

Dear all,

Following is a quick tour of the IPPM REPORTING MIB in proxy mode. It corresponds to the demo made to the WG chairs at the end of the WG session in Minneapolis.

The intend is to provide real MIB and IPPM material to help IPPM fellows to make they mind on the IPPM MIB without reading the MIB spec in detail:-)

Regards
Emile

1. abstract

France Telecom R&D and Qosmetrix had recently integrated the implementation of IPPM MIB developed by FranceTelecom lab in the measurement system of Qosmetrix, Netadvisor. The IPPM MIB is implemented as a SNMPv2 proxy on the top of this measurement system.

Information is extracted directly from snmpwalks performed on the proxy. The prefix 'IPPM-REPORTING-MIB::' is removed from all the statements.

2. Configuration

The first probe is located in Qosmetrix lab in Camarillo (Ca) the second one is located in Qosmetrix office in Massy (Paris, France).

The Netadvisor and the IPPM Proxy are located in Qosmetrix lab in Camarillo;

The test consists of 2 types of measures:

- + One network measure is running between Camarillo and Paris. It performs Type-P-One-way-Delay(6). Its configuration is described in section 8;

- + A first level of aggregation is performed by the recipient probe. It computes Type-P-One-way-Delay-Median(9) and Type-P-One-way-Delay-Minimums(10) results and uploads them. Network measure singletons are not uploaded. Their configurations are described in section 9;

3. ippmSystem group

ippmSystemTime.0 = Hex-STRING: 07 58 12 AF 34 DB 6A F8

ippmSystemSynchronizationType.0 = INTEGER: other(0)

ippmSystemSynchronizationDesc.0 = STRING: NO SYNCHRONIZATION AVAILABLE ON THIS SYSTEM

ippmSystemClockResolution.0 = Gauge32: 10000000 Nanoseconds

ippmSystemOperationalStatus.0 = INTEGER: up(1)

7. Metrics Table

Note: Only the entries of interest are displayed.

```
...
ippmMetricCapabilities.6 = INTEGER: implemented(1)
ippmMetricType.6       = INTEGER: network(0)
ippmMetricUnit.6       = INTEGER: nanosecond(8)
ippmMetricDescription.6 = STRING: Type-P-One-way-Delay
...
ippmMetricCapabilities.9 = INTEGER: implemented(1)
ippmMetricType.9        = INTEGER: aggregated(1)
ippmMetricUnit.9        = INTEGER: nanosecond(8)
ippmMetricDescription.9 = STRING: Type-P-One-way-Delay-Median
...
ippmMetricCapabilities.10 = INTEGER: implemented(1)
ippmMetricType.10        = INTEGER: aggregated(1)
ippmMetricUnit.10        = INTEGER: nanosecond(8)
ippmMetricDescription.10 = STRING: Type-P-One-way-Delay-Minimum
...
ippmMetricCapabilities.27 = INTEGER: implemented(1)
ippmMetricType.27        = INTEGER: network(0)
ippmMetricUnit.27        = INTEGER: nanosecond(9)
ippmMetricDescription.27 = STRING: Type-P-One-way-ipdv
...
```

8. Network Measure Table

Once the scenario is started, Netadvisor creates the new network measures in the IPPM Proxy.

```
# network measure root.1 Type-P-One-way-Delay(6) and Type-P-One-way-ipdv(27)
# Note: aggregation derivated from Type-P-One-way-ipdv(27) are not displayed in the document
#
ippmNetMeasureName."root".1      = STRING: -New Test Config
ippmNetMeasureMetrics."root".1   = STRING: "000000100000000000000000000000001000000"
#                               ^           ^
#                               6           27
# metric ID -----+-----+-----
#
ippmNetMeasureBeginTime."root".1 = Hex-STRING: 07 58 08 9C 00 00 00 00
ippmNetMeasureCollectionRateUnit."root".1 = INTEGER: minute(4)
ippmNetMeasureCollectionRate."root".1 = Gauge32: 1
ippmNetMeasureDurationUnit."root".1 = INTEGER: second(3)
ippmNetMeasureDuration."root".1 = Gauge32: 1800
ippmNetMeasureHistorySize."root".1 = Gauge32: 0
```

```

ippmNetMeasureFailureMgmtMode."root".1 = INTEGER: auto(1)
ippmNetMeasureResultsMgmt."root".1    = INTEGER: suspend(2)
ippmNetMeasureSrcTypeP."root".1       = STRING: "ip.tcp"
ippmNetMeasureSrc."root".1            = STRING: "66.14.75.68 12634"
ippmNetMeasureDstTypeP."root".1       = STRING: "ip.tcp"
ippmNetMeasureDst."root".1            = STRING: "62.161.75.221 9000"
ippmNetMeasureTxMode."root".1         = INTEGER: periodic(1)
ippmNetMeasureTxPacketRateUnit."root".1 = INTEGER: second(5)
ippmNetMeasureTxPacketRate."root".1   = Gauge32: 10 Packets
ippmNetMeasureMedOrBurstSize."root".1 = Gauge32: 0 Packets
ippmNetMeasureDevOrIntBurstSize."root".1 = Gauge32: 0 Packets
ippmNetMeasureLossTimeout."root".1    = Gauge32: 800 Milliseconds
ippmNetMeasureL3PacketSize."root".1   = Gauge32: 156 Bytes
ippmNetMeasureDataPattern."root".1    = STRING: "7"
ippmNetMeasureMap."root".1            = STRING: "Net Measure for One Way Delay"
ippmNetMeasureTotalPktsRecv."root".1  = Counter64: 12674 Packets
ippmNetMeasureLastUpdate."root".1     = Hex-STRING: 07 58 0D 88 00 00 00 00
ippmNetMeasureOperState."root".1     = INTEGER: stopped(2)

```

The duration of the measure is 1260 seconds (07580D88 - 0758089C). The rate is 10 pkts/s. So the total packets received is closed to 12600

9. Aggregated Measure Table

Once the scenario is started, Netadvisor creates the new aggregated measures in the IPPM Proxy.

```

# measure root.2 Type-P-One-way-Delay-Median(9) of the measure "root".1
#
ippmAggrMeasureName."root".2         = STRING: New Test Config
ippmAggrMeasureMetrics."root".2      = STRING: "000000000100000000000000000000000000"
ippmAggrMeasureBeginTime."root".2    = Hex-STRING: 07 58 08 9C 00 00 00 00
ippmAggrMeasureAggrPeriodUnit."root".2 = INTEGER: second(6)
ippmAggrMeasureAggrPeriod."root".2   = INTEGER: 10
ippmAggrMeasureDurationUnit."root".2 = INTEGER: second(6)
ippmAggrMeasureDuration."root".2     = INTEGER: 1800
ippmAggrMeasureHistorySize."root".2  = INTEGER: 190
ippmAggrMeasureStorageType."root".2  = INTEGER: nonVolatile(3)
ippmAggrMeasureResultsMgmt."root".2  = INTEGER: suspend(2)
ippmAggrMeasureHistoryOwner."root".2 = STRING: "root"
ippmAggrMeasureHistoryMetric."root".2 = INTEGER: 6
ippmAggrMeasureHistoryOwnerIndex."root".2 = INTEGER: 1
ippmAggrMeasureAdminState."root".2   = INTEGER: start(0)
ippmAggrMeasureFastReport."root".2   = OID: SNMPv2-SMI::zeroDotZero
ippmAggrMeasureMap."root".2          = STRING: Net Measure for One Way Delay
ippmAggrMeasureLastUpdate."root".2   = Hex-STRING: 07 58 0D 88 00 00 00 00
ippmAggrMeasureOperState."root".2    = INTEGER: running(1)

```

```

ippmAggrMeasureNbPktsTreated."root".2 = INTEGER: 126
ippmAggrMeasureStatus."root".2      = INTEGER: active(1)

# measure root.3 Type-P-One-way-Delay-Minimum(10) of the measure "root".1
#
ippmAggrMeasureName."root".3        = STRING: New Test Config
ippmAggrMeasureMetrics."root".3     = STRING: "0000000000100000000000000000000000000000"
ippmAggrMeasureBeginTime."root".3   = Hex-STRING: 07 58 08 9C 00 00 00 00
ippmAggrMeasureAggrPeriodUnit."root".3= INTEGER: second(6)
ippmAggrMeasureAggrPeriod."root".3  = INTEGER: 10
ippmAggrMeasureDurationUnit."root".3 = INTEGER: second(6)
ippmAggrMeasureDuration."root".3    = INTEGER: 1800
ippmAggrMeasureHistorySize."root".3 = INTEGER: 190
ippmAggrMeasureStorageType."root".3 = INTEGER: nonVolatile(3)
ippmAggrMeasureResultsMgmt."root".3 = INTEGER: suspend(2)
ippmAggrMeasureHistoryOwner."root".3 = STRING: "root"
ippmAggrMeasureHistoryOwnerIndex."root".3 = INTEGER: 1
ippmAggrMeasureHistoryMetric."root".3 = INTEGER: 6
ippmAggrMeasureAdminState."root".3  = INTEGER: start(0)
ippmAggrMeasureFastReport."root".3  = OID: SNMPv2-SMI::zeroDotZero
ippmAggrMeasureMap."root".3         = STRING: Net Measure for One Way Delay
ippmAggrMeasureLastUpdate."root".3  = Hex-STRING: 07 58 0D 88 00 00 00 00
ippmAggrMeasureOperState."root".3   = INTEGER: running(1)
ippmAggrMeasureNbPktsTreated."root".3 = INTEGER: 126
ippmAggrMeasureStatus."root".3     = INTEGER: active(1)

```

10. History Table

```

# Results for the aggregated measure named 'root.2': owd median
#
# The average delay from California to France is close to 101 ms
#

ippmHistoryTimestamp."root".2.9.1   = Hex-STRING: 07 58 08 A6 00 00 00 00
ippmHistoryValue."root".1.9.1       = INTEGER: 101167304
ippmHistoryTimestamp."root".2.9.2   = Hex-STRING: 07 58 08 B0 00 00 00 00
ippmHistoryValue."root".2.9.2       = INTEGER: 101306811
ippmHistoryTimestamp."root".2.9.3   = Hex-STRING: 07 58 08 BA 00 00 00 00
ippmHistoryValue."root".2.9.3       = INTEGER: 101211175
ippmHistoryTimestamp."root".2.9.4   = Hex-STRING: 07 58 08 C4 00 00 00 00
ippmHistoryValue."root".2.9.4       = INTEGER: 101080395
ippmHistoryTimestamp."root".2.9.5   = Hex-STRING: 07 58 08 CE 00 00 00 00
ippmHistoryValue."root".2.9.5       = INTEGER: 100703053
ippmHistoryTimestamp."root".2.9.6   = Hex-STRING: 07 58 08 D8 00 00 00 00
ippmHistoryValue."root".2.9.6       = INTEGER: 100790354

```

ippmHistoryTimestamp."root".2.9.7 = Hex-STRING: 07 58 08 E2 00 00 00 00
ippmHistoryValue."root".2.9.7 = INTEGER: 100831317
ippmHistoryTimestamp."root".2.9.8 = Hex-STRING: 07 58 08 EC 00 00 00 00
ippmHistoryValue."root".2.9.8 = INTEGER: 101174398
ippmHistoryTimestamp."root".2.9.9 = Hex-STRING: 07 58 08 F6 00 00 00 00
ippmHistoryValue."root".2.9.9 = INTEGER: 100669560

...

Results for the aggregated measure named 'root.3': owd minimum

#

The minimum delay from California to France is 98 ms

#

ippmHistoryTimestamp."root".3.10.1 = Hex-STRING: 07 58 08 A6 00 00 00 00
ippmHistoryValue."root".3.10.1 = INTEGER: 98592163
ippmHistoryTimestamp."root".3.10.2 = Hex-STRING: 07 58 08 B0 00 00 00 00
ippmHistoryValue."root".3.10.2 = INTEGER: 98607014
ippmHistoryTimestamp."root".3.10.3 = Hex-STRING: 07 58 08 BA 00 00 00 00
ippmHistoryValue."root".3.10.3 = INTEGER: 98937947
ippmHistoryTimestamp."root".3.10.4 = Hex-STRING: 07 58 08 C4 00 00 00 00
ippmHistoryValue."root".3.10.4 = INTEGER: 98689982
ippmHistoryTimestamp."root".3.10.5 = Hex-STRING: 07 58 08 CE 00 00 00 00
ippmHistoryValue."root".3.10.5 = INTEGER: 98512898
ippmHistoryTimestamp."root".3.10.6 = Hex-STRING: 07 58 08 D8 00 00 00 00
ippmHistoryValue."root".3.10.6 = INTEGER: 98537068
ippmHistoryTimestamp."root".3.10.7 = Hex-STRING: 07 58 08 E2 00 00 00 00
ippmHistoryValue."root".3.10.7 = INTEGER: 98901570
ippmHistoryTimestamp."root".3.10.8 = Hex-STRING: 07 58 08 EC 00 00 00 00
ippmHistoryValue."root".3.10.8 = INTEGER: 99173706
ippmHistoryTimestamp."root".3.10.9 = Hex-STRING: 07 58 08 F6 00 00 00 00
ippmHistoryValue."root".3.10.9 = INTEGER: 98840372

...