Release Notes for Cambium Networks cnMatrix Release 4.0.1-r2

Contents

Introduction

This document provides information for the Cambium Networks cnMatrix switch release 4.0.1-r2. The recommendations, technical data, configurations, and statements in this document are believed to be reliable and accurate but are presented without implied or express warranty. Users must take full responsibility for their

applications of any product specified in this document. The information in this document is proprietary to Cambium Networks Ltd.

Release 4.0.1-r2 consists of support for the new TX 2012R-P, new features, enhancements and bug fixes.

Supported Models

- cnMatrix EX2028

- cnMatrix EX2028-P

- cnMatrix EX2010

- cnMatrix EX2010-P

- cnMatrix EX2016M-P

- cnMatrix EX2052-P and EX2052R-P

- cnMatrix EX2052

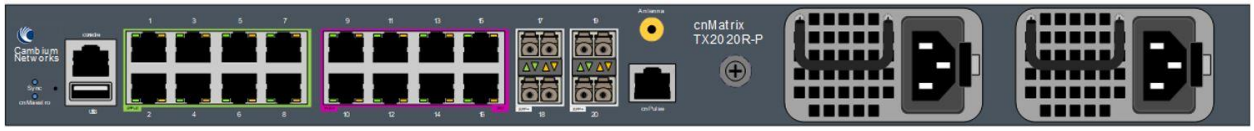
- cnMatrix EX1028

- cnMatrix EX1028-P

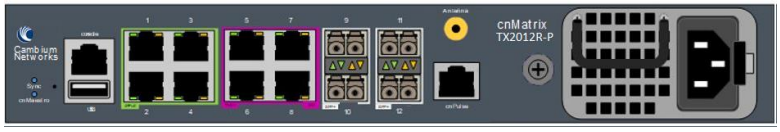
- cnMatrix EX1010

- cnMatrix EX1010-P

- cnMatrix TX2020R-P



- cnMatrix TX2012R-P



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Attention: Certain features may not be available on this product line and will be called out explicitly where not applicable. The TX switches do not support running software versions 2.x and 3.x. Downloading unsupported software is prohibited by 4.0.1-r2 agent.

Cambium Networks products and support

Product information: https://www.cambiumnetworks.com/products/software/

Log in to XMS-Cloud: https://login.xirrus.com

Log in to cnMaestro: https://cloud.cambiumnetworks.com

For more information: salesdev@cambiumnetworks.com

What's New in 4.0.1-r2

cnMatrix Software Release 4.0.1 is supported on all cnMatrix hardware platforms: EX2K, EX1K and TX2K.

The cnMatrix 4.0.1 software archive file can be loaded on both EX and TX models. The archive file name contains EX and TX model names - **cnMatrix-EXTX-4.0.1-r2.img.tar.gz** .

Support for new TX model

Part Number	Number of Ports	10/100/1000 Mbps RJ45 Ports	SPF+ Ports	Cambium Sync Ports	Power over Ethernet	Removable Power Supply
cnMatrix TX2012R-P	**12**	**8**	**4**	**8**	**Yes**	**Yes**

New Features

cnMatrix Release 4.0.1 brings new functionality supported on all models or only on specific models. The new features and supported models are listed in the table below.

cnMatrix New Features	EX2K	EX1K	TX2K
WEB GUI: Quick Start Page	Yes	Yes	Yes
WEB GUI: Support for boot partial and boot default	Yes	Yes	Yes
PoE hybrid mode	Yes (EX2016M-P only)	No	Yes
PoE autodetect cnWave	No	No	Yes

Auto Device Recovery Enhancement

Starting with release 4.0.1, non-responding remote (connected) devices will be “reset” via the ADR mechanism only for a configurable number of times.

PBA Enhancements

A new action has been added to PBA: Auto Device Recovery. A PBA policy can now enable or disable ADR on a port.

New PoE functionality

PoE Hybrid mode now supported on EX2016M-P

- PoE hybrid mode in which detection is still performed, but classification is no longer performed. Hence this mode has two major advantages: one, it offers protection by still performing standard 802.3 detection (as oppose to passive PoE mode) and second, it offers the possibility for a device to draw-up as much power as it desires regardless of the advertised class
- This mode is available starting with release 4.0 and available on all WISP ports, and with release 4.0.1 on EX2016M-P.
- By default, on EX2016M-P, ports power-up in 802.3bt mode and support up to 60w (Type3/Class6) over 4Pair ports (ports 9-14) and up to 30w (Type3/Class4) over 2Pair ports (ports 1-8).
- PoE hybrid mode is persistent if configuration is saved
- For hybrid mode, the PoE LED will light up amber, same as for 802.3 mode, since this mode requires detection and is not passive mode

CLI commands (from interface mode)**:**

```
EX2016MP-EC62C0# con t
EX2016MP-EC62C0(config)# interface gigabitethernet 0/4
EX2016MP-EC62C0(config-if)# power inline mode hybrid
```

PoE auto-detect mode for cnWave on TX models

- This feature offers the possibility to automatically set the PoE power mode to hybrid once a cnWave is detected on the port via LLDP. Assuming that the cnWave boots-up in 802.3 mode and has enough power to send LLDP, we will identify it based on the System Description TLV and change accordingly the power mode to hybrid on that power so that it can draw-up the full 90w even if it advertises itself as a class 4 device
- By default, the feature is enabled
- Enable/disable setting is persistent if configuration is saved
- This feature is similar to the cnMedusa mode released in SSW version 4.0

- **IMPORTANT NOTES**:

a. Changing the power-mode implies a power-on/power-off on the port. So, once a cnWave is detected and the power-mode is changed successfully, it will reboot and come back online with the new power-mode. After coming back online, the cnMatrix waits for 2 minutes to confirm again that it is a cnWave via the same LLDP information. During the transition period the port is kept intentionally off for 12seconds (PoE LED will be blinking green) to avoid the cnWave booting-up in SPC mode. All these events can be followed via logging (`TX2020RP-EC62C0# show logging`).
b. If the cnWave is unplugged or if the port is administratively powered-off, cnMatrix will revert the power-mode to 802.3 on that port
c. This feature only works for V3000 and V5000 cnWave models upgraded to the latest firmware.

CLI commands (from configure-terminal mode)

```
TX2020RP-EC62C0# con t
TX2020RP-EC62C0(config)# power mode hybrid cnwave
TX2020RP-EC62C0(config)# no power mode hybrid cnwave
```

Removable power supplies (RPS) on new TX model

- TX2012R-P model offers one power supply slot for flexible power budget requirements. The detection of a power supply upon insertion is done automatically and the power budget is adjusted accordingly on the fly.

CLI commands:

```
TX2012RP-EC6360# show system power-supply

Power Supply 1:
----------------------
Status: Normal
Power Ouput: 930 W
Voltage Output: 54.5 V
Current Output: 17 A
```

Important and Customer Bug Fixes

Tracking	Product	Description
3305	**All**	Changing the switch name (host name) via cnMaestro does not have any effect on the switch after switch is upgraded from 2.0.5.
3345	**All**	DHCP default gateway has lower route preference than the static default gateway
3393	**All**	IGMP Snooping - Switch crashes while processing jumbo size IPMC packets
3408	**All**	Switch can reset when being monitored with tools/scanners that establish SSH connections eg. PRTG, Auvik, ACAS
3417	**All**	Incorrect frame type for port configured in Access mode via XMS Cloud
3446	**All**	Under some conditions the non-root switch intermittently originates STP BPDU which causes spanning tree re-convergence

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Supported Features in cnMatrix

For your reference, here is the list of all features supported in cnMatrix. For more detailed information regarding cnMatrix supported features, please access cnMatrix User Guide.

cnMatrix feature availability varies between hardware platforms and cloud managers. Please consult the feature availability table below.

cnMatrix Feature	cnMaestro Configurable	XMS-Cloud Configurable	EX2K	EX1K	TX2K
Industry-standard Command Line Interface (CLI)	Yes	Yes	Yes	Yes	Yes
Web Management	Yes	No	Yes	Yes	Yes
cnMaestro Cloud-based Management	Yes	No	Yes	Yes	Yes
Zero-touch Remote Provisioning	Yes	Yes	Yes	Yes	Yes
SNMPv1/v2c/v3	No	No	Yes	Yes	Yes
Telnet Client/Server	Server	No	Yes	Yes	Yes
Out-Of-Band Ethernet Management	No	No	Yes	No	No
SSH/SSH v2	No	No	Yes	Yes	Yes
DHCP Client	Yes	Yes	Yes	Yes	Yes
DHCP Server	No	No	Yes	Yes	Yes
Local/Remote Syslog	No	No	Yes	Yes	Yes
System Resource Monitoring	Yes	No	Yes	Yes	Yes
802.1Q VLAN and Trunking Support	Yes	Yes	Yes	Yes	Yes
802.1d STP, 802.1w RSTP	Yes	Yes	Yes	Yes	Yes
802.1s MSTP	No	No	Yes	Yes	Yes
PVRST (Per VLAN RSTP)	Yes	No	Yes	Yes	Yes
802.1p Quality of Service	No	Partially	Yes	Yes	Yes
ACL QoS: Mapping/Marking ToS/DSCP, 802.1p, Priority Queue	Partially	Partially	Yes	Yes	Yes
Inbound Traffic Policing, and Outbound Traffic Shaping	No	No	Yes	Yes	Yes
Storm Control	Yes	No	Yes	Yes	Yes
Flow Control Per Port	No	No	Yes	Yes	Yes

802.1ab Link Layer Discovery Protocol (LLDP)	No	Partially	Yes	Yes	Yes
802.3ad Link Aggregation	Yes	No	Yes	Yes	Yes
Policy-Based Automation with Dynamic Configuration	Yes	Yes	Yes	Yes	Yes
IGMP Snooping v1/v2	Yes	No	Yes	Yes	Yes
IGMP Snooping Proxy	No	No	Yes	Yes	Yes
Private VLAN Edge	Yes	No	Yes	Yes	Yes
Port Mirroring: Port-based, ACL-based	No	No	Yes	Yes	Yes
SNTP	Yes	Yes	Yes	Yes	Yes
Port Statistics	Yes	No	Yes	Yes	Yes
RMON	No	No	Yes	Yes	Yes
Routing Between Directly Connected Subnets	No	No	Yes	Yes	Yes
Routed Interfaces	No	No	Yes	Yes	Yes
IPv4 static routes	Yes	No	Yes	Yes	Yes
Host routes	No	No	Yes	Yes	Yes
DHCP Relay	No	No	Yes	Yes	Yes
802.1x Authentication	Multi-host	Yes	Yes	Yes	Yes
Radius/TACACS+	Radius	Yes	Yes	Yes	Yes
DHCP Snooping	Yes	No	Yes	Yes	Yes
Static MAC	No	No	Yes	Yes	Yes
IGMP Filtering	No	No	Yes	Yes	Yes
Locally Managed Username and Password	Yes	Yes	Yes	Yes	Yes
cnMaestro on-premise	No	No	Yes	Yes	Yes
RIPv1/v2	No	No	Yes	**No**	Yes
OSPFv2	No	No	Yes	**No**	Yes
USB support	No	No	Yes	Yes	Yes
Reset button	Yes	No	Yes	Yes	Yes
Dynamic ARP Inspection	Yes	No	Yes	Yes	Yes
LLDP-MED	No	No	Yes	Yes	Yes
CLI ‘do’ command	No	No	Yes	Yes	Yes
cnMaestro Configuration	Yes	No	Yes	Yes	Yes

XMS-Cloud Configuration	N/A	Yes	Yes	Yes	Yes
Cambium Sync	Yes	No	No	No	Yes
802.3 af/at/bt	Yes	Yes	Up to 30W (60W on EX2016M-P)	Up to 30W	Up to 90W
PoE autodetect cnMedusa	Yes	No	No	No	Yes (first half of the ports)
PoE autodetect cnWave	Yes	No	No	No	Yes (first half of the ports)
PoE high temperature mode	No	No	Yes (only on EX2016M-P)	No	Yes
PoE hybrid mode	Yes	No	No	No	Yes
PoE Budget	N/A	N/A	Full	Reduced	Full
PoE+ (30W)	N/A	N/A	Yes	Yes	Yes
24V Passive PoE	Yes	No	No	No	Yes (second half of the ports)
54V Passive PoE	Yes	No	No	No	Yes
PoE on 4 Pairs (90W)	N/A	N/A	Only EX2016-M-P, ports 9-14, max 60W	No	Yes (first half of the ports)
Transceiver ports	N/A	N/A	SFP+ (SFP on EX2010)	SFP	SFP+
Cable Diagnostics	cnMaestroX	No	Yes (No on 2.5Gbps ports)	Yes	Yes
Redundant Power Supplies (RPS)	No	No	Yes	No	Yes (TX2020R-P only)
Dual Redundant Power Supplies	No	No	No	No	Yes
PBA	Yes (cnMaestroX on EX1K)	Yes	Yes	Yes	Yes
Auto recovery of connected devices	cnMaestroX	No	Yes	Yes	Yes

Known Issues

Tracking	Product	Description	Workaround
388	All	DHCP Relay: The switch doesn't relay all DHCP Release and Renew packets if there are more than 360 DHCP clients connected to the switch.	Use cnMatrix switch to relay DHCP packets for less than 360 DHCP clients.
460	All	LLDP port-id-subtype setting and DHCP server host hardware-type 3 setting are lost after boot.	Reconfigure the settings if they are lost after reboot.
519	All	UP7 traffic not equally serviced if received from 2 different ports - SP scheduler	N/A
554	All	802.1x Single Host : Mac-addresses are not learned in mac-address table after the clients are authenticated in single-host mode while in multi-host are learned properly	N/A
695	All	Ping doesn't work between 1/10 Gb interfaces or 1/10 Gb port-channels when STP mode is PVRST and more than 9 VLANs are created.	N/A
838	All	DHCP Snooping: When disabling DHCP Snooping globally, the DHCP Snooping VLAN configuration is cleared.	Reconfigure DHCP Snooping per VLAN.
848	All	Auto Attach: For phone detection it is advisable not to use rules with LLDP-CAP "phone" as matching criteria.	Phones can be identified using other data LLDP data, such as System Description, System Name or Chassis ID.
946	All	Routing is not working on routed port when static ARP is used	Use static ARPs only for VLAN interfaces.
985	All	Exec-timeout setting is lost after reboot.	Reconfigure this setting after unit reboot.
1056	All	Physical ports that are part of a port-channel are returning to VLAN 1 after remote peer is performing a boot default. 1) When port-channel is deleted, links are not restored to original VLANs 2) When link member is not part of the bundle, it is assigned to VLAN 1	N/A
1555	All	When downloading agent using SFTP from SSH/telnet session, the download progress is displayed on the console interface, not in the current session.	N/A
1828	All	Establishing a SSH session between two cnMatrix devices running software version 3.0 is not working.	N/A

Tracking	Product	Description	Workaround
1879	All CnMaestro	MSTP mode is not supported in cnMaestro	MSTP mode may be configured from cnMaestro only from CLI Templates menu in Access and Backhaul
2103	All CnMaestro	Router Port configuration from CLI Templates will result in faulty port performance tracking	N/A
2122	All	RIPv1/RIPv1 compatible updates are not sent to the RIP neighbors (3.0.1-r4 does not work with RIPv1 RIP router)	Only connect cnMatrix 3.0.1-r4 to RIPv2 neighbors, and set the RIP send update to RIPv2 mode

Feature Notes

- If you remove the default IP address from mgmt0 interface and save the running-config the default IP address is restored after boot.
- DHCP Client is enabled by default on In-Band Ports from VLAN 1.
    - On EX1028 and EX1028P, VLAN 1 has the default IP address 192.168.1.1
- The Out-of-Band port has the following default IP address: 192.168.0.1.

Limitations

- 265 - Flow control counters displayed by the command show interface flow control are not incremented on Extreme Ethernet interfaces (10Gbps).
- 437 – SNTP Authentication is not supported for broadcast and multicast modes.
- 1879 – MSTP mode may be configured only from CLI Templates menu in Access and Backhaul
- 2103 – Router Port configuration from CLI Templates will result in faulty port performance tracking
    - Configuring a router port from a template can lead to unexpected monitoring behavior. The setting is not recommended while using cnMaestro.
- 2603 If a static IP is set on L3 interface from CLI/Web, the out-of-sync condition is not triggered by cnMaestro.

  Workaround: trigger an out-of-sync condition e.g. bounce an interface from CLI/Web

- 2609 To preserve switch config finalized before switch on-boarding, the user needs to preconfigure manually the switch from cnMaestro.