

DiffServ Modules

SKU ZOS-RSVPTE-DS
SKU ZOS-RSVPTE-DSTE

Many Quality of Service (QoS) methods have been proposed to address the QoS requirements of today's networks. The latest evolution of QoS technology is Differentiated Services, or DiffServ, over Multi-Protocol Label Switching (MPLS). Service providers use DiffServ over MPLS to provide multiple, scalable classes of services to their customers. DiffServ over MPLS allows network administrators to define how DiffServ priorities are mapped to MPLS Label Switched Paths (LSPs) to optimize the organization's performance and reliability objectives.

DiffServ over MPLS (ZOS-RSVPTE-DS)

IP Infusion has implemented RFC 3270 as an extension to its ZebOS RSVP-TE Module to provide a flexible DiffServ over MPLS solution. This extension enables RSVP-TE to set up a DiffServ LSP using RSVP signaling. A DiffServ Object is added to the RSVP Path message and passed on to the next node. ZebOS DiffServ supports both EXP-Inferred-PHB Scheduling Class LSP (E-LSP) and Label-Only-Inferred-PHB Scheduling Class LSP (L-LSP).

The ZebOS DiffServ Module enables network traffic to be specified and prioritized by class so that certain kinds of traffic, for example voice traffic, get precedence over other types of traffic. DiffServ employs a sophisticated policy to determine how to forward network data, so it is more advanced than earlier QoS or Type of Service (ToS) protocols.

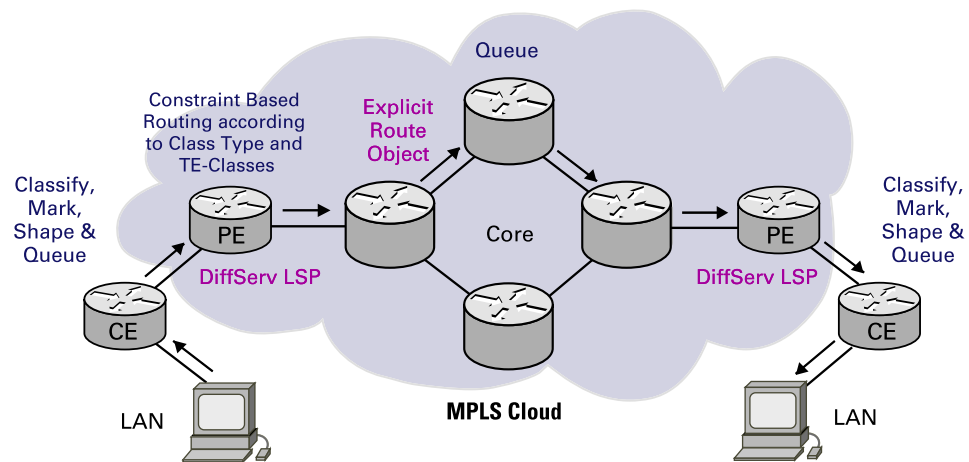


Figure 1 DiffServ-Aware MPLS Traffic Engineering (DS-TE)

DiffServ-Aware MPLS Traffic Engineering (DS-TE)

DiffServ by itself lacks the ability to efficiently use network transmission resources. MPLS Traffic Engineering can optimize the transmission of resources by using bandwidth reservation and constraint based routing. But it can only provide this capability at one aggregate level; it cannot classify network bandwidth. By combining DiffServ with MPLS Traffic Engineering, routing devices can simultaneously classify and prioritize traffic and achieve fined-grain optimization of transmission resources. IP Infusion has developed a DiffServ-Aware MPLS Traffic Engineering (DiffServ-TE) Module that conforms to draft-ietf-tewg-diff-te-proto-04.txt. The ZebOS DiffServ-TE Module performs traffic engineering per DiffServ class rather than at an aggregate level. This implementation specified in the DiffServ-TE draft differs from IETF RFC 3270. By mapping network traffic from a given DiffServ class of service to a separate LSP, traffic will use resources available to the given class on both shortest paths and non-shortest paths, and follow paths that meet engineering constraints which are specific to the given class. DiffServ-TE can utilize transport resources efficiently while prioritizing and managing different classes of traffic.

Benefits

- Stable, robust implementation of RFC 3270 & draft-ietf-tewg-diff-te-proto-04.txt
- Accelerated time-to-market of advanced DiffServ over MPLS technology for OEM customers
- Platform-independent implementation
- Full integration with other ZebOS ARS protocols and the ZebOS IMI management plane

Supporting Operating Systems

- Linux
 - MontaVista Professional Edition
 - NetBSD
 - VxWorks® *
- * All environments require an MPLS Forwarder. The MPLS Forwarder for Linux is available from IP Infusion. Requires router alert option (RAO).

Requirements

SKU	PRODUCT NAME
ZOS-NSM	ZebOS Network Services Module
ZOS-RSVP-TE	ZebOS RSVP-TE Module
ZOS-NSM-DSTE*	ZebOS DiffServ TE extensions to NSM
ZOS-OSPF*	ZebOS OSPFv2 Module
ZOS-OS-CSPF*	ZebOS OSPFv2 CSPF Extension Module

* Only required for ZOS-RSVP-TE-DSTE

Standards Support

STANDARD	FUNCTION
RFC 3270	Multi-Protocol Label Switching (MPLS) Support of Differentiated Services
draft-ietf-tewg-diff-te-proto-04	Protocol extensions for support of Diff-Serv-aware MPLS Traffic Engineering



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