
LDP Module

Overview

IP Infusion's ZebOS® Network Platform Label Distribution Protocol (LDP) Module is portable software implemented in the ZebOS Network Services Manager (NSM) to take advantage of the services provided by the NSM. LDP can establish adjacencies and sessions with peers and accommodates both IPv4 and IPv6 addresses.

ZebOS LDP is IETF compliant, and supports a number of features, including LDP Adjacencies, LDP Sessions, Forwarding Equivalence Classes (FEC), Label Generation, Label Distribution Modes, Label Retention Modes, Label Switch Path (LSP) Control, and Loop Detection.

ZebOS LDP adds MPLS forwarding entries to the ZebOS NSM using a set of predefined APIs that clients can customize for any hardware forwarder. This gives the ZebOS LDP module the flexibility for use on a variety of platforms. By coupling ZebOS LDP with the ZebOS BGP-4+ Module, IP Infusion provides one of the industry's first source-code MPLS-VPN solutions.

Pseudowires and Pseudowire Redundancy

IP Infusion's ZebOS LDP also supports Ethernet single-segment and multi-segment pseudowires (SS-PW and MS-PW). A pseudowire is an emulation of a native service (for example, ATM or Frame Relay) over a Packet Switched Network (PSN). Pseudowire redundancy allows multi-homed customer edge (CE) devices to be connected to two provider edge (PE) nodes via access circuits to provide protection.

Features

- Ethernet Single-Segment and Multi-Segment Pseudowire Setup and Maintenance
- Scalable to 40,000 LSP and VC
- Scalable Layer 3 MPLS-VPN (with BGP-VPN extension)
- Support for LDP Adjacencies
- Label Stack Encoding and Label Generation
- LDP IPv4/IPv6 Session Support
- Host Address and Prefix FEC Support
- Inter-Area Label Switched Paths
- Liberal and Conservative Label Retention Modes
- Ordered and Independent LSP Control
- Hop Count and Path Vector Loop Detection
- Graceful Restart

Requirements

- ZebOS Network Services Module
- ZebOS MPLS Layer 2 Virtual Circuit (Optional for L2VC support)
- ZebOS VPLS Module (Optional for VPLS support)

Standards Support

- RFC 3031 — Multiprotocol Label Switching Architecture
- RFC 3032 — MPLS Label Stack Encoding
- RFC 3815 — Definitions of Managed Objects for the Multi-Protocol Label Switching (MPLS), Label Distribution Protocol (LDP)
- RFC 3478 — Label Distribution Protocol Graceful Restart
- RFC 4447 — Pseudowire Setup and Maintenance Using the Label Distribution Protocol
- RFC 5036 — Label Distribution Protocol Specification
- draft-ietf-l2vpn-vpls-ldp-09 — Virtual Private LAN Services (VPLS) Over MPLS

Standard Deliverables

- Source Code (written in ANSI-compliant C)
- Installation Guide
- Configuration Guide
- Command Reference Guide
- Developer Guide