MPLS-Transport Profile

Introduction

MPLS-TP (MPLS Transport Profile) is jointly specified by the IETF and the ITU-T. It is designed to be a sub-set of the MPLS framework that provides connection-oriented services better suited to transport networks.

MPLS-TP uses the same packet format as MPLS, and uses LSPs (Label Switched Paths) and PWs (pseudowires)

The MPLS-TP path is configured by the management system, but can optionally be determined and provisioned by the GMPLS control plane. MPLS-TP supports active and backup paths, providing linear protection with sub-50 msec recovery. The concept of pre-defined active and backup paths facilitates traffic engineering and enables guaranteed bandwidth across the CEN (Carrier Ethernet Network)

OAM Support

MPLS-TP also provides extensive OAM support, including Y.1731 FM (Fault Management) and PM (Performance Management). Unlike MPLS, MPLS-TP does not use IP routing, so MPLS-TP CENs can be purely layer 2 networks.

MPLS supports point-to-point LSPs and also point-to-multipoint LSPs. Unlike MPLS, the forward and reverse directions of traffic are carried over the same network path at all times.

Note
Please note that this explanation relates to use of MPLS-TP for the Ethernet service layer SOAM, and does not mention transport layer (i.e. MPLS-TP specific) OAM features such as BFD.

Carrier Ethernet Services

MPLS-TP is a point-to-point (connection-oriented) transport technology and can be used to implement MEF E-Line and E-Access services.

EPL services can be provided over MPLS-TP with transparent handling of L2CPs in a similar fashion to that supported by VPWS. E-LANs and E-Trees can be implemented by running VPLS over MPLS-TP based LSPs and PWs.

Due to the fact that MPLS-TP uses the same frame format as MPLS, the scalability of services and CoS identification is the same. Refer to MPLS over VPWS for more details.

Support for the various Ethernet services is summarized in the table at right.