Enabling the hyper-connected world

MileGate

MileGate COGE4

Core unit of the Multi-Service Access Platform MileGate, supporting 40 Gigabit-Ethernet uplinks for ultra high bandwidth

Core unit COGE4

Features & Benefits

+ 2 x 40 GbE optical uplink front interfaces via QSFP+ modules
+ 3 x GbE/10 GbE optical front interfaces via SFP(+) modules
+ Access to 1GbE and 10 GbE star of MileGate subracks
+ 1:1 equipment protection possible for maximum availability
+ Within the MileGate Fiber Series product line, optimized for all-optical access, coverless operation in the subracks is supported

COGE4 is a core unit of the MileGate platform for the subracks MileGate 2310/2510.
It controls the installed units (line cards, gateways etc.) via the backplane and realises the uplink of the Ethernet data. With QSFP+/SFP+ cages the uplink can be realised with 2 x 40 Gbps and 3 x 10 Gbps.

COGE4 operates as Ethernet switch, which provides a wide range of functions e.g. for VLAN and IPTV Multicast applications.

Interfaces

COGE4 controls the data traffic for all installed MileGate units and provides the Ethernet uplink.

COGE4 comes with two optical 40 Gbps uplink interfaces using QSFP+ modules as well as 3 optical interfaces for GbE/10 GbE using SFP+ or SFP modules. With these, two 40 Gbps or 10 Gbps uplinks can be realised as well as a redundant 1:1 connection for protection of the transmission. The three optical 1GbE/10 GbE interfaces can be used for cascading or ring connections with further MileGate nodes – or for the uplink, too.

Backplane Access

COGE4 has access to the 10 GbE star of the MileGate subracks 2510/2310 as well as to the 1GbE star of all MileGate subracks.

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With the 10 GbE star, each installed service unit gets full 10 Gbps bandwidth for the data exchange between itself and the core unit. This guarantees highest bandwidth, e.g. for VDSL2 or FTTX applications. At the same time COGE4 secures that line cards with exclusively access to the 1GbE star are also supported.

1:1 Equipment Protection

COGE4 can be assembled redundantly in the subracks. One COGE4 is in a hot standby mode. This unit takes over operation in case an error occurs in the active unit. This ensures highest availability of the services.

Topologies

With the interfaces of COGE4 different network topologies can be realised. Beside the star or line topology, ring or redundant 1+1 connections can be built for the case that a transmission route is interrupted.

Management

All services are managed centrally via the management system UNEM or via local management access (CLI, SNMP).

Technical Data

Interfaces	
Optical	2 x 40 GbE/10 GbE with QSFP+ modules
	3 x 10 GbE with SFP+ modules or GbE with SFP modules
Management	1 x 10/100/1,000 Mbps electrical local management interface (RJ45)
Access to units via backplane	Via 1 GbE and 10 GbE star of MileGate subracks
Redundancy via backplane	2 x 40 Gbps links to redundant COGE4
Functions	
General	Management and control of MileGate subracks and all plug-in units
	Database with management information, embedded software download
	Alarm collection and notification
	External alarm interfacing via backplane and management
Ethernet Functions	
VLAN services	According to IEEE 802.1Q, 4096 VLANs supported
	VLAN tag stacking (Q-in-Q), according to IEEE 802.1ad
	VLAN QoS with Class of Service (CoS) handling, according to IEEE 802.1p
Spanning tree protocol	STP (Spanning Tree Protocol), according to IEEE 802.1D
	RSTP (Rapid Spanning Tree Protocol), based on IEEE 802.1w
Multicast	IGMP v2/v3, supporting
	IGMPv3 snooping with proxy reporting and message suppression
Link aggregation	LACP, based on IEEE 802.3ad
Security Functions	
MAC address	MAC address filtering
	Prevention of source MAC spoofing und MAC flooding
Access control list	MAC based access control, according to TR-101
	Multicast access control lists (multicast group restriction)
Further functions	Subscriber isolation per VLAN
	Prevention of L2 peer to peer (hair pin) forwarding
	Broadcast handling
Management	
CST	For local management
UNEM	For central management
Power Supply	
Input voltage nominal (min/max)	–48/–60 V DC (–39.5 V DC … –72 V DC)
Operation Environment	
Temperature range and humidity	According to MileGate environmental specifications

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