



Array Networks APV Series Application Delivery Controllers (ADCs) improve the availability, performance and security of enterprise applications and web sites while reducing cost and complexity in the data center. The appliances are designed for fast and intelligent acceleration of demanding applications and traffic aggregation necessary for large data centers, virtualization, cloud computing, service providers and multi-media services. The APV ADC appliances maintain high levels of performance with multiple, concurrent features enabled.

■ Availability. Acceleration. Security.

Availability ensures 24x7 user access to enterprise web applications and hosted multi-media services in data centers and across branch offices and acceleration delivers fast user experience to any device. Security encrypts transactions end-to-end, and protects servers from attacks. Consolidation reduces hardware and software license costs, and improves data center efficiency. With Array APV green ADCs you get availability, acceleration, security, performance, data center consolidation, and disaster recovery. Array APV is the platform for delivering demanding applications and bandwidth-intensive services.



■ Application Availability

Educational institutions, data centers (sites) and businesses need applications to be continuously available. Failed WAN ISP links, slow connections, unavailable servers, poorly written applications, improper bandwidth allocation and unavailable datacenters impact revenue and productivity. Quick fixes like increasing bandwidth, adding servers and hardware, and building redundant data centers would add to the cost, without addressing high availability and business continuity.

APV appliances deliver 99.999% uptime for WAN ISP links, e-commerce web sites, and enterprise applications. They provide reliability between geographic datacenters for disaster recovery.

APV aggregates bandwidth from multiple low-cost ISP links and load balances traffic between links.; multiplexes thousands of user connections to fewer server connections and intelligently distributes application load at layers 2-7 in and across redundant geographic datacenters. The result is 24x7 application access, faster downloads, reduced bandwidth costs, fewer servers, reduced business continuity risks, and lower infrastructure costs.



■ Application Acceleration

The data centers are fast consolidating utilizing latest hardware and software virtualization technologies. Mission-critical applications are being consolidated onto less hardware to reduce costs for software licenses, power, space and cooling. But consolidation efforts alone cannot enhance user productivity without fast application delivery, which must factor in WAN and application latency, especially across geographical locations.

The Array APV appliances combine sophisticated acceleration technologies such as TCP connection multiplexing, caching, hardware compression and QoS. When combined together, they improve application response times by 50% or more.

■ Application Security

The number of e-commerce, online banking, health portals, and online trading sites have skyrocketed in the past decade.

Product Benefits

- **Broad range of application delivery solutions from a single system,** including Layer 2-7 load balancing, link and global server load balancing
- **Comprehensive availability, acceleration and security solution** for web sites, enterprise applications, multi-media services, WAN ISP links, global data centers and hosted cloud-centric applications.
- **Integrates mature ADC functions, delivers 99.999% uptime,** improves user response times by 5x, reduces server infrastructure by 40%, reduces network bandwidth by 30% and uses 60% less power than other products.
- **Offers end-to-end SSL security for user transactions,** hardened platform protects applications against network-attacks without impacting performance.
- **Provides high reliability** via dual power supplies
- **Easy to configure** and simple to manage and deploy



As businesses turn to Internet and web platforms for making core business transactions available to a large user base, the application infrastructure is at risk from attacks while users are at risk from identity theft and fraud. Companies and banks that transact online must comply with industry regulations such as PCI DSS, while hospitals must comply with HIPAA privacy standards. Compromising on security and compliance can damage a company's reputation and results in a loss of business and customers. When security is enabled, most applications and servers slow to a crawl, resulting in a poor user experience.

Array APV appliances deliver consistent performance while providing data privacy, SSL offloading, certificate-based access control, authorization, and application security for banking, e-commerce, health portals, and stock trading applications. Array APV ADCs protect web applications, servers and services from malicious attacks, secure user transactions, and increase the performance and scalability of applications.

■ Application Availability

Server Load Balancing

The APV ADC improves application availability, facilitates tighter application integration, and intelligently and adaptively load balances traffic at Layers 2-7 based on a suite of application metrics and health checks. It also load balances IPS/IDS devices and coposite IP applications, and distributes HTTP/HTTPS traffic based on headers and SSL certificate fields. The APV ADC inserts, modifies and rewrites cookies for greater application traffic control.

Global Server Load Balancing

Today's enterprise workforce needs access to applications, and businesses need to provide access to services for customers across the globe.

Having application infrastructure at a single geographic (site) location can result in disaster as this reduces availability, limits application capacity and server resources, reduces performance and introduces application and network latency. Site availability challenges arise with natural disasters like big storms or widespread flu. Single site failure results in service disruption. Organizations deploy multiple sites spread across geographies for addressing disaster recovery issues.

Array APV global load balancers transparently redirect users away from failed sites by continuously monitoring site/server health.

APV ADC load balances services, distributed applications and traffic between geographic data center locations based on the proximity and the language of the user, site capacity, site load and response time.

APV ADC ensures application availability and performance on a global basis and enables site level redundancy and rapid transparent failover for disaster recovery.

Content Routing

APV ADC enables intelligent routing/switching of Layer 7 content to a destination application based on client request information (URI, HTTP header, cookie, hostname and URL). The APV ADC is capable of applying policy-based application-fluent intelligence to a mix of content types at Layers 4-7 for implementing application-specific, productivity-enhancing application delivery solutions.

Application Persistence

APV ADC allows connection persistence at Layer 4 based on client IP/port and hash IP. The appliance performs advanced Layer 7 request persistence based on client request information such as URI, HTTP headers, cookies, hostname, SSL session ID and URL. It supports site level persistence between users and sites.

QoS and Rate Shaping

Configure customized rate shaping policies based on application information for prioritizing network traffic, while ensuring bandwidth for critical applications.

APV ADC allows bandwidth borrowing between application flows to handle spiky loads. Array's specialized Layer 7 traffic shaping enables customers to rate limit Layer 7 traffic on a per URL/service basis for prioritized delivery of critical applications.

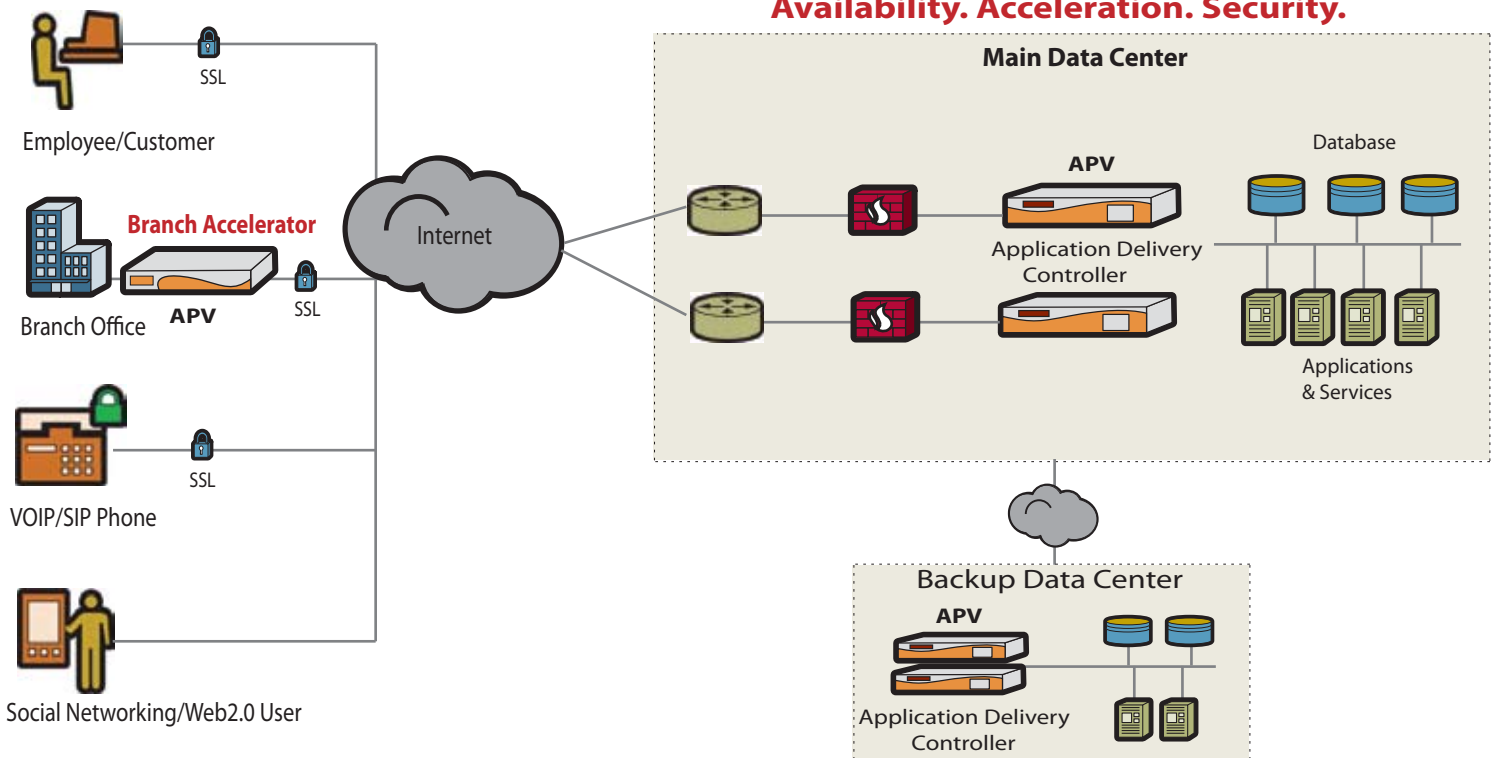
■ Application Acceleration

Caching

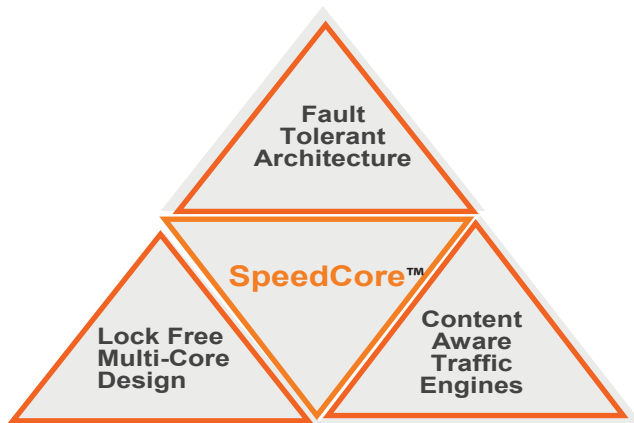
APV ADCs intelligent cache reduces requests to the server, frees up expensive CPU cycles, and improves response times by up to 75%. APV's cache is completely compliant with HTTP protocol and is optimized for small, dynamic, hot content – making it the ideal platform for delivering Web 2.0 applications. APV applies flexible cache rules and policies on requests and responses for efficient caching. It dramatically improves second level cache storage efficiency by combining caching and content switching.

Compression

APV compresses application data from servers, reduces data transferred over the Internet, efficiently utilizes bandwidth and improves response times to end users. APV is flexible in choosing a compression algorithm that is appropriate based on the nature of the application, browser/client type and data patterns. Most applications exchange data in different file formats – text, HTML, JavaScript, XML, PDF's and Microsoft Office documents attached as MIME types - and can therefore benefit significantly from compression.



Application Delivery Controller



SpeedCore™ Architecture Benefits

- **Lock-free multi-core design enables** rapid scaling of performance with the addition of cores and processors.
- **Fault-tolerant design improves** overall scalability and stability of the system by isolating and separating application traffic flows .
- **Content aware traffic engines efficiently** accelerate applications and content based on the nature of the application and the type of the content.

SpeedCore™ Architecture

Connection Multiplexing

Do more with less. Aggregate millions of client TCP connections into few server connections, improve end user response times and offload CPU intensive connection management tasks onto the APV ADC. Avoid costly application rewrites, or any changes to existing applications such as adding more servers for deriving performance gains. Reduce infrastructure costs by 40%. Improve customer satisfaction, serve more users with reduced response times

■ Application Security

SSL Offloading & Acceleration

SSL transactions consume server CPU cycles due to intensive encryption and decryption of the packets on a repeat basis. APV offloads SSL from servers and allows applications to focus on serving the content to end users, improving availability and response times, without performance degradation.

SSL Security

APV validates 100's of 1000's of SSL client certificates concurrently, performs authentication and authorization on behalf of applications. APV extracts any SSL client certificate field (including custom fields) and passes the information to the application via HTTP headers, URLs and cookies for enhanced access control.

APV understands all types of cipher suites and certificate formats, allows customers to set a precedence for custom cipher suites. Supports customizable SSL error pages, compliant with PCI-DSS standards.

High performance CRL module can revoke millions of client certificates concurrently for validity without performance impact.

■ Network & Server Security

The APV platform is security-hardened and protects applications and servers from DDoS, Syn-flood, tear drop, ping-of-death, Nimda and many other attacks. It also integrates extensive access control lists (ACL), network address translation (NAT), and stateful packet flow inspection to guard against unauthorized access.

■ SpeedCore™ Architecture

SpeedCore™ is the next generation application delivery architecture that fully leverages the multi-core trend to deliver unmatched scalability and 10Gbps+ throughput. Lock free multi-core design enables linear scaling of performance with the addition of cores and processors. Fault-tolerant data processing design provides application and service flow isolation and separation, which improves overall scalability and stability. Content aware traffic engines apply intelligent acceleration and optimization based on the nature and type of the content to support efficient network processing of application data while delivering over 10Gbps throughput.

■ Performance and Scalability

APV ADC appliances are available with varying Layer 4 and Layer 7 performance levels. Products are designed to meet SMB, mid-level, enterprise and service provider class market needs. The service provider class appliances can handle millions of Layer 4-7 connections.

■ High Reliability

Dual power supplies improve reliability of APV devices in datacenters. They reduce unplanned downtimes and enable deployments of all sizes to be compliant with industry regulations.

■ Management & Reporting

Array APV Series Application Delivery Controllers offer both a familiar CLI and an intuitive web user interface that can easily be customized to create streamlined, integrated management systems. The intuitive GUI makes it a breeze to configure advanced Layer 4 and Layer 7 application and security policies.

Advanced GUI provides in depth information into application flows, customize graphs based on the type of application. Build QoS and traffic shaping rules on a per virtual service basis for improved network visibility. Monitoring the Array APV is made simple with SNMP-based monitoring tools. With support for XML-RPC, a range of third-party applications can be used to automate management tasks.

■ Best Value

APV application delivery solutions are a result of a decade of field experience solving complex application delivery problems for many of the Global 2000 companies. Array products are field proven at the world's largest telecom, financial institutions and Fortune 500 enterprises with uptimes in excess of several years. Array APV enables IT infrastructure to be consolidated and simplified, thereby reducing power and space costs. APV uses 60% less power than other products, reduces server infrastructure by up to 40%, reduces network bandwidth by 30% and delivers strong ROI in as little as 6 months.

Application Availability

Layer 7 Server Load Balancing

- Maximizes traffic flow and performance with customizable layer policy
- Static, default, backup policy
- Persistent Policy
 - URL, Hash URL, insert/rewrite cookie
 - SIP and RTSP
 - SSL SID
- Content Routing
 - Hostname, URL, cookie
 - Network, clientport, regex
 - HTTP header, SOAP
- URL redirect, filetype, hash URL
- Per virtual service proxy mode

Layer 4 Server Load Balancing

- Intelligent routing maximizes balancing methods and increases performance
- TCP, TCPS, UDP protocols supported
- Round robin, weighted round robin, least connections, shortest response, persistence IP
- RADIUS, DNS servers

Advanced Content Routing

- Build nested L7 and L4 policies
- Combine L7 and L4 policies

Global Server Load Balancing

- Ensures performance for applications in a multitude of locations worldwide
- DNS DoS protection
- Global site/service selection
- Proximity and IP Persistence for nearest site for improved performance.
- Delivers local and global balancing for multi-site SSL VPN

Layer 2 / 3 Load Balancing

- Firewall appliances
- Intrusion Prevention Systems (IPS) and Intrusion Detection Systems (IDS)

Link Traffic Shaping

- WAN management
- Policy based routing based on port, Src/Dest IP, protocols UDP, TCP
- Return to sender (RTS)/IP flow persistence, link aggregation
- Dynamic routing
- Traffic shaping QoS policies

Clustering

- Ensures availability and performance of applications with single point of management, regardless of cluster size
- Active/active; active/standby
- Configuration synchronization
- Interoperability with BEA WebLogic Cluster
- Application-specific health check
- Fast failover

Application Acceleration

SSL Offloading and Acceleration

- Offloads HTTPS processing up to 90% while securing sensitive data
- High-performance hardware-based acceleration
- HTTPS, NNTPS, SMTPS, POPS, IMAPS, LDAPS
- SSL inside for end-to-end security
- Full certificate management features
- Process millions of CRL entries
- Share certificates across virtual services

High-Performance Caching

- Memory-based DRAM cache reduces seek times by a factor of 1000x
- Fully-compliant with HTTP 1.1 specs

TCP Acceleration

- Improves application performance 100x by off-loading TCP processing
- Connection pooling & multiplexing
- TCP buffering
- Client connection persistence
- IEEE 802.3ad link aggregation

Dynamic Compression

- Reduces response times an average of 75% for improved user experience
- Inline HTTP
- Hardware acceleration
- HTML and XML
- Java scripts
- Cascading style sheets
- Popular Microsoft file formats (.DOC, .XLS, .PPT)
- PDF

Application Security

Server Security

- Full proxy-based firewall safeguard applications from network attacks
- TCP Syn-flood protection
- Flash/surge event protection
- Full DoS protection
- URL Filtering

Network Security

- Full stateful packet inspection firewall
- Over 1000 ACL rules without performance degradation

Networking

- Static and port-based NAT translation for maximum flexibility and scalability
- VLAN
- Trunking

Network Address Translation

- Static and port-based translation for maximum flexibility and scalability

Management

- Complete, centralized management tools that simplify installation without compromising security or flexibility
- Industry standard CLI Interface
- Secure SSH remote network management
- Single point for cluster management
- Secure WebUI access
- XML-RPC remote management support
- SNMP V2 / V3 and private MIBs
- Syslog (UDP or TCP)
- Simple initial setup support
- Administrator account management
- CLI command-based monitoring
- Notification/alerting system w/paging
- Multiple configuration support
- Multiple unit configuration synchronization support
- On-line troubleshooting support
- Real-time monitoring graphs support
- Log message manual

	SpeedStack 6.x					SpeedCore 8.x		
	APV900	APV1200	APV2200	APV3200	APV5200	APV3520	APV5200B	APV6200
Throughput	750 Mbps	1 Gbps	1.5 Gbps	2 Gbps	4 Gbps	4 Gbps	8 Gbps	11 Gbps
Memory	512MB	1GB	2GB	4GB	4GB	8GB	8GB	16GB
I/O Configuration	2 x 10/100/1000	4 x 10/100/1000	Up to 6 Ports: 4 x 10/100/1000 Optional: Fiber	Up to 10 Ports: 4 x 10/100/1000 Optional: Fiber, Copper	Up to 10 Ports: 4 x 10/100/1000 Optional: Fiber, Copper 10 Gig XF SR	Up to 16 Ports: 12 x 10/100/1000 4 x 1000 Base-SX	Up to 14 Ports: 4 x 10/100/1000 Optional: Fiber, Copper 10 Gig XF SR	Up to 14 Ports: 4 x 10/100/1000 Optional: Fiber, Copper 10 Gig XF SR
Clustering	2	2	32	32	32	32	32	32
Form Factor	1U	1U	1U	1U	2U	2U	2U	2U
Power Supply	Single	Single	Single/Dual	Single/Dual	Dual	Single/Dual	Single/Dual	Dual

Technical Specifications	
Standards	10/100 Base-TX, 1000 Base-T, 1000 Base-SX, 10 GbE, 10 Gig XF SR, IP, SSH, HTTP 1.0/1.1, SSL, SNMP
Management	SSH CLI, Direct Console CLI, SNMP, Single Console per Cluster, XML-RPC
Console port	Male DB9 Serial (RS232) Port
Dimensions	Standard 19" Rack Mountable 900/1200: 17" (W) x 15" (D) x 1.75" (H) or 1RU 1U Dual Power: 2200/3200: 17" (W) x 19.87" (D) x 1.75" (H) or 1RU 3520/5200/5200B: 17" W X 21.5" D X 3.5" H or 2U 6200: 17" W X 23.5" D X 3.5" H or 2U
Weight	900/1200/2200/3200: 14 Lbs. 1U Dual Power: 2200/3200: 17.2 Lbs. 3520: 27lbs 5200/5200B: 30lbs 6200: 28lbs.
Environmental	Operating Temperature: 0° to 45°C Humidity: 0% to 90%, Non-condensing 1U Single Power: 900/1200/2200/3200: 100-240VAC, 6-3A, 47-63Hz, ATX Auto-Switching 1U Dual Power: 2200/3200: 100-240VAC, 4-2A, 47-63Hz, ATX Auto-Switching 2U Dual Power: 3520: 100-240VAC, 5A, 47-63 Hz, ATX Auto-Switching 2U Dual Power: 5200/5200B/6200: 100-240VAC; 10A; 47-63 Hz, ATX Auto-Switching
Regulatory compliance	The equipments described are declared to be in conformity with the applicable national and international standards, when tested in a representative chassis. The conformity is valid ONLY when the equipment is used in a manner consistent with manufacturer's recommendations and reference documents. IEC 60950-1, CSA 60950-1, EN 60950-1, ICES-003, EN 55024, CISPR 22, AS/NZS 3548, FCC, 47FR part 15 Class A, VCCI-A
Safety	CSA, C/US, CE EMC Testing: Bay Area Compliance Laboratories Corporation, 1274 Anvilwood Avenue, Sunnyvale, CA 94089 CB report issued by: CSA International, 13799 Commerce Parkway, Richmond, BC, Canada.

