HP IT Executive Scorecard

Software Version: 9.50
Windows ® operating system

Content Reference Guide for the Integration with HP Cloud Service Automation

Document Release Date: February 2015
Software Release Date: June 2014



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CSA Data Source - Integration, Associated Context, KPIs, Metrics, and Data Lineage

This document describes the integration, contexts, KPIs, Metrics, data lineage, and reports associated with the integration with the following data sources:

HP Cloud Service Automation (CSA) is a platform that orchestrates the deployment of computation and infrastructure resources and of complex multi-tier application architectures. HP CSA integrates and leverages the strengths of a hybrid cloud environment, providing the ability to design and deploy enterprise-ready cloud services tailored to the business needs of your organization. It works through a catalog-based subscription process. Subscribers request and modify cloud service offerings with pre-defined pricing and other customer-specific features. Once the request is approved, through a policy-driven process, HP CSA deploys the cloud service offering using a structured lifecycle with pre-defined integration mechanisms for invoking external processes.

The integration with CSA as new content pack provides reporting analysis based on CSA data model.

The CSA_CAP and CSA_CAP_Demo CAPs are associated with the CSA data source, its context, KPIs, Metrics, and data lineage. For details, see the *Content Acceleration Packs Guide*.

Data Lineage

For details on how to understand the data lineage graph, see Data Lineage in the *IT Executive Scorecard Content Reference Guide*

CSA Data Source - Bring Live CSA Data into XS

The purpose of the integration of CSA as a data source is to bring this information into the Data Warehouse.

To access:

Select **Admin > Data Source Management** then click **Add data source** and select **CSA** to activate the integration processes for the **CSA** data source.



Learn More

- To learn about Content Packs and their functionality, see Data Source Management in the *IT Executive Scorecard Administrator Guide*.
- The CSA Content Pack supports multiple instances.
- **FBI Integration:** An extractor using the File Based Integration mechanism that extracts entities from the source and generates corresponding flat files. For details see File Based Integration (FBI) in the *IT Executive Scorecard Administrator Guide*.
- All fields are case-sensitive.
- **Note:** When you want to use multiple currencies in XS, in addition to deploying CSA, you must also deploy the ALT data source in order to match the currency exchange rate data to that of XS.
- **Example of a CSA subscription price calculation:** If, for example, the price of one daily subscription is $10, you have just used the subscription for 12 hours, and the ETL starts to run at this moment, the total you have to pay is 10*12/24=$5. The CSA subscription price is calculated for the real usage accurate to the second. Though some customers would prefer to see $10 on the report even if the usage is not yet 24 hours, BA displays $5 after the ETL load because it represents the real usage.

Tasks

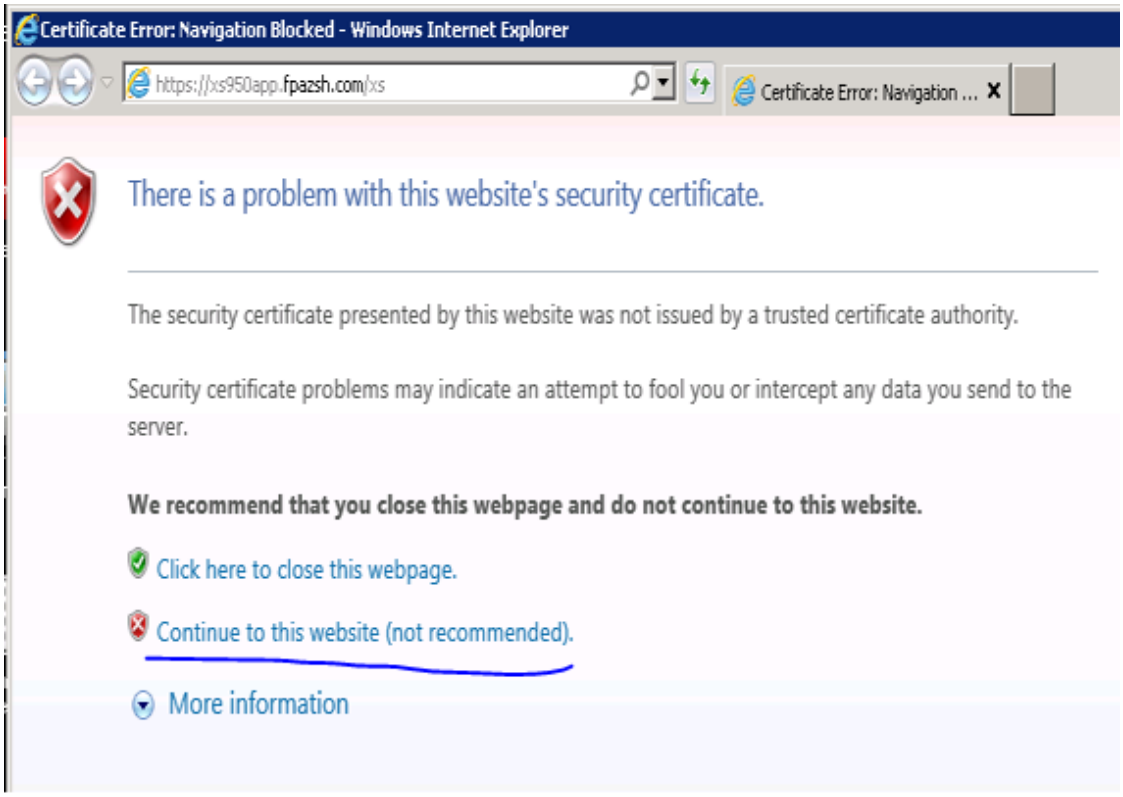
This section includes:

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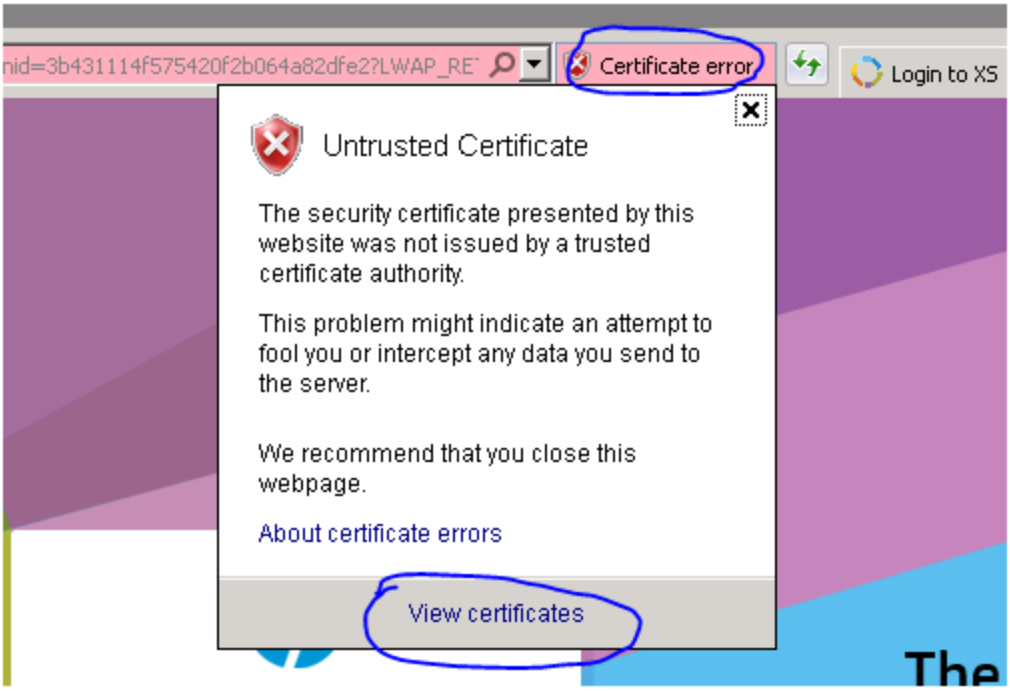
- Calculate the KPI 27
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Configure the XS Website Browser SSL

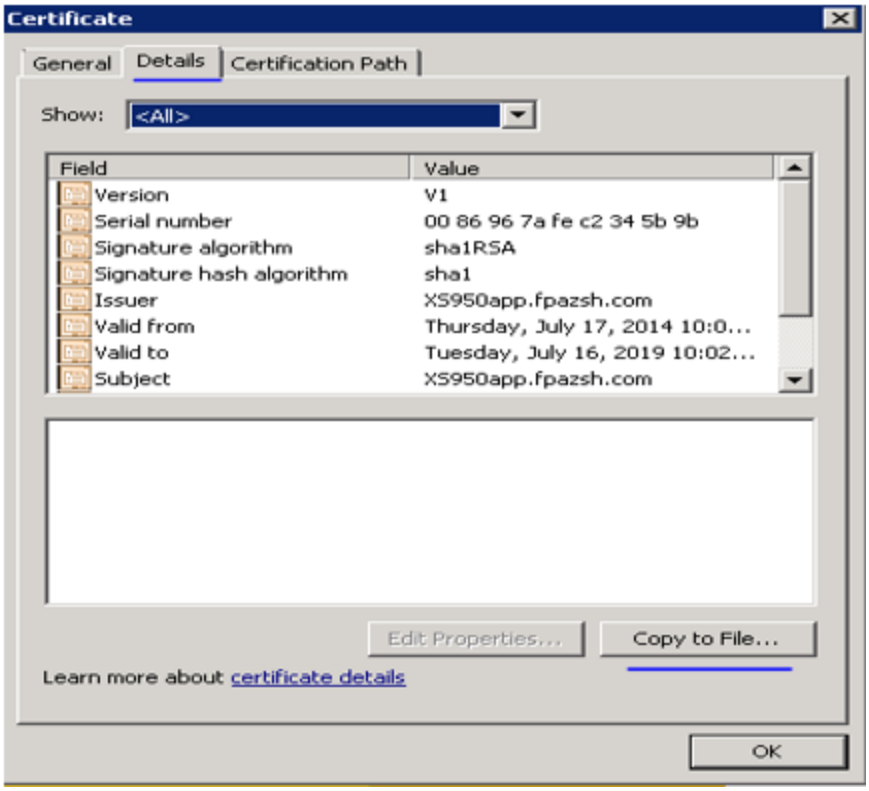
1. Log on to XS, and click **Continue to this website (not recommended)**.



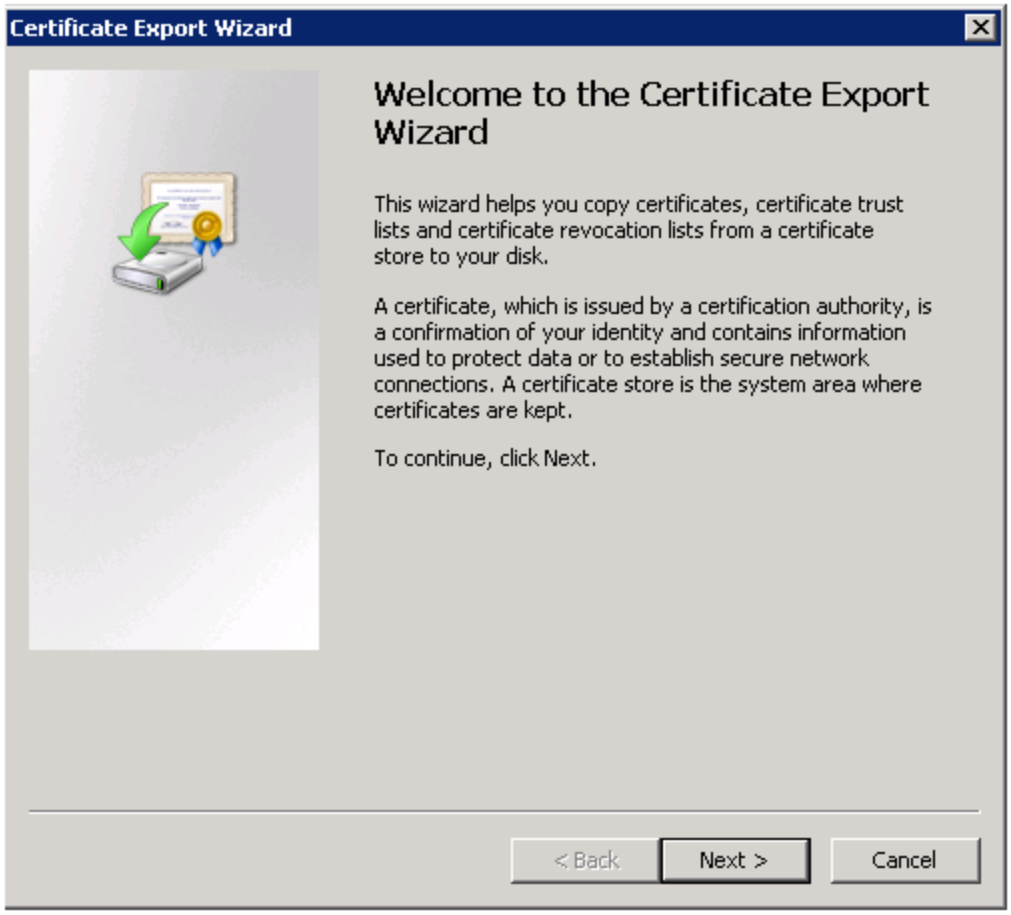
2. Click **Certificate error** and then click **View certificates**.



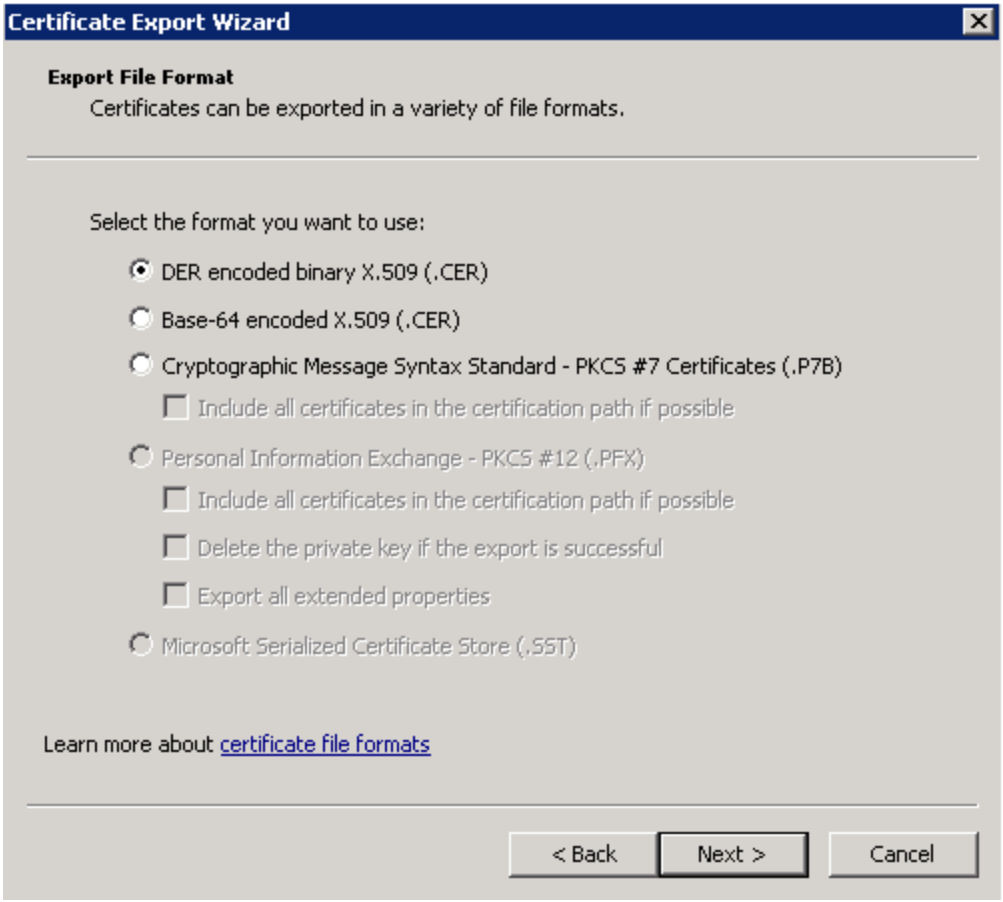
3. Click the **Details** tab and click **Copy to File …**



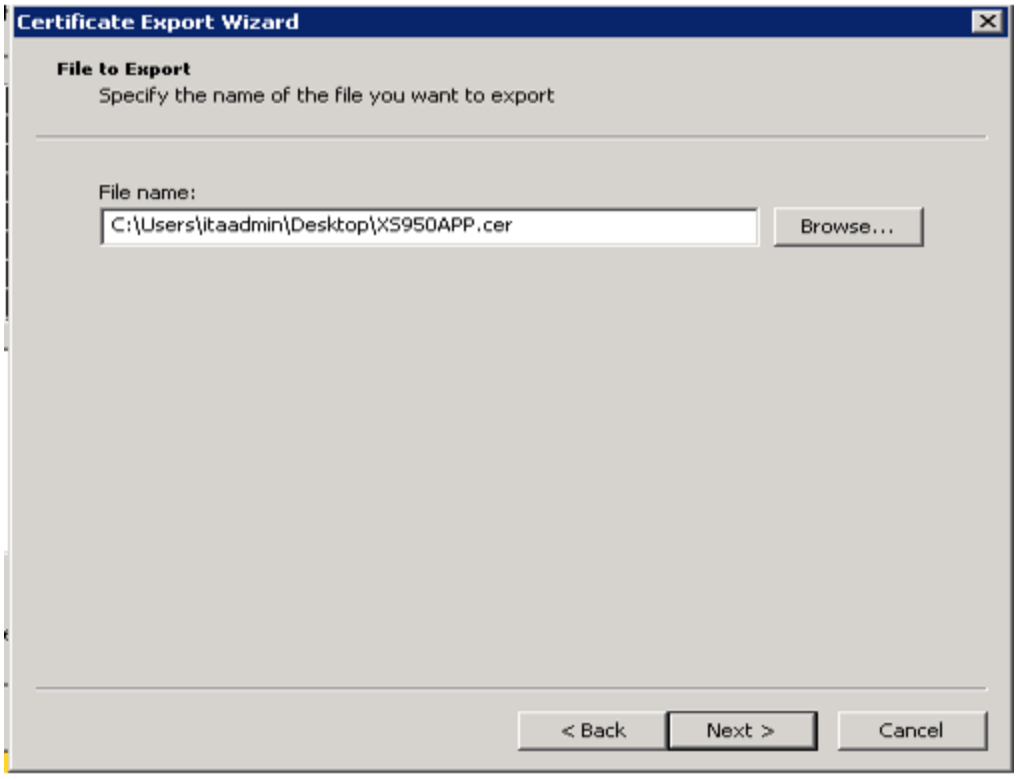
Click **Next**.


Certificate Export Wizard
Welcome to the Certificate Export Wizard
This wizard helps you copy certificates, certificate trust lists and certificate revocation lists from a certificate store to your disk.
A certificate, which is issued by a certification authority, is a confirmation of your identity and contains information used to protect data or to establish secure network connections. A certificate store is the system area where certificates are kept.
To continue, click Next.
< Back
Next >
Cancel

Click **Next**.



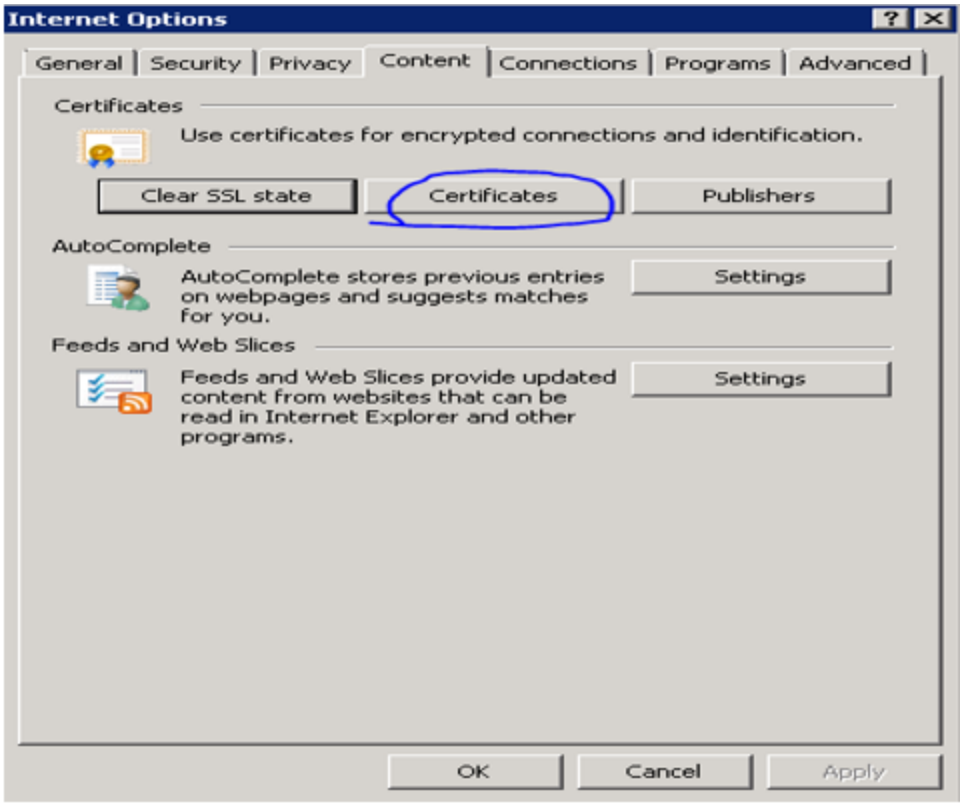
Click the **Browse...** button and give it a file name, such as **XS950APP.cer**, and click **Next**.



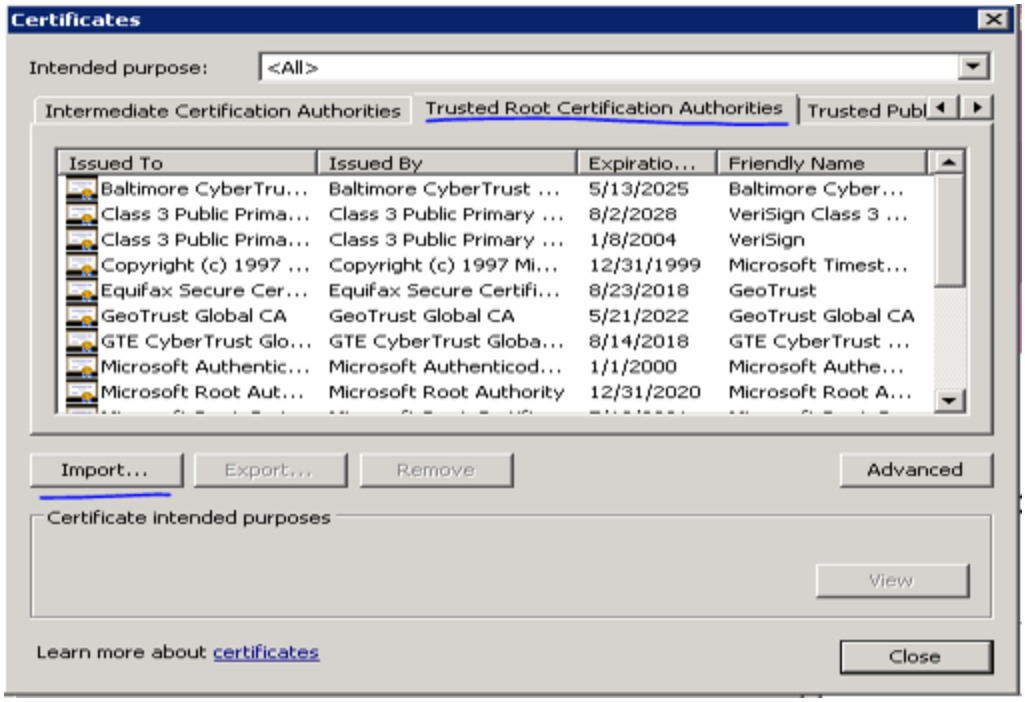
Click the **Finish** button.



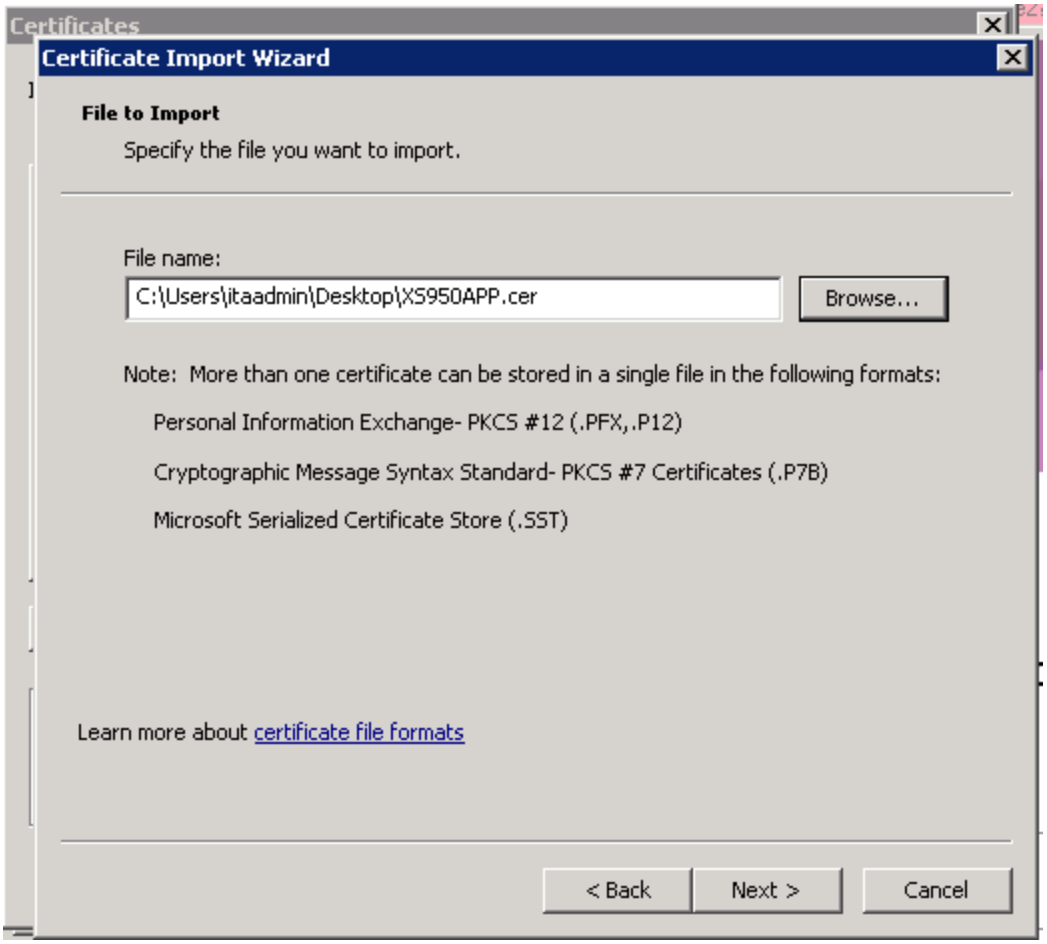
4. Open the **Internet Options** and click **Certificates**.



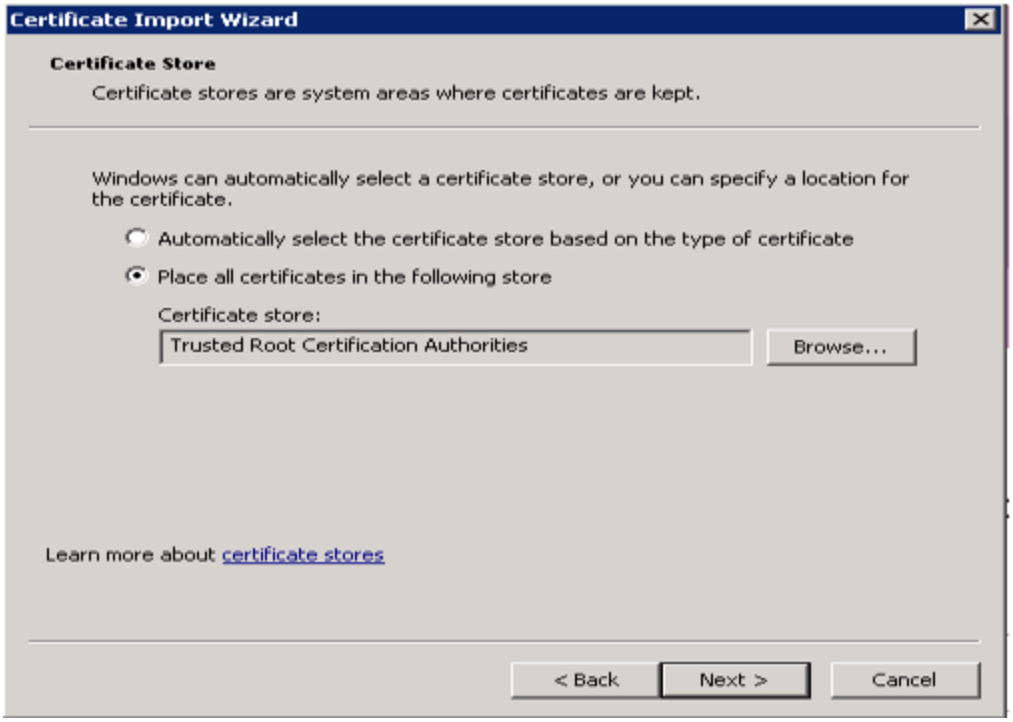
5. Open the **Trusted Root Certification Authorities** and click **Import...** link.



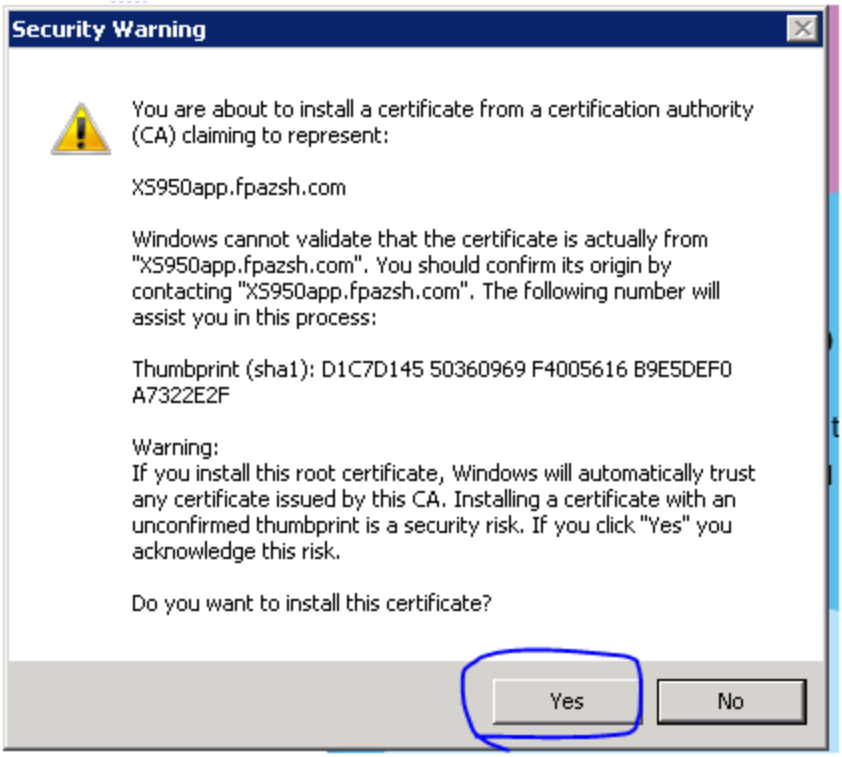
6. Select the relevant certificate file and click **Next**.


Certificates
Certificate Import Wizard
File to Import
Specify the file you want to import.
File name:
C:\Users\itaadmin\Desktop\XS950APP.cer
Browse...
Note: More than one certificate can be stored in a single file in the following formats:
Personal Information Exchange- PKCS #12 (.PFX,.P12)
Cryptographic Message Syntax Standard- PKCS #7 Certificates (.P7B)
Microsoft Serialized Certificate Store (.SST)
Learn more about certificate file formats
< Back
Next >
Cancel

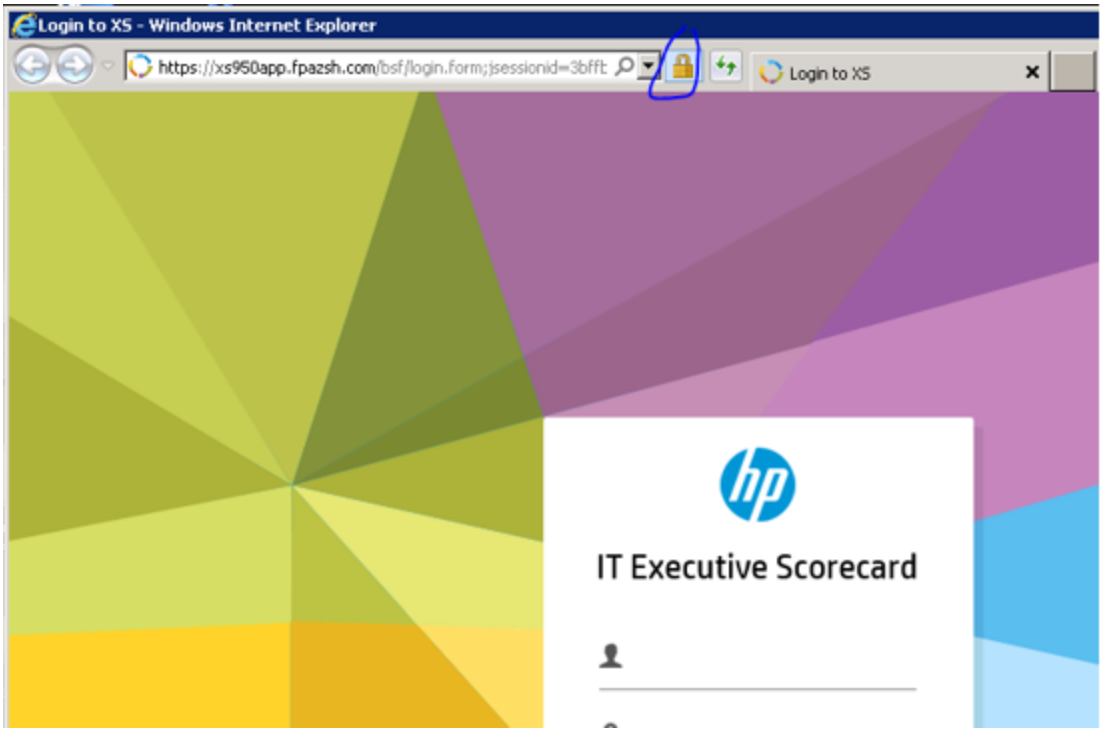
7. Click **Next**.



8. Click **Yes**.

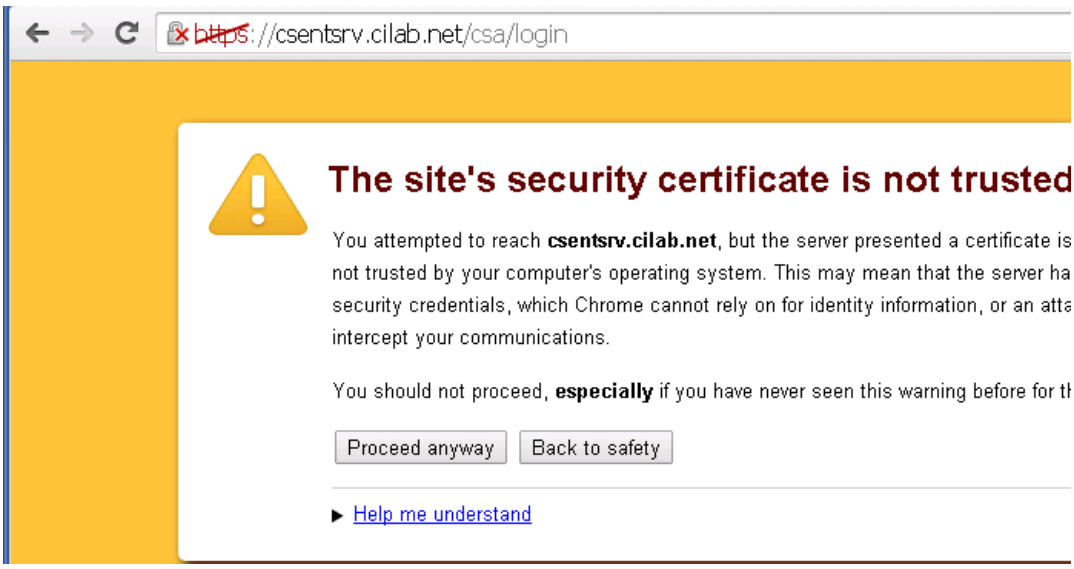


9. Open your browser and reopen the XS logon page.

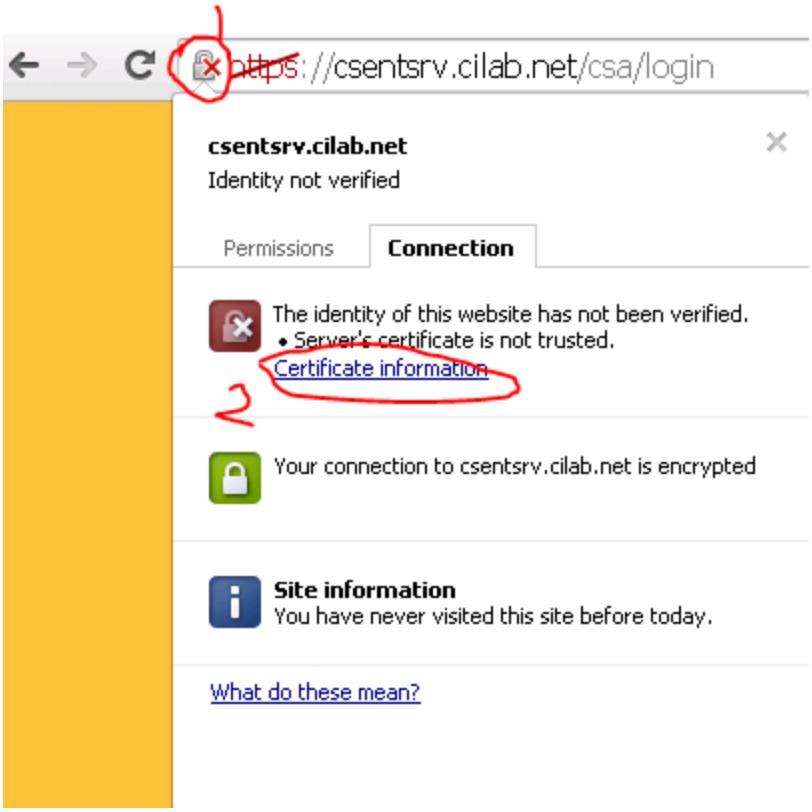


Import the CSA SSL certificate to XS keystore

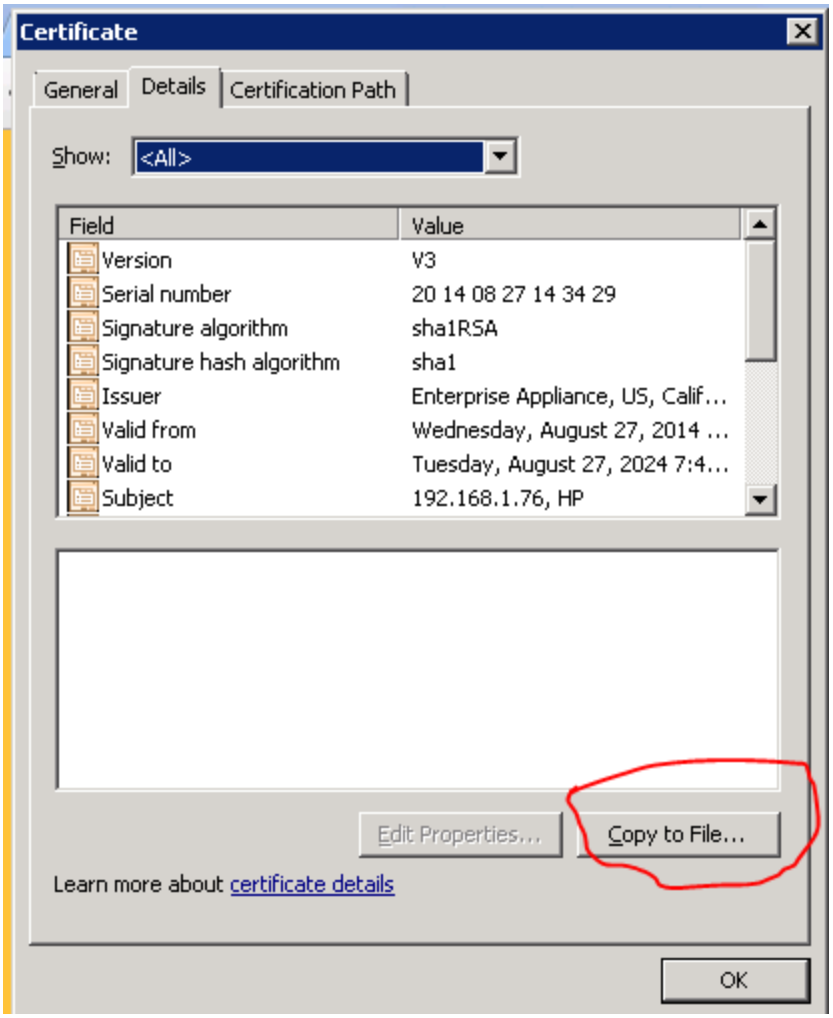
1. Export the CSA SSL certificate:
   a. Access the CSA portal from the browser of the XS server.



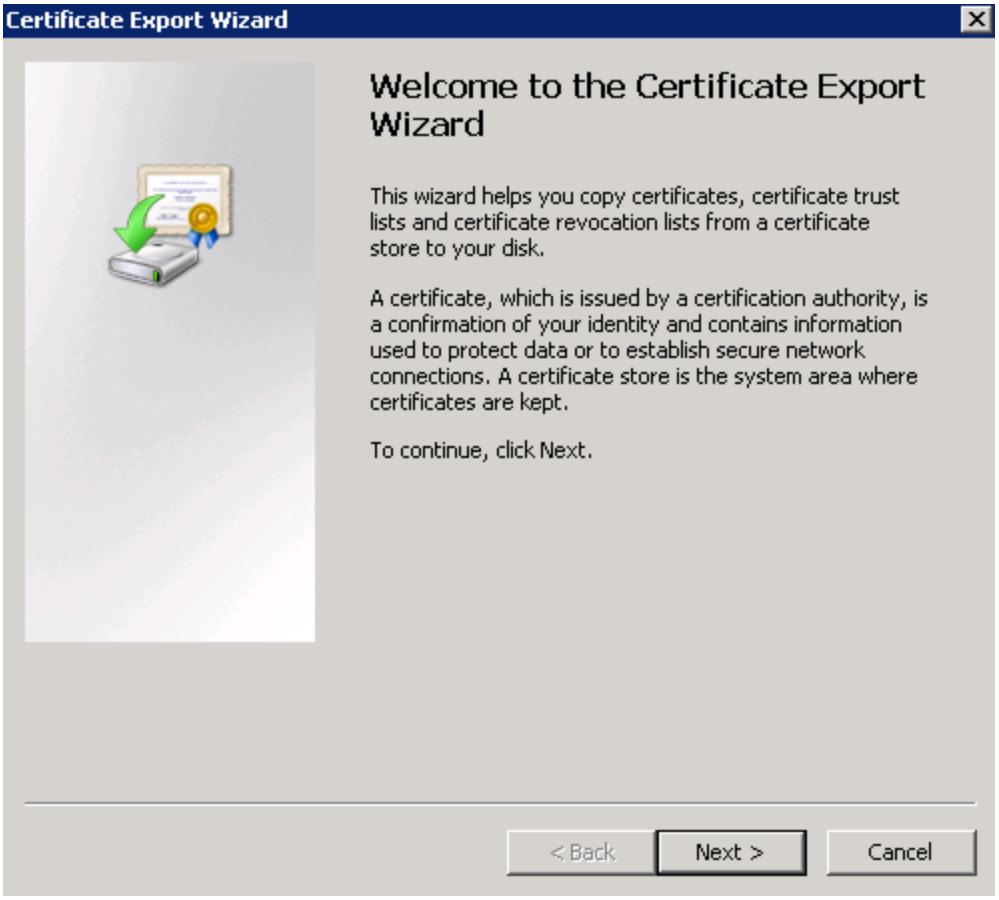
b. Click the red cross in the URL bar and then click **Certificate information**.



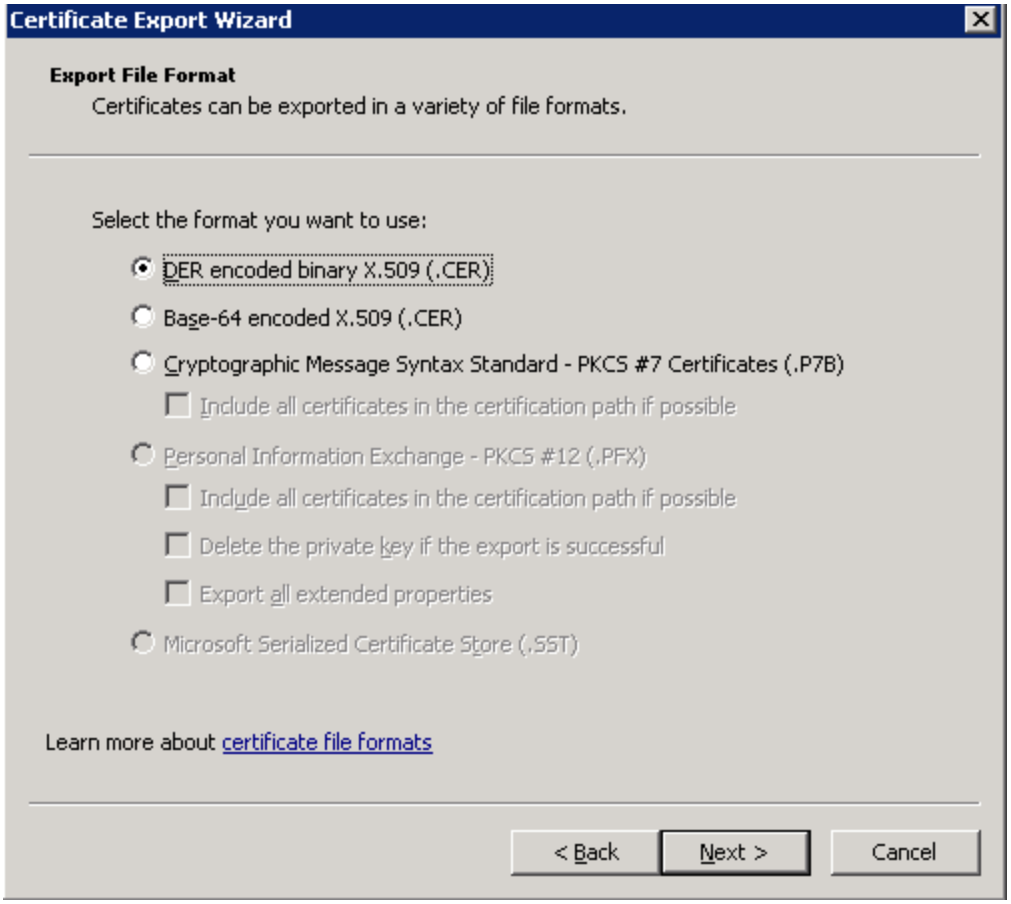
c. In the window that pops up, click the **Details** tab, and click the **Copy to File** … button.



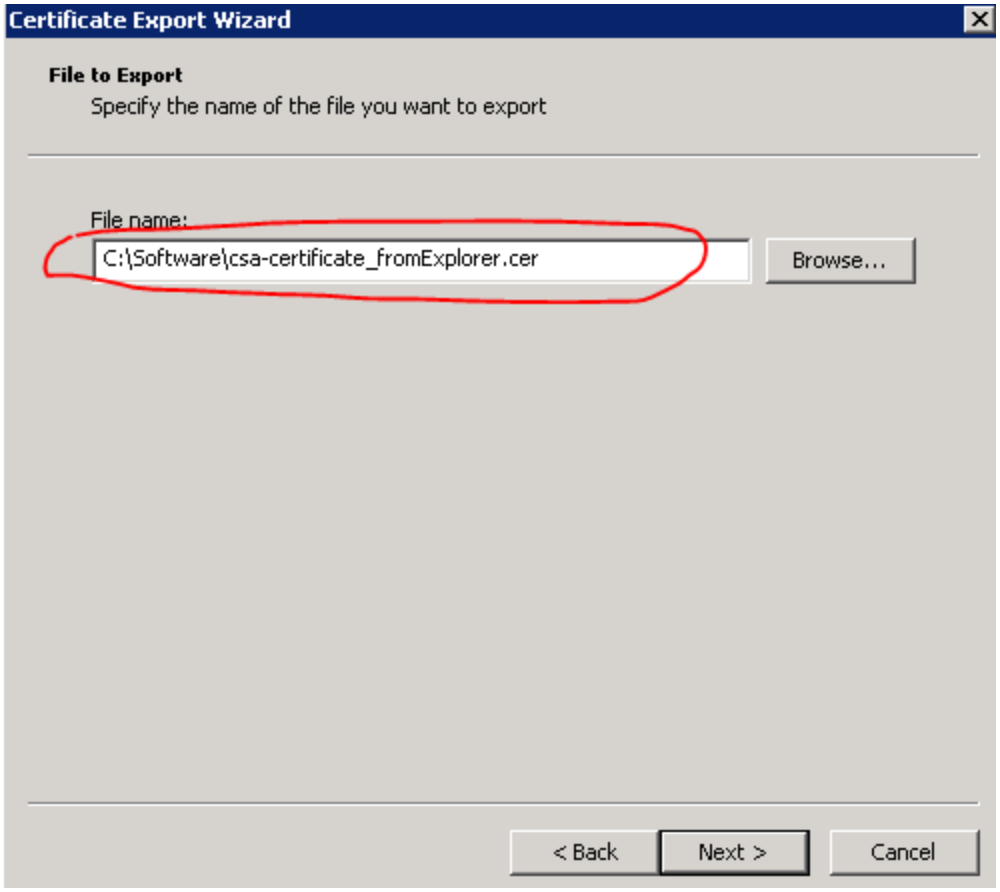
d. In the window that pops up, click **Next**.



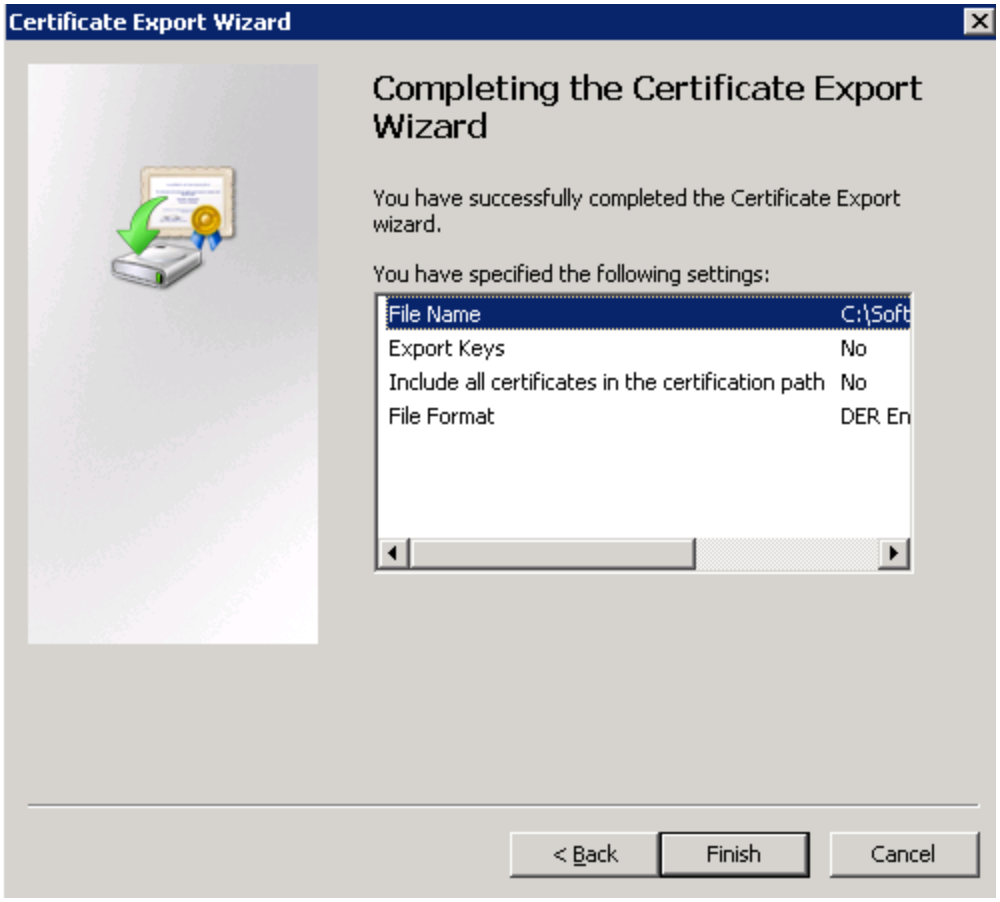
e. Click **Next**.


Certificate Export Wizard
Export File Format
Certificates can be exported in a variety of file formats.
Select the format you want to use:
DER encoded binary X.509 (.CER)
Base-64 encoded X.509 (.CER)
Cryptographic Message Syntax Standard - PKCS #7 Certificates (.P7B)
Include all certificates in the certification path if possible
Personal Information Exchange - PKCS #12 (.PFX)
Include all certificates in the certification path if possible
Delete the private key if the export is successful
Export all extended properties
Microsoft Serialized Certificate Store (.SST)
Learn more about certificate file formats
< Back
Next >
Cancel

f. Specify the name of the file you want to export and click **Next**.



g. In the next page, click **Finish**.



The CSA SSL cert file is now exported.

In the above example, the file is located at **C:\software\csa-certificate_fromExplorer.cer**.

2. Open a command prompt and run the following commands:

   cd "C:\HPXS\agora\jdk\jre\bin"

   keytool –importcert –alias csa –file "c:\Software\csa-certificate_fromExplorer.cer" –keystore C:\HPXS\agora\jdk\jre\lib\security\cacerts –trustcacerts

a. When prompted for the keystore password, type **changeit**.

b. When prompted to trust this certificate, type **yes**.



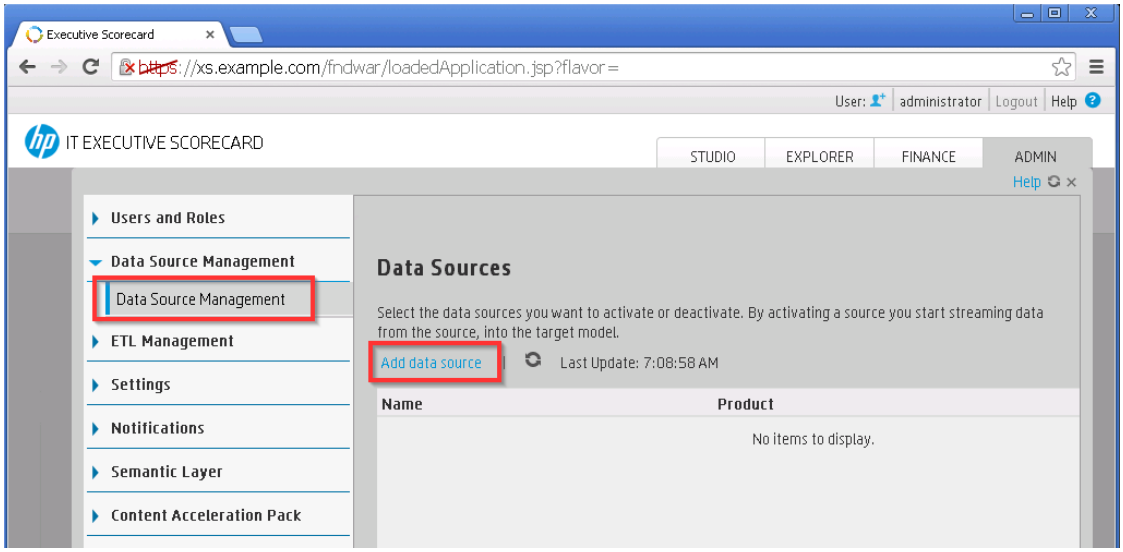
c. Restart the **HP Executive Scorecard** Service from Services Windows admin tools.

d. Wait a few minutes for the services to fully start.

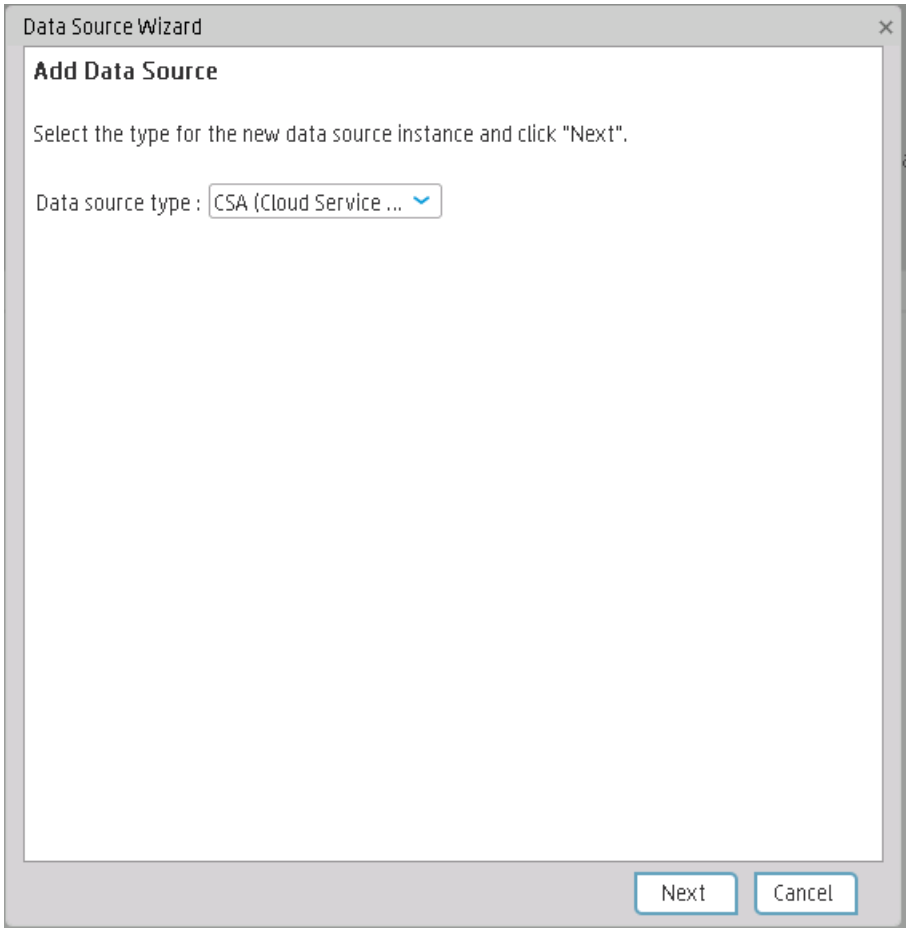
Activate the CSA data source

1. Make sure you have imported the CSA SSL Certificate (see above).
2. Log on to the XS application.
3. Click **Admin > Data Source Management > Data Source Management**.

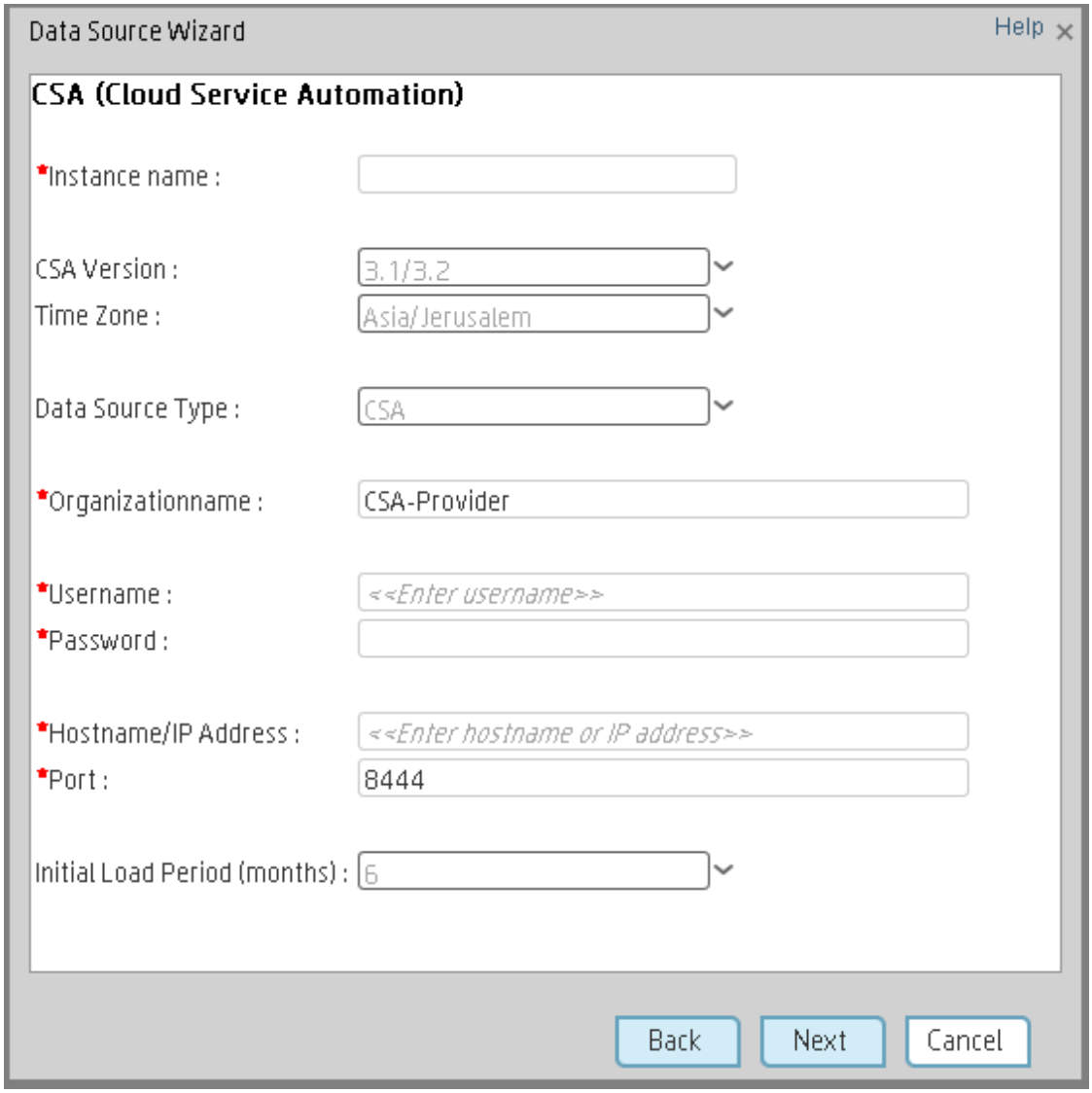
4. Click **Add data source**.



5. Select the CSA data source type and press **Next**.



If the **Next** button does not appear in the Wizard dialog box, click the edge of the Data Source Wizard and when the black cross appear, move the window upwards until you see the **Next** button.



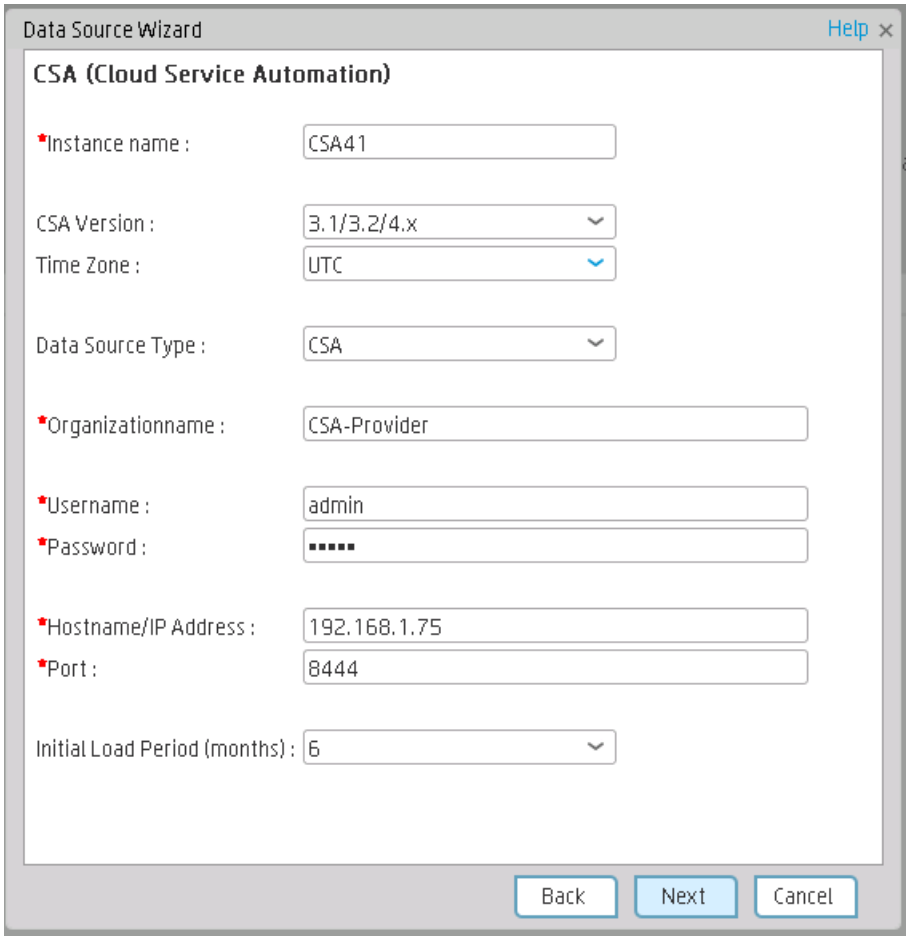
User interface elements are described below:

Note: If the CSA configuration is for a named instance connection, make sure to enter the named instance port.

UI Element	Description
Instance name	Enter a name for the data source instance you are activating.
CSA Version	Select the relevant version. . For details, see the *IT Executive Scorecard Support Matrix*.

UI Element	Description
Time Zone	Select the time zone for the data source.
Data Source Type	CSA This parameter is read only.
Organization Name	Enter the Organization Name that is necessary to retrieve admin details. The default value is CSA-Provider.
Username	Enter your admin username used to log on to CSA. The default username is **ooInboundUser**.
Password	Enter your admin password used to log on to CSA. The default admin password is **cloud**.
Hostname/IP Address	Enter the CSA server hostname or IP address.
Port	Port for REST API (default value is 8444).
Initial Load Period (months)	Select the number of months from which you want the initial data loaded.

6. Enter the CSA configuration parameters and click **Next** to validate the parameters.



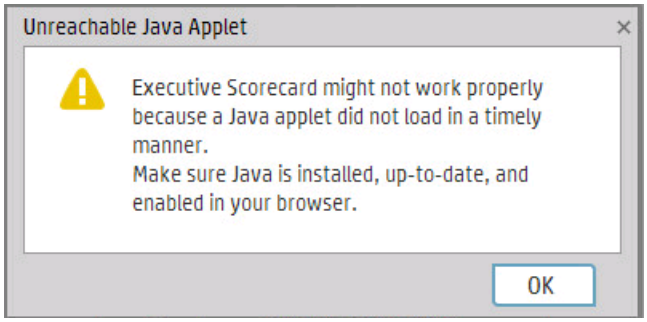
Activate the CSA_CAP

Activate the CSA_CAP_DEMO CAP for demo purposes or activate the CSA_CAP CAP for live data into XS.

For live data cases, if you had activated the CSA_CAP_DEMO previously, you must deactivate it before you activate the CSA_CAP CAP.

1. Log on to the XS application.

2. Ignore the **Unreachable Java Applet**. Click **OK**.



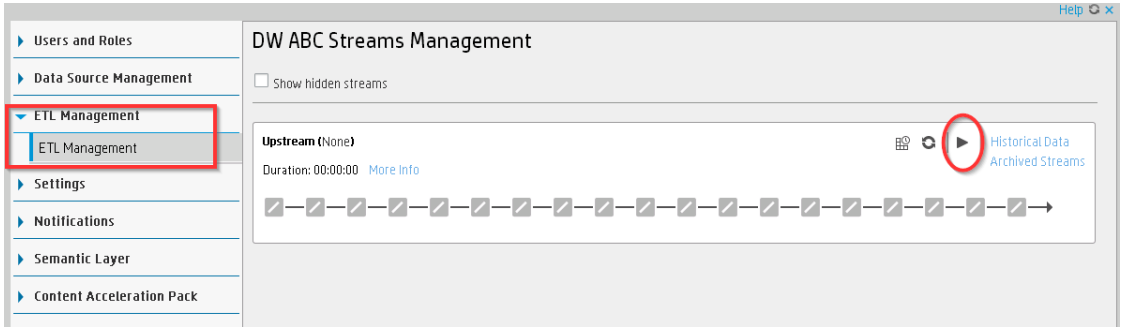
3. Click the **Admin > Content Acceleration Pack > Content Acceleration Pack**.
4. Select the **CSA_CAP** or the **CSA_CAP_DEMO** in the list of CPs, and click **Activate** to activate the CAP. Click **Yes** to begin the activation process.
   Then wait until the CAP activation is successful.
5. Close the **ADMIN** tab.

Execute ETL process

After adding the CSA data source, you need to run the ETL to pull data from CSA source.

You can schedule the running of the ETL process. For details, see ETL Management in the *IT Executive Scorecard Administrator Guide*.

1. Log on to the XS application.
2. Click **Admin > ETL Management > ETL Management**.
3. Click **Play**. This loads the data from the CSA data source.

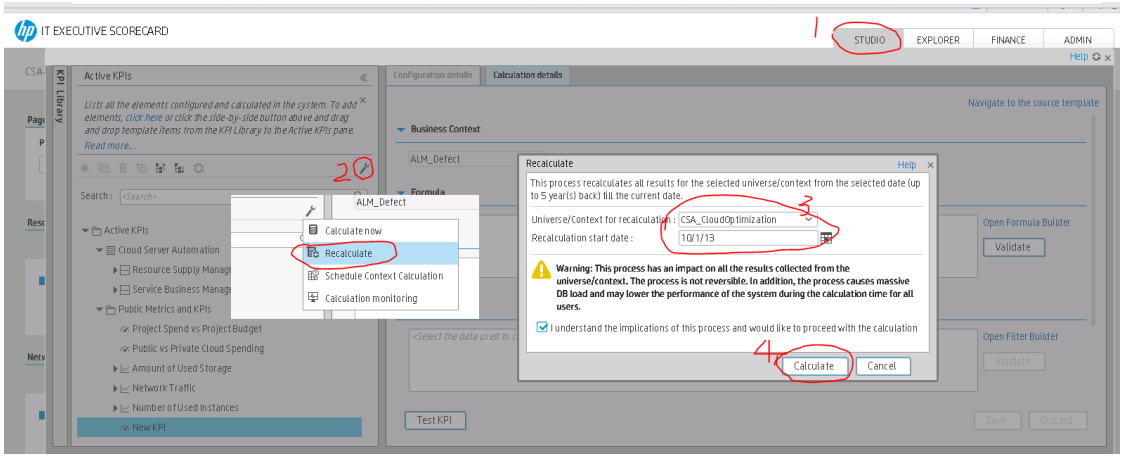


Note: The ETL run might last some time depending on the volume of data it has to load.

Calculate the KPI

1. Log on to the XS application.

2. Click the **STUDIO** tab and click the calculation tool and select **Recalculate**.



a. Select the **CSA_CloudOptimization** in the **Universe/Context for recalculation** list.

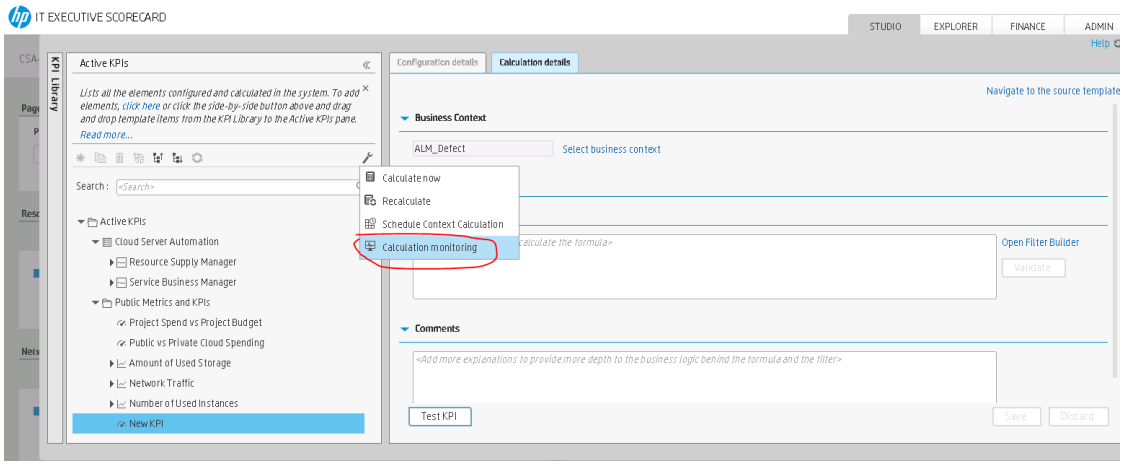
b. Select the recalculation start date.

c. Check the check box.

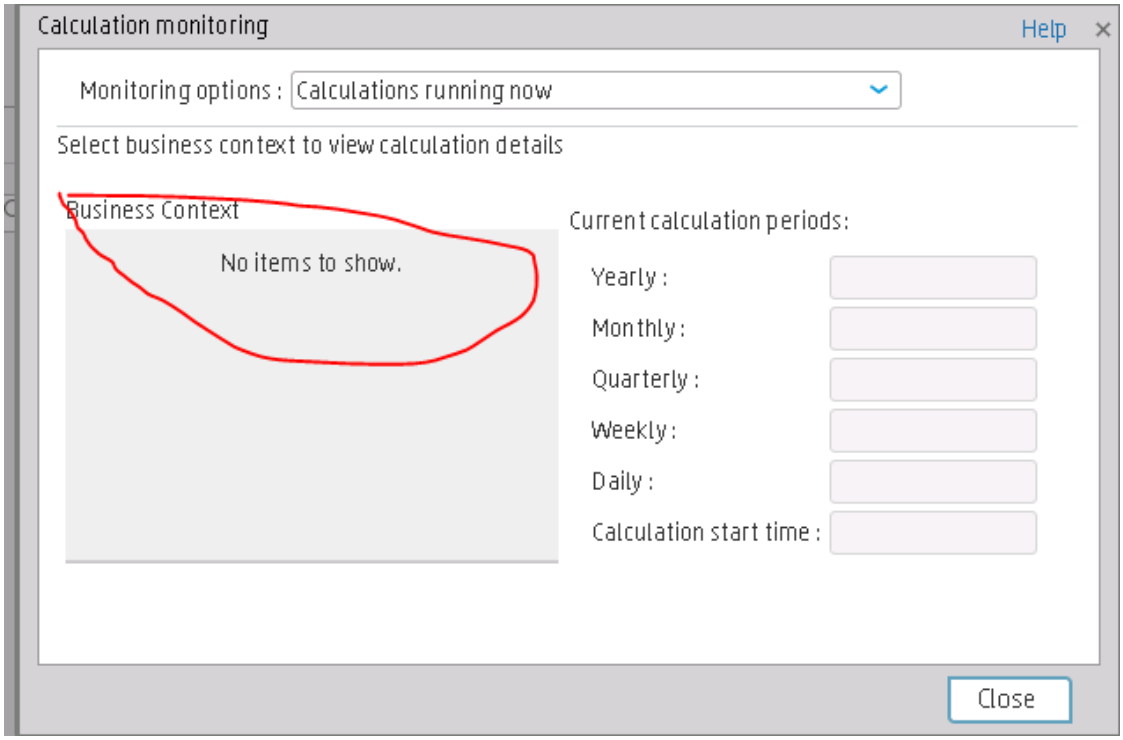
d. Click **Calculate**.

The calculation may take a few minutes.

3. To check the KPI calculation status, click the calculation tool and select **Calculation monitoring**.



4. Select **Calculations running now** in the Monitoring options.



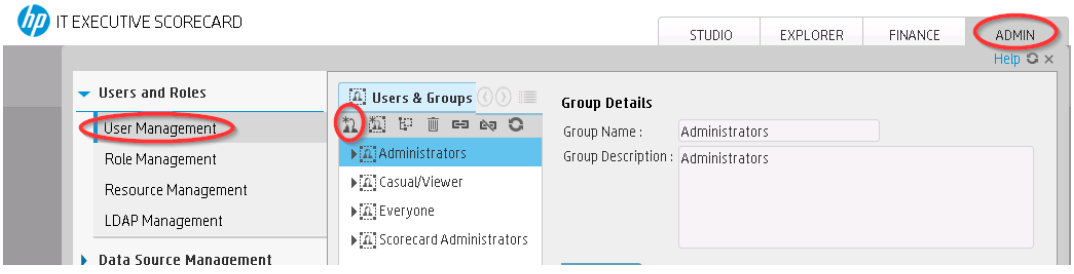
If **No items to show** is displayed, the KPI calculation is finished.

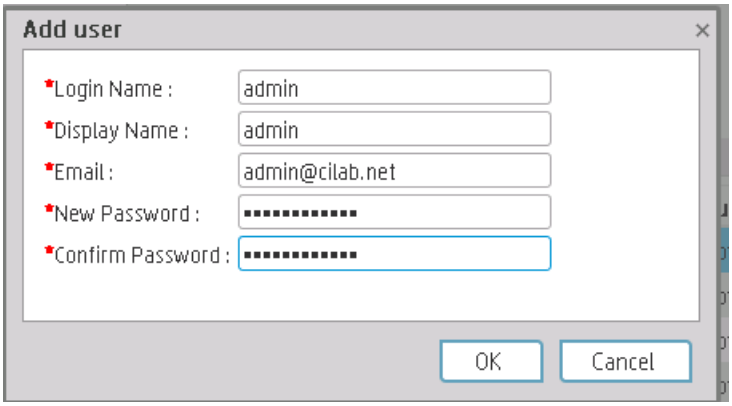
Now you can view the CSA dashboard pages with live data.

You can schedule the Scheduled calculation of the KPI. For details, see Calculation Scheduling in the *IT Executive Scorecard Business Analyst Guide*.

Configure the Cloud Analytic Tiles in the Provider Portal

1. Create a user in XS with the same login name as in CSA.
   a. From the XS ADMIN tab, create an XS user account with same login name as CSA (admin). The password does not need to be the same. The password needs to be complex.





b. Log out from XS, and log on again in as the administrator.

c. Select the pages relevant to CSA and make sure you can see the pages with live data.

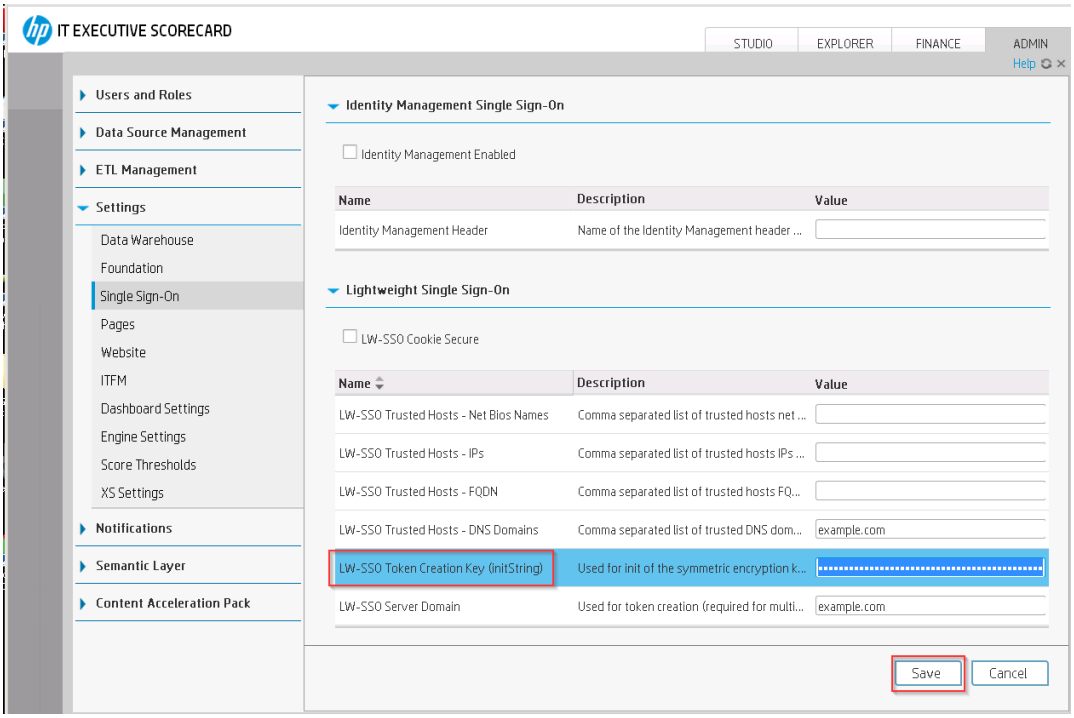
2. Configure single sign-on:

a. Go to the CSA system, get the initString(SSO key) from the **<CSA directory>\jboss-as-7.1.1.Final\standalone\deployments\csa.war\WEB-INF\hpssoConfiguration.xml** file.

b. Get the initString(SSO Key) from the **hpssoConfiguration.xml** file.

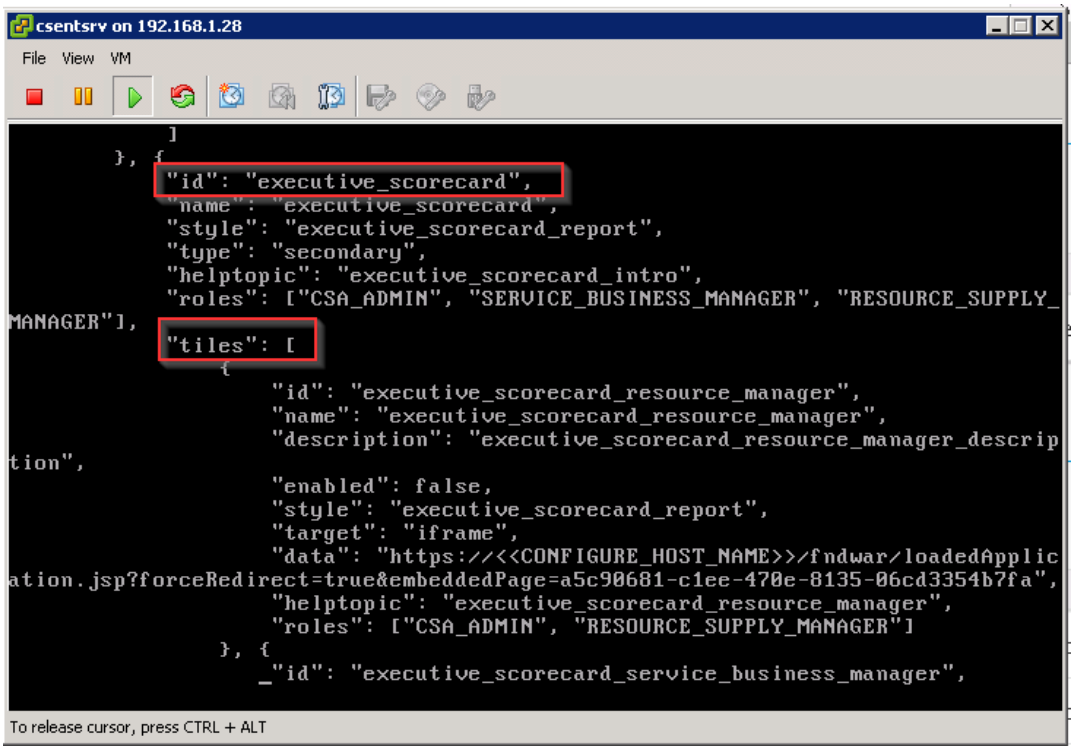
```
-->
<lwsso>
    <!-- crypto is required.
         It defines how to encrypt the tokens and how to decrypt them
  All inline attributes have default values (denoted here) save initString.
  initString - is the key for decryption of the lwsso token. This is the shared secret of all servers
               protected by lwsso and connected to the same authentication point server; therefore, it
               must be identical in all configurations of all servers in the system.
        (all other values are defaults)
-->
    <crypto initString="h/hAjnovyrq1H6gZozDBOpKgMSswHpcva1XH7XwID9M=" cipherType="symmetricBlockCipher" engineName="AES"
            paddingMode="CBC" keySize="256" encodingMode="Base64Url" algorithmPaddingName="PKCS7Padding" checkIntegrity="disabled"
            cryptoSource="lw" directKeyEncoded="false" directKeyEncoding="Hex" jcePbeAlgorithmName="PBEWithHmacSHA1"
            jcePbeMacAlgorithmName="PBEWithHmacSHA1" macAlgorithmName="SHA1" macKeySize="256" macPbeCount="20" macType="hmac"
            pbeCount="20" pbeDigestAlgorithm="SHA1"/>
```

c. In XS, click **Admin > Settings > Single Sign-on** and set the LW-SSO Token Creation key (initString) with the key above (without the doublequote and without the string “initString”). Change the domain name to the XS server domain(CSA server should have the same domain name). Click **Save**.



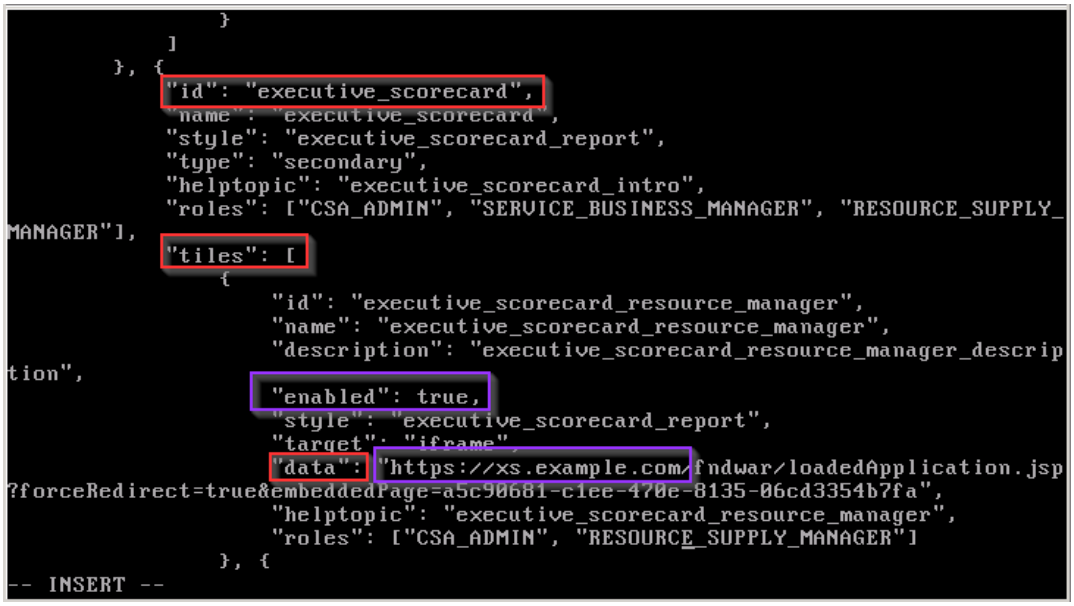
3. Configure the embedded page URL:
   a. In CSA server, backup the **%CSA_HOME%/jboss-as-7.1.1.Final/standalone/deployments/csa.war/dashboard/config.json** file (where %CSA_HOME% is the directory in which HP Cloud Service Automation is installed).
   b. Edit the **config.json** file.

c. Search for the **id: executive_scorecard** tile (beware there are two such tiles), start from the second (type = secondary) as shown below:



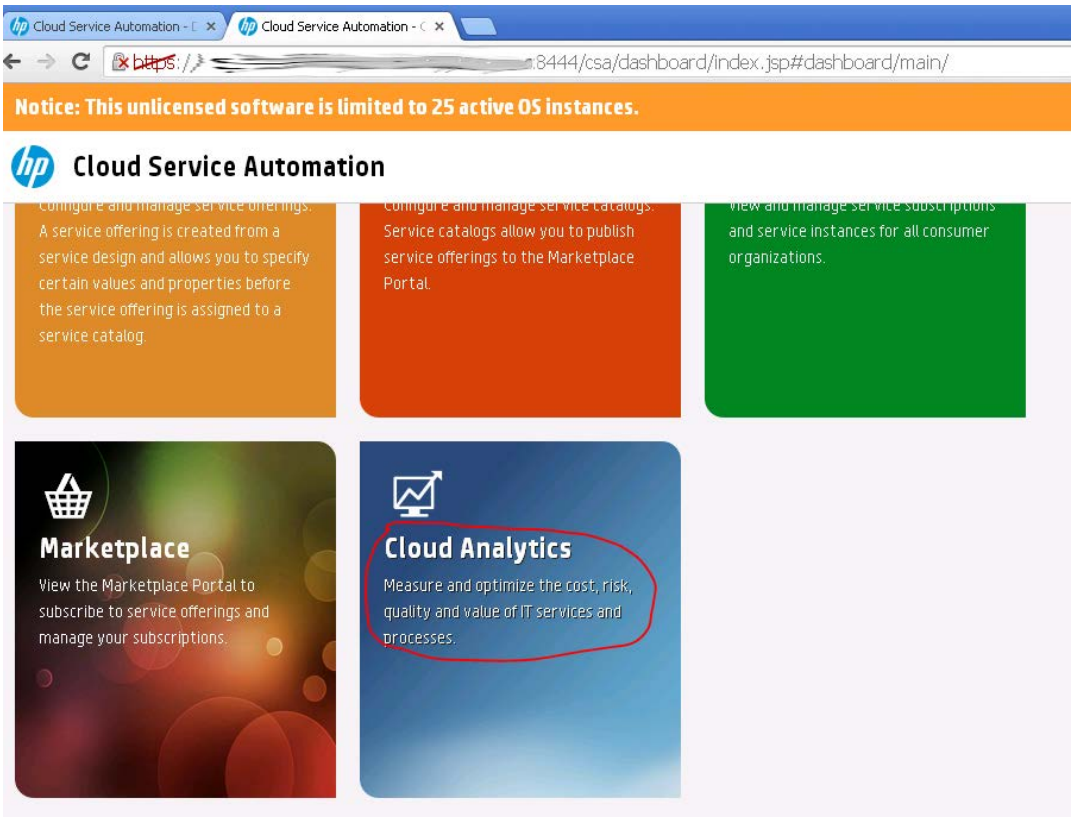
d. Under the **tiles** node, change **"enabled": false** to **"enabled": true**, for the following ids:
   i. **Executive_scorecard_resource_manager**
   ii. **Executive_scorecard_service_business_manager**
   iii. **Executive_scorecard_showback_report**
e. Do not change it in the id: **executive_scorecard_standalone**.
f. Change **"enabled": true** to **"enabled": false**in the id: **assistance_executive_scorecard**.

g. For all tiles that are under the id: **executive_scorecard**, in the data section, change **<CONFIGURE_HOST_NAME>** to match the hostname of your Executive scorecard installation. For example **xs.example.com**.

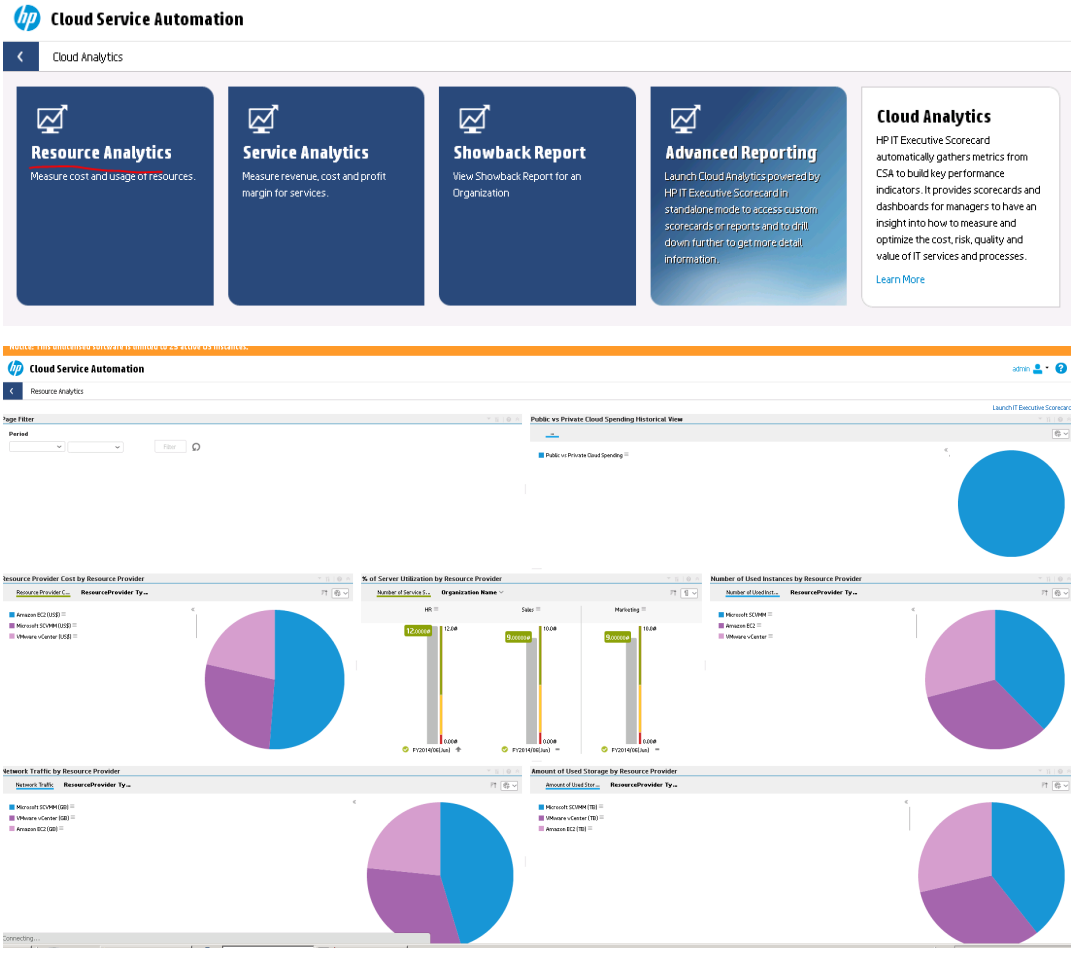


4. Access XS pages in the CSA system:

a. Log on to CSA using the full qualifier domain name (FQDN) URL.



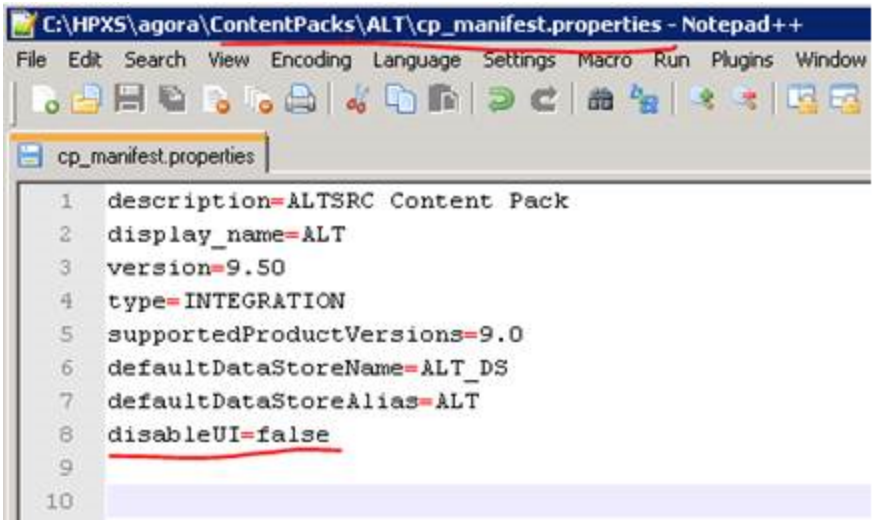
b. Open the embedded XS pages in the CSA system.



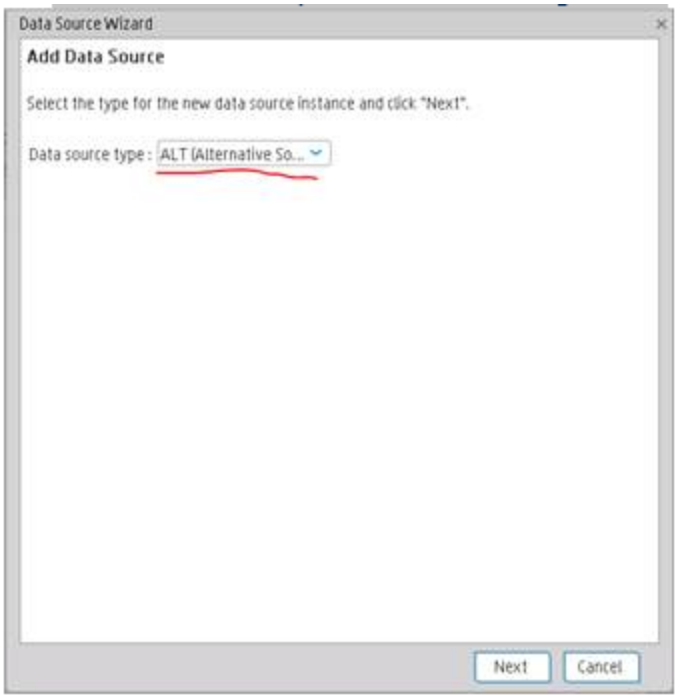
Support CSA Multiple Currency for Service Offering

Note: When you want to use multiple currencies in XS, in addition to deploying CSA, you must also deploy the ALT data source in order to match the currency exchange rate data to that of XS.

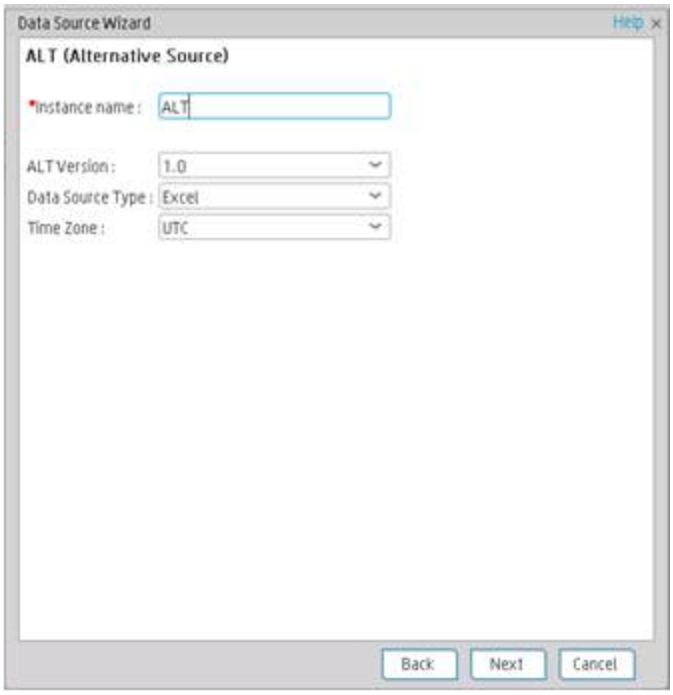
1. Edit the **cp_manifest.properties** file located in the **<HPXS>\agora\ContentPacks\ALT** folder on the DWH server.



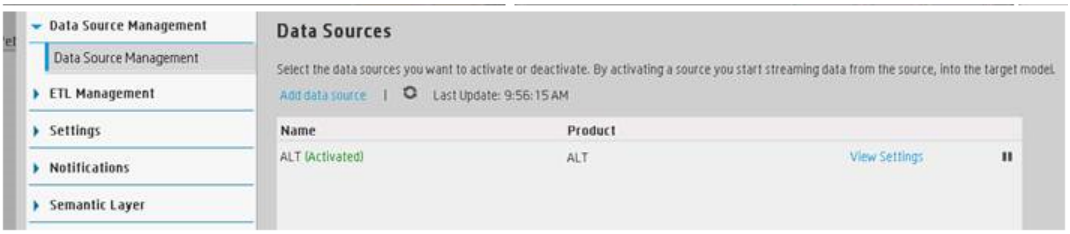
2. Activate the ALT source using XS Data Source Management.
   a. Select **Admin** > **Data Source Management** then click **Add data source**.
   b. The Add Data Source page opens. Select the **ALT (Alternative So...)** data source type and click **Next**.



Enter the relevant information and click **Next**.



After the validation succeeds, click **Next** to activate the instance of the ALT source (it may take some time for a first time activation). Once this is done, the Data Source Management page displays the activated ALT source.



3. Edit the **ALT_EXCHANGE.XLS** file located in the **<HPXS>\agora\DataWarehouse\ExternalSources** folder.

   For example:

	A	B	C	D	E	F	G	H
	MD_BUSINESS_KEY	SOURCE_CURRENCY	TARGET_CURRENCY	START_DATE	END_DATE	EXCHANGE_RATE	IS_CURRENT	DELETE_FLAG
3	JPY|USD|39838|Y	JPY	USD	1/25/2009	2/1/2009	0.0112	Y	
4	USD|CNY|39838|Y	USD	CNY	1/25/2009	2/1/2009	6.8297	Y	
5	USD|EUR|39838|Y	USD	EUR	1/25/2009	2/1/2009	0.7676	Y	
6	USD|GBP|39838|Y	USD	GBP	1/25/2009	2/1/2009	0.7073	Y	

4. Run the ETL. For details, see ETL Management in the *IT Executive Scorecard Administrator Guide*.

Configure the Showback report for the Consumer Organization Administrator

In this section, we simulate the CSA Consumer Organization administrator use case that leverages

two existing groups in the LDAP server. Each group can only see its own group's data. CSAEngineers group can only see the engineering group data and the CSAHR group can only see the HR group data. For details, see also Setting access restrictions on a universe in the *Universe Designer for BusinessObjects XI 3.1*.

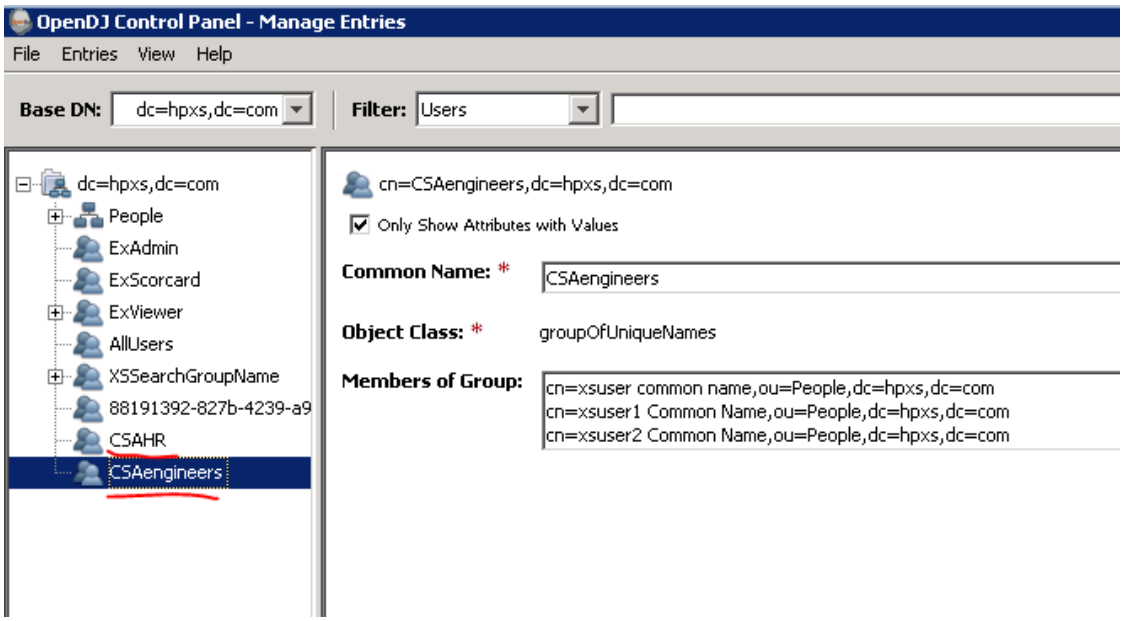
"Step 1 - Configure resource, user and permission" below

"Step 2 - Configure the restriction of Cloud Billing universe" on page 46

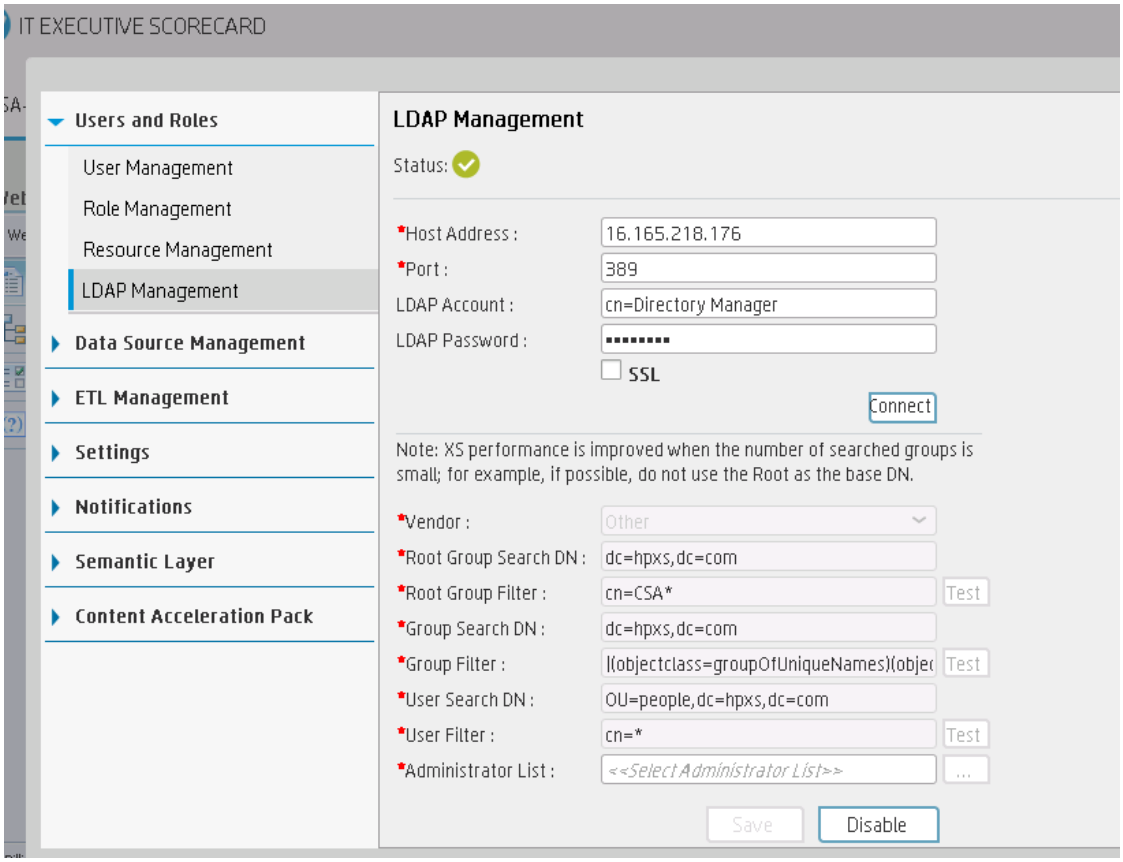
"Step 3 - Configure Executive Scorecard tile in the CSA Market Place Portal" on page 57

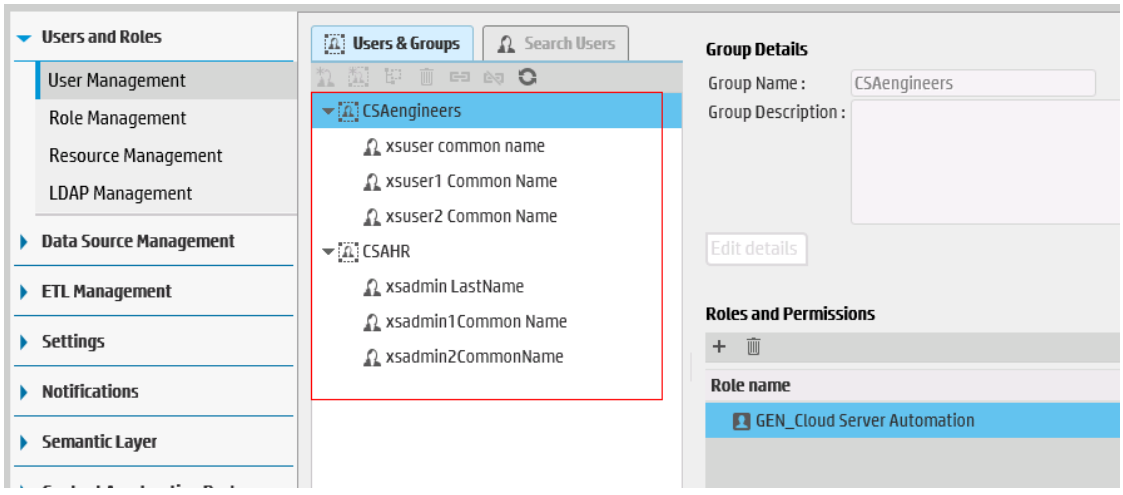
Step 1 - Configure resource, user and permission

1. In the CSA integrated LDAP server, select 2 groups: CSAHR and CSAEngineers.

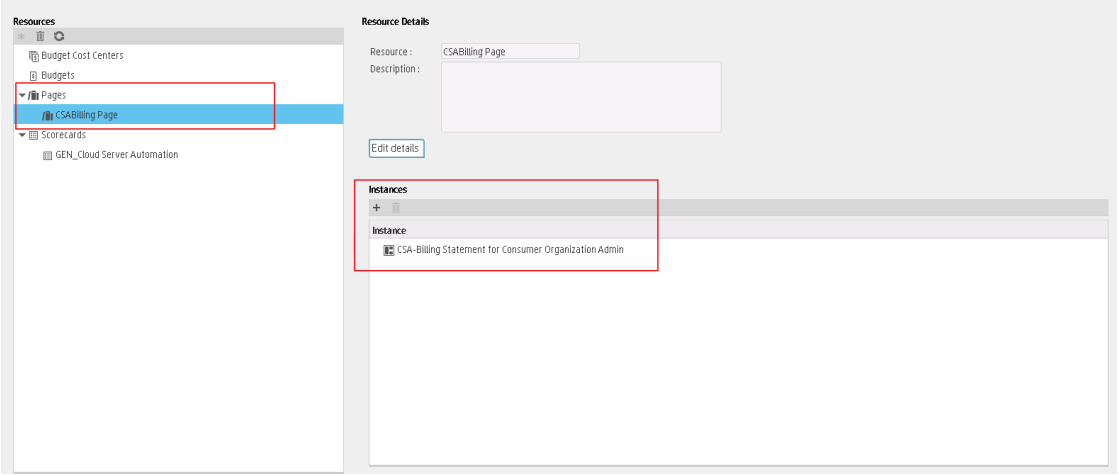


2. In the XS application, configure LDAP. For details, see LDAP in the *IT Executive Scorecard Administrator Guide*.

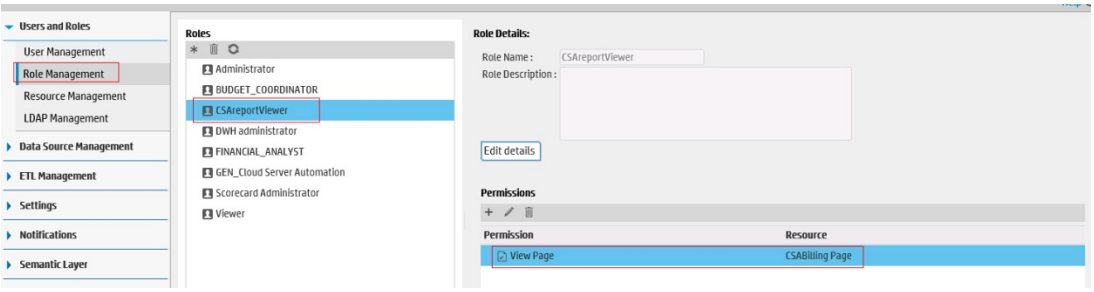




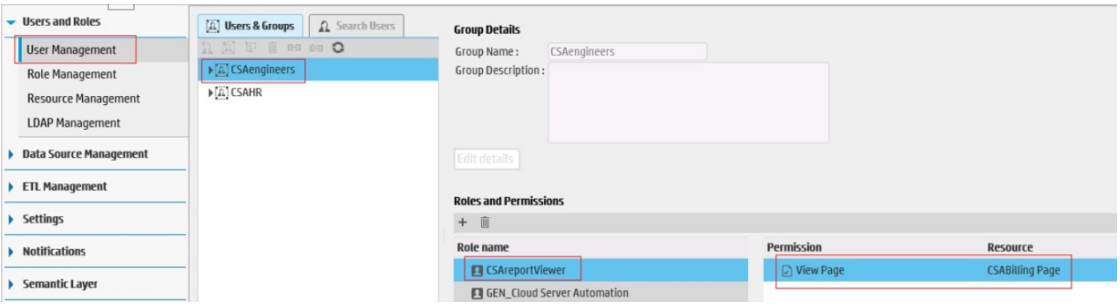
3. Create the resource for the CSA-Billing Statement for Consumer Organization Admin page.



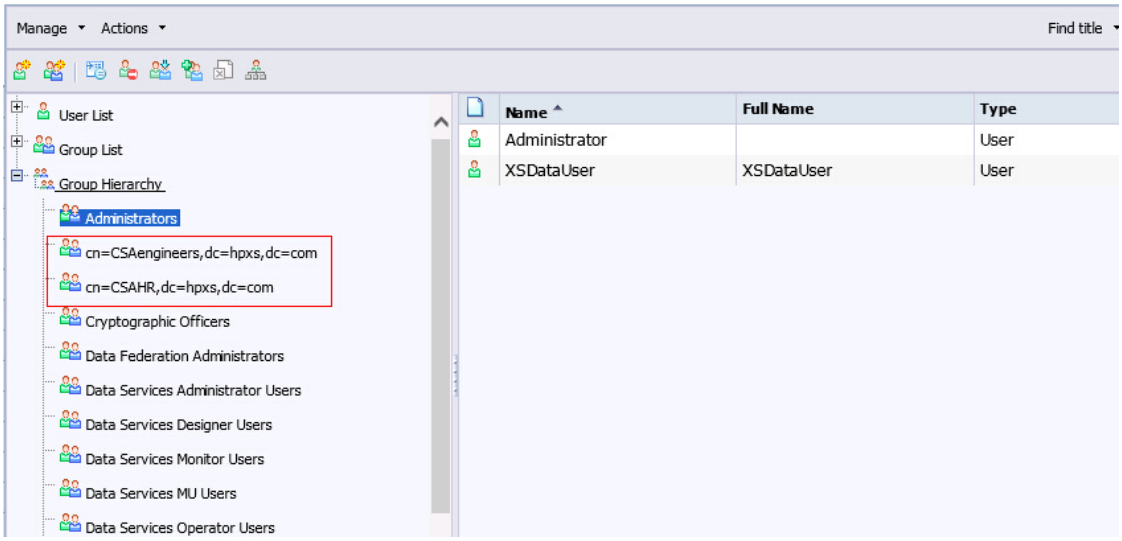
4. Create the CSAreportviewer role.



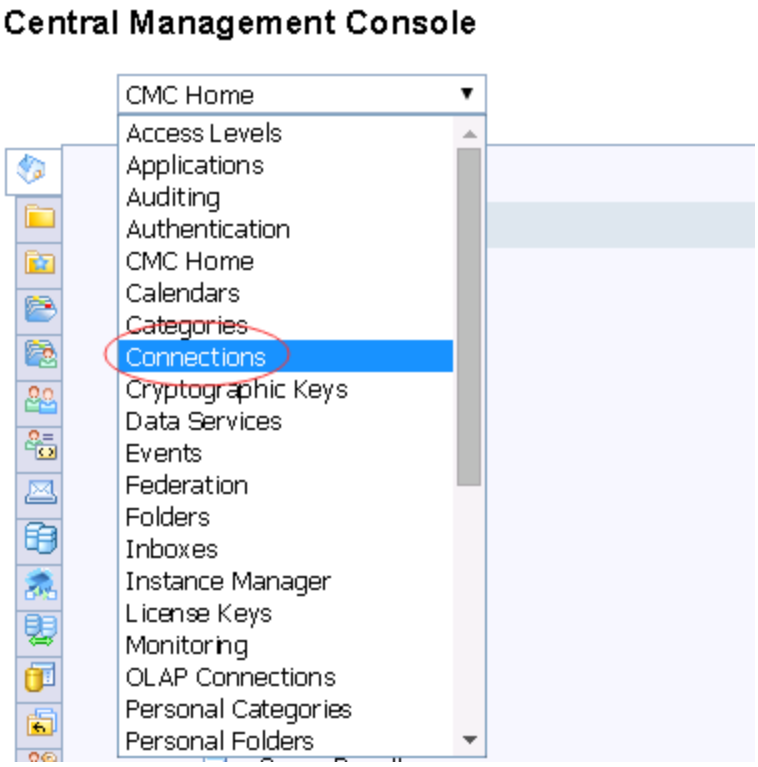
5. Assign the role CSAreportviewer to two groups.



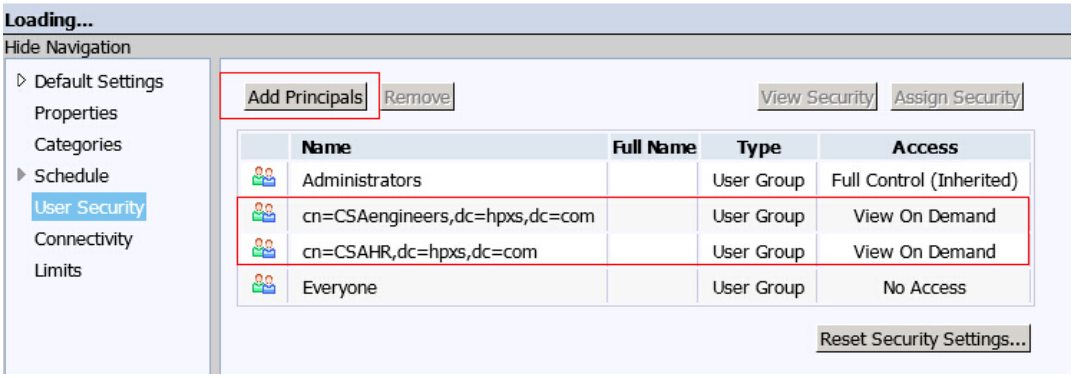
6. Configure LDAP with BOE. For details, see LDAP in BusinessObjects in the *IT Executive Scorecard Administrator Guide*.



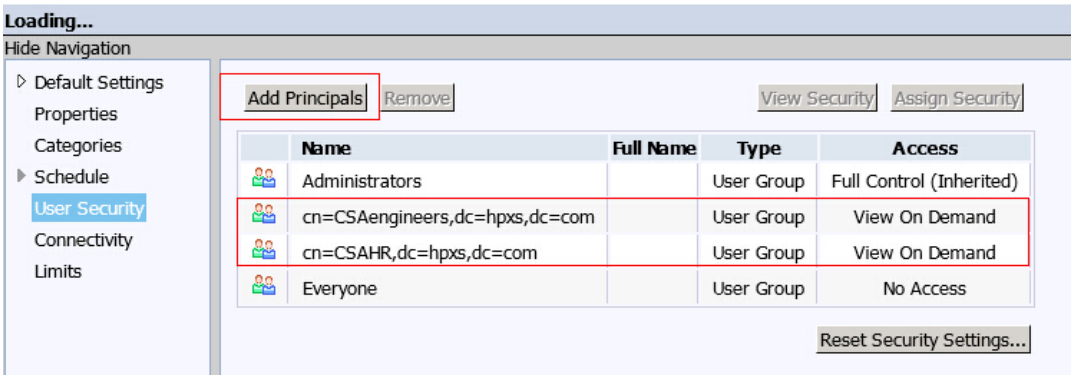
7. Configure the group permission in the BOE server:
   a. Log on to BusinessObjects Central Management Console (http:// <local BOE server name>:8080/BOE/CMC) using the administrator name and password and configure LDAP with BOE. For details, see LDAP in BusinessObjects in the *IT Executive Scorecard Administrator Guide*.
   b. Open the Connections:



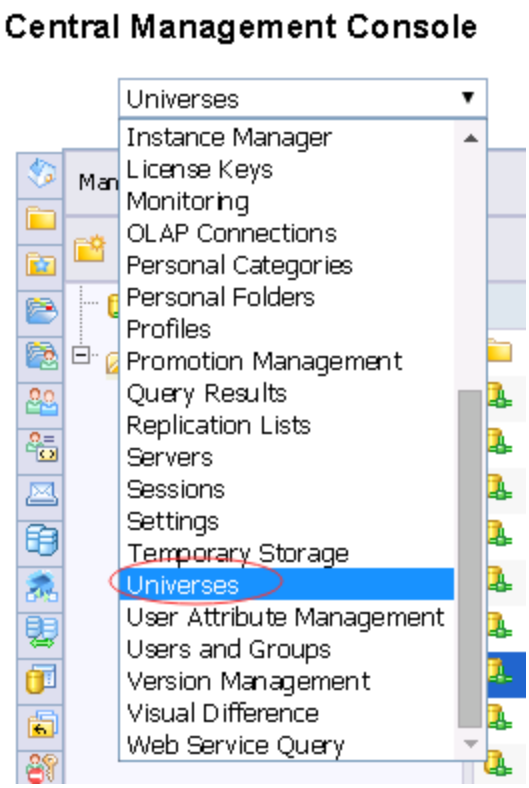
   c. Select the XS_DWH_JDBC connection that your report uses and click **User Security**.



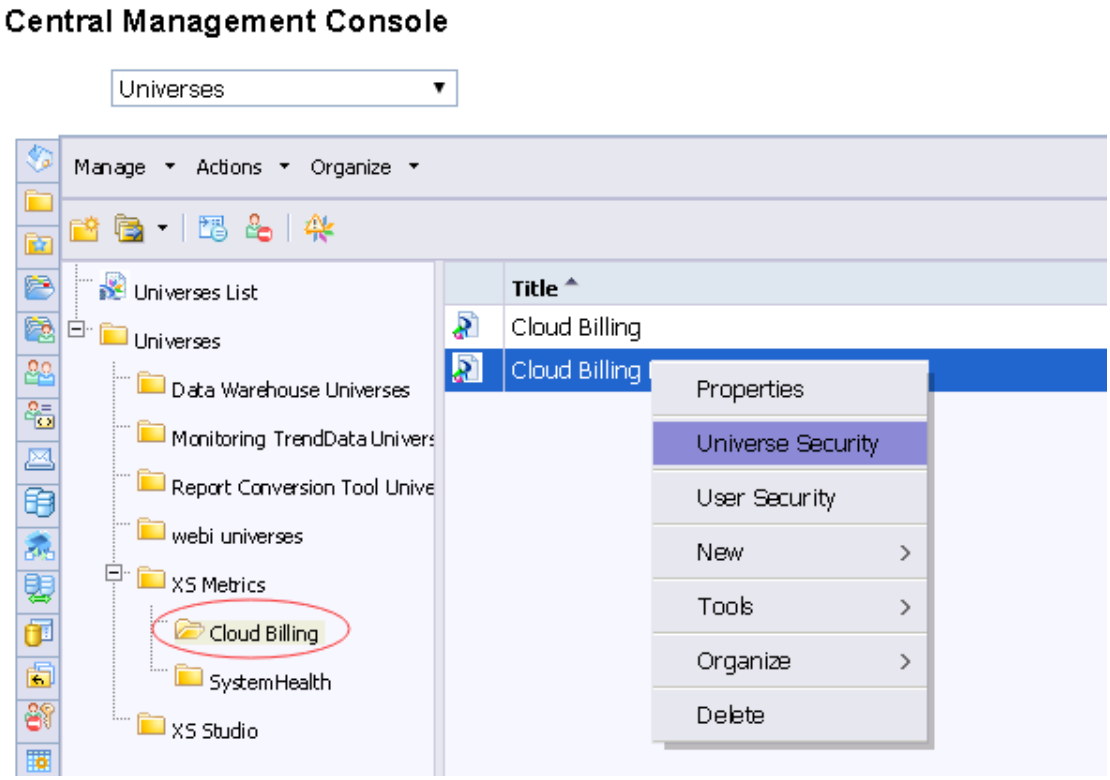
d. Grant the **View On Demand** permission to the two groups.



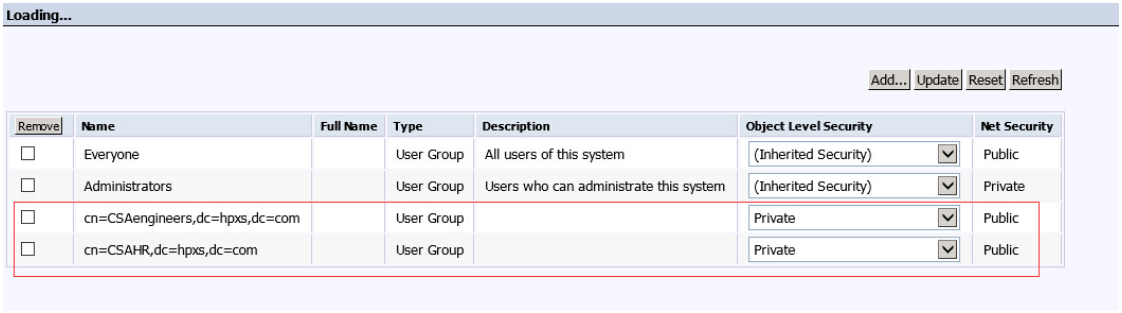
8. Open the Universes.



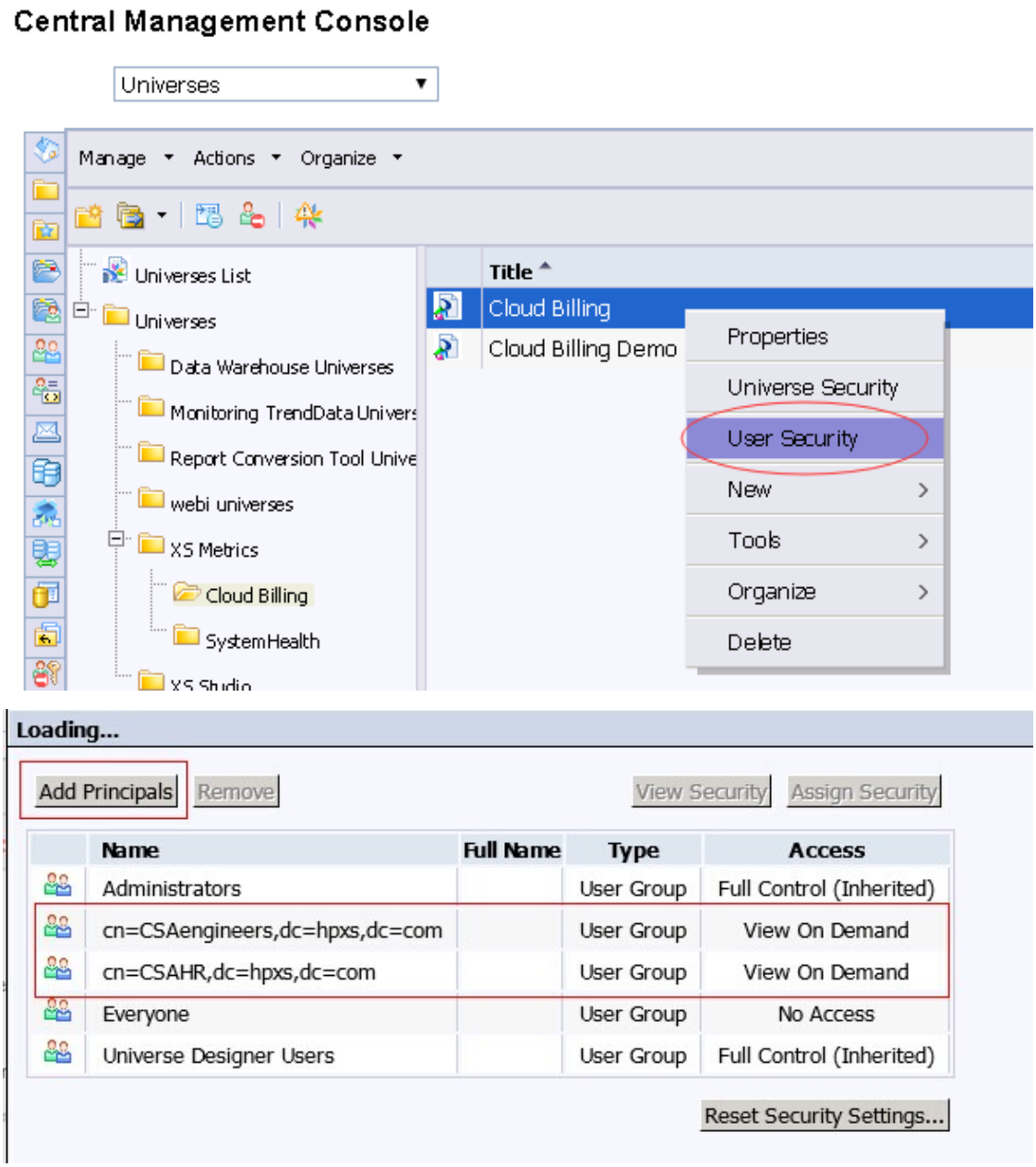
9. Select the **CloudBilling** universe that your report uses and click **Universe Security**.



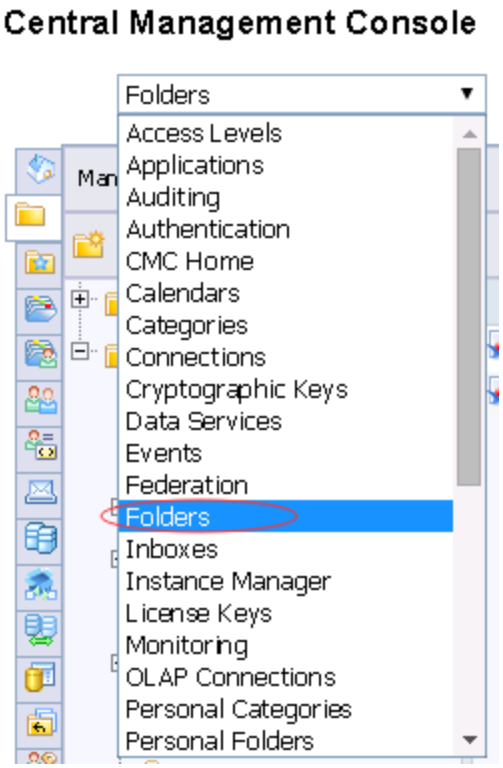
10. Add the **Private** security to the two groups.



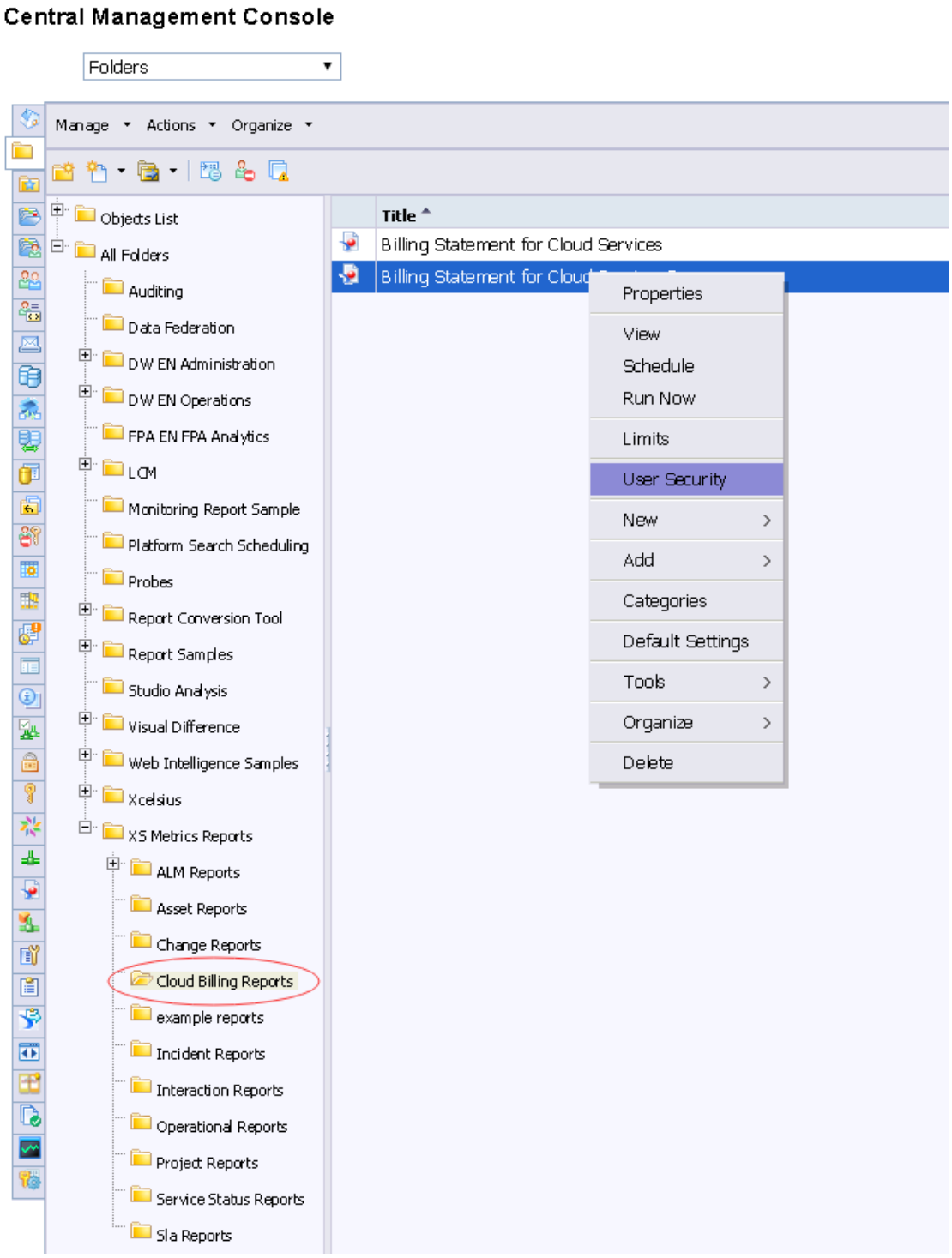
11. Grant the **View on Demand** permission to the 2 groups in **User Security**.



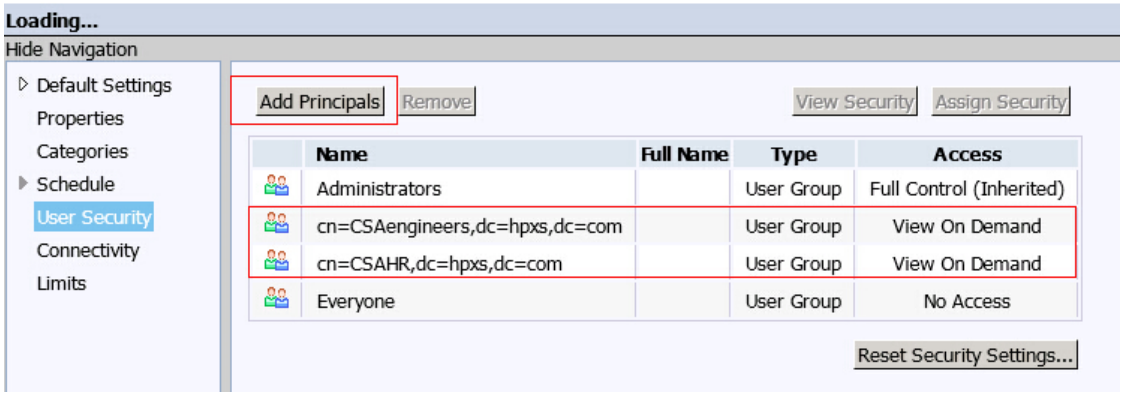
12. Select **Folders**.



13. Select the **Billing Statement for Consumer Organization Admin** report and click **User Security**.

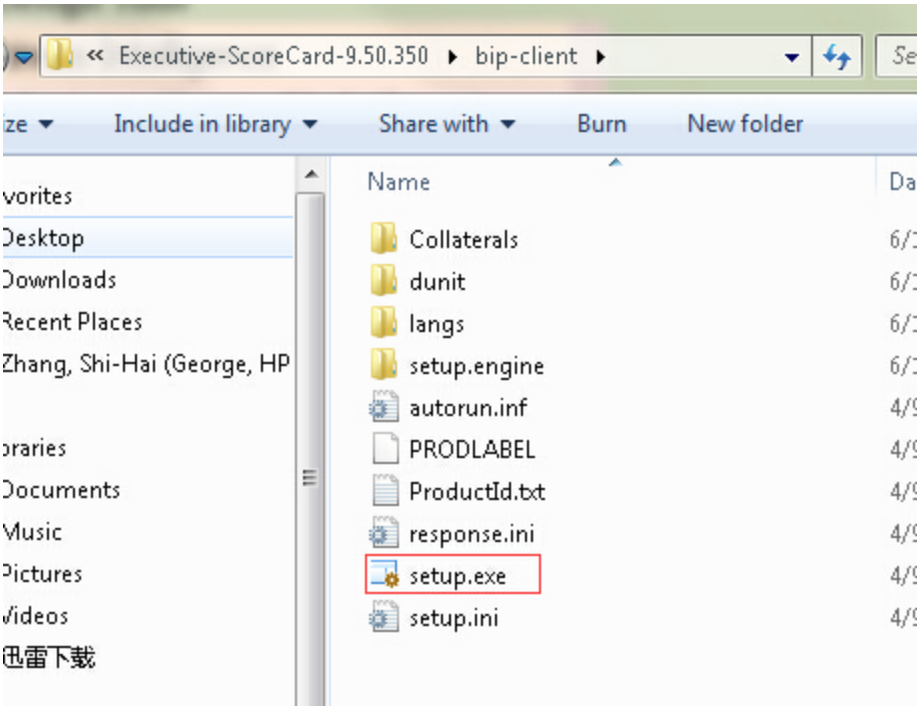


14. Grant the **View On Demand** to the 2 groups.

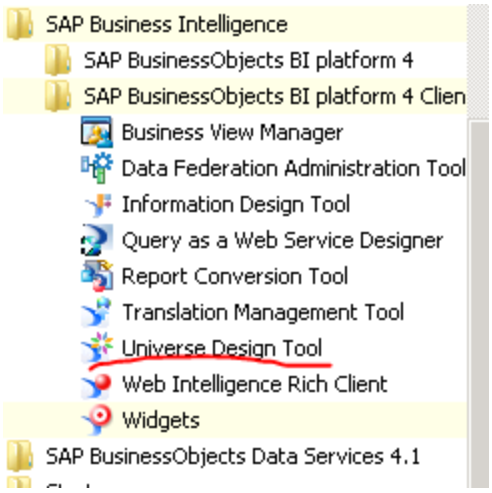


Step 2 - Configure the restriction of Cloud Billing universe

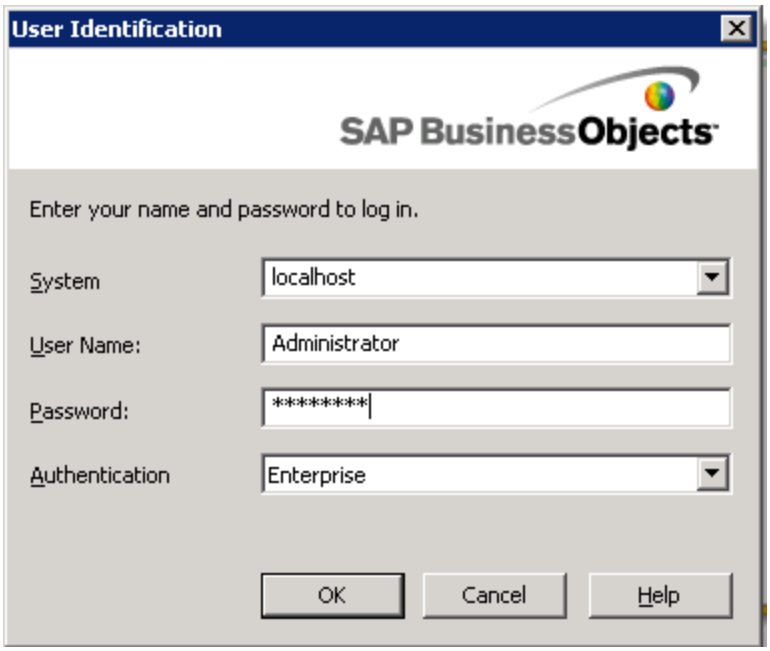
1. Configure the restrictions of the Cloud Billing universe:
   a. On the BOE server, install SAP BusinessObjects BI platform 4 Client Tools. Get the installation file from the Installation DVD file, and install it: Executive-ScoreCard-9.50.350\bip-client.



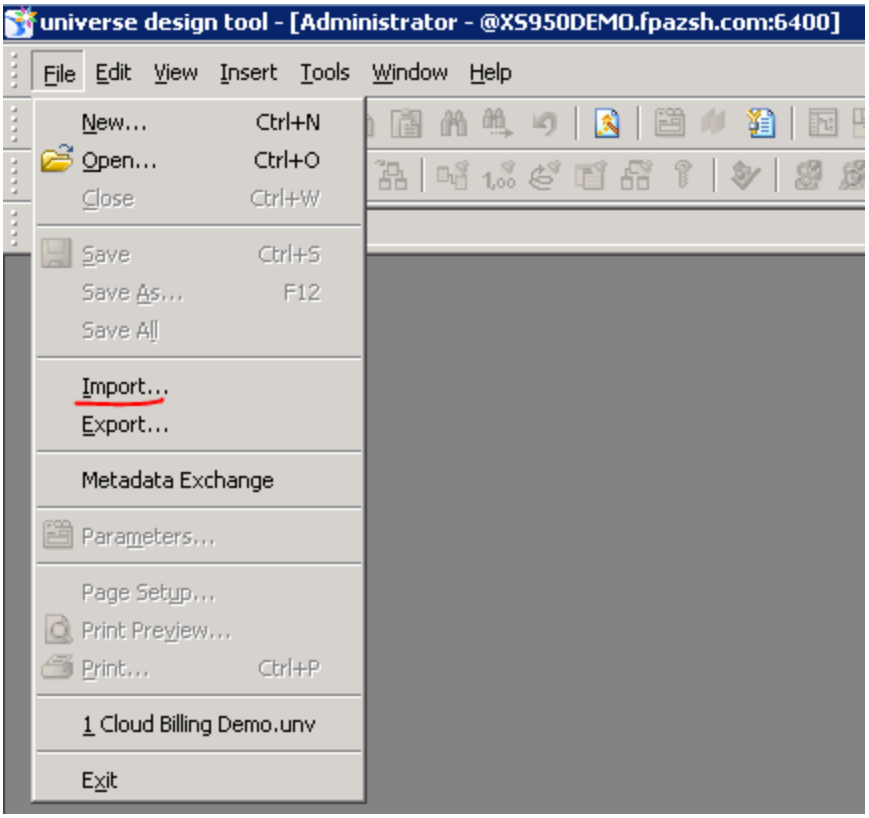
b. Open the Universe Design Tool.



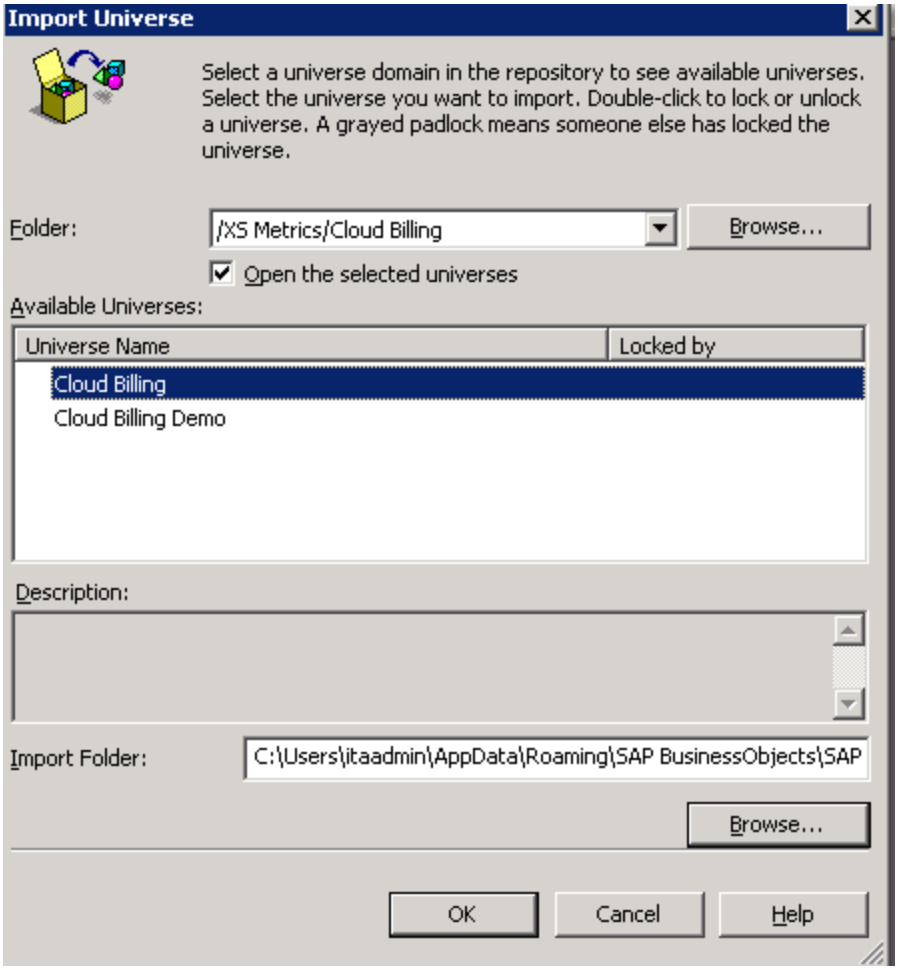
c. Log on to the Universe Design using the BOE administrator.

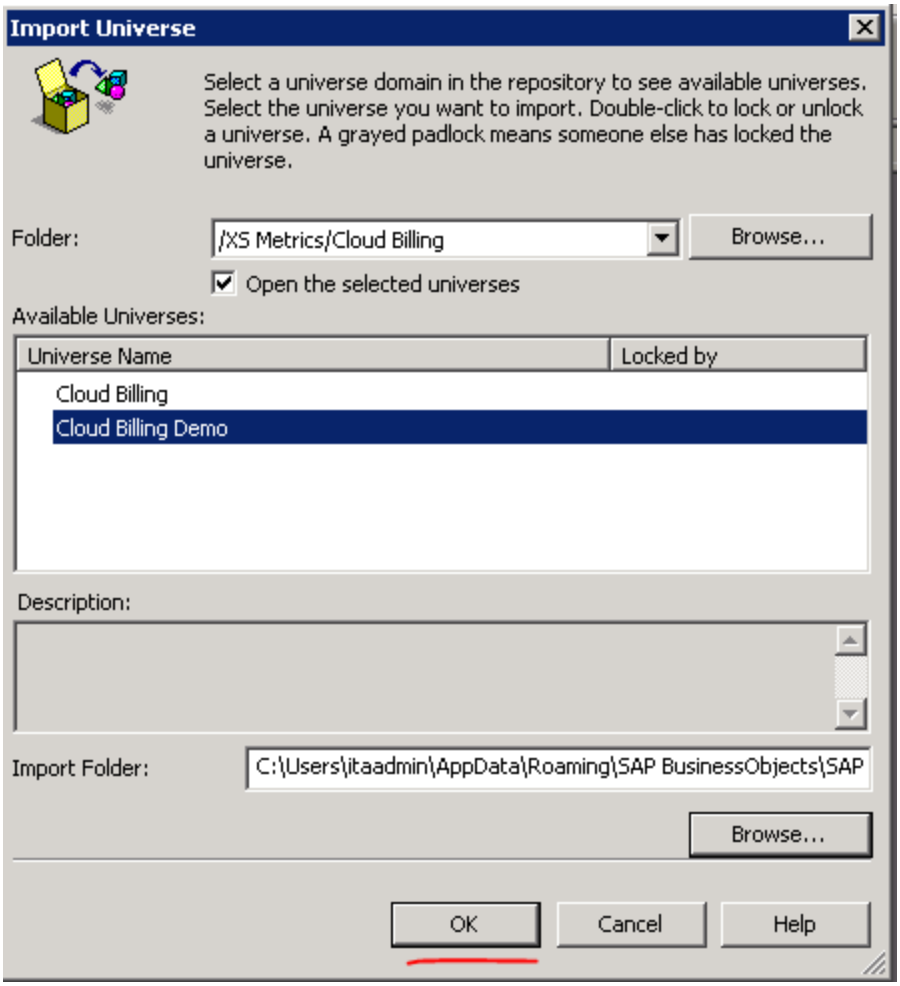


d. Click the **Import** button.

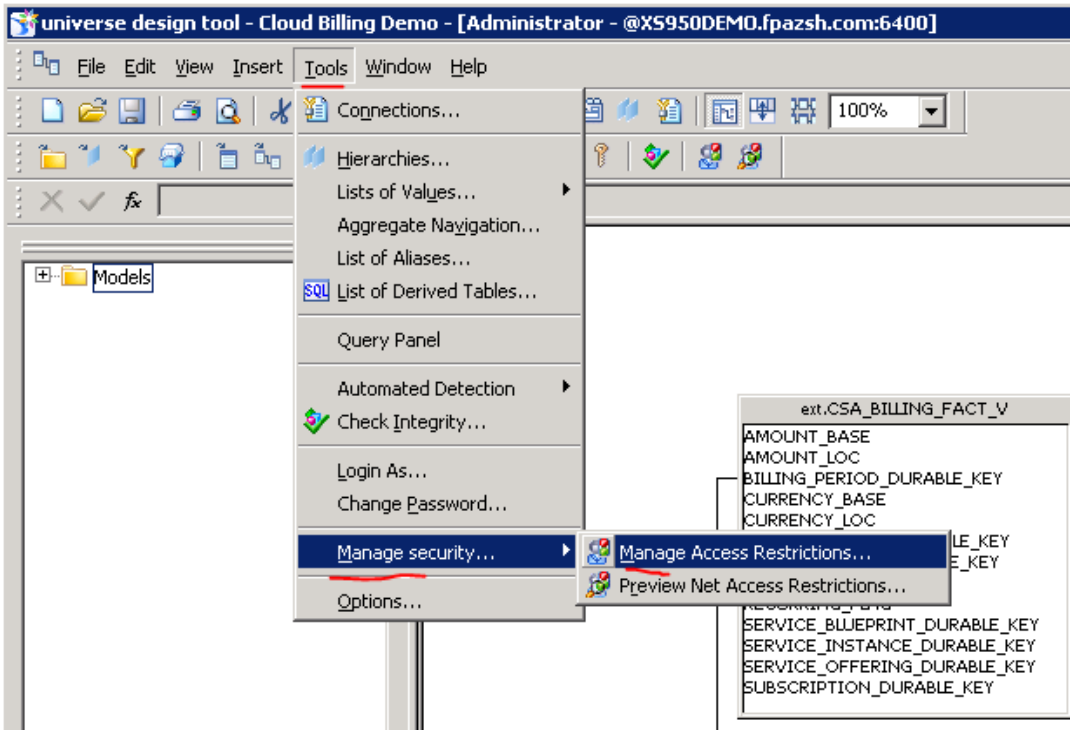


e. Open the Cloud Billing universe.


Import Universe
Select a universe domain in the repository to see available universes. Select the universe you want to import. Double-click to lock or unlock a universe. A grayed padlock means someone else has locked the universe.
Folder:
/XS Metrics/Cloud Billing
Browse...
Open the selected universes
Available Universes:
Universe Name
Locked by
Cloud Billing
Cloud Billing Demo
Description:
Import Folder:
C:\Users\itaadmin\AppData\Roaming\SAP BusinessObjects\SAP
Browse...
OK
Cancel
Help



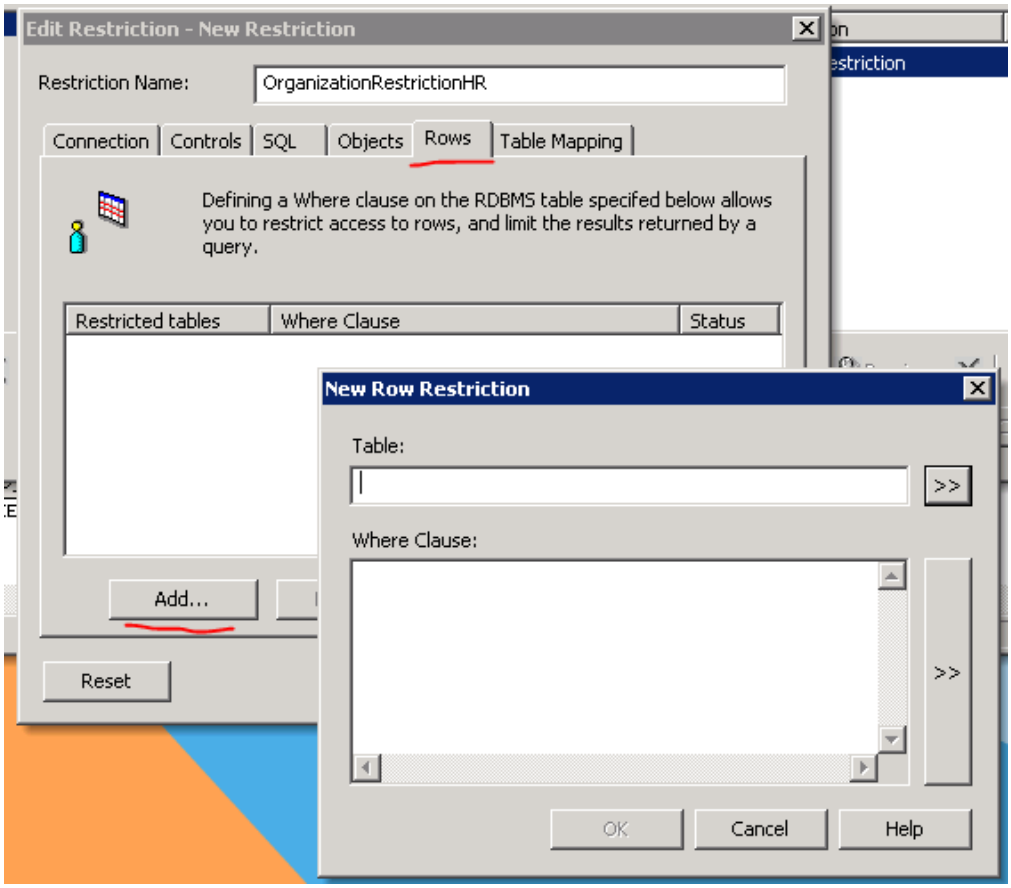
f. Add the relevant restrictions in the Manage Access Restrictions wizard:
   - Engineer_restriction is set for CSAengineers which is configured to see only the engineering group's data.
   - HR_restriction is set for CSAHR which is configured to see only the HR group's data.



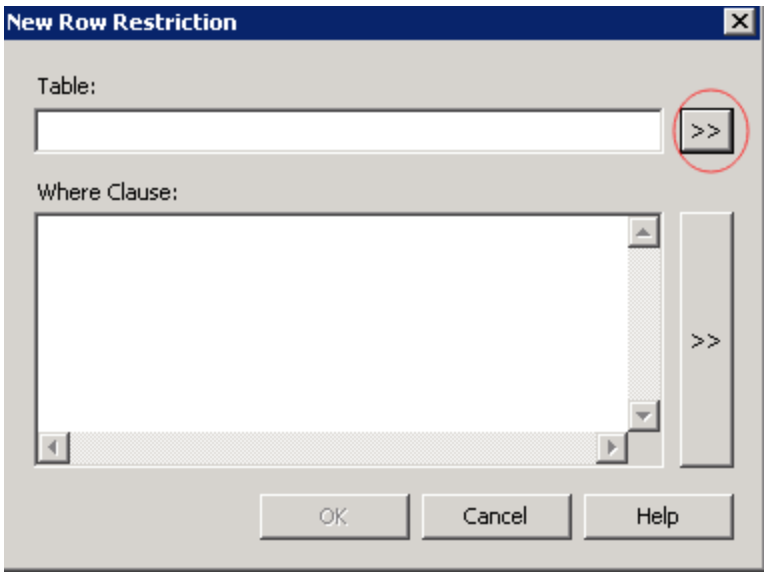
g. **Create the restriction.**

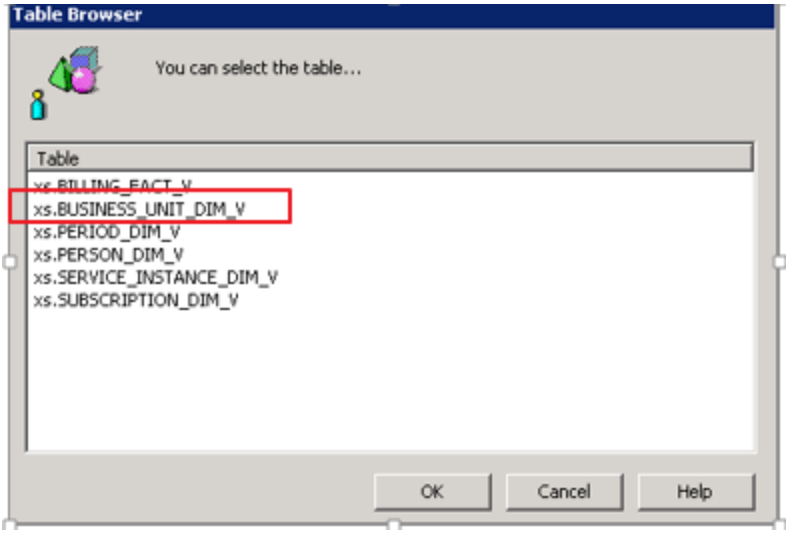
i. Click **New** in the wizard.

ii. Click the **Rows** tab and click **Add...**.



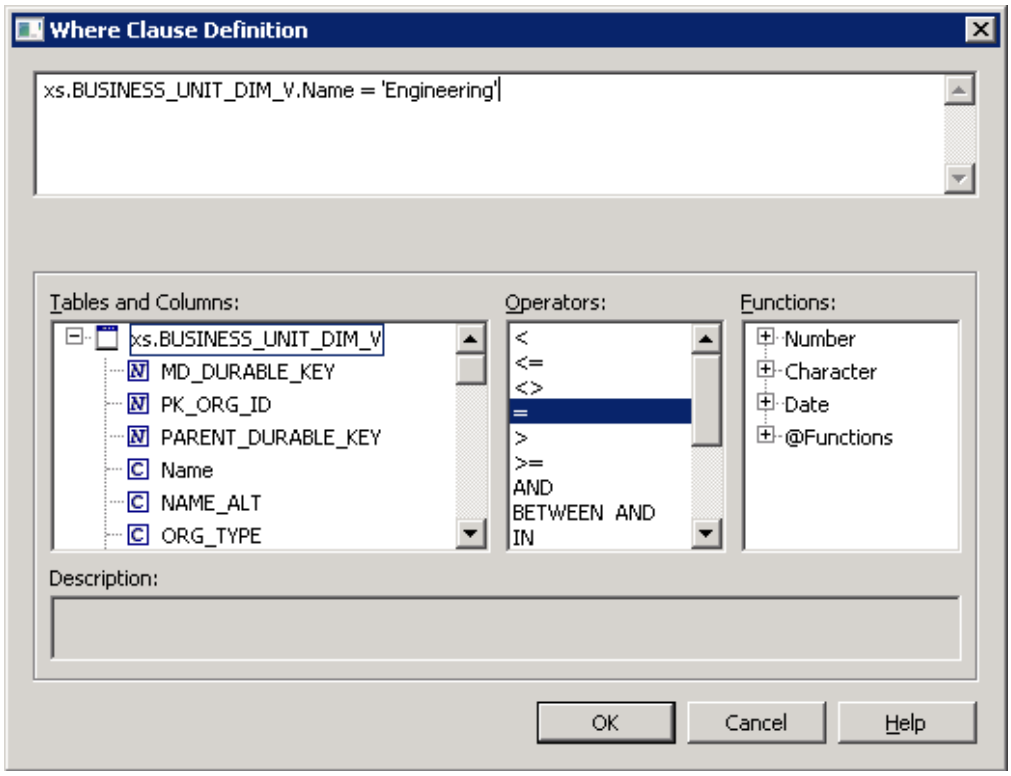
iii. Select the **XS_BUSINESS_UNIT_DIM_V** table in the **Table** list, and set the SQL query in as follows:





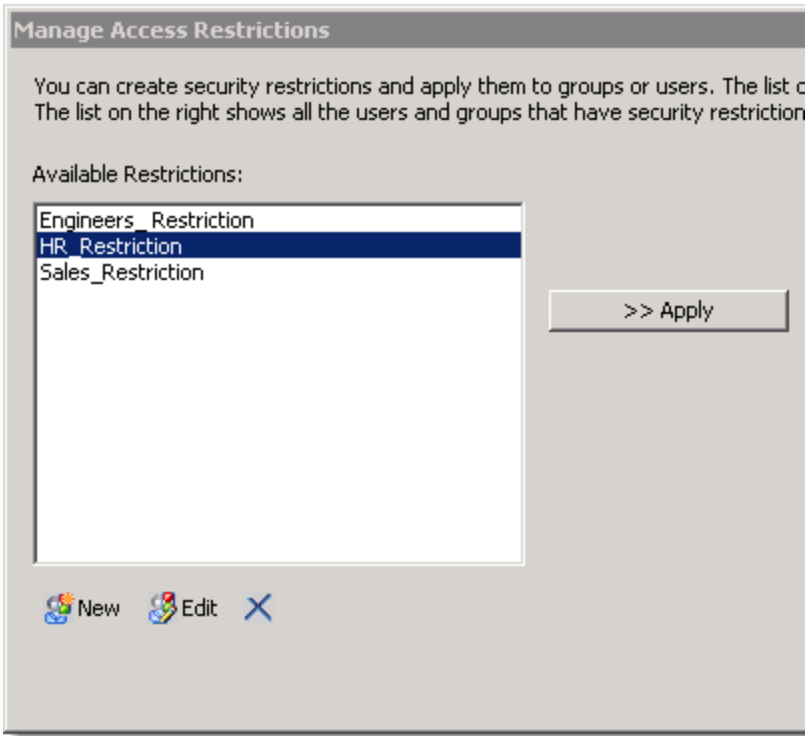
iv. Click **OK**.

v. Add restrictions1 as XS.BUSINESS_UNIT_DIM_V.Name = 'Engineering'.

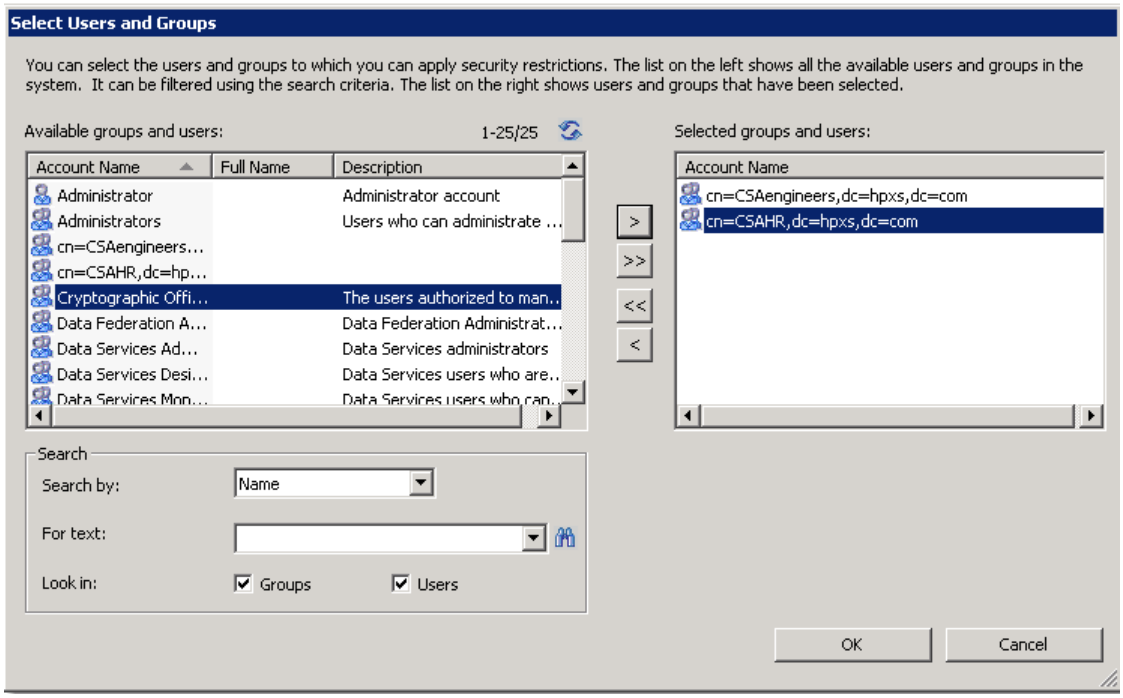


vi. Click **OK**.

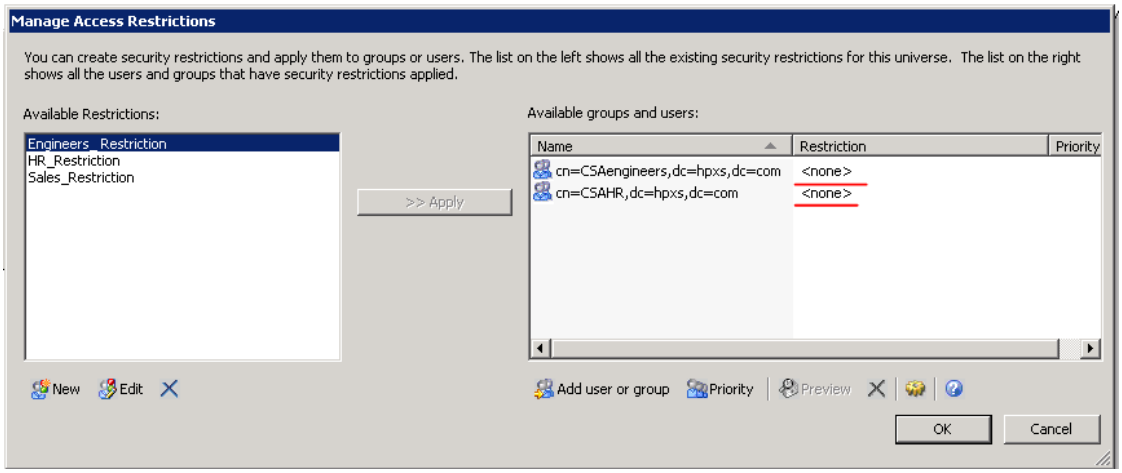
h. Repeat the steps from "Create the restriction. " on page 51 to create the second restriction.



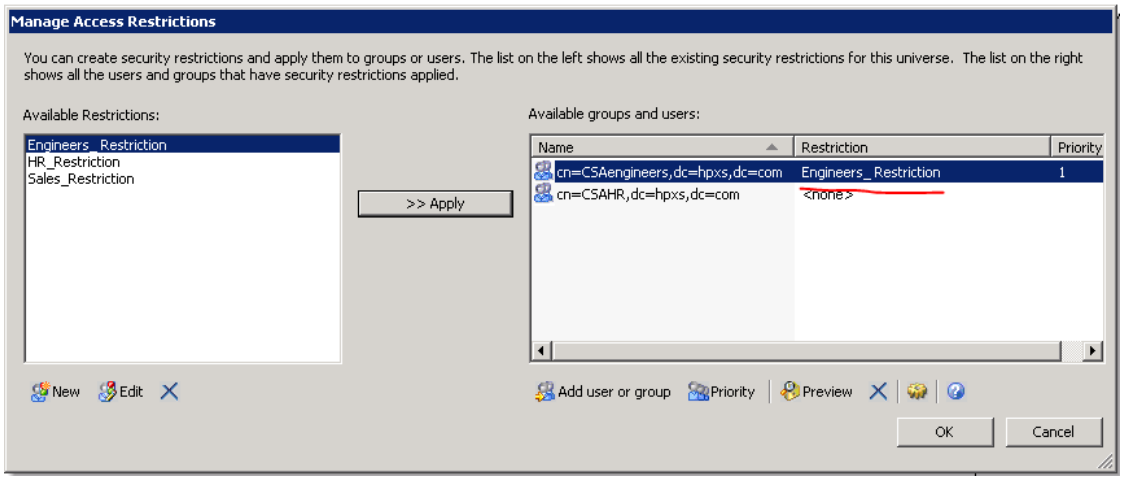
2. Click the **Add user** or **Add group** button, select the user and click the > button.



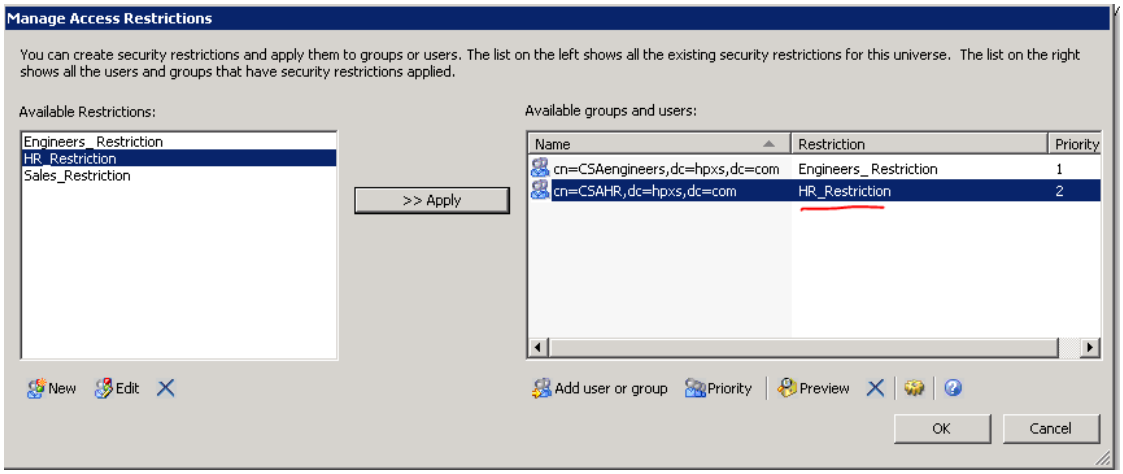
3. Click **OK**.



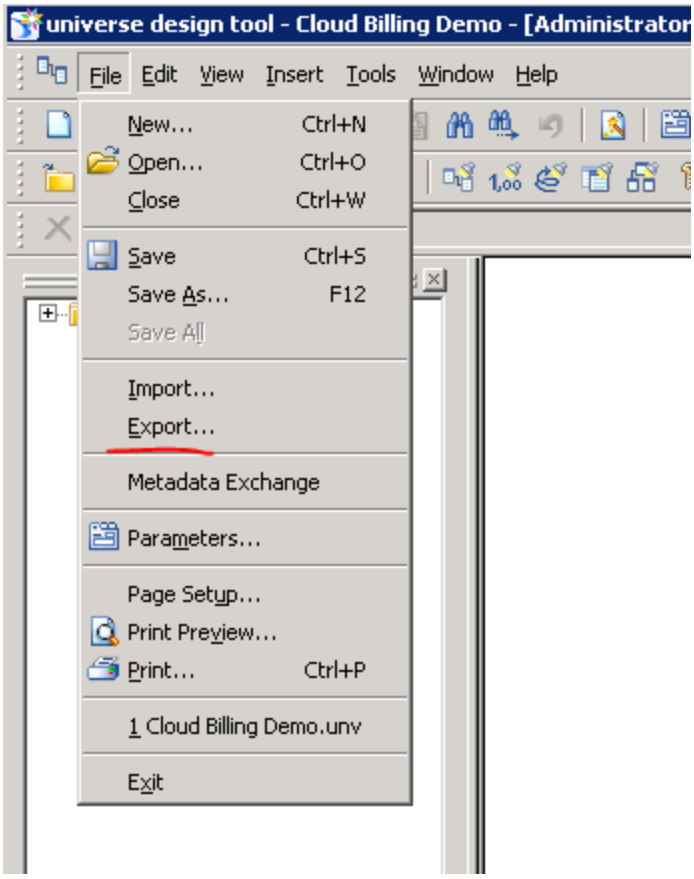
4. Select **Engineers_Restriction** in **Available Restrictions** area, select the **CSAengineers** group in the **Available groups and users** area, and then click the **>>Apply** button.



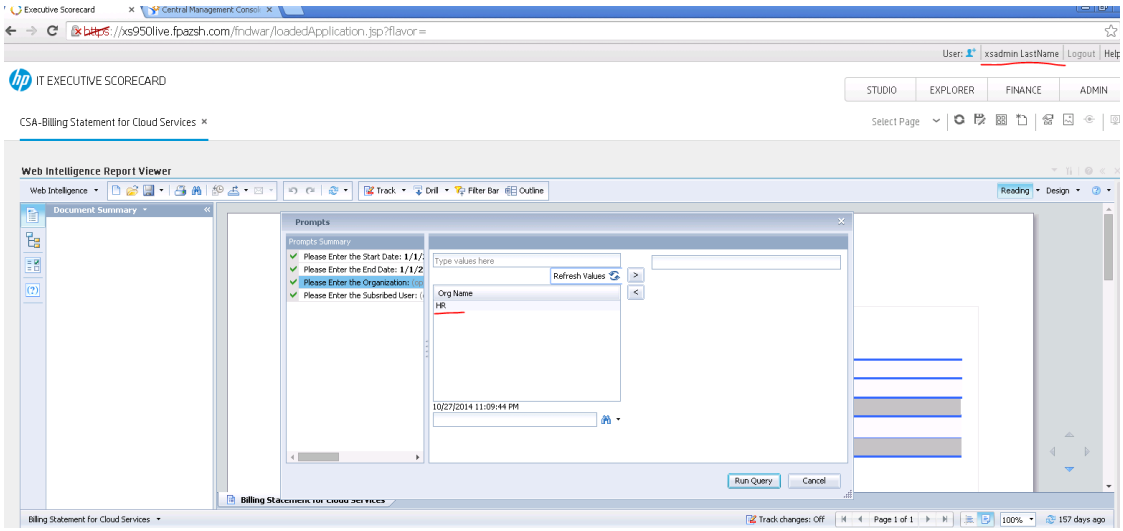
5. Repeat the previous step for the **HR_Restriction** and the HR group.



6. Click **Export...**

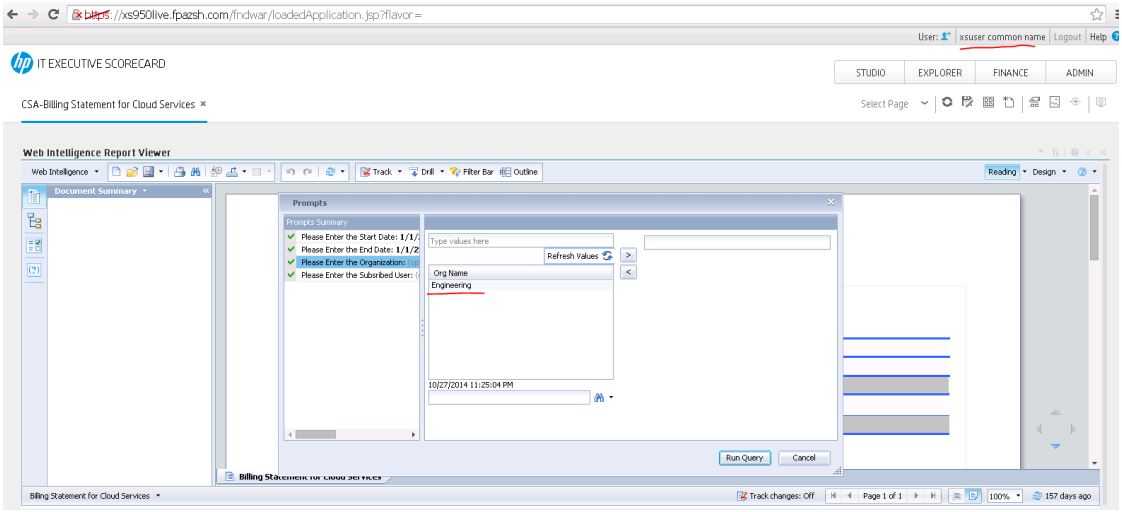


7. Click **OK**.
8. Log on to XS as the HR group one user and open the CSA billing report in the Dashboard.
9. Click the **Refresh** button to display the following value for Org Name.



10. Log on XS as the Engineers group one user and open the CSA billing report in the Dashboard.

11. Click the **Refresh** button to display the following value for Org Name.



Step 3 - Configure Executive Scorecard tile in the CSA Market Place Portal

To enable and configure the Showback report on the CSA Market Place Portal for the Consumer Organization Administrator persona:

1. Locate the **%CSA_HOME%\portal\conf\dashboard.json** file.
2. In the file, locate the section below and in the highlighted url replace the <CONFIGURE_HOST_NAME> placeholder with the host name of the XS instance.

```
{
    "label": "common.section.ADMINISTRATION.label",
    "role": ["CONSUMER_ORGANIZATION_ADMINISTRATOR"],
    "tiles": {
      "default": {
        "className": "light-gray"
      },
      "items": [{
        "label": "common.items.MANAGE_USER_SUBSCRIPTIONS",
        "icon": {
          "className": "icon-manage-subscriptions"
        },
        "link": "#/user/manage"
      }, {
        "label": "common.items.SCORECARD",
        "icon": {
          "className": "icon-status"
        },
        "link": {
          "url":"https://<CONFIGURE_HOST_
NAME>/fndwar/loadEmbeddedPage.jsp?com.hp.bsm.uim.pageUID=ef63ab7f-b86b-43c8-
b8d8-bb81869b73dc",
          "target": "_blank"
```

```
            }
          }]
        }
      }
```

3. Save.

CSA_CloudOptimization and CSA_CloudOptimization_Demo Contexts

The CSA_CloudOptimization and CSA_CloudOptimization_Demo contexts gather data from several data sources: Amazon Web Services, Amazon Web Service CloudWatch, HP Cloud Service Automation, Hyper-V, and vCenter Chargeback Manager.

To access:

In Executive Scorecard, click **Admin > Semantic Layer > Semantic Layer**. In the Context Management page, click **Launch Context Designer**. In the Context Designer page, click **Open an existing context**, and select the Context.

Learn More | Tasks | UI Description

Learn More

Data sources of the CSA_CloudOptimization and CSA_CloudOptimization_Demo context

The CSA_CloudOptimization and CSA_CloudOptimization_Demo contexts contain the attributes and classes that relate to the following data source:

HP Cloud Service Automation (CSA) is a platform that orchestrates the deployment of computation and infrastructure resources and of complex multi-tier application architectures. HP CSA integrates and leverages the strengths of a hybrid cloud environment, providing the ability to design and deploy enterprise-ready cloud services tailored to the business needs of your organization. It works through a catalog-based subscription process. Subscribers request and modify cloud service offerings with pre-defined pricing and other customer-specific features. Once the request is approved, through a policy-driven process, HP CSA deploys the cloud service offering using a structured lifecycle with pre-defined integration mechanisms for invoking external processes.

The integration with CSA as new content pack provides reporting analysis based on CSA data model.

Tasks

Display the Context

1. In Executive Scorecard, click **Admin > Semantic Layer > Semantic Layer**. The Context Management page opens.
2. The list of out-of-the-box Contexts is displayed.
3. Click **Launch Context Designer**.
4. In the Context Designer page that opens, click **Open an existing context**.
5. Select the relevant Context.

   The structure of the Context is displayed.

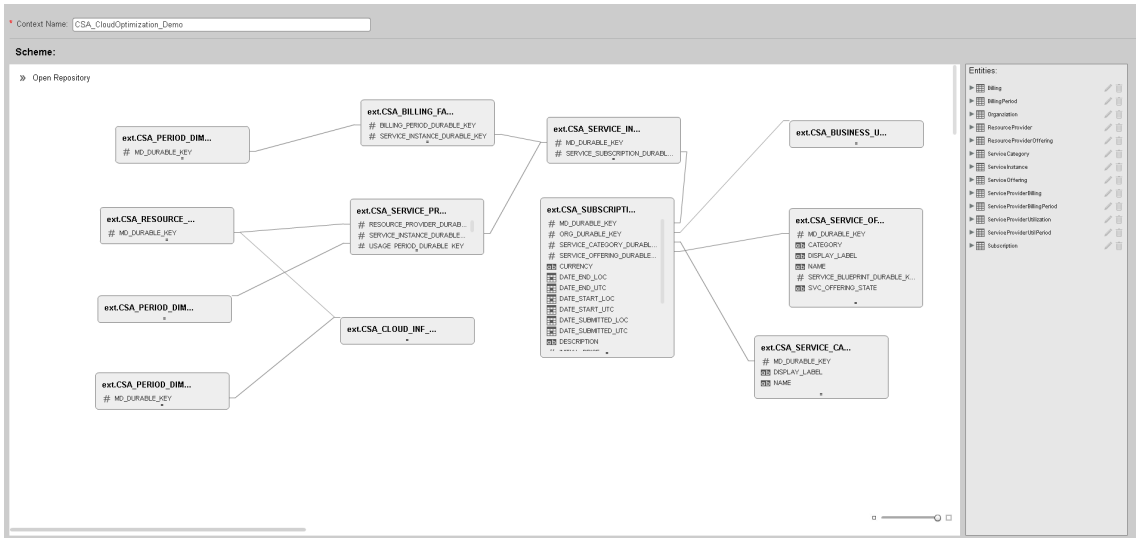
For additional details about Context Designer, see "Semantic Layer - Context Designer" on page 1 in the *IT Executive Scorecard Administrator Guide*.

Reference

CSA_CloudOptimization_Demo

Context Tables and Structure

The contexts includes the following tables and relationships:



Statistics

Entity Count	Field Count	Table Count	Alias Count	Join Count
12	51	12	2	11

Model Structure

The table lists all the views and fields included in the model even when the corresponding objects have not been selected to be part of the corresponding Context.

TABLE_NAME	COLUMN_NAME	TYPE
ext.CSA_SERVICE_CATEGORY_DIM_V	DISPLAY_LABEL	nvarchar
ext.CSA_SERVICE_CATEGORY_DIM_V	NAME	nvarchar
ext.CSA_PERIOD_DIM_V	PERIODICITY	nvarchar
ext.CSA_PERIOD_DIM_V	Year	nvarchar
ext.CSA_PERIOD_DIM_V	Quarter	nvarchar

TABLE_NAME	COLUMN_NAME	TYPE
ext.CSA_PERIOD_DIM_V	Month	nvarchar
ext.CSA_PERIOD_DIM_V	Week	nvarchar
ext.CSA_PERIOD_DIM_V	Day	nvarchar
ext.CSA_SERVICE_OFFERING_DIM_V	CATEGORY	nvarchar
ext.CSA_SERVICE_OFFERING_DIM_V	DISPLAY_LABEL	nvarchar
ext.CSA_SERVICE_OFFERING_DIM_V	NAME	nvarchar
ext.CSA_SERVICE_OFFERING_DIM_V	MD_DURABLE_KEY	numeric
ext.CSA_SERVICE_OFFERING_DIM_V	SVC_OFFERING_STATE	nvarchar
ext.CSA_SERVICE_INSTANCE_DIM_V	DISPLAY_LABEL	nvarchar
ext.CSA_SERVICE_INSTANCE_DIM_V	NAME	nvarchar
ext.CSA_SERVICE_INSTANCE_DIM_V	SVC_INS_STATE	nvarchar
ext.CSA_BILLING_FACT_V	AMOUNT_BASE	numeric
ext.CSA_BILLING_FACT_V	RECURRING_FLAG	numeric
ext.CSA_RESOURCE_PROVIDER_DIM_V	FLAG_INTERNAL	nvarchar
ext.CSA_RESOURCE_PROVIDER_DIM_V	Name	nvarchar
ext.CSA_RESOURCE_PROVIDER_DIM_V	LEVEL0	nvarchar
ext.CSA_SUBSCRIPTION_DIM_V	DATE_END_LOC	datetime
ext.CSA_SUBSCRIPTION_DIM_V	DATE_START_LOC	datetime
ext.CSA_SUBSCRIPTION_DIM_V	DATE_SUBMITTED_LOC	datetime
ext.CSA_SUBSCRIPTION_DIM_V	INITIAL_PRICE	numeric
ext.CSA_SUBSCRIPTION_DIM_V	NAME	nvarchar
ext.CSA_SUBSCRIPTION_DIM_V	RECURRING_PERIOD	nvarchar
ext.CSA_SUBSCRIPTION_DIM_V	RECURRING_PRICE	numeric
ext.CSA_SUBSCRIPTION_DIM_V	STATUS	nvarchar
ext.CSA_SERVICE_PROVIDER_BILLING_FACT_V	COST_BASE	numeric
ext.CSA_SERVICE_PROVIDER_BILLING_FACT_V	USAGE_QUANTITY	numeric
ext.CSA_SERVICE_PROVIDER_BILLING_FACT_V	USAGE_TYPE	nvarchar

TABLE_NAME	COLUMN_NAME	TYPE
ext.CSA_SERVICE_PROVIDER_BILLING_FACT_V	USAGE_TYPE_CATEGORY	nvarchar
ext.CSA_SERVICE_PROVIDER_BILLING_FACT_V	VIRTUAL_INF_ID	nvarchar
ext.CSA_CLOUD_INF_UTILIZATION_FACT_V	UTILIZATION	numeric
ext.CSA_CLOUD_INF_UTILIZATION_FACT_V	UTILIZATION_TYPE	nvarchar
ext.CSA_CLOUD_INF_UTILIZATION_FACT_V	VIRTUAL_INF_ID	nvarchar
ext.CSA_BUSINESS_UNIT_DIM_V	Name	nvarchar
ext.CSA_BUSINESS_UNIT_DIM_V	ORG_TYPE	nvarchar
ext.CSA_SERVICE_CATEGORY_DIM_V	DISPLAY_LABEL	nvarchar

Object List

The table lists all the entities and fields of the model that were selected to be part of the Context.

Entity Name	Field Name	Source Table Name	Alias Table Name	DB Column Name	Field Type
ServiceCategory	DisplayLabel	ext.CSA_SERVICE_CATEGORY_DIM_V	NULL	DISPLAY_LABEL	nvarchar
ServiceCategory	Name	ext.CSA_SERVICE_CATEGORY_DIM_V	NULL	NAME	nvarchar
ServiceProviderBillingPeriod	PERIODICITY	ext.CSA_PERIOD_DIM_V	SERVICE_PROV_BILLING_PERIOD	PERIODICITY	nvarchar
ServiceProviderBillingPeriod	Year	ext.CSA_PERIOD_DIM_V	SERVICE_PROV_BILLING_PERIOD	Year	nvarchar
ServiceProviderBillingPeriod	Quarter	ext.CSA_		Quarter	nvarch

Entity Name	Field Name	Source Table Name	Alias Table Name	DB Column Name	Field Type
		PERIOD_DIM_V	SERVICE_PROV_BILLING_PERIOD		ar
ServiceProviderBillingPeriod	Month	ext.CSA_PERIOD_DIM_V	SERVICE_PROV_BILLING_PERIOD	Month	nvarchar
ServiceProviderBillingPeriod	Week	ext.CSA_PERIOD_DIM_V	SERVICE_PROV_BILLING_PERIOD	Week	nvarchar
ServiceProviderBillingPeriod	Day	ext.CSA_PERIOD_DIM_V	SERVICE_PROV_BILLING_PERIOD	Day	nvarchar
ServiceOffering	Category	ext.CSA_SERVICE_OFFERING_DIM_V		CATEGORY	nvarchar
ServiceOffering	DisplayLabel	ext.CSA_SERVICE_OFFERING_DIM_V		DISPLAY_LABEL	nvarchar
ServiceOffering	Name	ext.CSA_SERVICE_OFFERING_DIM_V		NAME	nvarchar
ServiceOffering	ServiceOfferingId	ext.CSA_		MD_	

Entity Name	Field Name	Source Table Name	Alias Table Name	DB Column Name	Field Type
		SERVICE_OFFERING_DIM_V		DURABLE_KEY	numeric
ServiceOffering	State	ext.CSA_SERVICE_OFFERING_DIM_V		SVC_OFFERING_STATE	nvarchar
ServiceInstance	DisplayLabel	ext.CSA_SERVICE_INSTANCE_DIM_V		DISPLAY_LABEL	nvarchar
ServiceInstance	Name	ext.CSA_SERVICE_INSTANCE_DIM_V		NAME	nvarchar
ServiceInstance	State	ext.CSA_SERVICE_INSTANCE_DIM_V		SVC_INS_STATE	nvarchar
Billing	Amount	ext.CSA_BILLING_FACT_V		AMOUNT_BASE	numeric
Billing	RecurringFlag	ext.CSA_BILLING_FACT_V		RECURRING_FLAG	numeric
ResourceProvider	IsPrivate	ext.CSA_RESOURCE_PROVIDER_DIM_V		FLAG_INTERNAL	nvarchar
ResourceProvider	Name	ext.CSA_RESOURCE_PROVIDER_DIM_V		Name	nvarchar
ResourceProvider	Type	ext.CSA_RESOURCE_PROVIDER_DIM_V		LEVEL0	nvarchar
Subscription	DateEnd	ext.CSA_		DATE_	

Entity Name	Field Name	Source Table Name	Alias Table Name	DB Column Name	Field Type
		SUBSCRIPTION_DIM_V		END_LOC	datetime
Subscription	DateStart	ext.CSA_SUBSCRIPTION_DIM_V		DATE_START_LOC	datetime
Subscription	DateSubmit	ext.CSA_SUBSCRIPTION_DIM_V		DATE_SUBMITTED_LOC	datetime
Subscription	InitialPrice	ext.CSA_SUBSCRIPTION_DIM_V		INITIAL_PRICE	numeric
Subscription	Name	ext.CSA_SUBSCRIPTION_DIM_V		NAME	nvarchar
Subscription	RecurringPeriod	ext.CSA_SUBSCRIPTION_DIM_V		RECURRING_PERIOD	nvarchar
Subscription	RecurringPrice	ext.CSA_SUBSCRIPTION_DIM_V		RECURRING_PRICE	numeric
Subscription	Status	ext.CSA_SUBSCRIPTION_DIM_V		STATUS	nvarchar
ServiceProviderBilling	Cost	ext.CSA_SERVICE_PROVIDER_BILLING_FACT_V		COST_BASE	numeric
ServiceProviderBilling	UsageQuantity	ext.CSA_SERVICE_PROVIDER_BILLING_FACT_V		USAGE_QUANTITY	numeric
ServiceProviderBilling	UsageType	ext.CSA_SERVICE_PROVIDER_BILLING_FACT_V		USAGE_TYPE	nvarchar

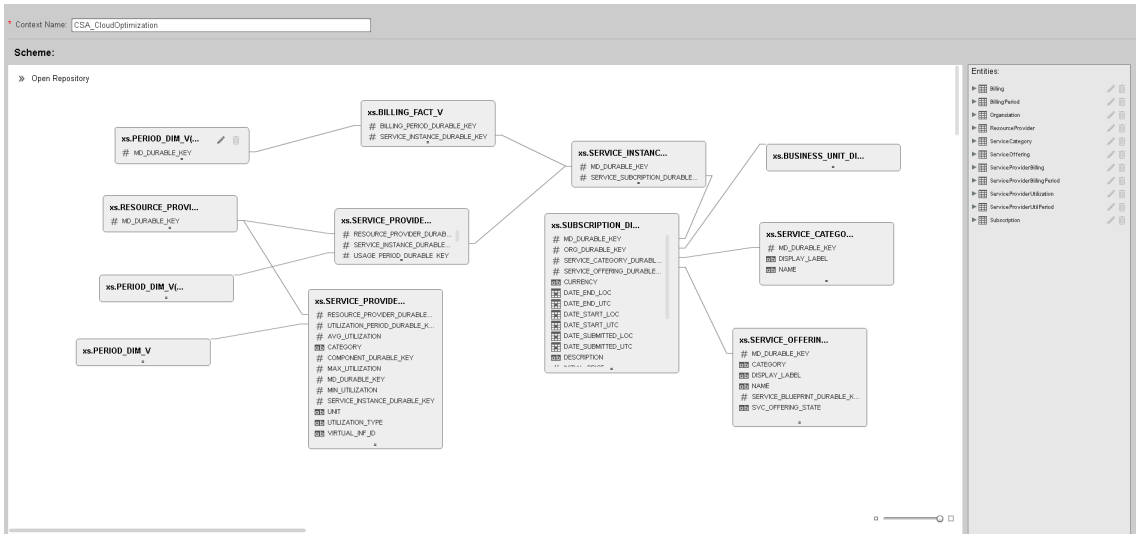
Entity Name	Field Name	Source Table Name	Alias Table Name	DB Column Name	Field Type
ServiceProviderBilling	UsageTypeCategory	ext.CSA_SERVICE_PROVIDER_BILLING_FACT_V		USAGE_TYPE_CATEGORY	nvarchar
ServiceProviderBilling	VirtualInfraStructureId	ext.CSA_SERVICE_PROVIDER_BILLING_FACT_V		VIRTUAL_INF_ID	nvarchar
ServiceProviderUtilization	AvgUtilization	ext.CSA_CLOUD_INF_UTILIZATION_FACT_V		UTILIZATION	numeric
ServiceProviderUtilization	UtilizationType	ext.CSA_CLOUD_INF_UTILIZATION_FACT_V		UTILIZATION_TYPE	nvarchar
ServiceProviderUtilization	VirtualInfraStructureId	ext.CSA_CLOUD_INF_UTILIZATION_FACT_V		VIRTUAL_INF_ID	nvarchar
Organization	Name	ext.CSA_BUSINESS_UNIT_DIM_V		Name	nvarchar
Organization	Type	ext.CSA_BUSINESS_UNIT_DIM_V		ORG_TYPE	nvarchar
BillingPeriod	PERIODICITY	ext.CSA_PERIOD_DIM_V	BILLING_PERIOD	PERIODICITY	nvarchar
BillingPeriod	Year	ext.CSA_PERIOD_DIM_V	BILLING_PERIOD	Year	nvarchar
BillingPeriod	Quarter	ext.CSA_PERIOD_DIM_V	BILLING_	Quarter	nvarchar

Entity Name	Field Name	Source Table Name	Alias Table Name	DB Column Name	Field Type
			PERIOD		
BillingPeriod	Month	ext.CSA_PERIOD_DIM_V	BILLING_PERIOD	Month	nvarchar
BillingPeriod	Week	ext.CSA_PERIOD_DIM_V	BILLING_PERIOD	Week	nvarchar
BillingPeriod	Day	ext.CSA_PERIOD_DIM_V	BILLING_PERIOD	Day	nvarchar
ServiceProviderUtilPeriod	PERIODICITY	ext.CSA_PERIOD_DIM_V		PERIODICITY	nvarchar
ServiceProviderUtilPeriod	Year	ext.CSA_PERIOD_DIM_V		Year	nvarchar
ServiceProviderUtilPeriod	Quarter	ext.CSA_PERIOD_DIM_V		Quarter	nvarchar
ServiceProviderUtilPeriod	Month	ext.CSA_PERIOD_DIM_V		Month	nvarchar
ServiceProviderUtilPeriod	Week	ext.CSA_PERIOD_DIM_V		Week	nvarchar

CSA_CloudOptimization

Context Tables and Structure

The contexts includes the following tables and relationships:



Statistics

Entity Count	Field Count	Table Count	Alias Count	Join Count
12	51	12	2	11

Model Structure

The table lists all the views and fields included in the model even when the corresponding objects have not been selected to be part of the corresponding Context.

TABLE_NAME	COLUMN_NAME	TYPE
xs.SERVICE_CATEGORY_DIM_V	DISPLAY_LABEL	nvarchar
xs.SERVICE_CATEGORY_DIM_V	NAME	nvarchar
xs.PERIOD_DIM_V	PERIODICITY	nvarchar
xs.PERIOD_DIM_V	Year	nvarchar
xs.PERIOD_DIM_V	Quarter	nvarchar
xs.PERIOD_DIM_V	Month	nvarchar
xs.PERIOD_DIM_V	Week	nvarchar
xs.PERIOD_DIM_V	Day	nvarchar
xs.SERVICE_OFFERING_DIM_V	CATEGORY	nvarchar
xs.SERVICE_OFFERING_DIM_V	DISPLAY_LABEL	nvarchar
xs.SERVICE_OFFERING_DIM_V	NAME	nvarchar
xs.SERVICE_OFFERING_DIM_V	MD_DURABLE_KEY	numeric

TABLE_NAME	COLUMN_NAME	TYPE
xs.SERVICE_OFFERING_DIM_V	SVC_OFFERING_STATE	nvarchar
xs.SERVICE_INSTANCE_DIM_V	DISPLAY_LABEL	nvarchar
xs.SERVICE_INSTANCE_DIM_V	NAME	nvarchar
xs.SERVICE_INSTANCE_DIM_V	SVC_INS_STATE	nvarchar
xs.BILLING_FACT_V	AMOUNT_BASE	numeric
xs.BILLING_FACT_V	RECURRING_FLAG	numeric
xs.RESOURCE_PROVIDER_DIM_V	FLAG_INTERNAL	nvarchar
xs.RESOURCE_PROVIDER_DIM_V	Name	nvarchar
xs.RESOURCE_PROVIDER_DIM_V	LEVEL0	nvarchar
xs.SUBSCRIPTION_DIM_V	DATE_END_LOC	datetime
xs.SUBSCRIPTION_DIM_V	DATE_START_LOC	datetime
xs.SUBSCRIPTION_DIM_V	DATE_SUBMITTED_LOC	datetime
xs.SUBSCRIPTION_DIM_V	INITIAL_PRICE	numeric
xs.SUBSCRIPTION_DIM_V	NAME	nvarchar
xs.SUBSCRIPTION_DIM_V	RECURRING_PERIOD	nvarchar
xs.SUBSCRIPTION_DIM_V	RECURRING_PRICE	numeric
xs.SUBSCRIPTION_DIM_V	STATUS	nvarchar
xs.SERVICE_PROVIDER_BILLING_FACT_V	COST_BASE	numeric
xs.SERVICE_PROVIDER_BILLING_FACT_V	USAGE_QUANTITY	numeric
xs.SERVICE_PROVIDER_BILLING_FACT_V	USAGE_TYPE	nvarchar
xs.SERVICE_PROVIDER_BILLING_FACT_V	USAGE_TYPE_CATEGORY	nvarchar
xs.SERVICE_PROVIDER_BILLING_FACT_V	VIRTUAL_INF_ID	nvarchar
xs.SERVICE_PROVIDER_UTILIZATION_FACT_V	UTILIZATION	numeric
xs.SERVICE_PROVIDER_UTILIZATION_FACT_V	UTILIZATION_TYPE	nvarchar
xs.SERVICE_PROVIDER_UTILIZATION_FACT_V	VIRTUAL_INF_ID	nvarchar
xs.BUSINESS_UNIT_DIM_V	Name	nvarchar
xs.BUSINESS_UNIT_DIM_V	ORG_TYPE	nvarchar

Object List

The table lists all the entities and fields of the model that were selected to be part of the Context.

Entity Name	Field Name	Source Table	Alias Table Name	DB Column Name	Field Type
ServiceCategory	DisplayLabel	xs.SERVICE_CATEGORY_DIM_V	NULL	DISPLAY_LABEL	nvarchar
ServiceCategory	Name	xs.SERVICE_CATEGORY_DIM_V	NULL	NAME	nvarchar
ServiceProviderBillingPeriod	PERIODICITY	xs.PERIOD_DIM_V	SERVICE_PROV_BILLING_PERIOD	PERIODICITY	nvarchar
ServiceProviderBillingPeriod	Year	xs.PERIOD_DIM_V	SERVICE_PROV_BILLING_PERIOD	Year	nvarchar
ServiceProviderBillingPeriod	Quarter	xs.PERIOD_DIM_V	SERVICE_PROV_BILLING_PERIOD	Quarter	nvarchar
ServiceProviderBillingPeriod	Month	xs.PERIOD_DIM_V	SERVICE_PROV_BILLING_PERIOD	Month	nvarchar
ServiceProviderBillingPeriod	Week	xs.PERIOD_DIM_V	SERVICE_PROV_BILLIN	Week	nvarchar

Entity Name	Field Name	Source Table	Alias Table Name	DB Column Name	Field Type
			G_ PERIOD		
ServiceProviderBilling Period	Day	xs.PERIOD_ DIM_V	SERVIC E_ PROV_ BILLIN G_ PERIOD	Day	nvarch ar
ServiceOffering	Category	xs.SERVICE_ OFFERING_ DIM_V		CATEGOR Y	nvarch ar
ServiceOffering	DisplayLabel	xs.SERVICE_ OFFERING_ DIM_V		DISPLAY_ LABEL	nvarch ar
ServiceOffering	Name	xs.SERVICE_ OFFERING_ DIM_V		NAME	nvarch ar
ServiceOffering	ServiceOfferingId	xs.SERVICE_ OFFERING_ DIM_V		MD_ DURABLE_ KEY	numeri c
ServiceOffering	State	xs.SERVICE_ OFFERING_ DIM_V		SVC_ OFFERIN G_STATE	nvarch ar
ServiceInstance	DisplayLabel	xs.SERVICE_ INSTANCE_ DIM_V		DISPLAY_ LABEL	nvarch ar
ServiceInstance	Name	xs.SERVICE_ INSTANCE_ DIM_V		NAME	nvarch ar
ServiceInstance	State	xs.SERVICE_ INSTANCE_ DIM_V		SVC_INS_ STATE	nvarch ar
Billing	Amount	xs.BILLING_ FACT_V		AMOUNT_ BASE	numeri c
Billing	RecurringFlag	xs.BILLING_			

Entity Name	Field Name	Source Table	Alias Table Name	DB Column Name	Field Type
		FACT_V		RECURRING_FLAG	numeric
ResourceProvider	IsPrivate	xs.RESOURCE_PROVIDER_DIM_V		FLAG_INTERNAL	nvarchar
ResourceProvider	Name	xs.RESOURCE_PROVIDER_DIM_V		Name	nvarchar
ResourceProvider	Type	xs.RESOURCE_PROVIDER_DIM_V		LEVEL0	nvarchar
Subscription	DateEnd	xs.SUBSCRIPTION_DIM_V		DATE_END_LOC	datetime
Subscription	DateStart	xs.SUBSCRIPTION_DIM_V		DATE_START_LOC	datetime
Subscription	DateSubmit	xs.SUBSCRIPTION_DIM_V		DATE_SUBMITTED_LOC	datetime
Subscription	InitialPrice	xs.SUBSCRIPTION_DIM_V		INITIAL_PRICE	numeric
Subscription	Name	xs.SUBSCRIPTION_DIM_V		NAME	nvarchar
Subscription	RecurringPeriod	xs.SUBSCRIPTION_DIM_V		RECURRING_PERIOD	nvarchar
Subscription	RecurringPrice	xs.SUBSCRIPTION_DIM_V		RECURRING_PRICE	numeric
Subscription	Status	xs.SUBSCRIPTION_DIM_V		STATUS	nvarchar

Entity Name	Field Name	Source Table	Alias Table Name	DB Column Name	Field Type
ServiceProviderBilling	Cost	xs.SERVICE_PROVIDER_BILLING_FACT_V		COST_BASE	numeric
ServiceProviderBilling	UsageQuantity	xs.SERVICE_PROVIDER_BILLING_FACT_V		USAGE_QUANTITY	numeric
ServiceProviderBilling	UsageType	xs.SERVICE_PROVIDER_BILLING_FACT_V		USAGE_TYPE	nvarchar
ServiceProviderBilling	UsageTypeCategory	xs.SERVICE_PROVIDER_BILLING_FACT_V		USAGE_TYPE_CATEGORY	nvarchar
ServiceProviderBilling	VirtualInfraStructureId	xs.SERVICE_PROVIDER_BILLING_FACT_V		VIRTUAL_INF_ID	nvarchar
ServiceProviderUtilization	AvgUtilization	xs.SERVICE_PROVIDER_UTILIZATION_FACT_V		UTILIZATION	numeric
ServiceProviderUtilization	UtilizationType	xs.SERVICE_PROVIDER_UTILIZATION_FACT_V		UTILIZATION_TYPE	nvarchar
ServiceProviderUtilization	VirtualInfraStructureId	xs.SERVICE_PROVIDER_UTILIZATION_FACT_V		VIRTUAL_INF_ID	nvarchar
Organization	Name	xs.BUSINESS_UNIT_DIM_V		Name	nvarchar
Organization	Type	xs.BUSINESS_UNIT_DIM_V		ORG_TYPE	nvarchar

Entity Name	Field Name	Source Table	Alias Table Name	DB Column Name	Field Type
BillingPeriod	PERIODICITY	xs.PERIOD_DIM_V	BILLING_PERIOD	PERIODICITY	nvarchar
BillingPeriod	Year	xs.PERIOD_DIM_V	BILLING_PERIOD	Year	nvarchar
BillingPeriod	Quarter	xs.PERIOD_DIM_V	BILLING_PERIOD	Quarter	nvarchar
BillingPeriod	Month	xs.PERIOD_DIM_V	BILLING_PERIOD	Month	nvarchar
BillingPeriod	Week	xs.PERIOD_DIM_V	BILLING_PERIOD	Week	nvarchar
BillingPeriod	Day	xs.PERIOD_DIM_V	BILLING_PERIOD	Day	nvarchar
ServiceProviderUtilPeriod	PERIODICITY	xs.PERIOD_DIM_V		PERIODICITY	nvarchar
ServiceProviderUtilPeriod	Year	xs.PERIOD_DIM_V		Year	nvarchar
ServiceProviderUtilPeriod	Quarter	xs.PERIOD_DIM_V		Quarter	nvarchar
ServiceProviderUtilPeriod	Month	xs.PERIOD_DIM_V		Month	nvarchar
ServiceProviderUtilPeriod	Week	xs.PERIOD_DIM_V		Week	nvarch

Entity Name	Field Name	Source Table	Alias Table Name	DB Column Name	Field Type
					ar
ServiceProviderUtilPeriod	Day	xs.PERIOD_DIM_V		Day	nvarchar

% of Server Utilization KPI

Note: This KPI is currently only available with demo data for the CSA_CAP and CSA_CAP_Demo CAPs.

Component Type	KPI
Business Questions	Make sure our resources are utilized efficiently
Business Objective	Node/Infra Service
Description	The average of percentages of CPU utilization at instance level.
Context	CSA_CloudOptimization_Demo/CSA_CloudOptimization
Data source	.csv files/CSA
Formula	AVG(ServiceProviderUtilization.AvgUtilization , ResourceProvider.Type is not null and ServiceProviderUtilization.UtilizationType ='CPUUtilization' and PERIOD_ENTITY = ServiceProviderUtilPeriod)
KPI Formula Filter	N/A
Unit Type	%
Time Period	Daily
Direction	Centralize
Thresholds	0 to 60 | 60 to 70 | 70 to 80 | 80 to 90 | 90 to 100
Release	9.50

Number of Service Subscriptions KPI

Component Type	KPI
Business Questions	Make sure our service subscription are utilized
Business Objective	
Description	The number of Service Offering instances.
Context	CloudOptimization
Data source	CSA
Formula	COUNT(Subscription.Name, Subscription.Status <>'PENDING' AND Subscription.Status <>'INVALID' AND Subscription.Status <>'UNKNOWN' and Subscription.DateStart IN_PERIOD)
KPI Formula Filter	N/A
Unit Type	#
Time Period	Monthly
Direction	Maximize
Thresholds	
Release	9.40

Public vs Private Cloud Spending KPI

Component Type	KPI
Business Questions	Make sure the balance between private and public spending comply with our organization policies.
Business Objective	Optimize Resource Provider Relationship
Description	The ratio between the public and the private spending.
Context	CloudOptimization
Data source	CSA, AWS, VCM, HPV
Formula	PERCENTAGE_MATH(SUM(ServiceProviderBilling.Cost , ResourceProvider.IsPrivate ='N' And PERIOD_ENTITY = ServiceProviderBillingPeriod) ,SUM(ServiceProviderBilling.Cost , ResourceProvider.IsPrivate ='Y' And PERIOD_ENTITY = ServiceProviderBillingPeriod) ,0)
KPI Formula Filter	N/A
Unit Type	%
Time Period	Monthly
Direction	Centralize
Thresholds	0 to 80 | 80 to 120 | 120 to 200
Release	9.40

Resource Provider Cost KPI

Component Type	KPI
Business Questions	Make sure our resource providers spending is within the planned budget.
Business Objective	Optimize Vendor Relationship
Description	The average monthly cost of our resource providers.
Context	CloudOptimization
Data source	CSA, AWS, VCM, HPV
Formula	RATIO_MATH(SUM(ServiceProviderBilling.Cost , ResourceProvider.Name is not null and PERIOD_ ENTITY = ServiceProviderBillingPeriod), COUNT_DISTINCT(ResourceProvider.Name, *),0)
KPI Formula Filter	N/A
Unit Type	US $
Time Period	Monthly
Direction	Minimize
Thresholds	0 to 1000000 | 1000000 to 2000000
Release	9.40

Service Revenue KPI

Component Type	KPI
Business Questions	Track revenue of IT services and make sure it is aligned with the predicted revenue.
Business Objective	Increase Service Profitability
Description	The average revenue of service provided by IT.
Context	CloudOptimization
Data source	CSA
Formula	RATIO_MATH(SUM(Billing.Amount, PERIOD_ENTITY = BillingPeriod) , COUNT_DISTINCT(ServiceOffering.DisplayLabel, ServiceOffering.DisplayLabel <> 'INVALID' and ServiceOffering.DisplayLabel <> 'UNKNOWN'),0)
KPI Formula Filter	N/A
Unit Type	US$
Time Period	Monthly
Direction	Maximize
Thresholds	-99999 to 0 | 0 to 99999
Release	9.40

Service Subscription Lifespan KPI

Component Type	KPI
Business Questions	Increase Service Profitability
Business Objective	
Description	The average life-cycle time of a subscription to a service.
Context	CloudOptimization
Data source	CSA
Formula	DATE_CONVERT('ms','d', AVG(Subscription.DateEnd, Subscription.DateEnd is not null AND Subscription.Status <>'PENDING' AND Subscription.Status <>'INVALID' AND Subscription.Status <>'UNKNOWN' and Subscription.DateStart IN_PERIOD) - AVG(Subscription.DateStart, Subscription.DateEnd is not null AND Subscription.Status <>'PENDING' AND Subscription.Status <>'INVALID' AND Subscription.Status <>'UNKNOWN' and Subscription.DateStart IN_PERIOD))
KPI Formula Filter	N/A
Unit Type	Days
Time Period	Monthly
Direction	Maximize
Thresholds	0 to 10 | 10 to 20 | 20 to 30
Release	9.40

Amount of Used Storage Metric

Component Type	Metric
Business Questions	
Business Objective	
Description	The number of terabytes (TBs) of storage we are currently using.
Context	CloudOptimization
Data source	CSA, AWS ,VCM, HPV
Formula	SUM(ServiceProviderBilling.UsageQuantity, ServiceProviderBilling.UsageTypeCategory ='Storage' And PERIOD_ENTITY = ServiceProviderBillingPeriod)/1024
KPI Formula Filter	N/A
Unit Type	TB
Time Period	Daily
Direction	N/A
Thresholds	N/A
Release	9.40

Network Traffic Metric

Component Type	Metric
Business Questions	
Business Objective	
Description	The total network traffic.
Context	CloudOptimization
Data source	CSA, AWS ,VCM, HPV
Formula	SUM(ServiceProviderBilling.UsageQuantity , ServiceProviderBilling.UsageTypeCategory = 'Data Transfer' and PERIOD_ENTITY = ServiceProviderBillingPeriod)
KPI Formula Filter	N/A
Unit Type	GB
Time Period	Daily
Release	9.40

Number of Used Instances KPI

Component Type	KPI
Business Questions	Increase Service Profitability
Business Objective	
Description	The number of dedicated instances running in our hybrid cloud environment.
Context	CloudOptimization
Data source	CSA, AWS ,VCM, HPV
Formula	COUNT_DISTINCT(ServiceProviderBilling.VirtualInfraStructureId, ServiceProviderBilling.VirtualInfraStructureId <> 'Untagged' and PERIOD_ENTITY = ServiceProviderBillingPeriod)
KPI Formula Filter	N/A
Unit Type	#
Time Period	Daily
Direction	Maximize
Thresholds	
Release	9.41

Limitations

This section provides limitations.

Make sure to use the correct out-of-the-box CSA

Make sure that you are using the out-of-the-box CSA provided by Amazon Service Design, vCenter Service Design, and Hyper-V service design in their service offering and related subscriptions, so the following KPIs display their values in Executive Scorecard:

- Network Traffic
- Public vs Private Cloud Spending
- Number of Used Instances
- Amount of Used Storage
- % of Server Utilization
- Resource Provider Cost

The Service Designs are as follows:

- For Amazon service design, the service design name is CSL_BP_AMAZON_EC2_COMPUTE_3.10.
- For Hyper-V service design, the service design name is CSL_BP_SCVMM_COMPUTE_3.10.
- For VCenter service design, the service design name is CSA_BP_VCENTER_COMPUTE_3.20.

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