DATACOM Ethernet Switches
DM4100 Family

CE2.0 MEF
CERTIFIED

Standalone and stackable switches, with fixed configuration, electrical and optical ports and support to several technologies.

DATACOM

Datacom Ethernet Switches consist of different product families that compose a complete Ethernet portfolio for applications from access to core of the networking infrastructure.

The product families are DM4000, DM4100, DM4050, DM4170 as Core and Aggregation Ethernet Switches, DM2100 and DM2300 as Ethernet Demarcation switches and DM1200E as an Enterprise LAN switch.

DM4100 Family

The DM4100 is a family of wire speed (HW) L2, L3 (IPv4/IPv6) and MPLS switches for 19-inch racks.

The family is divided into two major groups: optical and electrical. The groups are determined by the predominant type of the equipment's Ethernet Gigabit ports. Both groups may feature 10G XFP/SFP+ ports and electric stacking ports.

Each model has two different versions: L3 and MPLS. In addition to that, there are some electrical models that support PoE/PoE+, thus making the DM4100 series extremely versatile.

Some of the DM4100 models support redundant AC/DC full-range hot-swappable supplies, while others are only provided with internal fixed AC power supply with the option to have redundancy by using external RPU. The models with PoE/PoE+ can supply up to 30W to the terminal devices in all ports simultaneously when equipped with an optional external RPU.

The optional stacking port versions may support stacking in a closed-loop configuration for enhanced redundancy. The stacking ports support speeds up to 16Gbp/s each, depending on the model. The DM4100 models provide an out-of-band Ethernet 10/100Base-TX management port.

All models are 1U high for 19-inch racks.

Environmental Conditions

Operation temperature
0 to 55 degrees Celsius
Storage Temperature
-30 to 70 degrees Celsius
Relative Humidity
10% to 90%, non condensing

Weight and Dimensions

Models	Weight (Kg)	Without Mouting Brackets			With Mouting Brackets		
		Height	Width	Depth	Height	Width	Depth
ETH24GX Series	3.18	43.5mm	440mm	250.7mm	43.5mm	480.8mm	250.7mm
ETH20GT+4GC Series	3.4	43.5mm	440mm	250.7mm	43.5mm	480.8mm	250.7mm
ETH20GP+4GC Series	5.76	43.8mm	440.2mm	326.75mm	43.8mm	481mm	326.75mm
ETH44GT+4GC Series	6	NA	NA	NA	43.65mm	482.5mm	421.33mm
ETH44GP+4GC Series	7.46	NA	NA	NA	43.65mm	482.5mm	421.33mm

Solutions for Ethernet Networks

The DM4100 product line is ideal for the deployment of Ethernet networks, either by applying Layer 2, Layer 3 or IP/MPLS technology. A wide range of layer 2 (i.e. xSTP, EAPS, ERPS, LACP, 802.1x) and layer 3 (i.e. OSPF, BGP, LDP, RSVP) protocols allows for the deployment of different network solutions suitable to the most diverse customers' demands. DM4100 is able to support several OAM resources to reduce the OPEX in the networks managed by means of the DmView (DATACOM's NMS) or third-party platforms.

General features of the DM4100 Ethernet Switches

WIRESPEED L2, L3 AND MPLS

- L2, L3 and MPLS packet switching done at the hardware level. Layer 2/3 protocols are implemented in software in order to assemble the MAC address, IPv4/IPv6 route tables and MPLS labels.

IP/MPLS NETWORKS

- Static and dynamic routing for IPv4 and IPv6, including RIP, OSPF, BGP and PIM protocols.
- The use of LDP, RSVP and LDP over RSVP for IP/MPLS networks with support to rapid convergence (Fast Reroute) and traffic engineering (TE).
- The implementation of MPLS VPNs is possible for L2 point-to-point (VPWS and Backup-PW) and multipoint services (VPLS and H-VPLS).

MANAGEMENT

- Comprehensive centralized SNMP management is available via DmView, DATACOM's full FCAPS management software. DmView allows for multiple user and segmented network management capability.
- Switch access control with definition of which IP addresses may access the equipment and through which protocols (SNMP, HTTP, Telnet, SSH).
- Easy to use and comprehensive Command Line Interface (CLI), internal Web Server, XML interface and SNMP/RMON agent.
- Access Control Lists (ACLs) implemented in hardware, performing multiple comparisons and actions without overloading the equipment CPU.

QoS FACILITIES

- Eight queues per port and priority algorithms that can be set up with fixed priority, weight, minimum rate, maximum rate or a combination of these methods.
- Classification based on IEEE 802.1p standard, IP precedence, DSCP, TCP and UDP ports, are resources that allow the implementation of several QoS models to efficiently provide real time traffic transport, bandwidth guarantee and the transference of data in high rates.
- Bandwidth control with 64 kbps granularity for CIR and PIR parameters applied to inbound or outbound traffic of the ports or to a certain flow of packets by using filters and counters implemented in hardware.

SECURITY

- Encryption is applied within the communication protocols.Managers access control rules allow the implementation of efficient mechanisms to prevent violation of security and integrity during network operation.
- Local and remote Syslog, user authentication, authorization and accounting RADIUS and TACACS+ (AAA), alarm notification via email, single clock synchronized with SNTP server, Denial of Service (DoS) attack prevention and 802.1x port authentication are some of the available features for detection and/or protection of the network.
- Limitation on the number of MAC addresses per port and per VLAN. Protection mechanisms on L2 and L3 protocols against network attack and bandwidth limitation for broadcast and multicast traffic and destination lookup failure (DLF) are also available options for implementing a more secure network.

POWER OVER ETHERNET

- Optional for the versions with electrical ports, complies with the IEEE 802.3at standard and can supply up to 34,2W per port (Class 4), allowing the transmission of power and data through Cat.5e or Cat.6 cables. This feature is recommended when powering and connecting remote devices such as Access Points, IP telephones and IP cameras.

VLANS

- Up to 4,096 VLANs, outlined by IEEE 802.1Q. Capable of providing double tagging functionality(Q-in-Q) allowing the creation of TLS services.
- VLAN definition based on diffent options, such as protocol type, MAC address, IP-Subnet and physical port.
- Insertion, removal or translation of VLAN field bits in order to provide interoperability with other network devices, such as GPONs, DSLAMs or even CPEs.

PROTECTION MECHANISMS

- Spanning Tree protocols, including RSTP and MSTP.
- EAPS and ERPS (ITU G.8032) protocols for L2 networks and RSVP FRR for MPLS networks, allowing a recovery time lower than 50 milliseconds for Ethernet rings.
- Backup link for redundancy or dual homed applications, offering a choice of configuring the backup interface status either as blocking or "link down".

Optical and Electrical Models

| Available Models	1000 Base-X Ports	10/100/1000 Base-T Ports	Combo 1000Base-X 10/100/1000 Base-T Ports	10GbE Ports	Ports with PoE+ support	Stack-able	Switch Fabric (Gbps)	Packet Processing (Mpps)	MPLS Support	Power Supply	Equipm. Power	Max PoE Power	Max PoE Power (w/ RPU)
ETH24GX+4GX+L3	28	-	-	-	-	-	56	41,7	-	Redundand, Hotswap AC/DC	80W	-	-
ETH24GX+4GX+MPLS	28	-	-	-	-	-	56	41,7	license		80W	-	-
ETH24GX+2XX+S+L3	24	-	-	2 XFP	-	yes	140	104,2	-		80W	-	-
ETH24GX+2XX+S+MPLS	24	-	-	2 XFP	-	yes*	140	104,2	license		80W	-	-
ETH24GX+4XX+L3	24	-	-	4 XFP	-	-	128	95,2	-		85W	-	-
ETH24GX+4XX+MPLS	24	-	-	4 XFP	-	-	128	95,2	license		85W	-	-
ETH24GX+4XS+MPLS	24	-	-	4 SFP+	-	-	128	95,2	license		85W	-	-
ETH20GT+4GC+L3	-	20	4	-	-	-	48	35,7	-		75W	-	-
ETH20GT+4GC+S+L3	-	20	4	-	-	yes	100	74,4	-		75W	-	-
ETH20GT+4GC+S+MPLS	-	20	4	-	-	yes*	100	74,4	license		75W	-	-
ETH20GT+4GC+2XX+S+L3	-	20	4	2 XFP	-	yes	140	104,2	-	Redundand, Hotswap AC/DC	80W	-	-
ETH20GT+4GC+2XS+S+L3	-	20	4	2 SFP+	-	yes	140	104,2	-		80W	-	-
ETH20GT+4GC+2XX+S+MPLS	-	20	4	2 XFP	-	yes*	140	104,2	license		80W	-	-
ETH20GT+4GC+4XX+L3	-	20	4	4 XFP	-	-	128	95,2	-		85W	-	-
ETH20GT+4GC+4XS+L3	-	20	4	4 SFP+	-	-	128	95,2	-		85W	-	-
ETH20GT+4GC+4XX+MPLS	-	20	4	4 XFP	-	-	128	95,2	license		85W	-	-
ETH20GP+4GC+S+L3	-	20	4	-	24	yes	100	74,4	-	Internal AC + Optional RPU	80W	411W	912W
ETH20GP+4GC+2XX+S+L3	-	20	4	2 XFP	24	yes	140	104,2	-		85W	411W	912W
ETH20GP+4GC+2XS+S+L3	-	20	4	2 SFP+	24	yes	140	104,2	-		85W	411W	912W
ETH20GP+4GC+4XX+L3	-	20	4	4 XFP	24	-	128	95,2	-		90W	411W	912W
ETH20GP+4GC+4XS+L3	-	20	4	4 SFP+	24	-	128	95,2	-		90W	411W	912W
ETH44GT+4GC+S+L3	-	44	4	-	-	yes	160	119,0	-		160W	-	-
ETH44GT+4GC+S+MPLS	-	44	4	-	-	yes*	160	119,0	license		160W	-	-
ETH44GT+4GC+2XX+S+L3	-	44	4	2 XFP	-	yes	200	148,8	-		165W	-	-
ETH44GT+4GC+2XS+S+L3	-	44	4	2 SFP+	-	yes	200	148,8	-	Internal AC + Optional RPU	165W	-	-
ETH44GT+4GC+2XX+S+MPLS	-	44	4	2 XFP	-	yes*	200	148,8	license		165W	-	-
ETH44GT+4GC+4XX+L3	-	44	4	4 XFP	-	-	176	131,0	-		170W	-	-
ETH44GT+4GC+4XS+L3	-	44	4	4 SFP+	-	-	176	131,0	-		170W	-	-
ETH44GT+4GC+4XX+MPLS	-	44	4	4 XFP	-	-	176	131,0	license		170W	-	-
ETH44GT+4GC+S+MPLS (DC)	-	44	4	-	-	yes*	160	119,0	license	Redundant DC	120W	-	-
ETH44GT+4GC+2XX+S+MPLS (DC)	-	44	4	2 XFP	-	yes*	200	148,8	license		125W	-	-
ETH44GT+4GC+4XX+MPLS (DC)	-	44	4	4 XFP	-	-	176	131,0	license		130W	-	-
ETH44GP+4GC+S+L3	-	44	4	-	48	yes	160	119,0	-		160W	822W	1824W
ETH44GP+4GC+2XX+S+L3	-	44	4	2 XPP	48	yes	200	148,8	-		165W	822W	1824W
ETH44GP+4GC+2XS+S+L3	-	44	4	2 SFP+	48	yes	200	148,8	-	Internal AC + Optional RPU	165W	822W	1824W
ETH44GP+4GC+4XX+L3	-	44	4	4 XFP	48	-	176	131,0	-		170W	822W	1824W
ETH44GP+4GC+4XS+L3	-	44	4	4 SFP+	48	-	176	131,0	-		170W	822W	1824W

Hardware Characteristics

DM4100 Models	MAC Address Table	L3 Hosts (IPv4)	L3 Hosts (IPv6)	L3 Routes (IPv4)	L3 Routes (IPv6)	L2 Multicast Groups	L3 (IPv4) Multicast Groups	L3 (IPv6) Multicast Groups	Stacking (models with +S in the name)	Access Control Lists (ACLs)	Alarms
ETH24GX, ETH20GT and ETH20GP	32k	4k	4k	12k	6k	1k	4k	2k	2 dedicated ports 52Gbit/s* total	2k	3 inputs 1 output
ETH44GT and ETH44GP	32k	4k	4k	12k	6k	1k	4k	2k	2 dedicated ports 64Gbit/s* total	2k	2 inputs 1 output

(*) Stacking functionalities available for L2 and L3 applications only.
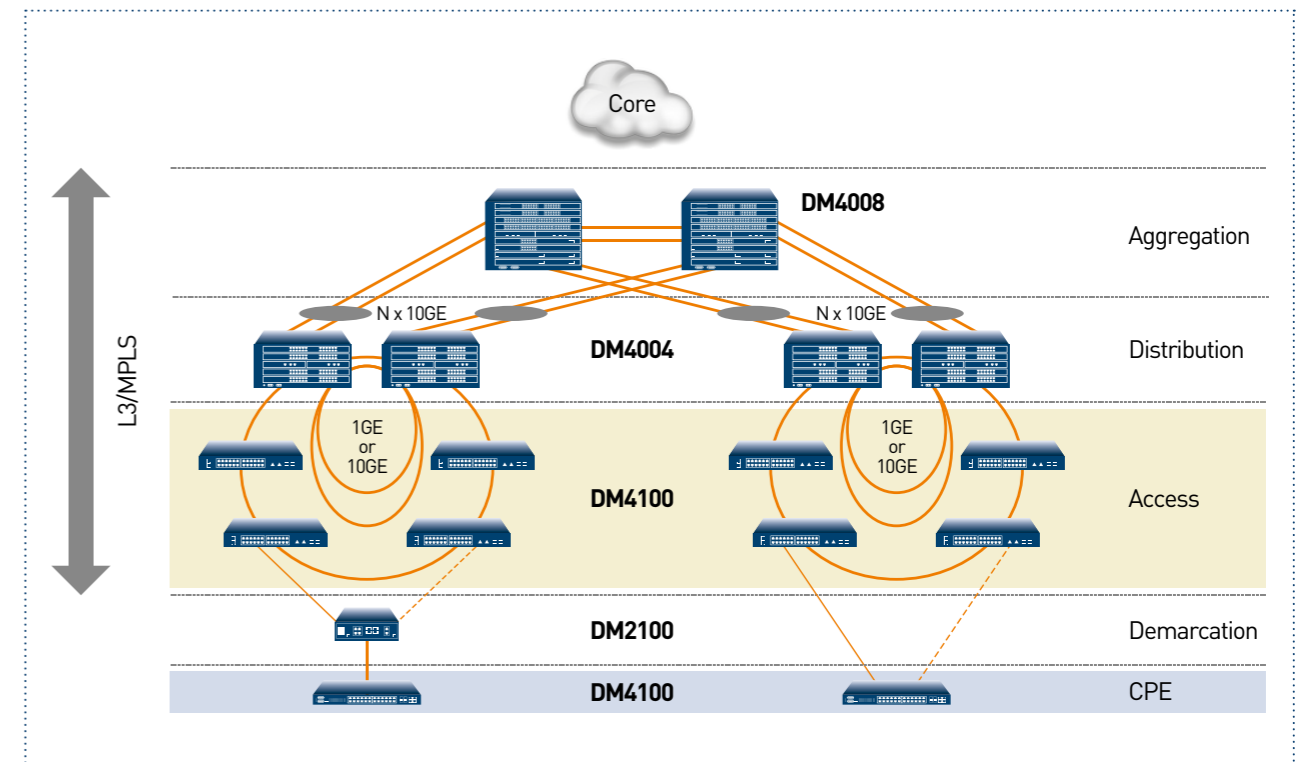
Applications

Enterprise

Enterprise infrastructure based on DM4100 PoE/PoE+ to interconnect headquarter and branch offices. The Core can be performed by DM4000 series of modular switches.
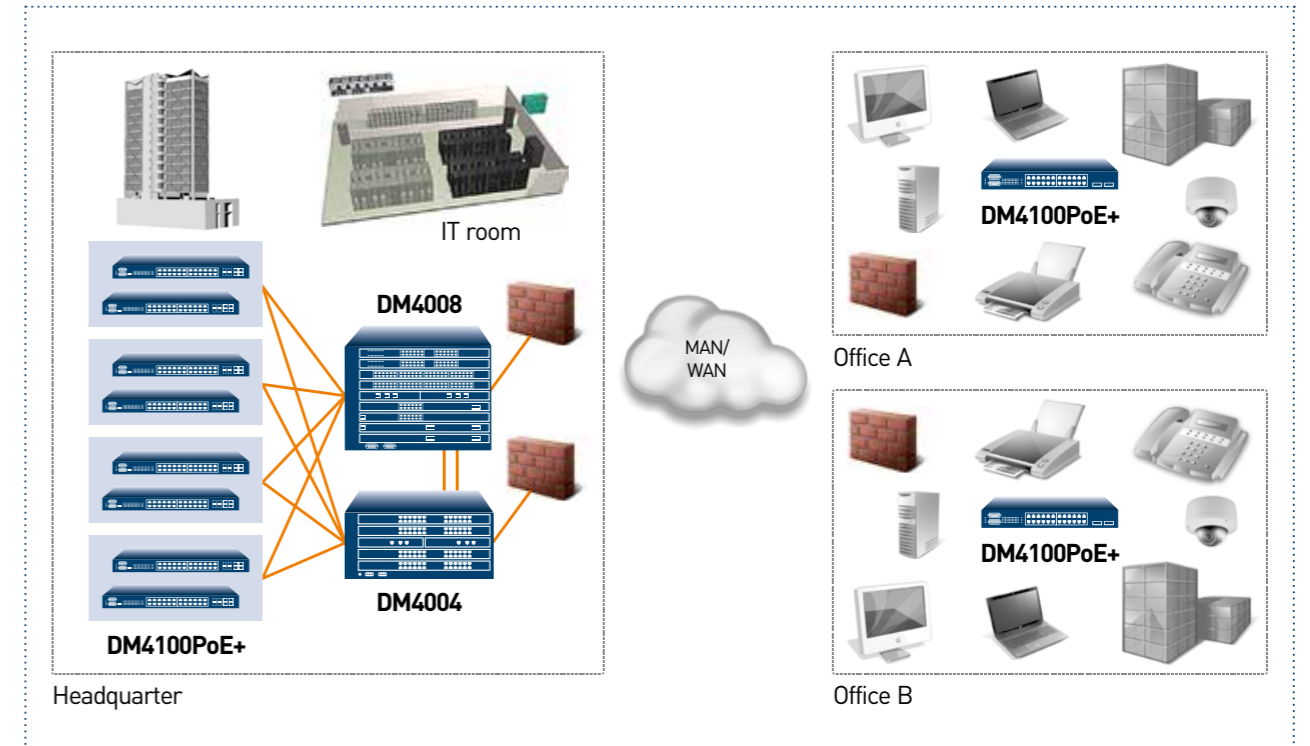
Metro Ethernet

Metro Ethernet Access network based on DM4100, which supports up to 48 GbE and four 10GbE ports, IPv4/IPv6 routing and optional MPLS.

DATACOM

Rua América, 1000 | 92990-000 | Eldorado do Sul | RS | Brazil

+55 51 3933 3000

sales@datacom.ind.br

www.datacom.ind.br