NORTEL

Carrier VoIP

Session Server Trunks Performance Management

Document status: Standard
Document version: 04.02
Document date: 20 October 2006

Contents

New in This Release

The following sections list what's new in Session Server Trunks (SST) Performance Management in this release.

- Features

- Other changes

Features

There are no feature changes to SST Performance Management in this release.

Other changes

The OM sections are reorganized alphabetically.

Performance management strategy

Like other components in the Carrier VoIP environment, Session Server Trunks (SST) records operational measurements (OMs) for various performance-related data items. These OMs are essential information sources for determining preventive and corrective maintenance actions, as well as identifying provisioning problems or capacity limitations. All OMs collected are directly related to the SIP Gateway application.

OMs are viewed using a command line interface (CLI), accessed either through a secure shell (SSH) connection or through the IEMS. OMs cannot be viewed directly through the IEMS.

OM data recorded on one unit of a SST node is completely independent of data recorded on its mate unit. Data is not transferred from one unit to another during synchronization activities.

In addition to OM data, performance measurements contained in a MIB template on the Integrated Element Management System (IEMS) are collected from the SST. The table that follows provides a list of the performance measurements collected from the SST.

Performance measurements collected from the SST

Performance measurement	Type	Description
sysDescr	string	Indicates system information.
snmpInPkts	counter	Indicates the number of SNMP messages received by the SNMP agent on the SST.
snmpOutPkts	counter	Indicates the number of SNMP messages sent by the SNMP agent on the SST.
snmpInBadVersions	counter	Indicates the total number of SNMP messages received with an error-status field value of 'badValue'.

Performance measurement	Type	Description
snmpInBadCommunityNames	counter	Indicates the total number of SNMP messages received by the SNMP agent on the SST for an unsupported SNMP version.
snmpInBadCommunityUses	counter	Indicates the total number of SNMP messages delivered to the SNMP agent on the SST for SNMP operations not allowed by the SNMP community named in the SNMP message.
snmpInASNParseErrs	counter	Indicates the total number of ASN.1 or BER errors encountered by the SNMP agent on the SST when decoding received SNMP messages.
snmpInTotalReqVars	counter	Indicates the total number of MIB objects retrieved successfully by the SNMP agent on the SST as a result of receiving valid SNMP Get-Request and Get-Next messages.
snmpInTotalSetVars	counter	Indicates the total number of MIB objects that have been altered successfully by the SNMP agent on the SST as the result of receiving valid SNMP Set-Request messages.
snmpOutTraps	counter	Indicates the total number of SNMP trap messages generated by the SNMP agent on the SST.
snmpSilentDrops	counter	Indicates the total number of GetRequest, GetNextRequest, GetBulkRequest, SetRequest, and InformRequest messages delivered to the SNMP agent on the SST which were silently dropped because the size of a reply containing an alternate Response message with an empty variable-bindings field was greater than either a local constraint or the maximum message size associated with the originator of the request.
hrSystemUptime	time ticks	Indicates the amount of time since the SST was last initialized.
hrSystemDate	string	Indicates the system time and date.

Performance measurement	Type	Description
hrSystemProcesses	unsigned	Indicates the number of process contexts loaded or running on the SST.
hrStorageIndex	integer	Identifies a unique storage area on the SST. The index starts at 1 and increments for each Filesystem Name entry.
hrStorageType	object identifier	Indicates the type of storage associated with the hrStorageIndex.
hrStorageAllocationUnits	integer	Indicates the block size, in bytes, of the filesystem.
hrStorageSize	integer	Indicates the size of the filesystem represented by the entry, in units of hrStorageAllocationUnits.
hrStorageUsed	integer	Indicates the amount of allocated storage for this entry, in units of hrStorageAllocationUnits.
hrStorageAllocationFailures	counter	Indicates the number of requests for storage on this filesystem that could not be honored due to not enough free storage.

Monitoring SIP-T DPT call processing traffic levels

Operational measurements, related to SIP-T DPT call capacity limits and collected on the core, collect information related to current equipment and software load capacities, showing the load process for each SIP-T DPT trunk group.

Service monitoring

Operational measurements can indicate service level degradation for the SST when used with alarms indicating that resources are running low. This information helps to determine the corrective action which can include equipment repair.

Overload controls

Call processing overload control is detected by monitors in the SIP Gateway application, performed by applying flow control to throttle new originations and discarding packets from babbling nodes, and indicated by STGW700 log reports and OM group SIP_OVERLOAD.

The SIP Gateway applications considers three factors to detect pending overload and overload conditions: CPU occupancy, and the size of the Generic Control Protocol (GCP) and SIP message queues.

Overload is entered when CPU occupancy or either message queue exceeds the overload threshold. A major STGW700 is generated and flow control is applied to throttle new originations.

Pending overload is entered when CPU occupancy or either message queue approaches the overload threshold. A minor STGW700 is generated. No flow control is applied when in pending overload, but as a unit recedes from overload to pending overload, existing flow control measures are loosened to allow more originations.

Flow control

Once in overload, flow control is applied to both CS 2000 originated calls and remote SIP server originated calls. Existing calls are not affected. For each sample period the flow control rate is adjusted. If the unit remains in overload, the percentage of new originations is reduced. If the unit exits overload, then the percentage of allowed originations is increased. Increasing the flow control rate gradually ensures that the unit does not bounce back into overload.

When an origination is rejected, a 503 Service Unavailable is sent in response to SIP originations. For GCP originations, a local cause of 42 is sent.

Babbling node detection and isolation

Every five seconds, the SIP Gateway application scans a counter associated with each IP address. If 20 new bad messages have been received from an IP address since the previous scan, then the IP address is removed from service such that no new messages from the IP address are processed by the SIP Gateway application. When a node is marked as babbling, then messages from that node are ignored for five minutes, all access links to the remote SIP server are removed from service. At the CS 2000, the corresponding trunks are put in a SYS state. This disables all incoming and outgoing calls from the remote SIP server. A STGW700 log is generated and indicates the IP address of the node.

After the five minute interval ends, messages from the node are permitted again. The same criteria are applied to detect and isolate the node if it continues to send excessive SIP messages with syntax errors.

Disabled babbling nodes are automatically enabled when remote SIP server configuration data is changed, the SIP Gateway application is suspended and unsuspended, and when a SWACT is performed.

Overload indication and monitoring

OM group SIPGW_OVERLOAD is available to indicate the current status of CPU occupancy, and message queue size. This is available when operating normally, in pending overload, or in overload.

STGW700 is enhanced to indicate changes in flow control rate, IP address removal and re-addition related to babbling, and when a CPU occupancy threshold is crossed.

Operational measurement terminology

This section describes operational measurement terms and usage.

Register

A *register* is a peg counter in the SST software that stores counts for a variety of events. Each register has a name that contains a maximum of 32 alphanumeric characters. Up to 32 registers are grouped logically into what is called an OM group.

OM Group

An OM group is a logical collection that contains a maximum of 32 related OM registers. Each OM register can only be associated with one OM group, but peg counts for OM groups can be sorted into more than one class. OM groups can belong to more than one class. Some OM groups' peg counts can be queried based on tuples.

The SIP Gateway application software defines the OM groups and the fields. Different software versions and releases may contain different sets of OM groups. OM groups cannot be defined by the user.

OM classes - active and holding

Two OM classes are used: *Active and Holding*. During the collection interval (the same as the holding period), software processes that run within the SIP Gateway application increase or peg the registers in the Active class for all OM groups. For example, calls attempted or calls answered are recorded during the collection interval in the active registers of the SIPGW_CALLP OM group. Once the collection interval has elapsed, a system process moves the active register's collected data into the holding registers, for all OM groups.

In addition to the active and holding registers, the class variable LASTFIVE is defined for holding only the last five minutes of active register peg counts, for all OM groups. When querying OM groups by class, the last five minutes of peg count activity for the selected group using LASTFIVE.

Register precision

Registers in the Active and Holding classes are 32 bit, double precision registers and have a peg count capacity of 4 294 967 296 counts.

Tuple OM group

OM groups can have multiple collections of register counts for each register class (active, holding, lastfive). These collections are referred to as tuples. Each tuple's peg counts are associated with a logical entity. In the case of OM groups SIPGW_CALLP, SIPGW_SERVICE, and SIPGW_MISC, the logical entity that pegs are made against is the SIPLINK (see core table SIPLINK).

OM tuple key name and key number

A key name and key number are associate with each tuple defined for an OM group. The SIP link names, each representing a specific SIP trunk, are used for the tuple key names. Each SIP link name is also assigned a key number. Link names are associated with the SIP trunk names found in Core table SIPLINK.

Available link names can be determined using procedure Adding and managing Access Link Maps in *Session Server Trunks Configuration Management* (NN10338-511). In general, link names start with prefix LN. Link numbers can range from 0 to 4 294 967 295.

Viewing OM peg counts by tuple key number and tuple key name is supported for the SIPGW_CALLP, SIPGW_SERVICES, and SIPGW_MISC OM groups, but not for the SIPGW_TLS OM group. Viewing OM peg counts for OM group SIPGW_TLS displays only the individual registers.

OM holding period and displaying OM classes

The system collects OM data during a specified time interval (called a *collection period*) and stores the data in the active registers. After this interval elapses, the system transfers the data to the holding registers. The *transfer or holding periods* (synchronized with the collection period) used on SST are 15 or 30 minutes, with 15 minutes being the default. The alignment of the holding period is always to the top of the hour and the OM reporting intervals are multiples of the holding period.

At the end of each transfer/collection period, the counts in Active class registers transfer to Holding class registers. The software processes clear (zero) the Active class registers to reset them, so they can begin counting events in the next collection period. The Active class registers always contain counts for the current holding period. The Holding class registers always contain counts from the previous holding period. Data in both the active and holding registers is available for review using the `omshow` command.

As an example, if the holding period time is 30 minutes and the current time is 4:50 PM. The active registers represent 4:30-4:50 PM and the holding registers represent 4:00-4:30 PM. Finally at 5:00 PM the active registers are copied to the holding registers.

In addition to the above example, the values of OM groups and their registers can be output for the current five minute interval. For example, if the current time is 4:04:39 PM, the register values for the last 4 minutes and 39 seconds can be output using the LASTFIVE option.

Limitations of recording and displaying operational measurements

OM registers pegged for an application such as the SIP Gateway application may not reach the OM subsystem for a full minute. This impacts what is displayed when using the `omshow` command.

OM group register data pegged on one unit of a SST node is independent of register data on its mate unit. Register data is not transferred from one unit to another.

Initial configuration of performance and operational measurements

By default, the collection/holding period is set to 15 minutes but can be changed to 30 minutes. There are no other OM parameters that can be modified.

Tools and utilities for accessing and reviewing OMs

The OM viewing utility `omshow` is accessed from the CLI (command line interface). Similarly, the comma separated value (CSV) history files can be viewed with the CLI using standard UNIX cat or vi commands.

Current OM groups and the OM history files are viewed either through the IEMS manager or directly using an SSH (secure shell) connection to the active or standby SST units.

For more information about using IEMS to access the CLI, refer to procedure "Accessing SST/NCGL GUIs or CLI using the IEMS" found in the *Session Server Trunks Security and Administration* (NN10346-611). For more information about accessing OMs using SSH, refer to procedure "Logging in remotely using a secure shell (SSH)" found in the *Session Server Trunks Security and Administration* (NN10346-611).

Operational measurement information output to CSV files

While the `omshow` function provides recent information, it does not provide access to performance information older than 30 minutes or 60 minutes, depending on the holding period. In certain circumstances, this historical information may prove to be valuable. Therefore, OM information is also

saved from the holding registers to comma separated value (CSV) ASCII files on the hard drives. Two sets of file groups are created for storing OM information: traffic history files and standard history files.

- Traffic history files contain the last 30 minutes of generated OM information. Each of six traffic files consists of a particular five minute interval within the thirty minute time frame. Traffic history files are located at the following path: `/opt/apps/ngsspm/trafhist`. Traffic history files are named using the following format: NGSS.TRAF_OMs.QoS.<year>.<month>.<hour>_<minute>.<seconds>_<timezone>.csv

- Standard history files represent the last 24 hours of all OM information generated. If the OM collection holding period is 15 minutes, then a total of 96 files are kept, representing the last 24 hours of generated OM information. However if the collection interval is 30 minutes, then only 48 files are kept. Standard history files are located at the following path: `/opt/apps/ngsspm/stdhist`. Standard history files are named using the following format:NGSS.STD_OMs.QoS.<year>.<month>.<hour>_<minute>.<seconds>_<timezone>.csv

Sample CSV file contents

```
PMFile=Begin MeasurementCategory,FileCreationTime,EarliestSta
rtTime,LatestCaptureTime,RegisterTypeDefault,ValueTypeDefault
pm,2005.9.22_14.00_EDT,unknown,unknown,counter,integer System=Begin
SystemId
SessionServer
Entity=Begin EntityId 47.142.97.115-rtpf_unit0 SubEntity=Begin
SubEntityId
Unit0
Table=Begin TableId,MeasurementKind,IntervalDuration,CaptureTime,Rea
liability SIPGW_CALLP,PeriodBased,15,unknown,Valid Label,Label,Labe
l,Label,Label,Label,Label,Label,Label,Label,Label,Label,Label
Key,KeyName,IC_CALL_ATTEMPTS,OG_CALL_ATTEMPTS,CALLS_ABANDONED,CALLS_ANSW
ERED,CALLS_REJECTED,CALLS_REDIRECTED,OVRLD_CALLS_REJECTED,SIPGW_CALLP_SP
ARE_1,SIPGW_CALLP_SPARE_2,SIPGW_CALLP_SPARE_3,
SIPGW_CALLP_SPARE_4,SIPGW_CALLP_SPARE_5 Value,Value,Value,Value,Value,Va
lue,Value,Value,Value,Value,
Value,Value,Value
0,SIPLINKNAME1,0,0,0,0,0,0,0,0,0,0,0,0
1,SIPLINKNAME2,0,0,0,0,0,0,0,0,0,0,0,0
2049,SIPLINK_UNKNOWN,0,0,0,0,0,0,0,0,0,0,0,0
Table=End
.
.
.
.
SubEntity=End
```

```
Entity=End
System=End
PMFile=End
```

SST OM groups and register descriptions

This section describes the following SST OM groups:

- "NCAS_LINK" (page 26) - records the state changes of the NCAS Link and the number of messages sent and received over the NCAS Link

- "SIPGW_CALLP" (page 29) - records call processing events

- "SIPGW_MISC" (page 33) - records miscellaneous call events

- "SIPGW_OOB" (page 39) - records the out-of-band related SIP messages sent and received between the SST and the MCS 5200

- "SIPGW_OVERLOAD" (page 43) - records CPU occupancy and call processing message queue size

- "SIPGW_NCAS" (page 36) - records the out-of-band related transaction capabilities application part (TCAP) messages send and received between the SST and the CS 2000

- "SIPGW_SERVICES" (page 47) - records call type events

- "SIPGW_TLS" (page 52) - records TLS callp security events

SST callp OMs generated on the core

There are OMs on the Core used for SST callp measurements. Core OM group, NGSSOM provides information on the maximum number of simultaneous calls that utilize the SST platform, and provides an indication of the number of times the CS2B0008 and CS2B0009 SOC limit settings have been exceeded.

The registers included in OM group NGSSOM are as follows:

- register CS2CSHW - holds the value of the highest number of simultaneous SIPT calls that utilize the SST platform to handle a call to or from another CS 2000 (CS2CSHW2 is the overflow register)

- register CS2ASHW - holds the value of the highest number of simultaneous SIPT calls that utilize the SST platform to reach a far-end SIP application server (CS2ASHW is the overflow register)

- register CS2CSOV - holds the number of times a SIPT call did one of the following (CS2CSOV2 is the overflow register):

  — attempted to utilize the SST platform to reach a far-end CS 2000 and was not allowed to complete because it would have exceeded the limit set by the usage SOC CS2B0008

— was received from a far-end CS 2000 through the SST platform and was not allowed to complete because it would have exceeded the limit set by the usage SOC CS2B0008

- register CS2ASOV - holds the number of times a SIPT call did one of the following (CS2ASOV2 is the overflow register):

— attempted to utilize the SST platform to reach a far-end SIP application server and was not allowed to complete because it would have exceeded the limit set by the usage SOC CS2B0009

— was received from a far-end SIP application server through the SST platform and was not allowed to complete because it would have exceeded the limit set by the usage SOC CS2B0008

To view callp OMs generated on the core, refer to the CS 2000 Performance Management NTP applicable to your solution.

Monitoring the SST resources for optimal performance

Currently there are no procedures or practices for altering the performance of the SST or its applications.

Platform resources such as memory, CPU and disk drive file system usage use preset thresholds for generating alarms. You can monitor these parameters using procedures in the *Session Server Trunks Fault Management* (NN10332-911). You can change performance monitoring thresholds for file systems only using the *Session Server Trunks Configuration Management* (NN103387-511).

Generating performance reports

No performance reports are available.

Procedures for viewing operational measurements

The following table lists the available performance management procedures.

Procedure
"Viewing SST operational measurements" (page 17)
To view the status of platform resources such as memory and disk usage, refer to procedure "Viewing the operational status of a SST NCGL platform" found in the *Session Server Trunks Security and Administration* (NN10346-611).
To change the parameters for file system monitoring, refer to the *Session Server Trunks Configuration Management* (NN10338-511).

Viewing SST operational measurements

Purpose of this procedure

Use this procedure to display operational measurement (OM) information for the supported SST OM groups.

Limitations and restrictions

The following restrictions and limitations apply to this procedure:

- This procedure cannot be used to access long-term OM information or information that is older than 24 hours.

- The SIPGW_TLS group does not have dynamic OMs based on variable SIPLINK.

- Starting in SN08, OM group parameter ALL is no longer supported when using the omshow command.

Prerequisites

OMs cannot be viewed directly by the IEMS.

Refer to procedure "Logging in remotely using a secure shell (SSH)," found in *Session Server Trunks Security and Administration* (NN10346-611) to access a command line interface (CLI) using an available client workstation.

Refer to section "SST OM groups and register descriptions" (page 15) for details about using the **omshow** command to display all or parts of the OM groups and to change settings related to OM registers and OM holding periods.

Action

Step	Action

At a the NCGL CLI

1   Log in with the mtc user account.

2   To view registers for a specific OM group, at the prompt type:

```
$ omshow <omgroup> <class> <tuple_info>
```

and press Enter.

Where

omgroup

a required value, is one of the supported SST OM groups.

`class`

a required value, is a class of OM group:

- holding (for the holding registers)

- active (for the active registers)

- lastfive (for the last five minutes of active register peg counts)

- zero (zeros out both the active and lastfive registers)

`tuple_info`

an optional value, is a tuple information parameter:

- tuple key number: enter a tuple key number from 0 to 2050.

- tuple key range: enter a range of tuple values from 0 to 4 294 967 295, separated by a space. For instance, 0 10 will display tuples 0 through 10.

- tuple key name: enter a valid tuple key name. Refer to procedure "Adding and Managing Access Link Maps" in *Session Server Trunks Configuration Management* (NN10338-511) to determine valid SIP link names used for tuple key names.

- tuple key name range: enter a valid range of SIP link names, in the order shown by using the tuple key range. Refer to procedure Adding and Managing Access Link Maps" in *Session Server Trunks Configuration Management* (NN10338-511) to determine valid link names.

3   Refer to section "Additional information - alternate syntax for omshow" (page 18) to review example of other command details.

—End—

Additional information - alternate syntax for omshow

Use the commands in the following table to view different kinds of OM data view tuple and link peg counts, to zero out registers and to set the holding period value.

Viewing OM peg counts by tuple key number and tuple key name is supported for the SIPGW_CALLP, SIPGW_SERVICES, and SIPGW_MISC OM groups.

omshow command syntax

omshow command syntax	Description
omshow omshow help	Displays a list of the required command syntax along with a complete list of available OM groups. Several simple command syntax examples are also shown.
omshow <omgroup> active	Displays the active class register peg counts for all tuples in the selected OM group.
omshow <omgroup> holding	Displays the holding class register peg counts for all tuples in the selected OM group.
omshow <omgroup> lastfive	Displays the last 5 minutes of active register peg counts for all tuples in the selected OM group.
omshow <omgroup> zero	Zeros the active and lastfive registers for a selected OM group.
omshow holdingperiod 30	Sets the holding period to 30 minutes.
omshow holdingperiod 15	Sets the holding period to 15 minutes (default).
omshow <omgroup> lastfive 0	Displays all the register counts from the last five minutes for tuple number 0 in the selected OM group.
omshow <omgroup> active LN2RTPF_IT1	Displays all the active register counts for the tuple key name ln2rtpf_it1, for the selected OM group.
omshow <omgroup> active 0 20	Displays all the active register counts for the range of tuple numbers 0 through 20, for the selected OM group.
omshow <omgroup> active LN_NGSS_TEST LNIT_LOOP1	Displays all the active register counts for the range of tuple key names from LN_NGSS_TEST through LNIT_LOOP1, for the selected OM group.
	You can obtain the range order of the tuple key names by first using the tuple number option to view a range of tuple numbers and associated tuple names (SIP link names).

omshow query command examples

The following views show examples of using the omshow command and the system responses:

Querying SIPGW_TLS OM group registers

```
[mtc]$ omshow sipgw_tls lastfive
=================================================================
Lastfivemin Register Count
START Tue Feb 15 16:45:00 2005   STOP Tue Feb 15 16:49:12 2005

OMGROUP: SIPGW_TLS
*****************************************************************

TUPLE KEY: 0            TUPLE KEY NAME:

Register Name                            Value
------------------------------        ----------
TLS_CALLS                                  0
TLS_CONNECTION_REQUESTS                    0
TLS_CONNECTION_REQUESTS_PASSED             0
TLS_CONNECTION_REQUESTS_DROPPED            0
TLS_CONNECTION_REQUESTS_FAILED             0
TLS_HANDSHAKE_AUTHENTICATED                0
TLS_HANDSHAKE_AUTHENTICATION_FAILED        0
TLS_CONNECTION_CLOSE                       0
TLS_CONNECTION_DROPPED                     0
TLS_EXTERNAL_SESSION_CACHE_HIT             0
TLS_EXTERNAL_SESSION_CACHE_MISS            0
TLS_EXTERNAL_SESSION_CACHE_EXPIRED         0
TLS_EXTERNAL_SESSION_REMOVED_FULL          0
*****************************************************************

[mtc]$
```

Querying OM group tuples based on key name and key number

```
[mtc]$ omshow sipgw_callp active ln2rtpf_it1
=================================================================
Active Register Counts
START Mon Feb 14 22:00:00 2005   STOP Mon Feb 14 22:00:24 2005

OMGROUP: SIPGW_CALLP
****************************************************************

TUPLE KEY: 0     TUPLE KEY NAME: LN2RTPF_IT1

Register Name                          Value
-------------------------------        ----------
IC_CALL_ATTEMPTS                                0
OG_CALL_ATTEMPTS                                0
CALLS_ABANDONED                                 0
CALLS_ANSWERED                                  0
CALLS_REJECTED                                  0
CALLS_REDIRECTED                                0
OVRLD_CALLS_REJECTED                            0
****************************************************************

[mtc]$




[mtc]$ omshow sipgw_callp active 50
=================================================================
Active Register Counts
START Mon Feb 14 21:45:00 2005   STOP Mon Feb 14 21:55:46 2005

TUPLE KEY: 50          TUPLE KEY NAME: LNSS2SSD_IT_2

Register Name                          Value
-------------------------------        ----------
IC_CALL_ATTEMPTS                                0
OG_CALL_ATTEMPTS                                0
CALLS_ABANDONED                                 0
CALLS_ANSWERED                                  0
CALLS_REJECTED                                  0
CALLS_REDIRECTED                                0
OVRLD_CALLS_REJECTED                            0
****************************************************************


[mtc]$
```

Querying OM group tuples based on a range of key numbers

```
[mtc]$ omshow sipgw_callp active 0 2
===================================================================
Active Register Counts
START Tue Feb 15 16:30:00 2005    STOP Tue Feb 15 16:38:37 2005

OMGROUP: SIPGW_CALLP
****************************************************************

TUPLE KEY: 0            TUPLE KEY NAME: LN2RTPF_IT1

Register Name                           Value
------------------------------       ----------
IC_CALL_ATTEMPTS                               0
OG_CALL_ATTEMPTS                               0
CALLS_ABANDONED                                0
CALLS_ANSWERED                                 0
CALLS_REJECTED                                 0
CALLS_REDIRECTED                               0
OVRLD_CALLS_REJECTED                           0
****************************************************************

TUPLE KEY: 1            TUPLE KEY NAME: LN2RTPF_IT2

Register Name                           Value
------------------------------       ----------
IC_CALL_ATTEMPTS                               0
OG_CALL_ATTEMPTS                               0
CALLS_ABANDONED                                0
CALLS_ANSWERED                                 0
CALLS_REJECTED                                 0
CALLS_REDIRECTED                               0
OVRLD_CALLS_REJECTED                           0
****************************************************************

TUPLE KEY: 2            TUPLE KEY NAME: LN2RTPF_ATC1

Register Name                           Value
------------------------------       ----------
IC_CALL_ATTEMPTS                               0
OG_CALL_ATTEMPTS                               0
CALLS_ABANDONED                                0
CALLS_ANSWERED                                 0
CALLS_REJECTED                                 0
CALLS_REDIRECTED                               0
OVRLD_CALLS_REJECTED                           0
****************************************************************


===================================================================

[mtc]$
```

Querying OM group tuples based on a range of key names

```
[mtc]$ omshow sipgw_callp active ln2rtpf_it1 ln2rtpf_atc1
==================================================================
Active Register Counts
START Tue Feb 15 16:30:00 2005   STOP Tue Feb 15 16:42:39 2005

OMGROUP: SIPGW_CALLP
****************************************************************

TUPLE KEY: 0            TUPLE KEY NAME: LN2RTPF_IT1

Register Name                         Value
-------------------------------       ----------
IC_CALL_ATTEMPTS                               0
OG_CALL_ATTEMPTS                               0
CALLS_ABANDONED                                0
CALLS_ANSWERED                                 0
CALLS_REJECTED                                 0
CALLS_REDIRECTED                               0
OVRLD_CALLS_REJECTED                           0
****************************************************************

TUPLE KEY: 1            TUPLE KEY NAME: LN2RTPF_IT2

Register Name                         Value
-------------------------------       ----------
IC_CALL_ATTEMPTS                               0
OG_CALL_ATTEMPTS                               0
CALLS_ABANDONED                                0
CALLS_ANSWERED                                 0
CALLS_REJECTED                                 0
CALLS_REDIRECTED                               0
OVRLD_CALLS_REJECTED                           0
****************************************************************

TUPLE KEY: 2            TUPLE KEY NAME: LN2RTPF_ATC1

Register Name                         Value
-------------------------------       ----------
IC_CALL_ATTEMPTS                               0
OG_CALL_ATTEMPTS                               0
CALLS_ABANDONED                                0
CALLS_ANSWERED                                 0
CALLS_REJECTED                                 0
CALLS_REDIRECTED                               0
OVRLD_CALLS_REJECTED                           0
****************************************************************


[mtc]$
```

SST OM groups

The following sections describe SST OM groups.

NCAS_LINK

Description

OM group NCAS_LINK provides registers to record the state changes of the NCAS Link and the number of messages sent and received over the NCAS Link.

The following table lists the key and info fields associated with OM group NCAS_LINK.

Key field	Info field
None	None

Related functional groups

There are no functional groups associated with OM group.

Registers

The following table lists the registers associated with OM group NCAS_LINK and what they measure.

Registers for OM group NCAS_LINK

Register name	Measures
"NCAS_LINK_UP" (page 26)	Number of times the NCAS Link is brought up
"NCAS_LINK_DOWN" (page 27)	Number of times the link goes down
"MSG_SENT" (page 27)	Number of messages sent over the NCAS Link
"MSG_RCVD" (page 27)	Number of times a response is received over the NCAS Link
"MSG_SEND_FAIL" (page 28)	Number of times the message send fails
"MSG_RCVD_FAIL" (page 28)	Number of times the message receive fails.

NCAS_LINK_UP

Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts how many times the NCAS Link has been brought up.

Associated registers
None

Extension register

None

Associated logs

None

NCAS_LINK_DOWN

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register counts how many times the NCAS Link has gone down

Associated registers

None

Extension register

None

Associated logs

None

MSG_SENT

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register counts how many messages are successfully sent over the
NCAS Link

Associated registers

None

Extension register

None

Associated logs

None

MSG_RCVD

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register counts how many messages are successfully received over
the NCAS Link

Associated registers

None

Extension register

None

Associated logs

None

MSG_SEND_FAIL

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register counts how many times messages fail to be sent over the NCAS Link

Associated registers

None

Extension register

None

Associated logs

None

MSG_RCVD_FAIL

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register counts how many times messages fail to be received over the NCAS Link

Associated registers

None

Extension register

None

Associated logs

None

SIPGW_CALLP

Description

OM group SIPGW_CALLP provides registers for recording incoming and outgoing call processing events related to the SIP Gateway application.

The following table lists the key and info fields associated with OM group SIPGW_CALLP.

Key field	Info field
None	None

Related functional groups

All registers in OM group SIPGW_CALLP are associated with dynamically allocated tuple, based on assigned tuple key numbers and tuple key names. Tuple key names are related to SIP link names and associated with SIP trunk IDs found in Core table SIPLINK.

A tuple with a key number of 2049 and a key name of SIPLINK_UNKNOWN is always available to collect register peg counts that cannot be associated with a specific SIPLINK.

Registers

The following table lists the registers associated with OM group SIPGW_CALLP and what they measure.

Registers for OM group SIPGW_CALLP

Register name	Measures
"IC_CALL_ATTEMPTS" (page 30)	Total number of incoming call attempts
"OG_CALL_ATTEMPTS" (page 30)	Total number of outgoing call attempts
"CALLS_ABANDONED" (page 30)	Total number of calls abandoned
"CALLS_ANSWERED" (page 31)	Total number of calls answered
"CALLS_REJECTED" (page 31)	Total number of calls rejected
"CALLS_REDIRECTED" (page 31)	Total number of calls redirected
"OVRLD_CALLS_REJECTED" (page 32)	Total number of calls rejected due to overload conditions

IC_CALL_ATTEMPTS

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register counts the total number of incoming SIP call attempts.

Associated registers

None

Extension register

None

Associated logs

None

OG_CALL_ATTEMPTS

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register counts the total number of outgoing SIP call attempts.

Associated registers

None

Extension register

None

Associated logs

None

CALLS_ABANDONED

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register counts the total number of SIP calls abandoned.

Associated registers

None

Extension register

None

Associated logs
None

CALLS_ANSWERED
Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the total number of SIP calls answered.

Associated registers
None

Extension register
None

Associated logs
None

CALLS_REJECTED
Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the total number of SIP calls rejected.

Associated registers
None

Extension register
None

Associated logs
SIPC310

CALLS_REDIRECTED
Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the total number of SIP calls redirected.

Associated registers
None

Extension register

None

Associated logs

None

OVRLD_CALLS_REJECTED

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register counts the total number of SIP calls rejected due to overload conditions.

Associated registers

None

Extension register

None

Associated logs

None

SIPGW_MISC

Description

OM group SIPGW_MISC provides registers for recording miscellaneous call events, including calls using different transport types, SIP messaging failures and SDP (session description protocol) compatibility for the SIP Gateway application.

The following table lists the key and info fields associated with OM group SIPGW_MISC.

Key field	Info field
None	None

Related functional groups

All registers in OM group SIPGW_MISC are associated with dynamically allocated tuple, based on assigned tuple key numbers and tuple key names. Tuple key names are related to SIP link names and associated with SIP trunk IDs found in table SIPLINK.

A tuple with a key number of 2049 and a key name of SIPLINK_UNKNOWN is always available to collect register peg counts that cannot be associated with a specific SIPLINK.

Registers

The following table lists the registers associated with OM group SIPGW_MISC and what they measure.

Registers for OM group SIPGW_MISC

Register name	Measures
"TCP_CALLS" (page 33)	Total number of TCP Calls
"UDP_CALLS" (page 34)	Total number of UDP calls
"SIP_MSG_SEND_FAILURES" (page 34)	Total number of SIP Msg Send Failures, note that this value is inaccurate
"INCOMING_SDP_INCOMPATIBLE" (page 35)	Total number of incompatible SDPs received from remote SIP servers
"OUTGOING_SDP_INCOMPATIBLE" (page 35)	Total number of incompatible SDPs received from local gateways.

TCP_CALLS
Register type
Peg type, double precision, up to 4 294 967 296 counts

Description

This register counts the total number of TCP Calls.

Associated registers

None

Extension register

None

Associated logs

None

UDP_CALLS

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register counts the total number of UDP calls.

Associated registers

None

Extension register

None

Associated logs

None

SIP_MSG_SEND_FAILURES

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register counts the total number of SIP Msg Send Failures. This register is displayed but is not accurate.

Associated registers

None

Extension register

None

Associated logs

None

INCOMING_SDP_INCOMPATIBLE

Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the total number of incompatible SDPs (session description protocols) received from remote SIP servers.

Associated registers
None

Extension register
None

Associated logs
None

OUTGOING_SDP_INCOMPATIBLE

Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the total number of incompatible SDPs received from local gateways.

Associated registers
None

Extension register
None

Associated logs
None

SIPGW_NCAS

Description

OM group SIPGW_NCAS provides registers to record of the out-of-band related transaction capabilities application part (TCAP) messages sent and received between the SST and the CS 2000. TCAP messages are sent over an non-call associated signaling (NCAS) link.

The following table lists the key and info fields associated with OM group SIPGW_NCAS.

Key field	Info field
None	None

Related functional groups

All registers in OM group SIPGW_NCAS are associated with dynamically allocated tuple, based on assigned tuple key numbers and tuple key names.

This OM group is related to OM group SIPGW_OOB.

Registers

The following table lists the registers associated with OM group SIPGW_NCAS and what they measure.

Registers for OM group SIPGW_NCAS

Register name	Measures
"CREATE_CALL_SENT" (page 36)	CREATE_CALL request message sent
"CREATE_CALL_FAIL" (page 37)	CREATE_CALL request failed
"CLOSE_RECEIVED" (page 37)	CLOSE message received
"TERM_NOTIFY_RECEIVED" (page 37)	CLOSE message received

CREATE_CALL_SENT
Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register is pegged when a Create_Call message is sent to the CS 2000 over the NCAS link.

Associated registers
REFER_RECEIVED, REFER_ACCEPTED, both in OM group SIPGW_OOB

Extension register
None

Associated logs
None

CREATE_CALL_FAIL

Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register is pegged when a Create_Call request fails to complete.

Associated registers
NOTIFY_REPORT_FAIL in OM group SIPGW_OOB

Extension register
None

Associated logs
None

CLOSE_RECEIVED

Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register is pegged when the SST receives a CLOSE message in
response to the Create_Call request.

Associated registers
NOTIFY_200OK, NOTIFY_PROCEEDING, both in OM group SIPGW_OOB

Extension register
None

Associated logs
Log report NCAS 501 is generated when an out-of-band REFER message
is rejected.

TERM_NOTIFY_RECEIVED

Register type
Peg type, double precision, up to 4 294 967 296 counts

Description

This register is pegged when the SST receives a Terminate_Notification message from the CS 2000.

Associated registers

NOTIFY_TERMINATE in OM group SIPGW_OOB

Extension register

None

Associated logs

None

SIPGW_OOB

Description

OM group SIPGW_OOB provides registers for recording the out-of-band related SIP messages sent and received between the SST and the MCS 5200.

The following table lists the key and info fields associated with OM group SIPGW_OOB.

Key field	Info field
None	None

Related functional groups

All registers in OM group SIPGW_OOB are associated with dynamically allocated tuple, based on assigned tuple key numbers and tuple key names.

Registers

The following table lists the registers associated with OM group SIPGW_OOB and what they measure.

Registers for OM group SIPGW_OOB

Register name	Measures
"REFER_RECEIVED" (page 39)	out-of-band REFER messages received
"REFER_ACCEPTED" (page 40)	out-of-band REFER messages accepted, 202 Accepted sent
"REFER_REJECTED" (page 40)	out-of-band REFER rejected
"NOTIFY_200OK" (page 41)	NOTIFY sent following receipt of CLOSE message
"NOTIFY_PROCEEDING" (page 41)	proceeding NOTIFY sent
"NOTIFY_TERMINATE" (page 41)	final NOTIFY sent
"NOTIFY_REPORT_FAIL" (page 42)	NOTIFY sent indicating failures

REFER_RECEIVED
Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register is pegged when the SST receives an out-of-band REFER request from the MCS 5200.

Associated registers
REFER_ACCEPTED, REFER_REJECTED

Extension register
None

Associated logs
None

REFER_ACCEPTED
Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register is pegged when the SST validates an out-of-band REFER request and requests a Create_Call TCAP to be sent to the CS 2000.

Associated registers
REFER_RECEIVED, CREATE_CALL_SENT in OM group SIPGW_NCAS

Extension register
None

Associated logs
None

REFER_REJECTED
Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register is pegged every time the SST is unable to validate an out-of-band REFER request.

Associated registers
REFER_RECEIVED

Extension register
None

Associated logs
Log report NCAS 501 is generated when an out-of-band REFER message is rejected.

NOTIFY_200OK

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register is pegged when the SST receives a CLOSE TCAP message from the CS 2000 and a NOTIFY/200OK request is sent to the MCS 5200.

Associated registers

CLOSE_RECEIVED in OM group SIPGW_NCAS

Extension register

None

Associated logs

None

NOTIFY_PROCEEDING

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register is pegged when the SST sends a NOTIFY/Proceeding msg to the MCS 5200.

Associated registers

CLOSE_RECEIVED in OM group SIPGW_NCAS

Extension register

None

Associated logs

If the queue size crosses the 400 or 500 message threshold, then a STGW700 indicates pending overload (400), or overload (500), and flow control is applied to remote SIP server side originations.

NOTIFY_TERMINATE

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register is pegged when the SST sends a NOTIFY message indicating that the call has ended.

Associated registers

TERM_NOTIFY_RECEIVED in OM group SIPGW_NCAS

Extension register
None

Associated logs
None

NOTIFY_REPORT_FAIL

Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register is pegged when the SST sends a NOTIFY message indicating a failure in Create_Call completion.

Associated registers
FAILURE_RECEIVED in OM group SIPGW_NCAS

Extension register
None

Associated logs
None

SIPGW_OVERLOAD

Description

OM group SIPGW_OVERLOAD provides registers for recording CPU occupancy, generic control protocol (GCP) queue size, SIP queue size, and high water marks for each of the three measures. These three parameters are used to calculate overload status. The GCP queue indicates the number of messages pending in the queue from the CS 2000 and the SIP queue indicates the number of messages pending in the queue from remote SIP servers. For both queues, messages indicate requests such as call setup, call progress, and teardown.

The following table lists the key and info fields associated with OM group SIPGW_OVERLOAD.

Key field	Info field
None	None

Related functional groups

All registers in OM group SIPGW_OVERLOAD are associated with dynamically allocated tuple, based on assigned tuple key numbers and tuple key names.

Registers

The following table lists the registers associated with OM group SIPGW_OVERLOAD and what they measure.

Registers for OM group SIPGW_OVERLOAD

Register name	Measures
"CPU_OCCUPANCY" (page 44)	CPU occupancy, 0 to 100
"CPU_OCCUPANCY_HWM" (page 44)	High water mark during the recording interval
"GCP_QUEUE_SIZE" (page 44)	Number of CS 2000 side messages in the queue
"GCP_QUEUE_SIZE_HWM" (page 45)	High water mark during the recording interval
"SIP_QUEUE_SIZE" (page 45)	Number of remote SIP server side messages in the queue
"SIP_QUEUE_SIZE_HWM" (page 45)	High water mark during the recording interval

CPU_OCCUPANCY

Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register indicates the CPU occupancy, 0 to 100.

Associated registers
CPU_OCCUPANCY_HWM

Extension register
None

Associated logs
If CPU_OCCUPANCY crosses the overload or overload pending thresholds, a STGW700 report is generated.

CPU_OCCUPANCY_HWM

Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register indicates the high water mark for CPU occupying during the recording interval.

Associated registers
CPU_OCCUPANCY

Extension register
None

Associated logs
None

GCP_QUEUE_SIZE

Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the number of CS 2000 originated messages in the queue.

Associated registers
GCP_QUEUE_SIZE_HWM

Extension register
None

Associated logs
If the queue size crosses the overload or overload pending thresholds, a STGW700 is generated, and flow control is applied to originations.

GCP_QUEUE_SIZE_HWM
Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register holds the high water mark value for GCP_QUEUE_SIZE for the recording interval.

Associated registers
GCP_QUEUE_SIZE

Extension register
None

Associated logs
None

SIP_QUEUE_SIZE
Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the number of remote SIP server originated messages in the queue.

Associated registers
SIP_QUEUE_SIZE_HWM

Extension register
None

Associated logs
If the queue size crosses the overload or overload pending thresholds, a STGW700 is generated, and flow control is applied to originations.

SIP_QUEUE_SIZE_HWM
Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register holds the high water mark value for SIP_QUEUE_SIZE for the recording interval.

Associated registers
SIP_QUEUE_SIZE

Extension register
None

Associated logs
None

SIPGW_SERVICES

Description

OM group SIPGW_SERVICES provides registers for recording incoming and outgoing call device subscription and referral events related to the SIP Gateway application.

The following table lists the key and info fields associated with OM group SIPGW_SERVICES.

Key field	Info field
None	None

Related functional groups

All registers in OM group SIPGW_SERVICES are associated with dynamically allocated tuple, based on assigned tuple key numbers and tuple key names. Tuple key names are related to SIP link names and associated with SIP trunk IDs found in table SIPLINK.

A tuple with a key number of 2049 and a key name of SIPLINK_UNKNOWN is always available to collect register peg counts that cannot be associated with a specific SIPLINK.

Registers

The following table lists the registers associated with OM group SIPGW_SERVICES and what they measure.

Registers for OM group SIPGW_SERVICES

Register name	Measures
"REFER_ATTEMPTS" (page 48)	Total number of refer attempts
"REFER_SUCCESS" (page 48)	Total number of successful refers
"IC_DTMF_SUBSCRIBES" (page 48)	Total number of incoming DTMF subscribes
"OG_DTMF_SUBSCRIBES" (page 49)	Total number of outgoing DTMF subscribes
"IC_DTMF_NOTIFYS" (page 49)	Total number of incoming DTMF notifies
"OG_DTMF_NOTIFYS" (page 49)	Total number of outgoing DTMF notifies
"IC_FAX_SUBSCRIBES" (page 50)	Total number of incoming fax subscribes
"OG_FAX_SUBSCRIBES" (page 50)	Total number of outgoing fax subscribes
"IC_FAX_NOTIFYS" (page 50)	Total number of incoming fax notifies
"OG_FAX_NOTIFYS" (page 51)	Total number of outgoing fax notifies

REFER_ATTEMPTS

Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the total number of refer attempts.

Associated registers
None

Extension register
None

Associated logs
None

REFER_SUCCESS

Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the total number of successful refers.

Associated registers
None

Extension register
None

Associated logs
None

IC_DTMF_SUBSCRIBES

Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the total number of incoming DTMF subscribes.

Associated registers
None

Extension register
None

Associated logs
None

OG_DTMF_SUBSCRIBES
Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the total number of outgoing DTMF subscribes.

Associated registers
None

Extension register
None

Associated logs
None

IC_DTMF_NOTIFYS
Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the total number of incoming DTMF notifies.

Associated registers
None

Extension register
None

Associated logs
None

OG_DTMF_NOTIFYS
Register type
Peg type, double precision, up to 4 294 967296 counts

Description
This register counts the total number of outgoing DTMF notifies.

Associated registers
None

Extension register

None

Associated logs

None

IC_FAX_SUBSCRIBES

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register counts the total number of incoming fax subscribes.

Associated registers

None

Extension register

None

Associated logs

None

OG_FAX_SUBSCRIBES

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register counts the total number of outgoing fax subscribes.

Associated registers

None

Extension register

None

Associated logs

None

IC_FAX_NOTIFYS

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register counts the total number of incoming fax notifies.

Associated registers

None

Extension register

None

Associated logs

None

OG_FAX_NOTIFYS

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register counts the total number of outgoing fax notifies.

Associated registers

None

Extension register

None

Associated logs

None

SIPGW_TLS

Description

OM group SIPGW_TLS provides registers for recording TLS (transport layer security) call processing security events, including various connection counts and authentication records related to the SIP Gateway application.

The following table lists the key and info fields associated with OM group SIPGW_TLS.

Key field	Info field
None	None

Related functional groups

There are no functional groups associated with OM group SIPGW_TLS.

This OM group is made up of a single OM tuple with a key number of 0.

Registers

The following table lists the registers associated with OM group SIPGW_TLS and what they measure.

Registers for OM group SIPGW_TLS

Register name	Measures
"TLS_CALLS" (page 53)	Number of calls carried over TLS connections
"TLS_CONNECTION_REQUESTS" (page 53)	Number of new TLS connection requests
"TLS_CONNECTION_REQUESTS_PASSED" (page 54)	
	Number of TLS connection requests passed
"TLS_CONNECTION_REQUESTS_DROPPED" (page 54)	
	Number of TLS connection requests dropped (throttled)
"TLS_CONNECTION_REQUESTS_FAILED" (page 54)	
	Number of TLS connection requests failed
"TLS_HANDSHAKE_AUTHENTICATED" (page 55)	
	Number of certificates authenticated
"TLS_HANDSHAKE_AUTHENTICATION_FAILED" (page 55)	
	Number of certificates that have failed authentication
"TLS_CONNECTION_CLOSE" (page 55)	Number of TLS connections closed

Register name	Measures
"TLS_CONNECTION_DROPPED" (page 56)	Number of TLS connections dropped
"TLS_EXTERNAL_SESSION_CACHE_HIT" (page 56)	
	Number of external session cache hits during TLS connection setup.
"TLS_EXTERNAL_SESSION_CACHE_MISS" (page 57)	
	Number of external session cache misses during TLS connection setup.
"TLS_EXTERNAL_SESSION_CACHE_EXPIRED" (page 57)	
	Number of external session cache entries expired during TLS connection setup.
"TLS_EXTERNAL_SESSION_REMOVED_FULL" (page 57)	
	Number of external session cache remove requests due to cache being full.

TLS_CALLS

Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the total number of calls carried over TLS enabled connections.

Associated registers
None

Extension register
None

Associated logs
None

TLS_CONNECTION_REQUESTS

Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the number of TLS connection requests.

Associated registers
None

Extension register
None

Associated logs
None

TLS_CONNECTION_REQUESTS_PASSED
Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the number of TLS connection requests passed.

Associated registers
None

Extension register
None

Associated logs
None

TLS_CONNECTION_REQUESTS_DROPPED
Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the number of TLS connection requests dropped due to throttling.

Associated registers
None

Extension register
None

Associated logs
SIPS300, SIPS600

TLS_CONNECTION_REQUESTS_FAILED
Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the number of TLS connection requests failed.

Associated registers
None

Extension register
None

Associated logs
SIPS301, SIPS601

TLS_HANDSHAKE_AUTHENTICATED
Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the number of certificates authenticated.

Associated registers
None

Extension register
None

Associated logs
None

TLS_HANDSHAKE_AUTHENTICATION_FAILED
Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the number of certificates that have failed authentication.

Associated registers
None

Extension register
None

Associated logs
SIPS301, SIPS601

TLS_CONNECTION_CLOSE
Register type
Peg type, double precision, up to 4 294 967 296 counts

Description

This register counts the number of TLS connections closed.

Associated registers

None

Extension register

None

Associated logs

None

TLS_CONNECTION_DROPPED

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register counts the number of TLS connections dropped.

Associated registers

None

Extension register

None

Associated logs

None

TLS_EXTERNAL_SESSION_CACHE_HIT

Register type

Peg type, double precision, up to 4 294 967 296 counts

Description

This register counts the number of external session cache hits during TLS connection setup.

Associated registers

None

Extension register

None

Associated logs

None

TLS_EXTERNAL_SESSION_CACHE_MISS

Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the number of external session cache misses during TLS connection setup.

Associated registers
None

Extension register
None

Associated logs
None

TLS_EXTERNAL_SESSION_CACHE_EXPIRED

Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the number of external session cache entries expired during TLS connection setup.

Associated registers
None

Extension register
None

Associated logs
None

TLS_EXTERNAL_SESSION_REMOVED_FULL

Register type
Peg type, double precision, up to 4 294 967 296 counts

Description
This register counts the number of external session cache remove requests due to cache being full.

Associated registers
None

Extension register

None

Associated logs

None

Carrier VoIP

Session Server Trunks Performance Management

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