

WIRELESS-AWARE TECHNOLOGY

Makes Management Easy



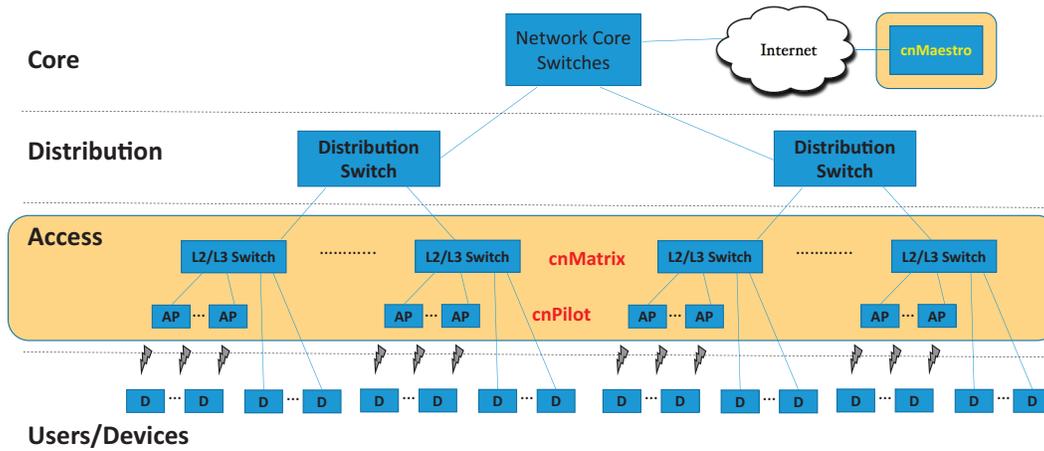
There is no doubt that the edge of the network is where all the action is today. With a robust and stable network core in place, nearly all of an administrator's time is spent monitoring and configuring edge devices. Securing edge access and handling add, move and change requests is more than a full-time job. Considering the different hats worn by those responsible for this process, it is an impressive feat. With Wi-Fi having emerged as the de facto network access mechanism, the ability to easily and cost-effectively administer a unified wired and wireless network edge is now a requirement. cnMatrix™, with its customized and flexible wireless-aware support, is designed to expertly satisfy this need.

cnMatrix is Cambium Networks' portfolio of cloud-managed, enterprise-grade, Layer-2/Layer-3 Ethernet switches. cnMatrix switches are high-performance, feature-rich and fully-managed.

Automation is the key to lessening the burden on the network administrator. The automation capabilities provided by cnMatrix are innovative and differentiating. Designed to reduce the cost of ownership and flatten the learning curve, cnMatrix automates many of the interactions with connected wireless devices. Cambium Networks' vast array of wireless devices perform superbly when connected to any network solution. However, when connecting these devices to a wireless-aware Cambium Networks' cnMatrix switch, automation and ease-of-use rise to the next level. When working in tandem, cnMatrix switches and Cambium Networks' cnPilot wireless indoor and outdoor access points provide unique features, enhanced capabilities and automated switch configuration.

Automating Network Management

- Saves time
- Reduces errors
- Leverages IT skill



The wireless-aware cnMatrix supports automating the required switch configuration when connecting, removing or updating Cambium Networks' wireless devices. When connected to cnMatrix switches, configuration settings can be pushed from the downstream wireless device to the switch to eliminate error-prone and time-consuming manual configuration. Leveraging secure proprietary signaling (available late 2019), network connectivity requirements are pushed to the switch to establish virtual paths, condition ports and segment traffic flows. No manual configuration is required on cnMatrix resulting in hands-free, zero-touch wireless connectivity.

The innovative Policy Based Automation (PBA) functionality on the upstream cnMatrix can also be used to support zero-touch configuration for any wireless device. Automatic detection of Cambium Networks' cnPilot wireless devices is natively supported by PBA (starting with release 2.2). General device characteristics can be specified as well to facilitate automated detection of devices from any vendor. Following device detection, a plethora of actions can be initiated - from auto-segmentation via VLAN creation and port membership assignment to establishing the appropriate default Quality-of-Service (QoS) settings for the discovered device. cnMatrix streamlines and simplifies configuration of a secure and maintainable switching infrastructure.



cnMatrix Access Layer Switches

All automated configuration settings are dynamic and are instantly cleared once the device to which they are applied is no longer present.

cnMatrix pushes the automation envelope even further with built-in Intelligent Power over Ethernet (PoE). With Intelligent PoE, cnMatrix Tower switches (available 2020) can auto-detect the PoE requirements of certain connecting devices, in addition to providing complete hands-on control over all PoE functionality. cnMatrix Tower switches support the different requirements of both IEEE-standard active PoE and non-standard passive PoE. cnMatrix will support 802.3af/at/bt PoE as well as 24V and 54V passive PoE. cnMatrix PoE management provides the ability to control per-port PoE status settings and monitor per-port PoE statistics such as voltage, current and instantaneous power being supplied. This is yet another cnMatrix wireless-aware tool in the arsenal for troubleshooting and diagnostics.



cnPilot Enterprise Access Point

Completing the package, Cambium Networks' cnMaestro system is a cloud-based or on-premises network management platform offering end-to-end network control with zero-touch provisioning and device configuration. cnMaestro configures Cambium Networks' wireless devices with network access information, some of which can be automatically pushed to the upstream cnMatrix for automated switch configuration. cnMaestro can also simultaneously provision all cnMatrix switches network-wide with device detection and action criteria.

Consider Cambium Networks' cnPilot wireless APs as a case in point. When connected to cnMatrix, the AP uses proprietary signaling (available late 2019) to securely indicate VLAN and link tagging requirements to the switch. cnMatrix acts on the request by manipulating virtual path and port settings to satisfy the network access requirements. If access requirements change on the fly, cnMatrix immediately and transparently updates the configuration as needed. An error-free and seamless connection for all wireless users is established with no pre-configuration required on cnMatrix.

If cnMatrix staging is preferred, cnMaestro and PBA are used to establish network-wide and uniform network access policies. cnPilot access can be connected to any port on any cnMatrix and the expected network access configuration will be applied.

- All of the necessary VLANs are being automatically created.
- VLAN port membership on access and uplink ports is updated dynamically.
- Native VLAN settings and link tagging requirements are correctly synchronized.
- Default QoS settings and device PoE priority are automatically established.
- Fully automated configuration at an administrator's fingertips is completely independent of which port and which switch cnPilot APs are connected to.
- All ports are created equal.
- When a wireless device disconnects, the associated configuration is automatically reset to its previous state. This is extremely important from a security and device maintenance point-of-view.

Being wireless-aware does not stop with just cnPilot APs. Cambium Networks' outdoor fixed broadband wireless portfolio will also take advantage of the wireless-aware cnMatrix switches. Additional uses on the Tower switches (available 2020) include allowing network operators to connect two Cambium radios configured to operate on the same spectrum. The wireless-aware cnMatrix Tower switch, leveraging proprietary signaling, will appropriately configure the solution to operate in an active-standby mode thereby providing much needed redundancy and maximizing the use of very limited spectrum. It should go without saying that this solution will auto-fail-over if needed, providing for uninterrupted uptime for users.



Fixed Wireless Broadband Distribution

As networks continue to proliferate, demands on network operators will increase. Automation provides the ability to instantly monitor and manage networks, while precisely controlling the configuration process network wide. Network operators can consistently execute requirements and reduce downtime while saving time and money in the process.



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