

SCTP Performance Measurements

USER GUIDE

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Contents

1	Introduction	1
2	Performance Measurement Groups	3
3	Measurements of Sctp PM Group	5
4	Measurements of SctpAssociation PM Group	13





1 Introduction

This document describes the SCTP performance measurements.

For description of PM concepts and operations, i.e. how to work with PM jobs, refer to the [Performance Management](#).





2 Performance Measurement Groups

Page 3 lists the SCTP performance measurement groups.

Table 1 PmGroups

pmGroupId	Properties
Sctp	<ul style="list-style-type: none">• description: Measurements at SCTP level. The measured object identifier is "Transport=1,Sctp=1".• pmGroupVersion: 2
SctpAssociation	<ul style="list-style-type: none">• description: Measurements at SCTP association level. The measured object identifier is "Transport=1,Sctp=1,SctpEndpoint=<LocalPortNumber>_<LocalIPAddr1>_..._<LocalIPAddrN>,SctpAssociation=<RemotePortNumber>_<RemoteIPAddr1>_..._<RemoteIPAddrM>".• pmGroupVersion: 1

The update frequency is 60 seconds for all measurements.





3 Measurements of Sctp PM Group

Page 5 provides measurement types of Sctp PM group.

Table 2 Sctp Measurements

measurementTypeId	Properties
sctpOutSCTPPacks	<ul style="list-style-type: none">• description: Number of transmitted SCTP packets.• collectionMethod: CC• aggregation: SUM• measurementStatus: USED• resetAtGranPeriod: true• measurementResult: Number of packages sent
sctpInSCTPPacks	<ul style="list-style-type: none">• description: Number of received SCTP packets, including duplicates and those received in error.• collectionMethod: CC• aggregation: SUM• measurementStatus: USED• resetAtGranPeriod: true• measurementResult: Number of packages received
sctpCurrEstab	<ul style="list-style-type: none">• description: Number of SCTP associations for which the current state is either ESTABLISHED, SHUTDOWN-PENDING or SHUTDOWN-RECEIVED. The measurement is only working when single SCTP instance is configured per payload node.• collectionMethod: GAUGE• aggregation: SUM• measurementStatus: USED• resetAtGranPeriod: true• measurementResult: Number of associations



Table 2 Sctp Measurements

sctpAbortedS	<ul style="list-style-type: none">• description: Number of times that SCTP associations have made a direct transition to the CLOSED state from any state after sending or receiving ABORT chunk.• collectionMethod: CC• aggregation: SUM• measurementStatus: USED• resetAtGranPeriod: true• measurementResult: Number of chunks
sctpShutdowns	<ul style="list-style-type: none">• description: Number of times that SCTP associations have made a direct transition to the CLOSED state from either the SHUTDOWN-SENT state or the SHUTDOWN-ACK-SENT state after receiving of SHUTDOWN ACK or SHUTDOWN COMPLETE chunk.• collectionMethod: CC• aggregation: SUM• measurementStatus: USED• resetAtGranPeriod: true• measurementResult: Number of packages sent
sctpOutOfBlues	<ul style="list-style-type: none">• description: Number of received out-of-the-blue SCTP packets. These are packets that are correctly formed (with a correct checksum), but where the receiver is not able to identify the association to which this packet belongs.• collectionMethod: CC• aggregation: SUM• measurementStatus: USED• resetAtGranPeriod: true• measurementResult: Number of packages



Table 2 Sctp Measurements

sctpOutDataChunks	<ul style="list-style-type: none"> • description: Number of transmitted DATA chunks. The counter does not include retransmissions. • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Number of chunks
sctpInDataChunks	<ul style="list-style-type: none"> • description: Number of received DATA chunks. The counter does not include duplicates. • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Number of chunks
sctpRtxDataChunks	<ul style="list-style-type: none"> • description: Number of retransmitted DATA chunks, including T3 and fast retransmissions. • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Number of chunks
sctpOutCtrlChunks	<ul style="list-style-type: none"> • description: Number of transmitted and retransmitted control chunks. These are chunks with Chunk Type not equal to 0. • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Number of chunks

Table 2 Sctp Measurements

sctpInCtrlChunks	<ul style="list-style-type: none"> • description: Number of received control chunks. These are chunks with Chunk Type not equal to 0. The counter does not include abnormal or discarded chunks. • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Number of chunks
sctpDroppedChunks	<ul style="list-style-type: none"> • description: Number of dropped chunks. The counter includes both control and data chunks. • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Number of chunks
sctpSentCongestionInds	<ul style="list-style-type: none"> • description: Number of times SCTP has sent a congestion indication to the user. • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Number of times
sctpSentCongestionCeaseInd	<ul style="list-style-type: none"> • description: Number of times SCTP has sent a congestion ceasing indication to the user. • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Number of times



Table 2 Sctp Measurements

sctpRestarts	<ul style="list-style-type: none"> • description: Number of times SCTP associations have been restarted. • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Number of times
sctpSendBufferFull	<ul style="list-style-type: none"> • description: Number of times SCTP send buffer (M buffer) was full. • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Number of times
sctpHbTimeouts	<ul style="list-style-type: none"> • description: Number of SCTP heartbeat timeouts. • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Number of times
sctpDroppedUserMessages	<ul style="list-style-type: none"> • description: Number of user messages that SCTP has been forced to drop due to overflow in the send buffer. • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Number of chunks

Table 2 Sctp Measurements

sctpOutUnorderChunks	<ul style="list-style-type: none"> • description: Number of unordered chunks transmitted to the remote side. • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Number of chunks
sctpInUnorderChunks	<ul style="list-style-type: none"> • description: Number of unordered chunks received from the remote side. • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Number of chunks
sctpOutFragUsrMsgs	<ul style="list-style-type: none"> • description: Number of fragmented user messages transmitted to the remote side. The counter is incremented when the first data chunk of the fragmented message is sent. • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Number of chunks
sctpInFragUsrMsgs	<ul style="list-style-type: none"> • description: Number of fragmented user messages received from the remote side. The counter is incremented when the first data chunk of the fragmented message is received. • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Number of chunks



Table 2 Sctp Measurements

sctpTotalEstabs	<ul style="list-style-type: none"> • description: Number of times that SCTP associations have made a direct transition to the ESTABLISHED state from the CLOSED state or the COOKIE-ECHOED state. This counter is a sum of sctpActiveEstabs and sctpPassiveEstabs counters. • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Number of associations
sctpChecksumErrors	<ul style="list-style-type: none"> • description: Number of SCTP packets received from the remote side with an invalid checksum. • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Number of packets



Table 2 Sctp Measurements

sctpActiveEstabs	<ul style="list-style-type: none">• description: Number of times that SCTP associations have made a direct transition to the ESTABLISHED state from the COOKIE-ECHOED state.• collectionMethod: CC• aggregation: SUM• measurementStatus: USED• resetAtGranPeriod: true• measurementResult: Number of associations
sctpPassiveEstabs	<ul style="list-style-type: none">• description: Number of times that SCTP associations have made a direct transition to the ESTABLISHED state from the CLOSED state.• collectionMethod: CC• aggregation: SUM• measurementStatus: USED• resetAtGranPeriod: true• measurementResult: Number of associations



4 Measurements of SctpAssociation PM Group

Page 13 provides measurement types of SctpAssociation PM group.

Table 3 SctpAssoc Measurements

measurementTypeId	Properties
sctpOutDataChunks	<ul style="list-style-type: none">• description: Number of transmitted DATA chunks. The counter does not include retransmissions.• collectionMethod: CC• aggregation: SUM• measurementStatus: USED• resetAtGranPeriod: true• measurementResult: Number of chunks
sctpInDataChunks	<ul style="list-style-type: none">• description: Number of received DATA chunks. The counter does not include duplicates.• collectionMethod: CC• aggregation: SUM• measurementStatus: USED• resetAtGranPeriod: true• measurementResult: Number of chunks
sctpAssocRtxChunks	<ul style="list-style-type: none">• description: Number of DATA chunks retransmitted and fast retransmitted to the remote side per association.• collectionMethod: CC• aggregation: SUM• measurementStatus: USED• resetAtGranPeriod: true• measurementResult: Number of chunks



Table 3 SctpAssoc Measurements

sctpSentCongestionInds	<ul style="list-style-type: none">• description: Number of times SCTP has sent a congestion indication to the user.• collectionMethod: CC• aggregation: SUM• measurementStatus: USED• resetAtGranPeriod: true• measurementResult: Number of times
sctpAssocCongestionDuration	<ul style="list-style-type: none">• description: Accumulated time (in milliseconds) while SCTP association is under congestion.• collectionMethod: CC• aggregation: SUM• measurementStatus: USED• resetAtGranPeriod: true• measurementResult: Time of congestions



Table 3 SctpAssoc Measurements

sctpAssocDormantNumber	<ul style="list-style-type: none"> • description: Number of times SCTP association became Dormant (Association which has no active paths is referred as being in the Dormant state). • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Number of an times
sctpAssocDormantDuration	<ul style="list-style-type: none"> • description: Accumulated time (in milliseconds) while SCTP association was in Dormant state (Association which has no active paths is referred as being in the Dormant state). • collectionMethod: CC • aggregation: SUM • measurementStatus: USED • resetAtGranPeriod: true • measurementResult: Time of Dormant state