DATA SHEET

CISCO ONS 15530 DWDM MULTISERVICE AGGREGATION PLATFORM

The Cisco® ONS 15530 is a highly scalable, dense wavelength-division multiplexing (DWDM), multiservice aggregation platform that integrates storage, data networking, and legacy applications over an ultra-high-bandwidth, intelligent optical infrastructure. The Cisco ONS 15530 provides flexible, scalable, and highly available optical networking for high-performance, bandwidth-intensive networking applications.

Figure 1
Cisco ONS 15530 Multiservice Aggregation Platform

BENEFITS

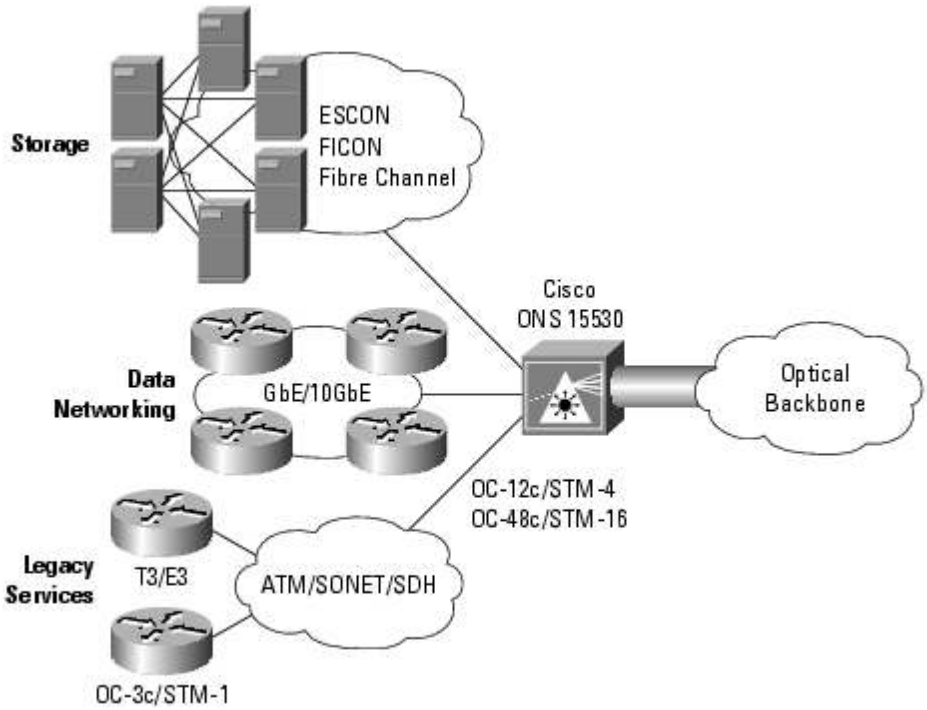
- High-density service aggregation—Provides industry-leading aggregation capabilities with up to 8 ports of Fibre Channel, IBM Fiber Connection (FICON), or Gigabit Ethernet, or up to 40 ports of Enterprise System Connection (ESCON) on a single wavelength. Service aggregation of 2 Gbps Fibre Channel/FICON—Support for up to 4 ports of 2 Gbps Fibre Channel or 2 Gbps FICON services per wavelength.
- Multiservice support for complete network consolidation—Customers have a single scalable platform that supports low-speed copper legacy services such as T1/E1 (PBX interconnect), OC-3/STM-1, Fast Ethernet, and D1 video, in addition to high-density Gigabit Ethernet, Fibre Channel, FICON, and ESCON services.
- Capacity—Fiber capacity is maximized when used with a 32-wavelength system, such as the Cisco ONS 15540, providing up to 256 Fibre Channel, FICON, or Gigabit Ethernet services or up to 1280 ESCON services on a single fiber pair.
- Scalability—Providing customers with the flexibility to grow their networks over time, the Cisco ONS 15530 can support 2.5 Gbps wavelengths for initial deployments of low-density applications and then scale up to 10 Gbps wavelengths for high-density applications.
- Service mixing—With a scalable switch fabric, the Cisco ONS 15530 provides the ability to mix a combination of Fibre Channel, FICON, ESCON, and Gigabit Ethernet services over the same wavelength, maximizing the carrying capacity of the metro DWDM network.
- Transparency—Through the use of protocol-independent transponders and service aggregation cards, a customer can network several services such as ESCON, 1 Gbps and 2 Gbps FICON, 1 Gbps and 2 Gbps Fibre Channel, Gigabit Ethernet, Synchronous Optical Network/Synchronous Digital Hierarchy (SONET/SDH), Asynchronous Transfer Mode (ATM), digital video, Sysplex Timer (external throughput rate [ETR] and control link oscillator [CLO]), and Coupling Link (ISC1 or ISC3 compatibility mode, or ISC3 peer-to-peer

mode). Customers can perform network consolidation of all their storage, data networking, and legacy applications over a single, resilient metro DWDM network.

- Certifications—Fully compatible with storage solutions from Cisco partners, including IBM GDPS, EMC SRDF, HP/Compaq DRM, and HDS TrueCopy, allowing customers the flexibility of deploying the Cisco ONS 15530 platform in many types of storage environments.
- Management—The Cisco ONS 15530 system, based on Cisco IOS® Software, easily integrates into existing Cisco networks using CiscoWorks CiscoView, Simple Network Management Protocol (SNMP), Cisco Transport Manager providing reduced training and management costs. Per-wavelength and per-fiber management channels are used to monitor and manage a robust network. The Cisco ONS 15530 also offers a unique and patented per-service level Operations, Administration, Maintenance, and Provisioning (OAM&P) capability.
- Network consolidation—A customer can consolidate existing SONET/SDH and ATM networks, Ethernet-based data networks, and storage networks on a single Cisco ONS 15530 optical network. The initial deployment of a Cisco ONS 15530 network can be easily extended over time to support new applications and services.
- Cisco Systems® service and support—Easily integrates into existing service programs.

APPLICATIONS

Figure 2
Cisco ONS 15530 Applications



- Storage—The ability to aggregate multiple storage services on a single wavelength makes the Cisco ONS 15530 ideal for use in storage networking applications. The transparent networking of ESCON, FICON, Fibre Channel, Coupling Link, Sysplex Timer, and other protocols

makes the Cisco ONS 15530 the perfect solution for business continuance applications such as IBM GDPS, EMC SRDF, HP/Compaq DRM, and HDS TrueCopy.

- Data networking—Data protocols such as Gigabit Ethernet or Fast Ethernet can be cost-effectively extended over a Cisco ONS 15530 metro optical network in their native forms, without requiring complex protocol conversions between the local- and metropolitan-area networks (LANs/MANs). A flatter network hierarchy can be built that is simpler to manage, because complex protocol conversion, access, and throughput policy-based management are no longer required at the LAN/MAN convergence point. At the same time, this new patented technology offers similar levels of OAM&P capabilities typically expected in a legacy metro environment.
- Legacy—Whether a customer is overlaying new services onto their existing SONET/SDH or ATM infrastructure or entirely replacing it, the Cisco ONS 15530 can network legacy protocols in addition to the newer gigabit-speed protocols driving both data and storage networks. This feature makes the Cisco ONS 15530 a unique solution for enterprises and service providers, providing the ability to transparently extend any service.

CONFIGURATIONS AND SPECIFICATIONS

System features

- Up to 4 protected or 8 unprotected channels per fiber pair ITU-T (C band) G.692 on one fiber
- Up to 32 protected channels per fiber pair ITU-T (C-band) G.692 when used with the Cisco ONS 15540
- 11-slot, modular design
- Hot-swappable modules
- Integrated switch fabric
- Optical add/drop multiplexer (OADM) design with optical pass-through capabilities

Aggregation support

- Up to 8 ports of Fibre Channel, FICON, or Gigabit Ethernet per wavelength
- Up to 4 ports of 2 Gbps Fibre Channel or 2 Gbps FICON per wavelength
- Up to 40 ports of ESCON per wavelength
- Up to 8 low-speed services such as T1/E1, OC3-STM-1, ESCON, D1 Video, Fast Ethernet, Gigabit Ethernet, 1 Gbps Fibre Channel, and ITS per 2.5 Gbps wavelength

Multiprotocol transparent support

- ESCON
- 1-Gbps and 2-Gbps Fibre Channel
- 1-Gbps and 2-Gbps FICON
- Sysplex Timer; external throughput rate (ETR), and control link oscillator (CLO)
- Coupling Link (ISC1 and ISC3)
- Gigabit Ethernet
- Fast Ethernet
- Fiber Distributed Data Interface (FDDI)

- SONET/SDH and ATM (OC-3/STM-1, OC-12/STM-4, and OC-48/STM-16)
- Packet over SONET (POS)
- T1 and E1
- D1 video and other protocols

Protection methods

- Optical unidirectional path switched ring (O-UPSR)
- Automatic protection switching (APS)
- Client side: 1+1 with Y cable
- Switch fabric: Per-service level protection
- Trunk side: 1+1 and optical splitter
- Fiber route diversity 1:1 path protection with less than 50 ms switchover
- Redundant CPU and switch module with less than 50 ms switchover

Client interfaces

- 8-port multiservice muxponder card
- 4-Port 1 Gbps or 2 Gbps Fibre Channel/FICON aggregation card
- 8-port Fibre Channel/Gigabit Ethernet aggregation card
- 10-port ESCON aggregation card
- Transponder line card (splitter and non-splitter versions available)
  - Multimode (16 Mbps to 622 Mbps)
  - Single mode (16 Mbps to 2.5 Gbps)

Trunk interfaces

- 2.5 Gbps ITU Trunk Card (splitter and non-splitter versions available)
- 10 Gbps ITU Trunk Card (splitter and non-splitter versions available)
- 10 Gbps 1310 nm Uplink Card

Cisco ONS 15530 modules

- Optical Add Drop Multiplexers (OADM)—Eight 4-channel bands (A through H) @ 100 GHz over ITU C-Band
- CPU and switch module
- Dual AC or DC power supplies
- Carrier motherboard (used for half-slot modules)
  - Optical Supervisory Channel (OSC)
  - Wide-Band Variable Optical Attenuator (WB-VOA)
  - Per-Band Optical Equalizer (PB-OE)

Configuration options

- Single chassis
  - Up to 4 protected wavelengths
  - Up to 8 unprotected wavelengths
  - Up to 32 ports of Fibre Channel FICON Gigabit Ethernet per chassis
  - Up to 60 ports of ESCON per chassis
- Stackable Multichassis Solution

Supported network topologies

- Point-to-point
- Hubbed ring
- Meshed ring
- Aggregation into a Cisco ONS 15540 ESPx network

Physical and environmental

- Environmental: GR-63-CORE
- EMC: GR-1089-CORE, FCC Part 15, Class A, and ETS 300 386-1
- Product safety: UL 1950, EN 60 950, and IEC 60 825-2
- Network Equipment Building Standards (NEBS): Level 3 GR-1089
- European Telecommunications Standards Institute (ETSI): ETSI 300 019-1

Management

- OSC: per-fiber management
  - 1562.23 nm
- Per-wavelength management channel
- Network Management support
  - Cisco IOS Software
  - CiscoWorks
  - CiscoView
  - Cisco Transport Manager
  - SNMP

Local management interfaces

- RS-232 (DB-23)
- RS-232 auxiliary port (RJ-45)
- 10/100 Ethernet (RJ-45)

Performance monitoring

- Packet cyclic redundancy check (CRC) errors and statistics (10 Gigabit Ethernet, Gigabit Ethernet, Fibre Channel, FICON, ESCON)
- Fibre Channel word errors and ESCON sequence check
- SONET/SDH bit interleaved parity (BIP)

Chassis

- NEBS (H x W x D): 15.7 x 17.3 x 10.1 in.
- ETSI (H x W x D): 365.9 x 439.4 x 256.5 mm
- Power requirements: 100 to 240 VAC or -48 to -60 VDC
- Power consumption: 120W (minimum)

* Common Language Equipment Identifier (CLEI) codes are available upon request.

For more information about the individual modules available with the Cisco ONS 15530 platform, please refer to the Cisco ONS 15530 technical specifications, available at: http://www.cisco.com/en/US/products/hw/optical/ps2011/ps4002/index.html

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