HP IT Executive Scorecard

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Windows ® operating system

Content Reference Guide for the Integration with vCenter Chargeback Manager

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VCM 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 vCenter Chargeback Manager data source.

vCenter Chargeback Manager (VCM) is a key component of VMWare private cloud solution. It's a centralized platform that provides virtual machine in a flexible and scalable way. You can use VCM, an end-to-end cost reporting solution for virtual environments using vSphere. vCenter Chargeback Manager can also be used with VMware vCloud Director. The integration with VCM provides cost and usage reports based on the VCM data model.

VMware vCloud Director enables enterprises to build secure, multi-tenant private clouds by pooling infrastructure resources into virtual data centers and exposing them to users through web-based portals and programmatic interfaces as fully automated, catalog-based services. VMware vCloud Director enables IT organizations to deliver resources to internal users as virtual data centers. By logically pooling compute, storage, and networking capacity into virtual data centers, IT organizations can manage resources more efficiently with complete abstraction between consumption and delivery of IT services. vCloud Director can be integrated with VCM (vCenter Chargeback Manager), but data is only extracted from VCM.

vCenter Chargeback Manager (VCM) is a key component of vCenter Chargeback Managerprivate cloud solution. It's a centralized platform that provides virtual machine in a flexible and scalable way. We use VCM to get usage and cost information for virtual machines. VCM is an end-to-end cost reporting solution for virtual environments using vSphere. VCM can also be used with VMware vCloud Director.

Chargeback is a mechanism that is used to account for the operational costs involved in providing and maintaining an IT infrastructure, including the costs for IT services and applications. Measuring resource utilization and calculating the corresponding IT operational cost enables you to account for the IT resources utilized and bill for the services provided.

In a non-virtual environment, a physical server and the associated resources like the applications running on it can be easily mapped to the department using them, making the billing for such resource utilization relatively easy. Also, costs incurred due to maintenance and licensing can be directly associated to a department, thereby enabling you to calculate the complete IT operational costs.

In a virtual environment, however, the task of calculating the IT operational cost for each department becomes very difficult. Multiple virtual machines run on a physical server, which might be shared across different departments or cost centers in an organization. As a result, resource utilization for this server and, therefore, the cost incurred cannot be directly associated to any single department or cost center. The difficulty in accounting gets further compounded when applications and services get shifted over time to different servers, based on the load and available infrastructure resources.

The integration with VCM provides cost and usage reports based on the vCenter data model.

Cloud Optimization Offering

The Cloud Optimization offering includes integrations with:

- **Amazon Web Services (AWS).** For details see AWS Data Source - Integration, Associated Context, KPIs, Metrics, and Data Lineage in the *IT Executive Scorecard Content Reference Guide for the Integration of Amazon Web Services*.
- **Amazon Web Service CloudWatch(AWSCW).** For details see AWSCW Data Source - Integration, Associated Context, KPIs, Metrics, and Data Lineage in the *IT Executive Scorecard Content Reference Guide for the Integration of Amazon Web Service CloudWatch*.
- **HP Cloud Service Automation (CSA).** For details see CSA Data Source - Integration, Associated Context, KPIs, Metrics, and Data Lineage in the *IT Executive Scorecard Content Reference Guide for the Integration of HP Cloud Service Automation*.
- **vCenter Chargeback Manager (VCM).** For details see VCM Data Source - Integration, Associated Context, KPIs, Metrics, and Data Lineage in the *IT Executive Scorecard Content Reference Guide for the Integration of vCenter Chargeback Manager*.
- **Microsoft Hyper-V (HPV).** For details see Hyper-V Data Source - Integration, Associated Contexts, KPIs, Metrics, Data Lineage, and Reports in the *IT Executive Scorecard Content Reference Guide for the Integration of Hyper-V*.

Note: Information about the ALT data source and more general content issues are detailed in the *IT Executive Scorecard Content Reference Guide for the Integration of Alternate Data Sources*.

Data Lineage

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

VCM Data Source

The purpose of the integration of VCM 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 **VCM** to activate the integration processes for the **VCM** data source.

Learn More | Tasks | UI Description | Reference

Learn More

Content Packs and their functionality

To learn about Content Packs and their functionality, see Data Source Management in the *IT Executive Scorecard Administrator Guide*.

Important Information

- The VCM 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.
- VCM must be activated with the CSA data source. If you activate VCM alone, only the cost fact information is displayed, without the ability to drill down further.

Note: When configuring VCM reports:

- VCM **Custom** reports are not supported, therefore it is recommended to select the **Daily** report option.
- Only cost reports are supported.
- When you generate a report in vCenter Chargeback Manager, you cannot select the following values:
  - Disk Read
  - Disk Write
  - Network Transmitted
  - Network Received

    Although the combined disk read and write utilization data and the combined network transmitted and received utilization data can be fetched and included in the report, the split

utilization data for disk read, disk write, network transmitted, and network received is unavailable.

When using both the AWS and VCM data sources. Both the AWS and the VCM data sources offer the same type of information. If you integrate with both data sources, the values provided by the relevant Metrics might combine. For example, the Number of Used Instances Metric calculates how many VMs users are using the hybrid cloud environment. Both of the AWS data source (100 VM subscriptions) and the VCM data source (300 VM subscriptions) include this information. If, for example, you work with AWS only, the Number of Used Instances Metric is 100. If you work with VCM only, the Number of Used Instances Metric is 300. If you work with both data source, the Number of Used Instances Metric is 400.

Tasks

Activate the Integration

1. Select **Admin** > **Data Source Management** then click **Add data source**.
2. The Add Data Source page opens. Select the VCM data source type.
3. Select or enter the configuration parameters.
4. Click **Next** to proceed to the validation page.

Note: To perform configuration and activation tasks using the Automation tool, seeThe Automation Tool in the *IT Executive Scorecard Administrator Guide*.

Connect to VCM on a Secured Connection

1. Export the VCM SSL certificate to a file.
2. Reveal the VCM certificate to Data Warehouse as follows:

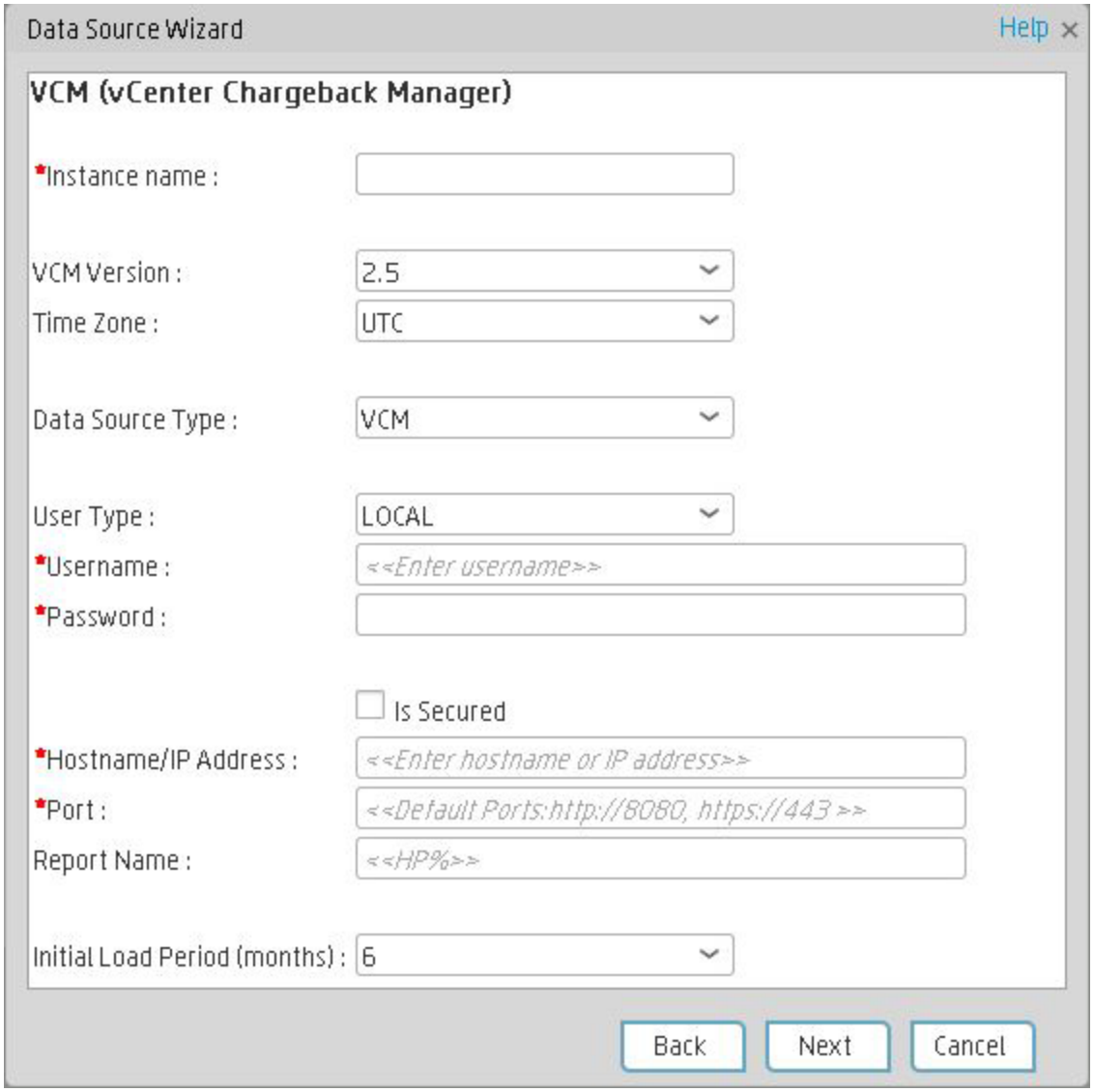
   Import the SSL certificate trusted by the VCM server into the JDK key store using a tool provided by the JDK called **keytool.exe** and run the command :
   <HP_XS>\jdk\jre\bin\keytool -importcert -alias <alias> -file <file> -keystore <HP_XS>\agora\jdk\jre\lib\security\cacerts -trustcacerts

   Note: The default password for JVM keystore is 'changeit'. If this password wasn't changed before, use the default keystore password for certificate import.
3. Restart the Executive Scorecard server to activate the VCM certificate.
4. Select **Is secured** in the activation parameters page.
5. Change the port to a secured port (default is **443**).

UI Description

VCM Activation Page

The following is an example of the VCM Activation page for MS SQL server.



User interface elements are described below:

For the SQL server:

If the VCM 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.
VCM Version	Select the relevant VCM version. For details, see the *IT Executive Scorecard Support Matrix*.
Time Zone	Time zone must be UTC.
Data Source Type	VCM. This parameter is read only.
User Type	Select **LDAP** or **LOCAL**. When you select **LDAP**, you must enter the **LDAP Server Name**.
Username	Enter your username used to log on to the VCM web application.
Password	Enter your password used to log on to the VCM web application.
Is Secured	Select if the server host is secured. Supports https or http connection.
Hostname/IP Address	Enter the hostname or IP address on which VCM is installed.
Port	Port for VCM web application.
Report Name	Enter a report name key word to filter the report. Precise and fuzzy queries are supported. For fuzzy query, make sure you add the character "%" before or after the key word. For precise query, enter the key word.
Initial Load Period (months)	Select the number of months from which you want the initial data loaded.

Reference

List of Entities

List of Entities in Excel format

This document is available in the PDFs directory in the Installation DVD, is accessible from the Help Center page in the online Help Center (documentation library), or from the HP Software Product Manual Site (http://h20230.www2.hp.com/selfsolve/manuals).

CloudOptimization Context

The CloudOptimization context gathers data from several data sources.

Data sources of the CloudOptimization context

The CloudOptimization context contains the attributes and classes that relate to the following data sources:

- Amazon Web Services (AWS) offers a complete set of infrastructure and application services that enable you to run virtually everything in the cloud: from enterprise applications and big data projects to social games and mobile apps. One of the key benefits of cloud computing is the opportunity to replace up-front capital infrastructure expenses with low variable costs that scale with your business.

  The integration with AWS provides cost and usage reports based on the cost allocation report provided by AWS account.

  For details, see AWS Data Source in the *IT Executive Scorecard Content Reference Guide for the Integration of Amazon Web Services*.
- 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.

  For details, see CSA Data Source in the *IT Executive Scorecard Content Reference Guide for the Integration of HP Cloud Service Automation*.
- Amazon CloudWatch monitors your Amazon Web Services (AWSCW) resources and the applications you run on AWS in real-time. You can use CloudWatch to collect and track metrics, which are the variables you want to measure for your resources and applications. CloudWatch alarms send notifications or automatically make changes to the resources you are monitoring based on rules that you define. For example, you can monitor the CPU usage and disk reads and writes of your Amazon Elastic Compute Cloud (Amazon EC2) instances and then use this data to determine whether you should launch additional instances to handle increased load. You can also use this data to stop under-used instances to save money. In addition to monitoring the built-in metrics that come with AWS, you can monitor your own custom metrics. With CloudWatch, you gain system-wide visibility into resource utilization, application performance, and operational health.

  For details, see AWSCW Data Source in the *IT Executive Scorecard Content Reference Guide for the Integration of Amazon Web Service CloudWatch*.

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.

Tasks | Reference

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.

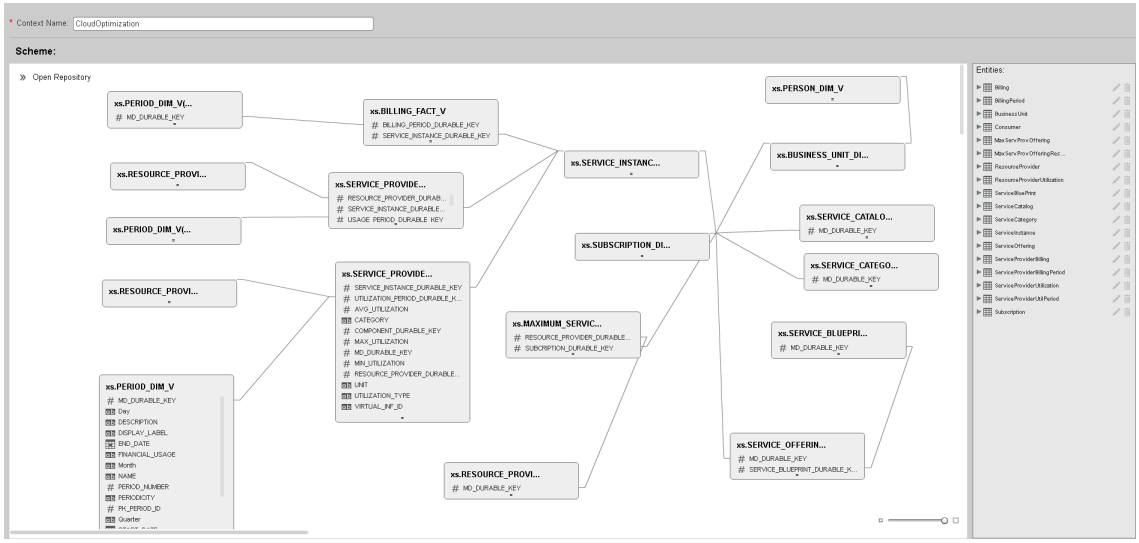
   The structure of the Context is displayed.

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

Reference

Context Tables and Structure

The context includes the following tables and relationships:



Statistics

Entity Count	Field Count	Table Count	Alias Count	Join Count
18	94	18	4	17

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.BILLING_FACT_V	AMOUNT_BASE	NUMERIC
xs.BILLING_FACT_V	RECURRING_FLAG	NUMERIC
xs.BUSINESS_UNIT_DIM_V	Name	STRING
xs.BUSINESS_UNIT_DIM_V	ORG_TYPE	STRING
xs.MAXIMUM_SERVICE_PROVIDER_ OFFERING_V	SERVICE_OFFERING_ DURABLE_KEY	NUMERIC
xs.PERIOD_DIM_V	Day	STRING
xs.PERIOD_DIM_V	Day	STRING
xs.PERIOD_DIM_V	Day	STRING
xs.PERIOD_DIM_V	Month	STRING
xs.PERIOD_DIM_V	Month	STRING
xs.PERIOD_DIM_V	Month	STRING
xs.PERIOD_DIM_V	PERIODICITY	STRING
xs.PERIOD_DIM_V	PERIODICITY	STRING
xs.PERIOD_DIM_V	PERIODICITY	STRING
xs.PERIOD_DIM_V	Quarter	STRING
xs.PERIOD_DIM_V	Quarter	STRING
xs.PERIOD_DIM_V	Quarter	STRING
xs.PERIOD_DIM_V	Week	STRING
xs.PERIOD_DIM_V	Week	STRING
xs.PERIOD_DIM_V	Week	STRING

TABLE_NAME	COLUMN_NAME	TYPE
xs.PERIOD_DIM_V	Year	STRING
xs.PERIOD_DIM_V	Year	STRING
xs.PERIOD_DIM_V	Year	STRING
xs.PERSON_DIM_V	Name	STRING
xs.RESOURCE_PROVIDER_DIM_V	FLAG_INTERNAL	STRING
xs.RESOURCE_PROVIDER_DIM_V	FLAG_INTERNAL	STRING
xs.RESOURCE_PROVIDER_DIM_V	FLAG_INTERNAL	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL0	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL0	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL0	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL1	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL1	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL1	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL2	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL2	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL2	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL3	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL3	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL3	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL4	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL4	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL4	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL5	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL5	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL5	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL6	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL6	STRING

TABLE_NAME	COLUMN_NAME	TYPE
xs.RESOURCE_PROVIDER_DIM_V	LEVEL6	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL7	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL7	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL7	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL8	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL8	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL8	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL9	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL9	STRING
xs.RESOURCE_PROVIDER_DIM_V	LEVEL9	STRING
xs.RESOURCE_PROVIDER_DIM_V	Name	STRING
xs.RESOURCE_PROVIDER_DIM_V	Name	STRING
xs.RESOURCE_PROVIDER_DIM_V	Name	STRING
xs.SERVICE_BLUEPRINT_DIM_V	DISPLAY_LABEL	STRING
xs.SERVICE_BLUEPRINT_DIM_V	NAME	STRING
xs.SERVICE_BLUEPRINT_DIM_V	SVC_BLUPRT_TYPE	STRING
xs.SERVICE_CATALOG_DIM_V	DISPLAY_LABEL	STRING
xs.SERVICE_CATALOG_DIM_V	NAME	STRING
xs.SERVICE_CATEGORY_DIM_V	DISPLAY_LABEL	STRING
xs.SERVICE_CATEGORY_DIM_V	NAME	STRING
xs.SERVICE_INSTANCE_DIM_V	DISPLAY_LABEL	STRING
xs.SERVICE_INSTANCE_DIM_V	NAME	STRING
xs.SERVICE_INSTANCE_DIM_V	SVC_INS_STATE	STRING
xs.SERVICE_OFFERING_DIM_V	CATEGORY	STRING
xs.SERVICE_OFFERING_DIM_V	DISPLAY_LABEL	STRING
xs.SERVICE_OFFERING_DIM_V	MD_DURABLE_KEY	NUMERIC
xs.SERVICE_OFFERING_DIM_V	NAME	STRING

TABLE_NAME	COLUMN_NAME	TYPE
xs.SERVICE_OFFERING_DIM_V	SVC_OFFERING_STATE	STRING
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	STRING
xs.SERVICE_PROVIDER_BILLING_FACT_V	USAGE_TYPE_CATEGORY	STRING
xs.SERVICE_PROVIDER_BILLING_FACT_V	VIRTUAL_INF_ID	STRING
xs.SERVICE_PROVIDER_UTILIZATION_FACT_V	AVG_UTILIZATION	NUMERIC
xs.SERVICE_PROVIDER_UTILIZATION_FACT_V	CATEGORY	STRING
xs.SERVICE_PROVIDER_UTILIZATION_FACT_V	MAX_UTILIZATION	NUMERIC
xs.SERVICE_PROVIDER_UTILIZATION_FACT_V	MIN_UTILIZATION	NUMERIC
xs.SERVICE_PROVIDER_UTILIZATION_FACT_V	UNIT	STRING
xs.SERVICE_PROVIDER_UTILIZATION_FACT_V	UTILIZATION_TYPE	STRING
xs.SERVICE_PROVIDER_UTILIZATION_FACT_V	VIRTUAL_INF_ID	STRING
xs.SUBSCRIPTION_DIM_V	DATE_END_LOC	DATE
xs.SUBSCRIPTION_DIM_V	DATE_START_LOC	DATE
xs.SUBSCRIPTION_DIM_V	INITIAL_PRICE	NUMERIC
xs.SUBSCRIPTION_DIM_V	NAME	STRING
xs.SUBSCRIPTION_DIM_V	RECURRING_PERIOD	STRING
xs.SUBSCRIPTION_DIM_V	RECURRING_PRICE	NUMERIC
xs.SUBSCRIPTION_DIM_V	STATUS	STRING

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
Billing	Amount	xs.BILLING_FACT_V	NULL	AMOUNT_BASE	NUMERIC
Billing	RecurringFlag	xs.BILLING_FACT_V	NULL	RECURRING_FLAG	NUMERIC
BillingPeriod	Day	xs.PERIOD_DIM_V	BILLING_PERIOD	Day	STRING
BillingPeriod	Month	xs.PERIOD_DIM_V	BILLING_PERIOD	Month	STRING
BillingPeriod	PERIODICITY	xs.PERIOD_DIM_V	BILLING_PERIOD	PERIODICITY	STRING
BillingPeriod	Quarter	xs.PERIOD_DIM_V	BILLING_PERIOD	Quarter	STRING
BillingPeriod	Week	xs.PERIOD_DIM_V	BILLING_PERIOD	Week	STRING
BillingPeriod	Year	xs.PERIOD_DIM_V	BILLING_PERIOD	Year	STRING
BusinessUnit	Name	xs.BUSINESS_UNIT_DIM_V	NULL	Name	STRING
BusinessUnit	Type	xs.BUSINESS_UNIT_DIM_V	NULL	ORG_TYPE	STRING
Consumer	Name	xs.PERSON_DIM_V	NULL	Name	STRING
MaxServProvOffering	ServiceOfferingId	xs.MAXIMUM_SERVICE_PROVIDER_OFFERING_V	NULL	SERVICE_OFFERING_DURABLE_KEY	NUMERIC
MaxServProvOfferingResProvider	IsPrivate	xs.RESOURCE_PROVIDER_DIM_V	xs_RESOURCE_PROVID	FLAG_INTERNAL	STRING

Entity Name	Field Name	Source Table Name	Alias Table Name	DB Column Name	Field Type
			ER_DIM_V2		
MaxServProvOfferingResProvider	LEVEL0	xs.RESOURCE_PROVIDER_DIM_V	xs_RESOURCE_PROVIDER_DIM_V2	LEVEL0	STRING
MaxServProvOfferingResProvider	LEVEL1	xs.RESOURCE_PROVIDER_DIM_V	xs_RESOURCE_PROVIDER_DIM_V2	LEVEL1	STRING
MaxServProvOfferingResProvider	LEVEL2	xs.RESOURCE_PROVIDER_DIM_V	xs_RESOURCE_PROVIDER_DIM_V2	LEVEL2	STRING
MaxServProvOfferingResProvider	LEVEL3	xs.RESOURCE_PROVIDER_DIM_V	xs_RESOURCE_PROVIDER_DIM_V2	LEVEL3	STRING
MaxServProvOfferingResProvider	LEVEL4	xs.RESOURCE_PROVIDER_DIM_V	xs_RESOURCE_PROVIDER_DIM_V2	LEVEL4	STRING
MaxServProvOfferingResProvider	LEVEL5	xs.RESOURCE_PROVIDER_DIM_V	xs_RESOURCE_PROVIDER_DIM_V2	LEVEL5	STRING
MaxServProvOfferingRe	LEVEL6	xs.RESOURC	xs_	LEVEL6	STRIN

Entity Name	Field Name	Source Table Name	Alias Table Name	DB Column Name	Field Type
sProvider		E_PROVIDER_DIM_V	RESOURCE_PROVIDER_DIM_V2		G
MaxServProvOfferingResProvider	LEVEL7	xs.RESOURCE_PROVIDER_DIM_V	xs_RESOURCE_PROVIDER_DIM_V2	LEVEL7	STRING
MaxServProvOfferingResProvider	LEVEL8	xs.RESOURCE_PROVIDER_DIM_V	xs_RESOURCE_PROVIDER_DIM_V2	LEVEL8	STRING
MaxServProvOfferingResProvider	LEVEL9	xs.RESOURCE_PROVIDER_DIM_V	xs_RESOURCE_PROVIDER_DIM_V2	LEVEL9	STRING
MaxServProvOfferingResProvider	Name	xs.RESOURCE_PROVIDER_DIM_V	xs_RESOURCE_PROVIDER_DIM_V2	Name	STRING
ResourceProvider	IsPrivate	xs.RESOURCE_PROVIDER_DIM_V	NULL	FLAG_INTERNAL	STRING
ResourceProvider	LEVEL0	xs.RESOURCE_PROVIDER_DIM_V	NULL	LEVEL0	STRING
ResourceProvider	LEVEL1	xs.RESOURCE_PROVIDER_DIM_V	NULL	LEVEL1	STRING

Entity Name	Field Name	Source Table Name	Alias Table Name	DB Column Name	Field Type
ResourceProvider	LEVEL2	xs.RESOURCE_PROVIDER_DIM_V	NULL	LEVEL2	STRING
ResourceProvider	LEVEL3	xs.RESOURCE_PROVIDER_DIM_V	NULL	LEVEL3	STRING
ResourceProvider	LEVEL4	xs.RESOURCE_PROVIDER_DIM_V	NULL	LEVEL4	STRING
ResourceProvider	LEVEL5	xs.RESOURCE_PROVIDER_DIM_V	NULL	LEVEL5	STRING
ResourceProvider	LEVEL6	xs.RESOURCE_PROVIDER_DIM_V	NULL	LEVEL6	STRING
ResourceProvider	LEVEL7	xs.RESOURCE_PROVIDER_DIM_V	NULL	LEVEL7	STRING
ResourceProvider	LEVEL8	xs.RESOURCE_PROVIDER_DIM_V	NULL	LEVEL8	STRING
ResourceProvider	LEVEL9	xs.RESOURCE_PROVIDER_DIM_V	NULL	LEVEL9	STRING
ResourceProvider	Name	xs.RESOURCE_PROVIDER_DIM_V	NULL	Name	STRING
ResourceProviderUtilization	IsPrivate	xs.RESOURCE_PROVIDER_DIM_V	RESOURCE_PROV_UTILIZATION	FLAG_INTERNAL	STRING
ResourceProviderUtilization	LEVEL0	xs.RESOURCE_PROVIDER_DIM_V	RESOURCE_PROV_UTILIZATION	LEVEL0	STRING

Entity Name	Field Name	Source Table Name	Alias Table Name	DB Column Name	Field Type
ResourceProviderUtilization	LEVEL1	xs.RESOURCE_PROVIDER_DIM_V	RESOURCE_PROV_UTILIZATION	LEVEL1	STRING
ResourceProviderUtilization	LEVEL2	xs.RESOURCE_PROVIDER_DIM_V	RESOURCE_PROV_UTILIZATION	LEVEL2	STRING
ResourceProviderUtilization	LEVEL3	xs.RESOURCE_PROVIDER_DIM_V	RESOURCE_PROV_UTILIZATION	LEVEL3	STRING
ResourceProviderUtilization	LEVEL4	xs.RESOURCE_PROVIDER_DIM_V	RESOURCE_PROV_UTILIZATION	LEVEL4	STRING
ResourceProviderUtilization	LEVEL5	xs.RESOURCE_PROVIDER_DIM_V	RESOURCE_PROV_UTILIZATION	LEVEL5	STRING
ResourceProviderUtilization	LEVEL6	xs.RESOURCE_PROVIDER_DIM_V	RESOURCE_PROV_UTILIZATION	LEVEL6	STRING
ResourceProviderUtilization	LEVEL7	xs.RESOURCE_PROVIDER_DIM_V	RESOURCE_PROV_UTILIZATION	LEVEL7	STRING
ResourceProviderUtilization	LEVEL8	xs.RESOURCE_PROVIDER_DIM_V	RESOURCE_PROV_UTILIZATION	LEVEL8	STRING

Entity Name	Field Name	Source Table Name	Alias Table Name	DB Column Name	Field Type
ResourceProviderUtilization	LEVEL9	xs.RESOURCE_PROVIDER_DIM_V	RESOURCE_PROV_UTILIZATION	LEVEL9	STRING
ResourceProviderUtilization	Name	xs.RESOURCE_PROVIDER_DIM_V	RESOURCE_PROV_UTILIZATION	Name	STRING
ServiceBluePrint	DisplayLabel	xs.SERVICE_BLUEPRINT_DIM_V	NULL	DISPLAY_LABEL	STRING
ServiceBluePrint	Name	xs.SERVICE_BLUEPRINT_DIM_V	NULL	NAME	STRING
ServiceBluePrint	Type	xs.SERVICE_BLUEPRINT_DIM_V	NULL	SVC_BLUPRT_TYPE	STRING
ServiceCatalog	DISPLAY_LABEL	xs.SERVICE_CATALOG_DIM_V	NULL	DISPLAY_LABEL	STRING
ServiceCatalog	NAME	xs.SERVICE_CATALOG_DIM_V	NULL	NAME	STRING
ServiceCategory	DISPLAY_LABEL	xs.SERVICE_CATEGORY_DIM_V	NULL	DISPLAY_LABEL	STRING
ServiceCategory	NAME	xs.SERVICE_CATEGORY_DIM_V	NULL	NAME	STRING
ServiceInstance	DisplayLabel	xs.SERVICE_INSTANCE_DIM_V	NULL	DISPLAY_LABEL	STRING
ServiceInstance	Name	xs.SERVICE_INSTANCE_DIM_V	NULL	NAME	STRING

Entity Name	Field Name	Source Table Name	Alias Table Name	DB Column Name	Field Type
ServiceInstance	State	xs.SERVICE_INSTANCE_DIM_V	NULL	SVC_INS_STATE	STRING
ServiceOffering	Category	xs.SERVICE_OFFERING_DIM_V	NULL	CATEGORY	STRING
ServiceOffering	DisplayLabel	xs.SERVICE_OFFERING_DIM_V	NULL	DISPLAY_LABEL	STRING
ServiceOffering	Name	xs.SERVICE_OFFERING_DIM_V	NULL	NAME	STRING
ServiceOffering	ServiceOfferingId	xs.SERVICE_OFFERING_DIM_V	NULL	MD_DURABLE_KEY	NUMERIC
ServiceOffering	State	xs.SERVICE_OFFERING_DIM_V	NULL	SVC_OFFERING_STATE	STRING
ServiceProviderBilling	Cost	xs.SERVICE_PROVIDER_BILLING_FACT_V	NULL	COST_BASE	NUMERIC
ServiceProviderBilling	UsageQuantity	xs.SERVICE_PROVIDER_BILLING_FACT_V	NULL	USAGE_QUANTITY	NUMERIC
ServiceProviderBilling	UsageType	xs.SERVICE_PROVIDER_BILLING_FACT_V	NULL	USAGE_TYPE	STRING
ServiceProviderBilling	UsageTypeCategory	xs.SERVICE_PROVIDER_BILLING_FACT_V	NULL	USAGE_TYPE_CATEGORY	STRING
ServiceProviderBilling	VirtualInfraStructureId	xs.SERVICE_PROVIDER_BILLING_	NULL	VIRTUAL_INF_ID	STRING

Entity Name	Field Name	Source Table Name	Alias Table Name	DB Column Name	Field Type
		FACT_V			
ServiceProviderBillingPeriod	Day	xs.PERIOD_DIM_V	SERVICE_PROV_BILLING_PERIOD	Day	STRING
ServiceProviderBillingPeriod	Month	xs.PERIOD_DIM_V	SERVICE_PROV_BILLING_PERIOD	Month	STRING
ServiceProviderBillingPeriod	PERIODICITY	xs.PERIOD_DIM_V	SERVICE_PROV_BILLING_PERIOD	PERIODICITY	STRING
ServiceProviderBillingPeriod	Quarter	xs.PERIOD_DIM_V	SERVICE_PROV_BILLING_PERIOD	Quarter	STRING
ServiceProviderBillingPeriod	Week	xs.PERIOD_DIM_V	SERVICE_PROV_BILLING_PERIOD	Week	STRING
ServiceProviderBillingPeriod	Year	xs.PERIOD_DIM_V	SERVICE_PROV_BILLING_PERIOD	Year	STRING
ServiceProviderUtilization	AvgUtilization	xs.SERVICE_PROVIDER_UTILIZATION_FACT_V	NULL	AVG_UTILIZATION	NUMERIC
ServiceProviderUtilization	Category	xs.SERVICE_PROVIDER_UTILIZATION_FACT_V	NULL	CATEGORY	STRING
ServiceProviderUtilization	MaxUtilization	xs.SERVICE_PROVIDER_UTILIZATION_FACT_V	NULL	MAX_UTILIZATION	NUMERIC

Entity Name	Field Name	Source Table Name	Alias Table Name	DB Column Name	Field Type
ServiceProviderUtilization	MinUtilization	xs.SERVICE_PROVIDER_UTILIZATION_FACT_V	NULL	MIN_UTILIZATION	NUMERIC
ServiceProviderUtilization	Unit	xs.SERVICE_PROVIDER_UTILIZATION_FACT_V	NULL	UNIT	STRING
ServiceProviderUtilization	UtilizationType	xs.SERVICE_PROVIDER_UTILIZATION_FACT_V	NULL	UTILIZATION_TYPE	STRING
ServiceProviderUtilization	VirtualInfraStructureId	xs.SERVICE_PROVIDER_UTILIZATION_FACT_V	NULL	VIRTUAL_INF_ID	STRING
ServiceProviderUtilPeriod	Day	xs.PERIOD_DIM_V	NULL	Day	STRING
ServiceProviderUtilPeriod	Month	xs.PERIOD_DIM_V	NULL	Month	STRING
ServiceProviderUtilPeriod	PERIODICITY	xs.PERIOD_DIM_V	NULL	PERIODICITY	STRING
ServiceProviderUtilPeriod	Quarter	xs.PERIOD_DIM_V	NULL	Quarter	STRING
ServiceProviderUtilPeriod	Week	xs.PERIOD_DIM_V	NULL	Week	STRING
ServiceProviderUtilPeriod	Year	xs.PERIOD_DIM_V	NULL	Year	STRING
Subscription	DateEnd	xs.SUBSCRIPTION_DIM_V	NULL	DATE_END_LOC	DATE
Subscription	DateStart	xs.SUBSCRIPTION_DIM_V	NULL	DATE_START_LOC	DATE
Subscription	InitialPrice	xs.SUBSCRIPTION_DIM_V	NULL	INITIAL_PRICE	NUMERIC

Entity Name	Field Name	Source Table Name	Alias Table Name	DB Column Name	Field Type
Subscription	Name	xs.SUBSCRIPTION_DIM_V	NULL	NAME	STRING
Subscription	RecurringPeriod	xs.SUBSCRIPTION_DIM_V	NULL	RECURRING_PERIOD	STRING
Subscription	RecurringPrice	xs.SUBSCRIPTION_DIM_V	NULL	RECURRING_PRICE	NUMERIC
Subscription	Status	xs.SUBSCRIPTION_DIM_V	NULL	STATUS	STRING

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

Incoming Network Traffic Metric

Component Type	Metric
Business Questions	
Business Objective	
Description	Network download
Context	CloudOptimization
Data source	AWS ,VCM, HPV
Formula	SUM(ServiceProviderBilling.UsageQuantity , ServiceProviderBilling.UsageTypeCategory ='Data Transfer' and (ServiceProviderBilling.UsageType Like '%-In-Bytes%' or ServiceProviderBilling.UsageType = 'Network Received') and PERIOD_ENTITY = ServiceProviderBillingPeriod)
KPI Formula Filter	N/A
Unit Type	GB
Time Period	Daily
Release	9.40

Outgoing Network Traffic Metric

Component Type	Metric
Business Questions	
Business Objective	
Description	Network upload
Context	CloudOptimization
Data source	AWS ,VCM, HPV
Formula	SUM(ServiceProviderBilling.UsageQuantity , ServiceProviderBilling.UsageTypeCategory ='Data Transfer' and (ServiceProviderBilling.UsageType Like '%-Out-Bytes%' or ServiceProviderBilling.UsageType = 'Network Transmitted') and PERIOD_ENTITY = ServiceProviderBillingPeriod)
KPI Formula Filter	N/A
Unit Type	GB
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

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