


# Cisco IGX 8400 Label Switch Router



**Standards-based Multiprotocol Label Switching (MPLS) technology is available on the Cisco IGX 8400 Series multiservice switch platform. An entry point to MPLS on a carrier-class platform, the Cisco IGX 8400 expands the reach of the successful BPX 8600 MPLS technology, often used in conjunction with the Cisco IGX.**

The Cisco IGX 8400 is ideal for post, telephone, and telegraph (PTT) carriers and alternative providers that deliver Frame Relay and asynchronous transfer mode (ATM) services for midsized or distributed points of presence (POPs), as well as for deployments that require a robust, cost-effective, multiservice solution. The Cisco IGX 8400 brings the scalability advantages of IP + ATM to large enterprises worldwide.

The Cisco IGX can be upgraded with IP functionality with the addition of the IGX-LSC-72 Label Switch Controller Retrofit Kit. With the Label Switch Controller Retrofit Kit, the IGX provides industry-leading ATM broadband service capabilities and integrates Cisco IOS® software to deliver IP services. The addition of an IGX-LSC-72 to an IGX allows scaling of Internet services and enables the user to provision new integrated IP+ATM services such as voice over IP (VoIP), virtual private networks (VPNs), and Web and content hosting services across the ATM backbone.

## Features and Benefits of Cisco IGX 8400 Label Switch Router

The label switch controller (LSC), combined with the Cisco IGX 8400 IP+ATM switch, supports scalable integration of IP services over an ATM network. The MPLS LSC enables the Cisco IGX 8400 to:

- Participate in an MPLS network
- Directly peer with IP routers
- Support the IP features in Cisco IOS software

The MPLS LSC supports highly scalable integration of MPLS (IP+ATM) services by using a direct peer relationship between the Cisco IGX 8400 switch and MPLS routers. This direct peer relationship removes the limitation on the number of IP edge routers typical of traditional IP-over-ATM networks, allowing service providers to meet growing demands for IP services. The MPLS LSC also supports direct and rapid implementation of advanced IP services over ATM networks using Cisco IGX 8400 switches.

The MPLS LSC controls the ATM switch by means of the Virtual Switch Interface (VSI), which runs over an ATM link connecting the two devices.

MPLS combines the performance and virtual circuit capabilities of Layer 2 (data link layer) switching with the scalability of Layer 3 (network layer) routing capabilities. This combination enables service providers to deliver solutions for managing growth, providing differentiated services, and leveraging existing networking infrastructures.



The Cisco IGX 8400 Label Switch Router (LSR) architecture provides the flexibility to:

- Run applications over any combination of Layer 2 technologies
- Support any Layer 3 protocol while scaling the network to meet future needs

By deploying the MPLS LSC across service provider networks, large enterprise networks or wide-area networks (WAN), customers can:

- Save money by using existing ATM and routing infrastructures
- Grow revenue using MPLS-enabled services
- Increase productivity through enhanced network scalability and performance
- Reduce costs of network operations through automated provisioning

#### Specifications

The MPLS LSC is a LSR that is configured to control the operation of a separate ATM switch. Together, the MPLS LSC and the controlled ATM switch function as a single ATM MPLS router (ATM-LSR).

The CiscoIGX-LSC-72 consists of common equipment, and several configurable products that are required to be added to the base system.

**The Cisco IGX-LSC-72 common equipment includes:**

- Cisco 7204 Label Switch Controller
- FR-TSC72 (Label Switch Controller License)
- FR-IR72 (MPLS Feature Licence)
- Mechanical Packaging

**The following configurable items are required to create a valid system:**

- IOS 12.0.7T
- I/O Controller
- MEM-1/0-FLD48M
- NPE-300
- MEM-NPE-64MB
- Port Adapter (PA-A3-OC3MM or SM)

#### IGX System Requirements

The existing IGX must include the following items:

- Switch Software 9.3.10 or higher
- IGX-NPM-64B
- IGX-UXM Firmware Model C

#### Regulatory Compliance

The Cisco IGX-LSC-72 conforms to the following set of safety and regulatory standards:

##### Safety

- UL 1950
- CSA 22.2-No. 950
- EN60950
- EN41003
- AUSTEL TS001
- AS/NZS 3260

##### EMI

- AS/NRZ 3548 Class A
- CSA Class A
- FCC Class A
- EN60555-2
- EN55022 Class B
- VCCI (Class II)

##### Immunity

- IEC-1000-4-2 (ESD)
- IEC-1000-4-3 (radiated susceptibility)
- IEC-1000-4-4 (electrical fast transients)
- IEC-1000-4-5 (surge)
- IEC-1000-4-6 (injected RF swept)
- IEC-1000-4-11 (power line voltage)
- IEC-1000-3-2 (harmonics)



Corporate Headquarters  
Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
[www.cisco.com](http://www.cisco.com)  
Tel: 408 526-4000  
800 553-NETS (6387)  
Fax: 408 526-4100

European Headquarters  
Cisco Systems Europe  
11, Rue Camille Desmoulins  
92782 Issy Les Moulineaux  
Cedex 9  
France  
[www.cisco.com](http://www.cisco.com)  
Tel: 33 1 58 04 60 00  
Fax: 33 1 58 04 61 00

Americas Headquarters  
Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
[www.cisco.com](http://www.cisco.com)  
Tel: 408 526-7660  
Fax: 408 527-0883

Asia Pacific Headquarters  
Cisco Systems Australia, Pty., Ltd  
Level 17, 99 Walker Street  
North Sydney  
NSW 2059 Australia  
[www.cisco.com](http://www.cisco.com)  
Tel: 61 2 8448 7100  
Fax: 61 2 9957 4350

Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on the  
**Cisco.com Web site at [www.cisco.com/go/offices](http://www.cisco.com/go/offices).**

Argentina • Australia • Austria • Belgium • Brazil • Canada • Chile • China • Colombia • Costa Rica • Croatia • Czech Republic • Denmark • Dubai, UAE  
Finland • France • Germany • Greece • Hong Kong • Hungary • India • Indonesia • Ireland • Israel • Italy • Japan • Korea • Luxembourg • Malaysia  
Mexico • The Netherlands • New Zealand • Norway • Peru • Philippines • Poland • Portugal • Puerto Rico • Romania • Russia • Saudi Arabia • Singapore  
Slovakia • Slovenia • South Africa • Spain • Sweden • Switzerland • Taiwan • Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela

All contents are Copyright © 1992–2001 Cisco Systems, Inc. All rights reserved. Important Notices and Privacy Statement. Printed in the USA. Catalyst, Cisco, Cisco IOS, Cisco Systems, and the Cisco Systems logo are registered trademarks of Cisco Systems, Inc. or its affiliates in the U.S. and certain other countries. All other brands, names, or trademarks mentioned in this document or Web site are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company (0101R) 03/01 BW7089