Implementing MPLS Forwarding on Cisco IOS XR Software

All MPLS features require a core set of MPLS label management and forwarding services; the MPLS Forwarding Infrastructure (MFI) supplies these services.

MPLS combines the performance and capabilities of Layer 2 (data link layer) switching with the proven scalability of Layer 3 (network layer) routing. MPLS enables service providers to meet the challenges of growth in network utilization while providing the opportunity to differentiate services without sacrificing the existing network infrastructure. The MPLS architecture is flexible and can be employed in any combination of Layer 2 technologies. MPLS support is offered for all Layer 3 protocols, and scaling is possible well beyond that typically offered in today's networks.

MFI Control-Plane Services

The MFI control-plane provides services to MPLS applications, such as Label Distribution Protocol (LDP) and Traffic Engineering (TE), that include enabling and disabling MPLS on an interface, local label allocation, MPLS rewrite setup (including backup links), management of MPLS label tables, and the interaction with other forwarding paths (IPv4 for example) to set up imposition and disposition.

MFI Data-Plane Services

The MFI data-plane provides a software implementation of MPLS forwarding in all of the following forms:

- Imposition
- Disposition
- Label swapping