AVX SERIES DATASHEET

AVX Series Network Functions Platform

AVX Series network functions platforms host Array and 3rd-party virtual network functions or virtual appliances, enabling data center consolidation that delivers the highest levels of efficiency, agility and performance.

Array's AVX Series network functions platform hosts up to 32 fully-independent virtual network functions (VNFs) or virtual appliances (VAs), including Array load balancing and SSL VPN as well as 3rd-party VNF/VAs from leading Web application firewall and next-generation firewall vendors. Designed with managed service provider and enterprise customers in mind, the AVX Series enables consolidation without sacrificing the agility of cloud and virtualization or the performance of dedicated appliances. Uniquely capable of assigning CPU, SSL, memory and interface resources per VNF/VA, the AVX Series network functions platform is the only solution to deliver guaranteed performance in shared environments.

Highlights & Benefits

- Three platforms: 35Gbps with support for up to 8 VNF/VAs, 65Gbps with support for up to 16 VNF/VAs and 115Gbps with support for up to 32 VNF/VAs
- Hosts Array vAPV virtual application delivery controllers and Array vxAG virtual SSL VPNs, as well as 3rd-party VNF/VAs such as virtual Web application firewalls and virtual next-generation firewalls
- Four VNF/VA sizes: entry, small, medium and large, with the ability to mix-and-match sizes
- Dedicated CPU cores, SSL cores, memory and interfaces per VNF/VA ensures both high performance and guaranteed performance
- Management and hypervisor overhead segregated from processing resources for assured performance among instances
- Each VNF/VA is fully independent to ensure separation required for compliance and high-security environments
- Purchase and deploy VNF/VAs as needed on a pay-as-you-grow basis
- Platform and VNF/VA-level high availability spans AVX Series systems and hosted network and security services
- System monitoring and management, as well as service chaining for hosted VNF/VAs via an intuitive Web interface
- eCloud™ API for integration with cloud management, orchestration and automation
- Reduces space, power and cooling requirements by up to 16x versus dedicated ADC, SSL VPN or other 3rd-party networking and security appliances
- Significantly reduces infrastructure costs as compared to dedicated hardware appliances and general-purpose virtualized servers
- Eliminates truck rolls for provisioning high-performance network and security services
- Provides unmatched price-performance for virtual ADC and virtual SSL VPN functions, with the lowest $/SSL transaction per second (TPS) on the market
- Proven 6-month average time period to achieve ROI for enterprises, service providers and public sector organizations
- Supports Array vAPV virtual ADCs for integrated Layer-4 and Layer-7 server load balancing, link load balancing, global server load balancing and SSL acceleration
- Supports Array vxAG virtual SSL VPNs for secure remote and mobile access with SSL encryption, multiple access methods, advanced AAA and multi-factor authentication
- Supports 3rd-party VNF/VAs including Web application firewall, next-generation firewall and others

Guaranteed Performance in Shared Environments

In typical virtual environments, resources are shared across many virtual machines, resulting in contention and performance degradation for hosted applications and network functions or virtual appliances. In addition, general-purpose servers were never designed to support compute-intensive network functions. As a result, customers are left to choose between network and security devices that deliver guaranteed performance, or VNF/VAs that deliver enhanced agility.

Array AVX Series network functions platforms eliminate this trade-off, providing the agility of cloud and virtualization with the performance of dedicated appliances. Unlike most virtual computing environments, the AVX Series is uniquely capable of assigning dedicated CPU, SSL, memory and interface resources for each hosted VNF/VA. Hypervisor management is similarly assigned dedicated resources, and separated from hosted functions, to fully eliminate resource conflicts.

Combined with additional cloud and virtualization capabilities including pay-as-you-grow capacity licensing, variable-size VNF/VAs, support for Array Networks and 3rd-party VNF/VAs, and the capacity for orchestration and service chaining, the AVX Series is an ideal solution for service providers and enterprises seeking agility at scale for network and security functions.

High Performance for VNFs & VAs

The AVX Series supports up to 32 fully independent VNF/VAs, each powered by reserved CPU, SSL, memory and interface resources. As a result, the AVX Series offers the equivalent of up to 32 dedicated physical appliances in just two rack units, where customers and services can be assured of guaranteed and demonstrable performance.

Each VNF/VA is separately configurable and centrally manageable, enabling the utmost in flexibility, security and control. Through dedicated hardware resources and a partitioned software-centric architecture, service providers and enterprises gain a purpose-built platform for on-demand provisioning and consolidation of secure, high-performance VNF/VAs.

Flexible Sizing & Capacity-Based Consumption

Four size options are supported for hosted VNF/VAs – entry, small, medium and large – to meet the performance requirements of any size customer or service. In addition to supporting different network functions, different size VNF/VAs can be mixed and matched within an AVX Series platform. For example, a single platform can be configured to simultaneously support one large, two medium, four small and eight entry-level VNF/VAs.

The AVX Series also features pay-as-you-grow licensing, allowing purchase of platform capacity in quarter increments: one-quarter, half, three-quarters or full. For AVX Series platforms purchased at less than full capacity, incremental licenses allow additional capacity to be unlocked at any time to meet growing business requirements.

Cost-Effective To Deploy & Maintain

By consolidating multiple VNF/VAs into a single, easy-to-manage virtualized appliance, the AVX Series reduces space and power requirements by up to a factor of 16 versus traditional dedicated hardware network and security appliances. Expensive truck rolls for provisioning high-performance services are also eliminated. By bringing the AVX Series platform and hosted VNFs/ VAs under the purview of a software-centric cloud management system, services may be enabled, expanded and relocated on-demand. Time to ROI, based on CapEx and OpEx savings, is typically under 6 months for both enterprise and service provider organizations.

Management Integration & Orchestration

AVX Series platforms and hosted Array VNF/VAs are simple to install and offer intuitive configuration and management via a WebUI and a familiar command line interface. Via the AVX dashboard, network managers can view the status for a range of system and function parameters, enable services, automate configuration and gain granular control over virtual Ethernet and SSL resources.

To meet the deployment and management requirements of modern virtualized data centers and private cloud environments, Array's eCloud RESTful API provides an extensible interface for cloud management, orchestration and automation systems to manage and monitor Array AVX Series platforms and hosted Array VNF/VAs.

For service providers and enterprises leveraging OpenStack for cloud management and automation, Array's integration with OpenStack for load balancing-as-a-service (LBaaS) creates a standardized means to rapidly integrate with and control Array application delivery technology.

Platform & Function-Level High Availability

AVX Series platforms support multi-level high availability, providing redundancy and failover for both AVX Series systems and VNF/VAs. AVX Series platforms can be configured to failover to backup AVX Series platforms, while VNF/VAs can be configured to failover within a platform or to failover to a backup platform.

Full-Featured App Delivery & Security

vAPV virtual application delivery controllers (ADCs) and vxAG virtual secure access gateways (SSL VPNs) deployed on AVX Series platforms support feature parity with Array's line of physical load balancing and remote access products. In addition, many features that require additional licenses on Array's physical appliances – such as global server load balancing on the APV Series and MotionPro remote desktop access on the AG Series – are included at no additional charge when deployed as virtual appliances on AVX Series platforms.

vAPV Virtual Application Delivery Controller

vAPV virtual ADCs support advanced server load balancing that ensures high availability for enterprise applications and cloud services. The vAPV also supports link load balancing and global server load balancing (GSLB) to ensure high availability for WAN connections and geographically dispersed sites.

In addition, compute-intensive SSL functions can be offloaded from servers to vAPV virtual ADCs hosted on the AVX Series platform. Server efficiency and application performance are greatly improved through hardware SSL acceleration, and Array's purpose-built SSL stack is immune to vulnerabilities that affect open source implementations such as OpenSSL.

Additional features include connection multiplexing, compression, caching, traffic shaping, Web firewall, DDoS protection, SSL intercept, header manipulation, HTTP content rewrite and IPv6 support.

vxAG Virtual Secure Access Gateway

vxAG virtual secure access gateways provide anytime, anywhere secure remote and mobile access to networks, applications, Web sites and desktops for multiple communities of interest. vxAG SSL VPNs provide security for data in motion and at rest, and enforce application-level policies on a per-user basis.

Features include 2048/4096-bit SSL encryption, multiple access methods including network-level and application-level connectivity, advanced AAA, multifactor authentication, host checking, cache cleaning, integrated Web firewall and support for HTML5 and mobile device and application management.

3rd-Party VNFs & VAs

In addition to supporting Array Networks virtual appliances for application delivery and security, AVX Series platforms also host VNF/VAs from 3rd-party vendors. Examples include security functions such as Web application firewalls and next-generation firewalls as well as network functions such as WAN optimization and other proprietary or open source virtual functions or appliances that are compatible with AVX Series platform requirements.

3rd-party VNF/VAs benefit from the same performance guarantees and benefits as Array Networks VNF/VAs. VNF/VAs benefit from a higher level of performance as compared to general-purpose servers and also benefit from guaranteed performance. By deploying 3rd-party VNF/VAs on AVX Series platforms, enterprises and service providers can consolidate network infrastructure to achieve cost efficiencies, and at the same time move toward a software-centric architecture aligned with trends in cloud and virtualization.

AVX Series Platform Editions

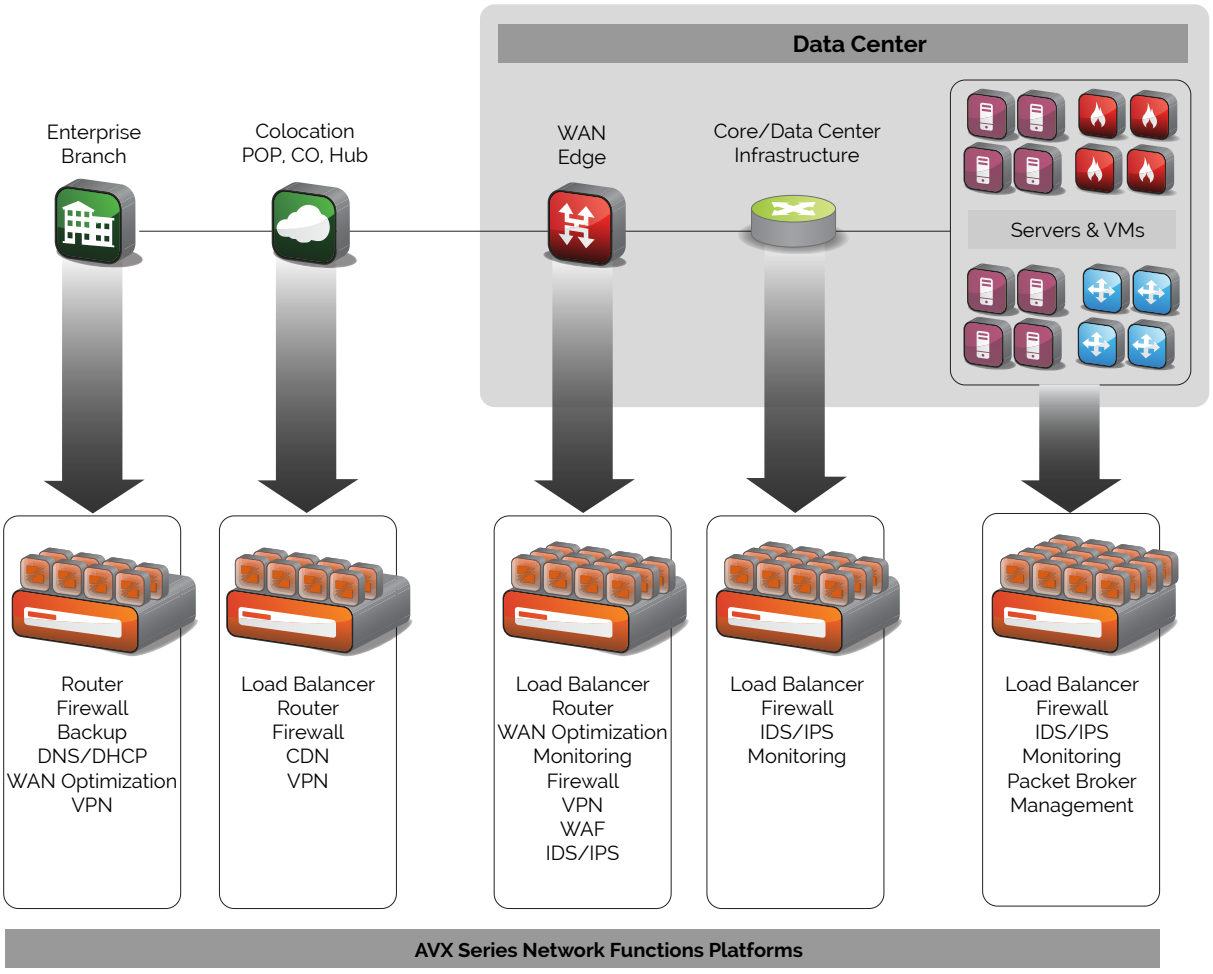
The AVX Series is comprised of three platforms: the entry-level AVX3600, the mid-range AVX7600 and the high-end AVX10650. All AVX Series network functions platforms can be purchased at one-quarter, half, three-quarters or full capacity, with incremental capacity available for purchase in one-quarter capacity increments.

The AVX3600 can host one large, two medium, four small or eight entry VNF/VAs, with the ability to mix and match instance sizes up to system capacity. For example, a three-quarter capacity AVX3600 can host one medium vAPV and one small vxAG , or six entry vAPVs, or other combinations. The AVX3600 supports 35Gbps throughput per system. The AVX3600 is also capable of hosting up to 16 shared-entry VNF/VAs for deployment scenarios where density is a key business driver and guaranteed performance is not a use case requirement.

The AVX7600 can host two large, four medium, eight small or sixteen entry VNF/VAs, with the ability to mix and match instance sizes up to system capacity. For example, a full-capacity AVX7600 can host two medium vAPVs, two entry vxAGs and six entry vAPVs. The AVX7600 supports 65Gbps throughput per system.

The AVX10650 can host four large, eight medium, sixteen small or thirty-two entry VNF/VAs, with the ability to mix and match instance sizes up to system capacity. For example, a full-capacity AVX10650 can host one large vAPV, two medium vAPVs, four small vAPVs, two entry vxAGs and six entry vAPVs – all on a single platform. The AVX10650 supports 115Gbps throughput per system.

AVX Series Network Functions Platform Architecture



Product Specifications

	AVX3600	AVX7600	AVX10650
Hosted VNF/VAs	1, 2, 4 or 8 (16 without performance guarantee)	2, 4, 8 or 16	4, 8, 16 or 32
CPU	E3-1240 v5	2 x E5-2690 v3	2 x E5-2690 v2
Cores	4	2 x 6	2 x 10
RAM	64GB	64GB	128GB
HDD	2TB	2TB	2TB
1 GbE (copper) Management Port	1	1	1
10 GbE Fiber (SFP+)	4	8	16
Power Supply	Dual Power: 100-240VAC, 5-3A, 50-60Hz	Dual Power: 90-264VAC, 10-5A, 47-63Hz	Dual Power: 90-264VAC, 10-5A, 47-63Hz
Dimensions	Dual Power: 1U – 17" W x 19.875" D x 1.75" H	Dual Power: 2U – 17" W x 22.5" D x 3.5" H	Dual Power: 2U – 17" W x 22.5" D x 3.5" H
Weight	Dual Power: 19.8 lbs.	Dual Power: 28 lbs.	Dual Power: 28 lbs.
Environmental	Operating Temperature: 0° to 45° C, Humidity: 0% to 90%, Non-condensing	Operating Temperature: 0° to 45° C, Humidity: 0% to 90%, Non-condensing	Operating Temperature: 0° to 45° C, Humidity: 0% to 90%, Non-condensing
Regulatory Compliance	ICES-003, EN 55024, CISPR 22, AS/NZS 3548, FCC, 47FR part 15 Class A, VCCI-A	ICES-003, EN 55024, CISPR 22, AS/NZS 3548, FCC, 47FR part 15 Class A, VCCI-A	ICES-003, EN 55024, CISPR 22, AS/NZS 3548, FCC, 47FR part 15 Class A, VCCI-A
Safety	CSA, C/US, CE, IEC 60950-1, CSA 60950-1, EN 60950-1	CSA, C/US, CE, IEC 60950-1, CSA 60950-1, EN 60950-1	CSA, C/US, CE, IEC 60950-1, CSA 60950-1, EN 60950-1
Support	Gold, Silver and Bronze Level Support Plans	Gold, Silver and Bronze Level Support Plans	Gold, Silver and Bronze Level Support Plans
Warranty	1 Year Hardware, 90 Days Software	1 Year Hardware, 90 Days Software	1 Year Hardware, 90 Days Software

Array VNF/VA Feature Specifications

• STANDARD ○ OPTIONAL

	vAPV
L2, L4 & L7 SLB	•
LLB	•
GSLB	•
L7 Policy Engine	•
eCloud API & LBaaS Integration	•
ePolicy Scripting	•
eRoute Routing	•
SSL Intercept	•
Transparent Proxy	•
SSL (HW)	•
Compression (SW)	•
RAM Caching	•
Traffic Shaping	•
Web Application Security (Including WAF)	•
IPv6 Support	•
Multi-language WebUI	•
Single System Image	•
Fast Failover	•
Clustering	•

	vxAG
2048/4096-bit SSL Encryption	•
Virtual Portals*	○
Layer-3 VPN Client	•
L3 Mobile VPN	•
L4 SDK Tunneling	•
Web Applications	•
HTML5	•
Host Checking & Cache Cleaning	•
Client, App & Device Security	•
Secure Browser	•
Array Registration Technology	•
Wake-on-LAN	•
Enterprise App Store	•
Site2Site SSL VPN Tunneling	•
Clustering	•
WebUI	•
Additional Virtual Portals	○

*vxAG requires a separate pool license for total concurrent users and virtual portals.

Array VNF/VA Performance on the AVX Platform

	AVX3600 (Medium, 1/2 Capacity)	AVX7600 (Medium, 1/4 Capacity)	AVX10650 (Medium, 1/8 Capacity)
vAPV Virtual ADC			
Max. Connections per Second	325K	195K	165K
Max. Concurrent Connections	1.2M	1.2M	1.2M
Throughput	18Gbps	18Gbps	14Gbps
Max. SSL TPS (2048-bit)	12K	9K	9K
vxAG Virtual SSL VPN			
Max. SSL TPS (2048-bit)	12K	9K	9K
Max. Concurrent Users*	25,000*	25,000*	25,000*

*vxAG requires a separate pool license for total concurrent users and virtual portals. Licenses are assigned to specific vxAG virtual appliances within the AVX Series network functions platform.

Ordering Information

Ordering No.	Description
AVX3600 Network Functions Platform	
AW955600	AVX3600 Hardware, Dual Power Supplies, 1U, 64GB, 4x10GbE SFP+ ports (Network functions platform. Maximum capacity of 1 large function, or 2 medium functions, or 4 small functions, or 8 entry functions, or 16 shared-entry functions, and 25,000 SSL TPS 2K Keys. Must select one Capacity License Pack)
AW928775	AVX3600 Capacity License Pack-1 (Enable 0 large function, or 0 medium function, or 1 small function, or 2 entry functions, or 4 shared-entry functions, and 6,250 SSL TPS 2K Keys)
AW928776	AVX3600 Capacity License Pack-2 (Enable 0 large function, or 1 medium function, or 2 small functions, or 4 entry functions, or 8 shared-entry functions, and 12,500 SSL TPS 2K Keys)
AW928777	AVX3600 Capacity License Pack-3 (Enable 0 large function, or 1 medium and 1 small functions, or 3 small functions, or 6 entry functions, or 12 shared-entry functions, and 18,750 SSL TPS 2K Keys)
AW928778	AVX3600 Capacity License Pack-4 (Enable 1 large function, or 2 medium functions, or 4 small functions, or 8 entry functions, or 16 shared-entry functions, and 25,000 SSL TPS 2K Keys)
AVX7600 Network Functions Platform	
AW977998	AVX7600 Hardware, Dual Power Supplies, 2U, 64GB, 8x10GbE SFP+ ports (Network functions platform. Maximum capacity of 2 large functions, or 4 medium functions, or 8 small functions, or 16 entry functions, and 35,000 SSL TPS 2K Keys. Must select one Capacity License Pack)
AW928770	AVX7600 Capacity License Pack-1 (Enable 1 medium function, or 2 small functions, or 4 entry functions, and 8,750 SSL TPS 2K Keys)
AW928771	AVX7600 Capacity License Pack-2 (Enable 1 large function, or 2 medium functions, or 4 small functions, or 8 entry functions, and 17,500 SSL TPS 2K Keys)
AW928772	AVX7600 Capacity License Pack-3 (Enable 1 large function, or 3 medium functions, or 6 small functions, or 12 entry functions, and 26,250 SSL TPS 2K Keys)
AW928773	AVX7600 Capacity License Pack-4 (Enable 2 large functions, or 4 medium functions, or 8 small functions, or 16 entry functions, and 35,000 SSL TPS 2K Keys)
AVX10650 Network Functions Platform	
AW960070	AVX10650 Hardware, Dual Power Supplies, 2U, 128GB, 16x10GbE SFP+ ports (Network functions platform. Maximum capacity of 4 large functions, or 8 medium functions, or 16 small functions, or 32 entry functions, and 70,000 SSL TPS 2K Keys. Must select one Capacity License Pack)
AW928765	AVX10650 Capacity License Pack-1 (Enable 1 large function, or 2 medium functions, or 4 small functions, or 8 entry functions, and 17,500 SSL TPS 2K Keys)
AW928766	AVX10650 Capacity License Pack-2 (Enable 2 large functions, or 4 medium functions, or 8 small functions, or 16 entry functions, and 35,000 SSL TPS 2K Keys)
AW928767	AVX10650 Capacity License Pack-3 (Enable 3 large functions, or 6 medium functions, or 12 small functions, or 24 entry functions, and 52,500 SSL TPS 2K Keys)
AW928768	AVX10650 Capacity License Pack-4 (Enable 4 large functions, or 8 medium functions, or 16 small functions, or 32 entry functions, and 70,000 SSL TPS 2K Keys)
SFP Optical Transceivers	
AW220300	AVX Field Upgrade: SX SFP Fiber Optical Transceiver, 1 GbE 1000Base-T Copper (TX/RX)
vxAG Virtual Portals	
AU920138	1 Virtual Portal (incl. URL aliasing)
AU920139	Add 5 Virtual Portals (incl. URL aliasing)
AU920140	Add 10 Virtual Portals (incl. URL aliasing)
vxAG VPN Concurrent Users	
AW920103	Add 10 Concurrent Users (up to max conc. user limits)
AW920105	Add 25 Concurrent Users (up to max conc. user limits)
AW920110	Add 50 Concurrent Users (up to max conc. user limits)
AW920120	Add 100 Concurrent Users (up to max conc. user limits)
AW920121	Add 250 Concurrent Users (up to max conc. user limits)
AW920122	Add 500 Concurrent Users (up to max conc. user limits)
AW920123	Add 1,000 Concurrent Users (up to max conc. user limits)
AW920127	Add 2,500 Concurrent Users (up to max conc. user limits)
AW920130	Add 5,000 Concurrent Users (up to max conc. user limits)
AW920133	Add 10,000 Concurrent Users (up to max conc. user limits)

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VERSION: MAR-2017-REV-A