# The 54th IETF Meeting - IPPM Working Group

IPPM REPORTING MIB
& REGISTRY

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# Agenda

- Draft-ietf-ippm-metrics-registry-01.txt
- Draft-ietf-ippm-reporting-mib-00.txt
- Timestamp resolution

# Draft-ietf-ippm-metrics-registry-01.txt

- First registry
- future metrics identification
- OID size issues

# Registry format

```
IPPM-METRICS-REGISTRY DEFINITIONS ::= BEGIN
    ippmMetricsRegistry MODULE-IDENTITY
     DESCRIPTION      " This memo defines defines a registry of the IPPM WG metrics."
    ::= { ippm 1 }

   rfc        OBJECT IDENTIFIER      ::= { registry 1 }
  draft       OBJECT IDENTIFIER      ::= { registry 2 }
  other       OBJECT IDENTIFIER      ::= { registry 4 }

  oneWayDelay OBJECT-IDENTITY
     DESCRIPTION "The identifier for the One-way-Delay metric. "
     REFERENCE "RFC2679, section 3."
      ::= { rfc  6 }

 oneWayDelayInversePercentile OBJECT-IDENTITY
      DESCRIPTION  "The identifier for the One-way-Delay-Inverse-Percentile metric. "
      REFERENCE "RFC2679, section 5.4."
      ::= { rfc 11 }
END
```

# Future metrics Registry

- A section in the specification of the metrics

```
IPPM-XXX-METRICS-REGISTRY DEFINITIONS ::= BEGIN
    ippmXXXMetricsRegistry MODULE-IDENTITY
     DESCRIPTION     " This memo defines defines a registry of the IPPM WG XXX  metrics."
    ::= { ippm N }

   xxxMetric1Name OBJECT-IDENTITY
     DESCRIPTION "The identifier for the metric1. "
     REFERENCE “xxx, section x."
      ::= { rfc  i }

  xxxMetric2Name OBJECT-IDENTITY
     DESCRIPTION "The identifier for themetric1. "
     REFERENCE “xxx, section y."
      ::= { rfc  j }
END
```

# Registry: Metric identifier encoding length

- Requirements:
  - Hardware detection needs constant length of the encoding of the metrics identifier.
  - 8 bytes length is the common boundary used in table-formatted protocol and in computers.

- Proposals:

  - under node 'mib-2': An id below 127 to the ippmMetricRegistry and above 127 for the ipdvMetricRegistry
    - » 1.3.6.1.2.1.ippm.ippmMetricRegistry.rfc.oneWayDelay 9 bytes
    - » 1.3.6.1.2.1.ippm.ipdvMetricRegistry.rfc.oneWayIpdv 10 bytes
  - under 'Internet':
    - » 1.3.6.1.ippm.ippmMetricRegistry.rfc.oneWayDelay 7 bytes
    - » 1.3.6.1.ippm.ipdvMetricRegistry.rfc.oneWayIpdv 7 bytes
  - under 'mgmt':
    - » 1.3.6.1.2.ippm.ippmMetricRegistry.rfc.oneWayDelay 8 bytes
    - » 1.3.6.1.2.ippm.ipdvMetricRegistry.rfc.oneWayIpdv 8 bytes

# Registry: WG Draft document

**Temporary metric identifiers to help standardization process:**

- **Interoperability verification;**
- **Avoid implementers arbitrary value;**

```
Draft-XXX-METRICS-REGISTRY DEFINITIONS ::= BEGIN
    draftXxxMetricsRegistry MODULE-IDENTITY
     DESCRIPTION     " This memo defines defines a registry of the draftXXX  metrics."
    ::= { ippm N }

  draftXxxMetric1Name OBJECT-IDENTITY
      DESCRIPTION "The identifier for the metric1. "
      REFERENCE “xxx, section x."
       ::= { draft  i }

 draftXxxMetric2Name OBJECT-IDENTITY
      DESCRIPTION "The identifier for themetric1. "
      REFERENCE “xxx, section y."
       ::= { draft  j }
END
```

# Draft-ietf-ippm-reporting-mib-00.txt

- Change:
  - ippmHistorySqceNdx;
  - Timestamp resolution;
  - Synchronization.
- Issues
  - Control using SNMP obver TCP;
  - Measurement packet interoperability;

# IPPM REPORTING MIB: ippmHistorySqceNdx

ippmHistorySqceNdx OBJECT-TYPE

SYNTAX Integer32

DESCRIPTION

" ippmHistorySqceNdx is the sequence index of the measurement results of the measure of a metric.

**Network metrics:**

It's the sequence index of a measurement packet. Typically, it identifies the order of the packet in the stream of packets sends by the source.

**Aggregated metrics:**

It is the sequence index of the aggregated metric results computed.

**Others:**

**multicast, spatial**

"

# IPPM REPORTING MIB: timestamp resolution

```
GMTDateAndTime ::= TEXTUAL-CONVENTION
DISPLAY-HINT "d-d-d,d:d:d,4d"
DESCRIPTION
        "A date-time specification.
        field  octets  contents              range
        -----  ------  --------              -----
        1      1-2     year*                 0..99
        2      3-4     month                 1..12
        3      5-6     day                   1..31
        4      7-8     hour                  0..23
        5      9-10    minutes               0..59
        6      11-12   seconds               0..59
        7      13-16   250 picoseconds       0..2^32-1          "
    SYNTAX      OCTET STRING (SIZE (16))
```

Ex: 00010002010902000105010 00BEBC200

-> 8:15pm, 10 seconds and 50 ms GMT on 19 February 2001

->displayed as 01-02-19,20:15:10, 200000000

# IPPM REPORTING MIB: timestamp resolution

```
ippmSystemSynchonizationOperStatus OBJECT-TYPE
    SYNTAX INTEGER  {
        other(0),
        unsynchronized(1),
        initializing(2),
        synchronized(4)
    }
    MAX-ACCESS read-only
    STATUS     current
    DESCRIPTION
        " ippmSystemSynchonizationOperStatus describes the
        operational status of the clock synchronization.
        Other(0) :              The status of the synchronization is unknown.
        unsynchronized(1) : The system is not synchronized.
        initializing(2) :        The system is receiving synchronization
        information but is not yet synchronized.
synchronized(4):      The system is synchronized.   "
    ::= {  ippmSystemGroup 10 }
```

## Measurement Management issues

- Control using SNMP over TCP;
  - Security
  - NOC integration
- Measurement packet interoperability;