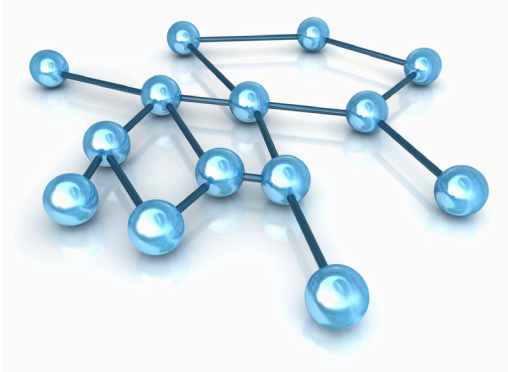
DATA SHEET
Application Acceleration Service

APPLICATION ACCELERATION SERVICE

The Aruba Application Acceleration Service (AAS) delivers faster application performance for branch offices and teleworkers while lowering WAN bandwidth costs at enterprise datacenters. AAS is a key component of Aruba's Virtual Branch Networking solution, and seamlessly integrates with the Remote Access Point (RAP) family to provide services without requiring another device at remote sites. AAS accelerates and optimizes Microsoft Exchange, Windows file sharing, and enterprise web applications to provide faster response times for branch office and remote users. To offload enterprise datacenter WAN bandwidth and overcome speed-of-light WAN latency, AAS also leverages public cloud network providers, creating a global content cache that can securely move enterprise content closer to end users.



DISTRIBUTED ENTERPRISE NETWORKS NEED APPLICATION ACCELERATION

As enterprises geographically distribute their employees and offices, demands on their network infrastructure continue to rise. WAN connections at remote sites must be continually upgraded to support growing enterprise data. At the headquarters or datacenter location, the demand on the WAN pipe is even more exaggerated as it serves more and more distributed locations. At the same time, WAN latency is a fact of life, and cannot be overcome by upgrading bandwidth. This is particularly true for global organizations dealing with inter-continental or satellite WAN latency.

WAN acceleration and optimization is the answer to many of these challenges. But traditional WAN acceleration is designed for point-to-point links between headquarters and mid-sized to large branch offices, where several employees in the same office can benefit from caching and de-duplication. Aruba's Application Acceleration Service is the first solution specifically designed for small offices and teleworkers – places where traditional WAN acceleration technology is not cost-effective.

COMPRESSION AND PROTOCOL OPTIMIZATION

In a basic configuration, AAS performs data compression and protocol optimization for three of the most widely-used enterprise applications:

- Web applications (HTTP)
- Microsoft Exchange Email (MAPI)
- Microsoft file sharing (CIFS)

Without compression, documents, spreadsheets, presentation files, and Web pages consume excess WAN bandwidth that could easily be recovered. Without protocol optimization, latency of WAN connections can introduce inefficiencies that slow down application response time. By adding both compression and protocol optimization, AAS better utilizes existing WAN bandwidth and provides faster performance for end users.

CLOUD-BASED GLOBAL CACHE

With the addition of a Content Delivery Network (CDN) subscription, Aruba's AAS leverages the cloud to provide a secure global file cache for enterprise files and data. Traditional WAN acceleration technology caches network traffic on either side of a point-to-point connection using local hard disk storage. When another user in the same branch office requests a file that has already been stored locally, the local cache delivers the file instead of transferring it a second time across the WAN. While this approach results in significant WAN cost savings for larger branch offices, the equipment costs cannot be justified for smaller branch offices or organizations with work-at-home teleworker initiatives. And because each remote location must transfer content over the WAN at least once, WAN acceleration does not reduce demands on headquarters or datacenter WAN bandwidth when there are numerous small sites.

Aruba's AAS is optimized for a large number of small branch offices or teleworker locations. The mode of operation is "one-to-many": – enterprise data crosses the headquarters or datacenter WAN pipe once, and is then replicated by the CDN to many datacenters worldwide. Each subsequent file request from a remote user will be fulfilled from the CDN datacenter closest to the user, rather than from the enterprise datacenter. This solution overcomes WAN latency challenges by positioning enterprise data geographically close to users, while simultaneously offloading enterprise WAN pipes.

SECURITY IS PARAMOUNT

Content Delivery Networks have been used for years by software companies, video content providers, and others who deliver public Internet content to large numbers of users. To ensure confidentiality of enterprise data placed in the public CDN, Aruba's AAS encrypts all content. Using state-of-the-art Advanced Encryption Standard (AES) with 256-bit keys, enterprise data is split into smaller files, encrypted, and then transferred to the CDN. Encryption keys are never transferred outside the enterprise network – keys are maintained by the AAS Server and transferred as needed to Aruba RAPs through secure IPsec tunnels. After the RAP completes decryption and reassembly of a file, it immediately deletes the encryption key. Keys are stored only in active memory on the RAP, never in persistent storage.

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SOLUTION OVERVIEW

The Aruba AAS solution consists of the following components, as illustrated in Figure 1.

① Remote Access Point (RAP): A lightweight, low-cost network access device that is installed in branch offices and teleworker homes. RAPs provide network access through traditional wired Ethernet connections or through secure wireless LAN, and are centrally controlled and managed by Aruba Mobility Controllers. The client-side component of the Application Acceleration Service is integrated within the RAP.

② Aruba Mobility Controller: Network infrastructure hardware in the enterprise datacenter or network core that is responsible for control, configuration, and management of all Aruba RAPs. All communication between RAPs and the Mobility Controller is secured through IPsec tunnels.

③ AAS Server: Software running on an x64-compatible server platform, located adjacent to the Aruba Mobility Controller where RAPs are connected. The AAS Server is responsible for receiving file requests from the RAP, fulfilling those requests from the source server, compressing and optimizing the file, encrypting the content, and publishing it to a CDN. The AAS Server also maintains encryption keys for all encrypted content and makes them available to RAPs when requested.

④ Content Delivery Network (CDN): A network of servers containing replicated copies of data, geographically located near clients to minimize latency for clients accessing the data. The AAS solution encrypts enterprise data, then stores it inside the CDN, allowing the CDN to replicate the data worldwide using its own high-speed backbone.

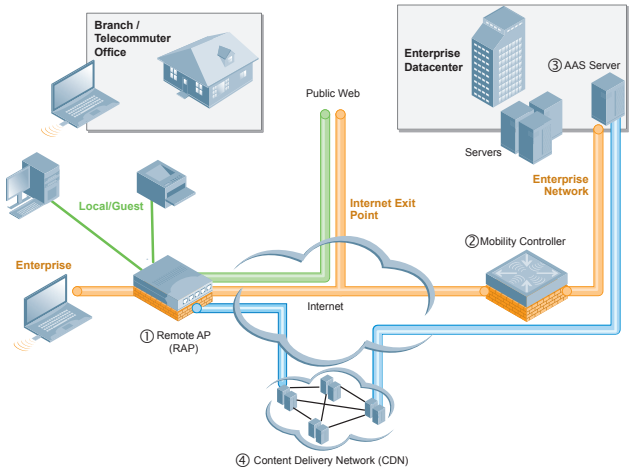

Figure 1 - AAS Solution Overview

SPECIFICATIONS

Supported Protocols	HTTP, CIFS, MAPI
Encryption	AES-CBC-256
Concurrent TCP Connections per RAP	128
Concurrent TCP Connections per AAS Server	32,000
RAPs supported per AAS Server	2,000
RAP Forwarding Modes	Bridge, Split-Tunnel
Supported CDN Providers	Limelight, Amazon S3
VM Support for AAS Server	Yes
AAS Server Redundancy	Yes

MINIMUM SOLUTION REQUIREMENTS

Mobility Controller	Aruba 600 series, Aruba 3000 series, or Aruba M3
ArubaOS Software	5.0 or higher
RAP	RAP-2wg, RAP-5, RAP-5wn, AP-120 series operating in RAP mode
AAS Server Hardware	2.8 GHz Quad-Core CPU, 4GB RAM, 160GB Disk (Aruba part numbers AWMS-HW-PRO and AWMS-HW-ENT meet AAS Server specifications)

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
ACC-SVR-SW	Application Acceleration Server software
LIC-ACC-1	ArubaOS Application Acceleration Service - 1 AP license
LIC-ACC-2	ArubaOS Application Acceleration Service - 2 AP license
LIC-ACC-4	ArubaOS Application Acceleration Service - 4 AP license
LIC-ACC-8	ArubaOS Application Acceleration Service - 8 AP license
LIC-ACC-16	ArubaOS Application Acceleration Service - 16 AP license
LIC-ACC-32	ArubaOS Application Acceleration Service - 32 AP license
LIC-ACC-64	ArubaOS Application Acceleration Service - 64 AP license
LIC-ACC-128	ArubaOS Application Acceleration Service - 128 AP license
LIC-ACC-256	ArubaOS Application Acceleration Service - 256 AP license
LIC-ACC-512	ArubaOS Application Acceleration Service - 512 AP license
LIC-ACC-1024	ArubaOS Application Acceleration Service - 1024 AP license
LIC-ACC-2048	ArubaOS Application Acceleration Service - 2048 AP license

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