

complete manual on network configuration automation - Official Technical
Overview & Hardware Datasheet

PRODUCT OVERVIEW AND DATASHEET: COMPLETE MANUAL ON NETWORK
CONFIGURATION AUTOMATION

EXECUTIVE SUMMARY

The modern network infrastructure landscape demands a paradigm shift from manual, error-prone CLI commands to intelligent, software-driven automation. The "complete manual on network configuration automation" is not merely a document; it is a comprehensive, operational framework and a testament to our commitment to network agility. This Official Technical Overview and Hardware Datasheet details the purpose-built hardware appliance engineered to serve as the physical cornerstone of your automation strategy. Designed for seamless integration with existing orchestration platforms (e.g., Ansible, Python Netmiko, RESTCONF/NETCONF), this platform delivers a centralized, secure, and highly scalable environment for executing, validating, and backing up network configurations across thousands of devices.

This document serves as the definitive technical reference for network architects, DevOps engineers, and systems integrators, detailing the hardware specifications, performance parameters, and deployment characteristics of our

automation-dedicated hardware. By combining carrier-grade reliability with a software-defined operational model, we empower organizations to reduce OpEx, enforce compliance, and accelerate service delivery.



ARCHITECTURE & CHASSIS DESIGN

The hardware platform is built on a modular, dual-core processing architecture optimized for concurrent automation workflows. Unlike generic servers, this appliance features a purpose-built ASIC for SSL/TLS session management, drastically reducing the CPU overhead associated with encrypted management plane traffic (SSH/HTTPS). The 1RU chassis integrates an active-active backplane capable of supporting up to 256 concurrent automation sessions with sub-millisecond latency. Primary memory is configured with ECC (Error-Correcting Code) to ensure data integrity during large-scale

configuration push operations. The front-accessible drive bays are configured in a RAID-10 array, providing both high read/write speeds for configuration logs and database integrity via hot-swappable SSDs, guaranteeing minimal downtime in the event of a media failure.

HARDWARE FEATURES

1. **HIGH-PERFORMANCE COMPUTE CORE:** Equipped with a 16-core Intel Xeon Scalable processor, turbo-boosting to 3.8 GHz, specifically calibrated for high-frequency automation script execution.
2. **DEDICATED MANAGEMENT NETWORK INTERFACE:** Four (4) 10G SFP+ ports for connectivity to the management network (in-band/out-of-band), ensuring isolation from production data plane traffic.
3. **SECURE STORAGE SUBSYSTEM:** 2x 960GB enterprise NVMe drives (RAID 1) for the OS and configuration repository, plus 4x 4TB 7.2K RPM SATA drives (RAID 10) for historical compliance and audit log storage.
4. **HARDWARE SECURITY MODULE:** An integrated TPM 2.0 chip for secure key storage, ensuring the integrity of automation scripts and credential vaults.
5. **CONSOLE ACCESS:** Standard RJ-45 serial console port for initial provisioning and break-glass emergency access.
6. **FRONT PANEL LCD:** A diagnostic LCD screen displays real-time automation throughput, system health, and active session counts.

COMPLIANCE & STANDARDS

The "complete manual on network configuration automation" platform adheres to the highest industry standards for telecommunications and enterprise network equipment, including:

- NEBS (Network Equipment Building Systems) Level 3 compliant.
- ETSI EN 300 386 for electromagnetic compatibility.
- Safety: UL/CSA 60950-1 and IEC 60950-1.
- Environmental: RoHS and WEEE compliant.
- Security: FIPS 140-2 Level 2 compliance for cryptographic modules.

TECHNICAL SPECIFICATIONS

Parameter	Specification
Form Factor	1RU Rackmount Chassis (19-inch standard)
Processor (CPU)	Intel Xeon Scalable 16-Core, 2.4 GHz (Turbo to 3.8 GHz)
Memory (RAM)	128 GB (Standard) / 256 GB (Enterprise) DDR4 ECC
Storage (Boot)	2x 960GB NVMe SSD (RAID 1)

Storage (Data)	4x 4TB 7.2K RPM SATA (RAID 10) - Enterprise Only
Management Ports	4x 10G SFP+ (Dedicated Management)
Out-of-Band Ports	1x 10/100/1000 Base-T (RJ-45)
Console Port	1x RS-232 Serial (RJ-45)
USB Ports	2x USB 3.0 (Front and Rear)
Power Supply	1+1 Redundant, Hot-swappable (AC/DC options)
Power Consumption	250W (Typical), 350W (Max)
Operating Temperature	0°C to 45°C (Short-term: -5°C to 55°C)
Storage Temperature	-40°C to 70°C
Operating Humidity	5% to 85% (Non-condensing)
MTBF (Mean Time Between Failures)	175,000 Hours (at 25°C)

ORDERING OPTIONS

The platform is available in two primary configurations to match the scale of your network footprint. Additionally, software licensing tiers are available to unlock advanced features such as multi-vendor parser libraries, real-time change impact analysis, and intent-based configuration validation.

- STANDARD CONFIGURATION (Part Number: NAC-1000-BASE): Includes 16-core CPU, 128GB RAM, 1.92TB NVMe storage (RAID 1). Supports up to 200 concurrent automation devices.
- ENTERPRISE CONFIGURATION (Part Number: NAC-1000-ENT): Includes 16-core CPU, 256GB RAM, dual NVMe (1.92TB RAID 1) + 16TB (RAID 10) HDD storage. Supports up to 1000 concurrent devices and includes enhanced multi-vendor compliance modules.

For organizations requiring high-availability, we offer the NAC-1000-HA bundle, which includes two appliances configured in an active-standby cluster with a 10G redundant management switch.

