Q & A

Cisco ONS 15310-MA SONET Multiservice Platform

Q. What is the Cisco® ONS 15310-MA SONET Multiservice Platform?

A. The Cisco ONS 15310-MA is a fully redundant, fully protected 6-rack-unit (6-RU) Multiservice Provisioning Platform (MSPP) optimized for metro access networks. It uses the same management interface – the Cisco Transport Controller – as the Cisco ONS 15454, ONS 15600, and ONS 15310-CL platforms, and is fully interoperable with these platforms. The Cisco ONS 15310-MA provides superior circuit scalability (DS-1, DS-3, EC-1, and Ethernet options at both Layer 1 and 2), and includes Small Form-Factor Pluggable (SFP)-based optics capable of OC-3, OC-12, OC-48, and CWDM/DWDM options, plus a wide variety of protection options for up to 99.999 percent reliability.

Figure 1
Cisco ONS 15310-MA SONET Multiservice Platform

Q. What unique benefits does the Cisco ONS 15310-MA offer?

A. The Cisco ONS15310-MA bridges the gap between the Cisco ONS 15310-CL and the Cisco ONS 15454 platforms, providing a small-size aggregation and transport solution. It offers higher density, more features, and greater flexibility than the Cisco ONS 15310-CL, as well as fully redundant common equipment and facility protection for a carrier-class, 99.999 percent availability solution. While it has less capacity than the Cisco ONS 15454, it is designed with a smaller footprint and lower price. The Cisco ONS 15310-MA uses the same feature-rich and innovative software as the other optical products in its product family.

Q. What are the physical dimensions of the Cisco ONS 15310-MA?

A. The Cisco ONS 15310-MA is 6-RU (10.5 inches) tall, 10.67 inches wide, and 12.0 inches deep. It fits easily into a 19-inch rack, and two can be mounted side by side in a 23-inch rack.

Q. What are the physical components that make up the Cisco ONS 15310-MA?

A. The Cisco ONS 15310-MA basic product offering consists of the following components:

- Shelf Assembly (**MA-SA**) supports one fan tray and filter, plus four feature slots, two common control slots, and two backplane interface cards.
- Fan tray assembly (**MA-FTA**)
- Air filter (**MA-FTF**)
- Control/Timing/Cross-connect card (**CTX2500**) provides management, synchronization, timing, inter-shelf communications, system cross connects, OC-3/OC-12/OC-48 optics. Operates in slots 3 and 4.
- TDM interface card (**DS1-28/DS3-EC1-3**) supporting up to 28 DS-1s and three DS-3/EC-1s, unprotected or 1:1 protected. Operates in slots 1, 2, 5, and 6.
- TDM interface card (**DS1-84/DS3-EC1-3**) supporting up to 84 DS-1s and three DS-3/EC-1s, unprotected or 1:1 protected. Operates in slots 1, 2, 5, and 6.
- 8-port 10/100-Mbps Layer 1 Carrier Ethernet mapper card (**CE100T-8**) supporting both high-order and low-order Virtual Concatenation (VCAT), Link Capacity Adjustment Scheme (LCAS), and Generic Framing Procedure (GFP). Compatible with both Cisco ONS 15310-CL and Cisco ONS 15310-MA. Operates in slots 1, 2, 5, and 6.
- 8-port 10/100-Mbps Layer 2/3 Ethernet card (**ML100T-8**) supporting high-order VCAT, LCAS, GFP, and Resilient Packet Ring (RPR). Compatible with both Cisco ONS 15310-CL and Cisco ONS 15310-MA. Operates in slots 1, 2, 5, and 6.
- Control/Timing/Cross-connect filler card (**CTX-Filler**) – Required when operating the Cisco ONS 15310-MA with simplex configuration (only one CTX card), for proper cooling and standards compliance. Operates in slots 3 or 4.
- Expansion Slot Filler card (**EXP-Filler**) – Required for empty expansion slots for proper cooling and standards compliance. Operates in slots 1, 2, 5, and 6.
- Backplane electrical interface card (**EIA-HD-A** and **EIA-HD-B**) – Required for electrical interface and interconnection of DS-1s, DS-3s, EC-1s, to "A" or "B" side of chassis. Accommodates up to 84 DS-1s and three DS-3/EC-1s per chassis side.
- Backplane filler (**BP-COVER-A** and **BP-COVER-B**) – blank backplane filler for use when EIA is not installed.

Q. What is the minimum hardware configuration required for the ONS 15310-MA?

A. The minimum equipment required for the Cisco ONS 15310-MA consists of a chassis, fan tray, filter, one CTX card with SFP optics, one CTX filler card, four expansion-slot filler cards, and two backplane covers, if EIA cards are not installed.

Q. What are the power requirements of the Cisco ONS 15310-MA?

A. The Cisco ONS 15310-MA installation requires the use of ground cable, #6 AWG stranded copper conductors for grounding, and #14 AWG stranded copper conductors for power. Use of a 15-ampere (A) fuse is recommended. The system operates between –40.5 volts (V) and –56.7V DC. A typical configuration would draw about 300 watts (approximately 6.5A DC at –48V).

Q. Does the Cisco ONS 15310-MA support redundant power supply?

A. Yes, the Cisco ONS 15310-MA has the following power characteristics:

- Redundant terminal blocks are used for connecting power, and inputs are on the back of the sub-rack with "A" and "B" at opposing corners.
- Battery A and B are independent.
- Return A and B are independent.
- A feed and B feed are independently monitored.

- The Cisco ONS 15310-MA uses state-of-the-art, point-of-use power supplies for maximum system reliability.

Q. Are there AC power options for the Cisco ONS 15310-MA?

A. The Cisco ONS 15310-MA operates on –48V DC power, and there is no optional AC power input. If only AC power is available, the Cisco AC/DC power rectifier (part number CSCO-ACDC-SYS) can be used for an effective DC power solution. For more information on the Cisco AC/DC power rectifier, please visit: www.cisco.com/en/US/products/ps6063/index.html.

Q. Which protection options are supported on the Cisco ONS 15310-MA?

A. The Cisco ONS 15310-MA supports unidirectional-path switched ring (UPSR), linear 1+1, and path-protected mesh networking (PPMN) as well as unprotected optical transmission. It also supports (but does not require) redundant controller cards for "hitless" switching. TDM redundancy (1:1 protection on DS-1/DS-3/EC-1 cards) and RPR on Cisco ONS 15454 ML-Series cards are also optional.

Q. What is the cross-connect capacity on the Cisco ONS 15310-MA?

A. The cross-connect capacity is 2128 bidirectional VT1.5s and 384 bidirectional STS-1s.

Q. What are the scaling capacities of the Cisco ONS 15310-MA?

A. The Cisco ONS 15310-MA can aggregate up to:

- 168 DS-1s
- 6 DS-3s
- 32 Layer 1 10/100 Ethernet ports
- 32 Layer 2/3 10/100 Ethernet ports
- 4 multirate (OC-3, OC-12, OC-48) SFP ports, including CWDM and DWDM capabilities

Q. What SFP adapters are available for use on the Cisco ONS 15310-MA?

A. The Cisco ONS 15310-MA supports the following SFP adapters:

- **OC-3** – 1310 nanometer (nm) intermediate reach, 1310-nm and 1550-nm long reach, CWDM
- **OC-12** – 1310-nm intermediate reach, 1310-nm and 1550-nm long reach, CWDM
- **OC-48** – 1310-nm intermediate reach, 1310-nm and 1550-nm long reach, CWDM, DWDM

Q. What is the default IP address on a new Cisco ONS 15310-MA?

A. The IP address resides on the controller card, and comes with the default IP address of 192.168.1.2.

Q. How is the Cisco ONS 15310-MA managed?

A. The Cisco ONS 15310-MA uses both Cisco Transport Controller and Cisco Transport Manager Version 7.0. Cisco Transport Controller is a simple Java-based GUI that works via IP. Because other Cisco ONS platforms use this same GUI, the convenience of full management, alarm monitoring, and A–Z provisioning are available from anywhere in the network. Other industry-standard management interfaces such as Transaction Layer 1 (TL1), Simple Network Management Protocol (SNMP), and Common Object Request Broker Architecture (CORBA) are also supported.

Q. Does the Cisco ONS 15310-MA operate on the same software coding as other Cisco optical products?

A. Yes, the Cisco ONS 15310-MA operates on the same software code as the ONS 15310-CL, ONS 15454, and the ONS 15600.

Q. My network management system (NMS) uses SNMP for fault management on my network. Does the Cisco ONS 15310-MA support SNMP?

A. Yes, the Cisco ONS 15310, 15454, and 15600 series platforms are configured with their own specific MIBs and support SNMP for NMSs.

Q. Which carrier-class certifications has the Cisco ONS 15310-MA achieved?

A. The Cisco ONS 15310-MA has the following carrier-class certifications:

- **Telecom** – Telcordia NEBS Level 3, GR-253-CORE, GR-1400-CORE, GR-1230-CORE
- **Data** – IEEE 802.3
- **Electromagnetic compliance** – GR-1089-CORE, FCC 47CFR15
- **Safety** – UL 60950(-1), GR-1089-CORE
- **Environmental** – GR-63-CORE, FCC Part 15 Approval

Q. What multiservice platforms are included in the Cisco ONS Family?

A. The Cisco ONS Family includes the following multiservice platforms:

- **Cisco ONS 15310-CL** – A low-cost, 1-RU device with two SFP optical interfaces supporting OC-3 and OC-12, in 1310 nm and 1550 nm wavelengths. Additionally the Cisco ONS 15310-CL supports 21 DS-1s, three DS-3s, and provides an interchangeable slot to support a choice of Layer 1 or Layer 2/3 Ethernet capability.
- **Cisco ONS 15310-MA** – A 6-RU device using 4 SFP optical interfaces including OC-3, OC-12, and OC-48, in 1310 nm, 1550 nm, CWDM, and DWDM wavelengths. Additionally, the Cisco ONS 15310-MA supports up to 4 interchangeable traffic module slots, capable of high-density DS-1s, DS-3s, and EC-1s, and a choice of Layer 1 or Layer 2/3 Ethernet capability.
- **Cisco ONS 15454** – 14-RU device using 12 interchangeable slots, capable of high-density DS-1s, DS-3s, Layer 1 and Layer 2/3 Ethernet at 10/100 or Gigabit Ethernet; SFP-supported SONET links of OC-3, OC-12, OC-48, and OC-192 in 1310 nm, 1550 nm, CWDM, and DWDM wavelengths, Fibre Channel, and up to 32 lambdas of 10-Gbps DWDM with a wide variety of interfaces.
- **Cisco ONS 15600** – Core switching device supporting 320 Gbps of switching, grooming, aggregation, and bandwidth management capacity. Eight high-density feature slots support 32 OC-192/STM-64, or 128 OC-48/STM-16 optical interfaces in 1310 nm, 1550 nm, CWDM, and DWDM wavelengths, all in a single shelf.

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