CloudVision

Key Features

- Centralized configuration and policy management
- Cognitive cloud based network baselining and troubleshooting with root cause analysis engine
- WiFi analytics for business intelligence
- Wireless Intrusion Prevention (WIPS)
- Application Visibility and Control
- Visual packet trace and analysis
- Wireless Access Security
- Multifunctional management of 3rd radio for client emulation and intelligent RF optimization
- API Integration
- Cloud and On-Premises options

Overview

Harnessing the power of the cloud, big data analytics, machine learning and automation, CloudVision WiFi brings the power of intelligence, speed and accuracy to wireless networks. Through root cause analysis and proactive problem resolution options, CloudVision WiFi reduces the mean-time-to-resolve problems, minimizing network troubleshooting effort while reducing total cost of ownership.

Enterprise ready cloud architecture

CloudVision Wi-Fi’s cognitive management plane simplifies configuration, troubleshooting while delivering richer telemetry, to network administrators. A centralized management plane remarkably simplifies policy management and provisioning of WiFi networks. A flexible data plane allows wireless access points to provide customizable traffic redirection at the network’s edge. A distributed control plane enables enterprise WiFi features without the scalability issues of older architectures - and an innovative cognition plane with streaming telemetry automates WiFi network monitoring and troubleshooting to optimize the WiFi user experience and minimize the mean time to resolution (MTTR) for network access and performance issues.

Simplicity Redefined

Centrally managing a WiFi network has many advantages - its simple to change a network configuration globally, physically locate a WiFi device, view real-time or historical experience of WiFi users or capture and visualize a packet trace from a remote site.

Mission-critical Reliability

Arista Wi-Fi’s distributed dataplane architecture ensures there is no loss of functionality if connectivity to the management plane is lost. The Wi-Fi network continues to support mission-critical applications and secure airspace at all times. Automated disaster recovery and high-availability ensures users do not experience downtime even in the event of a datacenter- or region-wide incidence.
Seamless scalability
With virtually unlimited and elastic availability of storage and compute resources, the Arista cloud eliminates artificial boundaries inherent in controller-based WLAN architectures. Naturally, it enables many innovative, previously unforeseen applications in big data analytics, machine learning and cognitive computing in the context of WiFi.

Cognitive Management Plane
Arista uses cognitive computing to deliver the best experience possible to Wi-Fi administrators and users.

Client JourneyTM
CloudVision Wi-Fi provides direct and real-time insight into the experience of Wi-Fi clients as they journey on the network. Client Journey tracks when and why clients fail to connect to the network, reporting latencies of network services such as AAA, DHCP, and DNS. Administrators can drill down and access live and historical client connection logs to aid troubleshooting.

Network Baselining
Using machine-learning algorithms on the telemetry it collects, CloudVision Wi-Fi baselines network traffic and automatically detects and highlights anomalies. When necessary it fine-tunes the Wi-Fi network to optimize the user experience and provides recommendations to resolve network problems.

Root Cause Analysis Engine
CloudVision Wi-Fi employs in-built domain expertise and protocol-level intelligence to help administrators maintain the network. In real time, it automatically detects and classifies Wi-Fi clients connection failures and pinpoints the root cause—if it is related to Wi-Fi or to a network service such as DHCP or DNS, a client device or an application. Similarly it automates root cause analysis of poor performance, such as poor coverage, high retry rate and sticky clients.

Automatic Packet Capture
With real-time, inline packet capture, CloudVision Wi-Fi preemptively captures packet traces to help capture problems. The traces are stored alongside related failures or symptoms to simplify troubleshooting at a later time. Packet traces can be downloaded or directly visualized in Arista Packets, the cloud-based, visual Wi-Fi packet analyzer.

Client Emulation and Network Profiling
CloudVision Wi-Fi employs the 3rd multi-function radio, turning it into a client to run tests and proactively identify problems before users do. This helps validate the network’s readiness for supporting business-critical applications.

Intelligent RF Optimizations
Unparalleled visibility in both 2.4 GHz and 5 GHz enables automatic RF optimizations such as band steering, smart steering, auto channel selection or auto transmit power control to maximize Wi-Fi capacity. Real-time application performance is further enhanced with multicast-to-unicast conversion and smart blocking, pruning and optimization of broadcast and multicast traffic.
**Wireless Intrusion Prevention (WIPS)**

With the third radio acting as a dedicated wireless intrusion prevention (WIPS) sensor, wireless threats are detected and blocked almost instantly in your network. CloudVision WiFi works with the APs - which are powered by patented techniques such as Marker Packets(TM) to enable surgical over-the-air prevention, automatically and accurately creating alerts and classifying wireless threats.

**Wi-Fi Analytics**

Analytics based on presence and behavior of Wi-Fi devices can provide significant business intelligence, and can inform business functions such as:
- marketing research (A/B testing of storefront displays, measure ROI of marketing campaigns, context-based guest engagement)
- operations (staff planning, optimize facility utilization),
- IT (network planning and design based on user density).

The gathered data is based on Wi-Fi device mac addresses collected from probe requests, content analytics and application visibility based on Wi-Fi connections, and engagement analytics based on Wi-Fi users who opt in and choose to share their personal information.

**Presence Analytics**

Presence analytics provide anonymous, statistical information about the footfall (number of Wi-Fi devices detected), dwell time (duration for which Wi-Fi devices are present) and repeat versus new customers. These trends can be viewed by particular site or aggregated across multiple sites, and across different time periods: intra-day, daily, weekly, monthly and year-over-year.

**Engagement analytics**

Integration with social networks and third-party loyalty systems can be leveraged to collect demographics and other information from Wi-Fi users who opt in to share their personal details. This in turn can be used to engage with the opt-in Wi-Fi users, e.g., retail business can provide special deals to their loyal customers and convert them into brand ambassadors.

**Zone analytics**

Zone analytics provide insight into the density and flow of Wi-Fi users by visualizing it on a floor map. This allows administrators to monitor how the various parts of a facility are populated over a period of time. Zones can be demarcated as a region around Wi-Fi APs on a floor map.

**Content analytics and application visibility**

Web analytics and application visibility based on deep packet inspection can provide insight into Wi-Fi usage pattern and allow you to enforce policies in terms of the type of content or applications that can or cannot be accessed based on the type of Wi-Fi network (e.g., employee vs. guest) and user privileges (e.g., students vs. teachers) and assign the desired quality of service.

**Wireless access security and control**

With a suite of features to identify users, devices and applications and to control the access and privileges they get on the network, Arista provides a comprehensive solution to enforce context-based policies and protect the network from abuse.

**Integration with Google® G Suite**

Google G Suite for business or education, can be used to enforce an additional layer of security for Wi-Fi users with Arista’s WiFi integration.
No additional hardware, software or license is required. Regardless of whether PSK or 802.1X is being used for authentication, network access control for Wi-Fi users and devices can be enforced based on a users’ Google account privileges and organization unit (OU) membership.

**Role Based Control**
Role based controls can be enforced on a per SSID basis. Role profiles can be created to match roles configured in the RADIUS server, Google G Suite or both. Rules of precedence can be used to combine settings defined in a role profile and SSID, and enforce policies in terms of role attributes such as VLAN access, firewall rules, application firewall rules, per user bandwidth control and redirection to a captive portal.

**Mission-critical Reliability**
Arista Wi-Fi’s distributed data-plane architecture ensures that there is no loss of any functionality if connectivity to the cloud is lost. That means the Wi-Fi network will continue to support mission-critical applications and secure airspace at all times. Automated disaster recovery and high-availability ensures that users do not experience noticeable cloud downtime in the event of a datacenter- or region-wide incidence.

**Federal grade security**
The Arista Cloud implements multiple tiers of security—including strong access controls, two-factor authentication, regular vulnerability scanning and management, encryption of data in transit (TLS) and at rest (EBS and S3), and PII data privacy. The security measures certifications are SSAE SOC 2 Type II and FIPS 140-2.

**Seamless scalability**
With virtually unlimited and elastic availability of storage and compute resources, the Arista cloud eliminates artificial boundaries inherent in controller-based WLAN architectures. Naturally, it enables many innovative, previously unforeseen applications in big data analytics, machine learning and cognitive computing in the context of Wi-Fi.

**APIs and Third-party Integration**
With Single Sign-On, powerful Web APIs, and secure tunneling, integrating the Arista Cloud with third-party systems, in-cloud or on-premises, is easy. Both push and pull mechanisms are available. Using custom applications, Wi-Fi analytics can be pulled from the Arista Cloud or configuration and policy changes can be pushed to it. Wi-Fi analytics from the Arista Cloud or directly from the Arista APs can also be pushed to third-party Web services.

**Social WiFi**
Inbuilt integration with Facebook, Google+, Twitter, LinkedIn, Instagram and Foursquare enables guest on-boarding using social login.

**Bonjour® Gateway**
Arista APs can be configured as a Bonjour Gateway to allow Wi-Fi clients to discover and access Bonjour services across VLANs. This feature can be enabled on a per SSID basis and works for both static and dynamic VLANs.

**Stateful L3-L7 Firewall**
Arista APs can enforce SSID-based rules for inbound and outbound traffic based on host or domain name, IP address, port number, protocol, e.g., UDP, TCP, and applications. Leveraging the in-built application visibility engine, rules can be defined to block or allow specific applications, or an entire category of applications, or to mark applications with DSCP for appropriate handling at the network layer.

**GDPR Compliance**
Arista Networks provides General Data Protection Regulation (GDPR) compliant Arista Cloud Wi-Fi to its partners, resellers, and customers in the European Union. The Arista Cloud acts as a GDPR Processor of personal data.
Arista’s Cloud Integration Point and APIs

Powerful Web APIs allow you to export Wi-Fi analytics from the Arista Wi-Fi APs or the Arista Cloud to third-party systems or implement applications to consume the APIs and pull the Wi-Fi analytics from the Arista Cloud. Wi-Fi analytics can be exported in real time or periodically on demand.

The data exchanged between Arista Cloud and an on-premise Cloud Integration Point (CIP) is secured with AES-256 encryption. The CIP contains a firewall that only forwards traffic to the specified local destinations on the defined ports. It also isolates the network with NAT so client connections cannot be established through the CIP.

Wi-Fi controller integration for WIPS overlay

Arista Cloud integration with other wireless LAN controllers allow Arista’s WIPS solution to fetch information from the controller for WIPS classification and tracking the location of devices.

Enterprise Security Management (ESM)

Integration with Enterprise Security Management servers enables Arista Cloud to send events and audit logs to Syslog and ArcSight servers, allowing customers to use their existing logging infrastructure to manage Arista events and logs.
## CloudVision-WiFi System Requirements:

<table>
<thead>
<tr>
<th>Feature/Platform</th>
<th>CloudVision Wi-Fi (Cloud Subscription)</th>
<th>CloudVision Wi-Fi (ESXi on-prem)</th>
<th>CloudVision Wi-Fi (KVM on-prem)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supported Browser</strong></td>
<td>Safari, Firefox, Chrome, Microsoft Edge</td>
<td></td>
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<tr>
<td><strong>System Requirements</strong></td>
<td>NA</td>
<td><strong>Upto a 1000 APs</strong> - CPU - <a href="mailto:2vCPUs@2.933Ghz">2vCPUs@2.933Ghz</a> 5866Mhz Reserved RAM - 4096 MB Reserved Hard Disk - 100Gb, Thin Provisioning</td>
<td>2 CPUs RAM - 4096 MB Reserved Hard Disk - 100Gb</td>
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<tr>
<td><strong>Client Journey</strong></td>
<td>✔</td>
<td></td>
<td>✔</td>
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<tr>
<td><strong>Application Visibility and Control</strong></td>
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<td>✔</td>
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<td><strong>WIPS</strong></td>
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<tr>
<td><strong>RCA Engine</strong></td>
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<td><strong>Baselining</strong></td>
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<td>X</td>
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<tr>
<td><strong>Packet Capture/ Troubleshooting</strong></td>
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<td><strong>Network Profiling</strong></td>
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<td></td>
<td>✔</td>
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<tr>
<td><strong>RF Optimization</strong></td>
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<td><strong>Wi-Fi Analytics</strong></td>
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<td><strong>Guest and Captive Portal Management</strong></td>
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<td><strong>Wi-Fi ACLs</strong></td>
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<td><strong>RBAC</strong></td>
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<td>✔</td>
</tr>
<tr>
<td><strong>Automatic Updates and Upgrades</strong></td>
<td>✔</td>
<td></td>
<td>Customer managed</td>
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</table>
SKUs Service and Support

Software support for CloudVision-WiFi is included in the CloudVision software subscription license. Hardware support for the CloudVision Physical Appliance requires a corresponding A-Care service contract. Support for each EOS device managed by CloudVision is covered by standard A-Care offerings for each particular device. For more details on A-Care service offerings across all Arista products, see: [http://www.arista.com/en/service](http://www.arista.com/en/service)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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<tbody>
<tr>
<td>SS-COGWIFI-1M</td>
<td>Cognitive Cloud SW Subscription License for 1-Month for 1 x Wireless Access Point</td>
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<tr>
<td>SS-PREMWIFI-1M</td>
<td>On-premises SW Subscription License for 1-month for 1 x wireless access point. For electronic delivery only; not for sale with DCA-200 appliance</td>
</tr>
<tr>
<td>SS-PREMWIFI-1M-DCA</td>
<td>On-premises SW Subscription License for 1-month for 1 x wireless access point. For sale only with DCA-200 appliance</td>
</tr>
<tr>
<td>SS-PREMWIFI-1M-VM</td>
<td>On-premises SW Subscription License for 1-month for 1 x wireless access point for virtual environment. For electronic delivery only</td>
</tr>
<tr>
<td>DCA-200-CV</td>
<td>1 unit CloudVision Physical Appliance, Model 200 (Includes CVX, CVP and Server). No device licenses.</td>
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