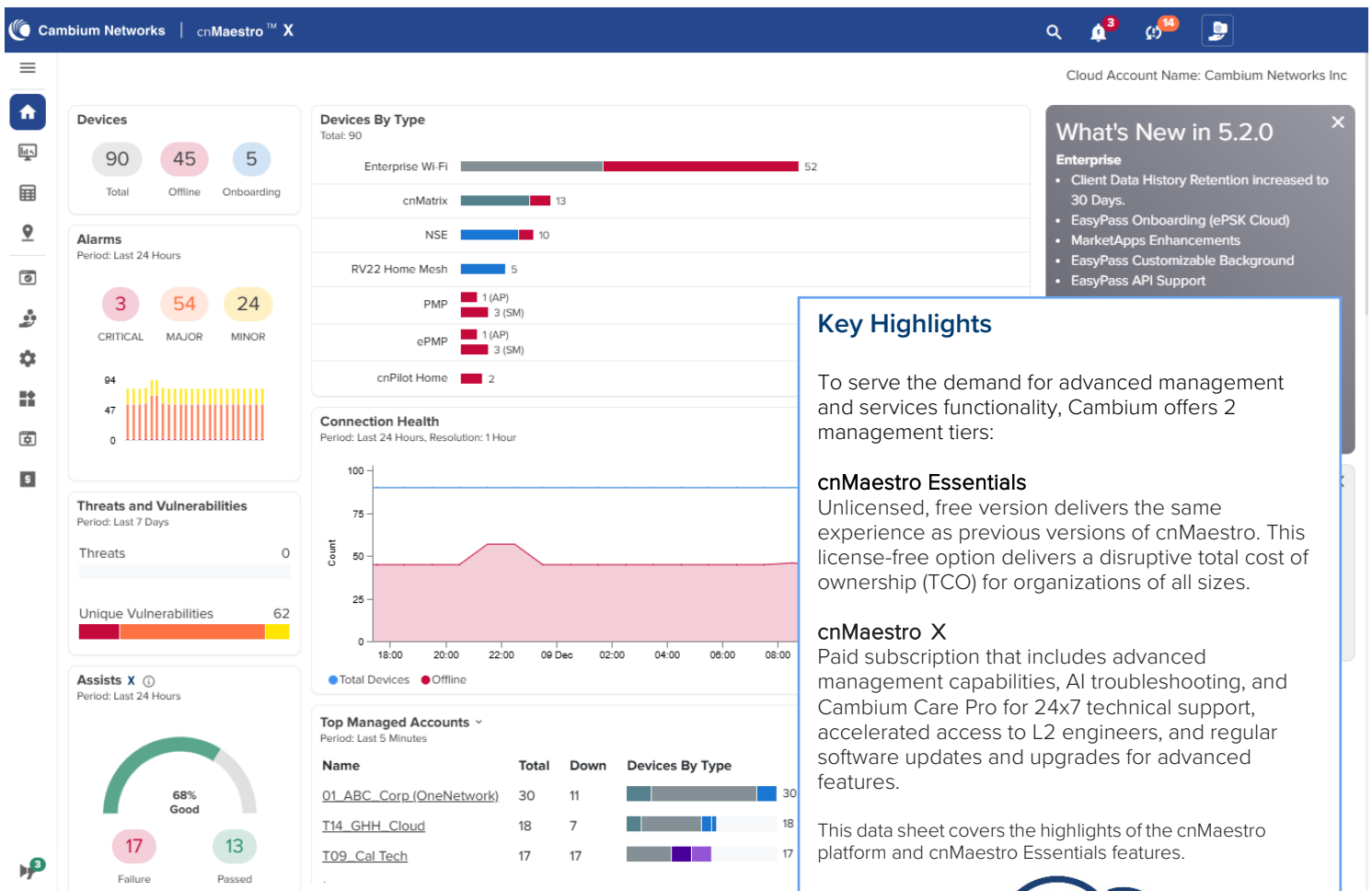
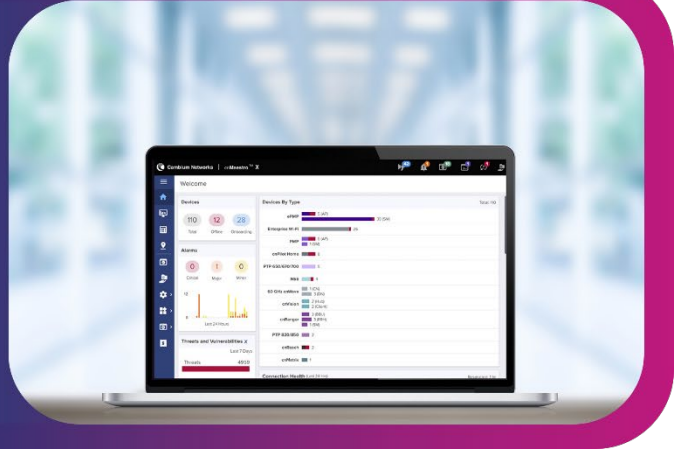


cnMaestro™ Management System

cnMaestro Quick Look

A simple, yet sophisticated cloud-first network management system for Cambium Networks wireless and wired solutions.

- Elastic scalability and a single-pane-of-glass experience
- Secure, end-to-end network management with zero-touch provisioning
- Simplified operations and ongoing maintenance for the network administrator



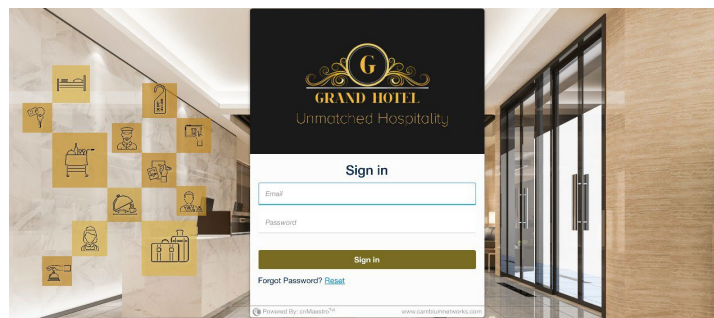
cnMaestro™ Management System

Product Overview

cnMaestro Essentials

- Comprehensive cloud and on-premises management for Cambium's wired and wireless portfolio is included with the hardware purchase with no subscription or recurring fees.
- Zero-touch provisioning: Create, provision, monitor, and manage the entire network of wireless and wired devices from a single dashboard login with key performance metrics, alarms, and alerts. The cloud-first UI design is easy to learn and apply across the portfolio and helps network administrators simplify operations and deliver an optimal client experience.
- With centralized visibility and control for Cambium Networks' wireless and wired products, network administrators can quickly and easily deploy networks with minimal training. Whether you work on small sites or large distributed networks with thousands of sites, cnMaestro makes deployment and operations easy. Administrators have access to information needed to enforce policies and optimize performance. Remote support capability is integrated into the architecture, along with powerful help desk tools to debug remote issues without going onsite. Troubleshooting tools such as ping, traceroute, throughput, and live packet captures are included, dramatically reducing resolution times and enabling remote troubleshooting.
- Deployment flexibility and TCO: Choice of public cloud, private cloud, or on-premises deployment with best TCO. cnMaestro helps reduce operating costs and accelerate return on investment. cnMaestro does not require Wi-Fi controllers, thereby reducing the complexity and cost of deploying Wi-Fi networks.
- Built for scale and security at all levels: Devices connect to cnMaestro Cloud using SSL-enabling deployments without changes to the firewall configuration. Cambium Intelligent edge architecture enables fault-tolerant networks where the network continues to operate even when the cloud is unreachable due to a WAN outage. With cnMaestro Essentials, you can manage networks with up to thousands of sites, and up to 10,000 devices.
- Tailored views for enterprise, access and backhaul, and IIoT: The access and backhaul view provides visualization and control of devices from tower to edge. This includes PTP and PMP devices.
- Supports network hierarchy, which enables easy configuration, monitoring, and debugging at network nodes to reduce operational costs. This is especially critical for large networks or small distributed networks with small on-site IT staff.

- Provides a bird's-eye view of network health with insights on performance, connectivity, and client experience. Administrators can quickly identify potential trouble spots and drill down from network to client-level details.



Advanced Functionality in cnMaestro X

cnMaestro X is a super set of cnMaestro Essentials and includes advanced features with Cambium Care Pro for 24x7 technical support. *Paid subscription is required.*

- X Assurance provides AI-powered analytics to identify and fix wireless network issues, helping IT admins improve user experience by proactively finding root cause of problems.
- EasyPass offers diverse Wi-Fi onboarding options for employees, guests, attendees, and IoT, featuring advanced captive portals and one-year client login history.
- Application visibility and control provides analytics and policy control for 2,400+ applications at the Wi-Fi and WAN edge.
- Customizable MSP dashboard offers ability to create different brands with multi-tier customizations including guest portals.
- Consolidated MSP tenant statistics offers ability to drill down to manage a specific tenant without impacting data from others.
- cnMaestro X support up to 200 managed tenants
- Restful APIs and webhooks allow for integration with existing OSS/BSS systems and event monitoring.
- The Assists function scans device configurations to identify potential vulnerabilities and recommends improvements to save time troubleshooting.
- RADIUS, TACACS+, LDAP, and AD Login for user administration.
- Long-term historical data: 2-year data retention for FWB and 1-year data retention for Enterprise and IIoT devices.
- Advanced cnMatrix™ switch features including QinQ, auto-device recovery (ADR), and cable diagnostics.

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Product Summary *Features marked X require cnMaestro X subscription*

Onboarding & Provisioning

- Zero-touch onboarding
- Template configuration
- Object configuration (Enterprise)
- Claim PMP SMs associated with AP
- cnMaestro Installer installation summary upload (PMP & ePMP) X
- Mass provisioning for ePMP/PMP/cnWave™ 60 GHz (using LinkPlanner) X
- Webhooks support X

Network Services

- Branded tenant login page X
- Support for software-defined radios (SDR) on XV3-8, XE3-4, & XE5-8 Wi-Fi 6 Access Points
- ePSK Types
 - ePSK Local – ePSKs are cached locally on the Wi-Fi APs
 - 2,000 per WLAN (Wi-Fi 6+)
 - 300 per WLAN (Wi-Fi 5)
 - ePSK RADIUS – ePSKs are limited via external radius server X
 - ePSK Cloud – ePSKs are unlimited & cloud managed (Wi-Fi 6+) X
- Personal Wi-Fi X
 - Number of guest portals: 4
 - Number of guest portals: 500 X
- EasyPass
 - One-click
 - Sponsored guest X
 - Voucher
 - Paid X
 - Payment gateway X
 - » PayPal
 - » IPPay
 - » QuickPay
 - » mPesa
- Wi-Fi 4 EU
- Azure guest portal X
- Google authentication X
- Self-registration: SMS & email X
- Onboarding X
- Combined options
- Max number of login events:
 - 2,000 event records for 30 days
 - Unlimited records for 30 days X
- Max number of guest client sessions at a time: 10,000 X
- Max number of managed devices: 10,000 (Requires X for more than 10,000 devices)
- Application visibility & control of over 2,400 different applications across the Wi-Fi access network X

Wi-Fi

- Simplified wireless LAN view
- Stateful firewall support
- Dynamic channel listing based on country, release, & SKU
- AP group & WLAN configuration

- Site support for collocated APs
- WIDS support X

X Assurance X

- Client connection lifecycle monitoring & analysis
- Root cause analysis of connection & service failures
- Network-wide client health monitoring & scoring

NOTE: X Assurance is available for Wi-Fi 6 and above devices in cnMaestro X Cloud but not in cnMaestro X On-Premises

Troubleshooting & Forensics

- Tower-to-edge view
- Technical support dump export
- Rogue AP detection
- Wi-Fi packet capture
- ePMP/PMP link test
- Cambium Care Pro – 24/7 technical support, accelerated access to L2 engineers, & software updates/upgrades X

Security

- Communication over SSL
- No inbound internet access
- Not-in-traffic path
- Disaster recovery

Deployment

- Cloud-hosted delivered as a service
- Customer-hosted VMware OVA
- Amazon Marketplace AMI

Visualization

- Full visibility across network
- Supports ePMP, cnMatrix, enterprise & residential Wi-Fi, PMP, PTP, cnReach, cnRanger™
- Multiple product views
 - Access & backhaul view
 - Enterprise wireless view
 - Industrial internet view
- Hierarchical device tree
- PMP/ePMP sector display
- Spectrum analyzer PMP X
 - cnWave 60 GHz Interference Scan X

Configuration & Monitoring

- Redundant cloud services
- Scheduled system backup
- Automatic bulk software update
- Dedicated device dashboards
- Statistics & trending
- Email alerts
- Supporting concurrent device jobs X
- Configuration lock X
- Managed service provider accounts X
- Support for up to 200 accounts
- High availability (1+1) for On-Premises (Requires Cambium Care Pro) X
- Monitor Wi-Fi performance from client or AP to cnMaestro (On-Premises NMS; Cloud NMS – N/A) X

- Assists for cnMatrix, Wi-Fi, cnPilot™-R, PMP, ePMP, cnWave 5G Fixed, & PTP 670/700 X

Data & Reporting

- Statistics reports exported in CSV
- Export UI tables in CSV or PDF X
- RESTful monitoring/provisioning API X
- Graphical reports X
- Long-term data retention X
 - 2-year for FWB
 - 1-year for enterprise & IIoT

Administration

- Management users: 10
- Management users: 200 X
- Role-based access
- Auto-provisioning X
- RADIUS, TACACS+, LDAP, & AD login X
- Advanced troubleshooting X
 - Audit logs
 - Audit syslog & event syslog (On-Premises NMS; Cloud NMS – N/A)
- Advanced monitoring X
- Session management
- User authentication (On-Premises NMS; Cloud NMS – N/A)
- cnWave 60 GHz MAP features
 - Extensive Network Map RF Link visualization X
 - Auto-manage route
- Open ID/SAML authentication X

MarketApps X

- Managed Wi-Fi
- Self-Service Personal Wi-Fi
- Installer

cnMatrix

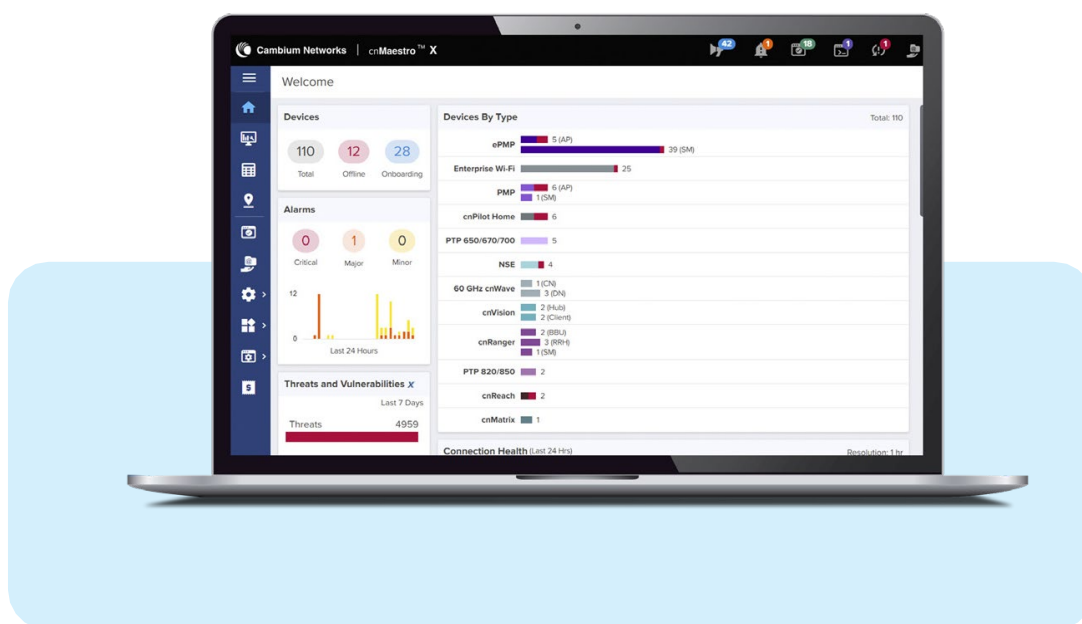
- Zero-touch remote provisioning
- Policy-based automation (PBA) on EX2000/EX3000
- Cambium Sync on TX series
- DHCP client/server
- Automated voice VLAN
- Assists X
- QinQ X
- Auto-device recovery X
- Cable diagnostics X
- PBA on EX1000 X
- MAC lists & location services for PBA X

Network Services Edge

- Site-to-site VPN
- WAN flow preferences
- DHCP/RADIUS/DNS services
- Load balancing
- WAN QoS
- Firewall
- LAN vulnerability assessment
- Granular content filtering
- WAN failover policy and IP groups
- High availability

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Resources	Enterprise	FWBB	Wi-Fi and FWBB
8vCPUs, 16 GB RAM, 250 GB Hard Disk	10,000 enterprise devices (Wi-Fi, cnMatrix)	20,000 fixed wireless devices (PMP, ePMP, PTP, cnReach, cnRanger)	10,000 total devices – fixed wireless and Enterprise
16vCPUs, 32 GB RAM, 500 GB Hard Disk	25,000 enterprise devices (Wi-Fi, cnMatrix)	40,000 fixed wireless devices (PMP, ePMP, PTP, cnReach, cnRanger)	25,000 total devices – fixed wireless and Enterprise



GET STARTED at

cloud.cambiumnetworks.com

Free 90-day trial of cnMaestro X:

cambiumnetworks.com/cnmaestro-x

ABOUT CAMBIUM NETWORKS

Cambium Networks enables service providers, enterprises, industrial organizations, and governments to deliver exceptional digital experiences and device connectivity with compelling economics. Our ONE Network platform simplifies management of Cambium Networks' wired and wireless broadband and network edge technologies. Our customers can focus more resources on managing their business rather than the network. We make connectivity that just works.

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