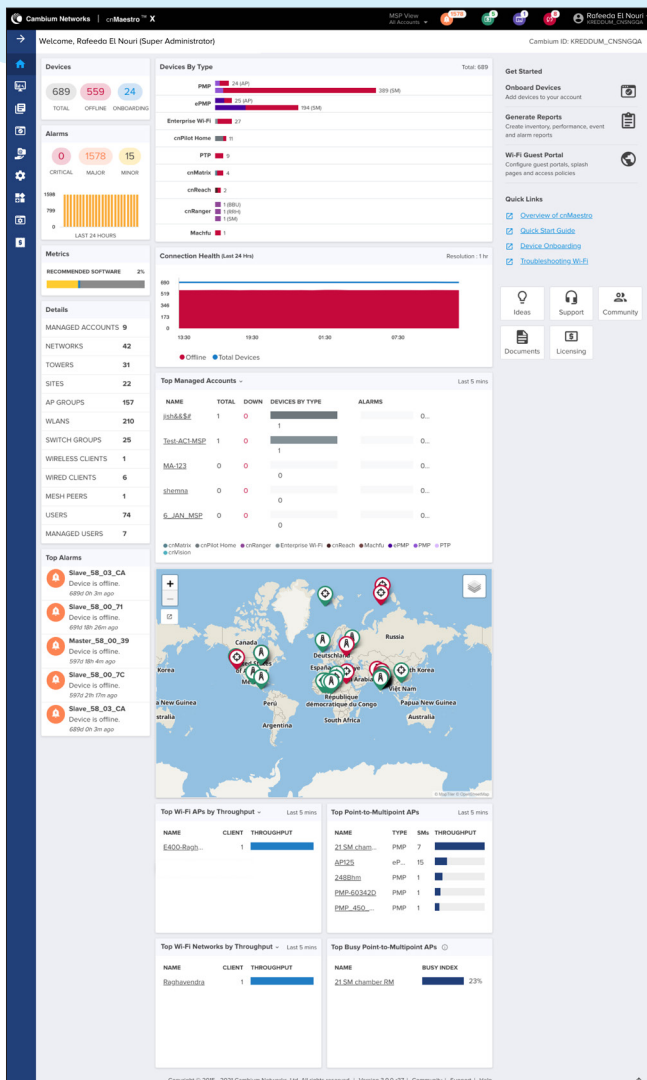
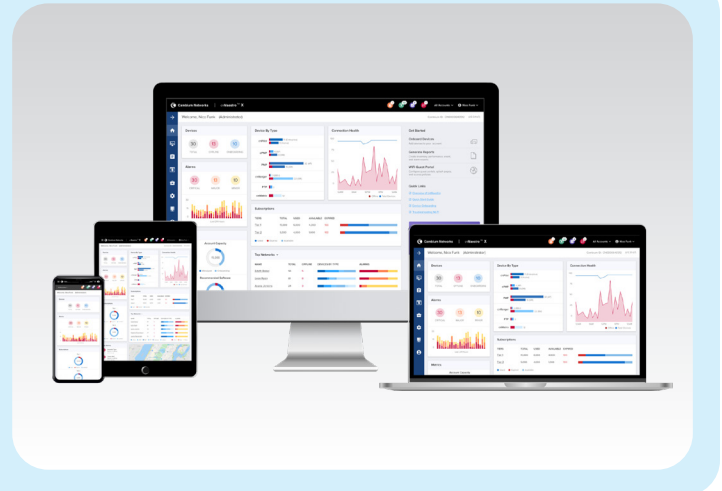


cnMaestro™ X Management System

QUICK LOOK:

cnMaestro X is a simple, yet sophisticated cloud-first, next-generation network management solution for Cambium Networks wireless and wired solutions. cnMaestro X offers elastic scalability and single-pane-of-glass management to deliver secure, end-to-end network and wireless lifecycle management with zero-touch provisioning, monitoring and troubleshooting capabilities. It simplifies operations and ongoing maintenance.



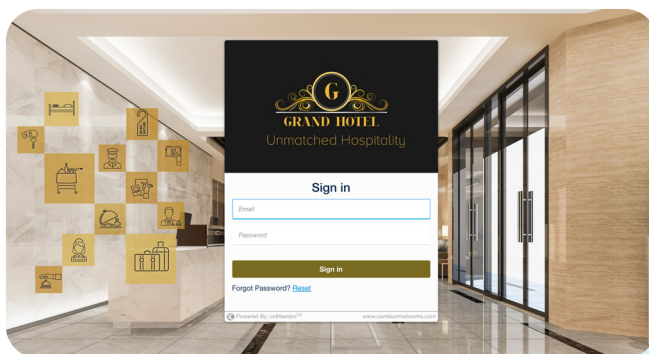
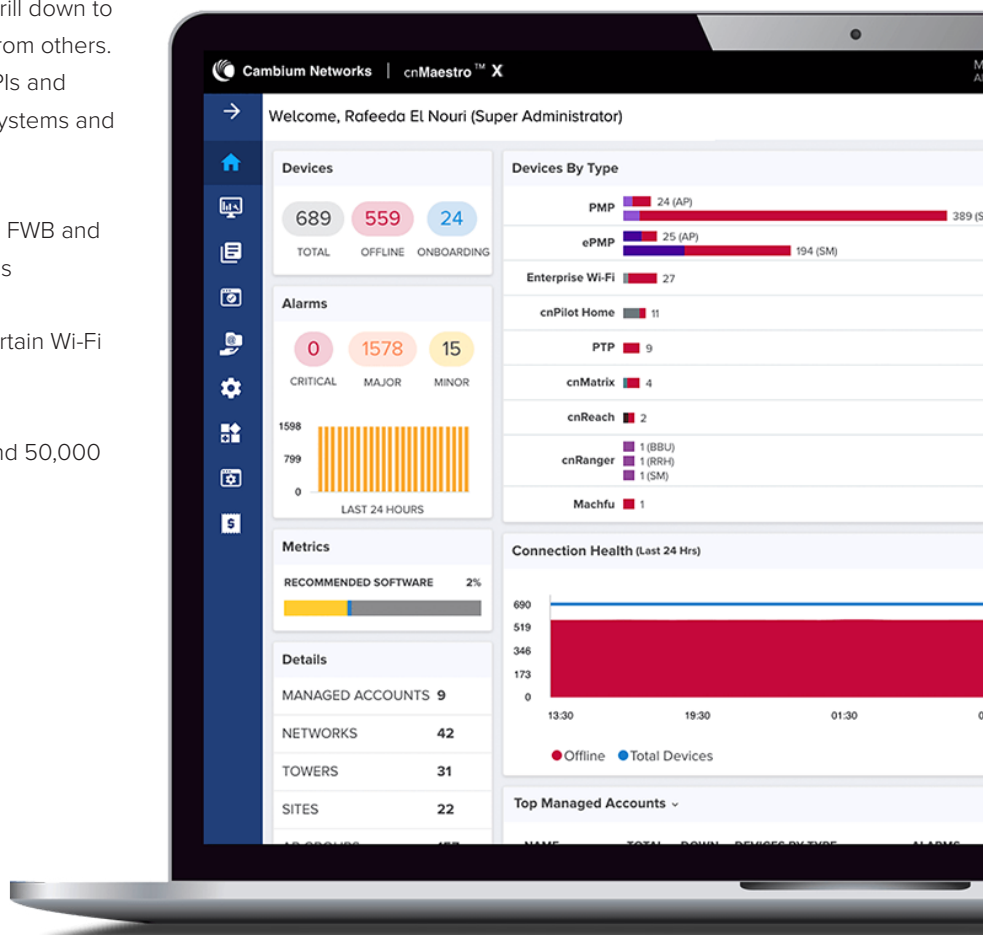
Key Highlights

- Single console for your entire Cambium network – Wi-Fi, Switching, Fixed Wireless
- Simple and easy-to-navigate user interface for fast time-to-productivity
- Powerful troubleshooting tools for drill down and rapid problem resolution
- Flexible integration via APIs and Webhooks for third party extensibility and customization
- Includes Cambium Care Pro software support with 24x7 L2 engineer access and all software updates for cnMaestro and managed devices

cnMaestro™ X Management System

Advanced Features

- Customizable MSP dashboard with ability to create different brands with multi-tier customizations including guest portals
- Consolidated MSP tenant statistics with ability to drill down to manage a specific tenant without impacting data from others. Support for up to 200 managed tenants. Restful APIs and Webhooks for integration with existing OSS/BSS systems and event monitoring
- Long-term historical data: 2-year data retention for FWB and 1-year data retention for Enterprise and IIoT devices
- Support for Software-Defined Radios (SDRs) on certain Wi-Fi 6/6E Access Points (APs)
- Support for 2,000 enterprise Wi-Fi PSKs per AP and 50,000 per account
- Advanced captive portal capabilities: 500 portals, 30,000 max vouchers, 1-year client login history



cnMaestro X allows MSP to create a custom branding experiences for their customers

cnMaestro™ X Management System

Other Key Features

- 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 cost 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 X, 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 provide 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 which reduce operational costs. This especially becomes 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.
- Extensible platform for managing third-party endpoints.
- cnMaestro X supports the following Cambium solutions:
 - » **Wi-Fi 6/6E Access Points**
 - » **cnPilot E-series and R-series Access Points**
 - » **Xirrus XD, XH, XA, and XR 11ac Access Points**
 - » **cnMatrix EX1000, EX2000, and TX2000 series Switches**
 - » **cnWave 60 GHz and 28 GHz**
 - » **PTP Point-to-Point**
 - » **PMP and ePMP Point-to-Multipoint**
 - » **cnReach**
 - » **cnRanger**

cnMaestro™ X Management System

Product Summary *Features marked X require cnMaestro X subscription*

Onboarding and Provisioning

- Zero-Touch Onboarding
- Template Configuration
- Object Configuration (Enterprise)
- Claim PMP SMs Associated with AP
- cnArcher installation summary upload (PMP and ePMP) X

Network Services

- Social Login and SMS Authentication
- Access Vouchers
- Branded Tenant Login Page X
- Payment Gateway X
 - » Paypal
 - » IPPay
 - » QuickPay
 - » Orange Money
 - » mPesa
- Support for Software Defined Radios (SDR) on XV3-8, XE3-4 and XE5-8 Wi-Fi 6 Access Points
- Unlimited Radius based ePSK X
- Unique PSKs supported: 300 per WLAN and per account
- Unique PSKs supported: 2,000 Per WLAN and 50,000 Per Account X
- Radius-based ePSK X
- Number of Guest Portals: 4
- Number of Guest Portals: 500 X
- Max number of login events: 2,000 event records for 7 days
- Max number of login events: 2,000 event records for 1 year X
- Max number of managed devices: 25,000
- Application visibility - Visibility of over 2400 different applications across the Wi-Fi access network X

Wi-Fi

- Simplified Wireless LAN View
- AP Group and WLAN Configuration
- cnMaestro Essentials supports a maximum of 1,000 active client sessions at a time.
- cnMaestro X supports a maximum of 10,000 active client sessions at a time. X
- Site Support for Collocated APs

Troubleshooting and 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 and 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 and Residential Wi-Fi, PMP, PTP, cnReach™, cnRanger™
- Multiple Product Views
 - o Access and Backhaul View
 - o Enterprise Wireless View
 - o Industrial Internet View
- Hierarchical Device Tree
- PMP/ePMP Sector Display

Configuration & Monitoring

- Redundant cloud services
- Scheduled system backup
- Automatic bulk software update
- Dedicated Device Dashboards
- Statistics and 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 X
- Monitor Wi-Fi performance from client or AP to cnMaestro (On-Premises NMS; Cloud NMS – N/A) X

Data and Reporting

- Statistics Reports Exported in CSV
- Export UI Tables in CSV or PDF X
- RESTful Monitoring/Provisioning API X
- Long-term data retention X
 - o 2-year for FWB
 - o 1-year for Enterprise and IIoT

Administration

- Management users: 10
- Management users: 100 X
- Role-Based Access
- Auto provisioning
- RADIUS, TACACS+, LDAP, and AD Login
- Advanced troubleshooting X
 - o Audit logs
 - o Audit syslog & Event syslog (On-Premises NMS; Cloud NMS – N/A)
- Advanced monitoring X
 - o Session management
 - o User authentication (On-Premises NMS; Cloud NMS – N/A)

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 (PMP, ePMP, PTP, cnReach, cnRanger, Wi-Fi, cnMatrix)
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)	

cnMaestro™ X Management System

cnMaestro X Part Numbers

cnMaestro X is available as a 1/3/5-year subscription service. The following pricing tiers are available for cnMaestro X for managing Cambium Networks devices.

Tier 0: Free Tier for cnPilot Home (R-Series) Wi-Fi APs and cnMatrix switches

Tier 1: PMP 450 and cnRanger Subscriber Modules, ePMP Force SMs/PTP

Tier 2: PMP 450 Access Points, cnRanger BBU and RRH, ePMP Access Points, PTP, and cnReach

Tier 3: cnPilot (E-Series) and Enterprise Wi-Fi 6

Tier 4: cnWave Client Node

Tier 5: cnWave Distribution Node

Tier 13: Xirrus APs

cnMaestro Ordering information

Part Number	Tier	Description
MSX-SUB-T1-1	T1	cnMaestro X for FWB: Includes SMs. Advanced management and includes CC Pro for Tier 1; 1-year subscription / Tier 1 device; Tier 1 devices include FWB SM
MSX-SUB-T1-3	T1	cnMaestro X for FWB: Includes SMs. Advanced management and includes CC Pro for Tier 1; 3-year subscription / Tier 1 device; Tier 1 devices include FWB SM
MSX-SUB-T1-5	T1	cnMaestro X for FWB: Includes SMs. Advanced management and includes CC Pro for Tier 1; 5-year subscription / Tier 1 device; Tier 1 devices include FWB SM
MSX-SUB-T2-1	T2	cnMaestro X for FWB: Includes FWB AP, PTP and IIoT. Advanced management and includes CC Pro for Tier 2; 1-year subscription / Tier 2 device
MSX-SUB-T2-3	T2	cnMaestro X for FWB: Includes FWB AP, PTP and IIoT. Advanced management and includes CC Pro for Tier 2; 3-year subscription / Tier 2 device
MSX-SUB-T2-5	T2	cnMaestro X for FWB: Includes FWB AP, PTP and IIoT. Advanced management and includes CC Pro for Tier 2; 5-year subscription / Tier 2 device; Tier 2 devices include FWB AP, PTP and IIoT
MSX-SUB-T3-1	T3	cnMaestro X for Enterprise: Includes Enterprise APs. Advanced management and includes CC Pro for Tier 3; 1-year subscription / Tier 3 device
MSX-SUB-T3-3	T3	cnMaestro X for Enterprise: Includes Enterprise APs. Advanced management and includes CC Pro for Tier 3; 3-year subscription / Tier 3 device
MSX-SUB-T3-5	T3	cnMaestro X for Enterprise: Includes Enterprise APs. Advanced management and includes CC Pro for Tier 3; 5-year subscription / Tier 3 device
MSX-SUB-T4-1	T4	cnMaestro X for 60 GHz cnWave: Includes Client Nodes. Advanced management includes CC Pro for Tier 4; 1-year subscription / Tier 4 device. Tier4 devices include V1000 and V3000.
MSX-SUB-T4-3	T4	cnMaestro X for 60 GHz cnWave: Includes Client Nodes. Advanced management includes CC Pro for Tier 4; 3-year subscription / Tier 4 device. Tier4 devices include V1000 and V3000.
MSX-SUB-T4-5	T4	cnMaestro X for 60 GHz cnWave: Includes Client Nodes. Advanced management includes CC Pro for Tier 4; 5-year subscription / Tier 4 device. Tier4 devices include V1000 and V3000.

cnMaestro™ X Management System

cnMaestro Ordering information

Part Number	Tier	Description
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MSX-SUB-T5-1	T5	cnMaestro X for 60 GHz cnWave: Includes Distribution Nodes. Advanced management includes CC Pro for Tier 5; 1-year subscription / Tier 5 device. Tier 5 device includes V5000.
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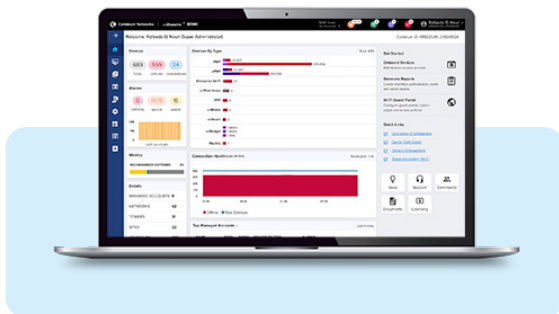
MSX-SUB-T5-3	T5	cnMaestro X for 60 GHz cnWave: Includes Distribution Nodes. Advanced management includes CC Pro for Tier 5; 3-year subscription / Tier 5 device. Tier 5 device includes V5000.
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MSX-SUB-T5-5	T5	cnMaestro X for 60 GHz cnWave: Includes Distribution Nodes. Advanced management includes CC Pro for Tier 5; 5-year subscription / Tier 5 device. Tier 5 device includes V5000.
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MSX-SUB-T13-1	T13	cnMaestro X for Xirrus Access Points: Advanced management for Tier 13 devices. Includes Cambium Care Pro software support. Tier 13 devices include Xirrus 11ac Wave 2 and select Wave 1 APs. 1-year subscription.
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MSX-SUB-T13-3	T13	cnMaestro X for Xirrus Access Points: Advanced management for Tier 13 devices. Includes Cambium Care Pro software support. Tier 13 devices include Xirrus 11ac Wave 2 and select Wave 1 APs. 3-year subscription.
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MSX-SUB-T13-5	T13	cnMaestro X for Xirrus Access Points: Advanced management for Tier 13 devices. Includes Cambium Care Pro software support. Tier 13 devices include Xirrus 11ac Wave 2 and select Wave 1 APs. 5-year subscription.
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GET STARTED at
cloud.cambiumnetworks.com

Free 90-day trial of cnMaestro X:
cambiumnetworks.com/cnmaestro-x

ABOUT CAMBIUM NETWORKS

Cambium Networks empowers millions of people with wireless connectivity worldwide. Its wireless portfolio is used by commercial and government network operators as well as broadband service providers to connect people, places and things. With a single network architecture spanning fixed wireless and Wi-Fi, Cambium Networks enables operators to achieve maximum performance with minimal spectrum. End-to-end cloud management transforms networks into dynamic environments that evolve to meet changing needs with minimal physical human intervention. Cambium Networks empowers a growing ecosystem of partners who design and deliver gigabit wireless solutions that just work.

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