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GMPLS MIB family update

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Status of this Memo

Abstract

   This memo describes the necessity of generalized multi-protocol label
   switching (GMPLS) management information base (MIB) family update.
   Since the establishment of basic GMPLS protocol specifications,
   additional functionalities has been proposed and standardized so far,
   such as recovery, call support, optical transport network (OTN)
   support and so forth. Coinciding with these additional specifications,
   GMPLS MIB family is also desired to be updated to manage GMPLS
   networks appropriately. This document is to clarify missing pieces in
   currently defined GMPLS MIB family due to the enhancement of original
   GMPLS protocols.

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[1](#). Introduction

With standardizing basic GMPLS protocols, ccamp WG has also defined
related GMPLS MIBs to manage label switched routers (LSRs), label
switched paths (LSPs) and TE links. However, as the time being,
additional functionalities have been proposed and standardized so far,
such as recovery, call support, OTN support and so forth. Coinciding
with these specifications, GMPLS MIB family is desired to be updated
to manage GMPLS networks appropriately. This document is to clarify
missing pieces in currently defined GMPLS MIB family due to the
enhancement of GMPLS protocols and to propose to start the update
work of GMPLS MIB family.

[2](#). Conventions used in this document

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](#)].

[3](#). GMPLS MIB family

CCAMP WG created series of GMPLS MIB specification so far to manage
label switched routers (LSRs), label switched paths (LSPs) and
traffic engineering (TE) links, accompanying with MPLS MIBs created
in MPLS WG, summarized as follows,

(1) GMPLS TC MIB: [[RFC4801](#)]
(2) LSRs (Nodes)

```
 - GMPLS LSR MIB: [RFC4803]
   (MPLS LSR MIB: [RFC3813])
(3) LSPs (Paths)
- GMPLS TE MIB: [RFC4802]
   (MPLS TE MIB: [RFC3812])
(4) TE Links (Links)
- LMP MIB: [RFC4631]
   (TE link MIB: [RFC4220])
```

CCAMP WG is also working for the MIB specification to manage TE
database information.

```
(5) TE database (routing)
- TEDB MIB: [GMPLS-TED-MIB]
```

4. GMPLS protocol updates

Since the establishment of the original GMPLS protocol specifications,
additional functionalities have been added so far summarized as
follows.

Original signaling specifications [RFC3471, RFC3473] were mainly
updated for the inclusion of

```
- Egress support [RFC4003]
- OTN support [RFC4328]
- Exclude route [RFC4874]
- Recovery of end-to-end and segment-by-segment [RFC4872, RFC4873]
- Call support [RFC4974]
```

Moreover, in the future, this will be also updated by
```
- Ethernet support
- Lambda support
```

5. Missing pieces of GMPLS MIB Family

Here is a possible list of future inclusion to GMPLS MIB Family.
Inclusion will be determined according to GMPLS OAM requirements
[GMPLS-OAM-REQ].

```
(1) Node
- Ingress and Egress port control information of each LSP
- OTN label as GMPLS label types
- Administrative status of cross-connections for recovery purpose

(2) Paths
- GMPLS recovery types of LSPs
```

- LSP status information related with recovery
    - Ingress/Egress port information of GMPLS LSPs

    (3) Link
    - OTN as an encoding type

6. Security consideration

    This document introduces no new security considerations in [RFC3471]
    and [RFC3471].

7. IANA Considerations

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    for an existing registry.
    B. Must specify if the document requires IANA to assign or update
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    C. See "Guidelines for Writing an IANA Considerations Section in
    RFCs" [RFC2434] (Narten, T. and H. Alvestrand, "Guidelines for
    Writing an IANA Considerations Section in RFCs, " October 1998.) and
    in some cases also "IANA Allocation Guidelines For Values In the
    Internet Protocol and Related Headers" [RFC2780] (Bradner, S. and V.
    Paxson, "IANA Allocation Guidelines For Values In the Internet
    Protocol and Related Headers, " March 2000.). In some case "Assigning
    Experimental and Testing Numbers Considered Useful" [RFC3692] (Narten,
    T., "Assigning Experimental and Testing Numbers Considered Useful,"
    January 2004.) may help as well.
    D.

    If there is no action for IANA, the section should say that, e.g.,
    including something like "This document has no actions for IANA."

8. Acknowledgement

    The authors would like to express their thanks to Adrian Farrel for
    the discussion.

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