

Network Working Group
Internet-Draft
Intended status: Standards Track
Expires: January 2, 2011

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july 1, 2010

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].

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Table of Contents

1. Introduction	4
2. Overview	4
3. IPPM Registry Extension Framework	4
3.1. Leg1, existing registry	4
3.2. Leg2, metrics parameters and options	5
4. Discussion and Open issues	6
5. IANA Considerations	6
5.1. New Registry Management rules	6
5.1.1. ianaIppmMetrics subtree (SMI leg)	7
5.1.2. Leg2	7
6. Security Considerations	7
7. Acknowledgements	7
8. References	7
8.1. Normative References	7
8.2. Informative References	8
Appendix A. An Appendix	8
Author's Address	8

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 MIBextension 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 separatly 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 of the metric	The default unit	The parameter is mandatory or optional	Text precising the meaning of the parameter	Input or 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 compatibility with the initial registry ? IESG will probably say 'Yes', I made this assumption 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 unchanged. 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 in 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

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Appendix A. An Appendix

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