Nile Zero Trust Fabric

Secure Access Point (AP) Portfolio

Overview

Nile delivers a family of indoor and outdoor access points engineered for consistent, high-performance, and secure connectivity across many environments.

Every Access Point operates within a standardized, centrally managed architecture that eliminates configuration drift and reduces operational overhead. Self-configuration, RF auto-optimization, and continuous verification are delivered through a Digital Twin framework, which is as part of Nile's autonomous operations.

Nile's AI-powered Services Cloud, along with the Nile Portal, a unified management and visibility console, provide insights, software lifecycle automation, and outcomes-based performance assurance.

Designed for enterprise-class performance in high-density offices, healthcare facilities, classrooms, manufacturing, warehouse and industrial environments, and public venues, the portfolio includes high-performance Wi-Fi 6 and 6E options. Each is designed with tri-radio and quad-radio designs, respectively (2.4/5/6 GHz plus a dedicated sensor), providing high throughput and fast application responsiveness.

Secure NaaS Architecture

Nile APs operate exclusively within Nile's secure NaaS offering. This eliminates the operational complexities of traditional controller-based architectures, device-level configuration, and manual tuning.

Architectural Elements

Nile's Secure NaaS architecture is built on three foundational pillars:

Zero Trust Security

Self-configuring APs with no console, SSH, or device-level configuration required. All endpoints and fabric elements must authenticate before passing traffic. Zero Trust per-endpoint isolation replaces VLANs to eliminate lateral movement immediately reducing risk and traditional switch vulnerabilities.

Autonomous Operations

Focusing on the entire lifecycle from Day 0 to Day 2 operations, AI-driven telemetry and a cloud-based Digital Twin continuously optimize traffic forwarding, detect deviations, and trigger corrective actions without manual intervention.

Cloud-Delivered Services

Configuration, software lifecycle, policy enforcement, and performance measurements are orchestrated centrally—ensuring consistent outcomes across all sites while facilitating easy change management without truck rolls.

AP Portfolio Features

Built-in Zero-Trust Security

WPA3 Personal/Enterprise, Enhanced Open, MACsec uplinks, always-on WIDS/WIPS, cloud-native control, mutual fabric authentication, and zero-config deployment simplify operations while reinforcing Zero Trust.

Performance

Multi-band APs leverage clean 6 GHz spectrum (Wi-Fi 6E) in LPI or Standard Power mode with Zero-Touch AFC, and Multigigabit uplinks to deliver high throughput and low latency for modern applications.

Capacity & Efficiency

Bi-directional OFDMA/MU-MIMO, TxBF, and TWT maximize airtime efficiency and end device battery life while maintaining reliable coverage in dense and diverse environments.

Always-On Guarantee

A dedicated sensor radio enables continuous spectrum monitoring, client-experience validation, and security scanning without disrupting user traffic.

Intuitive Service State Visibility

Nile APs use a service-aware LED model that reflects actual end-to-end service availability—not just power or link status—reducing troubleshooting ambiguity and aligning hardware behavior with real user experience.

Autonomous RF Planning and Optimization

Integrated AI and Digital Twin models continuously evaluate RF conditions, client density, interference patterns, and regulatory policy requirements to drive optimal channel selection and power.

Mobility and Reliability

Support for 802.11k/r/v, PMK, OKC, intelligent client steering, and automated channel/power orchestration ensures stable performance as users roam.

The Nile Difference

Enterprise-Grade Radio Architecture

All models are based on a 4×4 WLAN radio design with dedicated dual- or tri-band sensors for real-time scanning and assurance.

Secure Out of the Box

Default MACsec, console-less design, SSL certificate-based mutual auth and secure BLE access limited to Nile Nav authorization deliver a Zero Trust–aligned posture.

Zero-Config Deployment

QR-code activation via the Nile Nav app eliminates AP groups, profiles, controller configurations, and legacy DHCP options required for controller discovery. Ensures error-free deployment with deviation detection at install.

Unified Operating Model

All Nile APs and switches operate under the same cloud-defined policies and standardized firmware, ensuring consistent performance, telemetry, and user experience across wired and wireless.

Technical Specifications

Attribute	NWA1100	NWA1000	NWA1050
Deployment	Indoor	Indoor	Outdoor/Harsh Environment Indoor
Wi-Fi standard	Wi-Fi 6E 802.11ax	Wi-Fi 6 802.11ax	Wi-Fi 6 802.11ax
	2.4/5/6 GHz: (4×4:4)	2.4/5 GHz: (4×4:4)	2.4/5 GHz: (4×4:4)
Number of Wi-Fi radios	4	3	3
Wi-Fi radio modes	2.4 GHz + 5 GHz + 6 GHz	2.4 GHz + 5 GHz	2.4 GHz + 5 GHz
Scanning radio	Dedicated Tri-band 2×2	Dedicated Dual-band	Dedicated Dual-band
Antenna	Internal	Internal	Internal
BLE	Yes	Yes	Yes
Ethernet port	1/2.5/5G	1/2.5/5G	1/2.5/5G
Power	802.3bt PoE powered	802.3at PoE powered	802.3bt PoE powered
6GHz Standard Power	Yes (AFC Certified)	NA	NA
Environmental Rating			IP67
Certifications	FCC, CE, IC, ETSI, KSA and several others	FCC, CE, IC, ETSI, KSA and several others	FCC, CE, IC, ETSI, KSA and several others
	WiFi CERTIFIED	WiFi CERTIFIED	WiFi CERTIFIED

Management and Operations

Installation - Nile Nav

Mobile-app onboarding and guided activation for faster, deviation-free deployment by a Nile-qualified technician.

Operations - AI Command Center

Autonomous monitoring, optimization, and Digital Twin validation for lean IT operations.

Visibility - Nile Portal

Easily viewable switch status, inventory, performance monitoring, and required troubleshooting data.

AP Capabilities and Details

✓ RF performance and spectrum efficiency

All Nile APs are designed to provide capacity, coverage, and airtime efficiency at the PHY/MAC and RF orchestration layers. Each includes:

- **Bi-Directional OFDMA & MU-MIMO**
  Serve multiple clients concurrently, improving capacity under heavy load.

- **Target Wake Time (TWT)**
  Ability to schedule low-power client wake intervals to preserve battery and reduce contention.

- **Automatic Channel & Power Orchestration**
  Adapt channels and power to avoid interference and coverage holes.

- **Transmit Beamforming (TxBF)**
  Extends reliable coverage by focusing energy toward each client.

- **Dynamic Frequency Selection (DFS)**
  Safely use radar-sensitive channels to maximize spectrum.

- **Client Steering & Load Balancing**
  Guide dual-band clients to the best band/AP for consistent performance.

✓ Security and assurance

Continuous spectrum/security monitoring, threat detection, and traffic protection without impacting user flows.

- **Dedicated Sensor Radio**
  For full-time spectrum monitoring, client validation, and security scanning — assurance without impacting user traffic.

- **WPA3 Enterprise + Enhanced Open**
  Modern encryption and authentication for managed and guest traffic.

- **WIDS/WIPS with Zero Configuration**
  Detects rogue APs, spoofing, and anomalies via always-on sensor radio — no configuration required.

- **RF Awareness & Digital Twin Monitoring**
  Continuous RF sensing updates the Nile Digital Twin for predictive analytics and optimal spectrum use.

✓ Cloud-managed operations and automation

Centralized control, zero-touch workflows, and policy enforcement for simple Day-0 to Day-N operations.

- **Cloud-Native Secure Management**
  Tamper-proof control via Nile Cloud; policies, software, and telemetry enforced centrally.

- **Zero-Touch Deployment & Mobile App Onboarding**
  Guided workflows — no manual configuration or CLI required.

✓ Infrastructure and service delivery model

Physical connectivity, power, and the commercial/service wrapper that guarantees outcomes and extends capabilities.

- **Power over Ethernet (802.3bt) & Multi-Gigabit Uplink**
  1/2.5/5 GbE uplink and PoE++ power for high performance and simplified cabling.

- **Additional options**
  Mesh, Passpoint, UPSK, RTLS support.

- **Performance Guarantees (SLAs)***
  Part of Nile's Access Service with measurable coverage, capacity, and availability guarantees. (*Licensed).

- **Multiple RF tuning parameters**
  Eliminated or automated for operational simplicity.

Warranty & Support

All Nile infrastructure is supported by 24×7 AI-driven cloud monitoring, proactive incident detection, and automated remediation through Nile's autonomous operations and AI Command Center. An optional performance-based subscription adds a financially backed performance guarantee. Hardware replacement options include expedited RMAs aligned to the selected tier and region.

Ready to Get Started?   Request a Demo