

IS-IS Modules for IPv4 and IPv6

Overview

The ZebOS® Network Platform Intermediate System-to-Intermediate System (IS-IS) Module is an IETF-compliant implementation of IS-IS for IPv4 and IPv6 based on link-state technology with two levels of hierarchy. IS-IS forwards Open Systems Interconnect (OSI) and IP packets unaltered; packets are transmitted directly over the underlying link-layer protocols using the Dijkstra algorithm to find the shortest path to the destination. IP Infusion's latest update to the ZebOS IS-IS module incorporates cryptographic authentication of IS-IS PDUs using the Hashed Message Authentication Codes - Message Digest 5 (HMAC-MD5) algorithm.

The ZebOS IS-IS Module communicates with the ZebOS Network Services Module (NSM) to pass routing information to the forwarding plane. The IS-IS Module is fully integrated into the NSM and the other IPv4/IPv6 protocol modules. IP Infusion's IS-IS solution can be used in embedded equipment and on standard server platforms. It is a control plane software module that can also be integrated into a range of network processor environments, and is pre-configured to support many popular operating systems.

ZebOS IS-IS now includes a trigger for Bidirectional Forwarding Detection (BFD) when the ZebOS BFD module is also purchased.

Features

- Expanded use of Overload Bit for BGP Convergence
- Passive Interface Support
- Cryptographic authentication using HMAC-MD5
- Hello for adjacency maintenance
- IS-IS interface state machine
- IS-IS Mesh Groups
- Area, domain, and interface password authentication
- IS-IS Multi-topology support
- Summary Address
- Dynamic Hostname Exchange Mechanism
- Generalized MPLS Extensions
- Redistribution of information from another routing protocol
- Link state synchronization between link state update and link state database
- Bidirectional Forwarding Detection Trigger
- IS-IS Transient Blackhole Avoidance
- Areas for hierarchical topology
- IS-IS Traffic Engineering with CSPF
- Multiple Instance Support
- Domain-wide Prefix Distribution with Two-Level IS-IS
- IS-IS Restart
- Sequence Module
- Metric-style transition support
- Attached Level 2 Area
- Overload bit

Requirements

- ZebOS Network Services Module
- ZebOS BFD (Optional for IS-IS BFD Trigger)

Standards Support

- ISO-10589 — Intermediate System-to-Intermediate System Specification
- RFC 1195 — Use of OSI IS-IS for Routing in TCP/IP and Dual Environments
- RFC 2763 — Dynamic Hostname Exchange Mechanism for IS-IS
- RFC 2973 — IS-IS Mesh Groups
- RFC 2966 — Domain-wide Prefix Distribution with Two-Level IS-IS
- RFC 3373 — Three-Way Handshake for IS-IS Point-to-Point Adjacencies
- RFC 3567 — IS-IS Cryptographic Authentication (using HMAC-MD5)
- RFC 3784 — IS-IS Extensions for Traffic Engineering (TE)
- RFC 4205 — IS-IS Extensions in Support of Generalized Multi-Protocol Label Switching (GMPLS)
- draft-ietf-isis-wg-mib-09 — Management Information Base for IS-IS
- draft-ietf-isis-restart-02 — Restart Signaling for IS-IS
- draft-ietf-isis-wg-multi-topology-06 — M-ISIS: Multi-topology Routing in IS-IS
- draft-ietf-isis-ipv6-05 — Routing IPv6 with IS-IS

Special Considerations

- End System-IS (ES-IS) and ES are not supported.
- Connectionless Network Services (CLNS) routing and forwarding are not supported.
- Only IP routing is supported

Standard Deliverables

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