

Cisco IP Solution Center MPLS VPN Management 5.0

As part of the Cisco® IP Solution Center (ISC) family of intelligent network management applications, the Cisco ISC MPLS VPN Management application reduces network administration and management costs and complexity by accelerating and automating deployment of Multiprotocol Label Switching (MPLS) and Metro Ethernet technologies.

Product Overview

Cisco IP Solution Center

Cisco IP Solution Center provides automated, workflow-based troubleshooting and diagnostic capabilities, automated resource management, and rapid profile-based planning and provisioning capabilities for MPLS VPNs. The Cisco ISC applications can operate as standalone applications or as a suite. Functions include provisioning and automated diagnostics¹ for MPLS VPNs; ATM, Frame Relay, and Ethernet over MPLS VPNs; Metro Ethernet VPNs; and planning and configuration of MPLS Traffic Engineering. Cisco IP Solution Center provides a flexible application set for managing MPLS and Metro Ethernet technologies in service provider and large enterprise networks.

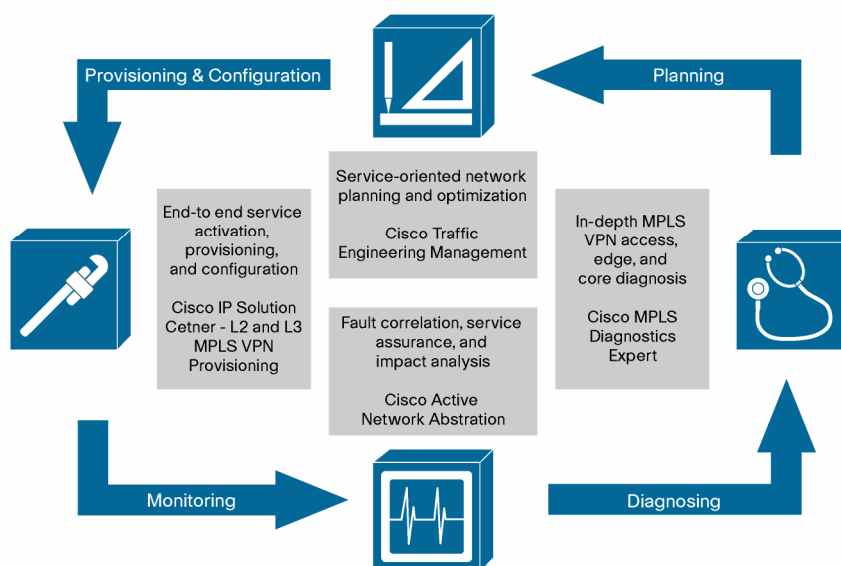
Cisco IP Solution Center also offers a scalable and reliable architecture for large-scale operations by providing a Web-based GUI and open APIs to help integrate IP services operations into existing service provider operations support systems (OSSs). Open APIs and OSS interfaces help service providers to easily integrate IP VPN services into their OSS and management infrastructure. The open APIs allow for integration with Cisco fault-management products such as Cisco Info Center and performance-management products from independent software vendors (ISVs). For additional information, contact your Cisco sales representative.

Cisco IP Solution Center delivers complete lifecycle management, from creating the IP service to real-time VPN and MPLS Traffic Engineering tunnel provisioning, activation, troubleshooting, and diagnostics. It provides the tools to accelerate deployment and time to market of IP services. Simultaneously, it simplifies management of multiple technologies by providing an integrated management product (Figure 1).

¹ Refer to the Product Overview section for additional details on automated diagnostics features provided today.

Figure 1. Intelligent Management Applications for MPLS and Metro Ethernet Networks

The ISC Product Suite and Associated Cisco Products Offer Full Service Management Lifecycle Support for MPLS Access, Edge, and Core Management



Cisco ISC MPLS VPN Management Application

The Cisco ISC MPLS VPN Management application gives enterprises and service providers a set of management features such as policy-based VPN and MPLS VPN routing audit to help minimize the cost of deploying new and revenue-generating MPLS VPN services. These features facilitate accurate, effective service deployment and help manage the entire lifecycle of MPLS VPN technologies.

Cisco ISC MPLS VPN Provisioning Capabilities

- Automated discovery. Under certain circumstances ISC will provide discovery of MPLS VPN services to simplify the discovery, creation, and continual management of manually configured services
- Management of resources such as autonomous systems, regions, IP address pools, and provider administrative domains
- Definition of provisioning parameters in a service policy to be used during service activation, including hub-and-spoke, full-mesh, and partial-mesh VPN design
- Preprovisioning checks for validity of service design, including uploading of the current configuration and validation of service design against the existing network configuration
- Download and activation of the Layer 3 VPN service design, including activation of various MPLS VPN topologies and wide support for routing protocol configuration on attachment circuits for export of customer routes – Open Shortest Path First (OSPF), static, Enhanced Interior Gateway Routing Protocol (EIGRP), and so on
- Postprovisioning validation of the service design to determine whether the Layer 3 VPN is active and functional

Cisco ISC MPLS VPN Planning Capabilities

- Configuration and management of MPLS Traffic Engineering tunnels on a network; for further details about the Cisco ISC Traffic Engineering Management application, refer to the Cisco IP Solution Center Traffic Engineering Management data sheet at <http://www.cisco.com/go/isc>.

Cisco ISC MPLS VPN Diagnostics Capabilities

- Smart configuration and routing audits, and VPN routing and forwarding (VRF) pings to validate VPN configuration
- On-demand and scheduled audits for configuration troubleshooting
- Automated, workflow-based troubleshooting and diagnostics of MPLS VPN deployments. This functionality is provided as part of the Cisco MPLS Diagnostics Expert, which works with the Cisco IP Solution Center family of applications. It can be used in conjunction with the Cisco ISC MPLS VPN Management application for VPN postprovisioning check and uses the customer and VPN data provided by Cisco ISC as a starting point for troubleshooting. After deploying a VPN using Cisco ISC MPLS VPN Management provisioning features, you can use Cisco MPLS Diagnostics Expert to run a reachability test to verify that the VPN has been provisioned successfully.

The Cisco ISC MPLS VPN Management application can be deployed with other Cisco ISC applications for additional capabilities and can also be used in conjunction with Cisco MPLS Diagnostics Expert for the analysis of network failure scenarios across MPLS access, edge, and core networks.

Other Cisco IP Solution Center applications are:

- Cisco ISC Layer 2 VPN application
- Cisco ISC Traffic Engineering Management application

For more information about these applications, please visit <http://www.cisco.com/go/isc>. For further details about the Cisco MPLS Diagnostics Expert application, please visit <http://www.cisco.com/go/mde>.

Key Features And Benefits

Table 1 gives the features and benefits of the Cisco ISC MPLS VPN Management application.

Table 1. Features and Benefits

Features	Description	Benefits
Tracking of MPLS resources	<p>Cisco ISC MPLS VPN Management allows service operators to:</p> <ul style="list-style-type: none"> • Manage Border Gateway Protocol (BGP) autonomous systems, regions, customers, customer sites, provider administrative domains, and VRF names • Automatically allocate resources such as IP addresses, route distinguishers, and router targets 	<p>Cisco ISC MPLS VPN Management keeps track of all the allocated resources and knows to which service, customer, or site these resources were allocated. This greatly reduces the time it takes the service operator to track these resources and relieves the operator from manually entering certain parameters during service activation.</p>

Rapid profile-based VPN provisioning	<p>Cisco ISC MPLS VPN Management allows service operators to define MPLS VPN provisioning parameters in a service policy and uploads the network-element configuration to calculate the change in configuration needed to help ensure successful service activation. It supports the configuration and management of:</p> <ul style="list-style-type: none"> • Routing protocols such as Routing Information Protocol (RIP), OSPF, BGP, and EIGRP as provider edge-to-customer edge (PE-CE) routing protocols • Multicast VPN for Cisco IOS® networks • Management VPN • Managed and unmanaged customer edge scenarios • Multi-VRF for managed and unmanaged customer edge • Interautonomous system management • Layer 2 access into MPLS VPNs • MPLS VPN carrier-supporting-carrier (CSC) support • Support of residential services using a Metro Ethernet Access Domain into an MPLS VPN 	<p>Automation of these processes helps reduce provisioning fallouts due to error-prone manual procedures.</p> <p>The use of service policies for service activation speeds the provisioning cycle and reduces time to market. It greatly reduces the service operator's tasks because the only parameters required for service activation have already been captured in the service policy.</p> <p>By uploading the configuration prior to applying the configuration, Cisco ISC MPLS VPN Management helps ensure that the service-activation configuration is successfully applied and does not collide with the existing configuration, reducing outages caused by incorrect provisioning.</p>
Recognize incorrect service configuration	<p>Cisco ISC MPLS VPN Management provides postprovisioning validation of the service design in order to determine whether the Layer 3 VPN is active and functional:</p> <ul style="list-style-type: none"> • Configuration and routing audits • On-demand audits for configuration troubleshooting 	<p>This feature reduces the time it takes to troubleshoot network outages due to incorrect service configuration by verifying that the commands for a service are present on the network elements and the links involved or VPN are working correctly.</p>
Autodiscovery of MPLS VPN services	<p>Cisco ISC MPLS VPN Management can discover MPLS services that were configured without Cisco IP Solution Center on the service provider's network. This capability requires that the services have been configured in the same way that ISC provisions the network. Please see ISC Infrastructure Reference, 5.0.1 for details.</p>	<p>Helps operators, with the help of Cisco Advanced Services or other integrator, to quickly set up Cisco ISC MPLS VPN Management in existing VPN networks and efficiently takes over management of manually configured MPLS VPN services.</p>
Investment protection from Cisco IOS and Cisco IOS XR Software and line-card changes	<p>Cisco ISC MPLS VPN Management provides comprehensive platform and Cisco IOS and IOS XR Software support.</p> <ul style="list-style-type: none"> • Platforms supported: <ul style="list-style-type: none"> ◦ Cisco 7200 Series Router ◦ Cisco 7500 Series Router ◦ Cisco MGX 8800 Series Switch ◦ Cisco 10000 Series Router ◦ Cisco 7600 Series Router ◦ Cisco 12000 Series Router ◦ Cisco XR12000 and CRS-1 • Cisco IOS Software supported: <ul style="list-style-type: none"> ◦ Cisco IOS Software versions ◦ 12.0(32)SY, 12.2S branches, 12.2(31)SB5, 12.2(33)SRA/B1 ◦ Cisco IOS XR 3.4.2, and 3.5 	<p>This feature reduces time to market of new services and the cost of upgrading the customer OSSs due to upgrades in platforms, Cisco IOS Software releases, and line cards by providing extensive support of the latest Cisco hardware and Cisco IOS Software release.</p>
Carrier-grade infrastructure for large deployments	<p>Cisco ISC MPLS VPN Management makes use of the following Cisco ISC set of system features in order to provide a carrier-grade VPN management system:</p> <ul style="list-style-type: none"> • Thin Web GUI client • Role-based access control (RBAC) • Extensible Markup Language (XML)-over-HTTP northbound interface • Data backup and restore 	<p>RBAC provides access control to service providers that want to implement strict operational processes. Backup and restore capabilities protect data against OS crashes, file corruption, disk failures, and total machine failure.</p>

Applications

Tier 1 service providers use managed MPLS-based VPN services to deploy many value-added services such as combined data, voice, and video services. MPLS-based VPNs lower the total cost of ownership (TCO) for a service provider. These savings can be passed along to enterprises, along with other inherent benefits such as simplified deployments of security, high availability, multicasting, and other critical capabilities. Offering and deploying MPLS VPN services to enterprise customers requires planning network resources and deploying, maintaining, and configuring the network elements and services. These manual procedures can be time-consuming and error-prone. A service provider needs to automate all these steps to compete effectively in this challenging market.

The Cisco ISC MPLS VPN Management application helps service providers by providing the required provisioning, planning, and troubleshooting features essential to manage the entire lifecycle of MPLS VPN services.

- MPLS management features such as policy-based VPN, management VPN provisioning, and MPLS VPN routing audit help minimize the cost of deploying new and revenue-producing MPLS VPN services.
- The Cisco ISC MPLS VPN Management application also can configure and monitor Cisco IOS multicast MPLS VPNs. Using the application's multicast VPN feature in conjunction with MPLS VPN allows service providers to offer both unicast and multicast connectivity to MPLS VPN customers.
- Service providers that want to manage customer premises equipment (CPE) can do so with Cisco IP Solution Center. CPE can be added to the management VPN for monitoring and management.

Product Specifications

Product specifications for each Cisco IP Solution Center application are found in the data sheets for the respective applications, and more details are available in the installation guide at <http://www.cisco.com/go/isc>.

System Requirements

The server, client, and Web browser system requirements can be found in the installation guide and at <http://www.cisco.com/go/isc> under Cisco IP Solution Center Technical Documentation. Refer to this and the product documentation guide for more detailed information about setting up and configuring this product.

Ordering Information

The Cisco ISC MPLS VPN Management application and Cisco MPLS Diagnostic Expert are available for purchase through regular Cisco sales and distribution channels worldwide. To place an order, visit the [Cisco Ordering Homepage](#).

Cisco ISC MPLS VPN Management ordering and licensing options are described in the Cisco IP Solution Center 5.0 product bulletin, available at http://www.cisco.com/en/US/products/sw/netmgtsw/ps4748/prod_bulletin0900aecd806b7aa5.html.

Cisco MPLS Diagnostics Expert ordering and licensing options are described in the Cisco MPLS Diagnostics Expert bulletin, available at <http://www.cisco.com/go/mde>.

Service and Support

Cisco offers a wide range of services programs to accelerate customer success. These innovative services programs are delivered through a unique combination of people, processes, tools, and partners, resulting in high levels of customer satisfaction. Cisco services help you protect your network investment, optimize network operations, and prepare your network for new applications to extend network intelligence and the power of your business. For more information about Cisco services, refer to [Cisco Technical Support Services](#) or [Cisco Advanced Services](#).

For More Information

For more information about the Cisco IP Solution Center MPLS VPN Management application, visit <http://www.cisco.com/en/US/products/sw/netmgtsw/ps5332/index.html> or <http://www.cisco.com/go/isc>, contact your local Cisco account representative or send an e-mail to the product marketing group at isc-mktg@cisco.com.



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