DATACOM

DM4370
10GE ACCESS SWITCH

DATASHEET

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COMPACT L2/L3/MPLS SWITCHES WITH 10G UPLINKS FOR METRO ETHERNET DEMARCATION AND ACCESS

The DM4370 switch offer high switching capacity to meet the increasing demands of access and demarcation of Metro Ethernet services with high performance and reliability.

The switch is based on Datacom´s DmOS modular network operating system, ensuring robustness and high availability of services on a platform supporting a series of L2 / L3 / MPLS functionalities, including the support for VLAN operations such as QinQ and VLAN Translate, LAG / LACP and ring operation through EAPS or ERPS protocols. The product also support RSTP, static IP routing and dynamic IP routing through OSPF and BGP protocols, MPLS, access control lists (ACLs), QoS, among others.

DM4370 innovates by bringing MPLS up to the point of access, ensuring the delivery of transparent LAN-to-LAN circuits. With the LDP infrastructure, it is possible to implement point-to-point VPN services (VPWS).

All L2 / L3 / MPLS packet forwarding and routing as well as ACLs processing QoS is done at the hardware level, ensuring wirespeed operation for any scenario and with all packet sizes.

The product offer configuration via command line (CLI) accessible locally through RS-232 or USB console port or remotely through SSHv2 or Telnet. RADIUS and TACACS functionalities allow the creation of management policies with different levels of authentications and user access authorizations. For remote management and troubleshooting, the product supports features like Syslog, SNTP and SNMP.

DM4370 switches are compact 1U units with metal cabinet enclosures. They feature an internal universal AC / DC power supply with automatic selection and an optional external power supply for redundancy. Up to two devices can be installed side by side in a 19" rack through a mounting adapter.

- Compact desktop design, with 1U height.

- 4x 10GE ports (SFP+)

- 8x GE ports, with 4x optical SFP plus 4x electrical RJ45

- VLAN, QinQ, EAPS and ERPS support for Metro Ethernet applications

- L2 protocol tunneling to service LAN-to-LAN services

- Static and dynamic routing through OSPF and BGP protocols

- Support for MPLS protocol

- Integrated full-range AC / DC power supply with automatic selection and optional redundancy via external PSU

10GE DEMARCATION

The DM4370 switch has 4x 10GE SFP+ interfaces that can be used for both service access links greater than 1GE and also as an uplink interface for 10GE aggregation rings. In addition, services with more than 10GE can be designed with Link Aggregation and LACP.

The product also features remote loop functionality with MAC-swap (*) and an embedded RFC2544 / Y.1564 (*) tester for service activation and maintenance procedures. With these features, the provider is able to trigger circuit diagnostic tests and generate service activation reports remotely without the need for technical visits to the customer's premises.

APPLICATIONS

METRO ETHERNET ACCESS AND AGGREGATION

Through its SFP based GE/10GE interfaces and the L2/L3 and MPLS functionalities, the DM4370 switch is the best solutions for Metro Ethernet access and aggregation applications, offering a reliable and highly available solution for enterprise and residential services. The product supports linear, star and ring topologies, assuring the flexibility needed for different network infrastructure topologies.
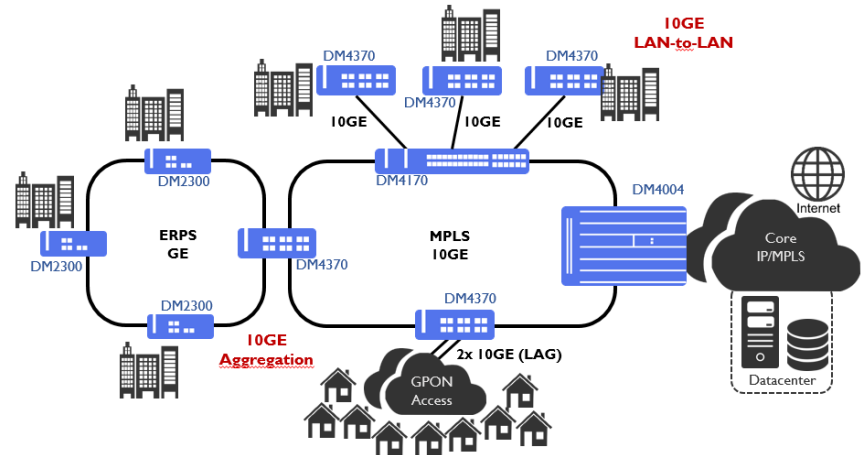
IP SERVICES ACCESS

The DM4370 switch supports hardware based packet routing, forwarding and filtering, and through OSPF and BGP protocols, ACLs filtering up to L4 and QoS functionalities, the product can be used as an IP access solution for up to 10Gbps high value added enterprise services, assuring redundancy through features like LACP and VRRP, depending on the network topology and architecture.
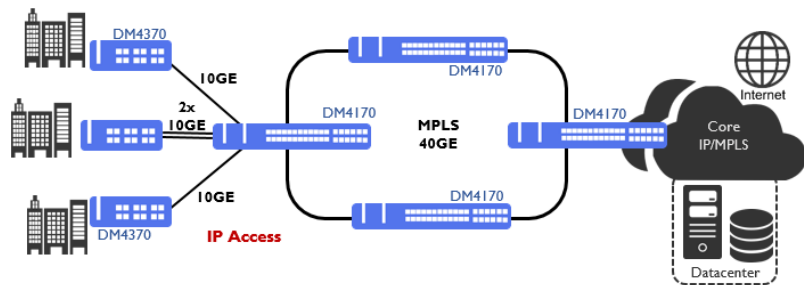
FEATURE LIST

MANAGEMENT

- Configuration Commit and rollback
- In-band and out-of-band management
- Statistics per Ethernet port
- Firmware rollback
- Firmware upgrade via TFTP
- RADIUS
- SNMPv1, SNMPv2, SNMPv2c, SNMPv3
- Command line interface (CLI) via SSHv2, Telnet and RS-232 or USB console
- Digital diagnostics of optical modules according to SFF 8472
- System status LEDs and alarms
- Inventory information
- Storage for up to 2 firmware and up to 8 configurations in Flash memory
- CPU and memory usage monitoring, with status available through SNMP
- SNTP
- Local and remote Syslog

SWITCHING

- EAPS and ERPS
- Static and dynamic Link Aggregation (LACP) of up to 6 groups with up to 8 ports per group
- VLANs
- Q-in-Q
- Selective Q-in-Q
- Spanning Tree (STP), Rapid Spanning Tree (RSTP)
- Aging L2 Global Configuration
- Auto negotiation interface configuration, with Auto MDI / MDIX support
- Support for Jumbo Frames of up to 9k bytes
- Configuration of up to 4k VLANs with up to 4k VLAN IDs

FILTERS AND SECURITY

- ACL Remark and Deny actions
- ACL math for L2 and L3 fields
- Protection mechanisms against Broadcast, Multicast or DLF attacks
- CPU protection against Denial of Service (DoS) attacks
- Protection mechanisms against IP spoofing
- Authentication of users through RADIUS or TACACS +

QOS

- P-bit remarking (PCP)
- Packet classification based on DSCP, source / destination IP, source / destination MAC, VLAN, port
- DSCP Mapping for COS
- Scheduling of queues by WFQ and Strict Priority
- Up to 8 priority queues per port

IP ROUTING

- BGP, with MD5 authentication option
- BGP IP Prefix Lists and Route Map
- Up to 32 BGP neighbors
- OSPFv2, with MD5 authentication option
- Static IPv4 routing
- Routing between VLANs
- Routes Redistribution between routing protocols

MPLS

- LDP for Label distribution
- VPWS
- L2VPN
- LER and LSR operation

SERVICES

- RFC2544/Y.1564 tests*
- MAC-swap remote loop tests*
- IPv4 ping
- SSH Client
- Telnet Client

MULTICAST

- IGMPv2, IGMPv3
- IGMP snooping com proxy report

(*) FEATURE IN ROADMAP. CONTACT DATACOM FOR AVAILABILITY INFORMATION.

STANDARDS

IETF

draft-grant-tacacs-02   The TACACS+ Protocol

RFC783   The TFTP Protocol (Revision 2)

RFC792   Internet Control Message Protocol (ICMP) (Ping IPv4)

RFC854   TELNET Protocol Specification

RFC894   A Standard for the Transmission of IP Datagrams over Ethernet Networks

RFC1157   A Simple Network Management Protocol (SNMPv1)

RFC1213   Management Information Base for Network Management of TCP/IP-based internets: MIB-II (Obsoletes RFC 1158)

RFC1215   A Convention for Defining Traps for use with the SNMP - TRAPS MIB

RFC1441   Introduction to version 2 of the Internet-standard Network Management Framework (SNMPv2)

RFC1700   ASSIGNED NUMBERS

RFC1901 to RFC1908   SNMPv2c

RFC2030   Simple Network Time Protocol (SNTP) Version 4 for IPv4, IPv6 and OSI

RFC2236   Internet Group Management Protocol, Version 2 - IGMPv2

RFC2328   OSPF Version 2 (obsoletes RFC2178, RC1583, RFC1247 e RFC1131)

RFC2348   TFTP Blocksize Option (obsoletes RFC1783)

RFC2385   Protection of BGP Sessions via the TCP MD5 Signature Option

RFC2474   Definition of the Differentiated Services Field (DS Field) in the IPv4 Headers (DSCP Remarking for IPv4)

RFC2865   Remote Authentication Dial In User Service (RADIUS) (obsoletes RFC 2138)

RFC2866   RADIUS Accounting (obsoletes RFC2139)

RFC3021   Using 31-Bit Prefixes on IPv4 Point-to-Point Links

RFC3376   Internet Group Management Protocol, Version 3 - IGMPv3

RFC3410 to RFC3418   SNMPv3 agent

RFC3619   EAPS

RFC4271   A Border Gateway Protocol 4 (BGP-4) (obsoletes RFC1771)

RFC4632   Classless Inter-domainRouting (CIDR): The Internet Address Assignment and Aggregation Plan

RFC4742   Using the NETCONF Configuration Protocol over Secure Shell (SSH)

RFC5277   NETCONF Event Notifications

RFC5717   Partial Lock Remote Procedure Call (RPC) for NETCONF

RFC6020   YANG - A Data Modeling Language for the Network Configuration Protocol (NET-CONF)

RFC6021   Common YANG Data Types

RFC6022   YANG Module for NETCONF Monitoring

RFC6241   Network Configuration Protocol (NETCONF) (Obsoletes RFC 4741)

RFC6242   Using the NETCONF Configuration Protocol over Secure Shell (SSH)

RFC6243   With-defaults capability for NETCONF

RFC6470   NETCONF Base Notifications

RFC6536   NETCONF Access Control Model

RFC6991   Common YANG Data Types (Obsoletes RFC 6021)

IEEE

802.1ad Double Tagging (Q-in-Q)

802.1AX/802.3ad Link Aggregation

802.1D   MAC bridges

802.1D   Spanning Tree Protocol (STP)

802.1p   Traffic Class Expediting

802.1Q   Virtual Bridged LAN (VLAN)

802.1w   Rapid Spanning Tree Protocol (RSTP)

802.3ae   10 Gigabit Ethernet over fiber; 10GBASE-SR, 10GBASE-LR, 10GBASE-ER, 10GBASE-SW, 10GBASE-LW, 10GBASE-EW

802.3z   1000BASE-X Gbit/s Ethernet over Fiber-Optic at 1 Gbit/s (125 MB/s)

ETSI

EN 300 019-1-1, Class 1.2   Environmental Conditions for storage

EN 300 019-1-2, Class 2.3   Environmental Conditions for Transport

EN 300 386 V1.6.1 (2012-09)   Electromagnetic compatibility and Radio spectrum Matters (ERM)

EN 55022   Information technology
                             equipment. Radio disturbance
                             characteristics - Class A

IEC

60825-1 Laser Safety Class

61000-4-11   Voltage dips, short interruptions and voltage
                 variations immunity tests

61000-4-6   Immunity to conducted disturbances, induced by
                 radio-frequency fields

EN 61000-4-2   Electrostatic Discharge Immunity Test

EN 61000-4-4   Electrical fast transient/burst immunity test

EN 61000-4-5   Surge immunity test

TECHNICAL SPECIFICATIONS

		DM4370 4GT+4GX+4XS
SCALABILITY	Wirespeed switching capacity	96 Gbps / 129 Mpps
	Packet Buffers	2MB
	MAC Table	32k
	L3 Routes	Shared table with 1024 IPv4 / 512 IPv6 (64 bits) Additional table with 256 IPv6 (128 bits)
	L3 Hosts	2k IPv4 / 1k IPv6
	Multicast groups	256
HARDWARE CHARACTERISTICS	Power Supply	Universal integrated AC (100 - 240V 50/60Hz) and DC (48 - 60Vdc). DC 12V input for optional external adapter
	Maximum power consumption	33W
	Typical power consumption	21W
	Operational temperature	0ºC to 55ºC**
	Operational relative humidity	10% to 90%, non-condensed
	Operational altitude	0 to 3000m
	Storage temperature	-20ºC to 70ºC
	Storage relative humidity	10% to 90%, non-condensed
	Dimensions (HxWxD)	43 x 189 x 191mm
	Weight	1.3kg
INTERFACES	10/100/1000Base-T (RJ45)	4
	1000Base-X (SFP)	4
	10GBase-X (SFP+)	4
	GE Out-of-band management (RJ45)	1
	Console (RJ45)	1
	USB Type Mini-B	1
MEMORY	Flash Memory	1GB
	RAM Memory	1GB

(**) BY USING COMMERCIAL GRADE SFP / SFP+ THE MAXIMUM RECOMMENDED OPERATING ENVIRONMENTAL TEMPERATURE FOR THE PRODUCT IS 45ºC. FOR THE PRODUCT TO OPERATE IN MAXIMUM ENVIRONMENTAL TEMPERATURE OF 55ºC, INDUSTRIAL CATEGORY SFP / SFP+ MUST BE USED. CONSULT DATACOM FOR MORE INFORMATION

ACCESSORIES

Accessory	Description
SFP+ 10GbE *PN: Inquire*	Optical 10 Gigabit Ethernet SFP+ modules. Several models with varying power and reach specifications are offered.
SFP 1GbE *PN: Inquire*	Optical Gigabit Ethernet SFP modules. Several models with varying power and reach specifications are offered.
MA-01 Tray *800.0141.xx*	Tray for installing up to two devices side-by-side on 19" racks.
External AC PSU *PN: Inquire*	Optional AC 100-240V / 50-60Hz to 12Vdc, 3A external power supply unit for redundancy.

ORDERING INFORMATION

Model	Description	
DM4370 4GT+4GX+4XS *800.5191.xx*	L2 / L3 / MPLS wirespeed switch with 4 Gigabit electrical ports (RJ45), 4 Gigabit Ethernet optical ports (SFP) and 4 10 Gigabit Ethernet optical ports (SFP +). Integrated AC / DC power supply with automatic selection and 12V input for optional redundant power. Standalone unit, 1U metal cabinet. License required for MPLS functionalities.	
DM4370 – MPLS License *012.4204.00*	Software license to enable MPLS functionalities on DM4370 switch.	-

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