The Cisco IP/MPLS Backbone Solution

A Converged Mobile Network for Greater Efficiency and Faster Time to Market

Mobile networks are evolving daily. A surge in customer demand for different types of broadband data, and multimedia services is putting pressure on mobile network operators to deploy and manage new products and services. Mobile operators worldwide are migrating to third-generation (3G) networks to support the vast array of new revenue-generating service opportunities. One common factor in the various 3G standards is the increased role of IP and the clear evolution towards an all IP network.

Cisco Systems

"The evolution to a core IP network is essential to the future architecture of the Vodafone systems. Cisco's experience in IP is critical to Vodafone transforming its business into really being a next generation service provider. It really opens up the opportunity for Vodafone to create the next generation of a mobile business and mobile services..."

–Alan Harper, Group Strategy Director, Vodafone

Cisco IP/MPLS Backbone Solution

Cisco Systems® has been working closely with leading mobile operators to make this transition easier through the use of Cisco® IP Multiprotocol Label Switching (MPLS) technology.

Cisco IP/MPLS helps you deploy and manage the newest IP and 3G mobile voice, data, and video services cost-effectively by converging your existing networks into one, while increasing scalability and bandwidth efficiencies.

Cisco IP/MPLS solution is supported on the industry-leading Cisco routing platforms at both the network core and edge. The Cisco routing portfolio includes Cisco 12000 and XR 12000 series routers and Cisco CRS-1 Carrier Routing System at the core; and Cisco 7600 and 10000 series routers at the edge.

Cisco IP/MPLS Solution Delivers the Following Capabilities:

Converge Multiple Independent Networks

Transition from multiple, single-purpose networks to one converged single network for packet-based voice, video, signaling, and data services. You gain economies of scale and faster time-to-market for 3G services and IP applications such as voice over IP (VoIP) and VPNs. MPLS VPN technologies allow one physical network to be partitioned into many independent VPNs, each with its own distinct characteristics, traffic types, and Quality of Service (QoS) features predefined by the operator. For instance, your SS7 signaling traffic and internal MIS traffic can be securely transported on the same network.

Deploy High-Quality Mobile IP Services

Cisco IP/MPLS takes advantage of the intelligence of IP routing, the switching characteristics of ATM, and end-to-end QoS controls that allow you to prioritize and guarantee different types of traffic. With advanced QoS, voice quality is not affected by a migration to IP. In fact, Cisco has worked with mobile vendors to help operators globally migrate from circuit-switched-based Mobile Switching Centers (MSCs) to IP-based voice network using distributed MSC and media gateways without any compromise in voice quality.

Provide IP Carrier Class Reliability and Availability

Cisco IP/MPLS supports advanced features such as traffic engineering (TE) and fast reroute (FRR) which enable an IP network to recover rapidly from various types of failures. Cisco IP experts will help design and architect your IP backbone to help ensure that there is always sufficient protection and bandwidth built into your network. QoS mechanisms also help ensure that critical traffic types are rerouted within seconds in the event of a network failure. Cisco routers have embedded features to help protect the IP network from security threats such as distributed denial of service (DDOS). Furthermore, the pioneering Cisco IOS XR Software, supported on the Cisco XR 12000 Series and Cisco CRS-1, provides IP carrier-class availability with valuable capabilities such as in-service software upgrade (ISSU).

Offer Long Term Scalability to Grow Capacity and Services

Cisco IP/MPLS solution offerings allow you to scale from 2.5G to 10G or even 40G networks as traffic, customers, and services grow. Innovative Cisco leading technology helps you easily deploy services so you can quickly meet new and accelerating customer demands.

Lower Operating and Capital Expenses

With a converged IP/MPLS infrastructure, you can reduce duplication and complexity in your network—resulting in cost savings from fewer transmission lines, less network equipment, and less physical rack space for the equipment.

Protect Your Existing Investment

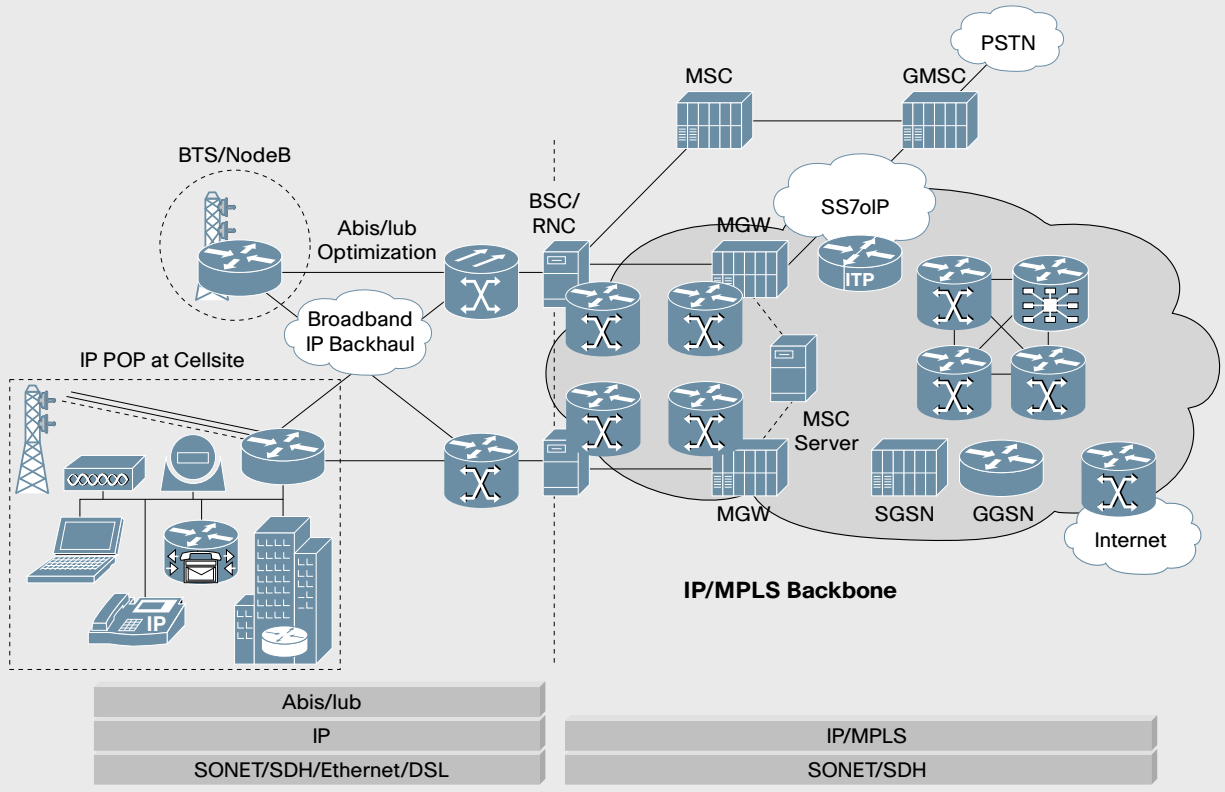
You can continue to use your existing network investments, whether they are based on ATM, TDM, Frame Relay, or other technologies. A Cisco IP/MPLS backbone can preserve your investments by transporting traffic from various access networks in a mobile network infrastructure and by permitting the use of MPLS-enabled ATM switches to start the transition to an IP/MPLS backbone.

Mobile Operators IP/MPLS Networks

The diagram below shows a mobile operator's network. It illustrates how the IP/MPLS technologies can be used in the backbone network to carry all the data traffic and support VoIP.

For mobile operators that also have a fixed-line business, Cisco IP/MPLS brings all existing and future network services under one network environment for end-to-end QoS, security, management, and other efficiencies. Without Cisco IP/MPLS, newer data and multimedia services are expensive and complex to deploy and manage on older network technologies.

Mobile Operators IP/MPLS Networks



Cisco IP/MPLS is an Integral Part of Cisco's IP Next-Generation Network (IP NGN) Mobile Network Vision

Cisco IP NGN provides the anytime, anywhere availability of voice, data, and video IP applications on digital devices of many kinds. Mobile operators need an application layer that can integrate new services over a single broadband infrastructure, and a secure network layer like IP/MPLS that converges multiple networks into one for extensive cost savings and timely service deployment. Cisco IP/MPLS is rapidly emerging as a core technology for IP NGNs, a proven Cisco multiservice architecture that has been deployed in service provider environments worldwide.

Why Cisco

As the undisputed IP leader, Cisco Systems provides the technology, solutions, and expertise that mobile operators need as they transition to IP NGNs. Cisco has a proven track record of technology leadership, investment protection, and world-class customer support. Cisco IP/MPLS is supported on the latest, most advanced Cisco hardware with a rich set of carrier-class features and capabilities powered by Cisco IOS Software and Cisco IOS XR Software. Deploying solutions that deliver greater network intelligence, integration, and overall flexibility will help you keep pace with new demands and ultimately boost your competitive advantage.

For More Information

More information on Cisco IP/MPLS can be found at **www.cisco.com/go/ipmpls**

Additional information on the Cisco portfolio supporting IP/MPLS solutions are available at:
www.cisco.com/go/crs
www.cisco.com/go/12000
www.cisco.com/go/10000
www.cisco.com/go/7600

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