



Cloud video security

with Avigilon Alta Video



MOTOROLA SOLUTIONS

Introduction

The Avigilon Alta Video cloud solution includes some or all of the following components:

- Avigilon Alta Video— the cloud-native video management system. It manages the analytics from all cameras, all the time, and provides operational insights into the activities on your premises. Alta Video is expandable, making it suitable for organizations of all sizes.
- Avigilon Alta cloud cameras with AI-powered analytics and on-board storage.
- Avigilon Alta Cloud Connectors — providing the analytics and storage for your third-party cameras and non-cloud-connected Avigilon Cameras. The Alta Cloud Connectors also provide the communications between these cameras and your Alta Video deployment.

In addition, with the Cloud Connectors, your Alta Video deployment might include:

- Non-cloud-connected Avigilon cameras
- Your existing third-party cameras

With AI-powered, always-on analytics from all your Avigilon and third-party cameras, the simple-to-use cloud-based solution provides intelligent, proactive security and business insights.

Designed to be quick and simple to set up, you can easily add additional cameras or Alta Cloud Connectors to Alta Video as your requirements change.

This white paper explains the structure and components of the Alta Video solution and how this provides a 'single pane of glass' for all your Avigilon and third party cameras.



Alta Video

Being cloud-native, Alta Video allows for simpler installation and maintenance, and reduced outlay on hardware. Simply purchase the Avigilon cloud-native cameras, install them across one or many sites and connect them to Alta Video. With Alta Video, there is usually no need to configure networks or firewalls.

If you have an existing camera infrastructure, incorporate these cameras by installing Alta Cloud Connectors to provide the on-site storage, analytics, and communications for your third-party cameras. Alta Cloud Connectors can also provide the storage and communications for your on-premise Avigilon cameras.

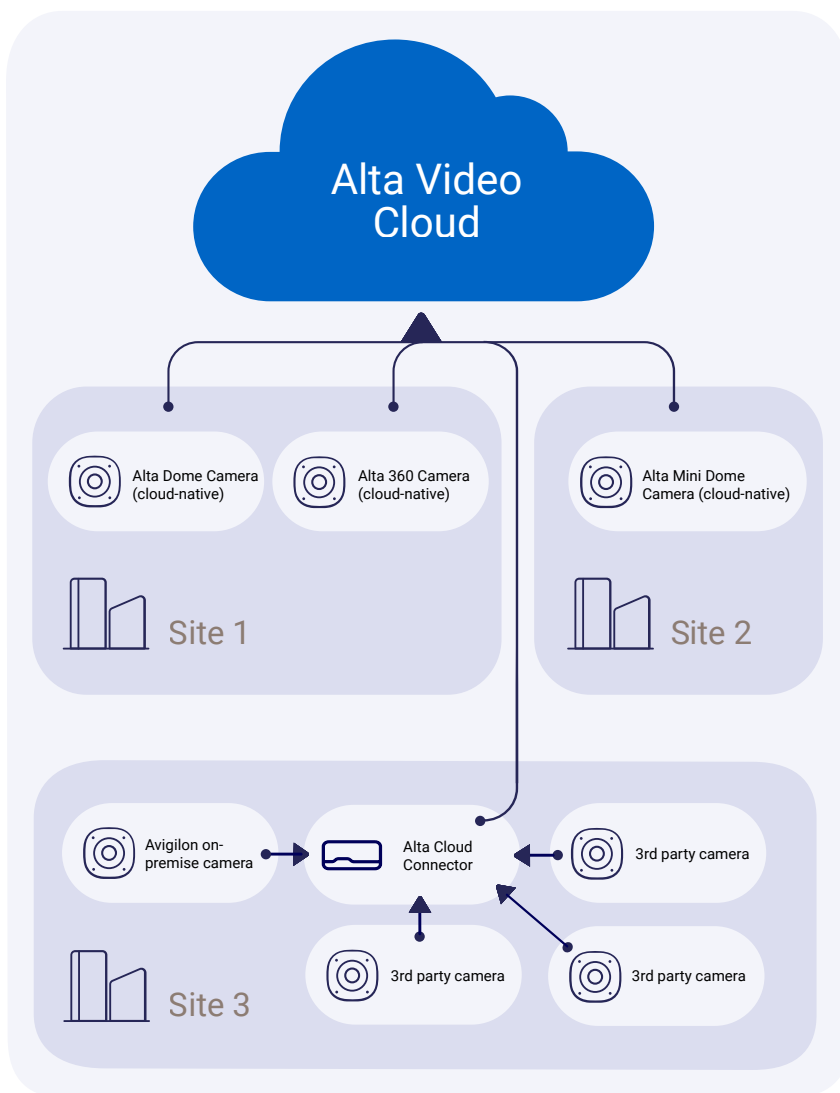


Fig 1: Cloud connections for Avigilon Alta



Avigilon cloud-native cameras

Avigilon Alta has a range of cameras suitable for different situations. From bullet, dome, and 360 IK10 and IP66-rated cameras that are vandal-resistant and suitable for indoor or outdoor use, to multi-sensor and PTZ cameras, and mini-dome, modular and Avigilon Flex cameras that are small-form cameras suitable for indoor use.

The Avigilon Alta H6SL cloud-native cameras are available in bullet and dome configurations and are available with a range of resolutions and storage options.

The Avigilon H5A Multisensor cloud-native cameras are suitable for outdoor use where large areas need to be monitored from a single unit. The Multisensor camera includes options for the resolution and storage and is available with either three or four sensors.

The Avigilon H5A Modular cloud-native camera provides small, discrete sensor units that are unobtrusive, designed for indoor use. Each base unit can have one or two connected imagers, with a choice of imager type, resolutions and storage options.

The Avigilon H6A PTZ cloud-native camera lets you keep track of people and vehicles as they move around your protected areas.

Each Avigilon cloud-native camera contains on-board storage and AI-powered analytics. This removes the requirement for centralized storage and analytics servers that need to be separately purchased, configured, and maintained.

All cameras are designed to be easy to install. Simply scan the QR code on each camera, or enter its Alta key into your Alta Video deployment, and the camera is added – usually without needing to make network configuration changes or to open inbound ports in your firewall.

Once added to Alta Video, all upgrades are automatically managed from the cloud, meaning there is little need for local access to the camera local user interface.

AVIGILON CLOUD-NATIVE CAMERA OPTIONS		
MODEL	MAX. RESOLUTION (MP)	RETENTION OPTIONS (DAYS)*
H6A Dome and Bullet	4/6/8	30/60/120
H6SL Dome and Bullet	2/5	30/60/120/365
H6A Dual Head	6/10/16**	30/60/120
H6 Mini Dome	2/5	30/60/120/365
A5 360	12	30/60
Flex	2	7
H5A Multisensor	9/12/15/20/24/32**	30/60/120
H6A PTZ	2/5	30/60/120
H5A Modular - Right Angle	3	30/60/120
H5A Modular - Micro Bullet	3/5	30/60/120

*Retention time varies depending on resolution.

**Total resolution including all lenses.



Alta Cloud Connectors

Unlike some other Video Security as a Service (VSaaS) providers, Avigilon Alta does not require you to rip out your existing cameras and replace them with new cameras to migrate to the cloud. The Alta Cloud Connectors allow you to link your existing standards-based cameras to your Alta Video deployment. Avigilon Alta supports the use of ONVIF-compliant cameras from a wide range of manufacturers, as well as manufacturer-specific protocols.

The Alta Cloud Connectors perform real-time analytics on the video streams from these third-party cameras, and provide the on-site storage needed by these cameras. The Cloud Connectors also provide the cloud connectivity between the cameras and your Alta Video deployment.

The Cloud Connectors are available in several configuration options so you can choose the ones that best meet your current and future needs. Alta Cloud Connectors can accommodate up to 200 camera streams and feature a scalable architecture that allows additional Cloud Connectors to be added to your network to handle multiple sites, provide high availability or support larger numbers of cameras within a site.

AVIGILON CLOUD CONNECTOR OPTIONS		
MODEL	MAX. CAMERAS	STORAGE OPTIONS (RAW)
A200 Cloud Connector	10	Up to 8TB
A600 Cloud Connector	25	Up to 24TB
A800 Cloud Connector	50	Up to 48TB
A1100 Cloud Connector	75	Up to 64TB
A1500 Cloud Connector	75	Up to 96TB
A2100 Cloud Connector	100	Up to 192TB
A3100 Cloud Connector	200	Up to 256TB

Single view

By adding Alta Cloud Connectors to your network, you can take the feeds from your existing third-party cameras, as well as the feeds from your Avigilon camera without on-board storage and view them with the rest of your Avigilon Alta cameras. You have a single view of all your cameras, irrespective of how they are connected to your Alta Video deployment.

Local display

By including Alta Cloud Connectors in the design of your video security system, you gain the ability to view the feeds from your cameras on-site, even if your connection to the internet drops. This is useful in situations where you want customers, visitors, or staff to be able to see the feeds from your cameras, for example, in the entrances to your retail areas, or from the nurse stations in a care setting. (Not available on all Cloud Connector models, refer to the relevant datasheets for more information.)



Video and audio analytics

Avigilon Alta cloud-native cameras perform video analytics on the camera, allowing access to high-quality data without bandwidth constraints. The cameras detect the presence of people and vehicles and trigger alarms without needing to send video to any external device.

For third-party cameras, the video analytics is performed by the Alta Cloud Connectors, using the same analytics models used by the Avigilon Alta cloud-native cameras.

For Avigilon cameras that include either a microphone or a directional acoustic sensor array or that have the ability to connect a microphone, the audio analytics perceive the camera's sound environment. The built-in audio analytics detects several types of specific sound event – for example, breaking glass, gun shots, screaming, smoke alarms, car alarms, dog barks, tire screeching, ultrasonic panic alarms, and others – as well as audio anomalies such as unusually loud noises – and then triggers alerts within the Alta Video web app and Alta Video mobile apps.

Security

Security is baked into the design of Alta Video, the Avigilon cameras and the Alta Cloud Connectors. Alta Video is always secure, with regular automatic updates of all software components.

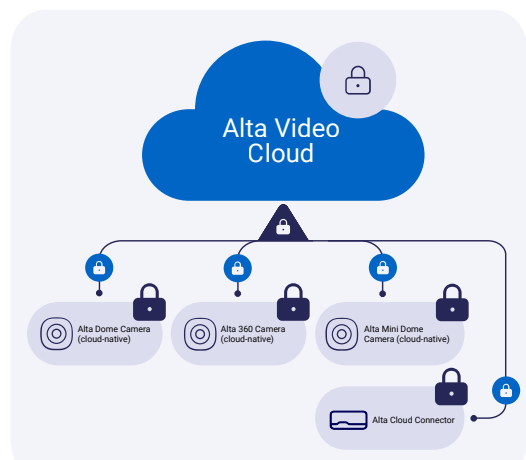


Fig 2: Data secured in transit and at rest

Avigilon cloud-native cameras come with security built in. They are equipped with Trusted Platform Modules (TPM). Each camera and Cloud Connector is provisioned with unique keys and certificates during manufacturing.

The Cloud Connectors and the Avigilon cloud-native cameras connect to Alta Video using TLS connections to ensure all data is encrypted in transit. Where appropriate, this uses the TPM-based keys to authenticate the device to the cloud.

All connections are made outbound from the camera with no inbound connections being required. This means there is no need to open ports in firewalls to make Alta Video deployments work, giving both security and ease of install.

All recordings and metadata are encrypted at rest in both the cloud and the camera. The encryption key is unique to each deployment. This means that any theft of cameras cannot lead to leakage of your stored recordings.

Access to the cloud, to Alta Video and to cameras are all protected via Avigilon Alta's flexible permissions system. Different users can be given access to different features and to different cameras within a deployment allowing for true enterprise-level control.

For each Alta Video deployment, you are in control of who can access the deployment. You can allow or restrict access for Avigilon employees and your Avigilon partners and control the scope of any access that you do grant.

Single sign-on

You can configure your Alta Video deployment for single sign-on using Security Assertion Markup Language (SAML). This enables your Alta Video administrators and operators to log into Alta Video using the same identity provider and authorization credentials as you use for your other corporate cloud services and systems.

Two-factor authentication (2FA)

For additional security and in cases where single sign-on is not available, you can require that your Alta Video users use 2FA when logging into your deployment. Using an additional authentication method at log-in makes access to your critical video management system more secure.



Alta Video architecture

This provides a powerful, modern video management system designed from the outset to be easy to set up, manage, upgrade and use.

The Alta Video cloud services consist of two separate layers. These layers are:

- A centralized set of core services available to all deployments, to provide upgrades, Smart Path™ media routing and the Deployment Management Portal (DMP).
- Multiple ring-fenced Alta Video cloud deployments, each configured specifically for an individual customer.

Smart Path intelligent media routing

Avigilon Alta uses its webRTC-based Smart Path technology to intelligently route the media streams from your Avigilon cloud-native cameras to find the optimal route. This ensures the highest possible video quality is used while also ensuring your network is not over-saturated by unnecessarily high-bandwidth video.

Individual deployments

The cameras and Cloud Connectors connect to your Alta Video deployment. Each deployment is a fully independent instance in the cloud, which means that your deployment is fully isolated and protected from other customers' deployments. It allows you to use the full power of Alta Video – creating the users, permissions and rules that you need – safe in the knowledge that these are not shared with any other deployment.

Since each deployment is separate, you have full control over setting an appropriate maintenance window. This means upgrades can be done when appropriate for you, rather than being forced centrally.

With you in full control of your deployment, access is only granted to your system for the users you set up. Neither Avigilon Alta nor your Avigilon partner has access to your deployment unless you specifically grant access, which you can rescind at any time.

Each Alta Video deployment provides you with a rich experience, with all the tools you need. Due to the expandable architecture, you can add up to 10,000 cameras and 50 Cloud Connectors to your Alta Video cloud video security solution.

To learn more, visit: www.avigilon.com



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