# How to Go from Zero to Hero in Two Hours with SAP Analytics Cloud

ANA264

EXERCISE 1:

How to configure SAP Analytics Cloud with SAP Web Dispatcher when you need to access live data stored in SAP HANA.

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SAP TECHED

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## INTRODUCTION

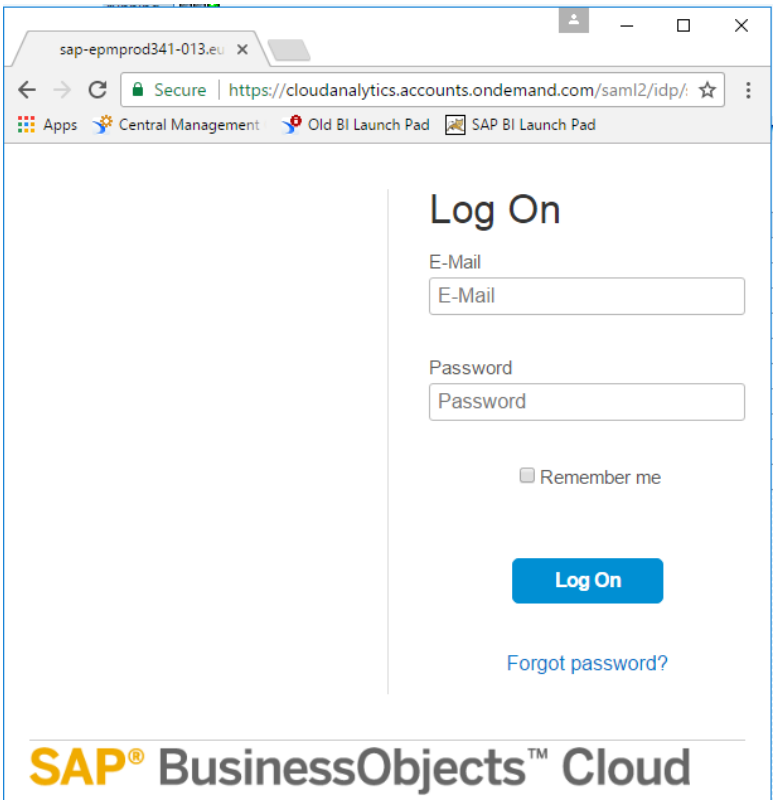
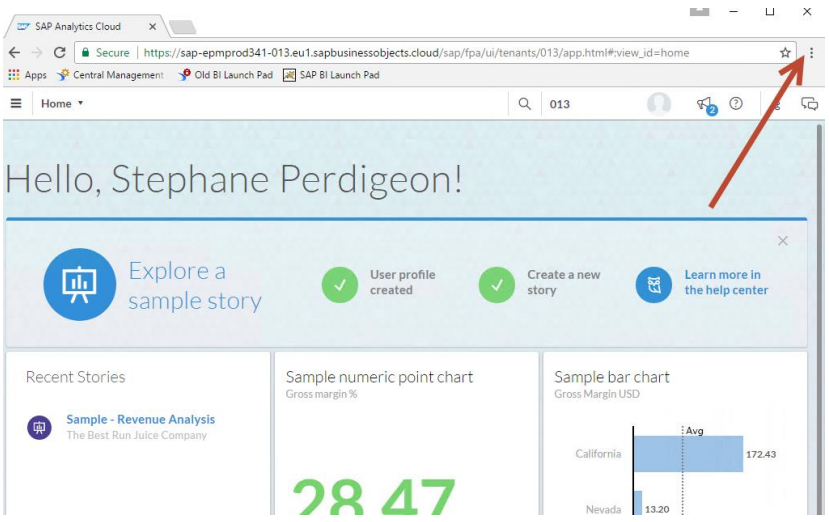
We have installed a SAP Web Dispatcher on this machine that will be used as a reverse proxy for this exercise. The reverse proxy allows us to access the SAP Analytics Cloud URL and the SAP HANA system URL both at the same… in order to perform a live connection to SAP HANA in SAP Analytics Cloud (SAC).

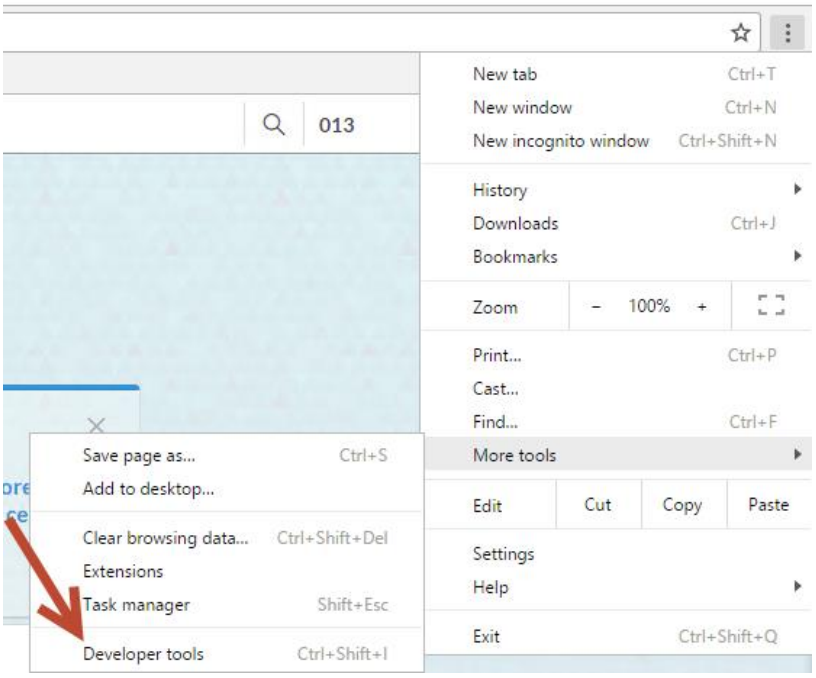
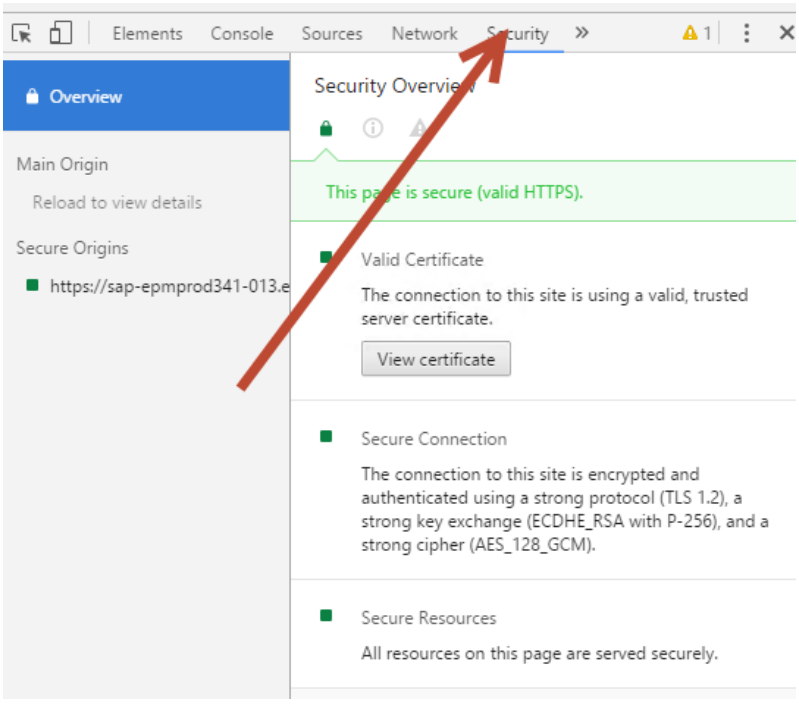
The main steps that will be performed are the following:

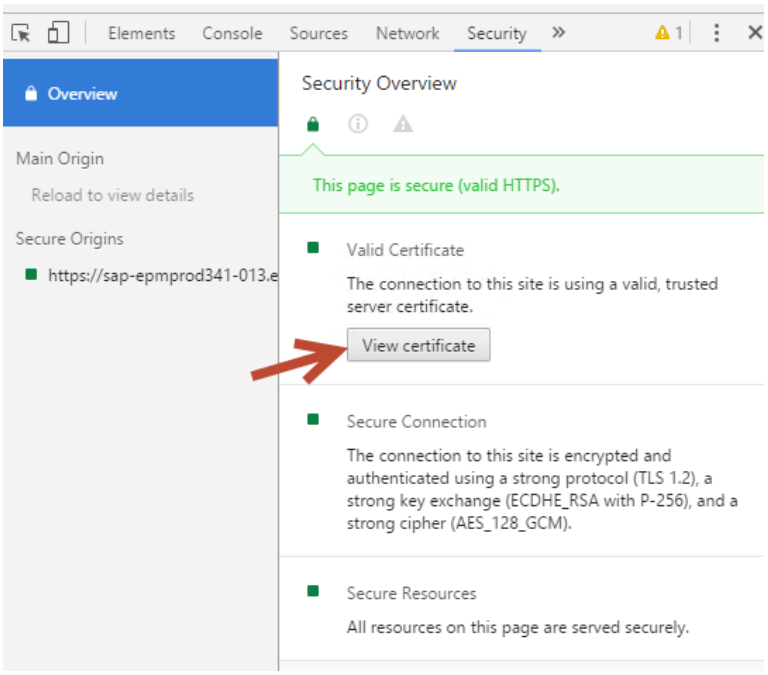
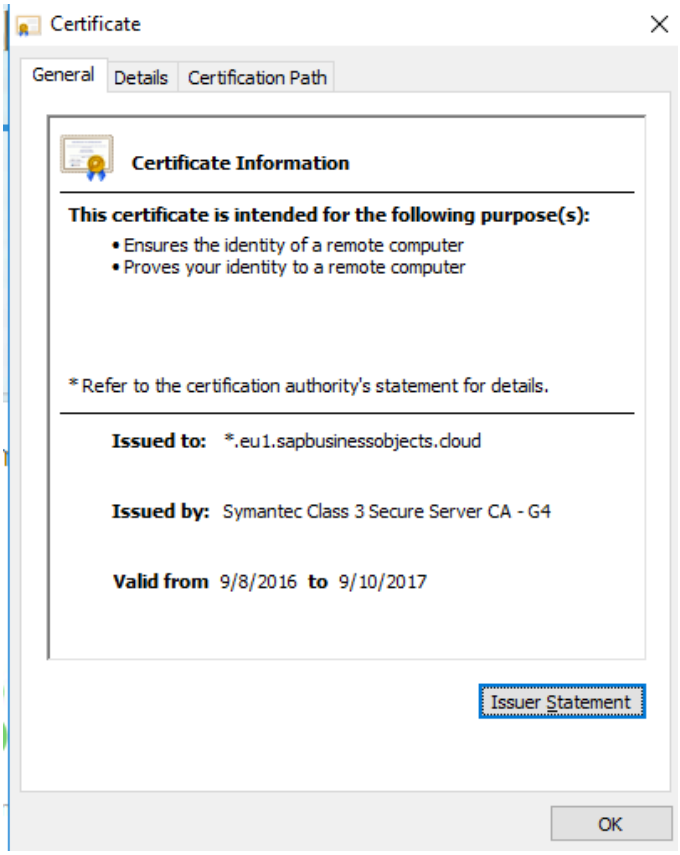
- Import certificate to trust communication between SAC and the reverse proxy
- Configure mapping rules to SAC, so that SAC calls using the reverse proxy URL are sent to the SAC system
- Configure mapping rules to HANA, so that HANA calls using the reverse proxy URL are sent to the HANA System
- Create a HANA LIVE Connection, to demonstrate the connection to HANA is working
- Quickly create a Model from the remote HANA System
- Quickly create a story to demonstrate the benefit of a LIVE connection

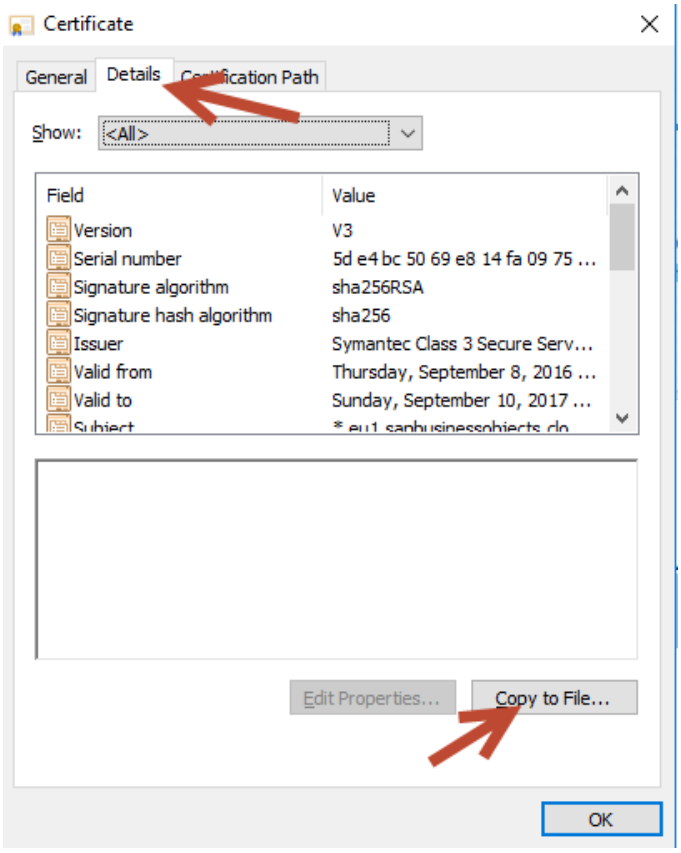
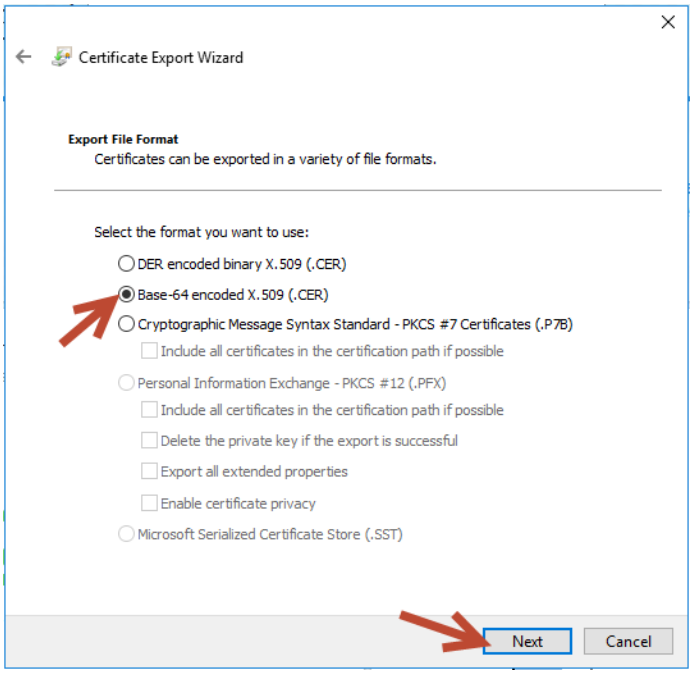
## IMPORT CERTIFICATE

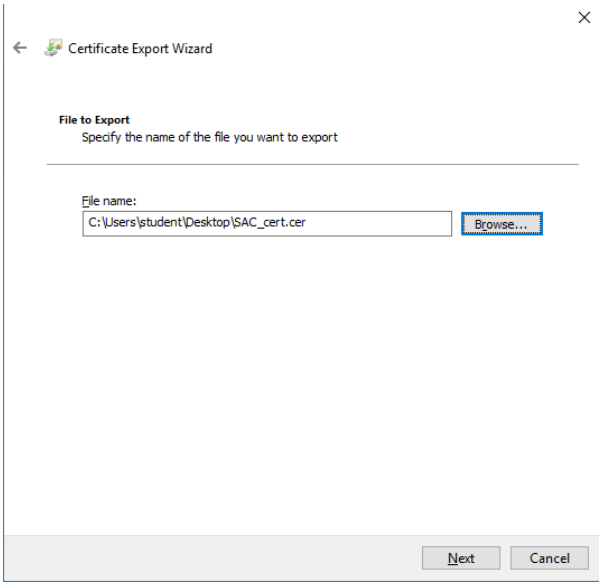
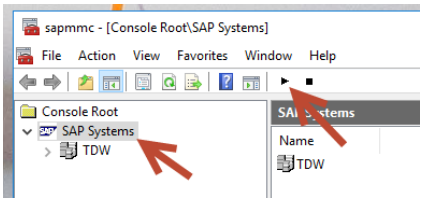
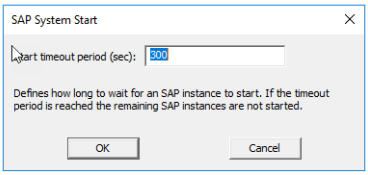
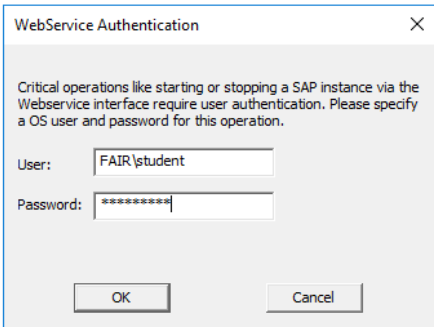
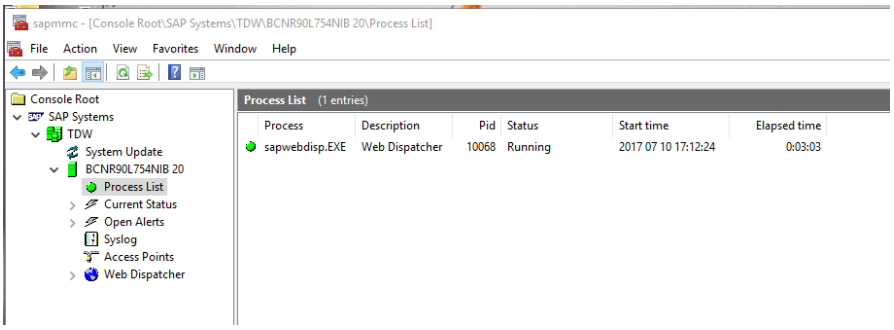
Import a certificate to trust communication between SAC and the reverse proxy.

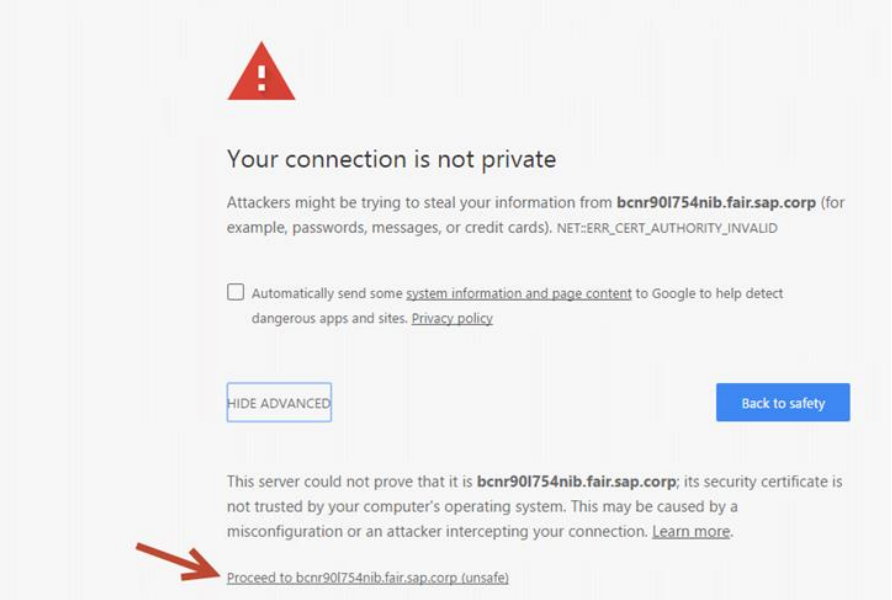
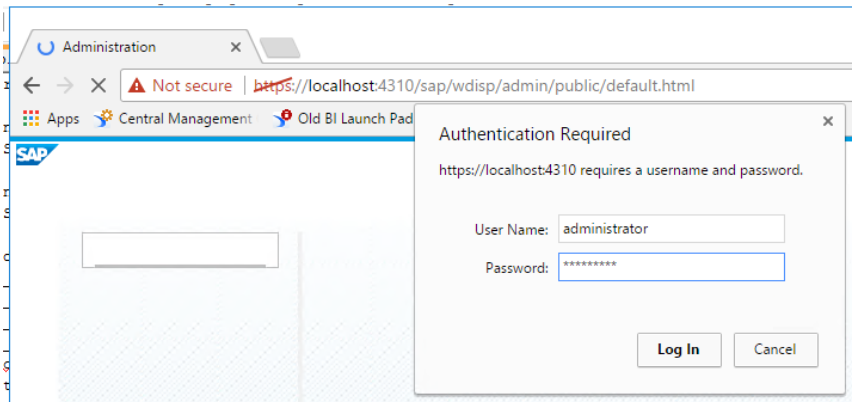
| Explanation | Screenshot |
|---|---|
| Launch Chrome browser, and access the Cloud for Analytics system URL: https://sap-epmprod341-013.eu1.sapbusinessobjects.cloud<br><br>Log into the system using your credentials: **teched17ANA264+XXX@gmail.com**<br>…where XXX is the number assigned to you (for example if you have 089, the email address will be: teched17ANA264+089@gmail.com)<br><br>Password: **Password1** |  |
| In the following steps, we are going to get the certificate information to trust the SAC web site.<br><br>Once logged on, click on the Customize link (3 dots). |  |

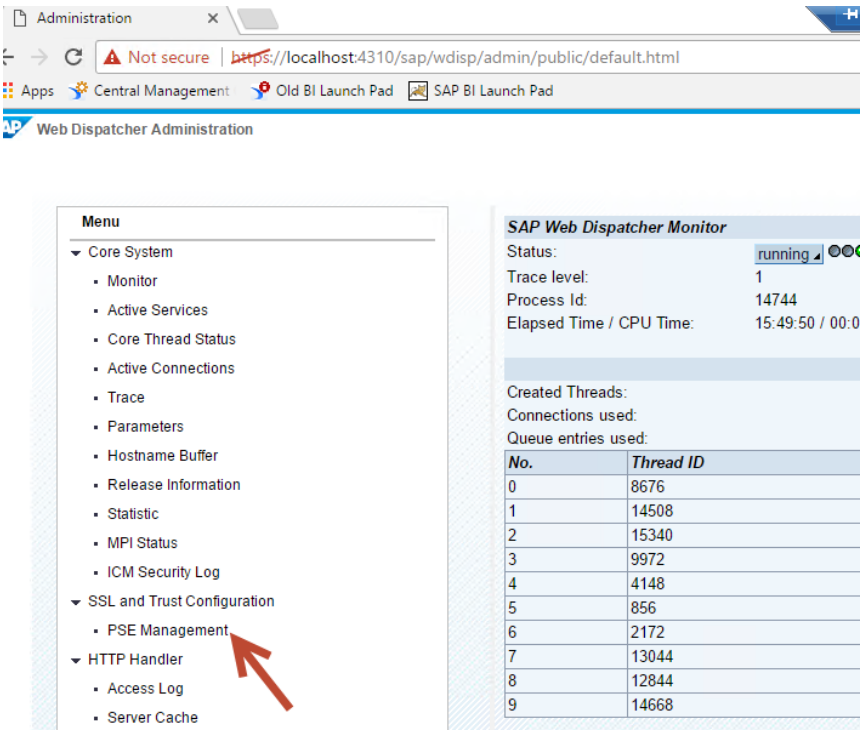
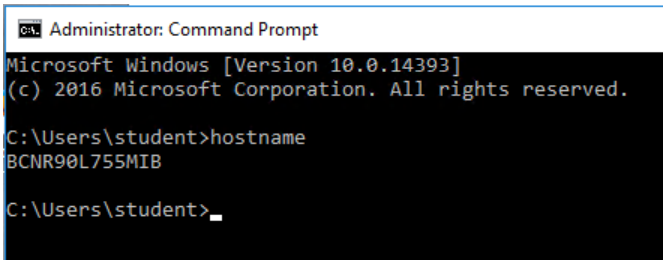
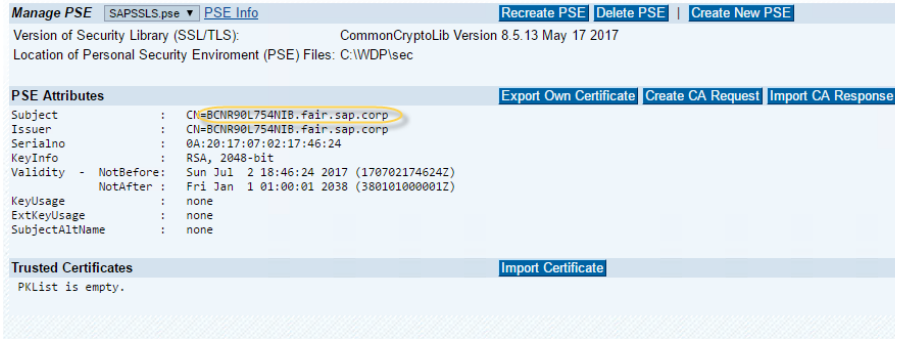
| Explanation | Screenshot |
| --- | --- |
| Choose:<br>*More tools → Developer tools* |  |
| Choose:<br>*Security* |  |

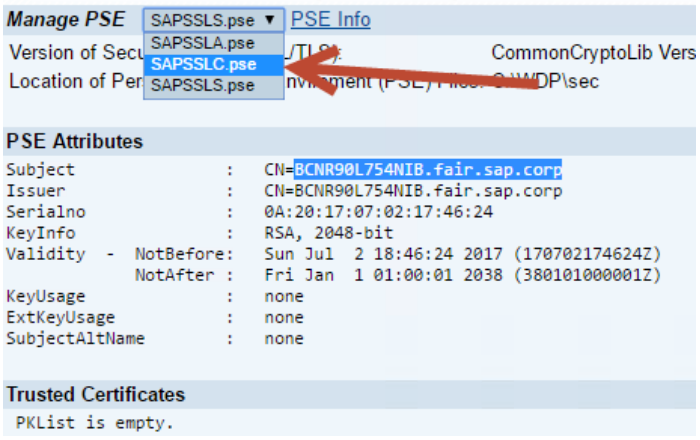
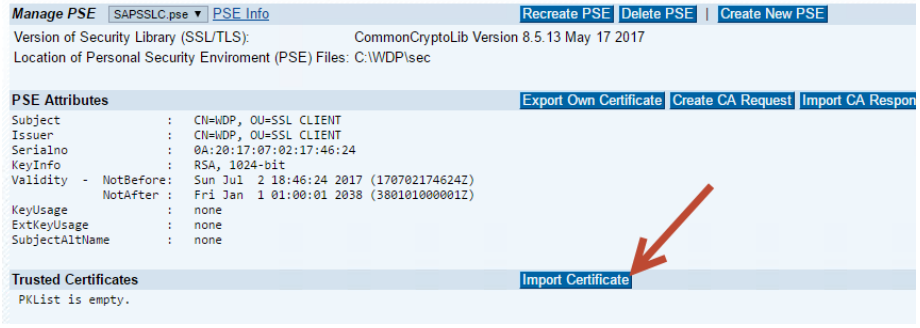
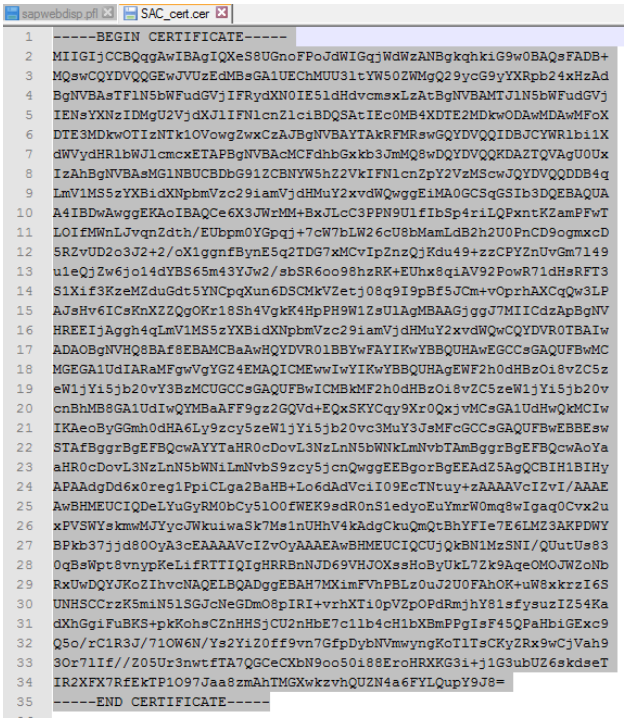
| Explanation | Screenshot |
| --- | --- |
| Choose:<br>*View Certificate* |  |
| You will get the Certificate information. |  |

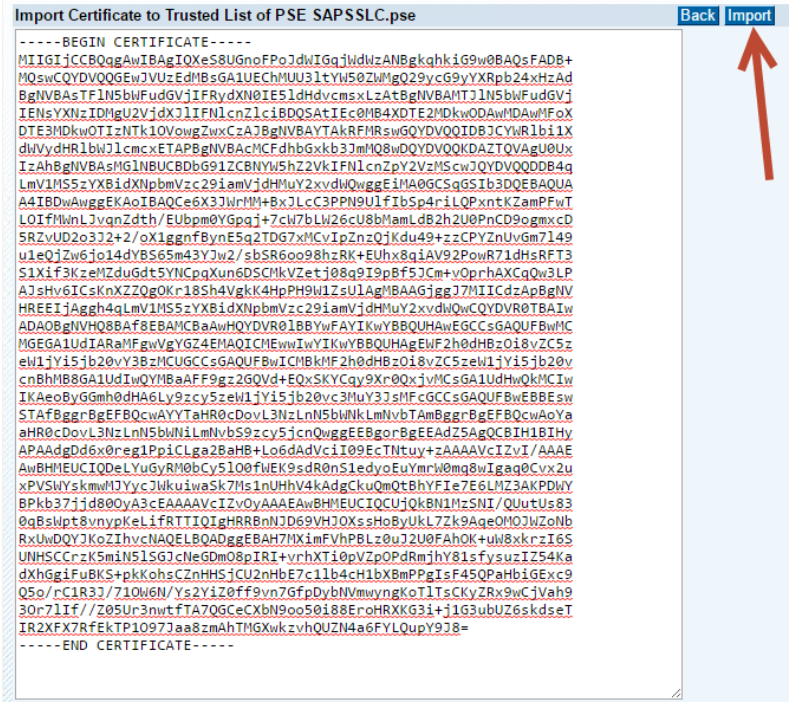
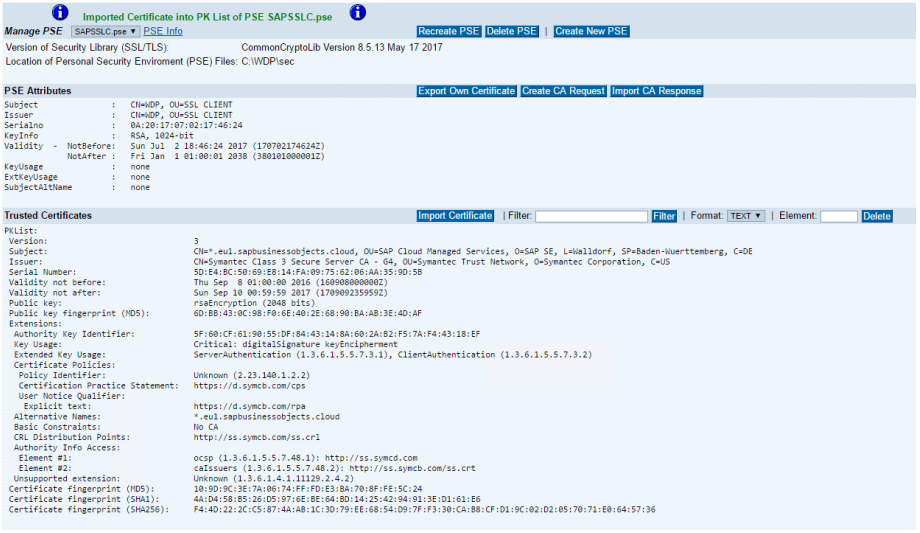
| Explanation | Screenshot |
| --- | --- |
| In the certificate viewer, export the certificate. Choose:<br>*Details Tab → Copy to File…* |  |
| Click *Next* in the certificate export wizard. Choose:<br>*Base-64 encoded X.509 (.CER)* as the file format, and click *Next*. |  |

| Explanation | Screenshot |
| --- | --- |
| Save the file as *SAC_cert.cer* onto the Desktop.<br><br>Click *Next*, then *Finish*.<br><br>You can close the Certificate window. |  |
| Let's start Web Dispatcher.<br><br>Launch the *SAP Management Console* available on your desktop.<br><br>  <br><br>Click on *SAP Systems* and then click the *Start* button.<br><br>Click *OK* for the "Timeout period" question.<br><br>If prompted for user / password enter the windows authentication information, then click *OK*.<br><br>User: **FAIR\student**<br>Password: **Welcome17**<br><br>Click the *Refresh* button to ensure this is started properly. |  <br>  <br>  <br>  |

| Explanation | Screenshot |
| --- | --- |
| The next step is to import the certificate to the Web Dispatcher's trusted certificate list.<br><br>Launch the Web Dispatcher's Administration UI at https://localhost:44320/sap/wdisp/admin/<br><br>If you are prompted that your connection is not private, click *Advanced* and then *Proceed*. |  |
| Enter the following credentials to login to the Administration UI:<br><br>User: **webadm**<br>Password: **Abcd1234** |  |

| Explanation | Screenshot |
| --- | --- |
| In the left menu, expand *SSL and Trust Configuration*.<br><br>Click *PSE Management*.<br><br>The PSE Management user interface appears on the right. |  |
| Before doing anything else, we will retrieve the hostname on the local machine. This will be used in several configuration steps.<br><br>Open a Windows Command Prompt (enter **cmd** into the Windows Search bar). In the Command Prompt, enter **hostname**<br><br>Use Notepad to note the hostname and suffix it with **.fair.sap.corp** to get the Fully Qualified Domain Name (FQDN).<br><br>The FQDN hostname will look like: BCNYYYYYYYYYY.fair.sap.corp<br><br>Save this as a text file on your Desktop and call it *hostname.txt*. |  <br>  |

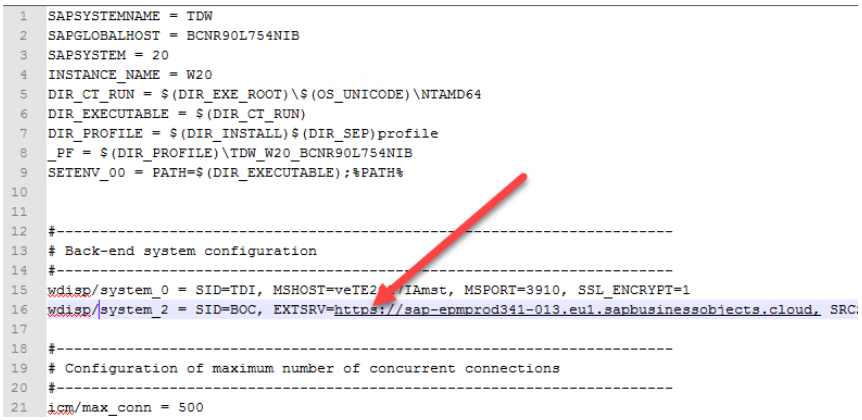
| Explanation | Screenshot |
|---|---|
| The Web Dispatcher acts as an SSL client to SAP Analytics Cloud, so we should maintain the trust in the *SAPSSLC.pse* file.<br><br>Select *SAPSSLC.pse* in the drop-down list. |  |
| Click *Import Certificate* in the "Trusted Certificates" section. |  |
| Now open the previously saved *SAC_cert.cer* certificate with a text editor and copy the entire contents. |  |

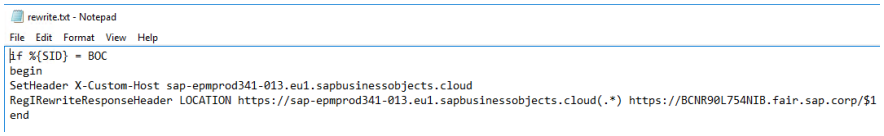
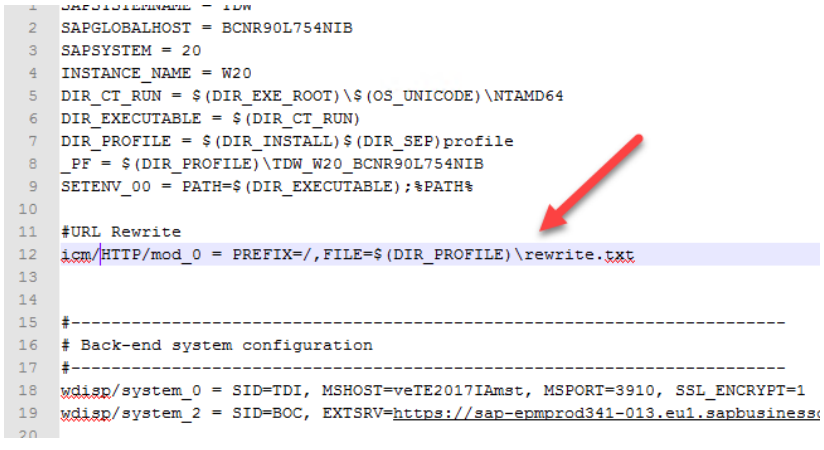
| Explanation | Screenshot |
| --- | --- |
| Paste this into the Import Certificate wizard.<br><br>Click *Import*. |  |
| The certificate is now part of the Trusted Certificates list. |  |

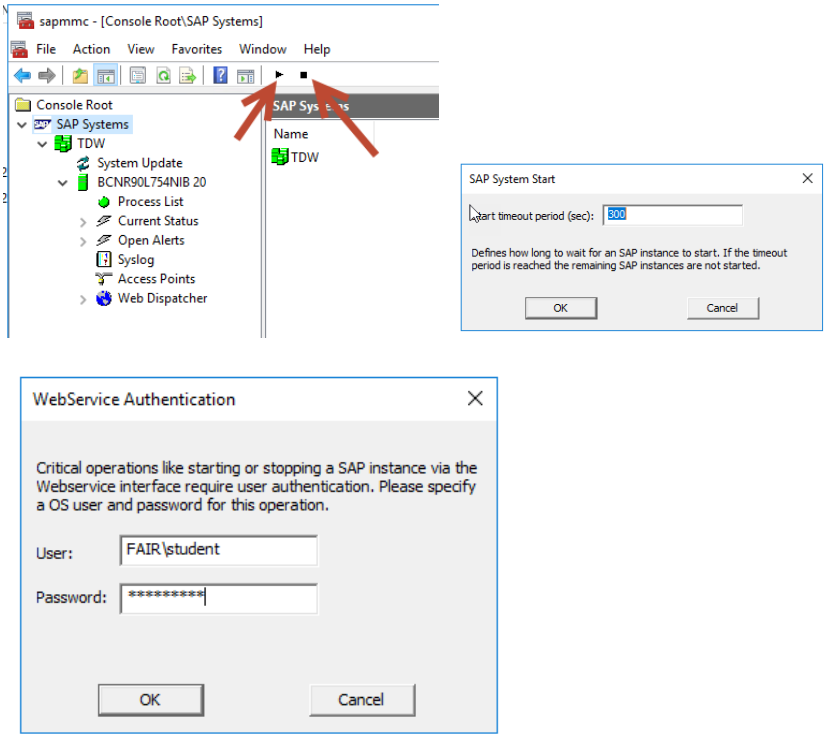
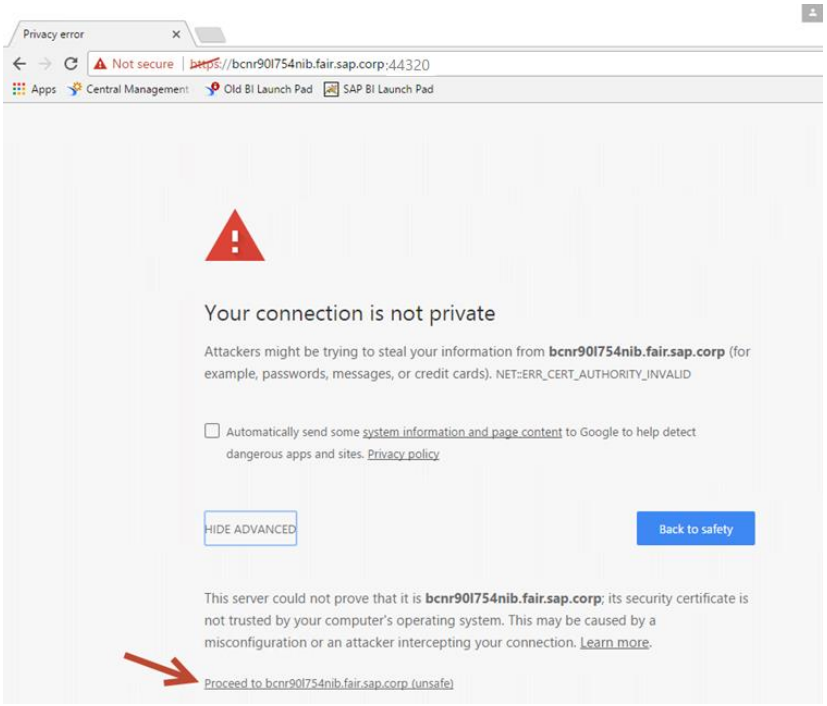
## CONFIGURE MAPPING RULES TO SAP ANALYTICS CLOUD

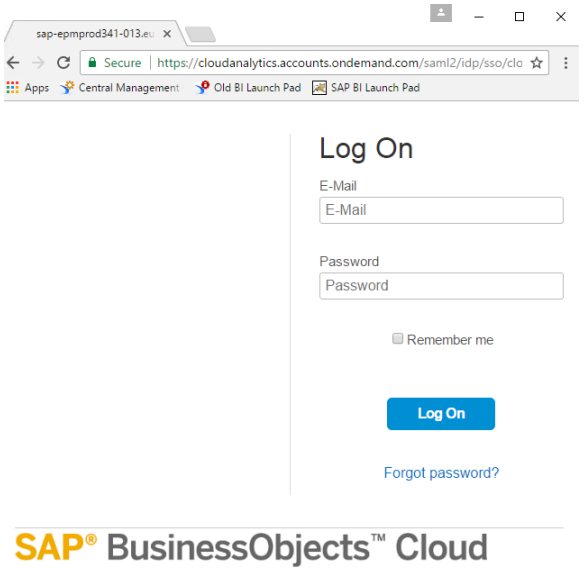
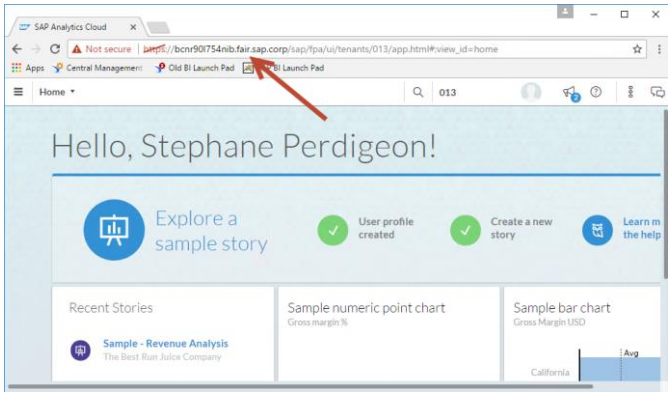
In the next few steps we will configure the Web Dispatcher's profile and URL "rewrite" rules to enable the Web Dispatcher to act as a reverse proxy for SAP Analytics Cloud.

For this part of this exercise you will need to access files that are located in the folder *D:\usr\sap\TDW\SYS\profile*. This is the folder where the SAP Web Dispatcher has been installed for you.

| Explanation | Screenshot |
|---|---|
| From *D:\usr\sap\TDW\SYS\profile*, use a text editor to open *TDW_W20_**** (*** being the hostname) and add the following line:<br><br>**wdisp/system_2 = SID=BOC, EXTSRV=https://sap-epmprod341-013.eu1.sapbusinessobjects.cloud, SRCSRV=*:44320, SRCURL=/, PROXY=proxy:8080, STANDARD_COOKIE_FILTER=OFF**<br><br>Optionally, the workshops hosts will tell you where to copy/paste this information.<br><br>This rule defines the System ID for the SAP Analytics Cloud system, its protocol, its server name and its port.<br><br>Any HTTPS request on port 44320 with a URL beginning with https://<WebDispatcherFQDN> will be forwarded to the SAP Analytics Cloud system at https://sap-epmprod341-013.eu1.sapbusinessobjects.cloud.<br><br>As SAP Analytics Cloud resides on the Internet, we need to add a proxy setting in the rule to allow the Web Dispatcher to access the system via SAP's corporate network proxy server. |  <br>SAPSYSTEMNAME = TDW<br>SAPGLOBALHOST = BCNR90L754NIB<br>SAPSYSTEM = 20<br>INSTANCE_NAME = W20<br>DIR_CT_RUN = $(DIR_EXE_ROOT)\$(OS_UNICODE)\NTAMD64<br>DIR_EXECUTABLE = $(DIR_CT_RUN)<br>DIR_PROFILE = $(DIR_INSTALL)$(DIR_SEP)profile<br>_PF = $(DIR_PROFILE)\TDW_W20_BCNR90L754NIB<br>SETENV_00 = PATH=$(DIR_EXECUTABLE);%PATH%<br><br><br>#-----------------------------------------------------------------------<br># Back-end system configuration<br>#-----------------------------------------------------------------------<br>wdisp/system_0 = SID=TDI, MSHOST=veTE2[illegible]IAmst, MSPORT=3910, SSL_ENCRYPT=1<br>wdisp/system_2 = SID=BOC, EXTSRV=https://sap-epmprod341-013.eu1.sapbusinessobjects.cloud, SRC<br><br>#-----------------------------------------------------------------------<br># Configuration of maximum number of concurrent connections<br>#-----------------------------------------------------------------------<br>icm/max_conn = 500 |

| Explanation | Screenshot |
| --- | --- |
| Open the file *rewrite.txt*, which is in the same folder as the *TDW_W20_*** file.<br><br>Add the following rewrite rule to the file and save it:<br><br>**if %{SID} = BOC**<br>**begin**<br>**SetHeader X-Custom-Host sap-epmprod341-013.eu1.sapbusinessobjects.cloud**<br>**RegIRewriteResponseHeader LOCATION https://sap-epmprod341-013.eu1.sapbusinessobjects.cloud(.*) https://<WebDispatcherFQDN>/$1**<br>**end**<br><br>Replace <WebDispatcherFQDN> with the Web Dispatcher system fully qualified domain name, which you previously saved in the *hostfile.txt* file. For TechEd the format is yyyyyy.fair.sap.corp.<br><br>This rule is an HTTP rewrite rule. Any HTTP redirection by SAP Analytics Cloud using the Location command with the original SAC system host name will be rewritten to use the Web Dispatcher's fully qualified domain name, so that the SAC URL is transparent to the end user.<br><br>Note that this rule only applies if %{SID} is equal to BOC, the system ID previously defined for the SAP Analytics Cloud system. |  |
| In the *TDW_W20_*** file, add the following lines to refer to the newly-created rewrite.txt:<br><br>**#URL Rewrite**<br>**icm/HTTP/mod_0 = PREFIX=/,FILE =$(DIR_PROFILE)\rewrite.txt**<br><br>Save the file. |  |

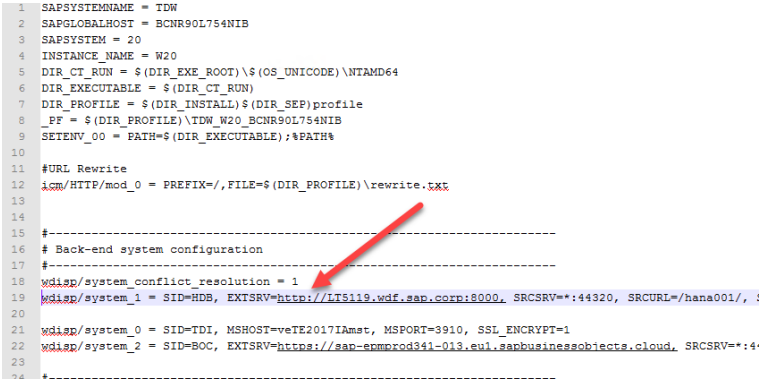
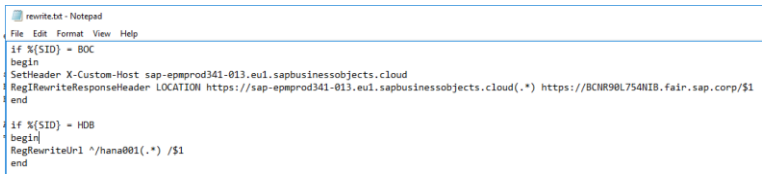
| Explanation | Screenshot |
| --- | --- |
| To restart the Server in the SAP Management Console, click *Stop* and choose *Hard (SIGINT)*.<br><br>Once the server has stopped, click *Start*.<br><br>Click *OK* for the “Timeout period” question.<br><br>If prompted for user / password enter the windows authentication information, then click *OK*.<br><br>User: **FAIR\student**<br>Password: **Welcome17** |  |
| Launch the Chrome browser and enter the following URL:<br>*https://<WebDispatcherFQDN>:44320*<br><br>Replace <WebDispatcherFQDN> with the Web Dispatcher system fully qualified domain name, which you previously saved in the *hostfile.txt* file. For TechEd the format is yyyyyy.fair.sap.corp.<br><br>Ignore the security warning as we are using a self-signed certificate for the Web Dispatcher. Proceed to the web site.<br><br>The SAP Analytics Cloud system is now being accessed via the Web Dispatcher. |  |

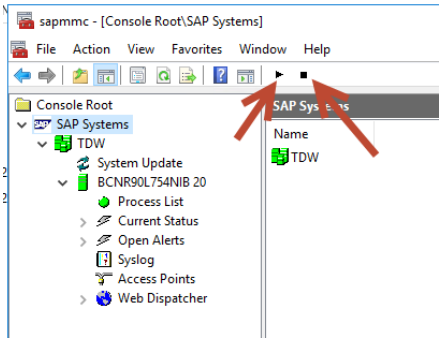
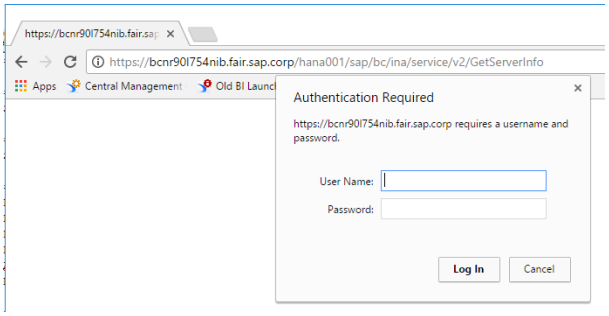
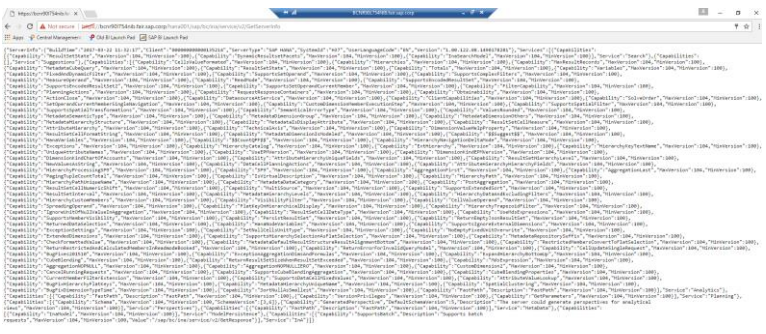
| Explanation | Screenshot |
| --- | --- |
| You can now log on to the system.<br><br>Log into the system using your credentials: **teched17ANA264+XXX@gmail.com** …where XXX is the number assigned to you (for example if you have 089, the email address will be: teched17ANA264+089@gmail. com).<br><br>Password: **Password1** |  |
| You are now accessing SAP Analytics Cloud using the reverse proxy URL. |  |

## CONFIGURE MAPPING RULES TO SAP HANA

In this section, we will setup the SAP Web Dispatcher as a reverse proxy for the on-premise / remote SAP HANA system. For simplicity, the SAP HANA system is being accessed via HTTP. In a production system you would use HTTPS between the Web Dispatcher and the SAP HANA system.

We will configure the Web Dispatcher profile and rewrite rules to turn it to a reverse proxy for HANA.

| Explanation | Screenshot |
|---|---|
| Add the mapping rule to the file *TDW_W20_*** with the following lines:<br><br>**wdisp/system_conflict_resolution = 1**<br><br>**wdisp/system_1 = SID=HDB, EXTSRV=http://LT5119.wdf.sap.corp:8000, SRCSRV=*:44320, SRCURL=/hana001/, STANDARD_COOKIE_FILTER=OFF**<br><br>This rule defines the HANA system's ID (SID), protocol, server name and port of the HANA XS engine. Any HTTPS request arriving at Web Dispatcher on port 44320, with its URL beginning with https://<WebDispatcherFQDN>/hana001, will be forwarded to the HANA system at http://LT5119.wdf.sap.corp:8000/.<br><br>Note that a proxy server is not configured in this rule as the HANA system resides on premise.<br><br>Save the *TDW_W20_*** file.<br><br>**Important Note:** The order of the systems matters. The SAC system should be labeled with the latest ID; here it is */system_2*. |  |
| Edit the *rewrite.txt* file and add the following rewrite rule:<br><br>**if %{SID} = HDB**<br>**begin**<br>**RegRewriteUrl ^/hana001(.*) /$1**<br>**end**<br><br>This is an HTTP Request rewrite rule, which removes the /hana001 part from the URL when forwarding to the backend HANA system, as /hana001 is used by the Web |  |

| Explanation | Screenshot |
| --- | --- |
| Dispatcher for server mapping purposes only and HANA does not recognize it.<br><br>We did not need a similar HTTP Request rewrite rule for the SAC system, as the URL to the SAC system does contain */sap* at the beginning of its URL path.<br><br>The *if* condition in this rule makes sure that it is only applied to the backend HANA system.<br><br>Save the *rewrite.txt* file. | |
| As before, restart the Server in the SAP Management Console. Click *Stop* and choose *Hard (SIGINT)*.<br><br>Once the server has stopped, click *Start*. |  |
| Launch a Chrome window, and put the following URL into the address bar to test the reverse proxy:<br><br>https://<WebDispatcherFQDN>:44320/hana001/sap/bc/ina/service/v2/GetServerInfo<br><br>Replace <WebDispatcherFQDN> with the Web Dispatcher system fully qualified domain name, which you previously saved in the *hostfile.txt* file. For TechEd the format is yyyyyy.fair.sap.corp.<br><br>When prompted, enter the HANA system's user credential provided by the instructor:<br><br>User: **System**<br>Password: **WelcomeSAP17** |  <br>  |

**Problems?**

If your edited mapping or rewrite rules do not work, you can use the following two files in *D:\usr\sap\TDW\SYS\profile* instead:

- *rewrite – SOLUTION.txt*
- *TDW_W20_<hostname> SOLUTION*

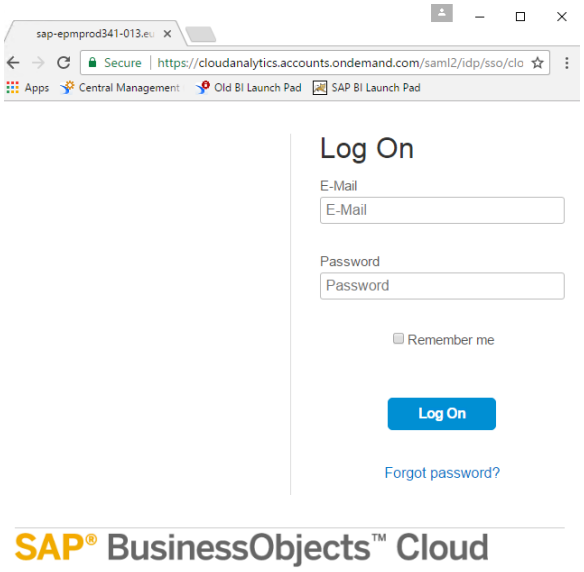
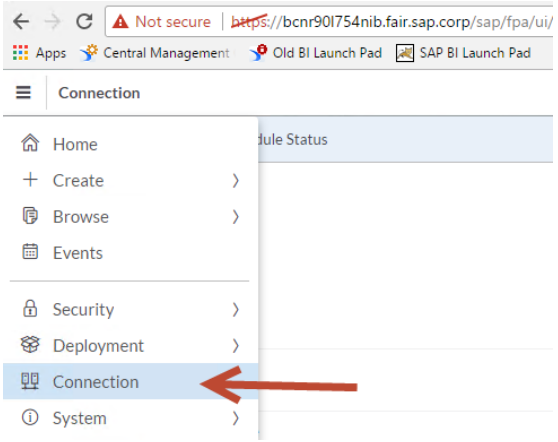
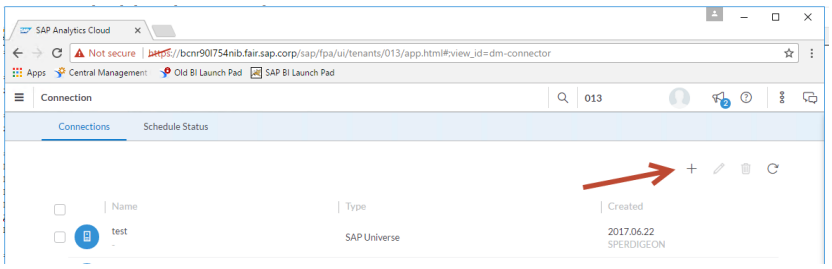
**Copy these two files** then rename the copies as:

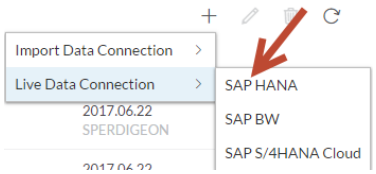
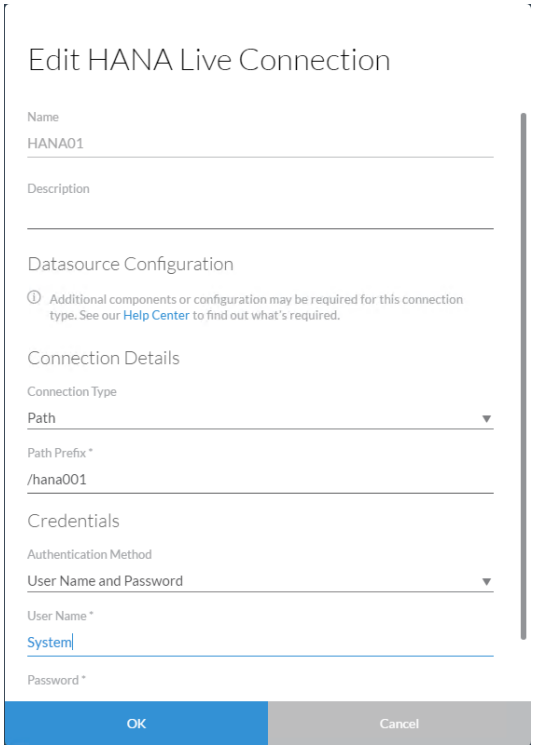
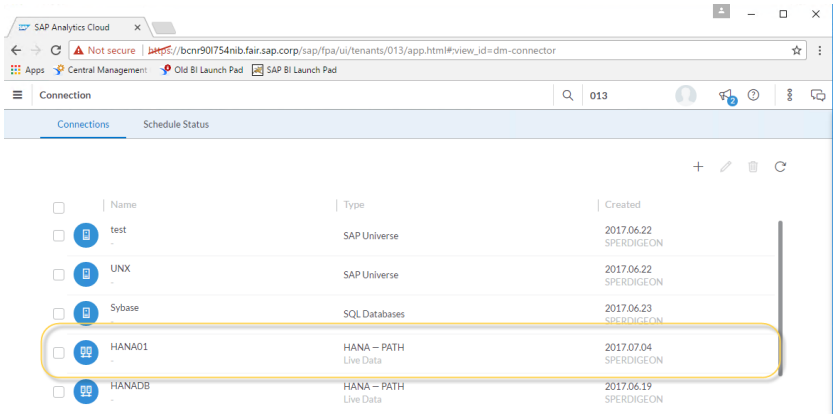
- *rewrite.txt*
- *TDW_W20_<hostname>*

…where <hostname> is the machine name (e.g. BCNR90L754NIB).

## CREATE A SAP HANA LIVE CONNECTION

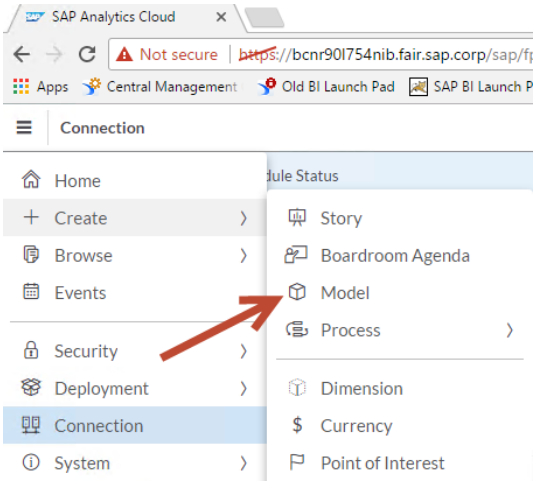
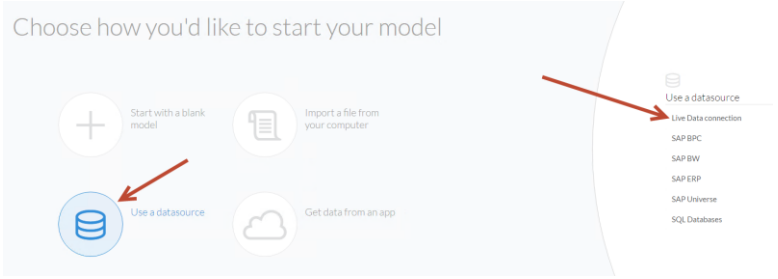
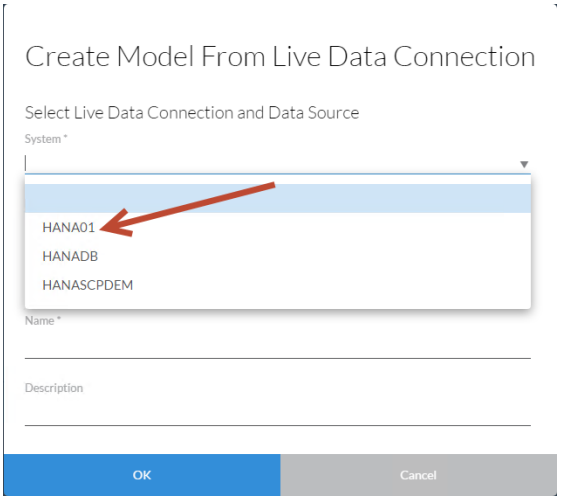
We will now connect to SAP Analytics Cloud via the reverse proxy and create a live connection to SAP HANA.

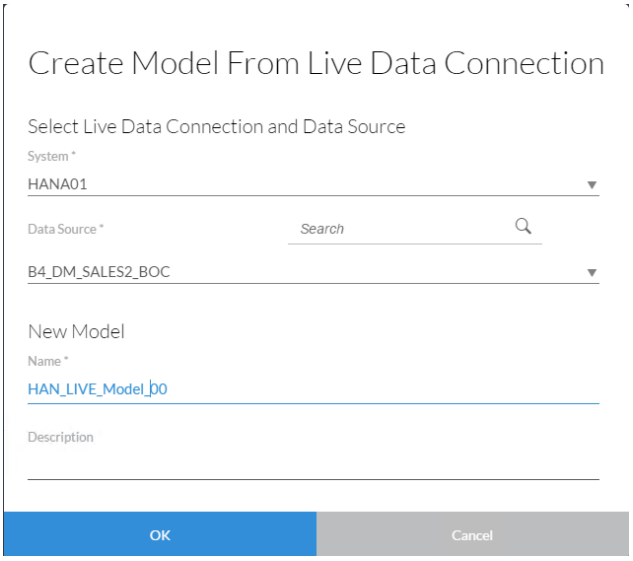
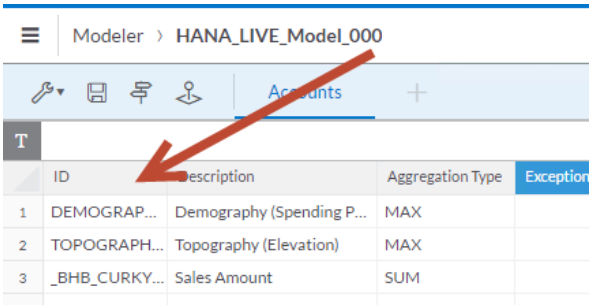
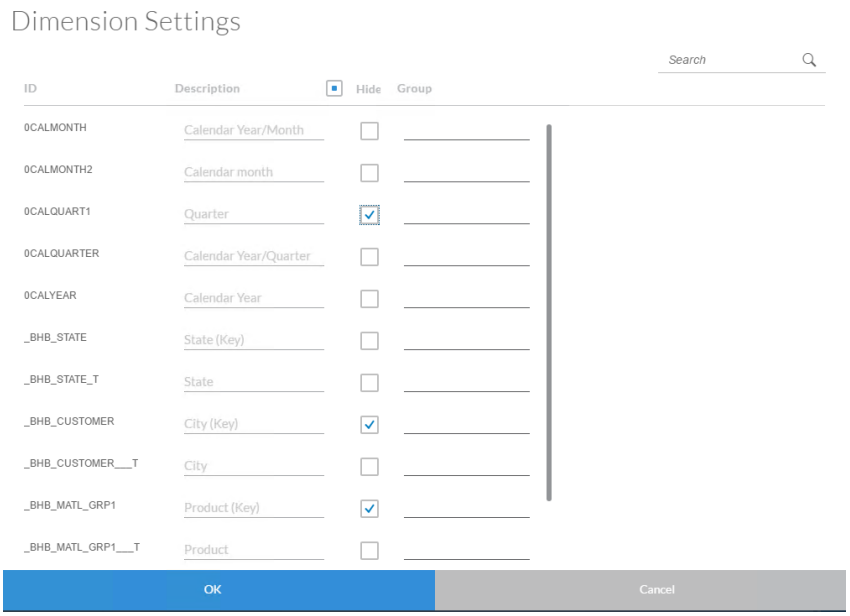
| Explanation | Screenshot |
|---|---|
| Launch the Chrome browser and enter the following URL: *https://<WebDispatcherFQDN>:44320*<br><br>Replace <WebDispatcherFQDN> with the Web Dispatcher system fully qualified domain name, which you previously saved in the *hostfile.txt* file. For TechEd the format is yyyyyy.fair.sap.corp.<br><br>Log into the system using your credentials: **teched17ANA264+XXX@gmail.com** …where XXX is the number assigned to you (for example if you have 089, the email address will be: teched17ANA264+089@gmail. com).<br><br>Password: **Password1** |  |
| Click on *Hamburger* → *Connection*. |  |
| Create a new connection by clicking the + button. |  |

| Explanation | Screenshot |
|---|---|
| Choose *Live Data Connection* → *SAP HANA*. |  |
| In the pop-up window, fill in the following details:<br><br>Name: **HANAXXX** (…where XXX is the number assigned to you).<br>Connection Type: **Path**<br>Path Prefix: **/hana001**<br>Credentials are required: **Checked**<br>Authentication Method: **User Name and Password**<br>User Name: **System**<br>Password: **WelcomeSAP17**<br><br>Notice that the path prefix matches the previous HANA path definition in the Web Dispatcher mapping rules. |  |
| The newly-created remote HANA system definition is now part of the list of connections in SAP Analytics Cloud. |  |

## CREATE A MODEL FROM THE REMOTE SAP HANA SYSTEM

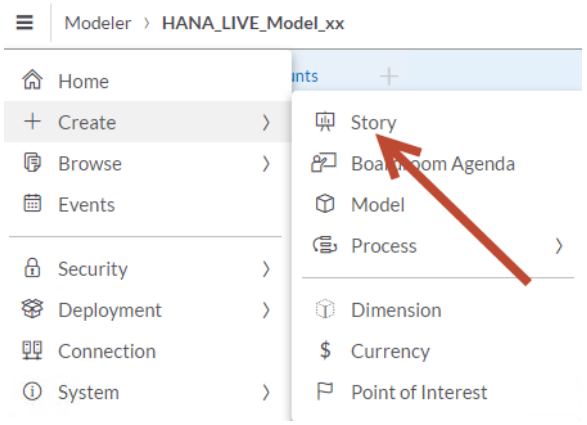
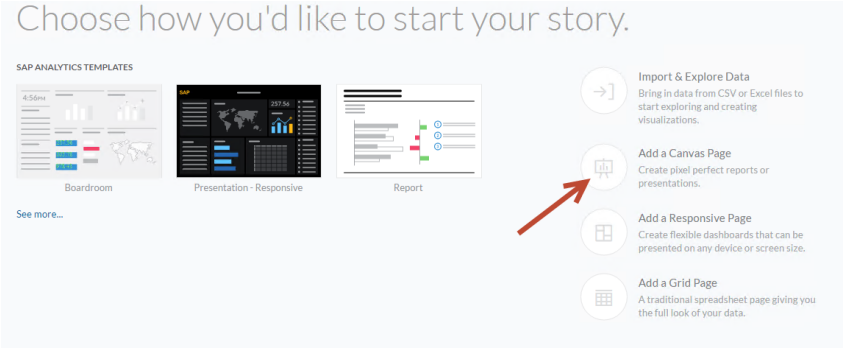
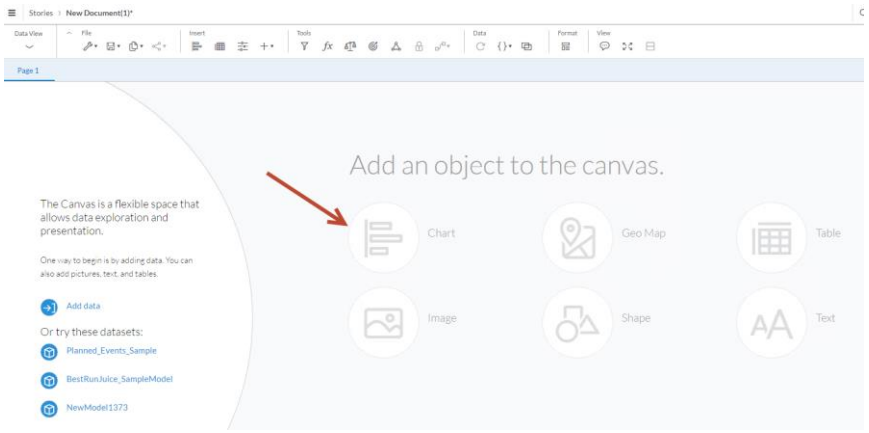
Now that the remote HANA system is ready to use, we will test it by creating a model from the remote HANA system.

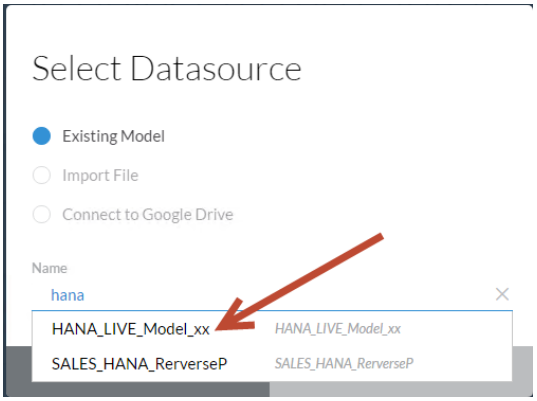
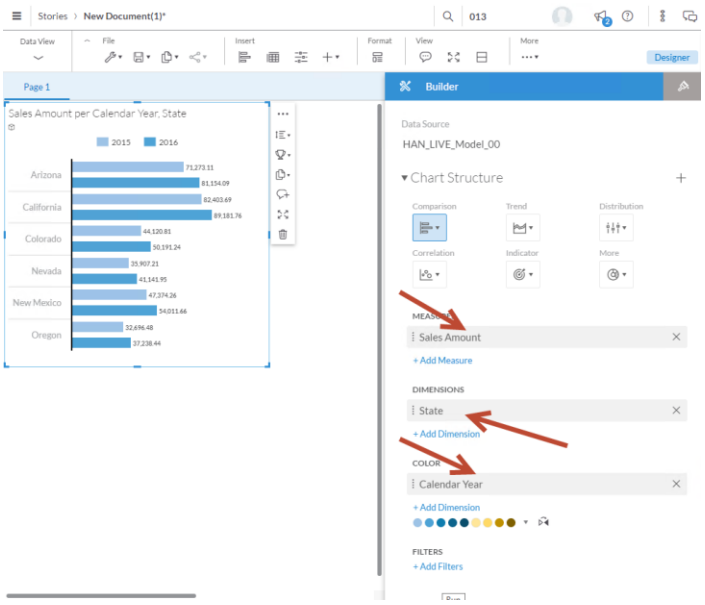
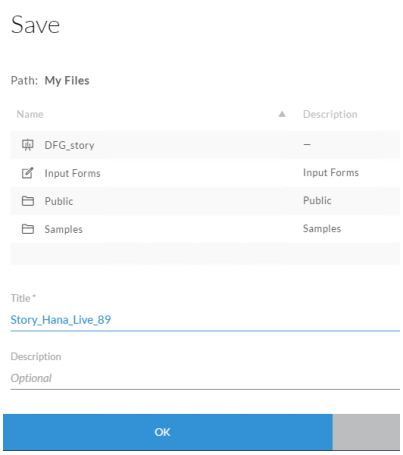
| Explanation | Screenshot |
|---|---|
| The next step is to create a model from the remote HANA system we defined earlier.<br><br>Click *Hamburger* → *Create* → *Model*. |  |
| Choose *Use a datasource* and click on *Live Data Connection*. |  |
| From the list of Systems, choose the name of the connection you just created *HANAXXX*, where XXX is the number assigned to you. |  |

| Explanation | Screenshot |
| --- | --- |
| Enter user name and password for the HANA system, if prompted.<br><br>User Name: **System**<br>Password: **WelcomeSAP17**<br><br>Chose the Data Source available at the HANA level. We will choose *B4_DM_SALES2_BOC*.<br><br>Give it a name such as *HANA_LIVE_Model_XXX*, where XXX is the number assigned to you.<br><br>Click *OK*. |  |
| You can optionally explore making some changes to your model.<br><br>For example click on the *Dimension settings* icon and hide some dimensions.<br><br>Click the *Save* icon to save your model. |  <br>  |

## CREATE A STORY

We will now validate the model by creating a simple SAP Analytics Cloud story.

| Explanation | Screenshot |
|---|---|
| Create a Story by clicking *Hamburger* → *Create* → *Story*. |  |
| Click on *Add a Canvas Page*. |  |
| Click on *Chart* to add a chart object to the canvas page. |  |

| Explanation | Screenshot |
| --- | --- |
| Choose the model we just created as a the Datasource, e.g. *HANA_LIVE_Model_XXX*, where XXX is the number assigned to you. |  |
| We now add data to the chart.<br><br>In the *Builder* panel on the right-hand side, add:<br><br>Measures: **Sales Amount**<br>Dimensions: **State**<br>Color: **Calendar Year** |  |
| Click the *Save* icon and save your story as *Story_HANA_Live_XXX*, where XXX is the number assigned to you. |  |

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