                      IPPM Metrics Registry Extension
                    draft-stephan-ippm-registry-ext-00

Abstract

   The current IANA IPPM Metrics Registry [RFC4148] only assigns an
   identifier to each IP Performance Metrics (IPPM) defined in the IETF.
   This document extends this registry for enabling the registration of
   fine-grained information on each metric.

Requirements Language

   The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT",
   "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this
   document are to be interpreted as described in RFC 2119 [RFC2119].

Table of Contents

1. Introduction

   The current IANA IPPM Metrics Registry [RFC4148] assigns an
   identifier to each IP Performance Metrics (IPPM) defined in the IETF.
   This document extends this registry for enabling the registration of
   fine-grained information on each metric.

2. Overview

   To facilitate the understanding of the changes this document reuse
   mostly the structure of [RFC4148].

   The current version assumes that IESG will request backward
   compatibility with the existing registry.

   This memo suggest to extend the current registry for the following
   reasons:

   o The current registry is designed as a MIB extension which may be
      used by other MIB modules to identify specific IP Performance
      Metrics. This precludes the usage of the registry by other
      management frameworks like those based on XML. The new registry
      should be easely parsable by other management frameworks.

   o parameters: It should capture information to distinguish flavors
      of a metric when a metric have optional parameters.

   o results: It should register parameters for easing the comparison
      of metrics. As a example an ouput parameter should be registered
      with clear units (time, number of packet, bytes...) or default
      value (e.g. milliseconds, kbytes...);

3. IPPM Registry Extension Framework

   The new registry should preserve the compatibilty with the existing
   one because MIB compilers already import this as a MIB module.
   Nevertheless the extension part does not inherit of this constraint.
   In brief the new registry is made of 2 legs the existing one and a
   new one which should be readable by non SMI network management
   frameworks.

3.1. Leg1, existing registry

   Leg1 corresponds the the current SMIv2 module. Its behavior is
   unchanged. New metrics are still identified in 'ianaIppmMetrics'
   subtree.

Furthermore the number assigned to a metric is copied in the table of
the metrics of the Leg2.

3.2. Leg2, metrics parameters and options

To capture the characterization of each metric the Leg2 has the
following structure :

o One table of metric names and identifiers given by the Leg1;

o A list of metrics flavors

The table of metric names copies the metric names, id and reference
from the 'ianaIppmMetrics' subtree of the Leg1 (pratically this is
done by IANA):

```
+-----------------------------------+----------+
| MetricName                        | MetricId |
+-----------------------------------+----------+
| ietfInstantUnidirConnectivity     | 1        |
| ietfInstantBidirConnectivity      | 2        |
| ...                               | ...      |
| ietfOneToGroupRangeDelayVariation | 70       |
+-----------------------------------+----------+
```

                     Metrics Table

Then metrics flavors are defined separately after this table.

Each metric flavor is introduced with its name and fields like the
MetricName it is based on and a brief description. Then the
parameters of the metric flavor are listed in a dedicaced table
described below.

```
+-----------+--------+----------------+-----------------+--------+
| Name      | Unit   | Cardinality    | Description     | Type   |
+-----------+--------+----------------+-----------------+--------+
| the name  | The    | The parameter  | Text precising  | Input  |
| of the    | default| is mandatory or| the meaning of  | or     |
| metric    | unit   | optional       | the parameter   | output |
+-----------+--------+----------------+-----------------+--------+
```

                    Metric flavor table

4. Discussion and Open issues

   Complexity: The new registry will probably have 2 legs, a SMI leg and
   the extension leg. Is this too complex ?

   Duplication of works: Having 2 legs means duplicating the metric
   identifier to provide natural access to SMI and non SMI frameworks.
   It is the price to have the metric identifiers to be shared amongs
   SMI and non SMI management frameworks.

   Security considerations: Diff with v1 of the registry: Security
   considerations differ from the initial registry because the new
   registry exposes detailed information on the metrics.

   Do we keep the retro compatibily with the initial registry ? IESG
   will probably say 'Yes', I made this asumption and may be wrong.

   Initial content: Do we initiate the extension of the registry with
   content ?

   Reporting metrics: This document does not specify a management
   interface. Nevertheless it may be somewhat tied with the work on the
   reporting of metrics the IPPM WG is currently addressing. How to
   benefit from that ?

5. IANA Considerations

   This section describes the rules for the management of the registry
   by IANA.

   The management of the ianaIppmMetrics subtree (existing registry) is
   inchanged. The rules below include these rules . Several are common
   to the 2 legs.

5.1. New Registry Management rules

   Registrations are done sequentially by IANA on the bases of
   'Specification Required' as defined in [RFC2434]. The number and the
   name identifying a metric is the same in the 2 legs.

   The reference of the specification must point to a stable document
   including a title, a revision and a date.

   The name always starts with the name of the organization and must
   respect the SMIv2 rules for descriptors defined in the section 3.1 of
   [RFC2578];

A document that creates new metrics would have an IANA considerations
section in which it would describe new metrics to register.

Additional documents may add new metric flavors in the registry on
the bases of 'Specification Required' as defined in [RFC2434].

5.1.1.   ianaIppmMetrics subtree (SMI leg)

Registrations are done sequentially by IANA in the ianaIppmMetrics
subtree. The number and the name identifying the metric is reused i
the leg2.

An OBJECT IDENTITY assigned to a metric is definitive and cannot be
reused. If a new version of a metric is produced then it is assigned
with a new name and a new identifier.

5.1.2. Leg2

see section 3.2

6. Security Considerations

FIXME: Security considerations differ from the initial registry.

7. Acknowledgements

8. References

8.1. Normative References

   [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate
              Requirement Levels", BCP 14, RFC 2119, March 1997.

   [RFC2434] Narten, T. and H. Alvestrand, "Guidelines for Writing an
              IANA Considerations Section in RFCs", BCP 26, RFC 2434,
              October 1998.

   [RFC2578] McCloghrie, K., Ed., Perkins, D., Ed., and J.
              Schoenwaelder, Ed., "Structure of Management Information
              Version 2 (SMIv2)", STD 58, RFC 2578, April 1999.

   [RFC4148] Stephan, E., "IP Performance Metrics (IPPM) Metrics
              Registry", BCP 108, RFC 4148, August 2005.

8.2. Informative References

   [RFC2330] Paxson, V., Almes, G., Mahdavi, J., and M. Mathis,
              "Framework for IP Performance Metrics", RFC 2330,
              May 1998.

Appendix A. An Appendix

Author's Address

   Stephan Emile
   France Telecom Orange
   2 avenue Pierre Marzin
   Lannion F-22307
   France

   Email: emile.stephan@orange-ftgroup.com