



APPENDIX **A**

Monitoring SCE Platform Utilization

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Introduction

This appendix explains how to monitor SCE platforms that are installed in real traffic.

- [SCE Platform Utilization Indicators, page A-2](#)
- [Service Loss, page A-3](#)

As with any network device, the SCE platform has its performance and capacity envelopes. As the network evolves, the utilization of the SCE platform can increase and these envelopes might be reached. It is, therefore, advisable to monitor SCE platform to be sure that utilization remains at a level that supports reliable and consistent service.

When the SCE platform reaches its performance envelopes, it activates certain mechanisms that insure that no traffic will be dropped while in this state. These mechanisms will prioritize packet handling over service related actions. As a result, symptoms of service loss might be experienced. Following are several examples:

- Broken reports during the congestion period (sometimes appears as saw-tooth pattern).
- Bandwidth enforcement levels are not met.
- No UDP traffic is being reported (this is because the SCE platform will automatically filter all UDP traffic in certain cases as a last resort).

Monitoring the SCE platform can be divided onto two main areas:

- Monitoring SCE platform utilization
- Monitoring service loss

SCE Platform Utilization Indicators

- [CPU Utilization, page A-2](#)
- [Flows Capacity, page A-2](#)
- [Subscribers Capacity, page A-2](#)

The SCE platform exposes several indicators to allow the network operators to easily monitor whether it is working within its performance and capacity specifications:

- CPU Utilization
- Flows capacity
- Subscribers capacity

CPU Utilization

- **SNMP**
tpCpuUtilization, available for each Traffic Processor (*TpInfoEntry*) in the *PCubeSeMib.mib*.
- **CLI command**
show snmp MIB pcube-SE-MIB traffic-processor | include tpCpuUtilization

It is advisable to consider sizing of the solution when the CPU utilization exceeds 75% regularly at peak hours.

Flows Capacity

- **SNMP**
tpFlowsCapacityUtilization, available for each Traffic Processor (*TpInfoEntry*) in the *PCubeSeMib.mib*
- **CLI command**
show snmp MIB pcube-SE-MIB traffic-processor | include tpFlowsCapacityUtilization

It is advisable to consider sizing of the solution when the flows capacity utilization exceeds 90% regularly at peak hours.

Subscribers Capacity

- **SNMP**
subscribersInfoEntry, available in the *PCubeSeMib.mib*
- **CLI command**
show snmp MIB pcube-SE-MIB subscriber

The SCE 2000 platform supports up to 80K subscribers, while the SCE 1000 supports up to 40K subscribers. You should make sure that the number of Introduced Subscribers plus the number of Anonymous Subscribers stays below this figure.

It is advisable that when subscribers utilization exceeds 90%, special attention should be given and sizing should be reconsidered.

Service Loss

Service Loss is an event which occurs when the SCE platform does not provide the processing it was expected to perform for any transaction in the network. This can occur due to either CPU or Flows shortage.

There are two different situations which can result with service loss in the SCE platform:

- Temporary – This might occur when some network pattern which is short in its nature occurred and caused the SCE platform to exhaust some of its resources temporarily. An example could be a DDoS attack that the SCE platform could not detect and filter.

This is usually measured in seconds.

- Permanent – In cases where the SCE platform is installed in locations where the network traffic does not match its capacity and performance envelopes, permanent service loss can occur.

This is measured in hours.

Service loss is defined as the ratio of the number of packets that did not receive service as expected to the total number of packets that were processed by the SCE platform.

Monitoring Service Loss

- SNMP

tpServiceLoss MIB available for each traffic processor (*TpInfoEntry*)

It is expected that the SCE platform user will define timeslots in which this variable is monitored (reset it between timeslots).

Note that the units for this variable are 0.001% and the information is rounded down.

