on the remote desktop). Installing your own RDP license might also be an option to allow more concurrent users on the RDP.
 - If your cloud provider infrastructure has restricted Internet access (e.g., it is a fenced environment), the remote desktop will not be fully provisioned
 - Chrome will not be installed → use Firefox for Fiori access or install Chrome at a later point in time if this is possible in your network setup
 - The Welcome page will not show up on the desktop, but you can find it on the remote desktop in the folder *Q:\flavor\S4HANA_Fully_Activated\WelcomePage*.

2.3 Option 2: System access via local PC

When accessing the system via your local PC, you will need to have the respective programs installed. A local browser (Chrome preferred) is obvious, but also a local SAP GUI, SAP Business Client or SAP HANA Studio (based on Eclipse) might be needed.

For SAP GUI access, you can use the “Connect → SAP GUI” option in the Cloud Appliance Library console (same as for the remote desktop) and a local SAP GUI will open.

Or you can add the Cloud Appliance Library system to your local SAP Logon Pad or HANA Studio (use the external IP address of the ABAP/HANA virtual machine as host name, further details like system numbers, etc. are listed in section 2.4).

For a fully working Fiori launchpad, you will need to map the `/etc/hosts` file as described in the next section.

2.3.1 Mapping your local `/etc/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 appliance 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 or there are security concerns in your environment), you can use the IP address of your appliance 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.

If you have access to a DNS service (corporate or as free internet service), you can also apply your own host and domain name to the system, possible together with a registered SSL certificate. See section 4.4. of this guide for details. This will make it easier for a larger number of users to access the system.

The following describes how to modify the local hosts file on a Windows computer (for Mac, please search the Internet for options).

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 Cloud Appliance Library console in the appliance properties, take the external IP address):

```
# S4H Appliance
<External IP Address SAP S4HANA/HDB server> vhcals4hci.dummy.nodomain vhcals4hci
vhcals4hcs.dummy.nodomain vhcals4hcs vhcals4hcs vhcals4hcs vhcals4hcs vhcals4hcs
<IP Address SAP NW JAVA/ASE/ADS server> vhcals4eci.dummy.nodomain vhcals4eci
vhcals4ecs.dummy.nodomain vhcals4ecs vhcals4ecs vhcals4ecs vhcals4ecs vhcals4ecs
<IP Address SAP BI Platform > bihost bihost.dummy.nodomain
```

5. Save the [hosts](#) file and exit.

2.4 Users & passwords for the system components

Note upfront: For URLs starting with `vhca1...` you will need to map your `/etc/hosts` file as described in chapter 2.3.

2.4.1 SAP S/4HANA ABAP application server

2.4.1.1 Pre-configured business users in SAP S/4HANA

Client	Business Content	Sample users <i>(password Welcome1 if not noted otherwise)</i>
000 Standard delivery client	<ul style="list-style-type: none"> Nothing specific (standard customizing only) 	<ul style="list-style-type: none"> BPINST DDIC / SAP* (<Master_Password>)
100 Trial & Exploration client	<ul style="list-style-type: none"> Pre-activated SAP Best Practices for SAP S/4HANA 2021 (Germany & US, sample demo flow localized for US) * Customizing and transactional data in US company code (1710) SAP Fiori Apps Based on the merged-client approach <p><u>Note on the users:</u> The demo users have a relatively broad set of roles and Fiori apps assigned for their respective functional area and should be primarily used for the suggested demo walkthroughs.</p>	<ul style="list-style-type: none"> <i>S4H_AA_DEM / S4H_AA</i> (Asset Accounting) <i>S4H_FIN_DEM / S4H_FIN</i> (Finance) <i>S4H_CASH_DEM / S4H_CASH</i> (Cash Management) <i>S4H_CO_DEM / S4H_CO</i> (Controlling) <i>S4H_MM_DEM / S4H_MM</i> (Materials Management) <i>S4H_PP_DEM / S4H_PP</i> (Production Planning) <i>S4H_PM_DEM / S4H_PM</i> (Plant Maintenance & Quality Mgmt.) <i>S4H_SD_DEM / S4H_SD</i> (Sales & Distribution) <i>S4H_EXT</i> (Extensibility) <i>S4H_EWM_DEM</i> (Warehouse Management) <i>S4H_PPM_...</i> (Portfolio & Project Management) <i>S4H_TM_DEM</i> (Transportation Management) <i>S4H_PRED</i> (Predictive Analytics)

Client	Business Content	Sample users (password <i>Welcome1</i> if not noted otherwise)
	<p>These users may have longer loading times in the Fiori launchpad, especially when using them for the first time or after a system suspension.</p> <p>Feel free to copy them to new user IDs (using transaction SU01) and adapt those new users to your needs.</p>	<ul style="list-style-type: none"> • <i>S4H_MG</i> (Data Migration) • <i>SERV_EMPL / SERV_MAN / SLS_MAN / IC_AGENT_SRV</i> (SAP S/4HANA Service) • <i>MDG_...</i> (Master Data Governance) • <i>S4H_HCM_...</i> (Human Capital Management) • <i>FIORIADMIN</i> (Fiori customizing & roles) • <i>S4H_AIF / S4H_AIF_ADM</i> (Application Interface Framework) • <i>BPINST</i> (Generic user. Caution: very long loading times in Fiori Launchpad)
200 Ready-to-Activate client (white list)	<ul style="list-style-type: none"> • Ready-to-Activate client with all pre-activation preparation activities executed 	<i>BPINST (Welcome1)</i> <i>DDIC / SAP* <Master password></i>
400 SAP Best Practices reference client (white-list)	<ul style="list-style-type: none"> • Pre-activated SAP Best Practices for SAP S/4HANA 2021 without transactional data • Based on the <u>merged-client</u> approach 	<i>BPINST (Welcome1)</i> <i>DDIC / SAP* <Master password></i>

All above users have the default password *Welcome1* if not indicated otherwise.

2.4.1.2 Administrative data & users for SAP S/4HANA

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)

Name	Value	Description
Clients	See section 1.4	These are the pre-configured clients
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 appliance.
ABAP administrator	s4hadm / <Master Password>	Additional user for ABAP lifecycle management – start/stop, administration,
SAP Web Dispatcher administrator	webadm / VA1MPwd_ or bpinst / Welcome1	Access to Web Dispatcher console: https://vhcals4hcs.dummy.nodomain:44301/sap/admin/public/default.html bpinst is case sensitive.
Technical user for HANA DB connectivity (schema user)	SAPHANADB / <Master Password>	See tCode DBACOCKPIT → System Landscape → Database Connections for additional usage of the SAPHANADB user
SAP Cloud Connector	Administrator / manage	Initial credentials for the integrated SAP Cloud Connector (access via https://vhcals4hcs.dummy.nodomain:8443)

2.4.2 SAP HANA DB server

Two database entities are relevant for the appliance:

The tenant database (for storing the S/4HANA data) and the system database (for general data and settings e.g., maintaining the license key for SAP HANA).

An entry for both is pre-configured in the HANA Studio on the remote desktop but you can also add entries in your local HANA Studio.

Tenant database (use Single Container when adding it to your local HANA Studio)

Name	Value	Description
Tenant DB name	HDB	System ID of the HANA DB
Tenant 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.

Name	Value	Description
Generic HANA DB user	BPINST / Welcome1	Generic user that can be used to access HANA DB
Technical S/4HANA user	SAPHANADB / <Master Password>	Technical user for accessing HANA from the S/4HANA server. Defined in /nDBACOCKPIT; HANA schema SAPHANADB contains the S/4HANA data

System database (use *Multiple Containers* → *System DB* when adding it to your local HANA Studio, needed e.g., for applying your own HANA DB license key)

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 SAP NetWeaver JAVA application server

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. Access to SAP NetWeaver Administrator: https://vhcalj2eci.dummy.nodomain:50001/nwa
Additional JAVA user	BPINST / Welcome1	Generic user in case other users are locked

2.4.4 SAP BusinessObjects BI platform

Parameter ID	Parameter Value	Note
Administrator name	Administrator / Welcome1	Use for all administrative functions of the BI platform e.g., in CMC

Parameter ID	Parameter Value	Note
BI Power User	BPINST / Welcome1	Use for BI Launchpad
SQL Anywhere DB user	dba / Appl1ances	Use to log on to the DB of the BI platform on Linux backend stored under /data/bobj/sqlanywhere/database
BI Platform Linux backend user	bipadm / 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.

SAP does not provide a separate MS Windows Terminal Server license as part of the virtual appliance; hence, you can connect with a maximum of two concurrent users (with different user IDs) at the same time. The *Administrator* account is pre-configured, and you may create additional user IDs in the local user administration of the remote desktop if needed.

If you want to use the remote desktop with larger user numbers, please apply your own MS Terminal Server license to the remote desktop and potentially choose a larger sizing for the RDP in the CAL console.

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 / <Master Password>	User for the Windows frontend server. This is a local user on the remote desktop. Only one Administrator user can logon to the front-end server at the same point in time.

A note on browsers:

Google Chrome and Firefox are pre-installed on the Remote Desktop. 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* since otherwise some Fiori applications (e.g. WebGUI or Web Dynpro) will not work correctly.

2.4.6 Accessing Your Appliance 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 an appliance on OS level, go to [this FAQ page](#) and look under the question: **How to connect to a running appliance 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 (file format .pem) that was generated in the last step of the Create Appliance wizard from SAP Cloud Appliance Library. During the creation, you were asked to either store the key file attached to your appliance within SAP Cloud Appliance Library or download it to a local secure file share on your computer.

2.5 Optional: Get your own fully-qualified domain name & SSL certificate

The SAP S/4HANA Fully-Activated Appliance by default contains these two settings:

- A dummy domain name for Fiori access (*.dummy.nodomain)
- A certificate self-signed by SAP (issuer cal.dummy.nodomain)

Depending on network setup and end-user authorizations, these settings may cause problems:

- Business users need to change the */etc/hosts* file with administrator rights on their PC (often not allowed)
- The corporate proxy or the end-user web browser might generally not trust self-signed certificates and bounces them back
- Inbound connectivity into the S/4HANA system (e.g., from SAP Analytics Cloud) is not trusted due to a self-signed certificate

On the [demo guide blog of the appliance](#), you can find a technical guide how to enable this for your system.

The Fiori domain name change requires SAP GUI access and will take ~ 15 minutes.

The SSL certificate requires access to the Linux OS and basic Linux skills, and will take ~ 45 minutes.

Please be aware that the mentioned guide is meant to provide a quick workaround and might not comply with the security recommendations that are issued by SAP in general.

3 Licenses & fees

SAP Cloud Appliance Library is a platform for quickly using SAP on-premise software products in a hyperscaler environment. Therefore, three separate license / cost factors need to be considered, each depending on the duration that your system should be used:

- a) the SAP on-premise product (e.g., SAP S/4HANA)
- b) SAP Cloud Appliance Library
- c) the chosen cloud provider

This table gives an overview about the different aspects. Details are mentioned in the paragraphs afterwards.

The third column in the table below (on-premise installation) is an alternative to SAP Cloud Appliance Library and not covered in detail in this document (please see SAP Note [2041140](#) for details).

SAP S/4HANA 2021 SP00 Fully-Activated Appliance: Fees, licenses, and support for the different channels (as of December 2021)

	SAP CAL 30-day trial	SAP CAL >30 days	On-Premise installation
SAP S/4HANA licenses ?	No Covered by web-based terms & conditions form on cal.sap.com	Yes Bring your own (trial) licenses *	Yes Bring your own (trial) licenses *
SAP CAL license ?	No Covered by web-based terms & conditions form on cal.sap.com	Yes Monthly CAL subscription (see overview or buy directly in SAP Store)	No
Hosting fees ?	Yes Hyperscaler will charge you	Yes Hyperscaler will charge you	No
Server hardware costs ?	No	No	Yes Hardware (x86_64) with Linux OS needed
Support ?	SAP community	SAP Incident (BC-VCM-CAL)	SAP Incident (BC-VCM-CAL)

Note for IT administrators:
Latest after 90 days you will need to generate and install your own license keys to keep the system running (the appliance has a 90-day temporary license key installed like every new S/4HANA system), see the Getting Started guide for details.

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* Needed S/4HANA licenses
(as of December 2021)



CAL >30 days:
S/4HANA Enterprise, HANA runtime

On-premise:
Additional licenses needed (for S/4 engines and further add-on product components), see SAP Note [2041140](#)

Get missing (trial) licenses via

- SAP Account Executive
- [SAP Store](#) (customer self-service)

SAP Partners:

- S/4HANA on-premise test&demo (TD_...) and application development (DEV_...) licenses are sufficient
- Pure platform development (DEV_...) licenses are not sufficient

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3.1 First 30 days: Running your appliance as trial

In the first 30 days, the SAP license fees (Cloud Appliance Library & S/4HANA) are waived. During this period, you only need to bear the hosting fees of your cloud provider.

The 30-day period starts when you accept the form for the trial agreement in the Cloud Appliance Library console (after clicking on “Create Appliance”).

During the instantiation, the S/4HANA system will generate a temporary license key that is enough for exploration purposes.

3.2 Beyond 30 days: Running your appliance with SAP licenses

If you want to use an appliance beyond the 30-day trial period (i.e. [unlock the appliance template in SAP CAL](#)), you need to obtain two SAP licenses:

1. The SAP Cloud Appliance Library (SAP CAL) subscription
2. The SAP product licenses for the product(s) that are bundled within your appliance

The validity of these licenses will be automatically checked after the first 30 days. In case of a missing license component an error message will be displayed in the SAP Cloud Appliance Library console and the respective appliance will stay in status “Suspended”.

The cloud provider fees will stay the same as during the first 30 days.

You can continue to use a trial appliance from the first 30 days under these conditions, all your changes in that appliance will be preserved once you unlock the appliance template.

3.2.1 SAP Cloud Appliance Library subscription

You can purchase the subscription package via the SAP Store on <https://www.sapstore.com/solutions/99007/SAP-Cloud-Appliance-Library>.

The minimum subscription is 3 months for one appliance (i.e., you can have exactly one appliance active at a time during these 3 months). You can also choose longer subscription periods and higher appliance numbers (i.e., you can activate multiple appliance templates in parallel).

In the SAP Store, you will need an S-user that has the “SAP Store buyer role” assigned.

Please make sure that the SAP Store user and the SAP Cloud Appliance Library user belong to the same organization, otherwise the mapping between the license and the to-be-unlocked appliance is not possible. In case these two users do not belong to the same organization, please see [this blog](#) how to resolve this.

3.2.2 SAP product licenses

3.2.2.1 SAP S/4HANA Enterprise Mgmt. & SAP HANA DB

To use an appliance under your own SAP Product License Agreements, you need to possess at least a license for the SAP HANA DB (application runtime) and for SAP S/4HANA Enterprise Management professional use.

If you don't possess these licenses already, you can either obtain them via your SAP account executive, or online as self-service by licensing the free [SAP S/4HANA 90-day trial in SAP Store](#).

The Cloud Appliance Library infrastructure checks whether the customer/partner organization of the S-user who created the appliance in SAP Cloud Appliance Library possesses these licenses. Only if this check is passed, the appliance can be activated in SAP Cloud Appliance Library.

The licenses entitle your organization to use the appliance template, however, since technically you will still be running under the 90-day temporary license key, we recommend generating your own license key and apply it to your system as soon as possible. 90 days after the initial appliance creation, the system will stop working without these technical license keys (see the next chapter for details).

Note:

The following separately licensed SAP S/4HANA capabilities are also configured and described in the pre-configured demo scenarios of the appliance template. These capabilities will technically work in your appliance without entering dedicated license keys for them, however, they might not be part of your customer-specific license agreement for implementation / production systems.

- 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
- SAP Enterprise Master Data Governance for SAP S/4HANA

3.2.2.2 Optional: SAP BusinessObjects BI Platform licenses

If you chose to use the optional SAP BusinessObjects Platform in your appliance, the temporary license key for BI will be valid for 30 days. It needs to be replaced by your own permanent key for the BI platform after that time if you want the BI platform to work.

If you don't apply a permanent license key, the BI platform cannot be used anymore. The other appliance components (S/4HANA etc.) will not be affected and can be used even without the BI platform.

3.3 Beyond 90 days: License key installation required

Latest 90 days after appliance creation (but better directly after unlocking the appliance template in Cloud Appliance Library after 30 days), you need to apply a valid license key to the system components.

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

The first three are part of the SAP S/4HANA license; the BI platform needs to be licensed separately.

To get license keys for your system components, you first need to register them as a customer installation (see <https://support.sap.com/en/my-support/systems-installations.html>).

Afterwards you can request license keys via the SAP license key application (<https://support.sap.com/licensekey>).

During the license key generation, you will be asked for certain parameters (hardware keys and other system properties). The table below has the details.

For S/4HANA and JAVA, you can also choose to generate a “Maintenance Certificate” together with the license key. The Maintenance Certificate is valid for 3 months and only needed for advanced system operations e.g., the installation of add-ons or support packages. It doesn’t affect the system in general so you can decide whether to take it or not. More details are [here](#).

For more information about how to generate and install product license keys, please see:

- [This blog](#) for an overview
- [Step-by-step video](#) (using an SAP-internal license key but the principle is the same for customers & partners)

SID	Product	Version	DB	OS	Comment	Where to get the hardware key and apply the license key
HDB	SAP HANA, platform edition	SAP HANA 2.0, platform edition	-	Linux	License type: SAP In-memory Appliance platform Quantity: 256 GB Memory Volume	HANA Studio: log on to system DB with SYSTEM user; <i>right-click on system</i> → <i>Properties</i> → <i>Licenses</i> . HANA Studio on remote desktop has pre-configured entry for system DB. In a local HANA Studio use host name vhcalthbdb or IP address of ABAP/JAVA VM; instance number 02; multiple containers > system database.
S4H	SAP S/4HANA	SAP S/4HANA 2021	SAP HANA database	Linux	N/A	Log on to S/4HANA with SAP GUI and use tCode <i>/nSLICENSE</i>
J2E	SAP NetWeaver	SAP NetWeaver 7.5	Sybase ASE	Linux	As license type, select 'J2EE - Web AS JAVA'	https://vhcalj2eci.dummy.nodomain:50001/nwa with Administrator user → <i>Configuration</i> → <i>Infrastructure</i> → <i>Licenses</i> .
BIP	Optional:	SAP BusinessObjects Business	-	Linux	Material: Choose SAP BO BI Platform (with fitting license KPI e.g.,	BOE CMC (http://bihost:8080/BOE/CMC) → <i>Licenses</i>

SID	Product	Version	DB	OS	Comment	Where to get the hardware key and apply the license key
	SAP BusinessObjects Business Intelligence platform	Intelligence platform 4.2			concurrent sessions CS,...) and version XI 4.2	

Note to SAP employees:

You can generate SAP-internal license keys (18 months validity) directly in the [license key application](#) without having to register your system (just enter the needed parameters and the hardware key).

3.3.1 What to do if your temporary license key has expired

If you missed to install your own permanent license key before the temporary 90-day key has expired, your appliance will stop working, hence, if you experience connectivity errors roughly three months after the appliance creation think of an expired license key in the first place.

The procedure is now a bit more difficult since you need to get to a fully-licensed HANA DB first before you can install the S/4 license key, therefore follow these steps:

1. Apply the HANA DB license key as described above. When you log on to the HANA system DB with the SYSTEM user, you will only have limited options (incl. some warning messages), but the license key installation works as usual.
2. Restart the S/4HANA ABAP system. The easiest way is to use the `Reboot` button in the Cloud Appliance Library console, but you can also do it on Linux OS level with the `sapcontrol` command.
3. When the S/4 virtual appliance is active again, apply the license key to S/4HANA as described above. **You need to do this in client 000 with the user SAP* / <Master_Password>**. Afterwards, HANA and S/4HANA should run as before.
4. Apply the JAVA server license key as described above **within 30 minutes after a re-boot or activation of the appliance**. After this period, the JAVA server will go down until the next reboot / re-activation.
5. For SAP BusinessObjects (temporary license key expires after 30 days), apply the license key as described above (no special considerations).

4 Security Aspects in SAP Cloud Appliance Library

4.1 Internet ports for accessing your appliance

By default, the following ports are opened for your appliance (i.e., this is the inbound firewall of your cloud provider). The access from your local computer to your appliance happens via those ports (see 'Description' what port is used where).

Please make sure that your outbound firewall (e.g., if you are behind a corporate firewall) allows access through the needed ports as well. If you encounter problems behind a firewall, a good test is to use a public network (e.g., from home) or test access via the delivered remote desktop – assuming you can access the remote desktop via port 3389.

You can edit/add/remove ports manually in the appliance details (click on the appliance link in the *Cloud Appliance Library 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 etc.). 44301 via Web Dispatcher, 44300 via ABAP ICM directly
ABAP	HTTP	50000	Standard HTTP port for ABAP
ABAP	HTTPS	8443	Access to integrated Cloud Connector
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 & RFC calls to other systems if intended
ABAP	TCP	30213 / 30215	Used for connection of SAP HANA Studio to HANA DB
JAVA	SSH	22	SSH connection to Linux operating system (e.g., for PuTTY)
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, 6405	Used for HTTP connection to BI platform
WIN	RDP	3389	Used for access from MS Windows remote desktop connection

* ABAP = SAP S/4HANA & SAP HANA DB;

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

BIP = SAP BusinessObjects BI Platform 4.2

WIN = MS Windows Remote Desktop

4.2 Network security considerations

Be aware that creating your appliances in the public zone of your cloud provider (i.e., the “open Internet”) is convenient but less secure than providing it within your corporate network.

If you want to tighten the security, open as few ports as really needed for your scenario.

In addition, we also recommend that you limit the access to your appliance by defining a whitelisted IP range of IP addresses that may access your appliance (e.g., the subnet of your company). With this, only computers within the white-listed IP range can access your system via the specific port. You can maintain the IP Range settings in the Cloud Appliance Library console → *Edit* → *Virtual Machine* → *Access Points.*, 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 (e.g., described in [this tutorial](#) or in your standard cloud provider documentation).

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](#).

4.3 ABAP user roles and profiles

The ABAP business users listed in chapter 2 have a large set of roles and extensive authorizations (**including the SAP_ALL profile**).

If you plan to release the virtual appliance to a larger set of users (especially in the Internet scenario), it is advised to restrict/lock the access with these users (or change the initial passwords) and create your own users with fitting roles and authorizations (see also the section “Recommended post-installation steps” earlier in this document).

This can be done using the standard user management capabilities (e.g., tCode SU01, etc.).

Please also note that the user BPINST is used in various RFC connections (tCode SM59) with its fixed password. If you lock the BPINST user or change its password, please also adapt these connections accordingly.

4.4 Certificates

The virtual appliance comes with a certificate that was self-signed by SAP. Most local browsers will issue a warning message that such a certificate is untrusted, and you will need to add the affected URLs (Fiori launchpad and others) to the list of trusted sites once.

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

As an alternative, you can also apply your own trusted certificate to the system (using tCode STRUST, etc.).

The above-mentioned [demo walkthrough page](#) provides a technical demo guide (in section (A) *Demo Guides* → *Technical*) for installing a free 90-day Let’s Encrypt certificate.

It also contains instructions how to apply a fully-qualified domain&host name to the system that might help in cases where you cannot map your local `/etc/hosts` file.

On the delivered remote desktop, the self-signed certificate has already been imported into the store with trusted certificates, and you will not see a warning if you access the Fiori launchpad. The web sites of the J2EE server or the SAP Cloud Connector will still display warnings, please acknowledge the risk and continue as outlined above.

5 Appliance Template 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](#).

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 appliance templates 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 S/4HANA 2021 SP00 on SAP ABAP application server 7.56 & SAP HANA DB 2.0.59

The SAP Kernel release is 785 PL 50.

Component	Release	SP-Level	Support Package	Short Description of Component
SAP_BASIS	756	0000	-	SAP Basis Component
SAP_ABA	75G	0000	-	Cross-Application Component
SAP_GWFND	756	0000	-	SAP Gateway Foundation
SAP_UI	756	0001	SAPK-75601INSAPUI	User Interface Technology
ST-PI	740	0015	SAPK-74015INSTPI	SAP Solution Tools Plug-In
SAP_BW	756	0000	-	SAP Business Warehouse
UIBAS001	700	0000	-	UI for Basis Applications
MDG_FND	806	0000	-	MDG Foundation
S4FND	106	0000	-	Foundation
MDG_APPL	806	0000	-	MDG Applications
S4CEXT	106	0000	-	S4CEXT
S4CORE	106	0000	-	S4CORE
S4CRM	206	0000	-	S4CRM
SAP_HR	608	0095	SAPKE60895	Human Resources
SAP_HRCAE	608	0095	SAPK-60895INSAPHRCAE	Subcomponent SAP_HRCAE of SAP_HR
SAP_HRCAR	608	0095	SAPK-60895INSAPHRCAR	Subcomponent SAP_HRCAR of SAP_HR
SAP_HRCAT	608	0095	SAPK-60895INSAPHRCAT	Subcomponent SAP_HRCAT of SAP_HR
SAP_HRCAU	608	0095	SAPK-60895INSAPHRCAU	Subcomponent SAP_HRCAU of SAP_HR
SAP_HRCBE	608	0095	SAPK-60895INSAPHRCBE	Subcomponent SAP_HRCBE of SAP_HR
SAP_HRCBG	608	0095	SAPK-60895INSAPHRCBG	Subcomponent SAP_HRCBG of SAP_HR
SAP_HRCBR	608	0095	SAPK-60895INSAPHRCBR	Subcomponent SAP_HRCBR of SAP_HR
SAP_HRCCA	608	0095	SAPK-60895INSAPHRCCA	Subcomponent SAP_HRCCA of SAP_HR

Component	Release	SP-Level	Support Package	Short Description of Component
SAP_HRCCH	608	0095	SAPK-60895INSAPHRCCCH	Subcomponent SAP_HRCCH of SAP_HR
SAP_HRCCL	608	0095	SAPK-60895INSAPHRCCCL	Subcomponent SAP_HRCCL of SAP_HR
SAP_HRCCN	608	0095	SAPK-60895INSAPHRCCN	Subcomponent SAP_HRCCN of SAP_HR
SAP_HRCCO	608	0095	SAPK-60895INSAPHRCCO	Subcomponent SAP_HRCCO of SAP_HR
SAP_HRCCZ	608	0095	SAPK-60895INSAPHRCCZ	Subcomponent SAP_HRCCZ of SAP_HR
SAP_HRCDE	608	0095	SAPK-60895INSAPHRCDE	Subcomponent SAP_HRCDE of SAP_HR
SAP_HRCDK	608	0095	SAPK-60895INSAPHRCDK	Subcomponent SAP_HRCDK of SAP_HR
SAP_HRCEG	608	0095	SAPK-60895INSAPHRCEG	Subcomponent SAP_HRCEG of SAP_HR
SAP_HRCES	608	0095	SAPK-60895INSAPHRCES	Subcomponent SAP_HRCES of SAP_HR
SAP_HRCFI	608	0095	SAPK-60895INSAPHRCFI	Subcomponent SAP_HRCFI of SAP_HR
SAP_HRCFR	608	0095	SAPK-60895INSAPHRCFR	Subcomponent SAP_HRCFR of SAP_HR
SAP_HRCGB	608	0095	SAPK-60895INSAPHRCGB	Subcomponent SAP_HRCGB of SAP_HR
SAP_HRCGR	608	0095	SAPK-60895INSAPHRCGR	Subcomponent SAP_HRCGR of SAP_HR
SAP_HRCHK	608	0095	SAPK-60895INSAPHRCHK	Subcomponent SAP_HRCHK of SAP_HR
SAP_HRCHR	608	0095	SAPK-60895INSAPHRCHR	Subcomponent SAP_HRCHR of SAP_HR
SAP_HRCHU	608	0095	SAPK-60895INSAPHRCHU	Subcomponent SAP_HRCHU of SAP_HR
SAP_HRCID	608	0095	SAPK-60895INSAPHRCID	Subcomponent SAP_HRCID of SAP_HR
SAP_HRCIE	608	0095	SAPK-60895INSAPHRCIE	Subcomponent SAP_HRCIE of SAP_HR
SAP_HRCIN	608	0095	SAPK-60895INSAPHRCIN	Subcomponent SAP_HRCIN of SAP_HR
SAP_HRCIT	608	0095	SAPK-60895INSAPHRCIT	Subcomponent SAP_HRCIT of SAP_HR
SAP_HRCJP	608	0095	SAPK-60895INSAPHRCJP	Subcomponent SAP_HRCJP of SAP_HR
SAP_HRCKR	608	0095	SAPK-60895INSAPHRCKR	Subcomponent SAP_HRCKR of SAP_HR
SAP_HRCKW	608	0095	SAPK-60895INSAPHRCKW	Subcomponent SAP_HRCKW of SAP_HR
SAP_HRCKZ	608	0095	SAPK-60895INSAPHRCKZ	Subcomponent SAP_HRCKZ of SAP_HR
SAP_HRCMX	608	0095	SAPK-60895INSAPHRCMX	Subcomponent SAP_HRCMX of SAP_HR
SAP_HRCMY	608	0095	SAPK-60895INSAPHRCMY	Subcomponent SAP_HRCMY of SAP_HR

Component	Release	SP-Level	Support Package	Short Description of Component
EA-HR	608	0095	SAPK-60895INEAHR	SAP Enterprise Extension HR
EA-HRCAE	608	0095	SAPK-60895INEAHRCAE	Subcomponent EA-HRCAE of EA-HR
EA-HRCAR	608	0095	SAPK-60895INEAHRCAR	Subcomponent EA-HRCAR of EA-HR
EA-HRCAT	608	0095	SAPK-60895INEAHRCAT	Subcomponent EA-HRCAT of EA-HR
EA-HRCAU	608	0095	SAPK-60895INEAHRCAU	Subcomponent EA-HRCAU of EA-HR
EA-HRCBE	608	0095	SAPK-60895INEAHRCBE	Subcomponent EA-HRCBE of EA-HR
EA-HRCBG	608	0095	SAPK-60895INEAHRCBG	Subcomponent EA-HRCBG of EA-HR
EA-HRCBR	608	0095	SAPK-60895INEAHRCBR	Subcomponent EA-HRCBR of EA-HR
EA-HRCCA	608	0095	SAPK-60895INEAHRCCA	Subcomponent EA-HRCCA of EA-HR
EA-HRCCH	608	0095	SAPK-60895INEAHRCCH	Subcomponent EA-HRCCH of EA-HR
EA-HRCCL	608	0095	SAPK-60895INEAHRCCL	Subcomponent EA-HRCCL of EA-HR
EA-HRCCN	608	0095	SAPK-60895INEAHRCCN	Subcomponent EA-HRCCN of EA-HR
EA-HRCCO	608	0095	SAPK-60895INEAHRCCO	Subcomponent EA-HRCCO of EA-HR
EA-HRCCZ	608	0095	SAPK-60895INEAHRCCZ	Subcomponent EA-HRCCZ of EA-HR
EA-HRCDE	608	0095	SAPK-60895INEAHRCDE	Subcomponent EA-HRCDE of EA-HR
EA-HRCDK	608	0095	SAPK-60895INEAHRCDK	Subcomponent EA-HRCDK of EA-HR
EA-HRCEG	608	0095	SAPK-60895INEAHRCEG	Sub component EA-HRCEG of EA-HR
EA-HRCES	608	0095	SAPK-60895INEAHRCES	Subcomponent EA-HRCES of EA-HR
EA-HRCFI	608	0095	SAPK-60895INEAHRCFI	Subcomponent EA-HRCFI of EA-HR
EA-HRCFR	608	0095	SAPK-60895INEAHRCFR	Subcomponent EA-HRCFR of EA-HR
EA-HRCGB	608	0095	SAPK-60895INEAHRCGB	Subcomponent EA-HRCGB of EA-HR
EA-HRCGR	608	0095	SAPK-60895INEAHRCGR	Subcomponent EA-HRCGR of EA-HR
EA-HRCHK	608	0095	SAPK-60895INEAHRCHK	Subcomponent EA-HRCHK of EA-HR
EA-HRCHR	608	0095	SAPK-60895INEAHRCHR	Subcomponent EA-HRCHR of EA-HR
EA-HRCHU	608	0095	SAPK-60895INEAHRCHU	Subcomponent EA-HRCHU of EA-HR
EA-HRCID	608	0095	SAPK-60895INEAHRCID	Subcomponent EA-HRCID of EA-HR

Component	Release	SP-Level	Support Package	Short Description of Component
EA-HRCIE	608	0095	SAPK-60895INEAHRCIE	Subcomponent EA-HRCIE of EA-HR
EA-HRCIN	608	0095	SAPK-60895INEAHRCIN	Subcomponent EA-HRCIN of EA-HR
EA-HRCIT	608	0095	SAPK-60895INEAHRCIT	Subcomponent EA-HRCIT of EA-HR
EA-HRCJP	608	0095	SAPK-60895INEAHRCJP	Subcomponent EA-HRCJP of EA-HR
EA-HRCKR	608	0095	SAPK-60895INEAHRCKR	Subcomponent EA-HRCKR of EA-HR
EA-HRCKW	608	0095	SAPK-60895INEAHRCKW	Subcomponent EA-HRCKW of EA-HR
EA-HRCKZ	608	0095	SAPK-60895INEAHRCKZ	Subcomponent EA-HRCKZ of EA-HR
EA-HRCMX	608	0095	SAPK-60895INEAHRCMX	Subcomponent EA-HRCMX of EA-HR
EA-HRCMY	608	0095	SAPK-60895INEAHRCMY	Subcomponent EA-HRCMY of EA-HR
EA-HRCNL	608	0095	SAPK-60895INEAHRCNL	Subcomponent EA-HRCNL of EA-HR
EA-HRCNO	608	0095	SAPK-60895INEAHRCNO	Subcomponent EA-HRCNO of EA-HR
EA-HRCNZ	608	0095	SAPK-60895INEAHRCNZ	Subcomponent EA-HRCNZ of EA-HR
EA-HRCOM	608	0095	SAPK-60895INEAHRCOM	Subcomponent EA-HRCOM of EA-HR
EA-HRCPH	608	0095	SAPK-60895INEAHRCPH	Subcomponent EA-HRCPH of EA-HR
EA-HRCPL	608	0095	SAPK-60895INEAHRCPL	Subcomponent EA-HRCPL of EA-HR
EA-HRCPT	608	0095	SAPK-60895INEAHRCPT	Subcomponent EA-HRCPT of EA-HR
EA-HRCQA	608	0095	SAPK-60895INEAHRCQA	Subcomponent EA-HRCQA of EA-HR
EA-HRCRO	608	0095	SAPK-60895INEAHRCRO	Subcomponent EA-HRCRO of EA-HR
EA-HRCRU	608	0095	SAPK-60895INEAHRCRU	Subcomponent EA-HRCRU of EA-HR
EA-HRCSA	608	0095	SAPK-60895INEAHRCSA	Subcomponent EA-HRCSA of EA-HR
EA-HRCSE	608	0095	SAPK-60895INEAHRCSE	Subcomponent EA-HRCSE of EA-HR
EA-HRCSG	608	0095	SAPK-60895INEAHRCSG	Subcomponent EA-HRCSG of EA-HR
EA-HRCSI	608	0095	SAPK-60895INEAHRCSI	Subcomponent EA-HRCSI of EA-HR
EA-HRCSK	608	0095	SAPK-60895INEAHRCSK	Subcomponent EA-HRCSK of EA-HR
EA-HRCTH	608	0095	SAPK-60895INEAHRCTH	Subcomponent EA-HRCTH of EA-HR
EA-HRCTR	608	0095	SAPK-60895INEAHRCTR	Subcomponent EA-HRCTR of EA-HR

Component	Release	SP-Level	Support Package	Short Description of Component
EA-HRCTW	608	0095	SAPK-60895INEAHRCTW	Subcomponent EA-HRCTW of EA-HR
EA-HRCUA	608	0095	SAPK-60895INEAHRCUA	Subcomponent EA-HRCUA of EA-HR
EA-HRCUN	608	0095	SAPK-60895INEAHRCUN	Subcomponent EA-HRCUN of EA-HR
EA-HRCUS	608	0095	SAPK-60895INEAHRCUS	Subcomponent EA-HRCUS of EA-HR
EA-HRCVE	608	0095	SAPK-60895INEAHRCVE	Subcomponent EA-HRCVE of EA-HR
EA-HRCZA	608	0095	SAPK-60895INEAHRCZA	Subcomponent EA-HRCZA of EA-HR
EA-HRGXX	608	0095	SAPK-60895INEAHRGXX	Subcomponent EA-HRGXX of EA-HR
EA-HRRXX	608	0095	SAPK-60895INEAHRRXX	Subcomponent EA-HRRXX of EA-HR
EA-PS	806	0000	-	SAP Enterprise Extension Public Services
FI-CAX	806	0000	-	FI-CA Extended
INSURANCE	806	0000	-	SAP Insurance
IS-OIL	806	0000	-	IS-OIL
IS-PRA	806	0000	-	SAP IS-PRA
IS-PS-CA	806	0000	-	IS-PUBLIC SECTOR CONTRACT ACCOUNTING
IS-UT	806	0000	-	SAP Utilities/Telecommunication
S4COREOP	106	0000	-	S/4HANA, On-Premise only parts
S4DEPREC	106	0000	-	S/4HANA, deprecation parts
GBX01HR	600	0019	SAPK-60019INGBX01HR	FIORI X1 HCM
GBX01HR5	605	0019	SAPK-60519INGBX01HR5	FIORI X1 HCM
UIAPFI70	900	0000	-	UI SFIN
UIHR001	100	0018	SAPK-10018INUIHR001	UI for ERP Human Capital Management
UIHR002	100	0015	SAPK-10015INUIHR002	UI for ERP Human Capital Management 100
UIS4HOP1	700	0000	-	UI for S/4HANA On Premise
PERSONAS	300	0012	SAPK-30012INPERSONAS	PERSONAS - SAP GUI PERSONALISATION
ST-A/PI	01U_731	0002	SAPKITABC1	Servicetools for SAP Basis 731 and higher

6.1.2 SAP HANA Database & Plug-In Versions

HANA Version is 2.00.059.00.1636704142 (fa/hana2sp05)

Plug-in	Full version
AFL	2.00.059.0000 Build 1636739110-1530
LCAPPS	2.00.059.0000 Build 1636739110-1530
SAP_AFL_SDK_APL	4.203.2123.0
VCH2021	202.105.900.001.636.000.000

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

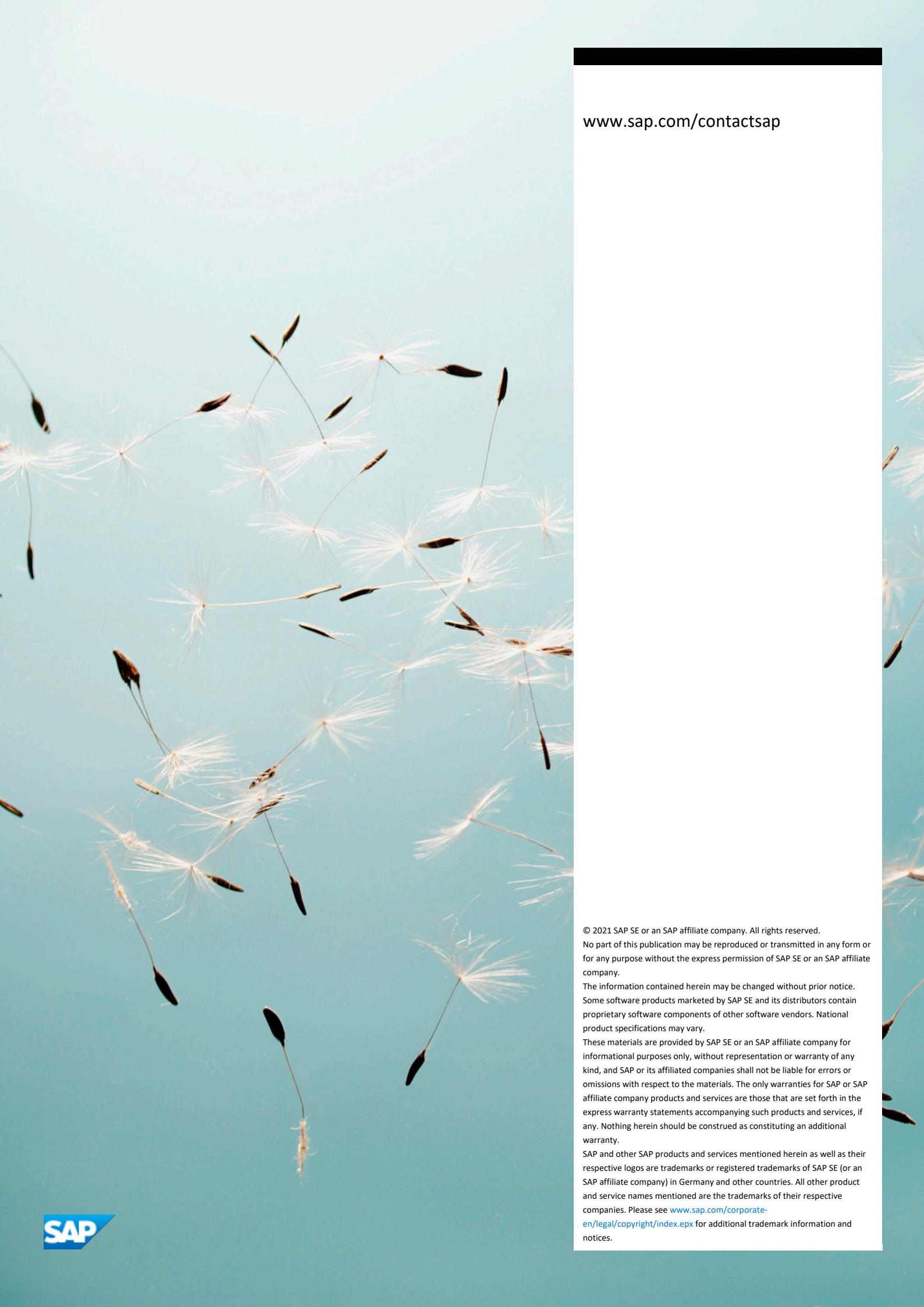
Product Name	Name	Version	Vendor	Description
SAP NETWAVER J2EE	7.50	16	sap.com	SAP NETWEAVER 7.5: Adobe Document Services
SAP NETWAVER J2EE	7.50	16	sap.com	SAP NETWEAVER 7.5: Application Server Java

6.1.4 Windows Remote Desktop

- SAP GUI & SAP Business Client 7.70 (with Webview2 plugin for Edge)
- SAP HANA Studio & ABAP Development Tools (2021-06)
- SAP Lumira 2.4 (Discovery & Designer)
- Google Chrome
- Mozilla Firefox

6.1.5 SAP BusinessObjects BI Platform 4.3

- SBOP BI PLATFORM 4.3 SERVER LINUX (64B)
- SAP Lumira Server for BI Platform



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