

March 2017, Eldorado do Sul - Brazil

DATACOM notifies the launching of the 14.10.10 firmware version for the DM4000 and DM4100 series products. This document presents the changes from firmware version 14.10.8.

Firmware Upgrading Procedure

- The firmware upgrade in chassis or stacking devices must be performed in all interface cards simultaneously, observing the supported versions, in order to avoid undesirable inconsistencies.
- For firmware upgrading from version 12.x (or less) to 14.x, it is required to perform a two-stages procedure, applying an upgrade to 13.8.6 (intermediate recommended version) and then to the final version 14.x.

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 MPLS access interfaces must not be configured with the feature QinQ external mode. An exception is a combination of `untagged access` with `vc-type vlan` parameter in the VPN. In this specific configuration the QinQ configuration is not overwritten by the VPN. Check the current configuration before upgrading from versions previous than 14.2 in order to avoid traffic loss due to conflicts at QinQ tag profile caused by VPN.
- The meters using `srTcm` and `trTcm` mode must be reconfigured and associated again to the respective filters after ending the firmware upgrade from versions 12.x or 13.x to version 14.x.
In case of any doubt about the procedure contact DATACOM Technical Support.
- Firmware version prior to 14.2 do not support VPN TE (`mplstype te`). Firmware downgrade for those versions affects the VPNs with such configuration demanding the VPN neighbor reconfiguration.
- OSPFv3 authentication configuration is not compatible with previous versions of 13.0. During an upgrade/downgrade this parameter must be removed before starting the procedure and added after new firmware version is active.
- Be sure of removing all RSVP tunnels with ID greater than 100 (one hundred) and reduce the number of VPLS ports to maximum eight before starting a downgrade to a previous version before 14.10.
- Starting from the version 14.10.8, make sure the feature L2VPN-TE Backup-PW is either removed or reconfigured as `mplstype non-te` before performing a firmware downgrade.
- From the version 14.10.2 on, the commands `ip igmp snooping flood-unknown` and `ipv6 mld snooping flood-unknown` are available only in the VLAN configuration scope. The configuration must be done individually for each VLAN that requires the disabling of flood-unknown multicast. After an upgrade/downgrade the equipment must have this configuration rebuilt because it will return to the default value of flood-unknown multicast.
- The CPU-Protect functionality may require feature reconfiguration after upgrading to versions higher than 14.2. Consult DATACOM Technical Support for more details.
- Starting from firmware version 14.10.10, in case of firmware downgrading, make sure the configuration has at most 256 MPLS L2VPNs.

New Features and Improvements

- The maximum scalability number of MPLS L2VPNs (VPWS/VPLS) has been increased to 512 for the DM4000 family.
- The `chassis load-balance` feature is now available for configuring the load-balance

criteria (`dst-ip | dst-mac | src-dst-ip | src-dst-mac | src-ip | src-mac | enhanced`) of internal links, which is utilized by the chassis internal connections, for each unit, allowing specific load-balance configuration when the incoming traffic from a unit comes out throughout a different unit.

- The command `show chassis-load-balance` is now available for verifying the configuration of the load-balance criteria utilized by the internal links in the units of the chassis.
- Enhancements in the information presented in a specific warning message for LACP-enabled port-channels.

Corrections

- Undesirable MPLS encapsulation behavior after switchover operation in a particular topology involving LDP, graceful-restart and L2VPN when the configuration had different `vc-type` encapsulation on the same access interface.
- Removing the `switchport vlan-translate ingress` command might not be effective requiring the `vlan-translate` rules to be also removed.
- Fixes about filter matching criteria with some protocols and TTL=1.

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.
- An equivalent protection of command `cpu-dos-protect block l3-slow-path`, for the DM4000 family, with the advantage of not affecting L3 protocols is the creation of a pre-

ingress filter to allow the packets reception for the required protocol and another filter with lower priority to drop packets with TTL=1.

- The MTU signaled by either VPWS or VPLS is derived from the access interface which has the lowest MTU value, even if this interface is logically disabled.
- The usage of command `no ipv6 mld snooping flood-unknown` causes OSPFv3 adjacencies to go to down state.
- The lowest recommended DmView version to use with CESoP feature is the 8.2.
- All DM4100 devices when operating in stacking mode must use the same software license. The current software licenses available are: Bridge (L2), Router (L3) and MPLS.
- The use of VLAN 1 (default) in L2 and L3 applications is not recommended.
- Firmware downgrading is not supported to a version lower than 14.8 when the configuration has VPNs with both `vc-type vlan` and `vc-type ethernet` on the same physical interface.
- MPLS is not supported in pizza box stacking.
- Use of RSVP services in MPLS scenarios with external memory enabled (for L3 routes) requires the configuration of the `memory external-resource vlan` command. Note that the VLAN used in this command is reserved and can not be used for other purposes.
- There are some restrictions about using RSVP and MPLS traffic engineering (TE). Consult DATACOM Technical Support for more details.
- RSVP tunnels re-convergence time below 50ms is not guaranteed on DM4100 Series.
- Local tunnel and RFC 3107 are not supported for the DM4100 family.

- Local Tunnel is not supported by DM4000 PWE3 H Series 32E1 module, DM4004 e DM4008.
- More than one RFC 3107 session (BGP address-family IPv4 with send-label) is only supported in the same PE when neighbors advertise different prefixes in each session.
- Metric cost and metric type manipulation in redistributed routes from RFC3107 to OSPF is not supported.
- Selective QinQ is not supported on VPN access ports for all DM4000 family.
- There may be temporary traffic loss during graceful-restart period in LDP scenarios.
- VRF-Lite does not allow IP addresses overlapping.
- No support for multiple IPv6 network protection using VRRP.
- BGP IPv6 Peer-Group is not supported.
- A total of 48 control queues were added in version 14.2 allowing more accurate selection and controlling over the packets to CPU (command: `cpu-dos-protect queue`). The commands `cpu-dos-protect block arp request` and `cpu-dos-protect block reserved-multicast` were removed.
- OSPF default originate does not guarantee reasonable convergence times and can cause momentaneous traffic unavailability in a BGP full routing scenario when using VLAN link-detect.
- The command `auto-cost reference-bandwidth` should not be used in OSPFv3 configuration.
- It is recommended to avoid RIP configuration with VLAN IP address using network mask / 31.
- The storm control default values (multicast / broadcast / unicast) for interfaces 1GB and 10GB have been changed in version 14.6.2.

In interfaces 1GB it has changed from 1000pps to 10000pps and in interfaces 10GB it has changed from 10000pps to 100000pps.

- There are some restrictions to reach the limit of 8k hosts in DM4100 L3 24P equipment. Consult DATACOM Technical Support for more details.
- The MPU384 with product code 800.0442.10 has the version 14.6 as a minimum firmware.
- DHCP Snooping database presents inconsistent records after releasing some client IPs right after a master switchover operation in Stacking.
- DHCP Snooping can not be used simultaneously with the features DHCP Server and DHCP Client.
- LDP-IGP Sync is not supported when interfaces do not have IPv4 address.
- The use of ECMP along with BFD or BGP can cause issues in the control plane of these protocols, when the main path drops. It can occur if the error detection interval for a BFD session that is configured in the BGP neighbor is less than 7 seconds or if the BGP holdtime is less than 21 seconds in a session session without BFD.
- In order to change the port-channel state from shutdown to no shutdown when using LACP it also requires the changing of the interfaces state that make up the port-channel.
- In a DM4100 equipment model ETH44GT 4GC+2XX+S it is recommended to use a maximum of 7 xSTP instances.
- Due to the introduction of new meter modes that allow the combination of hierarchical meters to the filters it has caused an incompatibility with versions minor than 14.x in the case that meters were using srTcm and trTcm mode. Such meters are removed from the configuration during the firmware upgrade.

Therefore, they must be recreated and associated again to the filters after update ending.

- Duplicated IPv6 address is not reported by VRRPv3.
- The feature ipfix is not released for DM4100-24P equipment.
- It is not possible to perform a ping to broadcast addresses.
- The command `dump` can take several minutes to be executed. As a result, the CLI becomes

unavailable during this period.

- Versions from 14.10 on do not allow the same meter and filters association in case of filters with different priorities. The same priority level has to be used if one intends to use the same meter.
- Scenarios with dual-homed equipment, most commonly used with firewalls, require the sending of messages Gratuitous ARP Request Packets (GARP) for the correct switching between active and stand-by elements.

One can get in 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.

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 14.10.10:

Interface Cards	MPU384	MPU512
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.