

To have a dependable network is not important - it's everything!



# DNWP

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## Connection Master

Mission-critical multiservice access platform for utility, corporate and enterprise networks

**Connection Master** offers true multiservice capabilities, enabling a wide range of legacy voice and data interfaces to be transported over IP and Next Generation SDH networks. Its high-performance architecture supports virtually all application types, including IP, POTS (Plain Old Telephony Service), and SCADA (Supervisory Control and Data Acquisition).

With ultra-low latency, Connection Master is ideal for time-critical services such as teleprotection.

Connection Master is fully backward compatible with existing networks – including **Nokia's Dynanet** and **FMX2** product families. It is delivered with a network management solution that also supports legacy equipment, enabling a smooth and flexible migration toward modern platforms. Its modular internal architecture, built on high-speed point-to-point buses, ensures long-term scalability – from PDH to SDH and packet-based networks



6-Slot Subrack



16-Slot Subrack

### Trunk Interfaces

SDH STM-1/4/16, Ethernet 1GE/10GE, MPLS-TP

### Versatility

64 kbit/s cross-connection functionality for legacy TDM services (voice and data), including advanced path protection.

# Connection Master

## Carrier Ethernet Plug-In for Connection Master

Connection Master – Carrier Ethernet – MPLS-TP plug-in units complement the Connection Master Multiservice Access Platform by providing advanced switching capabilities and services compliant with Metro Ethernet Forum (MEF) Carrier Ethernet 2.0 standards. The plug-in unit also acts as the system's control unit, handling all essential control functions such as alarm reporting, configuration management, diagnostics, and software maintenance.

### CM-CE offers two operating modes:

**Hybrid Carrier Ethernet** – MPLS-TP/SDH: with hybrid application software, with or without SDH network interfaces

**Native Packet Carrier Ethernet** – MPLS-TP: with native packet application software and no SDH interfaces

- Optimized for strictly time critical, low latency applications
- Power-over-Ethernet functionality
- High capacity IP, TDM and Ethernet based tributary units
- High availability via redundant critical modules

### Alternative Operation Mode (Without Carrier Ethernet)

Without the Carrier Ethernet MPLS-TP trunk control unit, Connection Master operates in native SDH mode.

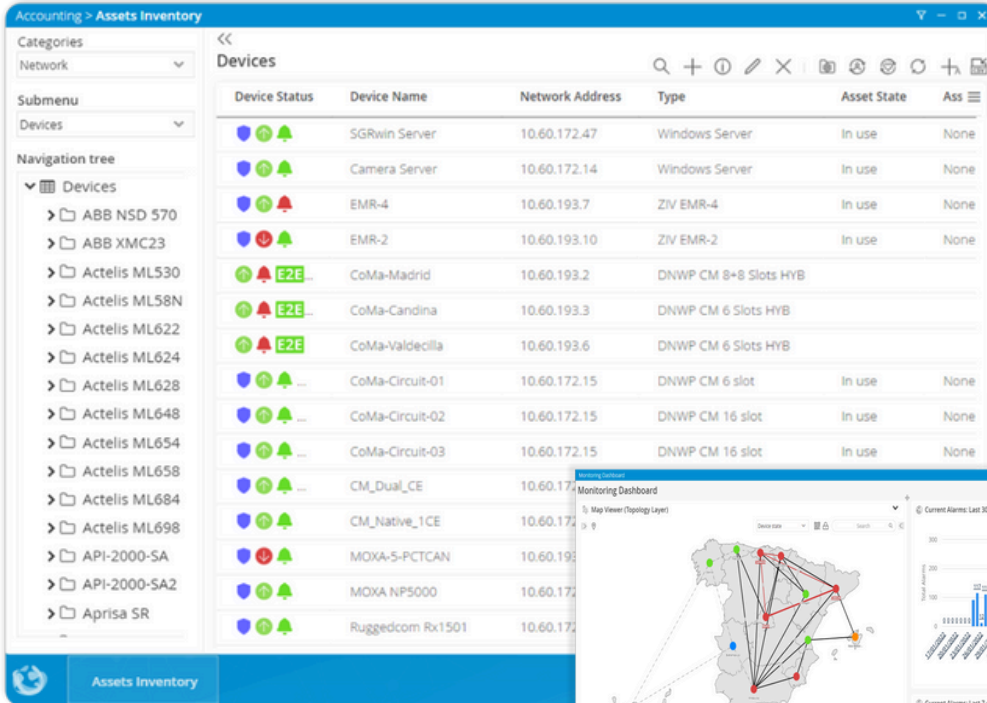
In this configuration, the CU-SDH plug-in unit functions both as the SDH trunk and as the device's control unit.



# Connection Master

## Network Management

Network inventory



Customer dashboards

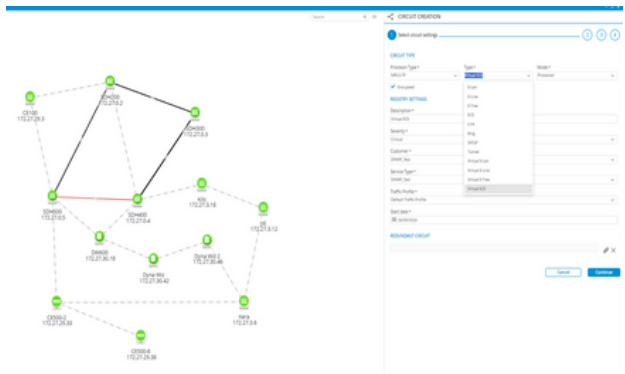


### Management Options: Web, GUI, and CLI

Connection Master can be managed locally or remotely either with Windows-based Multiservice Manager (Local Craft Terminal with graphical user interface) or with Command Line Interface (CLI).

Multiservice Manager allows easy access to all functions of Connection Master while CLI is a text-based interface accessible via SSH or USB for advanced use.

Service Creation PDH, SDH & MPLS-TP



# Connection Master

## Management

### NEs View & App Launch

The screenshot shows the Connection Master interface for NE CM101. The top panel displays NE details (10.10.101.1, Comm CM1, Site High-rack) and status (Logical View, Maintenance Mode, Comm Enabled, Re-Sync All Complete, Test Comm). Below is a 16 Slot Shelf Information view with a context menu open. An Alarm Chrono window is overlaid, showing a table of alarms:

Time/Date	Point ID	Description	Condition	Priority	xNETID
14:56:39 26-NOV-19	ADSNMP	Process Startup on Member 1	Alarm	1	14:56:3
14:56:28 26-NOV-19	GMGSRV	Process Running on Member 1	Alarm	1	14:56:2
01:00:01 26-NOV-19	KITCHECK	Automatic Task Trigger on Member 1	Complete	63	01:00:0
00:00:11 26-NOV-19	DB-BACKUP	Automatic Task Trigger on Member 1	Complete	63	00:00:1
00:00:11 26-NOV-19	DB-BACKUP	Automatic Task Trigger on Member 1	Failed	1	00:00:1
00:00:08 26-NOV-19	TO-SRCHFILES	Automatic Task Trigger on Member 1	Complete	63	00:00:0
00:00:06 26-NOV-19	NIGHTLY	Automatic Task Trigger on Member 1	Complete	63	00:00:0
00:00:01 26-NOV-19	SDELNE	Automatic Task Trigger on Member 1	Complete	63	00:00:0
10:18:19 25-NOV-19	SSITEMON	Process Running on Member 1	Normal	1	10:18:1
10:18:19 25-NOV-19	SYNCSQL	Process Running on Member 1	Normal	1	10:18:1

Alarm Chrono & Fault Management

## Network Management

Connection Master integrates seamlessly with the **DNWP Network Management System (NMS)** – a comprehensive and fully featured platform supporting full FCAPS functionality and advanced end-to-end circuit provisioning. End-to-end services can be created across PDH, SDH, and packet-based layers, even across multiple generations of network elements.

- Geo-referenced **network topology view**, including street-level maps
- Real-time fault **monitoring with alerting**
- Configuration management and OSS (Operations Support System) integration
- **Inventory management** for complete network visibility
- User **management and security features**
- Performance management and **advanced analytics**
- End-to-end circuit provisioning (64k, SDH, MPLS-TP) and service creation tools
- **Customizable dashboards** and query creation

The DNWP Network Management System (NMS) enables a smooth migration from Dynanet or FMX2 to Connection Master by supporting PDH, SDH, and packet-based networks within a single management platform.

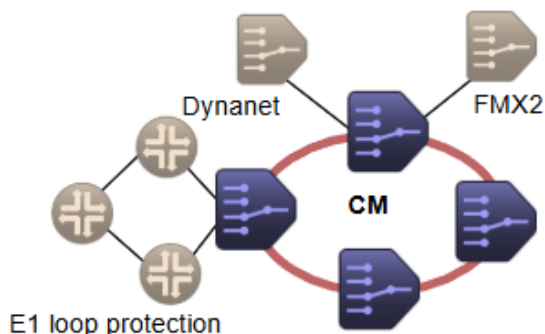
In addition, Connection Master can interface with any third-party Network Management System via an optional Northbound Interface (NBI) over SNMP. This standard-based interface allows seamless integration with existing OSS/NMS environments.

# Connection Master

## Application examples

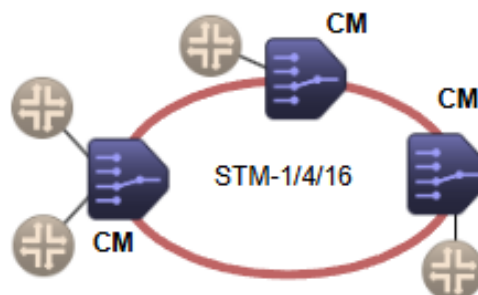
### Connection to legacy layer

Compatible with legacy E1 multiplexers. Enables voice and data services between networks.



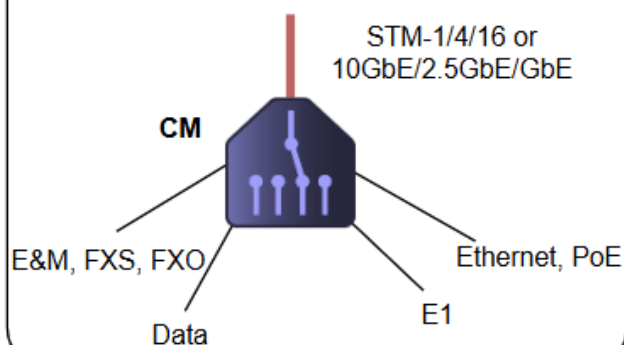
### Metro rings

Provide Ethernet transport or SDH connectivity



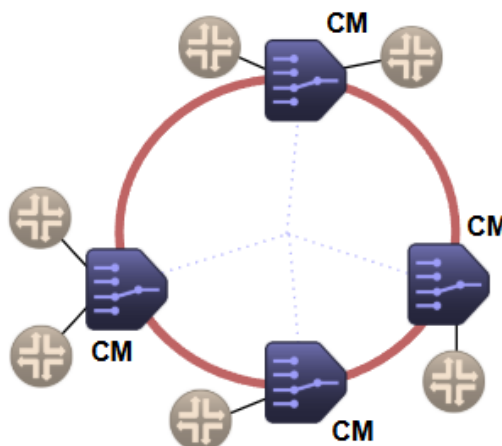
### Multiservice access and transport

Multiplexer, SDH and MPLS-TP layers integrated in one single hybrid node. A large number of E1links between layers no more needed.



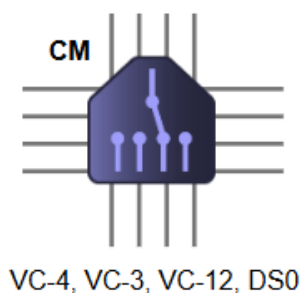
### Carrier Ethernet services over MPLS-TP

E-Line, E-Tree, E-LAN, E-Access



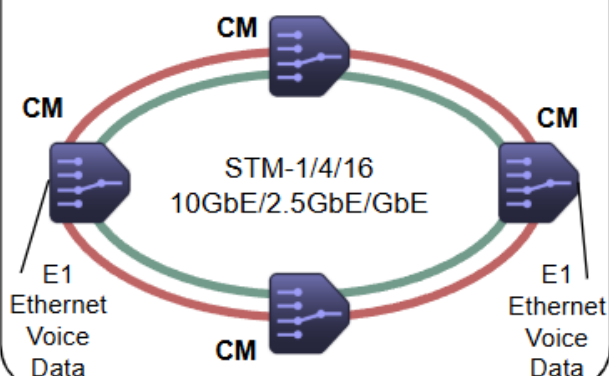
### Local cross-connect

Non-blocking cross-connect matrix 80x80 VC-4 and 230xE1/VC-12 at DS0 level. Optional advanced cross connections like data conferencing, summing and E1 loop protection.



### SDH/Ethernet hybrid rings

SDH and Ethernet trunk interfaces in one single node. Native critical TDM services can be carried in SDH ring and native Ethernet services in packet ring.

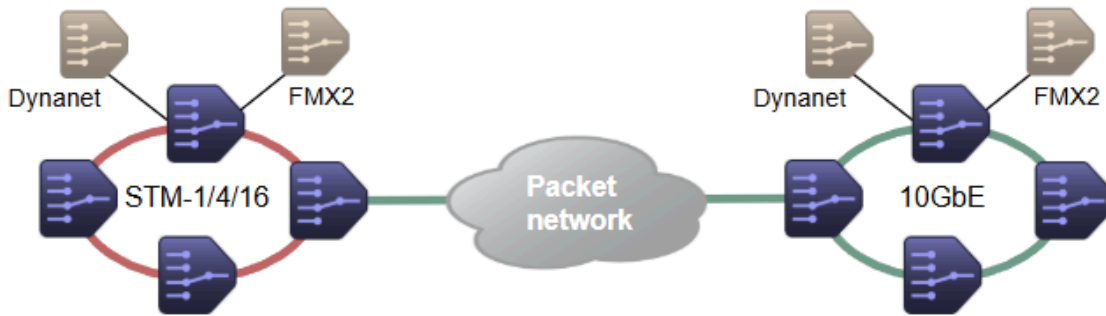


# Connection Master

## Application examples

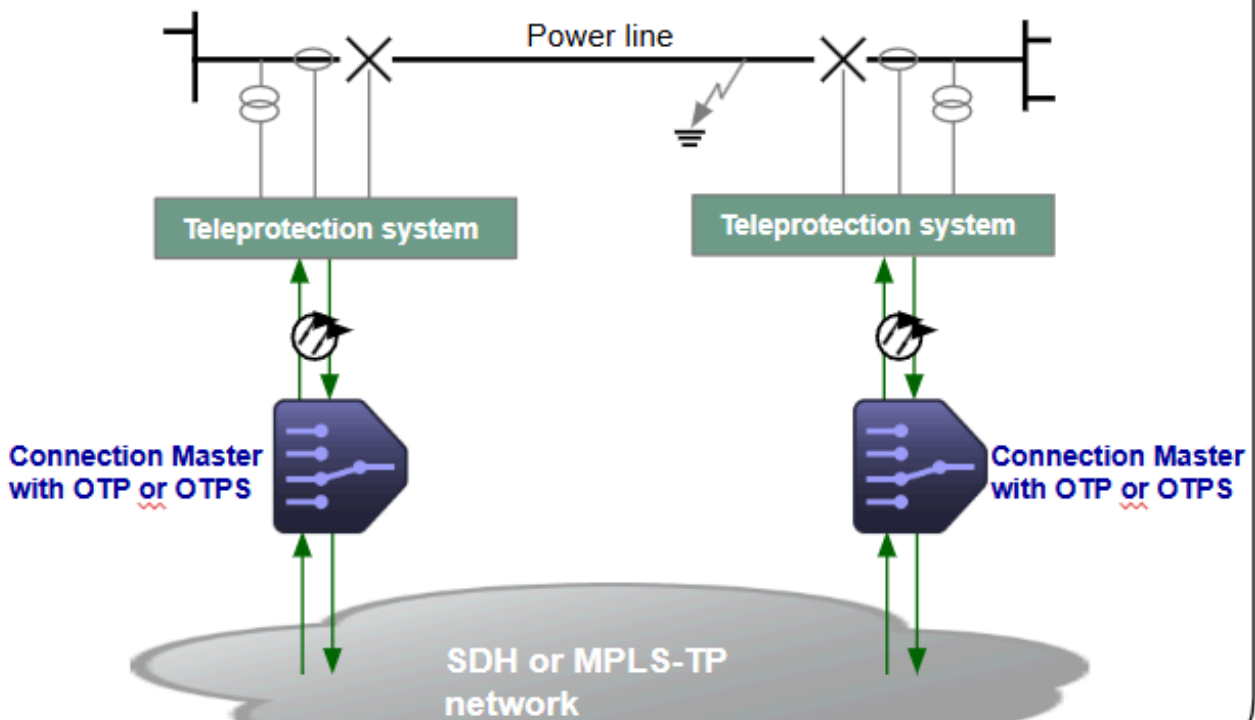
### TDM over Ethernet

TDM over Ethernet pseudo-wire connections. SAToP enables transmission of individual E1s or VC-12s and facilitates optimal bandwidth usage and support for P2P and P2MP connections.



### Optical tele-protection

Connection Master C37.94 and data interfaces enable reliable and latency optimized connections between tele-protection systems.



# Connection Master

Core units, interface units, chassis, and power units

<b>Core units</b>	T32001.01 CU SDH
	T33008.02 CU Carrier Ethernet plus 8 ports
	T33024.02 CU Carrier Ethernet plus 24 ports
	T32010.01 Advanced DXC Unit
<b>Interface units</b>	T33108.02 Carrier Ethernet SFP IF Unit, 8 ports
	T33108.01 Carrier Ethernet RJ45 IF Unit, 8 ports
	T32002.01 Ethernet Unit 1000BT, 8 Ports
	T32003.01 E1/T1 Unit, 8 ports, 75 ohm
	T32003.11 E1/T1 Unit, 8 ports, 120 ohm
	T32004.01 Data Unit V and X, 4 ports
	T32004.02 Data Unit G.703/64k, 8 ports
	T32004.03 Data Unit V.24, 20 ports
	T32004.11 Optical Teleprotection Unit, 4 ports
	T32004.12 Optical Teleprotection SFP Unit, 4 ports
	T32005.01 VF/E&M Unit, 8 ports
	T32005.11 FXS Unit, 16 ports
	T32005.21 FXO Unit, 16 ports
	<b>Chassis</b>
T32009.04 Subrack 16-Slot	
T32007.01 Fan Unit for 6-Slot Subrack	
T32007.12 Fan Unit for 16-Slot Subrack with alarm output	
T32011.01 Alarm Unit	
<b>Power units</b>	T32008.05 Power Adapter DC 48V Lite
	T32008.02 Power Adapter DC 24-60/48V
	T32008.11 Power Adapter DC 48V Bus Extension
	T32008.15 Power Adapter DC 48V Bus Extension Lite
	T32008.01 Power Adapter DC 48V

## Technical details

For technical details, please refer to the Connection Master Datasheet.

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