Cisco TelePresence Management Suite Analytics Extension

Reference Guide

Version 1.2

D14701 05

August 2012

Contents

Introduction

This document describes the measures and dimensions of the Cisco TelePresence Analytics Extension Data Warehouse cube. The combination of these measures and dimensions make the Cisco TelePresence Management Suite Analytics Extension application programming interface (API).

Supported clients and technologies

The API can be accessed by any client that can connect to Microsoft SQL Server Analysis Services.

Supported technologies include:

- XML for Analysis
- OLE DB for OLAP
- ADOMD /ADOMD.NET

Microsoft Excel as a client

The most commonly used client is Microsoft Excel. For instructions on connecting Excel to the cube, see *Cisco TelePresence Management Suite Analytics Extension Administrator Guide*.

The guide also describes the five Excel sample workbooks that are accessible via the Analytics Extension web interface. Each workbook covers one of the five fact tables described below, and the workbooks each have several worksheets that demonstrate different uses for the fact tables. If you are not familiar with data warehousing concepts and terminology, downloading and exploring the samples while reading this document will make it significantly easier to understand the data model used by the Analytics Extension.

MDX

MDX is a language for querying an OLAP cube. MDX is similar to SQL, but has added support for the multidimensional nature of cubes. When using clients such as Microsoft Excel or Microsoft SQL Server Management Studio to build reports, MDX is generated behind the scenes and sent to the Analysis Services database. Users may also write their own MDX queries to query the cube directly, but describing MDX in detail is beyond the scope of this reference guide.

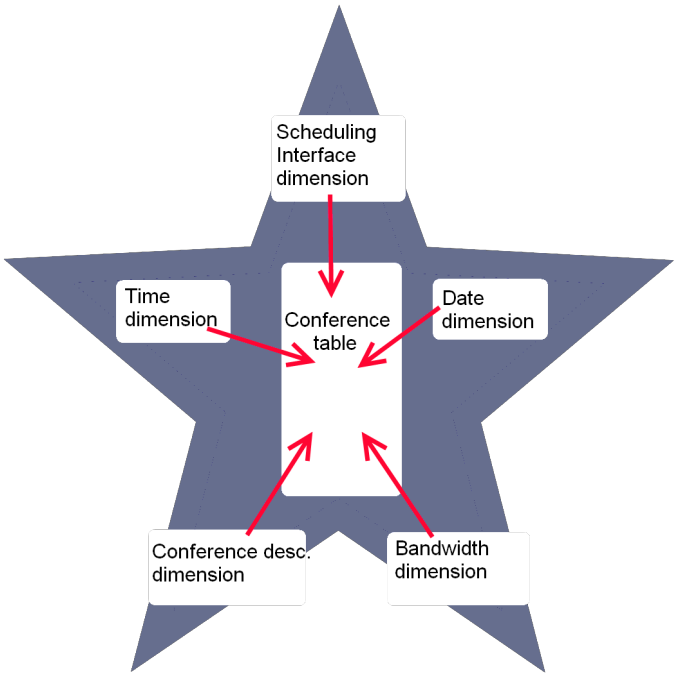
Dimensions and measures explained

The Cisco TMSAE data warehouse stores data in an OLAP cube, a specialized and standardized data structure that allows very fast analysis of large data sets.

An OLAP cube is made up of dimensions and measures.

- Dimensions are derived from dimension tables in the database. Each dimension has several attributes and members.
- Measures are numeric, and are derived from Fact tables in the database. The terms "fact" and "measure" are often used interchangeably.

Dimensions and facts are part of a data model called a star schema (see below). The star schema gets its name from a common visual representation— the fact table is in the center, while the dimension tables surround the fact table.



Each dimension is divided into several attributes. For example, the **System** dimension is broken down into attributes such as **System Name**, **System Manufacturer**, and **IP Address**. Each attribute has several members.

Usage examples

In the table below, the **Day Shortname** attribute of the **Date** dimension and the **Protocol Name** attribute of the **Call Protocol** dimension have been applied on the **Call Count** measure.

	IP (H323)	ISDN (H320)	SIP	Unknown
Sun	17679	597	13286	11
Mon	179257	1416	99897	201
Tue	198380	1332	119425	207
Wed	209295	1643	115372	190
Thu	193905	1587	111051	307
Fri	178052	1521	98886	485
Sat	14778	568	9837	173

Here, the attributes are broken down into members:

- Date has seven members (*Sun*, *Mon*, *Tue*, *Wed*, *Thu*, *Fri*, and *Sat*)
- Protocol Name has four members (*IP (H323)*, *ISDN (H320)*, *SIP*, and *Unknown*).

Only one measure is used, **Call Count**. As Call Count is used in conjunction with **Day Shortname** and **Protocol Name**, each cell shows the total number of calls placed on a particular weekday using a particular protocol. For example, since this particular TMS was set up in December 2008, there have been 209,295 H.323 calls made on Wednesdays.

The example is two-dimensional, using two dimensions and a single measure. Cubes are rarely two-dimensional, as they normally will have multiple measures and multiple dimensions. The Cisco TMSAE cube has five measures and 13 dimensions. Such a cube is harder to visualize than the two-dimension, one measure example above, but is just as easy to use as in the example.

Within each dimension, there are predefined aggregations of levels of measures. These are called hierarchies. Hierarchies make analyzing multiple levels of attributes easier. For example, the **Date** dimension has members such as *Year*, *Month Name*, *Week number*, and *Day Name*. These members are available as a hierarchy for ease of use.

In the example below, the **Peak Actual Video Calls** measure from **Fact MCU Load** is broken down by years, months, weeks, and days.

	Peak Actual Video Calls
⊟2010	46
⊞January	33
⊞February	46
⊟March	38
⊞10	19
⊞11	28
⊞12	36
⊟13	38
Sunday	5
Monday	1
Tuesday	1
Wednesday	1
Thursday	38
Friday	32
Saturday	1
⊞14	33
⊞April	40
⊞May	24
Grand Total	46

Charting number of calls at specific times

A commonly requested report is a simple chart of the number of calls made at specific time intervals. This is easily achieved by taking the **Call count** measure from the fact Call, and combining it with the **Time** dimension. The **Time** dimension defines a hierarchy of granularities, so the user may plot the number of calls made per year, quarter, month, week, day, hour, minute, and even second.

Endpoints are usually organized into a folder structure, often matching the organization's department structure. By combining the **Folder** dimension with the **Call count** measure, it is easy to see which departments are using video the most. You can continue using the time dimension, too, plotting each folders usage over time. The dimensions can also be filtered, allowing you for example to focus on a single folder, or a smaller time period.

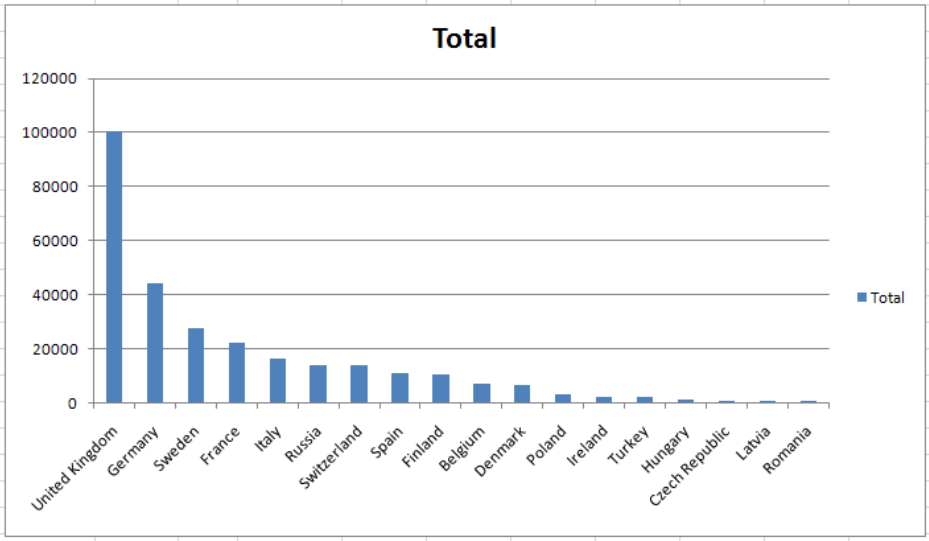
The sample chart below shows that the afternoon was the most popular time for videoconferencing in this department. The Call count measure is here broken down by the 1 Hour Interval member.

Charting number of calls at specific times [p.7]

Charting call count by folder

The example chart below is created by applying the **Folder.Parent Folder Id** hierarchy on the **Call count** measure, and then drilling down to the parts of the hierarchy that concern Europe. The chart shows that in the European part of the organization, the UK department makes the highest number of calls, followed by Germany, Sweden, and France.

Row Labels	Call Count
United Kingdom	100597
Germany	44138
Sweden	27544
France	22115
Italy	16369
Russia	13852
Switzerland	13782
Spain	10823
Finland	10355
Belgium	6944
Denmark	6389
Poland	3084
Ireland	2063
Turkey	1990
Hungary	1051
Czech Republic	943
Latvia	390
Romania	184
Grand Total	**282613**



Both of these examples concern the **Call** fact. **Call** is the most versatile of the measures, and most dimensions are applicable to it. Note that not all dimensions can be used on all facts; see the Dimension applicability matrix [p.29] for an overview.

Dimensions available in Cisco TMSAE

The dimensions available in Cisco TMSAE generally map quite closely to the attributes managed in Cisco TMS.

Dimensions are often organized in hierarchies. For example, the Date dimension can be browsed as a hierarchy starting with Year, from which you can drill down to Month, and then to the days in the month. Each dimension can support multiple such hierarchies. The Date dimension supports:

- Year > Month > Day of Month
- Year > Quarter > Month > Day of Month
- Year > Week > Day of Week

... and several others. Hierarchies are difficult to work with in SQL, and this is an area where MDX is particularly useful.

The following sections of this document describe the dimensions available in the Cisco TMSAE cube.

Date and Time

There are two time dimensions available, Date and Time. The former represents the date, and the latter represents the time of day. Date and Time are two of the most useful dimensions available, and they are applicable to most available measures.

Available attributes (Date)

Name	Description	Example values
Date	Date	■ `2010-01-25 00:00:00` ■ `2010-02-15 00:00:00`
Day in month	Day in month ("1"-"31"), positive integer.	■ `11` ■ `28`
Day in week	Day in week ("1"-"7"), positive integer. "1" is Sunday.	■ `2` ■ `6`
Day in year	Day in year ("1"-"366"); day "366" only applicable in leap years.	■ `21` ■ `56`
Day Name	The name of the day.	■ `Sunday` ■ `Wednesday`
Day Shortname	A shorthand version (three letters) of the day name.	■ `Sun` ■ `Wed`

Name	Description	Example values
Half year number	Half year. "1" is January-June, "2" is July-December.	■ `1` ■ `2`
Is Weekday	Whether a day is a weekday. Mondays to Fridays are "Yes", Saturdays and Sundays are "No".	■ *Yes* ■ *No*
Month Name	Name of the month, "January" to "December".	■ `March` ■ `August`
Month number	Number of the month. January is "1", "December" is "12".	■ `3` ■ `8`
Month Shortname	A shorthand version (three letters) of the month name.	■ `Jan` ■ `Mar` ■ `Apr`
Quarter number	Quarter year. "1" is January to March, "2" is April to June and so on.	■ `2` ■ `4`
Week number	Week numbers, U.S. calendar years. ("1"-"54")*.	■ `5` ■ `34`
Year	All years between 2000 and 2019.	■ `2001` ■ `2012`

Note that some years actually have 54 weeks. In the United States and other countries where Sunday is regarded as the first day of the week, this applies at 28-year intervals, for any year containing a Tuesday February 29. Cisco TMSAE uses Sunday as the first day of the week, not Monday as in the ISO 8601 standard.

Available hierarchies (Date)

Name	Description	Example values
Hierarchy	Year > Month Name > Week number > Day Name	■ `2009 > March > 12 > Sunday` ■ `2010 > January > 5 > Friday`
Year - Week number - Date	Year > Week number > Date	■ `2009 > 12 > 2009-03-15 00:00:00` ■ `2010 > 3 > 2010-01-11 00:00:00`

Name	Description	Example values
Year - Half year - Quarter - Month - Day	Year > Half year number > Quarter number > Month Name > Day in month	■ `2010 > 1 > 2 > April > 7` ■ `2009 > 2 > 4 > November > 3`
Year - Month - Day	Year > Month Name > Day in month	■ `2010 > March > 10` ■ `2009 > September > 9`
Year - Quarter - Month - Day	Year > Quarter number > Month Name > Day in month	■ `2009 > 3 > September > 8` ■ `2010 > 1 > February > 18`
Year - Quarter - Week - Day	Year > Quarter number > Week number > Day Name	■ `2009 > 2 > 14 > Tuesday` ■ `2010 > 2 > 16 > Monday`
Year - Week - Day	Year > Week number > Day Name	■ `2009 > 15 > Saturday` ■ `2010 > 13 > Thursday`

Available attributes (Time)

Name	Description	Example values
1 Hour Interval	One hour intervals	■ `00:00 - 01:00` ■ `19:00 - 20:00`
10 Minute Interval	Ten minute intervals	■ `01:00 - 01:10` ■ `16:30 - 16:40`
3 Hour Interval	Three hour intervals	■ `06:00 - 09:00` ■ `15:00 - 18:00`
30 Minute Interval	Thirty minute intervals	■ `02:30 - 03:00` ■ `05:00 - 05:30`
5 Minute Interval	Five minute intervals	■ `00:55 - 01:00` ■ `02:20 - 02:25`
6 Hour Interval	Six hour intervals	■ `00:00-06:00` ■ `06:00-12:00`

Name	Description	Example values
Hour	One hour intervals, 0-23	■ 1 ■ 5
Minute	One minute intervals, 0-59	■ 7 ■ 45
Minute In Day	One minute intervals, 0-1439	■ 847 ■ 1043
Second	One seconds intervals, 0-59	■ 7 ■ 45
Second In Day	One second intervals, 0-86384	■ 4440 ■ 86220
Time	Timetamp	■ 2008-01-05 00:06:00 ■ 2010-02-02 00:32:00

Available hierarchies (Time)

Name	Description	Example values
Hour - Minute - Second	Hour > Minute > Second	■ 4 > 2 > 0 ■ 23 > 51 > 0
Intervals	6 hour interval > 3 hour interval > 1 hour interval > 30 minute interval > 10 minute interval > 5 minute interval	12:00:00-18:00:00 > 12:00:00-15:00:00 > 13:00:00-14:00:00 > 13:30:00-14:00:00 > 13:50:00-14:00:00 > 13:50:00-13:55:00

System

The System dimension holds information about the video systems that Cisco TMS knows about. It contains information such as the IP, Name, Serial number, Folder, and much more. Video systems include all the systems one can see in the TMS Navigator, including both infrastructure products and endpoints.

Available attributes (System)

Name	Description	Example values
Added Timestamp	When the system was added to Cisco TMS.	■ 2004-09-06 10:37:41.737000000 ■ 2010-04-08 09:59:42.567000000

Name	Description	Example values
Community Name	SNMP community name	■ `public` ■ `video_endpoint`
Folder Id	The Cisco TMS folder ID.	■ `19` ■ `13`
Host name	The host name of the system.	■ `mcu1.example.com` ■ `indiaVCS1.example.com`
IP Address	The IP address of the system.	■ `10.33.11.7` ■ `192.168.0.178`
IP Zone	Which IP zone the system belongs to. Used by TMS to allocate MCU capacity, route calls etc.	■ `France` ■ `Singapore`
IP Zone Max IP Bandwidth	The maximum bandwidth associated with the IP zone above.	`10000`
IP Zone Max Number of Calls	The maximum number of calls associated with the IP zone above.	`1000`
IP Zone URI Domain Name	The domain name TMS uses for routing H.323 calls when doing URI dialing.	`example.com`
Key folder	(for internal use only)	—
Last Updated	The date of the last software update.	■ `2010-01-05 21:48:48.607000000` ■ `2009-02-19 07:00:03.843000000`
Max Audio Calls	The combined maximum number of Audio-only IP+ISDN MCU ports, MultiSite audio sites capability etc.	■ `1` ■ `20`
Max IP Audio	The maximum number of Audio-only IP MCU ports, MultiSite audio sites capability etc.	■ `1` ■ `20`
Max IP Bitrate	The maximum bandwidth for IP calls.	■ `512` ■ `6000`
Max Video Calls	Number of MCU ports, MultiSite capability etc.	■ `1` ■ `80`
Serial number	The serial number of a system.	■ `13A20107` ■ `A1AA02A00064`
Software version	The software the system is running.	■ `F7.4 PAL` ■ `TV2.1.1.200231`

Name	Description	Example values
Specific System Type	The specific model of the system.	■ `TANDBERG 1000MXP` ■ `TANDBERG 1700MXP`
System Category	What type of system or device it is.	■ `Gatekeeper` ■ `Endpoint`
System Identifier Type	How TMS keeps track of the system.	■ `IP Address` ■ `MAC Address`
System Manufacturer	The manufacturer of the system.	■ `TANDBERG` ■ `Polycom`
System Type	A broad class of systems that the specific system belongs to.	■ `Cisco TelePresence Group Systems` ■ `Cisco TelePresence Personal` ■ `TANDBERG MXP`
System Name	The system same in Cisco TMS.	■ `Amsterdam T3` ■ `peter.jones.office`
Time Zone	The time zone the system is set to.	■ `(GMT + 03:00) Moscow, St. Petersburg, Volgograd,` ■ `(GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London`
Time Zone GMT Offset	Same as the above, but only the offset.	■ `+ 03:00` ■ `+ 00:00`
Time Zone Sort Order	A sort order associated with a time zone, as a non-negative real number.	■ `3.0` ■ `9.0`

Available hierarchies (System)

Name	Description	Example values

Category - Type	Category > Type > Specific System Type > Name	`MCU > TANDBERG Codian MCU > TANDBERG Codian MCU 4501 > CompanyMCU1`
		
		`Endpoint > Cisco TelePresence Group Systems > Cisco TelePresence SX20 > alice.jones.sx20`

Name	Description	Example values

Manufacturer - Category - Type	Manufacturer > Category > Type > Specific System Type > Name	`TANDBERG > MCU > TANDBERG Codian MCU > TANDBERG Codian MCU 4501 > CompanyMCU1`
		
		`TANDBERG > Endpoint > Cisco TelePresence Group Systems > Cisco TelePresence SX20 > alice.jones.sx20`

Manufacturer - Type	Manufacturer > Type > Specific System Type > Name	`TANDBERG > TANDBERG Codian MCU > TANDBERG Codian MCU 4501 > CompanyMCU1`
		
		`TANDBERG > Cisco TelePresence Group Systems > Cisco TelePresence SX20 > alice.jones.sx20`

Persistent System

The Persistent System dimension is a variant of the System dimension. Persistent System will always associate call date with updated system information. For example, if a system named "Monster Park" changed its name to "Candlestick Park" at August 1, 2008, the Persistent System dimension will associate all calls both before and after this date with the "Candlestick Park" name. The System dimension, on the other hand, will treat "Monster Park" and "Candlestick Park" as two differently named systems.

The Persistent System dimension has the exact same attributes and hierarchies as the System dimension.

Dial Number

This dimension concerns the domains and numbers that have been dialed.

Available attributes (Dial Number)

Name	Description	Example values
Domain	The domains that have been dialed	■ `example.com` ■ `example.net` ■ `[Unknown Domain]`
Number	The numbers that have been dialed	■ `5701` ■ `7@example.com` ■ `sunil.singh@example.net`

Available hierarchies (Dial Number)

Name	Description	Example values
Domain - Number	A hierarchical view of domains and numbers	`example.com` > `peter.smith@example.com`

Folder

This is the Cisco TMS System Navigator folder structure. It is intended to be used as a hierarchic dimension, with the folder name as the only available attribute.

"Folder Id" and "Key Parent Folder" are used as intermediates when calculating the hierarchy, and will probably not be useful on their own.

Available attributes (Folder)

Name	Description	Example values
Folder Id	The internal ID of the folders of TMS' Systems > Navigator structure	■ `130` ■ `24`
Key Parent Folder	(for internal use only)	

Available hierarchies (Folder)

Name	Description	Example values
Parent Folder Id	A hierarchical view of the Systems > Navigator structure from Cisco TMS.	`Europe` > `Germany` > `Hamburg`

Encryption Mode

This dimension only has one attribute, "Encryption Mode".

Available member (Encryption Mode)

Name	Description	Example values
Encryption Mode	Name of the encryption mode	■ `AES128` ■ `Negotiate`

Bandwidth

This dimension has two members. The two members are closely related, but there are some cases where they differ.

Available attributes (Bandwidth)

Name	Description	Example values
Bandwidth Name	Descriptive name for the bandwidth.	▪ `1920 kbps` ▪ `3G`
Bitrate	The bitrate that the bandwidth uses. For the most part the bitrate is obvious from the bandwidth name, but in some few cases, this does not apply (for example for "3G" and "1xh221").	▪ `128` ▪ `6144`

Conference Description

This is a dimension with a few attributes pertaining to conferences only.

Available attributes (Conference Description)

Name	Description	Example values
Bridging method	How the conference was connected; for example whether it was a point to point conference or an internal or external MCU was used.	▪ `External MCU` ▪ `Internal MCU cascaded` ▪ `Multiway`
Encrypted	A flag indicating whether or not the conference was encrypted.	▪ `If Possible` ▪ `No` ▪ `Yes`
Reservation Type	Classification of the booking. Will be mostly "AdHoc" in many installations.	▪ `Booking` ▪ `RoutedAdHoc` ▪ `Manual Call Launch`

Scheduling Interface

This dimension relates to how the conference was created. For example, using an extension product for Exchange or IBM Lotus Notes, using the Cisco TMS booking interface, or through other means.

Available attributes (Scheduling Interface)

Name	Description	Example values
Key Scheduling Interface	(for internal use only)	
Name	The name of the scheduling interface.	■ `TANDBERG_SCHEDULER` ■ `TMS`
Type	Classification of the scheduling interface. The difference from the Name attribute is that all Exchange servers are grouped together in Type.	■ `TANDBERG_SCHEDULER` ■ `TMS`

VCS

This dimension describes the Cisco VCSs of the installation.

Available attributes (VCS)

Name	Description	Example values
Cluster Name	The name of a cluster of Cisco VCSs.	`vcspool.example.com`
Is Cluster Master	Whether a Cisco VCS is a cluster master.	■ *True* ■ *False*
Is deleted	Whether a Cisco VCS has been deleted from Cisco TMS.	■ *True* ■ *False*
Key VCS	The internal Cisco VCS identifier in Cisco TMS.	■ `1` ■ `2`
Name	The name of the Cisco VCS.	■ `vcs1.example.net` ■ `vcs2.example.net`

Available hierarchies (VCS)

Name	Description	Example values
Cluster - VCS	A hierarchical view of clusters and VCSs	`CHICAGO` > `CHICAGOvcs1`

VCS Cluster

This dimension has only one attribute, relating a VCS cluster name. As of Analytics Extension version 1.1, it is redundant to the VCS dimension.

Available attributes (VCS Cluster)

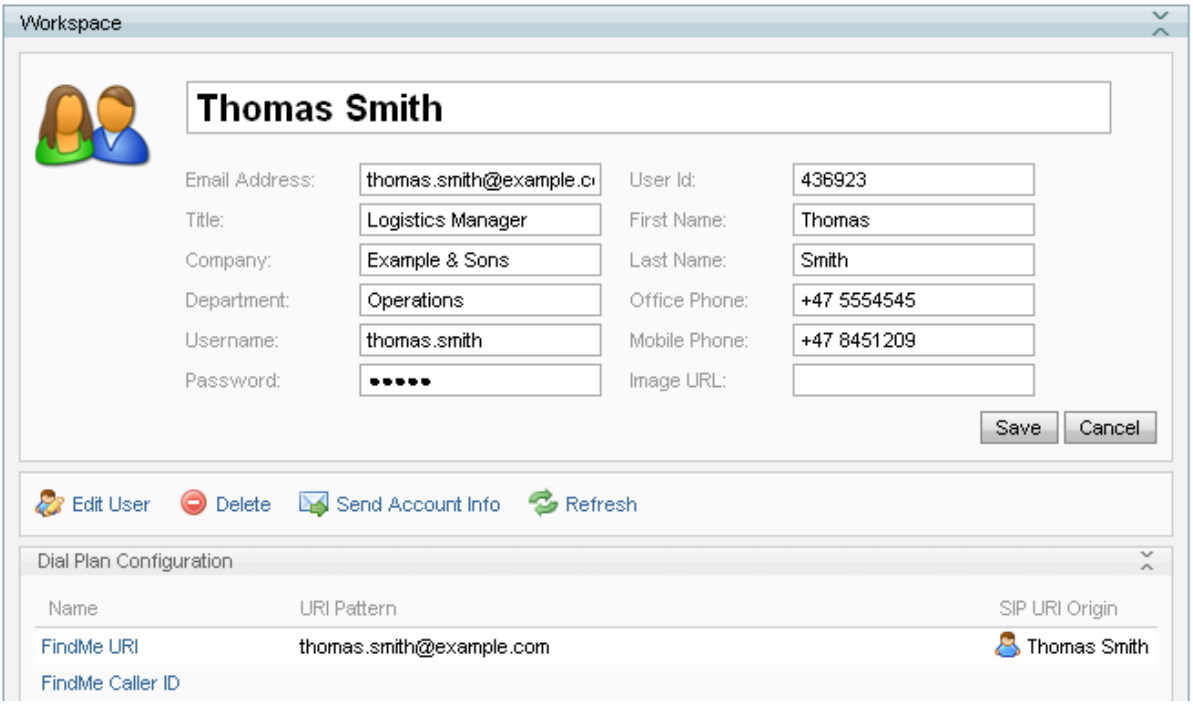
Name	Description	Example values
Name	A cluster of VCSs	▪ `FrankfurtPool.example.com` ▪ `CHICAGO`

User

The user dimension applies to installations using provisioning through either Cisco TMS Agent Legacy or Cisco TelePresence Management Suite Provisioning Extension (Cisco TMSPE).

If one of these provisioning models is deployed, information about the users involved in calls are available in User CDRs in the Cisco TMS web interface and through Cisco TMSAE. The provisioning groups and users will be available as the "User Group" and "User" dimensions respectively. The attributes are the same as in the Provisioning Directory (Legacy) or User directory (Cisco TMSPE).

This screenshot is from a deployment using Cisco TMS Agent Legacy. The fields for each user map to the available attributes in Cisco TMSAE.



Available attributes (User)

Name	Description	Example values
Company	The company of the user	`Example & Sons`
Department	The department of the user	■ `Marketing` ■ `R&D Florida` ■ `Reverse Logistics`
Display Name	The name the user is displayed with in TMS	■ `Thomas Smith` ■ `Bobby Thatcher`
Email Address	The email address of the user	`firstname.lastname@example.com`
FindMe	FindMe URI – as controlled by the URI pattern in TMS' provisioning directory	■ `peter.jones@example.com` ■ `alice.smith@example.com`
Key User	(for internal use only)	
Key User Group	(for internal use only)	
Mobile Phone	The mobile (cell) phone number of the user	`+61 345654654`
Office Phone	The office phone number of the user	`+45 547689235`
Title	The title of the user	■ `Vice President` ■ `Logistics Manager`
Username	The username	■ `peter.jones` ■ `alice.fletcher`

Available hierarchies (User)

Name	Description	Example values
Company - Department - Name	The company, department and name. Corresponds to the text fields **Company**, **Department**, and **Name** in the User Directory.	■ `ACME > UK Sales > Alexander Neville` ■ `ACME > R&D India > Sunil Khan`

User group

Similar to the User dimension above, but applied to User groups .

Available attributes (User group)

Name	Description	Example values
Key User Group	(for internal use only)	
Name	Name as in the Cisco TMS Provisioning Directory or user repository	■ `R&D India` ■ `Sales Canada`

Available hierarchies (User group)

Name	Description	Example values
Key User Group Parent	Level 02 > Level 03 > Level 04	`R&D India` > `Uttar Pradesh` > `Noida`

Cause

Available attributes (Cause)

Name	Description	Example values
Cause Code	The numeric cause code, such as `200` for a SIP call disconnected normally.	■ `200` ■ `480`
Cause Description	A descriptive text version of the cause, this is usually easier to work with for people.	■ `Success` ■ `Temporarily not available`
Cause	A combination of "Cause Code" and "Cause Description".	■ `200 Success` ■ `480 Temporarily not available`
Cause Marks Success	A flag indicating whether the cause marks a successful disconnect or not, useful if you want to filter out unsuccessful calls.	■ `True` ■ `False`
Protocol	The cause code protocol.	■ `SIP` ■ `IP/ISDN`

Call Type

Available attributes (Call Type)

Name	Description	Example values
Call Type	Type of call, such as `Traversal, NonTraversal, Streaming`.	■ `NonTraversal` ■ `Traversal`

Call Protocol

Available attributes (Call Protocol)

Name	Description	Example values
Protocol Name	Name of the protocol.	■ `ISDN (H320)` ■ `SIP` ■ `IP (H323)`

Duration Brackets

This bracket dimension consists of ten predefined time intervals. It can be used to group calls and conferences by their durations.

Available attributes (Duration Brackets)

Name	Description	Example values
Description	Textual description of the intervals	■ `0 seconds` ■ `1-5 minutes` ■ `5-10 minutes` ■ `More than 4 hours`
Key Duration Brackets	Integer associated with the intervals, where 0 is "0 seconds", 1 is "1-30 seconds", 2 is "31-60 seconds" and so on.	■ `0` ■ `1` ■ `2`

Actual System Count Brackets

This bracket dimension consists of ten predefined time intervals. It can be used to group conferences by their number of (actual) participants.

Available attributes (Actual System Count Brackets)

Name	Description	Example values
Description	Textual description of the intervals	■ `No participants` ■ `4 participants` ■ `11-20 participants`
Key Participant Count Bracket	Integer associated with the intervals, where 0 is "No participants", 1 is "1 participant" and so on.	■ `0` ■ `1` ■ `2`

Measures defined by Cisco TMSAE

The following sections describe the measures defined by Cisco TelePresence Management Suite Analytics Extension.

Several of the measures made available are meant for internal use only. These measures are used by Cisco TMSAE as intermediate numbers when making other calculations; for example is "Non Zero Actual Duration" used behind the scenes when "Peak Actual Video Utilization" is calculated.

The measures meant for internal use are included in the tables below for the sake of completeness, but have the description "(for internal use only)". The measures meant for internal use will most likely change in later versions, and you are recommended not to use them when building custom applications based upon the Cisco TMSAE API.

Fact Call

Fact Call contains processed Call Detail Records (CDRs). CDRs are data about all point-to-point calls made between two systems.

Fact Conference versus Fact Call

A conference can be viewed as a collection of multiple point-to-point calls, so a conference with three participants dialing into an MCU creates three CDRs, one for each system-to-MCU connection. This creates three points of data in Fact Call, but only one point of data in Fact Conference.

In many installations the majority of conferences are created in an ad-hoc fashion, unscheduled meetings. In such installations Fact Conference contains a mix of scheduled and ad-hoc conferences. You can use the Conference Description dimension to filter out ad-hoc conferences.

Calls are recorded as going from one system to another and contain information about both the source and the destination call endpoints.

Applicable Dimensions

- Date
- Time
- Bandwidth (Source and Destination)
- Call Protocol (Source and Destination)
- Call Type (Source and Destination)
- Cause (Source and Destination)
- Dial Number (Source and Destination)
- Duration Brackets
- Encryption Mode (Source and Destination)
- Folder (Source and Destination)
- Persistent System (Source and Destination)
- System (Source and Destination)
- User (Source and Destination)
- User Group (Source and Destination)
- VCS (Source and Destination)
- VCS Cluster (Source and Destination)

Except for the Date and Time dimensions, all the dimensions are available for both the source and destination of the call. By default, dimension names refer to the source and the destination is prefixed with "Destination", as in Destination System.

Applying the System dimension to Fact Call gives you data based on the source system of the call, whereas using the Destination System dimension gives you data based on the destination system of the call.

Available measures (Call)

Name	Available Units	Description
Average Call Duration	Days, hours, minutes, seconds	Average duration of the calls (does not include zero-duration calls or unsuccessful calls)
Bandwidth used	Bytes, kilobytes, megabytes, gigabytes	Total bandwidth used by the calls
Call count	Count	Number of calls
Call Duration	Days, hours, minutes, seconds	Duration of the calls

Fact Conference

Fact Conference contains information about conferences, both scheduled and ad-hoc.

If TMS is configured to do ad-hoc discovery, this will also contain a lot of point-to-point calls, not just scheduled conferences. See also the Fact Call section.

Most measures exist in both "actual" and "scheduled" versions. For example, there is both an "Actual Conference Duration" attribute and a "Scheduled Conference Duration" attribute.

Applicable Dimensions

- Duration Brackets
- Actual System Count Brackets
- Bandwidth
- Conference Description
- Encryption Mode
- Key Actual End Date
- Key Actual End Time
- Key Booking Created Date
- Key Booking Created Time
- Key Scheduled End Date
- Key Scheduled End Time
- Key Scheduled Start Date
- Key Scheduled Start Time
- Scheduling Interface

Available measures (Conference)

Name	Available units	Description
Actual Conference Duration	Days, hours, minutes, seconds	The actual duration of the conferences

Name	Available units	Description
Actual System Count	Count	The aggregate number of actual systems in conferences
Average Actual Conference Duration	Days, hours, minutes, seconds	The average actual duration of conferences
Average Conference Participant Count	Count	The average actual number of participants
Average Scheduled Conference Duration	Days, hours, minutes, seconds	The average scheduled conference duration
Conference Count	Count	The count of all conferences
Conferences With Error Count	Count	The count of conferences with errors, for example participants that the MCU was unable to connect to
Conferences With Participants Count	Count	The count of conferences with a non-zero number of participants
Non Zero Actual Duration		(for internal use only)
Non Zero Scheduled Duration		(for internal use only)
Scheduled Conference Duration	Days, hours, minutes, seconds	The scheduled duration of conferences

Fact Call Load

Call Load contains information about the number of concurrent calls. The only applicable dimensions are Time and Date. Note that the measures are peaks, meaning that if you look at the concurrent call count for a single day, you get the highest number seen during that day. As the resolution of the data is minutes, you can use the date and time dimension together to find exactly what minute of the day the peak was seen.

Applicable Dimensions

- Date
- Time

Available measures (Call Load)

Name	Available Units	Description
Peak Call Rate	Bits/s	The maximum concurrent bitrate used by all the active calls.
Peak Concurrent Calls	Count	The maximum number of concurrent calls.

System

System is available both as a fact and a dimension. As a fact it offers a single measurement, the "System Count", which can be used together with the System dimension to count how many systems from each

manufacturer you have or the number of MCUs, endpoints, or gatekeepers.

Applicable Dimensions

- Folder
- System

Available measures (System)

Name	Available Units	Description
System Count	Count	The number of systems in Cisco TMS.

Fact MCU Utilization

Fact MCU Utilization contains information about the MCU usage in the installation.

Note that many of the measures are peaks. For example, the Peak Audio Port Utilization at a given date will show the highest percentage of audio utilization on a given date. The combined Date And Time dimension can be used to find at exactly what minute of the day the peak was seen, as the resolution of the data is minutes.

Applicable Dimensions

- Date
- System
- Time

Available measures (MCU Utilization)

Name	Available Units	Description
Audio Bitrate Utilization		The relative usage of the available audio bitrate (Peak Audio Bitrate Usage / Available MCU Bitrate).
Available MCU Audio Ports	Port count	The number of available audio ports.
Available MCU Bitrate	Bits	The available MCU bitrate.
Available MCU Video Ports	Port count	The number of available video ports.
Peak Actual Used Audio Ports	Port count	The peak number of used audio ports.
Peak Actual Used Video Ports	Port count	The peak number of used video ports.
Peak Audio Bitrate Usage	Bits	The peak bitrate used for audio calls.

Name	Available Units	Description
Peak Audio Port Utilization		The peak relative usage of video ports (Peak Actual Used Audio Ports / Available MCU Video Ports).
Peak Video Bitrate Usage	Bits	The peak bitrate used for video calls.
Peak Video Port Utilization		The peak relative usage of video ports (Peak Actual Used Video Ports / Available MCU Video Ports).
Video Bitrate Utilization		The relative usage of the available video bitrate (Peak Video Bitrate Usage / Available MCU Bitrate).

Dimension applicability matrix

Rows in the table below that mention "(source and destination)" refer to two separate measures. For example, "Call Protocol (source and destination)" refers to the two different measures "Source Call Protocol" and "Destination Call Protocol". These measures are grouped together for the sake of clarity.

Dimension	Call	Conference	Call Load	MCU Utilization	System
Date	X	X	X	X	
Time	X	X	X	X	
System (source and destination)	X				
System				X	X
Persistent System (source and destination)	X				
Bandwidth (source and destination)	X				
Bandwidth		X			
Call Protocol (source and destination)	X				
Call Type (source and destination)	X				
Cause (source and destination)	X				
Dial Number (source and destination)	X				
Duration Brackets	X	X			
Encryption Mode (source and destination)	X				
Folder	X				X
Folder (destination)	X				
Conference Description		X			
Scheduling Interface		X			
Actual System Count Brackets		X			
VCS (source and destination)	X				
VCS Cluster (source and destination)	X				
User (source and destination)	X				
User Group (source and destination)	X				

Bibliography

All documentation for the latest version of Cisco TMSAE can be found at http://www.cisco.com/en/US/products/ps11472/tsd_products_support_series_home.html.

Title	Reference	Link
Cisco TelePresence Management Suite Analytics Extension Release Notes (1.2)	D14984	http://cisco.com
Cisco TelePresence Management Suite Analytics Extension Administrator Guide	D14668	http://cisco.com
Cisco TelePresence Management Suite Analytics Extension Installation Guide	D14657	http://cisco.com