

NetEngine AR Series - Official Technical Overview & Hardware Datasheet

EXECUTIVE SUMMARY

Huawei NetEngine AR Series represents a paradigm shift in enterprise branch routing, purpose-built for the SD-WAN and cloud-native era. Moving beyond traditional L2-L3 packet forwarding, the series integrates a revolutionary CPU+NP heterogeneous forwarding architecture (or multi-core processor with non-blocking switching fabric) to deliver up to three times the industry average forwarding performance . This architecture facilitates the convergence of routing, switching, security, VPN, and wireless services into a single, high-performance platform, significantly reducing Total Cost of Ownership (TCO) and operational complexity for diverse enterprise scenarios — from micro-branches to large headquarters .



ARCHITECTURE & CHASSIS DESIGN

The NetEngine AR Series is engineered around a robust, modular architectural philosophy. High-end models such as the AR6300-S leverage an innovative CPU+NP heterogeneous forwarding architecture that separates the control plane from the data plane, ensuring deterministic, non-blocking performance even under heavy load . This design incorporates hardware acceleration engines and an Ultra-Fast forwarding algorithm to optimize L2-L7 service processing . The chassis design varies from compact, fanless enclosures for the AR300 and AR610 series (ideal for constrained environments) to larger, modular chassis like the AR8000 series, which offers extensive slot capacity for Service Interface Cards (SICs), WSICs, and XSICs to support high-density port configurations and future expansion .

HARDWARE FEATURES

The platform boasts a comprehensive suite of hardware features designed for flexibility, resilience, and high performance:

* WAN Diversity and High Availability: The series provides unparalleled WAN access flexibility, supporting a rich array of interface types including 10GE SFP+, GE Combo, E1, POS, VDSL, and integrated 3G/LTE/5G cellular modules . Critical

to its high-availability design is the support for link aggregation via Eth-Trunk interfaces. This allows multiple physical links to be bundled into a single logical link, increasing bandwidth and providing load balancing and redundancy, which is particularly crucial for high-throughput 5G backhaul scenarios .

* SD-WAN and Security Integration: Deeply integrated with Huawei's SD-WAN solution, the AR series delivers intelligent application identification and traffic steering to ensure optimal application performance. A-FEC (Adaptive Forward Error Correction) technology is a standout feature, guaranteeing a fluent video experience even in networks with up to 20% packet loss . For security, the platform integrates a hardware-accelerated IPsec engine, offering robust data encryption without compromising performance, and is equipped with features like firewall and URL filtering .

* Management and Orchestration: Hardware supports multiple zero-touch provisioning (ZTP) methods for plug-and-play deployment, drastically reducing the complexity of branch rollout. It is fully manageable via the iMaster NCE unified controller, enabling intent-driven, automated network orchestration and simplified operations .

COMPLIANCE & STANDARDS

The NetEngine AR Series complies with a comprehensive set of international and industry-specific standards. All products adhere to rigorous environmental,

safety, and electromagnetic compatibility (EMC) regulations, including RoHS, REACH, and WEEE directives. The entire series has been successfully validated for performance, reliability, and SD-WAN capabilities by authoritative bodies such as China's Tolly-certified Telecommunications Technology Labs (TTL) . The platform also supports a wide range of cryptographic algorithms, including AES (CBC/GCM) and SM algorithms, ensuring compliance with stringent global data security and privacy regulations .

TECHNICAL SPECIFICATIONS

The following table provides a comprehensive overview of key performance indicators and hardware parameters across the NetEngine AR Series, illustrating the product family's scalability and capability range.

Parameter	NetEngine AR300 Series	NetEngine AR610/AR650 Series	NetEngine AR5700/AR8000 Series
Target Deployment	SMB / Micro-Branch	Small / Medium Branch	Large Branch / HQ
Forwarding Performance	Up to 1 Mpps	Up to 300 Mbps - 1.3 Gbps (IMIX)	Up to 30 Gbps (IMIX)
IPsec	N/A	Up to 200 - 800	Up to 20 Gbps

Performance (IMIX)		Mbps	
Form Factor	Compact Desktop / 1RU	1RU Fixed Chassis	1RU / 2RU Modular Chassis
WAN Interfaces	1x GE Combo	1x GE Combo to 2x 10GE SFP+	10x 10GE SFP+, 8x GE Combo / 1x 40GE QSFP+
5G / LTE Support	No	Optional (LTE CAT4/CAT6, 5G RU)	Supported (5G RU)
Expansion Slots	None	0-2 SIC, up to 1 WSIC	4-8 SIC, up to 8 WSIC, up to 6 XSIC
Memory (RAM)	256 MB - 1 GB	1 GB - 4 GB	16 GB (SPU) / 8 GB (MPU)

ORDERING OPTIONS

Huawei offers a versatile portfolio to address specific enterprise requirements. Orders are typically placed based on the chassis model, followed by the selection of required interface modules (SICs, WSICs), power supplies, and

software licenses. Key ordering categories include:

- * Fixed Chassis Models: Complete units like the AR651W or AR5710-S series for small-to-medium branches, integrating fixed ports and Wi-Fi .
- * Modular Chassis: Platforms like the AR6300-S or AR8700-8, ordered as a base chassis with separate line cards and modules for high scalability .
- * Interface Modules: A wide selection of SIC and WSIC cards for WAN (e.g., 5G, E1, POS), LAN switching, and voice (FXS) expansion .
- * Software Licenses: Required for activating advanced features such as SD-WAN functionality, managed AP count beyond the free limit, and value-added security services like IPS and AV .

