PRODUCT DATA SHEET

Nile Zero Trust Fabric

Secure Gateway

Overview

Part of the Nile Security Services Catalog, Secure Gateway is software that runs on Nile infrastructure to power the Nile Edge Service. Designed for corporate and distributed sites, it delivers WAN and cloud connectivity with built-in Zero Trust enforcement and autonomous traffic optimization. The result is a cloud-delivered model that removes standalone SD-WAN appliances, branch firewalls, and routers—all managed through the Nile Portal.

Secure NaaS Architecture

Nile Secure Gateway operates exclusively within Nile's secure NaaS architecture.This eliminates the operational complexities of SD-WAN architectures, separate firewalls, and device-by-device configuration, replacing them with a Zero Trust, cloud-managed service model.

Architectural Elements

Zero Trust Fabric

Edge is a fully integrated service within Nile's Zero Trust Fabric (ZTF), where every user, device, and network element is verified before communication. Built-in isolation prevents unauthorized lateral movement and maintains consistent security across sites.

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Autonomous Operations

AI-driven telemetry and a cloud-based Digital Twin continuously monitor LAN and WAN conditions, detect deviations (e.g., SLA breaches, link degradation), and trigger corrective actions without manual intervention.

Cloud-Delivered Services

Configuration, software lifecycle, policy enforcement, and performance measurements are orchestrated centrally in the Nile Services Cloud, ensuring consistent security policies, predictable network performance, and uniform operations across all sites while reducing manual configuration and change-related risk.

Secure Gateway Features

- **Application-aware routing**
  Uses L4/L7 signals to classify traffic and steer business-critical applications over the best available path while directing lower-priority traffic to secondary links.
- **SLA-based dynamic path selection**
  SLA-based dynamic path selection: Continuously measures WAN path performance and routes sessions over links that meet application SLAs, automatically switching paths when performance degrades.
- **Adaptive Path Selection (APS)**
  Dynamically ranks and selects WAN links using real-time performance, utilization, and stability metrics, replacing fixed primary/secondary designs with behavior-based path selection.
- **Bandwidth- and data-cap-aware routing**
  Uses provisioned bandwidth and metered-link constraints to balance load across links, reserve high-quality circuits for real-time traffic, and prevent overage charges.
- **Multi-ISP Link Design Support**
  Supports single- and dual-ISP deployments, including active/active utilization and standby failover, with traffic distribution driven by continuous path performance monitoring.
- **Traffic shaping and QoS**
  Provides DSCP-based queuing and per-class prioritization to ensure critical applications receive consistent performance during link congestion.

Embedded Security

- **Adaptive security and traffic handling**
  The Edge provides stateful firewalling, NAT, and intelligent traffic steering, automatically optimizing performance and protection without per-site configuration.
- **Cloud-Delivered Security Integration**
  Steers traffic to cloud-delivered SSE and ZTNA services for advanced security, reducing the need for complex on-site security functions.
- **Centralized policy definition with local enforcement**
  Customer-defined access and segmentation policies are created in the Nile Trust Engine, while enforcement occurs directly at the Edge to deliver consistent Zero Trust behavior.
- **Autonomous policy enforcement**
  Uses adaptive, system-driven decisions informed by context and intent, removing the need for custom per-site ACLs and static business-policy frameworks.

Nile vs Legacy Solutions

Engineered to deliver a secure, high-availability service experience, the Nile Secure Gateway unifies WAN performance, Zero Trust protections, and autonomous operations.

Native Zero Trust architecture

Identity-based segmentation eliminates VLAN sprawl and per-site firewall complexity.

One platform, fewer appliances

Embedding Edge software into the network infrastructure eliminates separate SD-WAN and firewall appliances.

Cloud-managed operations, no overhead

No controllers or software upgrades to manage. Edge is delivered as a cloud-managed service backed by Nile's Performance Guarantee.

Autonomous performance over manual policies

Nile's Adaptive Path Selection replaces SD-WAN policy matrices for consistent performance.

Technical Specifications

Attribute	Value
Deployment	Branch and mid-size enterprise offices; cloud-first, internet-bound sites
WAN throughput (target)	Up to 1.5 Gbps aggregate internet/WAN throughput per site
User and device scale	≈50–100 users and ~250 devices per site
WAN topologies	Single ISP (single/dual links); Dual ISP (single/dual links)
Application-aware routing	L4/L7 classification (DPI, SNI, TLS fingerprinting, port-based heuristics
Path selection	SLA-based latency/jitter/loss measurement, Adaptive Path Selection (APS)
Traffic management	DSCP-based queuing, per-class prioritization, rate limiting
Security at WAN edge	Stateful firewall with NAT and basic DoS/DDoS protection; SSE/ZTNA-friendly
Zero Trust integration	Nile Trust Service for identity- and segment-based policy enforcement
Management	Nile Control Center (configuration, upgrades, monitoring, analytics)

Management and Operations

With a vision to deliver autonomous operations, Nile enables customers and partners across Day-0 (planning and design), Day-1 (Installation) and Day-2 operations, helping reduce risk, increase agility, and deliver cost savings.

Installation - Nile Nav

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

Operations - AIOps 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.

Gateway Capabilities And Details

WAN Performance and Scale

Nile Secure Gateway is designed to deliver predictable WAN performance and capacity aligned with enterprise broadband services. Each gateway includes:

- **Up to 1.5 Gbps aggregate WAN throughput**

  Sized for 1 Gbps site circuits with headroom for growth.

- **High-performance secure forwarding**

  ~2 Gbps UDP (1500-byte), ~1.75 Gbps HTTP/HTTPS (1518-byte), and ~600 Mbps IMIX under mixed traffic conditions.

- **Session scale**

  Supports up to ~110K concurrent NAT and TCP/HTTPS sessions for real-world branch user and device loads.

Security and Assurance

Security is embedded from the switch hardware through the gateway and Nile Services Cloud.

- **Zero Trust–centric access design**

  Ports authenticate and authorize devices before IP assignment, with L3 isolation to prevent lateral movement.

- **Built-in hardware and access security**

  MACsec, 802.1X, TPM-rooted trust, and secure boot for hardware-level integrity.

- **Branch-level protections**

  Stateful firewall, NAT, DoS/DDoS protection, Trust Service policy enforcement, and SSE/ZTNA-friendly forwarding.

Cloud-Managed Operations and Analytics

Nile extends cloud-native observability and automation to WAN connectivity.

- **Real-time link intelligence**

  Continuous measurement of latency, jitter, loss, and throughput to drive Nile's Adaptive Path Selection.

- **Full-path application visibility**

  Synthetic probes map behavior to SaaS and cloud endpoints to quickly isolate LAN, WAN, or cloud issues.

- **Event-rich operational telemetry**

  Logs path changes, failovers, and performance events for troubleshooting and audit clarity.

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

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