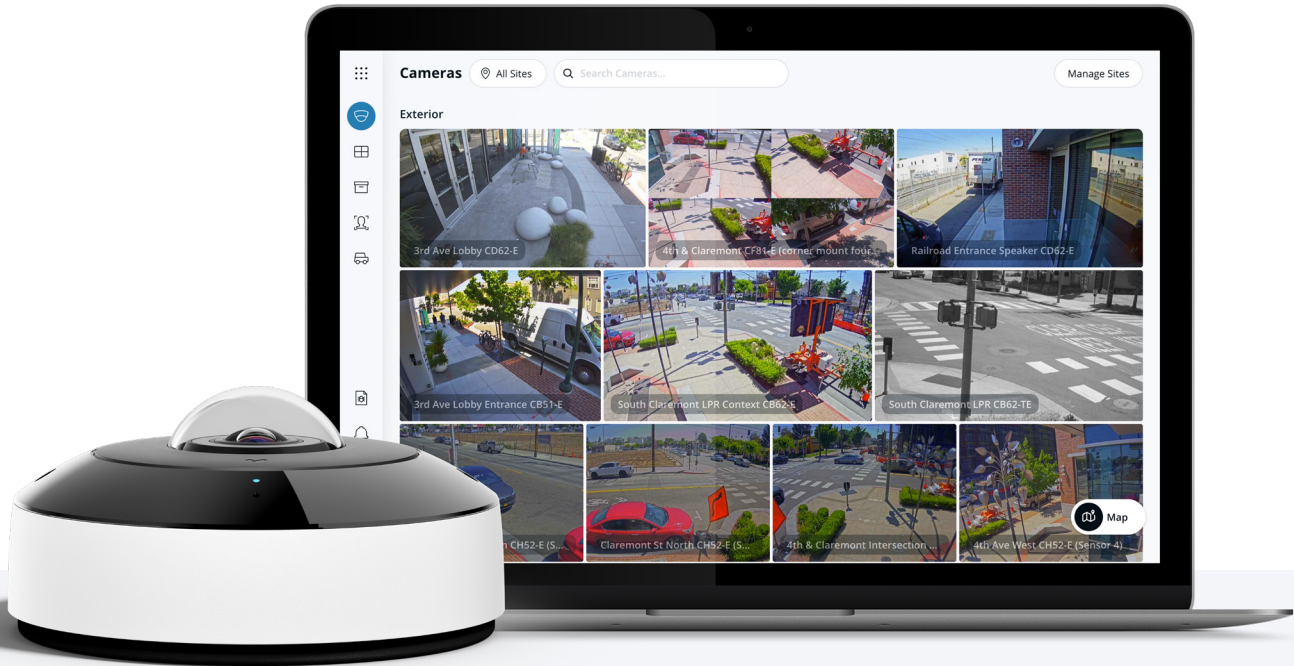


Hybrid cloud video security

Strengthen and simplify
security at scale



Overview

Verkada's line of hybrid cloud security cameras combine powerful edge-based processing with the scale and flexibility of cloud computing. With Verkada's hybrid cloud architecture, cameras analyze events in real-time, and simultaneously leverage Verkada's unique AI and computer vision technology that, collectively, reduce investigation times and deliver proactive monitoring.

All cameras have built-in onboard storage with up to 365 days of continuous recording in standard quality. With Verkada, organizations no longer need to worry about managing and maintaining devices like NVRs. Verkada cameras can self-manage, process, and safely store footage locally on each device, while unlimited cloud-based archiving allows organizations to save and share as much footage as needed.

Available in a wide range of form factors, including indoor and outdoor models, Verkada security cameras work out-of-the-box without any additional downloads or configurations. Users can access events and associated footage from virtually anywhere and from any device. Most importantly, without needing to open port forwards or setup VPNs, all Verkada traffic is automatically protected with data encrypted in transit and at rest.¹ What's more, organizations can leverage [enterprise-controlled encryption](#) for even more robust data protection and control.

1. Data on device is encrypted at rest using AES-128. Data in the cloud is encrypted at rest using AES-256. Data in transit to the cloud is encrypted using TLS 1.2 or greater.



Video security hardware

A wide range of form factors built for any need

Dome Series



- Versatile form factor for indoor and outdoor deployments
- Image resolutions ranging from 3MP-4K
- Up to 365 days of retention in standard quality

Mini Series



- Low-profile form factors for any environment
- Available in 3MP or 5MP image resolution
- Up to 365 days of retention in standard quality

Fisheye Series



- Five viewing modes: Panoramic, PTZ, 2-way split, 3-way split and 4-way split
- High-resolution image quality with up to 12.5MP image resolution
- Up to 120 days of retention in standard quality

Bullet Series



- Available in wide-angle and telephoto lens options
- Available in 5MP and 4K image resolutions
- Up to 365 days of retention in standard quality
- License plate recognition capabilities

Multisensor Series



- Form factors offering two or four independent image sensors from a single install point
- Comprehensive coverage with 5MP or 4K resolution
- Up to 365 days of retention in standard quality

Pan-Tilt-Zoom Series



- Available in 5MP and 4K image resolutions
- Dynamic monitoring with 360° pan and 220° tilt
- Long range visibility with 28-32x optical zoom and 100m / 328ft IR illumination
- Up to 180 days of retention in standard quality

Remote Series



- Built-in LTE provides internet in hard-to-wire locations
- Detailed 4K image resolution
- Up to 120 days of retention in standard quality
- License plate recognition capabilities

Thermal Series



- Capture a 4K visible light feed and thermal feed simultaneously
- Detect people and vehicles at longer distances or in complete darkness
- Configurable temperature alerts
- Live and historical temperature insights



Verkada hybrid cloud benefits overview



No NVR or DVRs

Enterprise-grade onboard storage saves up to 365 days of continuous video¹

Easy to scale

Bandwidth friendly and supports thousands of globally-distributed sites

Centralized management

Modern platform enables secure remote access on any supported browser or device

The reliability of onboard storage, with the accessibility and scalability of the cloud

Lightweight, hassle-free installation

- No NVRs, DVRs, or servers—just a PoE connection
- Cameras come online and configure in minutes without 3rd party plugins, thick clients, or downloads
- No additional software or complexities like port forwarding

Easy to use

- Intuitive UI for streamlined investigations and quick incident resolution
- Provision user accounts to access footage and features without additional training
- Find, download, and share footage from any supported browser or device

Predictable total cost of ownership

- Hardware includes a 10-year warranty²
- New software features are pushed over-the-air, without any additional cost

Scalable across sites

- Onboard storage and processing for reduced bandwidth consumption
- Cloud-based management platform centralizes globally-distributed devices
- Automatic firmware updates keep systems secure, eliminating the need for ongoing maintenance

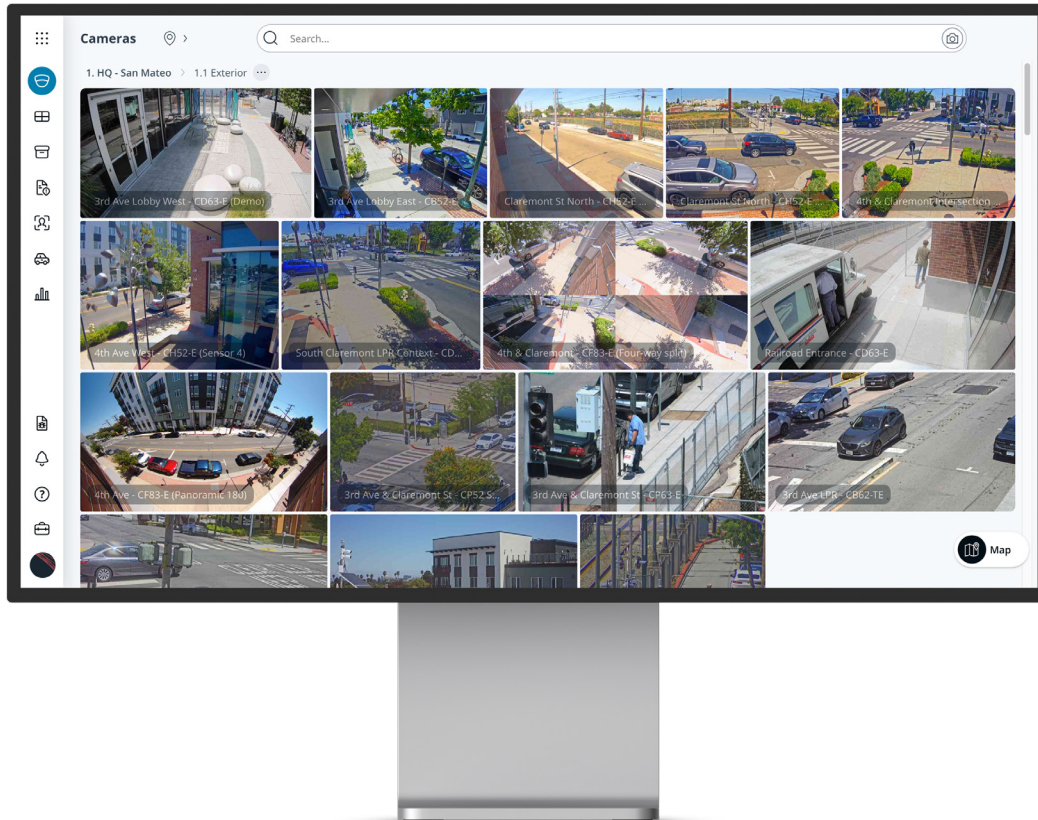
1. All our cameras record in “adaptive quality,” capturing both standard and high quality streams. Standard quality (SQ) video is stored up to the amount of retention specified by the customer. The amount of high quality video stored on the camera will depend on the amount of motion detected by the camera over time. To learn more, visit our website:

<https://docs.verkada.com/docs/adaptive-quality-recording-whitepaper.pdf>

2. Select products come with a 5-year warranty.



Verkada Command: centralized, cloud-based management for distributed deployments



Command, Verkada's cloud-based management software, centralizes management of Verkada devices across globally-distributed sites. Within Command, users can provision new cameras, create and organize sites, manage device settings, access live and historical footage, manage users, and leverage advanced analytics.

Manage from anywhere

- Remotely access footage and manage devices from any supported browser or device
- Leverage the Command mobile app for visibility on the go

Quickly detect and respond to threats

- Stay informed with customizable, intelligent alerts
- Filter people using attribute search and create person of interest (POI) profiles for specific subjects
- Search and filter to find vehicles and license plates of interest

Scale with simplicity

- Add more devices and sites without complicating the user experience
- Leverage granular roles and permissions to manage users at scale
- SAML-based integration with single sign-on (SSO) solutions

Streamline incident management

- Accelerate investigations with intelligent people, face, and vehicle detection
- Consolidate relevant footage to easily review and share with internal and external stakeholders

Keep data secure

- [Enterprise-controlled encryption](#) provides robust data protection, security, and control
- Stay secure with data encrypted in transit and at rest¹
- Receive automatic firmware updates to stay a step ahead of emerging threats

Archive and share over the cloud

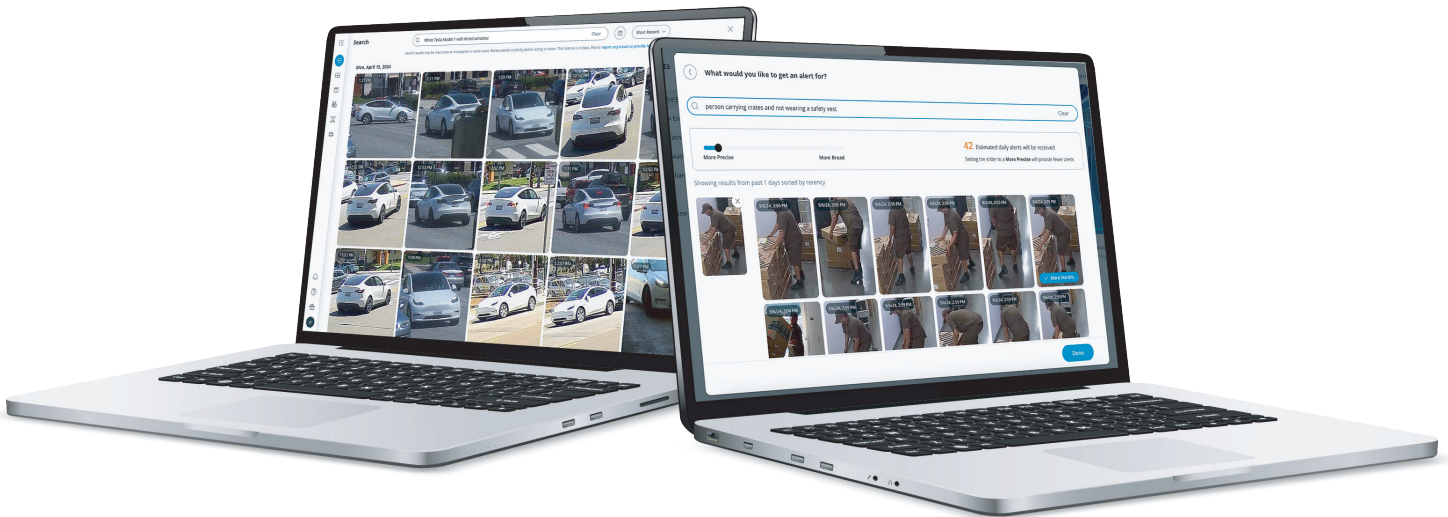
- Command licenses include unlimited cloud archiving and 30-days of cloud backup
- Easily export any footage in MP4 format and allow recipients to verify its authenticity
- Share live links and historical footage with first responders

1. Data on device is encrypted at rest using AES-128. Data in the cloud is encrypted at rest using AES-256. Data in transit to the cloud is encrypted using TLS 1.2 or greater.



Verkada's AI-powered search

Use natural language to conduct investigations and create alerts directly relevant to your organization



Verkada's AI-powered search in Command gives users the ability to search and create real-time alerts for a near-limitless number of attributes of people and vehicles across their organization. With AI-powered search, users can leverage their own words in a freeform search bar or upload a photo to search for a person or vehicle of interest and conduct highly-granular investigations in seconds.

Use everyday language or upload an image to get results in seconds

- Search for specific attributes of people like articles of clothing, hair styles, brands, as well as attributes of vehicles, like tinted windows, text (such as "UPS truck" or "San Mateo School bus"), and bumper stickers, that make investigations more accurate and streamlined.
- Use AI-powered reverse image search to upload a photo of a person, vehicle, or object and retrieve the likeliest set of matches from one's camera fleet.² Use this reverse image analysis to see if non-person and non-vehicle objects were carried, held, worn, or attached to a person or vehicle.³
- Use AI-powered reverse image search to help identify individuals when faces are not fully visible.

Conduct investigations that address different industry-specific use cases by time and location¹

- Better investigate slip-and-fall cases, shoplifting, break-ins, occupational hazards, workplace safety compliance and more, using freeform queries.
- Organize searches by time and location for added specificity and more relevant insights of people and vehicles.
- Use "NOT," "AND," and "OR" in queries to search for multiple identifying attributes or for missing attributes (e.g., "Person driving a forklift and wearing a safety vest, but not a hardhat").

Create proactive alerts in one click using freeform text queries

- Turn queries into action with AI-powered alerts and generate notifications directly relevant to one's security and operational needs.
- Adjust the frequency of alerts with a slider that tailors the accuracy of results.
- Share alerts in real-time and use the "More like this" feature to generate even more specific results from one's queries.

1. Check out our [User Guide](#) for example queries and methods for constructing queries relevant to organizational requirements.

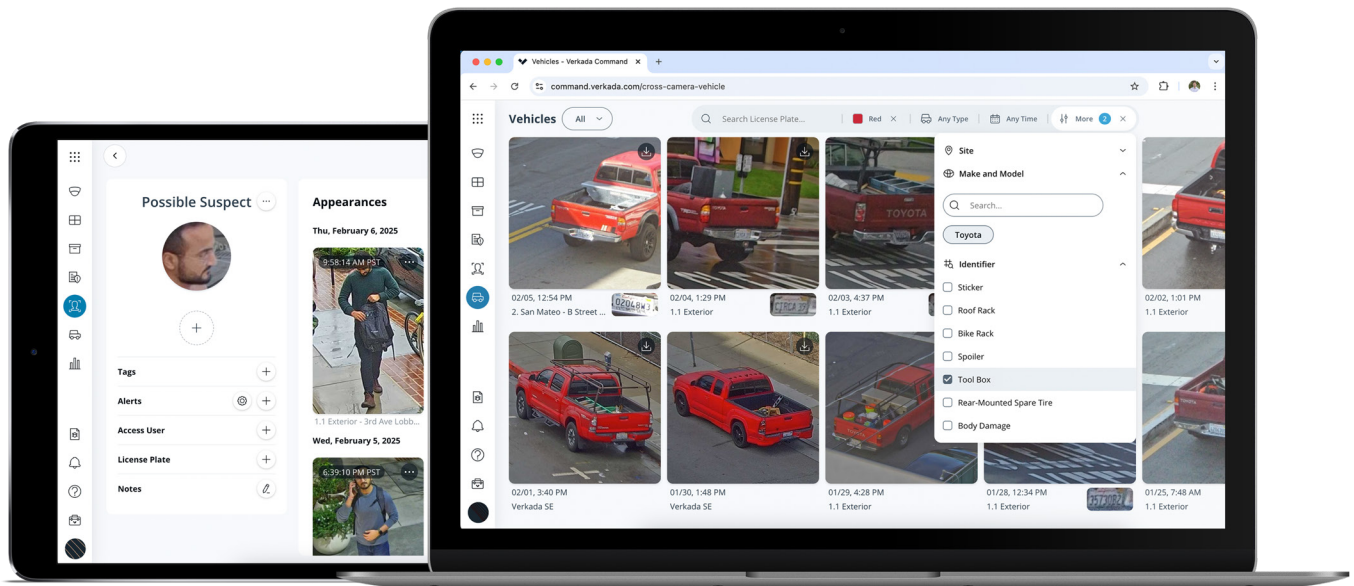
2. AI-powered reverse image analysis pulls multiple aspects of an uploaded image, like shapes, pixels, patterns, and other granular details, then delivers the most reasonable matches from one's footage.

3. Results leverage "hyperzooms," which are highly-detailed segments of a video frame that contain images of a person or a vehicle only, typically the most important parts of an investigation. If an uploaded image does not include a person or vehicle (i.e., a standalone object), results will be directed to "hyperzooms" of people and vehicles that include the object (e.g., if uploading a standalone suitcase, the search will return results of a person holding a suitcase or a suitcase attached to a vehicle).



Verkada's people and vehicle analytics

Simplify investigations with intelligent people, face, and vehicle detection



People and vehicle analytics combine intelligent edge-based video processing with computer vision to give users high-quality, cloud-based images of all individuals and vehicles identified across one's camera fleet. Using these analytics, security teams can filter for specific people or vehicles based on specific attribute descriptions.

Bring intelligence to investigations

Face search

- Quickly surface all appearances of a possible suspect by searching across all cameras for facial matches in a privacy-sensitive way¹

Person and license plate of interest notifications

- Create a person of interest using an uploaded photo or existing face in Command
- Search for and designate specific license plates of interest²
- Set up proactive SMS, email, or push notifications for when a matching person or license plate of interest is detected
- Link people of interest and license plates of interest to create a comprehensive profile of suspects in question

Person and vehicle history

- Browse through high-resolution snapshots of people and vehicles detected
- Click into a snapshot of a suspect and use [AI-powered unified timeline](#) to find all other instances of the individual in question throughout one's fleet

Attribute filters

- Search for people and vehicles using a detailed list of prescribed attribute filters
- Use the vehicle search page to filter footage by vehicle color, type, virtually any make and model, and unique identifiers like noticeable body damage
- Use the people search page to filter footage by clothing color, gender appearance, and the presence of hard hats, safety vests, and other PPE – ideal for ensuring workplace safety

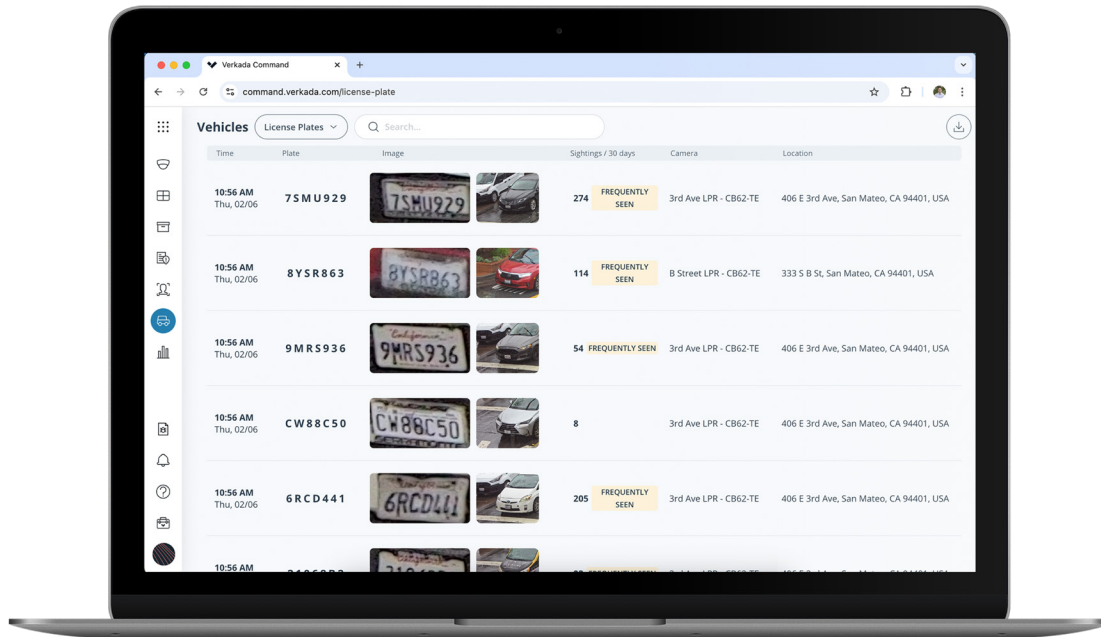
1. At Verkada, we intentionally do not train our people analytics models to identify sensitive characteristics such as race, ethnicity, age, or other demographic information. We also set administrative guardrails around the use of people analytics: it is disabled by default and after opting in, only users authorized by an organization's admin may enable or view analytics on a given device.

2. License plate recognition is only supported on Verkada's Bullet series and Remote series cameras.



License plate recognition

Enhanced vehicle insights with Verkada's powerful LPR camera solution



Verkada's license plate recognition (LPR) solution allows organizations to monitor license plates in real-time and streamline vehicle investigations. The solution uses Verkada's edge-based processing and computer vision technology to capture license plate images and provide users with a readable and searchable list of license plate numbers. These captures are connected to live or recorded video for added context.

Automatic license plate detection

Track fast-moving vehicles and broaden coverage

Capture license plate characters at speeds of up to 80 mph / 128 kph, cover up to three lanes of traffic and identify international or U.S. state-specific license plates – all with high precision and low latency¹

Conduct exhaustive vehicle investigations

Use LPR to reconstruct a map of a vehicles' whereabouts and help security teams pinpoint vehicles of interest across expansive areas, like multiple city blocks

Find license plates even with limited information

Verkada's LPR provides approximate license plate matches even if the inputted characters are incorrect or if the system is unable to detect all characters

Receive custom license plate recognition Alerts

Send alerts via SMS, email, or mobile app to specific individuals or entire teams when designated license plates are detected across LPR-enabled cameras

1. For best results, install cameras as outlined in the [User Guide for License Plate Recognition](#).

Enterprise-controlled encryption (ECE)



Overview

Verkada encrypts video data at rest (i.e., on the user’s device or on Verkada’s cloud servers) and in transit (i.e., as data moves among devices and the cloud). Enterprise-controlled encryption (ECE) builds on this encryption framework by giving customers more control over their data encryption. Leveraging a well-recognized technique called [client-side encryption](#), customers can choose to keep some keys to themselves, share them with Verkada if they need technical support, or with a third party for a variety of reasons, as outlined below. ECE improves on Verkada’s already robust data protection measures—empowering customers with control over their data.

Customers must opt-in and enable ECE for their devices. ECE will not be enabled for customers by default. To opt-in, navigate to “Login & Access” under “Admin” settings. Click on “Enterprise Controlled Encryption (ECE)” and complete all the steps.

An added layer of protection

With ECE, decryption requires access to two keys: one key is on Verkada servers, while the other is stored with the customer’s identity provider (e.g., Okta, Microsoft Entra ID, etc.) Both keys are required to decrypt certain data including most video history, so even if there is a breach at the identity provider or Verkada, the customer’s data remains secure. ECE is, in short, an enhanced, robust security method for data storage and transfer, combining the existing secure decryption step on Verkada’s servers with a second step on the customer’s own devices.

An added layer of protection

ECE puts decryption keys directly in our customers’ hands—allowing them to selectively share access on an as-needed basis. This flexibility allows customers to leverage the expertise of specialized services or comply with legal requirements, while maintaining control over their data.¹ ECE allows the customer to decide who gets access to data, for how long, and to what extent.

1. Using ECE, a customer might wish to share its decryption keys with third parties for a number of reasons. A customer can allow a cybersecurity firm to conduct a safety audit to analyze video data without having permanent device access. During a time-sensitive investigation, a customer can additionally provide specific keys to law enforcement to grant access to relevant footage without exposing their entire video archive. A customer can, moreover, use a transcoding service to change the format of video or employ translation services and grant the service provider limited, task-specific access to data.



Gain insights into how spaces are used with occupancy trends

Verkada's smart trends page offers powerful widgets that give organizations insight into how their physical space is used. Organizations can use the occupancy trends widget to aggregate data across multiple camera feeds, providing a comprehensive view of foot and vehicle traffic patterns throughout an area.

The occupancy trends widget allows organizations to:

- Analyze real-time and historical occupancy data for both people and vehicles.
- Monitor trends over various timeframes (daily, weekly, monthly, or a custom date range).
- Identify peak and average occupancy and underutilized areas for both foot and vehicle traffic.

Actionable insights to inform key operational decisions

Use Verkada's occupancy trends widget to boost efficiency and gain actionable insights in key areas across an organization:

- **Staffing optimization**
Allocate staff based on real-time occupancy needs, considering both foot and vehicle traffic patterns.
- **Inventory management**
Anticipate demand and optimize inventory levels based on traffic patterns in storage areas and loading zones.
- **Energy efficiency**
Identify underutilized spaces for potential HVAC adjustments based on combined foot and vehicle traffic.
- **Improved traffic flow**
Analyze vehicle traffic patterns to identify bottlenecks and congestion points, optimizing traffic flow through signage or delivery schedule adjustments.

Operational benefits across diverse industries



Retail: Optimize product placement, predict peak traffic periods (foot and vehicle), and analyze sales conversion rates.



Manufacturing: Improve production line workflows, identify bottlenecks, and optimize warehouse safety by monitoring foot and vehicle traffic patterns.



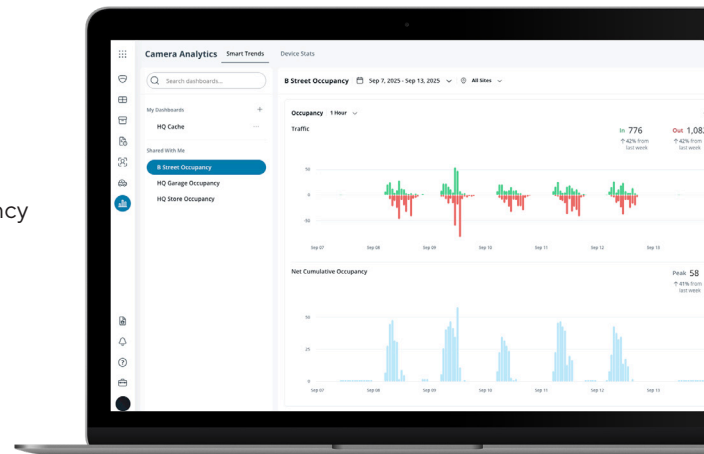
Healthcare: Enhance patient experience by proactively allocating resources based on real-time space usage, including foot traffic, ambulance arrivals, and parking lot activity.



Education: Support student safety and optimize class scheduling by understanding student movement patterns, foot and vehicle traffic around drop-off and pick-up zones.



Real Estate: Dynamically adjust HVAC usage based on foot traffic in a building, repurpose underutilized spaces, and make data-driven space planning decisions.



Customization and collaboration

The occupancy trends widget can be customized to an organization's specific needs. It is also easy to enable other individuals in an organization to view the same dashboard—facilitating easy collaboration among building managers, EHS officers, and frontline staff.

Maximizing value with two key views¹

1. Traffic

The "Traffic" section shows the number of subjects entering and exiting the designated space over a specified time period (e.g., day, week, month, or a custom range). Bar graph data can be displayed in 1 day, 1 hour, and 15 minute increments, or users can opt to view the hourly average across the selected time period. This dashboard also displays a percentage change indicating the change in movements relative to the previous time interval.

2. Net Cumulative Occupancy

The "Net Cumulative Occupancy" section subtracts the number of subjects exiting the space from the number of subjects entering the space to estimate total occupancy at a given point in time. By default, this number resets to zero at midnight local time, but organizations can customize this setting. Like the "Traffic" section, data can be displayed in 1 day, 1 hour, and 15 minute increments, or users can opt to view the hourly average across the selected time period. This dashboard also displays a percentage change indicating the change in peak occupancy relative to the previous time interval.

1. For details on how to create and interpret occupancy trends widgets, read our camera analytics overview [here](#).