

October 2015, Eldorado do Sul - Brazil

DATAKOM notifies the launching of the 14.6 firmware version for the DM4000 and DM4100 series products.

Changes from firmware version 14.4.

Firmware Upgrade Procedure

- For firmware upgrades from version 12.x (or less) to 14.x, it is required to perform a two-stages procedure, performing an upgrade to an intermediate version and then to the newest version.
 - The MPLS access interfaces must not be configured with the feature QinQ external mode. As an exception, is a combination of untagged access with vc-type vlan parameter in the VPN. Check the current configurations before upgrading from versions earlier than 14.2, in order to avoid traffic loss.
 - The intermediate recommended firmware version is the 13.8.6.
 - Upgrading firmware stages (must be performed in all interface cards simultaneously, observing supported versions, to avoid undesirable inconsistencies):
Stage 1: firmware upgrade from version 12.x to 13.8.6 with subsequent reboot.
Stage 2: firmware upgrade from version 13.8.6 to 14.x with subsequent reboot.
 - The meters modes srTcm and trTcm must be reconfigured and associated with the respective filters at the end of upgrade from firmware 12.x and 13.x to firmware 14.x.
- Any doubt about the procedure above, get contact with DATAKOM Technical Support.

New Features and Improvements

- BFD support, with restrictions mapped in *Compatibilities and Restrictions*.
- RSVP support with restrictions mapped in *Compatibilities and Restrictions*.
- Support to Gigabit Ethernet in the SFP+ ports of all SFP+ models of DM4100 Series.
- Support to VPLS with access interface port-channel with LACP.
- Allow the MTU configuration per VLAN to VLAN-Based VPNs.
- Support Rx/Tx loop in the interface port.
- Support to ping and extended traceroute, enabling the selection of the interface where the test is being executed.
- Support to the RFC 4292, IP Forwarding Table MIB.
- Provide filter actions to change source and destination MACs in the data packets.
- Make settable the timers of the protocols IGMP, Last Member Query Count and Last Member Query Interval.

- Support to packets drop in MPLS tunnels in the PEs ingress and egress, in case the MTU be bigger than configured value.
- CPU performance improvement when BGP session is Open-Sent.
- Inclusion of INPUT logs/traps of External-Alarm feature for DM4100 Series, previously available only for DmSwitch 3000.
- Improvement of the time counters (uptime, create time, last change) for L2VPN.

Corrections

- PWE3-ETH20GX+32E1 interface card do not interwork with MPU 384 - Quali-II.
- A unit reboot may cause a temporary unavailability of L3/MPLS services.
- Memory leak when mpls ldp control-mode independent, used by RFC3107, is configured.
- Link down events may cause partial or total unavailability of VPN traffic.
- VRRP master with preempt mode disabled, go back to master state after reboot the master

- unit.
- Adequacy of answers to the object lldpLocPortDesc of the LLDP-MIB.
- Readjustment of the log messages relative to the management link status, which runs at each 12 hours in the DM4000 Series switches.
- Correction of sending logs of AUDIT of improper hosts.
- Correction of the failure in the tunneling of BPDUs with QinQ.
- LDP Peer don't send IP address of a VLAN with LDP enabled in the LDP Address Message if this IP address is previously learned from another LDP peer.
- Correction of the fuse failure logs of the MPU384 Qualy I.
- Corrected the instability of SNMP after upgrade to the version FW14.4.
- Corrected the firmware recognition while units have empty flash positions.
- Failure during removal of OSPF configurations.
- Eventual problems may occur in a tunneled BPDUs forwarding after insertion of a second tag QinQ.
- Undesirable inconsistencies may occur if units be rebooted or switchovers be applied before the system's recovery time ends. It is recommended to survey if the system is completely recovered before apply unit reboots or consecutive switchovers. Unit reboots will not to be allowed by the system while the graceful-restart being in progress.
- The max number of next-hops ECMP is limited to 30 for OSPF, BGP and IS-IS and static routes. For the RIP it is limited to 4 ECMP next-hops.
- The minimum configurable value of ARP aging time was modified from 60s to 200s.
- Correction of the internal operation failure when the command clear mac-address-table is used in ETH24GX H Series interface cards.
- Loss of DHCP Snooping database after a change-master operation in stacking mode.
- OSPF sessions down during show ip route command execution in scenarios that contain a huge routes number and ECMP enabled.
- Intermittence in the EAPS causing ring loop after reboot in the master device.
- Sporadic traffic loss in the EAPS ring after reboot the transit device.
- When successive link down occurs, the switch stops spreading labels to adjacent switches.
- Correction of failures during the installation of actions of SWP or PHP.
- Unexpected reboots in the internal process that interwork with BGP for routes with labels (BVM), by disabling and enabling the loopback interface with MPLS activated.
- After a MPU switchover, adjacent switches present inconsistencies in the labels destined to a third switch.
- After a unit reboot, the links eBGP and iBGP stays down.
- Unexpected reboots in the internal DCMS process due to double request of LDP neighbor removal.
- Convergence and failure problem in VPNs due to periodic recalculations of OSPF LSAs.
- LDP do not rise up when shutdown/no shutdown commands are applied in the loopback interface.
- Adequate the scalability of 20k FECs to avoid instabilities.
- Inconsistency in the status of the RSVP tunnel in the Control Plane and LSC.
- After a switchover process some VPNs don't turn back to work properly.
- Equalization of the buffer in the PWE3.
- Deletion impossibility of PW of a VPN-TE while the status TNL_STS_ACTIVE to TNL_STS_DOWN is no protected.
- After activate the negotiation in the XS

interface ports, the link stays nonoperational.

- The update of BFD interval is not effective.
- Memory leak in the VPLS Multicast groups in L2VPN-TE scenarios with FRR.
- Impossibility of configuration removal of loopback-internal phy in the 4GX ports.
- Feature loopback-internal phy is not functional in SGMII ports.
- Corrected reversal of interface ports 51 and 52 for DM4100 ETH44GT+4GC+4XS.
- Block MTU configuration in interfaces lesser than VPN MPLS.
- Corrected the dump file generation that exceeds the size limit allowed.
- LASER TX ON stays turned ON even without XFPs in the DM4100 24GX+2XX – Q1.
- After flaps sequence, the traffic is sent with the backup tunnel label, even with the main tunnel being activated.
- Sending the wrong label in a transit element after a link flap and OSPF in the tail end.
- Command syntax show internal-dump was modified to show dump, avoiding this way conflicts with the show interfaces.
- The usage of 8k hosts is not available for devices with MPLS license or to stacking pizza box applications.

Compatibilities and Restrictions

- This firmware version supports devices of DM4000 and DM4100 Family. The compatibility matrix between MPU and interface cards for DM4000 in chassis is displayed in the Annex 1.
- The lowest recommended version of DmView to use the CESoP feature is the 8.2.
- The interface cards E Series and STM1 H Series will not support a stacking mode operation in DM4001.
- DATACOM recommends that the DM4100

devices, in stacking, operates with the same software license installed. The software licenses currently available are: Bridge (L2), Router (L3) and MPLS.

- With the new support to LOPS (Detection of Loss) in the PWE3 H Series interface cards, the fail status of the local Bundle comes to be calculated by the amount of packets consecutively loss. The configuration command *packet-loss-threshold* was removed, and was introduced the new command *lops-limits*. This way, it will cause compatibility restrictions to earlier firmware versions.
- The VLAN 1 (default) usage is not recommended in L2 and L3 applications.
- MPLS is not supported in pizza box stacking.
- MPLS usage with external memory enabled for L3 routes requires the application of the command *memory external-resource vlan*.
- Is not guaranteed the commutation of RSVP tunnels sub-50ms in the DM4100 Series.
- Undesirable behavior in VPNs with RSVP tunnels after switchover.
- High stress level tests of link-flap, in L2VPN-TE (RSVP) scenarios, are presenting instabilities.
- Improvements in CPU-Protect feature may require reconfiguration of this feature after a firmware upgrade to version 14.2 or superior. Get contact with DATACOM Technical Support.
- Removed the blocking parameters for broadcast, multicast and arp request from the feature *block* of the CPU-DoS-Protect. From firmware version 14.2 on, a selective and flexible control is included to perform the blocking or limitation of packets to the CPU, including broadcast, multicast, arp request between other protocols, totaling 48 queues of control (command: *cpu-dos-protect queue*).

- There are some restrictions of usage of 8k hosts in DM4100 L3 24P. Get contact with DATACOM Technical Support.
- The lowest recommended firmware version for MPU384 Quali-II is the 14.6 (product code: 800.0442.10).
- After execution of units reboot command, the iBGP sessions take a long time to recover again.
- Interruption of sending BGP and BDF packets after a unit reboot. The OSPF stays under indirect influence, it means, only when it is combined with the protocols BGP and/or BFD.
- After the master swap in a stacking mode, the client IP register fails in the database of DHCP Snooping. The workaround is to deactivate and reactivate the feature through the command *ip dhcp snooping*.
- Incompatibility of configuration of LDP-IGP Sync in interfaces that contains only IPv6 address.
- Unexpected restarts in the internal process DCSMS after a shut/no shut stress in loopback 0; LDP adjacent does not recover in a L2VPN-TE scenarios.
- Unexpected restarts in the internal process DCSMS may occur after shut/no_shut in the te-tunnel interfaces.
- LDP protocol stays as NonExistent and PW stays as LwLrDown after stress tests of interface down.
- PW stays inoperable due to LwLrDown after few iterations of down of LDP in the uplink interface.
- BFD shoots down OSPF sessions after momentary high consumption situations of the CPU.
- Delay in send packets commutation for redundant path via ECMP route provide the down of protocols BGP and BFD.
- BFD is limited to 40 adjacencies.
- The command *show ip bfd neighbors* with insufficient information for troubleshooting.
- The convergence of VPNs between neighbors increase 3 seconds in scenarios with more than 25 VPNs, when simulate stress conditions in a frequency of up to 15 transitions per second (*shut/no shut*) in the uplink interface.
- In scenarios with two BGP neighbors, RFC3107 does not converge after an interface shutdown.
- In STP scenarios, *topology change* causes loss of traffic after *shutdown/no shutdown* in AD interface.
- Permanent blocking of link-flap if the units reboots during the link-flap.
- Audit of L2VPN (PWE3 or VC TYPE VLAN) showing incorrect values to the access port ID and hardware status after removal of unit that this ports belongs to.
- Improper entry flushes in the MAC table related to port-channels with members up.
- Port-security does not block traffic when it is configured in a port-channel.
- To change the status from *shutdown* to *no shutdown* in port-channel with LACP, it is necessary to perform the configurations in the interfaces.
- In DM4100 - ETH44GT+4GC+2XX+S it is recommended the usage of up to 7 STP instances.
- Expansion slots to SFP+ are not detected and report *Read Error*.
- There is a compatibility issue with meter modes trTcm and srTcm when upgrading from firmware 12.x and 13.x to firmware 14.x and beyond due to the introduction of new meter modes for hierarchical metering with filters. After upgrade the meters are erased or invalid. It is necessary to re-create and re-associate them to the filters after the firmware upgrade.

Get contact with DATACOM Technical Support by e-mail to support@datacom.ind.br or via phone call (+55 51 3933 3122) in order to obtain additional information about supported features, upgrading procedures and compatibility of firmware versions, modules and accessories.

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Annex 1: Compatibility Matrix to DM4000 in Chassis

The following table displays the compatibility between MPU and interface cards to DM4000 in chassis, for the firmware version 14.6:

<i>Interface Cards</i>	<i>MPU384</i>	<i>MPU512</i>
ETH24GX H Series	✓	✓
ETH24GX E Series	✓	✓
ETH24GX L Series ^(*)	--	--
ETH24GT H Series	✓	✓
ETH48GX H Series	✓	✓
ETH48GT H Series	✓	✓
ETH24GX+2x10GX H Series	✓	✓
ETH24GX+2x10GX E Series	✓	✓
ETH2x10GX H Series	✓	✓
ETH4x10GX H Series	✓	✓
ETH4x10GX E Series	✓	✓
PWE3 ETH20GX+32E1 H Series	✓	✓
PWE3 ETH20GX+2x10GX+32E1 H Series	✓	✓
PWE3 ETH16GX+4STM1 H Series	✓	✓
PWE3 ETH16GX+2x10GX+4STM1 H Series	✓	✓

^(*) - L Series devices is compatible only in a standalone operation through the usage of a chassis DM4001 or DM4001 L.