Array

WAN Optimization Controllers

WAN SERIES DATASHEET

WAN Series WAN optimization controllers accelerate applications, speed data transfers and reduce bandwidth costs using a combination of application, network and protocol optimization.

Available on high-performance Array appliances or as software for cloud and virtualized environments, WAN Series accelerates the transfer of data and improves the performance of business-critical applications across wide area networks. In addition, WAN Series greatly improves bandwidth utilization, allowing businesses to reduce costs or increase ROI by doing more with less. Leveraging stream-based differencing, application blueprints, single instance store, traffic prioritization and network, application and TCP optimizations, WAN Series physical and virtual appliances and software clients cost-effectively deliver LAN-like performance between any cloud, data center, branch or user.

Highlights And Benefits

- Supports 50% more accelerated connections as compared to completing solutions at significantly less cost, delivering ROI in extremely short time frames
- Purpose-built to reduce the impact of network congestion, latency and packet loss that combine to slow end-user response times and the transfer of data
- Application-specific blueprints and specific protocol optimizations eliminate redundant and chatty traffc Stream—based differencing for eliminating the transmission of content previously received in local data stores
- Integrated QoS, traffic shaping and SSL for optimizing, prioritizing and securing traffic on your network
- Deliver cost-effective, seamless audio and video using QOS to guarantee bandwidth and prevent jitter and latency from impacting audio, video and VoIP apps
- Future-proof deployment in today's and tomorrow's data centers, public clouds, private clouds, hybrid clouds, remote locations and remote and mobile users – or any combination
- Software available for VMware ESXi, Hyper-V and KVM
- Integrated automated failover for high availability in (active-active/active-backup)
- Simplified management of physical and virtual appliances via transparent addressing, statistical performance dashboards, comprehensive reporting, and auto discovery
- Array WAN series supports authentication, · authorization and accounting (AAA) with external authentication external authentications - RADIUS, TACACS and local authentication. Support Role based Access like view level, advanced Level virtual appliances and mobile clients, Web services integration with 3rd party management tools or integration with virtualization management systems
- Secure CLI, WebUI and SSH, Management console (Serial dedicated ports), Management and monitoring – SNMP V2/ V3 and SMTP traps – Syslog (UDP or TCP) – Administrator and operator account management – E-mail and remote syslog.

Product Function Description

WAN Series WAN Optimization

Array's award-winning WAN Series WAN optimization controllers help enterprises eliminate network constraints and accelerate application performance to provide a LAN-like experience when accessing applications and data from branch offices, data centers or the cloud. Array Networks® pioneered application-level acceleration and currently leads the way in cross- platform support for physical and virtual appliances and software-only WAN optimization.

Combining advanced features for application and data acceleration with flexible deployment options, WAN Series WAN optimization controllers are future-proof IT investments that minimize costs and enable further consolidation of IT operations. If you require application acceleration, virtualization, consolidation, cloud computing or disaster recovery, Array's WAN Series can be deployed in both inline & out-of-path mode.

Stream Based Differencing

Array is patent—pending stream—based differencing enables continuous identification and analysis of larger streams of data in sequential order. Stream-based differencing facilitates the compression. organization and differencing of all data types as part of an overall data reduction and optimization process. Stream-based differencing efficiently utilizes system capacity to optimally support a large history database that scales along with available resources.

Single Instance Store

Single instance store provides a scalable resource to implement data differencing so that unchanged data is not sent over the network twice. The store also prevents multiple copies of the same data from being stored and maintained and enables predictive preloading based on usage patterns. The history store scales linearly with memory, and storage space adjustments are easy to implement both on physical appliances and in virtual environments.

Single instance store allows WAN Series to scale to support the needs of large deployments while maintaining high levels of performance, and is critical to supporting individual users without overutilizing data stores in the data center or cloud. Single instance store also enables peak performance for complex environments such as meshed networks.

Proxy & Connection Handling

Proxy and connection handling technologies with protocol transparency for CIFS, MAPI, HTTP, HTTPS, RPC-to-NFS SMB (v2 and v3) and others are lightweight and high performance and are designed to integrate with and take advantage of high-performance appliances and virtualization platforms. Proxy and connection handling is not tied to underlying hard- ware or operating systems and scalability varies by physical appliance or with the size of CPU and memory in virtual environments.

Forwarding Plane

Forwarding plane is a proprietary technology that allows WAN Series to statefully track hundreds of thousands of flows with minimal CPC impact. The forwarding plane also allows for the most flexible deployment In-Line and Out-of-path in networks including RIP, BGP and OSPF dynamic routing protocols as well as WCCP, VRRP, PBR and static routing.

Compression & Caching

WAN Series provides an ideal balance between data reduction and maximized throughput by performing compression on the first pass of data and then leveraging application acceleration blueprints to deliver content-aware de-duplication that separates encapsulation from the payload to prevent long-term performance degradation. WAN Series supports a number of compression algorithms, including LZ4 and Zstandard.

Content-Aware De-Duplication

WAN Series' content-aware de-duplication goes beyond that of other WAN optimization vendors. As data streams are processed, WAN Series segments and builds histories and distinguishes the protocol used to transfer the content By stripping off both TCP/IP and protocol encapsulation, WAN Series creates a clean history based on pure content.

Because disk space is not filled with protocol encapsulations that will never be matched in the future, it can be used more effectively to enable better long term performance; moreover, content that is written cleanly gets better matching. As a result, WAN Series delivers better data reduction, faster data transfers and superior matching when content is transferred using different protocols.

TCP optimization makes transfers more efficient across wide area networks and enables better utilization of both high and low bandwidth environments, faster recovery after packet loss and bandwidth fairness with other data flows, TCP optimization features include:

Window Scaling - Increases the default 64K TCP window size to ensure efficient throughput in long fat networks Slow Start with Congestion Avoidance - Determines available bandwidth and avoids sending more data than networks can handle Selective Acknowledgment – Precisely determines packets lost during transmission, and retransmits only lost packets

Application Blueprints

Legacy application protocols, such as CIFS for file sharing or MAPI for mail, were not designed to run over wide area networks. These protocols break data up into chunks and wait for one chunk to be received before sending another. This is known as chattiness, and chattiness can only be solved by applying application- level intelligence and optimization. WAN Series application blueprints optimize protocols so they operate efficiently across wide area networks. They use techniques such as local acknowledgments of requests, request pipelining, pre-fetching data and requests together to s Significantly accelerate applications. In addition, application blueprints provide application intelligence to the WAN Series de-duplication engine to enable content-aware de-duplication.

Traffic Shaping & Secure WAN

Integrated traffic shaping and SSL encryption allow IT to prioritize and secure traffic on the network Leveraging traffic shaping, guaranteed bandwidth may be assigned to particular hosts, networks, ports or applications. Moreover, by enabling encryption, accelerated traffic can be transmitted over SSL connections to ensure security for traffic sent Series appliances.

WAN Series Configuration Management System (CMS)

The WAN Series configuration management system enables secure global configuration, deployment, management, updating, monitoring and troubleshooting of up to 3,000 physical and virtual WAN Series appliances and clients. Thousands of remote, distributed WAN Series devices can auto- register with the CMS for zero-touch deployment. CMS uses templates, so that settings that are common between appliances can be easily managed from one configuration. Changes only need to be made once and will propagate through-out the system, creating simplicity and eliminating errors, while enforcing policies at the global network level. CMS provides IT administrators with an easy-to-use solution for centralized provisioning, drag-and-drop configuring, appliance management and a centralized view and backup of device configurations of entire WAN Series deployments. CMS was designed with the needs of the CIO and IT administrator in mind, optimizing operational efficiency for branch acceleration management and thereby lowering TCO for the enterprise.

WAN Series Mobile

WAN Series Mobile provides application acceleration using software installed on laptop computers for users who work remotely and independently and mobile users based out of Offices. Series Mobile allows users to benefit from downloads that others in the remote office have already made. Array's approach to creating peering relationships between WAN Series history stores users' histories to benefit each other, a feature which is a key differentiator between WAN Series and competing solutions. Leveraging the same features and capabilities present on WAN Series physical and virtual appliances, Array is able to extend industry-leading WAN optimization performance to remote and mobile environments and users.

Flexible Platform Options

WAN Series is available as a physical appliance, as a virtual appliance on VMware, Hyper-V or KVM VMs. Deployed as a physical appliance, WAN Series is packaged on Array's high-performance WAN Series hardware to provide the right balance of price, performance and scalability. Deployed as a virtual appliance, WAN Series may be scaled by increasing CPU cores, memory and disk space.

WAN Series virtual appliances and software can easily be downloaded to remote locations and provisioned dynamically for desired user workloads. Moreover, WAN Series' DHCP feature allows deployment, automatically discovering remote WAN Series appliances, setting up the peer connection and then accelerating traffic automatically.

In the data center, WAN Series may be deployed on WAN Series hardware or stored on the disks in a SAN and automatically deployed to one or more virtual machines. By deploying the right combination of physical and virtual appliances, IT can achieve the optimal balance of performance, scalability, security, availability and affordability.

Space Communications Protocol Specifications (SCPS)

Space Communications Protocol Specifications (SCPS) is designed to improve TCP performance in environments that include long delays, high bit error rates and significant asymmetries.

The WAN Series Advantage

Array WAN Series delivers superior acceleration, the ability to scale seamlessly, flexible hardware and software options for data center, cloud and remote environments, comprehensive centralized management and integration with 3rd party management systems, end-to-end security and pricing that is 30-50% less expensive versus rival solutions - enabling greater ROI in less time.

WAN Series Application Acceleration

SharePoint
Over 40 times faster response and 95% data reduction

SolidWorks
Over 20 times faster response and 90% data reduction

SolidEdge
Over 20 times faster response and 90% data reduction

Office 365
Over 40 times faster response and 95% data reduction

Microsoft Business NAV, CRM, GP, SL
Over 40 times faster response and 95% data reduction

Oracle Files
Over 40 times faster response and 95% data reduction

Image De-duplication
Over 40 times faster response and 95% data reduction

CA Software Distribution
Over 40 times faster response and 95% data reduction

NetApp NAS
Over 20 times faster backup and recovery times

IBM WebSphere
Over 30 times faster response and 90% data reduction

IBM Tivoli
Over 20 times faster response and 95% data reduction

Any TCP traffic

Microsoft Office
Over 40 times faster response and 95% data reduction

File Sharing
Over 40 times faster response and 95% data reduction

File Transfer
Over 40 times faster response and 95% data reduction

HTTP Including HTML5
Over 40 times faster response and 95% data reduction

Microsoft Exchange
Over 20 times faster response and 90% data reduction

Over 25 times faster response and 95% data reduction

SAP NetWeaver
Over 40 times faster response and 95% data reduction

EMC NAS & SAN
Over 20 times faster backup and recovery times

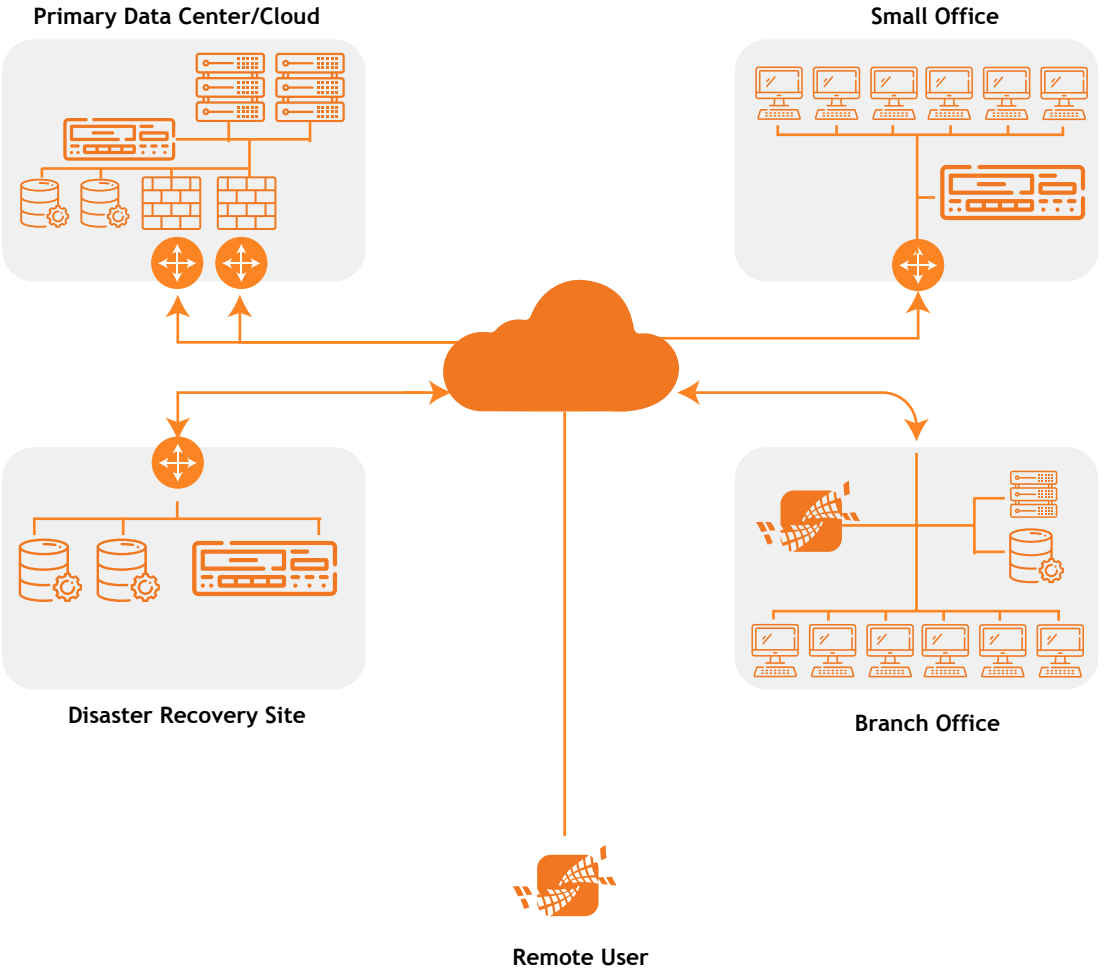
Dell EqualLogic & Compellent
Over 25 times faster response and 90% data reduction

IBM Rational Test & Dev
Over 40 times faster response and 95% data reduction

Microsoft System Center
Over 40 times faster response and 95% data reduction

Internet Traffic

WAN Series WAN Optimization Architecture



Physical Appliances

WAN Series Model	WAN4100	WAN4300	WAN4500	WAN4700	WAN4900	WAN41100
Accelerated TCP Connections	30K	60K	120K	240K	400K	800K
Traffic Rules	4K	4K	4K	8K	8K	8K
WAN Throughput	200Mbps	500Mbps	1Gbps	2Gbps	5Gbps	10Gbps
Standard Interfaces (1GbE Copper)	•	•	•	•	•	•
Bypass Ports (1GbE Copper)	•	•	•	o	o	•
Bypass Ports (10GbE Fiber)				o	o	o
Standard Interfaces (10 GbE SFP+)				o	o	o
Hard Disk (HDD/SSD)	500 GB	1TB	2 TB	2 TB	2 TB/4 TB	2 TB/4 TB
Power Supply	Single: 100-24VAC, 3-1.5A, 50-60Hz	Single: 100-24VAC, 3-1.5A, 50-60Hz	Dual: 90-264VAC, 10-5A, 47-63Hz	Dual: 90-264VAC, 10-5A, 47-63Hz	Dual: 90-264VAC, 10-5A, 47-63Hz	Dual: 90-264VAC, 10-5A, 47-63Hz
Dimensions	1U: 17.2″ W x 11.3″ D x 1.7″ H	1U: 17.2″ W x 11.3″ D x 1.7″ H	2U: 17″ W x 22.5″ D x 3.5″ H		2U: 17″ W x 22.5″ D x 3.5″ H	
Weight	11 lbs.	11 lbs.	24 lbs.	24 lbs.	28 lbs.	29 lbs.
Environmental	Operating Temperature: 0° to 40°C, Humidity: 0% to 90%, Non-condensing, Storage Temperature: 5° TO 65° c, Operating Altitude ---- 0 to 4000 meters above MSL					
Regulatory Compliance	FCC	FCC, 47FR part 15 Class A		ICES-003, EN 55024, CISPR 22, AS/ NZS 3548, FCC, 47FR part 15 Class A, VCCI-A		
Safety	CE	CSA, C/US, CE, IEC 60950-1, CSA 60950-1, EN 60950-1				
Optimization Features	Stream Based Differencing,Single Instance Store,Compression & Caching,Content-Aware De-Duplication,DNS Acceleration,Application Blueprints,Fragmentation & delay,SCPS					
Deployment Modes	L2 Mode (Bridge) and L3 Mode (PBR,WCCP)					
Networking	GRE,VLAN,IPV4,IPV6,NTP,Static Routing,Dynamic Routing,GTP					
Congestion Management	QoS,Badwidth adjustment,Traffic Shaping					
Secure Access	AAA support for Security Assertion Markup Language (SAML), LDAP, RADIUS,Kerberos and TACACS					

Virtual Appliance & Software System Requirements

Server Hardware	Certified on VMware hardware compatibility list to run ESX or ESXi: Certified for Windows Server 2008R2 KVM in CentOS 6.0 or later, RedHat Enterprise Linux 6.0 or later (64-bit only) Hyper-V (Windows Server 2008/2012 or later, Windows 10 Professional/ Enterprise, 64-bit only)
64-bit CPU	Intel CPUs with VT (virtualization technology); AMD CPUs with AMD-V support
Network Interface Card	1 available Ethernet interface for out-of-line deployments; 2 available Ethernet interfaces for inline deployments
Hardware	2 GB RAM; 30 GB free disk space

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