

## CloudVision Highlights

### Cloud Automation for Everyone

Arista CloudVision simplifies complex time and resource intensive tasks in a turnkey software solution designed to help customers move to a more automated, cloud-like infrastructure.

### Multi-Domain Service

Real-time state is streamed from wired and wireless devices from the entire enterprise, from DC to campus to WAN. This state is stored in NetDL®, a state-based, cloud-hosted, network-wide data lake, enabling cognitive analytics as a multi-domain service.

### Network Telemetry & Analytics

CloudVision brings a modern approach to network telemetry and a replacement for legacy polling mechanisms. AVA™, Arista's Autonomous Virtual Assist engine for analytics, takes full advantage of the state streaming infrastructure of EOS and NetDL to give Arista customers an unprecedented level of visibility with a time-series view of the entire network, across data center, campus, public clouds and WAN.

### NetOps Automation

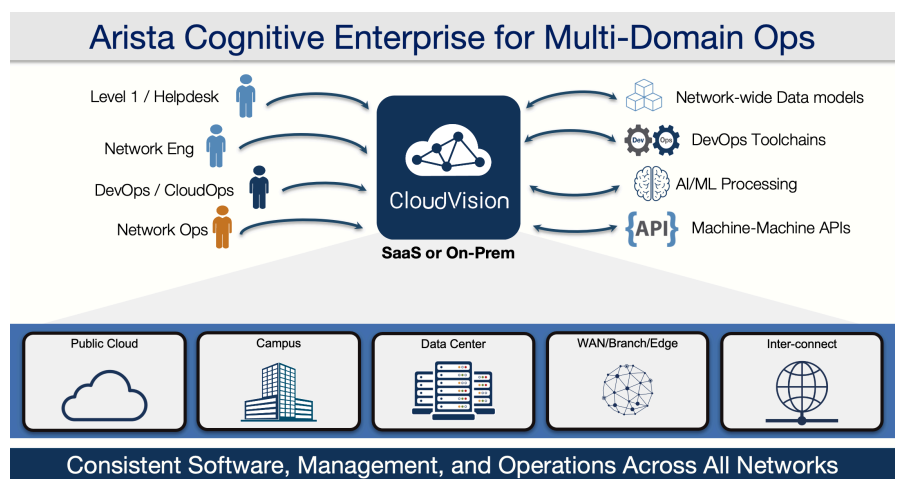
Addressing the spectrum of operator types in NetOps environments, CloudVision includes out-of-the-box, point n' click automated provisioning, through to integration with CI pipelines. All aligned with Arista best practice designs for a consistent experience.

### Open API Integrations

CloudVision is Arista's API gateway for physical network integration with third party services. Integrate with network overlay controllers, DevOps platforms and network services solutions such as Palo Alto Networks, ServiceNow and others. Built on modern REST and gRPC-based APIs, to both simplify and scale network integration.

## Overview

Arista has pioneered the cloud networking movement with its software driven approach, built on cloud principles with consistent, reliable software offering, open standards-based designs, and native programmability. CloudVision® extends the same architectural approach of simplification through software consistency as a multi-domain management plane for automating the entire network, across private, public and hybrid clouds as well as wired and wireless campus and branch environments. CloudVision enables enterprises to gain the benefits of cloud-class automation and telemetry via a turnkey software package. CloudVision is a network-wide approach for cloud networking, including a software suite of capabilities for automated provisioning, compliance, telemetry, analytics and orchestration.

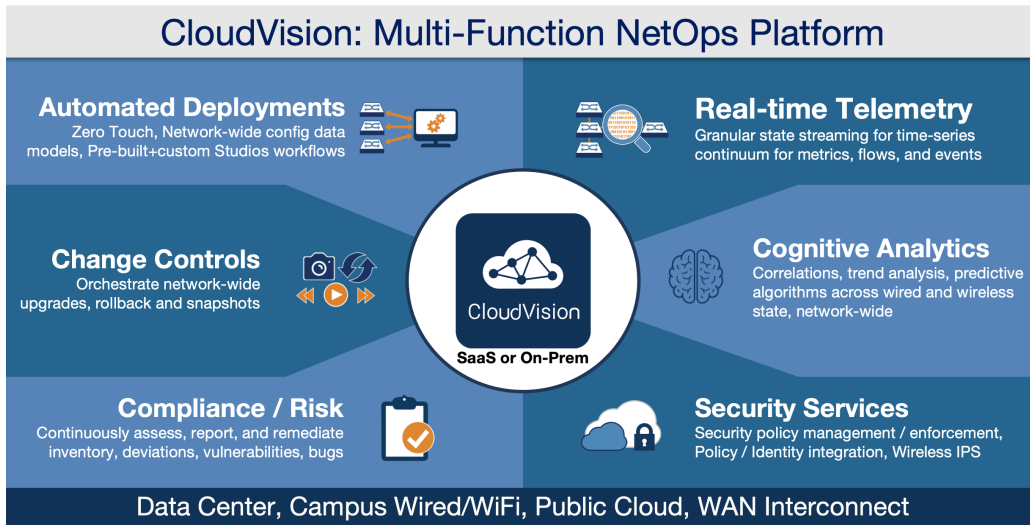


With CloudVision, the physical network continues to operate in a familiar model, following the Universal Cloud Network design principles. The well known control and data plane features continue to be distributed in each physical device. The same command-line (CLI) and APIs are available to the operator.

However, CloudVision enhances the traditional operational model with a centralized network data lake, NetDL, that leverages real-time state-streaming to collect an aggregate view of the physical network state. NetDL is built on a cloud-native architecture leveraging scale-out technologies such as Kubernetes and Hadoop and serves as a basis for cognitive analytics. With NetDL, CloudVision becomes the point of abstraction of, and interface to the physical network enabling enterprise-grade network-wide automation, time-series visibility with state streaming analytics, and 3rd party integrations from a central perspective.

CloudVision can be deployed as a traditional on-premises virtual or physical appliance, or can be consumed as a SaaS-based service, for both wired and wireless. CloudVision as-a-Service is a fully Arista managed software service that runs in the cloud and provides the same functionality as the on-prem offering. The cloud service takes full advantage of CloudVision's cloud-native architecture helping customers achieve faster time-to-value, elastic scaling, and continuous network assurance with a connected support experience in a secure environment.

CloudVision provides the following features and benefits:



### Flow Tracker

- Gain visibility into traffic patterns in the network with real-time streaming of flow records
- Visualize in time series graphs and heat maps for improved capacity planning
- Overlay flow data on topology views, including per-hop latency with Inband Network Telemetry (INT)

### Automated Provisioning

- Operational efficiency gains by moving from a manual box-by-box approach to an automated network-wide operational model
- Reduce time to deploy

### State Streaming Telemetry

- Real-time streaming of complete state across network
- Capture every state change with sub-second granularity
- Built on a standards based gRPC interface
- Addresses the limited scope and lack of granularity of traditional polling mechanisms such as SNMP

### Time Series View of the Network

- Provides a network-wide state database for real-time network state
- Visibility of all network state for live monitoring or forensic troubleshooting with historical state
- Compare network state between points in time or across devices
- Improved visibility of changes within the network compared with traditional log-based approaches

### Analytics

- Notification of network events with correlated metrics or before a network event with predictive analytics
- Big data analytics and machine learning to provide intelligent root cause analysis with metric correlation
- Prevent network outages with anomaly detection and predictive events that can alert users well before the event

### Topology View

- Intuitive network visualization using backend analytics and heuristics
- Detect device types, neighbor relationships and common network layouts
- Overlay real-time network metrics and traffic flows to identify problems in the path with link and device level events

### Network-Wide Search

- Search the network wide database for network elements and end points
- Visibility into historical changes for these network elements thereby reducing time to root cause
- Search results are enhanced with correlated metrics for associated Layer 2 or Layer 3 interfaces

network changes and the likelihood of human-induced errors, with Zero Touch Provisioning and out-of-the-box automation

- Point n' click, guided workflows aligned with best practice network designs
- Integrate into network CI pipelines with Ansible and other tools
- Maintain Single Source of Truth for device configuration and drive network wide change

### Change Control

- Automate network maintenance with a co-ordinated and controlled approach to implementing changes
- Maintain a documented audit trail and ensuring minimal network downtime
- Review and approval stages allow peer review of changes or integration with IT operations management systems like ServiceNow and Remedy
- Automate hitless upgrades across the network to minimize or eliminate planned network downtime
- Network state diff views to quickly assess and diagnose network inconsistencies across change controls

### Compliance Dashboard

- Real-time assessment of exposure to known software defects, security vulnerabilities and life cycle events that affect the install base
- Monitor compliance to configuration and image standards
- Allow users to make informed decisions and manage risk of software upgrade across the network

### Open API Integration

- Simplified approach for integration with third party applications and data sources
- Single point of integration for virtualization, services insertion, network access control and more
- Modern REST and gRPC-based APIs for scripting and integration

## CloudVision Solution

The CloudVision solution is comprised of three components: CloudVision Portal, CloudVision eXchange, and CloudVision CUE (Cognitive Unified Edge). These components provide the platform for both orchestration and automation for wired and wireless networks as follows:

**CloudVision Portal** is a web platform and associated historical database built to automate the workflows for a variety of network provisioning, change management, and monitoring tasks. Available for on-premises deployments (virtual or physical appliance) as well as cloud service delivery with CloudVision as-a-Service.

**CloudVision eXchange** is a EOS-based network-wide multi-function control point providing a single access point for real-time provisioning, orchestration and integration with third party controllers and services.

**CloudVision CUE (Cognitive Unified Edge)** is a centralized management plane that simplifies policy management, provisioning and troubleshooting of WiFi networks while delivering richer telemetry to network administrators. For more details, consult the [CloudVision CUE Datasheet](#).

## CloudVision Portal Features

The following table summarizes the main features of Arista's CloudVision Portal. For more information about the availability of these features by release please refer to <http://www.arista.com/en/products/eos/eos-cloudvision>

### General Platform and Telemetry Features

Feature	Description
User Security	Local and TACACS / RADIUS Authentication and Role-based Authorization Role Based Access Control (RBAC) - Custom role definition for authorization One-time password/Multi-factor Authentication Single sign on integration with OAUTH Providers (Microsoft, Google, Okta, OneLogin, Custom) and SAML Providers (Launchpad, Okta, OneLogin, Custom)
APIs	JSON-based REST and streaming APIs (gRPC)
Device Management	Device inventory Per device logs of all actions taken by CloudVision Device snapshot configuration and scheduling Third party system data source management
Compliance	Configuration and Image compliance for managed devices Bug exposure assessment for managed devices based on operational state of devices, including EOS devices and Arista wireless access points PSIRT assessment for managed devices for security compliance Hardware and Software Lifecycle events for product compliance
Telemetry Views	Real-time state streaming from devices Backend state repository and analytics engine Comparison application for easy comparison of state across devices and historic timeline Real-time analytics for event detection and notification CloudTracer for endpoint reachability monitoring across private, public, and hybrid cloud networks Topology Views, with Metric Layers, visibility for VLAN/VXLAN segments Custom dashboards to monitor metrics network wide with built-in panels for traffic flows, Top K interface graphs and more Flow visibility with sFlow and IPFIX flow records from devices with trend analysis and path visibility in Topology View Inband Network Telemetry based hop-by-hop latency for flow records (on supported EOS platforms) in Topology View Endpoint Inventory for all connected IP endpoints Network-wide search for MAC address and IP address
Partner Integration	Official support for ServiceNow, Remedy, Forescout and Ansible integration. Other technology partner integration details available upon request

## Provisioning Features

Feature	Description
Device Onboarding	Automatic device provisioning via Zero Touch Provisioning (ZTP) for EOS and CloudEOS devices Zero Touch Replacement (ZTR) Cloud-based ZTP as-a-Service**
Configuration Management	Device configuration provisioning via Studios and configlets Built-in guided workflows to provision Arista validated network designs and manage ongoing configuration changes Flexibility to customize built-in workflows or create new and advanced workflows Configlet Builder for config templating and scripting Build, validate and review configuration differences of proposed and running config for devices Config reconcile for source of truth management
Software Management	Repository for Images and Extensions Assign image bundles for initial provisioning across device groups Preload images onto devices prior to upgrading
Change Control	Automated ongoing device configuration change management Flexible change control workflow for task execution with support for snapshots and user defined scriptable actions, and the ability to schedule deployment of changes Review and approve stage to authorize changes with support for Role based access control Automated software upgrades across groups of devices leveraging BGP Maintenance mode, SSU and MLAG health checks for hitless upgrades Change Control Templates to automate repeatable operational run books Network-wide Rollback

\*\* Applicable to CloudVision as-a-Service offering only

## CloudVision eXchange Features

The following table summarizes the main features of Arista's CloudVision eXchange. For more information about the availability of these features by release please refer to <http://www.arista.com/en/products/eos/eos-cloudvision>


Feature	Description
Base Infrastructure	Runs in an EOS VM as a virtual appliance Three node cluster with high availability for production deployments Single node Deployment (Lab use only) Graceful reboot EOS operating environment (CLI, APIs, management features, etc.)
VXLAN and EVPN Services	VXLAN Control Services (VCS) for dynamic control plane learning of VXLAN mapping information CloudVision eXchange Federation across multiple Data Centers using BGP-EVPN
APIs	EOS command line eAPI for EOS
Open Virtual Switch Database (OVSDB) Services	Layer 2 hardware VTEP integration for synchronizing network topology information, MAC to VXLAN endpoints, and VXLAN ID bindings with overlay controllers Layer 3 hardware VTEP integration for logical routing functionality in VXLAN overlay networks
OpenStack Services	Integration with OpenStack via ML2 driver plugin for provisioning of network services (VLAN, VXLAN, etc) for VMs and with OpenStack Ironic to extend network provisioning to bare-metal servers
Macro-Segmentation Services	MSS-Firewall: Dynamically instantiate network services policy in the physical network by integrating with firewall services from Palo Alto and Fortinet
Partner Integration	Container Tracer support for Docker and Kubernetes based containerized environments Official support for VMware NSX and OpenStack integration Other technology partner integration details available upon request


## CloudVision Deployment Models


The following describes the deployment models for CloudVision Portal

CloudVision as-a-Service	Description
Connectivity Requirements	IP connectivity to <a href="http://www.arista.io">www.arista.io</a> (port 443) / <a href="http://apiserver.arista.io">apiserver.arista.io</a> (port 443)
Protocols	Browser over HTTPS gRPC for device connectivity
Supported SSO Providers	OAUTH (Microsoft, Google, Okta, OneLogin, Custom) SAML (Launchpad, Okta, OneLogin, Custom)

CloudVision Virtual Appliance	Description
Hardware Platform Requirements	Please consult the <a href="#">CloudVision Configuration Guide</a> for the latest hardware platform requirements. A 3-node cluster is recommended for production deployments.
Hypervisor Requirements	VMware ESX Linux KVM For supported Hypervisor versions, please refer to the software release notes.
Protocols	Browser over HTTPS Admin shell access over SSH, SCP NTP for time synchronization between nodes gRPC for device connectivity
Software Version Requirements	CloudVision Portal and CloudVision eXchange are deployed as virtual machines on supported hypervisors. For software recommendations, please refer to the software release notes.

CloudVision Physical Appliance	Description
Physical Appliance Platform Specifications for DCA-350E-CV 	CPUs: Two Intel® Xeon® Silver 4316 2.3GHz, 40C/80T DRAM: 128 GB (Eight 16GB RDIMM) Hard Drives: Five 2TB SSD Encrypted Drives (7.6 TB effective) Network Interfaces: Four port 10Gb Ethernet (RJ-45), 1Gb IPMI (RJ-45) Power Supply: Dual, Hot-plug, Redundant 550W Power Supplies (1+1) Power Cord: International, UL/EURO/CCC, C13 - C14, 2M, 18AWG, 1.0MM, 10A/250V Dimensions (HxWxD): 1.68"x17"x25.87" (4.26cm x 43.38cm x 65.70cm) Weight: 38.9 lbs (17.64 kg) Remote management: iDRAC9 Enterprise controller
Physical Appliance Software Version Requirements	DCA-350E-CV supports software applications for CloudVision Portal, CloudVision eXchange and CloudVision CUE. For software recommendations, please refer to the appliance release notes.

CloudVision Physical Appliance	Description
Physical Appliance Platform Specifications for DCA-300-CV 	CPUs: Two Intel® Xeon® Silver 4310 2.1GHz, 24C/48T DRAM: 64 GB (Two 16GB RDIMM) Hard Drives: Four 2TB SSD Drives (5 TB effective) Network Interfaces: Four port 10Gb Ethernet (RJ-45), 1Gb IPMI (RJ-45) Power Supply: Dual, Hot-plug, Redundant 550W Power Supplies (1+1) Power Cord: International, UL/EURO/CCC, C13 - C14, 2M, 18AWG, 1.0MM, 10A/250V Dimensions (HxWxD): 1.68"x17"x25.87" (4.26cm x 43.38cm x 65.70cm) Weight: 38.9 lbs (17.64 kg) Remote management: iDRAC9 Enterprise controller
Physical Appliance Software Version Requirements	DCA-300-CV supports software applications for CloudVision Portal, CloudVision eXchange and CloudVision CUE. For software recommendations, please refer to the appliance release notes.

CloudVision Physical Appliance	Description
Physical Appliance Platform Specifications for DCA-250-CV <sup>E</sup> 	CPUs: Two Intel® Xeon® 10 Core, 2.2 GHz CPUs, 20C/40T DRAM: 64 GB (Two 32GB RDIMM) Hard Drives: Four 2TB SSD Drives (5TB effective) Network Interfaces: Four port 1Gb Ethernet (RJ-45), 1Gb IPMI (RJ-45) Power Supply: Dual, Hot-plug, Redundant 550W Power Supplies (1+1) Power Cord: International, UL/EURO/CCC, C13 - C14, 2M, 18AWG, 1.0MM, 10A/250V Dimensions (HxWxD): 1.68"x17"x25.87" (4.26cm x 43.38cm x 65.70cm) Weight: 38.9 lbs (17.64 kg) Remote management: iDRAC9 Enterprise controller
Physical Appliance Software Version Requirements	DCA-250-CV supports software applications for CloudVision Portal, CloudVision eXchange and CloudVision CUE. For software recommendations, please refer to the appliance release notes.

For recommended releases, please refer to the [Recommended Releases](#) page.

<sup>E</sup> Product is subject to an End of Sale notice

## CloudVision Ordering Information

CloudVision is available as a software subscription via the following feature set offerings:

- A CloudVision license (SKUs starting with 'SS-CV') which includes all available CloudVision functionality
- A CloudVision Lite license (SKUs starting with 'SS-CV-LT') which includes a subset of CloudVision functionality
- A CloudVision license (SKUs starting with 'SS-CVS') for CloudVision as-a-Service, and includes all available functionality
- A CloudVision Lite license (SKUs starting with 'SS-CVS-LT') for CloudVision as-a-Service and includes a subset of functionality

For a complete summary of the Arista EOS licensing information, please see this webpage:

<http://www.arista.com/en/support/product-documentation/eos-feature-licensing>

## License Inclusions

CloudVision Lite	CloudVision
<ul style="list-style-type: none"> <li>• Provisioning: ZTP Service (+ client), Config/SW Mgmt,</li> <li>• Base Studios (Device, Interface, SW Mgmt*, Static Config*), Change Controls</li> <li>• Inventory: Device Inventory, System Info, Endpoint Inventory, Base Topology View</li> <li>• General: CV API access, EOS State-streaming, Settings, EOS/CloudEOS (VM/Container)</li> <li>• CV CUE functionality</li> </ul>	<ul style="list-style-type: none"> <li>• All CloudVision Lite Features</li> <li>• Telemetry: Full Device Views, Metrics Dashboard, Topology Overlays, Comparison App, CLI Snapshots</li> <li>• Compliance Dashboard: Bug, PSIRT, Lifecycle</li> <li>• Expanded Provisioning: Network Fabric Studios, Custom Studios, Quick Actions, Configlet Builders, Change Control Actions</li> <li>• Analytics: Events, Notifications, Device/Endpoint Analyzer*, Flow Tracking, Latency, Search</li> <li>• Multi-Cloud integrations</li> </ul>

\* CloudVision roadmap feature

## Product SKUs

Product Number	On-Premises SKU Options
SS-CV-SWITCH-1M	CloudVision SW Subscription License for 1-Month for 1 Switch. 10G+ Platforms. Delivered via download only.
SS-CV-G-SWITCH-1M	CloudVision SW Subscription License for 1-Month for 1 Switch. 1G Platforms. Delivered via download only.
SS-CV-MOD-G-SWITCH-1M	CloudVision SW Subscription License for 1-Month for 1 Switch. Arista 5 and 8 slot Modular 1G/mG Ethernet Switches. Delivered via download only.
SS-CV-CG-SWITCH-1M	CloudVision SW Subscription License for 1-Month for 1 Switch. 1G/mG Compact Platforms. Includes E, FLX-Lite. Delivered via download only.
SS-CV-LT-SWITCH-1M	CloudVision Lite SW Subscription License for 1-Month for 1 Switch. 10G+ Platforms. Delivered via download only.
SS-CV-LT-G-SWITCH-1M	CloudVision Lite SW Subscription License for 1-Month for 1 Switch. 1G Platforms. Delivered via download only.
SS-CV-LT-MOD-G-SWITCH-1M	CloudVision Lite SW Subscription License for 1-Month for 1 Switch. Arista 5 and 8 slot Modular 1G/mG Ethernet Switches. Delivered via download only.
SS-CV-LT-CG-SWITCH-1M	CloudVision Lite SW Subscription License for 1-Month for 1 Switch. 1G/mG Compact Platforms. Delivered via download only.
SS-CV-SWITCH-LAB-1M	Lab Use Only: CloudVision SW Subscription License for 1-month. Supports management of up to 10 switches. Any Platform.

Product Number	CloudVision Appliance SKU Options
DCA-250-CV <sup>E</sup>	1 unit CloudVision Physical Appliance, Model 250 (Includes CVX , CVP Server). No CV device licenses.
SVC-DCA-250-CV-NBD <sup>E</sup>	1 Month A-Care Software & NBD Hardware Replacement/Same Day Ship for DCA-CV-250 Appliance
DCA-300-CV	1 unit CloudVision Physical Appliance, Model 300 (Includes CVX , CVP Server). No CV device licenses.
SVC-DCA-300-CV-NBD	1 Month A-Care Software & NBD Hardware Replacement/Same Day Ship for DCA-CV-300 Appliance
DCA-350E-CV	1 unit CloudVision Physical Appliance, Model 350 (Includes CVX , CVP Server). No CV device licenses.
SVC-DCA-350E-CV-NBD	1 Month A-Care Software & NBD Hardware Replacement/Same Day Ship for DCA-CV-350E Appliance

Product Number	Cloud Service SKU Options
SS-CVS-SWITCH-1M	CloudVision as-a-Service Subscription Lic for 1-Month for 1 Switch. 10G+ Platforms.
SS-CVS-G-SWITCH-1M	CloudVision as-a-Service Subscription Lic for 1-Month for 1 Switch. 1G/mG Platforms.
SS-CVS-MOD-G-SWITCH-1M	CloudVision as-a-Service Sub License for 1-Month for 1 Switch. Arista 5 and 8 slot Modular 1G/mG Ethernet Switches.
SS-CVS-CG-SWITCH-1M	CloudVision as-a-Service Subscription Lic for 1-Month for 1 Switch. 1G/mG Compact Platforms. Includes E, FLX-Lite.
SS-CVS-LT-SWITCH-1M	CloudVision as-a-Service Lite Subscription Lic for 1-Month for 1 Switch. 10G+ Platforms.
SS-CVS-LT-G-SWITCH-1M	CloudVision as-a-Service Lite Subscription Lic for 1-Month for 1 Switch. 1G/mG Platforms.
SS-CVS-LT-MOD-G-SWITCH-1M	CloudVision as-a-Service Lite Sub License for 1-Month for 1 Switch. Arista 5 and 8 slot Modular 1G/mG Ethernet Switches.
SS-CVS-LT-CG-SWITCH-1M	CloudVision as-a-Service Lite Subscription Lic for 1-Month for 1 Switch. 1G/mG Compact Platforms.
SS-CVS-SWITCH-LAB-1M	Lab Use Only: CloudVision as-a-Service Subscription Lic for 1-Month. Supports management of up to 10 Switches. Any platform. Electronic Delivery Only.
SS-CVSC-CG-SWITCH-1M	CloudVision CUE as-a-Service Subscription Lic for 1-Month for 1 Switch. 1G/mG Compact Platforms.
SS-CVSC-G-SWITCH-1M	CloudVision CUE as-a-Service Subscription Lic for 1-Month for 1 Switch. 1G/mG Fixed Platforms.

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## Service and Support

Software support for CloudVision Virtual Appliance 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>

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