

Cisco

ONS 15252/201 Series



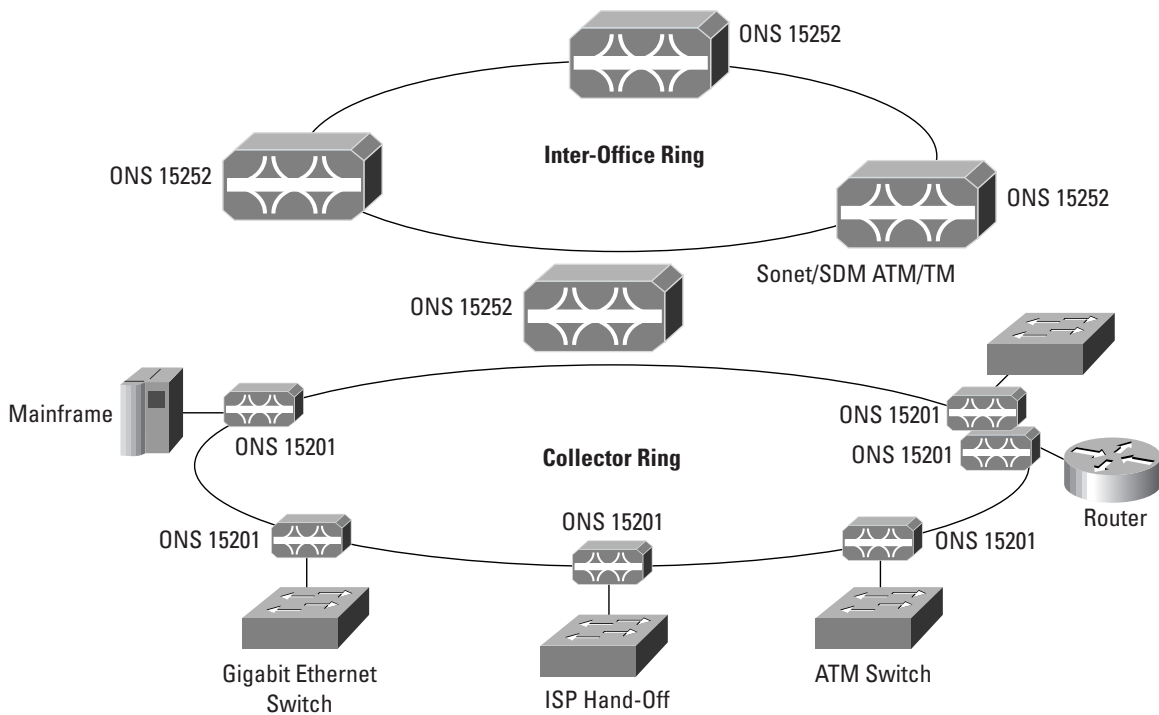
The explosion in voice and data traffic has strained available fiber bandwidth in the metropolitan area. As a result, many service providers are experiencing severe capacity constraints while struggling to keep pace with metro customers' demand for greater bandwidth and diversity of services. Laying new fiber in densely populated urban areas is often both cost- and time-prohibitive, forcing service providers to seek solutions that maximize their existing metropolitan fiber infrastructure.

Until now, only "first generation" Metro DWDM solutions have been available to meet service provider needs. First generation Metro DWDM optical networking systems are characterized by re-purposed long haul DWDM systems deployed in the metro space. These systems are large, cumbersome to install and turn up, and offer little in the way of wavelength and subwavelength service aggregation. The main benefit these

systems offer service providers is "fiber gain"—more channels per fiber on point to point routes.

The continuing growth of Internet traffic is leading service providers to look for a new generation of capacity-enhancing, service-delivering DWDM platforms. The Cisco ONS 15252/201 Metro DWDM systems meet these requirements with the unprecedented ability to deliver wavelengths to customer premises in single increments, support multiple network topologies, consume little in the way of power and space, support a combination of clear channel and transponder-based channels to aggregate wavelength and subwavelength services, support very low cost amplification, and interoperate seamlessly with alternative Metro Optical Transport gear such as SONET/SDH ADMs and high end routers.

Figure 1 Metropolitan Networks

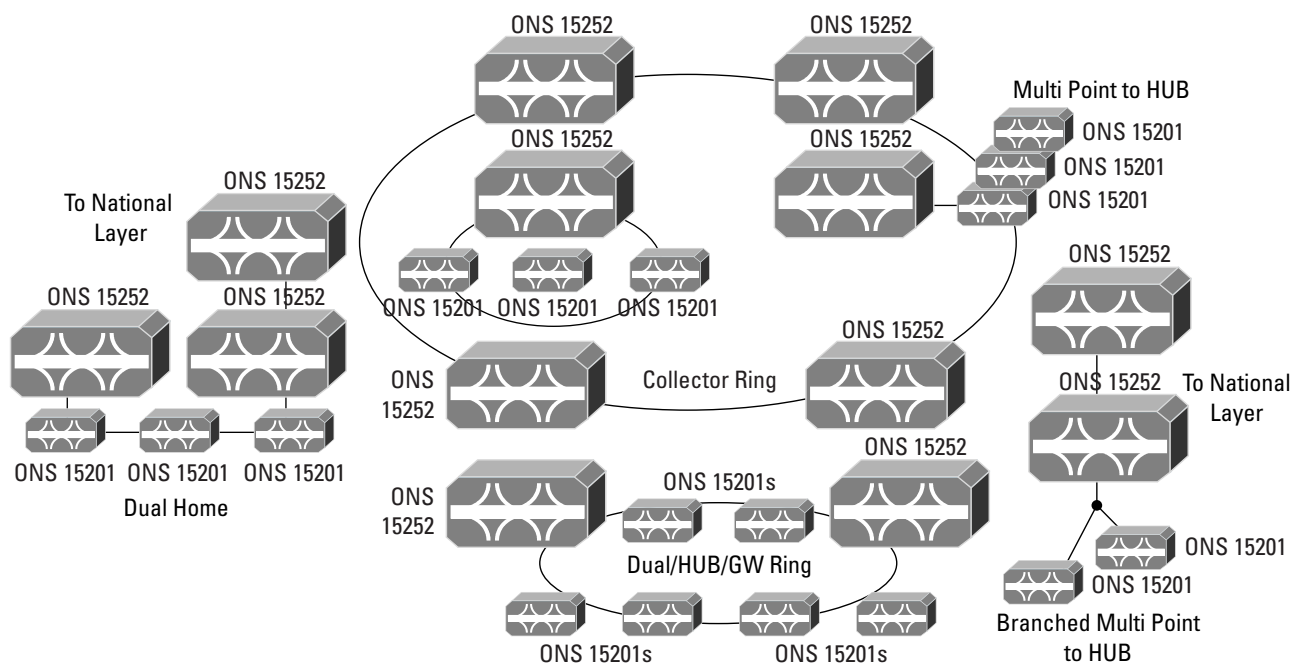


The need to boost the capacity by orders of magnitude is forcing carriers to search for new capacity solutions. The Cisco ONS 15252/201 from Cisco Systems is a DWDM system optimized to cost-efficiently meet the capacity and scalability requirements in metropolitan

networks (Figure 2). It offers simplicity and the capability of maximizing limited physical resources such as fibers, conduits, and floor space to their fullest—delivering radical economics.



Figure 2 Cisco Metropolitan Networks: Simple Solutions to Meet Future Capacity



Unprecedented Transport Flexibility

Cisco delivers the first wavelength to the building metro DWDM solution, offering the lowest cost per bit and the flexibility to handle any metro network, traffic mix, traffic pattern, and protection requirement.

The flexible ONS 15252/201 provide a managed, modular, and structured optical add/drop multiplexer (OADM) network optimized for feeder and transport applications in the evolving metro and short-haul environment.

The Cisco ONS 15252/201 modular architecture addresses various network applications with different levels of protection capability cost-effectively using the same basic building blocks. The Cisco ONS 15252/201 is extremely scalable but does not compromise transmission performance.

Radical Economics

High transmission efficiency allows for more channels, more nodes, and greater distances without amplifiers. With the majority of metropolitan collector rings employing a hub traffic configuration, the Cisco ONS 15252/201 provide cost-effective provisioning. The

ultra-compact single-channel unit, the Cisco ONS 15201 ensures minimal footprint and low power requirements at points of presence. This is complemented by the general-purpose, multiwavelength unit, the Cisco ONS 15252, designed for use at hub/gateways and meshed traffic applications of the metro core.

The modular system architecture of the Cisco ONS 15252/201 facilitate upgrades, allowing service providers to deploy additional capacity channel-by-channel—on demand. Finally, the Cisco ONS 15252/201 provide advanced channel-by-channel traffic protection options with full Synchronous Optical Network/Synchronous Digital Hierarchy (SONET/SDH) compatibility and switching times of less than 1 ms.

The Cisco ONS 15252/201 will continually evolve to complement the initial system, enabling users to extend networking options to offer an even wider selection of services.

The Cisco ONS 15252/201 enhance metropolitan networks by offering many value-added features such as a small footprint, channel upgrades, and scalability.

Small Footprint

The Cisco ONS 15252 multiwavelength node architecture allows 32 channels to be terminated in a single bay, while the Cisco ONS 15201 single-wavelength node terminates a single channel in just 1 rack unit (RU) of space. Today's equipment space is becoming very limited, and a small footprint means carriers can do more in less space and save money.

Power Miser

Power consumption is less than 8W per terminated channel, reducing utility and air conditioning costs.

Channel-by-Channel Upgrades

The modular architecture of the Cisco ONS 15252/201 allow channels to be easily installed, added, or upgraded on a wavelength-by-wavelength basis wherever and whenever traffic growth occurs.

Fast Optical Protection

Less than 1-ms switchover time protection options can be assigned to individual wavelengths to increase service availability.

Maximum Scalability

The Cisco ONS 15252/201 maximize unamplified fiber span up to 100 km depending on the network application, number of nodes, and wavelength channels.

Flexible Architecture

The general-purpose, Cisco ONS 15252 multiwavelength node provides cost-effective provisioning in interoffice ring mesh and hub/gateway applications between layers. The Cisco ONS 15252/201 use a distributed management architecture to optimize network control efficiency.

The architecture supports all system configurations and can be customized to any metropolitan interoffice and collector network. The Cisco ONS 15252/201 single wavelength collector node is ideal for traffic gathering.

End-to-End Management

Each wavelength is individually controlled, maintaining channel-by-channel modularity.

Limitless Channels

The Cisco ONS 15252/201 have no practical limitations aside from the optical power budget for the number of channels that can be carried on a single fiber pair.

Service Transparency

The Cisco Metro DWDM solution provides open protocol and client-layer interfaces to accommodate the broad mix of traffic types that typify metropolitan networks. This gives service providers the freedom to provide any mix of services on the same system.

Product Specifications

Maximum Channel Count	No limitations within power budget
Client Format	Protocol transparent. Line rates supported: 155 Mbit/s, 622 Mbit/s, 1250 Mbit/s (Gigabit Ethernet), and 2488 Mbit/s.
Supported Traffic Topologies	Meshed, hubbed, and adjacent supported network topologies point to point, bus, tree, and ring
Channel Protection	Options unprotected, path-switched fiber protection; client layer protection, dual home, dual hub path-switched switchover time 1 ms
Upgradability	In-service upgrade for all protected wavelengths, rapid provisioning for unprotected wavelengths

DWDM Optical Specifications

Channel Spacing	200 GHz, ITU-T G.692 Grid
Optical Connectors	SC (FC optional)

Client Interface Optical Specification

Cisco ONS 15252/201 to client	1310 nm, -9 dBm, multimode or single mode
Client to Cisco ONS 15252/201	1310 nm or 1550 nm, -18 to -3 dBm, 50/125 multimode or single mode
Optical Connectors	SC (FC optional)

Management

Craft Interface	Web-based GUI (10BaseT/HTTP) CLI (10BaseT/Telnet)
Maintenance Interface	Windows-based GUI (CLI CAN, RS-232/proprietary)
EMS	10BaseT/SNMP
Supervisory Channel	Proprietary with redundant routing

Physical and Environmental Specifications

Environmental	GR-63-CORE, ETSI 300 019 Class 1
EMC	GR-1089-CORE, FCC Part 15, Class A, ETS 300 386-1
Product Safety	UL 1950, EN 60 950, LVD 73/23/ECC, IEC 60 825

Cisco ONS 15201 Collector Node

Shelf Dimensions	1.7 x 17 x 10.8 in. (4.4 x 43.2 x 27.3 cm) (H x W x D) 19-in. rack
Power Requirements	-48 VDC A and B feeds or full-range 85-264 VAC, 50-60 Hz
Power Consumption	8W maximum

Cisco ONS 15252 Multiwavelength Node

Shelf Dimensions	24.5 x 19 x 10.8 in. (62.2 x 48.3 x 27.5 cm) (H x W x D) 19-in. rack
Power Requirements	-48 VDC A and B feeds
Power Consumption	130W maximum for 16 channels



Corporate Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
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-europe.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
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
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 Web site at www.cisco.com/go/offices**

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica • Croatia • Czech Republic • Denmark • Dubai, UAE
Finland • France • Germany • Greece • Hong Kong SAR • 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 • Scotland • Singapore • Slovakia
Slovenia • South Africa • Spain • Sweden • Switzerland • Taiwan • Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe