SIGHTLOGIX®

ENTERPRISE SECURITY SYSTEM GUIDE

For SightSensor NS, TC and HD

Set-Up Videos and Resources:

http://www.sightlogix.com/getting-started/

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About this Guide

This guide contains advanced settings for using the SightLogix® Enterprise Security System to detect intrusions. It is intended to provide a reference for users who will be managing SightSensor® cameras and SightTracker™ PTZ controllers.

For step-by-step instructions for installing SightLogix cameras and configuring basic video analytic rules and security policies, refer to the *SightLogix Installation Guide*.

All installers are encouraged to use the SightLogix Support Portal where you will find documentation videos, third-party integrations, and troubleshooting: http://portal.sightlogix.com/help/getting-started.

If you need to reach Customer Support, contact SightLogix at +1 609.951.0008 option 2 or support@sightlogix.com.

Chapter 1, "Introduction," is a general description of the features, capabilities, and architecture of the SightLogix devices. It also introduces the interface screens of the SightMonitor. Read this chapter for an overview of the system.

Chapter 2, "Setting Alarm Policies," describes the alarm policy options available for controlling when alarms are generated and what areas of the camera view can generate alarms.

Chapter 3, "Advanced Configuration," describes administrative functions for advanced calibration, monitoring cameras, changing video transmission settings, controlling the tracking and stabilizer functions, and addressing performance issues.

Chapter 4, "Setting up SightTrackers with PTZ Cameras," describes how to set up SightTrackers to automatically track targets identified by SightSensors.

Chapter 5, "Troubleshooting," suggests solutions to problems that can occur.

The Appendix includes additional information not covered in the SightSensor Installation Guide.

Contents

Introduction

The SightLogix Enterprise Security System detects and flags security intrusions at outdoor sites. In addition to detecting targets, the system can be calibrated to return a target's GPS coordinates, allowing security personnel to immediately and accurately identify a target's exact location.

Targets—objects that violate a site's alarm policies—are overlaid on an aerial image of a site to visually show their location and accurately represent the detection zones of SightLogix devices.

Two Smart Video Devices

The SightLogix Enterprise Security System comprises two intelligent video devices:

> **SightSensors** are smart thermal cameras with built-in processing that analyze video to detect objects that violate a site's alarm policies. A high-powered video processing board sits inside the camera housing to both digitize and analyze video in real time, while also stabilizing the video to ensure a clear, stable image. Equally important, stabilization reduces the number of alarms by removing camera movement as a factor in detected motions.

> SightSensor NS uses a thermal imager to detect intruders and presents video as black and white thermal images.

> SightSensor HD is a price-leading dual-stream camera that uses thermal to detect and presents HD color video for alarm assessment.

> SightSensor TC is a dual-stream camera for critical sites that uses thermal to detect and presents HD color video for alarm assessment.

> **SightTrackers** enable dome or PTZ cameras to automatically zoom and track a target identified by a SightSensor, providing immediate, close-up inspection of detected targets. SightTrackers receive GPS coordinates and other tracking information directly from SightSensors and convert this information to pan/tilt/zoom settings.

The system is highly configurable for the requirements of individual sites. Alarm policies specify exactly when and where alarms are generated, and the types of objects that can trigger alarms. Video bandwidth can be customized for a site's network capacity.

Both the initial setup and any system expansion are designed to be as easy for small sites of one or two cameras as for large sites with hundreds of cameras. Because all video processing is done at the devices, which are located at the edge of the network, installation is a relatively straightforward procedure of adding devices, connecting to a power source, making network connections, and connecting to a camera. Video is then immediately available for viewing.

SightLogix Architecture

The SightLogix software adheres to the server-client architecture and consists of a single Coordination System (CS) server and one or more SightMonitor clients.

The CS server assigns each tracked object a unique ID and maintains configuration, calibration, and policy information in a database. Backing up this database ensures an easy and fast recovery if needed. Cameras also keep a copy of their settings in permanent storage. Cameras can be removed from the system and added back with all settings preserved.

The SightMonitor client is the graphical interface to the server. It displays target and camera information maintained by the server and it presents a series of user-input screens for calibrating and making configuration changes, such as setting up alarm policies or adjusting the video settings.

One CS server must be installed on the network. Multiple SightMonitor clients can be installed to allow users to view the SightMonitor from anywhere on the network.

Multiple sites can be managed simultaneously from a central server, with security personnel able to switch between sites and administrators able to add, configure, calibrate, and monitor cameras remotely using client software from any PC connected to the network.
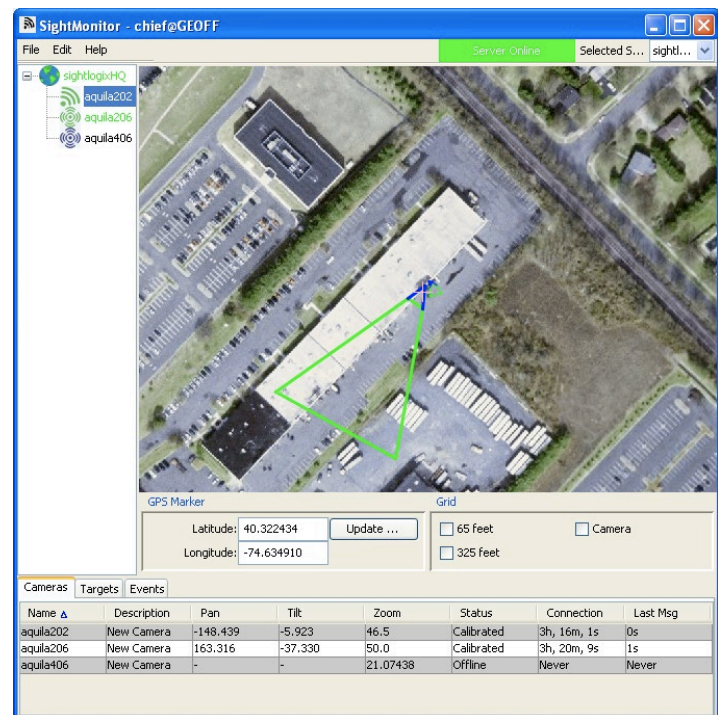
SightLogix devices—SightSensors and SightTrackers—sit at the network edge, relaying video and alarm information to the video management system (VMS). Alarm information is sent directly from SightSensors to SightTrackers. Since SightTrackers receive information directly

(and not from the Coordination System), there is no single point of failure and PTZ tracking occurs even if the Coordination System is down.

⚠ **Note**

For SightLogix devices to work harmoniously with each other and the CS server, all devices must have an accurate time source. For this reason, all devices must be configured with an NTP (Network Time Protocol) server.

Figure 1.1

Video from a SightLogix device is transmitted to a video management system, and transmits target/camera information to the CS for display in the SightMonitor.

Multiple sites can be monitored and managed from a central location

SightTrackers receive target GPS and other information directly from SightSensors

Video from SightLogix devices is transmitted directly over standard IP networks to the site's Video Management System (VMS)

SightTracker

SightSensor

IP Network

	Video
	Target status
	Device configuration & status

SightMonitor with site map and dialogs for calibrating and changing settings

VMS for viewing video

The CS server and client may reside on the same machine or on different machines. Multiple clients can be installed anywhere on the network

CS Server

Parameter change requests, device and target status

SightMonitor client

Overview of the Interface

Video from SightSensors is displayed in your site's video management system (VMS). Target and camera information is displayed visually within the SightMonitor client, which includes an intuitive site map for graphically showing devices and targets in the correct geographic locations. The SightMonitor and your VMS normally run as separate applications on side-by-side monitors.

Once installed according to the steps outlined in the *SightLogix Installation Guide*, start the SightMonitor by selecting Start→All Programs→SightLogix→SightMonitor.
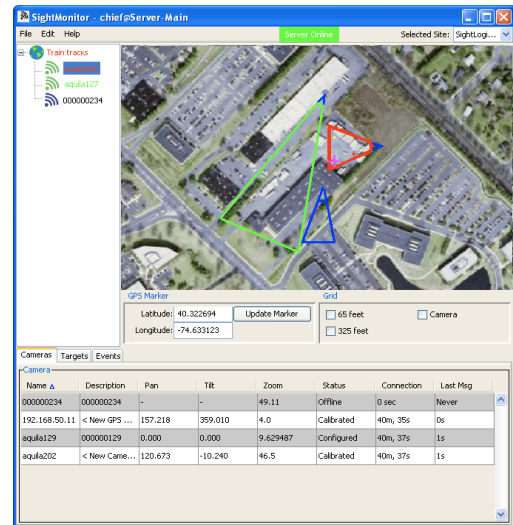
Video management system functions

Video viewing and alarm management

> View video, with targets identified
> View and replay current alarms
> Acknowledge alarms
> View archived video

SightMonitor functions

Configuration and situational awareness

> View targets in correct geographic location
> Visually monitor camera and target status
> Acknowledge warnings and severe events
> Access detailed camera, target, and system event information
> Set alarm policies
> Configure video transmission and other settings (such as video overlays)

About the SightMonitor

Camera and target information returned by the SightSensors is displayed in the SightMonitor client, which consists of the site map and the status tabs containing detailed information about each camera, target, and system event.

The site map is an aerial view that visually depicts the location and status of devices and targets within a geographic context. Double-click anywhere on the site map for GPS coordinates of any ground location (the system must be calibrated for this feature).

Cone-shaped detection zones, which represent the area of reliable detection for a human-size target for each camera, accurately reflect the zoom setting of a camera and thus its true field of view. If larger objects such as vehicles or watercraft are being tracked detection ranges will be proportionally greater.

Grids can be superimposed on the site image or within the camera cone to help measure distances. The grids show distances in increments of 20 or 100 meters (or 65 and 325 feet). A separate camera grid can be overlaid within the camera's concentric cones to measure distances relative to the camera.

Turn on one or more grids by selecting the appropriate checkboxes.

Lockdown	SightTrackers Frozen	Server Online

Status bar updates when lockdown is enabled (see page 26) or SightTrackers are frozen.

SightMonitor - chief@Server-Main

File   Edit   Help   Server Online   Selected Site: SightLogi...

Select site

Camera tree

SightLogix HQ
- GPS Dome
- aquila115
- aquila202

Train tracks
- aquila208
- aquila127
- 000000234

SightSensor

SightSensor HD

SightTracker (dome)

Target status

— Alarmed

● Being tracked only*

Double-click to obtain GPS coordinates

Cones reflect field of view and area of reliable detection (based on a human-size target); color indicates alarm status.

Site map navigation:

Zoom in/out
Use mouse roller ball or press +/-

Move within map
Press arrow keys
Or left click and drag.

GPS Marker

Latitude: 40.322694   Update Marker
Longitude: -74.633123

Grid
☐ 65 feet   ☐ Camera
☐ 325 feet

No alarms

At least one target in alarm zone

Offline

Not calibrated

Blue areas depict blind areas.

Cameras | Targets | Events

Camera

Name △	Description	Pan	Tilt	Zoom	Status	Connection	Last Msg
000000234	000000234	-	-	49.11	Offline	0 sec	Never
192.168.50.11	< New GPS ...	157.218	359.010	4.0	Calibrated	40m, 35s	0s
aquila129	000000129	0.000	0.000	9.629487	Configured	40m, 37s	1s
aquila202	< New Came...	120.673	-10.240	46.5	Calibrated	40m, 37s	1s

Cameras | **Targets** | Events

Target

Id	Camera	Policy	Rule	Detected
24167	aquila234	Default		00:00:00:06
24166				
24168				

Cameras | Targets | **Events**

Time ▽	Type	Category	State	Source
2008-03-13 11:57:29	Boot Slot Mismatch	Warning	Unacknowledged	aquila202
2008-02-29 15:07:07	Vital Alarm Trigger	Warning	Acknowledged	Camera ID 13
2008-02-29 15:07:07	Vital Alarm Trigger	Warning	Acknowledged	Camera ID 13
2008-02-29 15:07:07	Camera Configuration Mis...	Severe	Acknowledged	Camera ID 13
2008-02-29 15:07:04	Camera Configuration Mis...	Severe	Acknowledged	Camera ID 13

☑ Show Warnings   Selected Event
☐ Show Info   The camera value for the CameraDescription property does not match.   Ack   Ack All

Cameras tab

Targets tab

Events tab

Always acknowledge warnings and severe events

Camera status

Calibrated

Configured but not calibrated

Connected

Offline

Managed from a different server

Description: **New Camera**
Serial Number: **000000206**
IP Address: **192.168.50.206**
Latitude: **40.32305**
Longitude: **-74.63435**
Altitude: **4.00**
Monitor-Mode: Owner
Associated Serial Numbers:
000000406

Rolling over a camera icon reveals GPS coordinates, description name, and the Coordination System server that manages the camera.

SightLogix HQ
- GPS Dome
- aquila115
- aquila202

Train tracks
- aquila208
- aquila127
- 000000234

Selected device. Footprint of selected device is shown in a heavy outline. Device and site names are shown with red text when there is an alarm. Black text denotes offline cameras.

*To track only alarmed objects, unselect the Report Nonalarmed objects on the Sites dialog.

The Cameras tab lists camera-related information such as the status and camera type:

Name ▲	Description	Pan	Tilt	Zoom	Status	Connection	Last Msg
aquila202	New Camera	-148.439	-5.923	46.5	Calibrated	3h, 16m, 1s	0s
aquila206	New Camera	163.316	-37.330	50.0	Calibrated	3h, 20m, 9s	1s
aquila406	New Camera	-	-	21.07438	Offline	Never	Never

The Targets tab lists targets for five seconds after they were last tracked. This list can be sorted by clicking on a column head (Ctrl and click again for a secondary sorting). To sort by age, click at the top of the Detected column.

Alarm zone reporting the alarm.

Length of time object was tracked (DD:HH:MM:SS).

Id	Camera	Policy	Rule	Detected
24167	aquila234	Default		00:00:00:06
24166	aquila192	Default		00:00:00:18
24168	aquila234	Default		00:00:00:06

Red text is for alarmed objects, and black is for nonalarmed or ignored objects (objects originating within an ignore zone).

The Events tab lists system- and camera-related events, including both simple information-only messages (such as when the system is upgraded) as well as warnings and severe events that indicate the system is not working. Information-only and warning messages can be separately turned on or off.

Warnings may require maintenance; they include events such as low pressure or high temperatures, power supply problems, etc. Severe events, which can include communication failures between the Coordination System and devices, should be reported to SightLogix support.

Warnings and severe events should always be acknowledged. If more than 1000 events accumulate, early events will be automatically deleted to make room for recent ones. (Information-only events are automatically acknowledged.) Alarms are acknowledged at the VMS.

Flashing red indicates warnings or severe events.

Time ▽	Type	Category	State	Source
2008-03-13 11:57:29	Boot Slot Mismatch	Warning	Unacknowledged	aquila202
2008-02-29 15:07:07	Vital Alarm Trigger	Warning	Acknowledged	Camera ID 13
2008-02-29 15:07:07	Vital Alarm Trigger	Warning	Acknowledged	Camera ID 13
2008-02-29 15:07:07	Camera Configuration Mis...	Severe	Acknowledged	Camera ID 13
2008-02-29 15:07:04	Camera Configuration Mis...	Severe	Acknowledged	Camera ID 13

☑ Show Warnings
☐ Show Info

Selected Event

The camera value for the CameraDescription property does not match.

Ack   Ack All

Warnings

Severe events

Provides additional information.

Audio alerts

Audio alerts are supported for two severe events.

> > Network Connection Lost (all SightLogix devices)
> > One or more SightLogix devices lost the network connection. (The alarm will continue until acknowledged even if the connection is restored.)

> > Breach Enclosure (SightSensor and SightTracker only)
> > The device housing has been opened.

An audio alert repeats every 30 seconds until acknowledged. To disable audio alerts for SightSensors, de-select Enable Event Audio in the Camera dialog (for SightTrackers, the option is on the PTZ tab).

About alarms

Devices generate an alarm upon detecting a target that violates an alarm policy or, in the case of SightTrackers, when they automatically follow a target. Alarm information is immediately reflected in the SightMonitor's site map and relayed to the VMS program, where the security officer can acknowledge the alarm, view the video, and take the appropriate action.

By default, an alarm is reported per alarm condition. Thus multiple objects can trigger a single alarm. However, you can specify that alarms be generated per target (rather than per alarm condition).

The way in which alarms are reported is controlled by the *Alarm Report* option in the Sites dialog (see page 35). The default is Alarm, which generates an alarm per alarm condition; select the Target option to generate a motion level per target.

Messages from an event server are reported when the first alarmed target is tracked (Motion on event), and when the last alarmed target leaves the scene (Motion off event).

Note that the SightMonitor's targets tab provides information for each target.

Accessing and saving configuration settings

Configuration and accessing information about the site or a SightLogix device can usually be done through a right-click menu. Right-clicking a device icon opens a menu of configuration options. Right-clicking within the site map opens a menu for adding devices, editing the site, and editing the site's configuration *template*.

The template stores a site's configuration preferences. The template is applied to each new device you add so you don't have to individually enter common settings for each device. You can also apply parameter changes to an entire site using the template's Apply All function.

All system information is contained in a database. When you enter new information into a dialog box (such as when calibrating a device or editing an alarm policy), the information may change in the dialog but it is not entered into the database (or take effect) until you click OK or Save, depending on the dialog box.

Note: On dialog boxes with a Save button, selecting another tab exits the current tab page without saving changes.

Setting Alarm Policies

This chapter provides information about creating advanced video analytic alarm policies. For general information about creating rules and policies, refer to the *SightSensor Installation Guide*.

⚠️ **Note**

You can find helpful video tutorials for creating policies at
http://portal.sightlogix.com/help/video-tutorials

Before SightSensor devices will report a motion alarm, they must be configured with an Alarm Policy. You set the system to be more selective as to when alarms occur. For example, you may not want alarms generated during working hours, for objects that are only moving within a zone, or you may want only certain objects—differentiated by speed, size, or heading—to generate alarms.

You control alarm generation through *zones* and *alarm policies*. A zone is a specific area of the camera view that you define and specify whether or not it can generate alarms or even track objects. Three types of zones are supported: alarm zones where moving objects can generate alarms, mask zones where all movement is ignored, and ignore zones where objects originating in the zone are not tracked (though currently tracked objects are). For more about each alarm zone, see the next page.

An alarm policy is an alarm zone together with a set of rules that dictate the conditions under which alarms within that zone occur, or do not occur. These rules allow you to do the following:

> Specify the hours of the day or days of the week when alarms can occur. For example, you might set up a time range that is in effect only during nonworking hours, such as between 7:00 pm and 6:00 am on weekdays, but all 24 hours on the weekends.

> Designate the alarm zone to be a tripwire so only those objects that enter or exit a zone (or do both) generate alarms. Thus objects simply moving within the zone would not generate an alarm.

> Specify that an alarm be generated only if the target was tracked previously in a specified zone (called a *from-zone*).

> Specify that only certain types of objects can trigger an alarm. You specify objects by size, speed, direction, or shape (aspect ratio).

Each alarm zone can have multiple rules. For example, you can define one set of rules for a specific time range (such as working hours) and a different set for off hours.

⚠ **Important:**

Any restrictions imposed by time ranges can be temporarily removed in a lockdown situation by right-clicking in the site map and selecting Lockdown. See 27 for information about the lockdown feature.

Alarm, mask, and ignore zones

Three zone types are supported:

> An alarm zone is an area that can generate an alarm. Any sensitive areas that you wish to secure should be included in an alarm zone.

> A mask zone is an area in which no motion detection or tracking occurs. This zone type is useful for excluding areas prone to nuisance alarms, such as large tree branches that occasionally move, areas where birds congregate, or roadways with traffic.

> An ignore zone also does not generate alarms, nor does it track objects that *originate* in the zone; however, an ignore zone, unlike a mask zone, continues to track objects that are already being tracked, such as those that move from alarm zones or undefined areas into the ignore zone.

In non-defined areas—those areas not included in zones—objects are tracked but do not generate alarms.

Tracked objects are represented in the site map: targets in alarm zones are shown in red, and tracked objects outside an alarm zone (those in undefined areas as well as tracked objects that have moved into an ignore zone) are shown in yellow. (To track only alarmed objects, unselect the Report Nonalarmed objects on the Sites dialog.) Targets in masked zones are never represented.
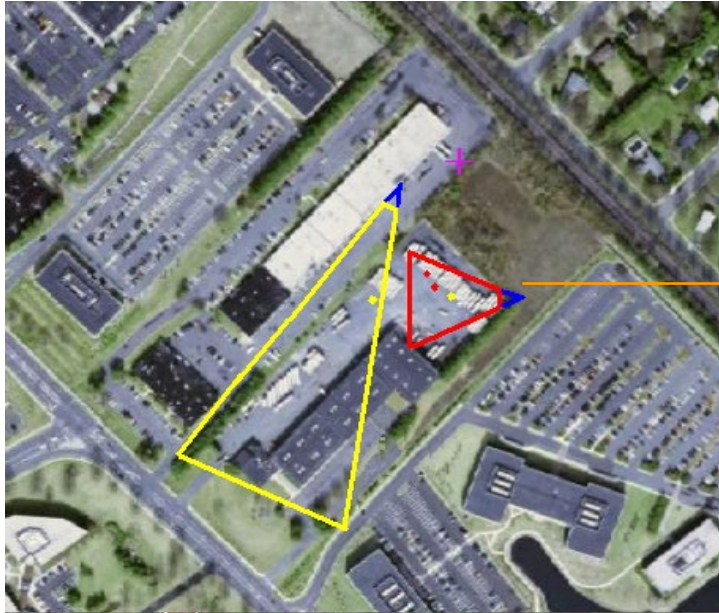
Targets in alarm zone.
The camera footprint is outlined in red if at least one target is in an alarm zone. Individual targets are shown in red if alarmed, or in yellow if not alarmed.

Mask zones are especially helpful when objects in different zones overlap or are in such close proximity that they can be interpreted by the system as being one object. In this example, where the pedestrian and orange vehicle appear to touch, the system may interpret the two as a single object and then track the vehicle as it moves forward, even though it is not in (or never was in) an alarm zone. (When they separate, they will become two different objects once again).

For this reason, it can be helpful to define a mask zone for the for the distant region. In the following example, defining the roadway as a mask zone prevents vehicles from being tracked.
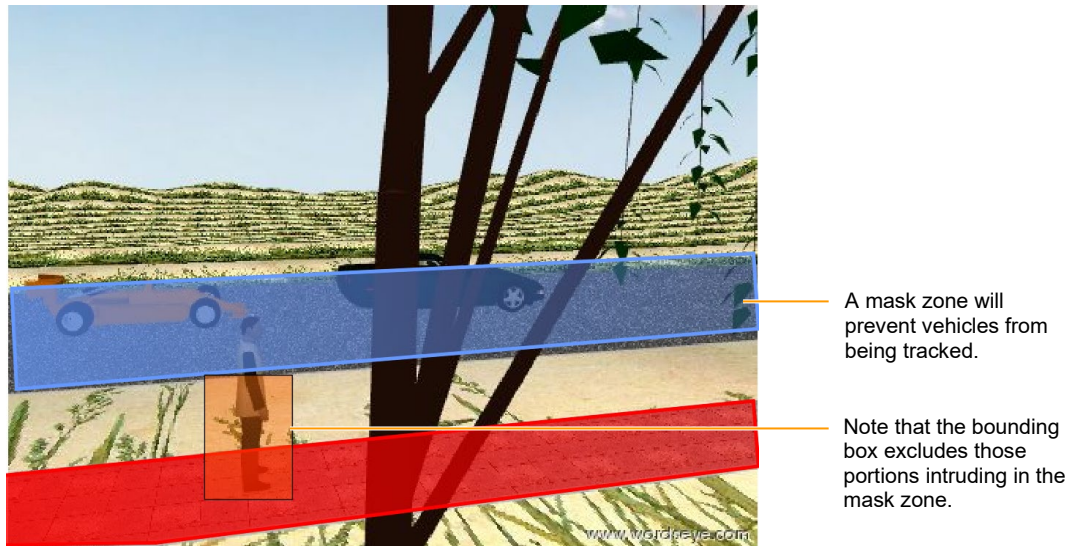
Figure 4.1

Mask zones are used to ensure that some motion is never tracked.
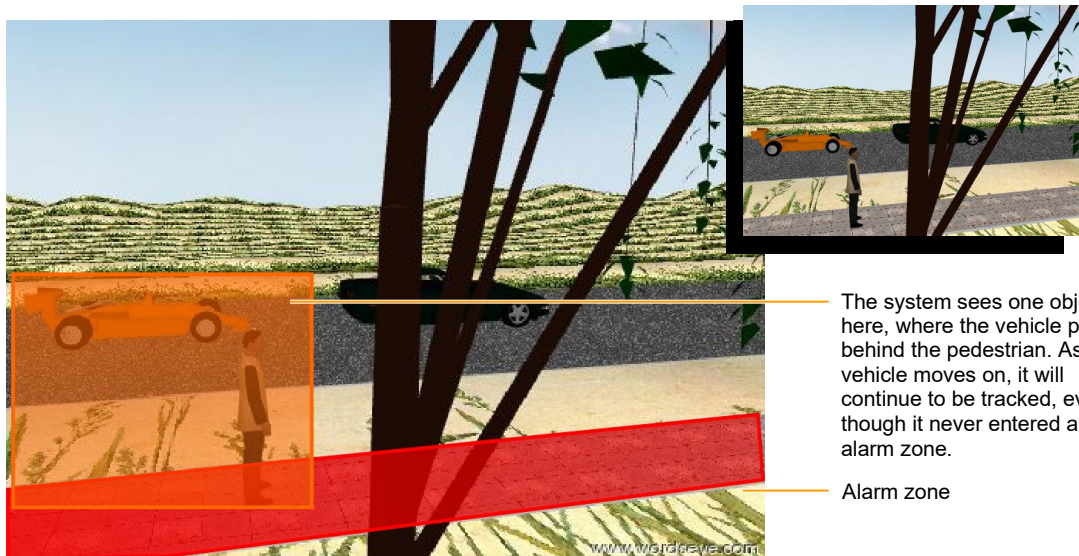
The system sees one object here, where the vehicle passes behind the pedestrian. As the vehicle moves on, it will continue to be tracked, even though it never entered an alarm zone.

Alarm zone

A mask zone will prevent vehicles from being tracked.

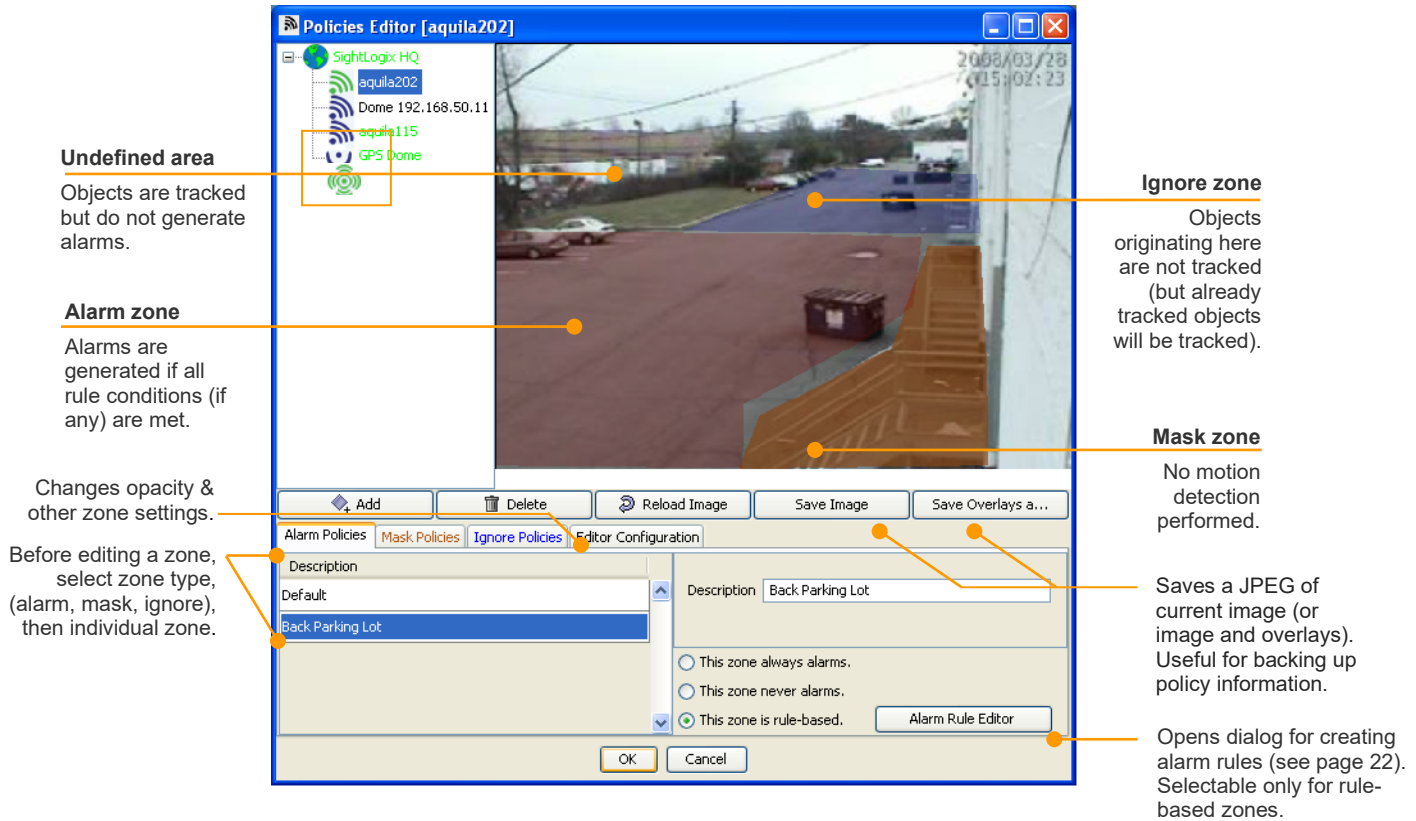Note that the bounding box excludes those portions intruding in the mask zone.

Creating and editing zones

When defining alarm zones, keep in mind that objects will trigger an alarm only when its midpoint is within the alarm zone. For example, a large tractor-trailer will be halfway into a zone before an alarm is generated.

Also, always draw alarm zones on the ground; alarms are generated only when an object's ground position is within an alarm zone.

To edit an alarm zone (to create a new zone, see next page):

1. Right-click on the camera icon and select Set Policies. The first time you access the dialog shown here, you will see a single alarm zone that covers the entire image.

Undefined area

Objects are tracked but do not generate alarms.

Alarm zone

Alarms are generated if all rule conditions (if any) are met.

Changes opacity & other zone settings.

Before editing a zone, select zone type, (alarm, mask, ignore), then individual zone.

Ignore zone

Objects originating here are not tracked (but already tracked objects will be tracked).

Mask zone

No motion detection performed.

Saves a JPEG of current image (or image and overlays). Useful for backing up policy information.

Opens dialog for creating alarm rules (see page 22). Selectable only for rule-based zones.

2. With the Alarm Policies tab selected, select the desired zone. Then use the mouse to move the nodes as appropriate to redraw the zone.

   Note that by default, alarm zones always alarms. Normally it's recommended that you create rule-based alarms so that alarms are generated only under conditions that you specify. This will reduce nuisance alarms. See next page for details.

3. Click OK.

To add a new zone:

1. Go to the Alarm Policies, Mask Policies, or Ignore Policies tab page as appropriate.

2. Click New to add a new zone. It's given the default name <New Alarm/Mask/Ignore Policy>.

3. Select the new policy in the policy list.

4. (Optional). To give a descriptive name to the zone, enter a name for the zone in the Description text box and click OK.

5. If you're creating an alarm policy, specify whether it always alarms, never alarms, or alarms only under certain conditions.

Never alarms (though objects are tracked). Useful for defining From zones.

This zone always alarms.
This zone never alarms.
This zone is rule-based.

Any object moving anywhere sets off an alarm. Not recommended since anything (a cat, for example) sets off an alarm. Use a rule-based alarm for more constraints on alarms.

Alarms only under conditions set by rules. Recommended for reducing nuisance alarms (a cat, for example, would not alarm if the object size was defined as 2 feet tall and one foot wide). See page 22 for setting rules. A ruled-based zone with no rules is the same as an always-alarm zone.

If you select a ruled-based alarm, define the rules as described starting on the next page.

6. Left-click to begin drawing the first segment; left-click to start each new segment. Double-click left to place the last segment and close the zone.
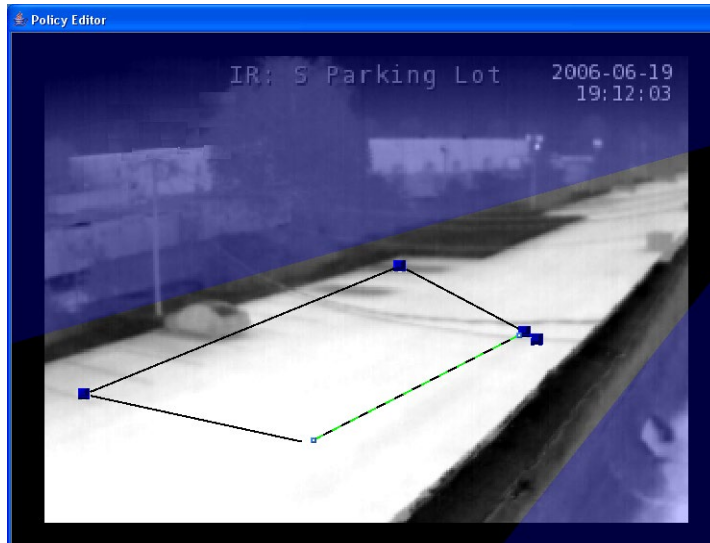
To delete extra anchor points, hover the anchor point and right-click.

To add a new anchor point, hover over the line segment and click left.

7. Click OK.

Once you create a zone, you should test that the targets are picked up properly and are shown in the proper color (red for targets in alarm zones, and yellow for targets in undefined areas or for targets that moved into ignore zone from an alarm zone).

To delete a zone, select the zone name in the list of zones, and click the Delete button.

Note: For this release, it is strongly recommended that you do not overlap zones.

Applying rules to alarm zones

Alarm zones can be associated with a set of rules that specify more precisely the conditions under which alarms are generated. These rules restrict alarms by time, by the duration of time spent in the zone, by tripwire, by previous path, or by target attributes such as the target's size, speed, direction, and shape (aspect ratio). By

default, no rule set is created for an alarm zone (meaning any moving object generates an alarm at any time).

You set up the alarm rules using the alarm rule editor, which is accessed by clicking the Alarm Rule Editor button on the Zones dialog (an alarm zone must be selected).

Assign a descriptive name. This name appears in the Targets list.

An object remaining in the zone for the time specified here generates an alarm.

Select alarm rule here to edit.

Select a motion, tripwire or disarm zone.

Set the rule to run only in the daytime, only during nighttime, or always.

Object attributes

Specify Disarm Zone attributes

Select a from-zone to define an illegal path.

Define a time range for when alarms can occur (report time) or when an alarm can't occur (nonreport).

To apply any type of rule—time range, tripwire type, object attribute—first create a rule set as follows: (1) Click New and assign a name to the rule set (you'll be renaming it from a default name); (2) select the alarm rule at bottom left; (3) define one or more rules; (4) click Save.

When editing a rule set, first select the appropriate rule set at the bottom of the dialog.

Setting a time duration for objects to remain in a zone

Use the duration setting to alarm on objects that remain in a zone longer than a specified minimum time period. For instance, you would use the duration setting when you didn't want to alarm on cars or objects passing through a zone, but only on those that stopped or lingered. When combined with other alarm rules, duration allows alarms to be generated based on loitering and other types of behavior.

Specifying a tripwire zone

By default, any object moving within a zone triggers an alarm. However, you can specify that alarms be triggered only when an object enters or exits a zone, or does both. You do this by changing the zone from a motion zone to a tripwire zone. There are three types of tripwire zones: TripWireEnter, TripWireExit, and TripWireEnterandExit.

You create a tripwire zone as follows:

1. From the Edit Alarm Rules dialog (page 23), select an alarm zone (at lower left).

2. From the dialog's Alarm Rule dropdown menu, select the appropriate tripwire type.

3. Click Save to save the rule change.
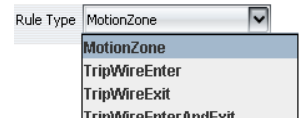
Specifying a from-zone to denote an illegal path

You can alarm on only those objects that were previously tracked in a specific zone before moving to the current one. To do so, use the From Zone dropdown list to specify the previous zone.

Any object that at any time was tracked in the from-zone will generate an alarm when it moves to the current one.

Setting time ranges

A time range specifies the hours when alarms can be generated for a particular alarm zone. By default, an alarm zone is in effect for all 24 hours.

⚠️ **Important:**

Any restrictions imposed by time ranges can be temporarily removed in a Lockdown situation by checking Lockdown state in the Sites dialog. See page 27 for more information about the lockdown feature.

To set a specific time range:

1. From the Edit Alarm Rules dialog, select an alarm policy.

2. Click Add under Report Time if you're specifying a time range for alarms, or click Add under Nonreport Time to specify a time range when alarms cannot occur.

3. Depending on how you want to define a time range, enter both a start and end pattern for the appropriate field or fields. (Asterisks denote no constraints for a field.) Hours are entered using a 24-hour clock.

   For example, for alarms to be generated only during work hours, enter 0700 for the start pattern (in hour field) and 1800 for end pattern; in day of week, enter 02 (for Monday; Sunday is 1) and 6 for Friday in the end pattern. See Table 4.1 for the syntax for the fields.

   Note: The start time is included in the range, and the end time is outside the range.

4. Click the Save button.

5. Repeat for each additional time range to be associated with the zone.

To edit or delete a time range, select the range and click Edit or Delete as appropriate.

Table 4.1 Time range settings	
Field	**Value range**
Minute	0-59. For example, entering 10 and 20 enables the time range between the 10th and 20th minutes for every hour.
Hour	0-24
Day (of the month)	1-31. Use this field when a single day has a different set of alarm rules than other days. For example, if the 15th day of the month requires different alarm zone generation from all other days, enter 15 in this field.
Month of the year	1-12
Day of the week	1-7, with Sunday being 1.
Nth occurrence of day in month	1-6, with 6 being last day of month only.
Year	YYYY

Asterisks in any field apply no restrictions (for example, * in the day field indicates all days). Use a comma to separate multiple entries for a field.

Specifying target attributes

You can restrict alarms according to an object's size, shape (aspect ratio), speed, or direction.

Note: Speed and heading for an object takes 2 seconds to become valid after a target is tracked. Thus adding a speed to a rule will cause a delay in responding to a new target

Table 4.2 Target attributes	
Information	**Unit, range to enter**
Height, width	Meters or feet as previously selected in install process
Speed	Meters per second or miles per hour as previously selected in install process
Heading	Degrees from North
Aspect ratio	Enter a number or fraction that represents the result of a ratio of width to height. For example, to alarm on people as opposed to vehicles, you would enter a figure less than 1 since people, being twice as tall as wide, would have a ratio less than 1, (~.4 to .2). Vehicles, being wider than tall, would have a value greater than 1.

Leave a field blank for no constraints.

Specifying a Disarm zone

Zones which contain disarm rules include a condition under which the zone will no longer trigger alarms. There are two types of disarm zones, "DisarmZone" and "DisarmAllZones".

As the name implies, if the disarm condition is met for a DisarmAllZones, any other Disarm zones also become disarmed. It is important to note that a zone will not disable if it is already alarmed. The alarm condition should include a duration so that the disarm condition can be met before the alarm condition.
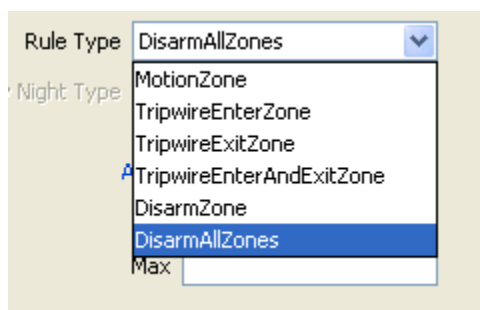
It is useful, when configuring disarm rules, to visualize the zone in the video using the zones overlay control. The red zone will become green when the disarm condition is met.

While the object which triggers the disarm of a zone is being tracked, (the object has an orange bonding box rather than yellow when a site has non-alarmed objects enabled), the zone stays disarmed. The zone stays in disarm mode, even if the object is no longer satisfying the disarm conditions. The zone is re-armed after the object is no longer tracked, and after the Rearm Delay. An extra delay is often useful if a large object has perhaps created movement in the alarm zone.

Guidelines to minimizing false and nuisance alarms

> Utilize disarm rules to disarm alarm zones during conditions which cause alarm rules to be met inappropriately. For example, when a delivery truck obscures a camera view every week.

Activating all alarm policies with lockdown

The lockdown feature immediately activates all alarm rules, even those that are currently disabled according the alarm policy schedule. To initiate lockdown, right-click within the site image and select Lockdown.

Lockdown is specifically designed for situations in which employees, students, and others are confined as a security measure when an unauthorized intruder poses an immediate threat. Enabling lockdown immediately activates all alarm policies, so that motion detection and other alarms can be utilized to locate the threat. Thus if your site normally alarms on motion only at night, enabling lockdown during the day activates the night-time motion detection.

Lockdown status is signaled in the status bar when enabled.

Guidelines to minimizing false and nuisance alarms

To minimize false and nuisance alarms, follow these guidelines:

> Use alarm policies to specify that alarms occur only at specific times, dates, weekends, and holidays.

> Unless your site must specifically guard against aircraft threats, use mask zones to eliminate the sky as a source of alarms. Large birds and aircraft and other objects in the sky are not usually considered a threat to most installations.

> Point the camera low enough to detect maximum height of a target in background and no higher.

> Use zone rules such as from – to instead of simple motion.

> Utilize minimum size rules to filter trash and small animals.

> Set a minimum time rule of 0.2 to 0.75 seconds to eliminate transients such as flying insects or reflections.

> Anticipate elevated areas where animals such as birds or squirrels may congregate and set off an alarm by appearing in an alarm zone from the camera's perspective.

> Do not include detection zone areas with draped power lines or foliage that will move during severe weather.

Advanced Configuration

This chapter describes additional administrative functions not provided in the SightLogix Installation Guide, such as how to manage users, back up system settings, and further customize the system for a site's specific requirements. It also includes an advanced calibration procedure.

Advanced Calibration

Advanced Calibration is for advanced SightLogix certified users only who need to fine-tune calibration settings. Complete the standard calibration process before doing an advanced calibration.

Conceptually, Advanced Calibration is performed by drawing lines along physical boundaries on the aerial site map image to create a virtual "trace" of clearly definable objects. These trace lines are then displayed as reference points on the SightSensor's actual field of view. Advanced Calibration essentially aligns the features on the site map with what the camera is actually seeing, providing a more accurate correlation between the two.

To access the Advanced Calibration settings, right-click the device icon in the SightMonitor camera tree and select Advanced Calibration.

Step 1: Mark your features on the overhead map

Select the Site tab to view the site map. This is where you will use drawing tools to mark easily distinguished features in the image. Features are buildings, landmarks, or other clearly defined elements including a corner curb, fence line, or along the wall of a building where it meets the ground.

To begin a feature, click once; continue the feature by clicking on a different spot in the image. To finish the current feature, double click. Delete any point by right-clicking it. Choosing a variety of features both near the camera and far from it provides more details for a finer calibration.
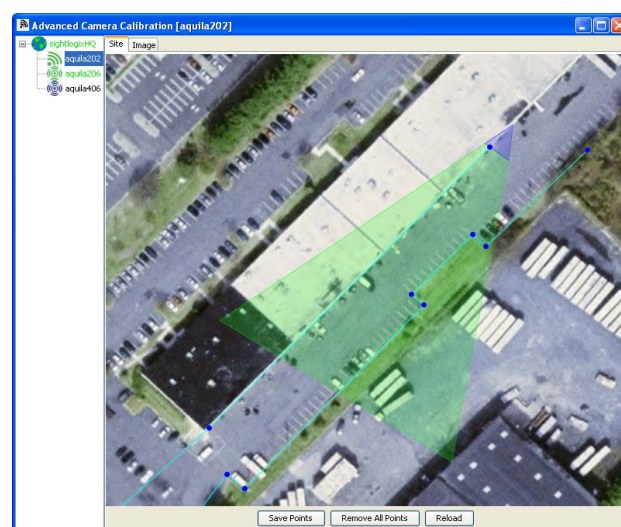
For better accuracy, zoom in to pinpoint a feature location using the mouse-wheel or the +/- keys. You can also change position of the site map by dragging with the mouse.

Selecting features on the Site tab does not alter the calibration settings; calibration settings are only changed via the sliders on the Image tab, described below.

When you are satisfied with your feature selections (tab over to the Image window to check your accuracy), click Save Points. To revert to the previously saved state, click the reset button.

Step 2: Adjust the features with the image tab sliders

To align your feature drawings to the camera's actual field of view, select the Image tab. This displays the lines and points created in the previous step.

Use the sliders to align the points and lines to the image view, as described below.

Opacity: Controls the transparency of the feature lines.

Pan: If you imagine a camera mounted on a pole, twisting the pole changes the pan of the camera's POV.

Tilt: If you imagine a camera mounted on a horizontal bar, twisting the bar changes the tilt of the camera's POV.

Yaw: If you imagine a bar running right through the lens of the camera, twisting that bar changes the yaw.

Left/Right: If you imagine the camera mounted on pole, moving the pole physically to the left or right changes this setting.

Forward/Backward: If you imagine the camera mounted on pole, moving the pole physically forward or backward changes this setting.

Altitude: If you imagine the camera mounted on pole, raising or lowering the pole height changes this value of the pole in the scene.

Sensitivity bar
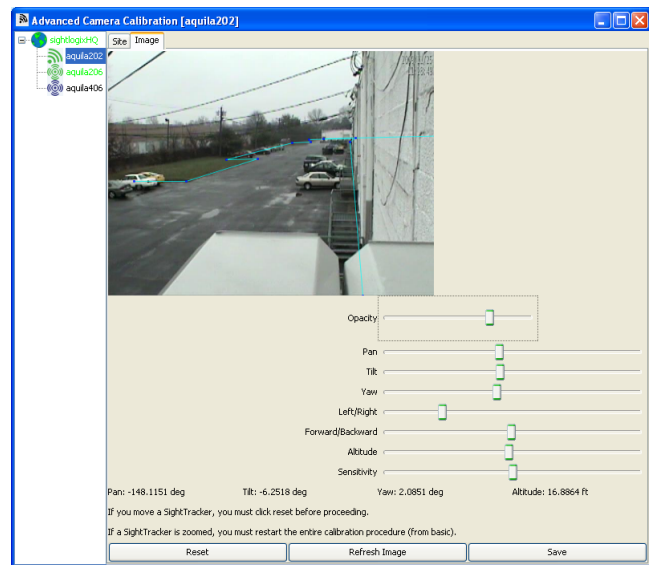
The Sensitivity bar affects the amount that the slider options change their parameters when they are adjusted. Moving the Sensitivity bar to the left makes the slider options less sensitive (i.e., moving a slider *x* pixels will have greater effect); moving the bar to the right makes the slider options more sensitive (i.e., moving one slider *x* pixels will have less effect). For example: to move forward a greater distance, slide the Sensitivity bar to the left, and then adjust the Forward/Backward bar.

As you refine and adjust the calibration, use the sensitivity slider to make more minute adjustments. When you change the Sensitivity bar setting, all sliders snap back to the center position, providing more room for additional adjustments.

Continue to adjust the sliders until the points in the image match up to the features that were selected on the aerial map. Click Save when finished.

Advanced calibration tips

> Begin by defining a horizontal line from camera's Point of View and adjust the yaw until that line is horizontal in the image.

> Choose obvious points in the Image tab that are easy to match between the Sight tab view.

> The Pan and Left/Right sliders have similar effects on the matching of the points, as does the Tilt and Altitude. A subtle difference is that Pan and Tilt do not typically change the angles of the connecting lines as much as Left/Right and Altitude. You can use Left/Right and Altitude to get the angles of the lines correct first, and then line up the points with Pan/Tilt.

> Adjusting Forward/Backward and Left/Right will move the pink cross on the sitemap. These represent the new position of the camera. Use the cross to make sure you're not changing the position in an inappropriate manner.

> The Pan, Tilt, Yaw and Altitude readouts in the Image tab provide a numerical reference to indicate the amount of orientation and position change of the camera. Refer to these numbers to ensure that you have not made excessive changes.

> If the points and lines seem to be too close together or too far apart, adjust the Forward/ Backward slider until they appear more accurately separated.

> Switch between the Image and Site tab to see the updated camera cone (from your adjustments) or add/delete/change the features.

> As you change calibration settings, you can perform a Follow Test (in the standard calibration window) to verify the accuracy of the new parameters.

Adding and Managing Users

All users of SightLogix must be associated with one of the following security groups: chief security officer, administrator, and security officer. The username and password entered by a user when starting SightMonitor identifies the group to which the user belongs.

Security group	Default username	Default password
Chief security officer	chief	change
Administrator	admin	change
Security officer	officer	change
Security officer	guest	change

The following table summarizes the privileges accorded each of the security groups:

	Chief security officer	Administrator	Security officer
User management	●		
Add sites, add/remove cameras	●		
Reboot camera	●	●	
Activate lockdown	●		
Network, communication settings	●	●	
Upgrade software	●		
Alarm policies	●	●	
Camera configuration & calibration	●	●	
View target info	●	●	●
Reset tracker	●	●	●

⚠️ **Important:**

For security reasons, you should restrict the chief security officer and administrator groups to properly trained essential users only. Day-to-day monitoring of the system should be performed by users in the security officer group only.

Adding and managing users and their login information is done from the User Management dialog box, which is accessible by choosing Users from the Edit menu:
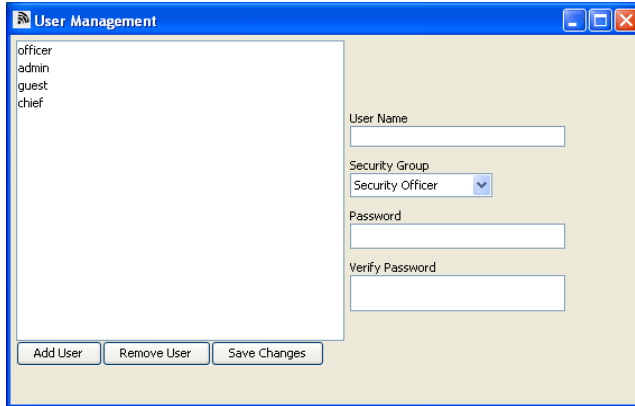
When you first open the User Management dialog, you see the four default users corresponding to each of the security groups (guest is the same as officer). You can add new users or change information about an existing user.

To add a new user:

1. Enter a user name.

2. Select a security group from the dropdown list.

3. Type (and retype) a password.

4. Click Add User.

To make a change to an existing user (such as changing the password):

1. Select the user from the list at left.

2. Enter the new username or password (the password must be typed twice), or change the security group that the user belongs to.

3. Click Save Changes.

⚠️ **Important:**

Make sure at least one user is always assigned to the chief security group. If no one is designated as a chief security officer, no users can be added (or deleted) and passwords cannot be changed since only the chief security officer has permission to change user login information.

Managing Sites

The Sites dialog allows you to edit information about a current site or add a new site. For instance, you may want to change the site name, use a different aerial image, or tweak the GPS coordinates or image size information.

To edit, open the Sites dialog, right-click anywhere on the site map and select Edit Site.
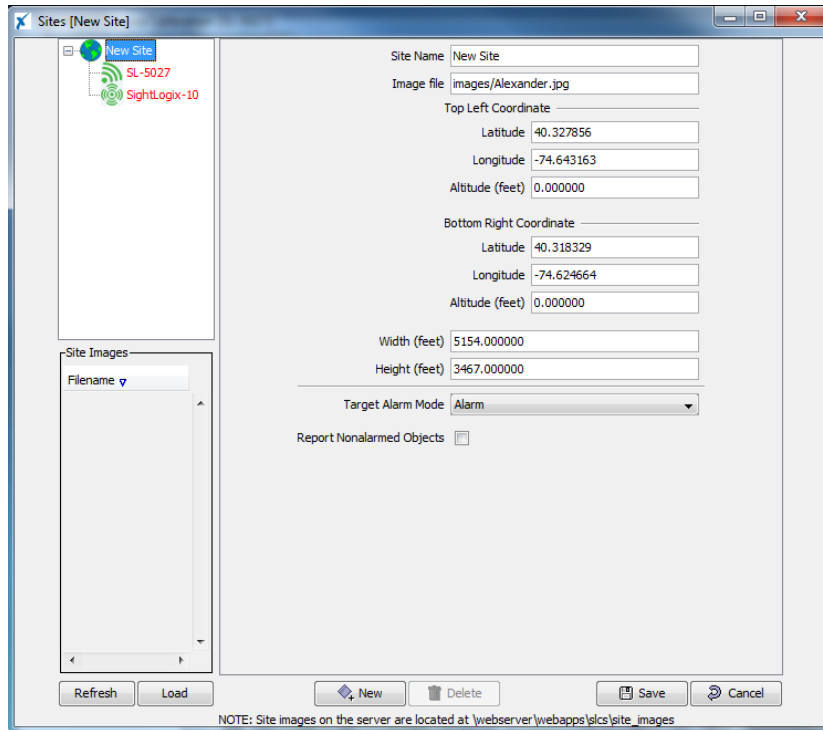
Target Alarm Mode: Choose "Target" or "Alarm" mode.

In the default *Alarm Mode* the alarm state is True whenever an alarmed object is being tracked and False when no alarmed objects are being tracked.

In *Target Mode*, the Alarm state will be briefly true whenever a new alarmed object is detected.

For VMS systems which record whenever objects are being tracked, the default mode is usually more useful.

However, for VMS systems that are event-driven, Target mode provides extra information. Each transition from non-alarm to alarm state causes a new event for each new alarmed object.

To edit a site, change the current information and click Save. For step-by-step instructions on inserting a new aerial image or creating a new site, refer to the SightSensor Installation Guide.

Changing the Video Transmission Settings

Image quality and bandwidth allocation are controlled from the video settings, which allow you to set the frame rate, the maximum bit rate, and other parameters (see Table 5.1 for descriptions). Video settings are applied independently for each channel.

By default, MPEG displays high-quality video for viewing purposes, while JPEG is configured for lower-quality video for archiving (the resolution of individual I frames is high, however, to ensure detail in still frames). The target frame rate for the MPEG channel is set for 30 frames per second; for the JPEG channel, it is set for 3 frames per second when no alarms are occurring and 10 frames per second during an alarm.

Not all VMS programs support both channels.

Video transmission settings are a tradeoff between network capacity concerns and the quality of the image or the smoothness of the video motion. A higher image quality necessarily requires more image data, contributing to the network load.

On low-bandwidth networks, such as wireless point-to-point connections, where limited bandwidth is likely to be an issue, you may need to adjust the video transmission settings to limit the amount of video being transmitted. To do so, you can do the following:

> Specify a lower bit rate.

> Set your VMS to view the motion JPEG channel (rather than the MPEG channel).

> Use an image scaling of half.

> On the MPEG channel, use the CBR (constant bit rate) instead of the VBR (variable bit rate) setting to precisely control the amount of data transmitted.

> On the MPEG channel, increase the quant value, which allows poorer-quality (lower-data) frames to be transmitted.

> On the MPEG channel, increase the frame interval, so that fewer high-resolution I frames are transmitted.

   Conversely, to increase image quality, specify a lower quant value or increase the maximum bit rate.

You can normally obtain the current bit rate from the VMS.

To change video transmission settings:

1. Right-click on the appropriate camera icon and select Configuration.

2. Go to the MPEG or JPEG tab, which opens one of the dialogs shown on the next pages.

3. Change the settings as needed (see Table 5.1 on the next page for details).

4. Click OK.
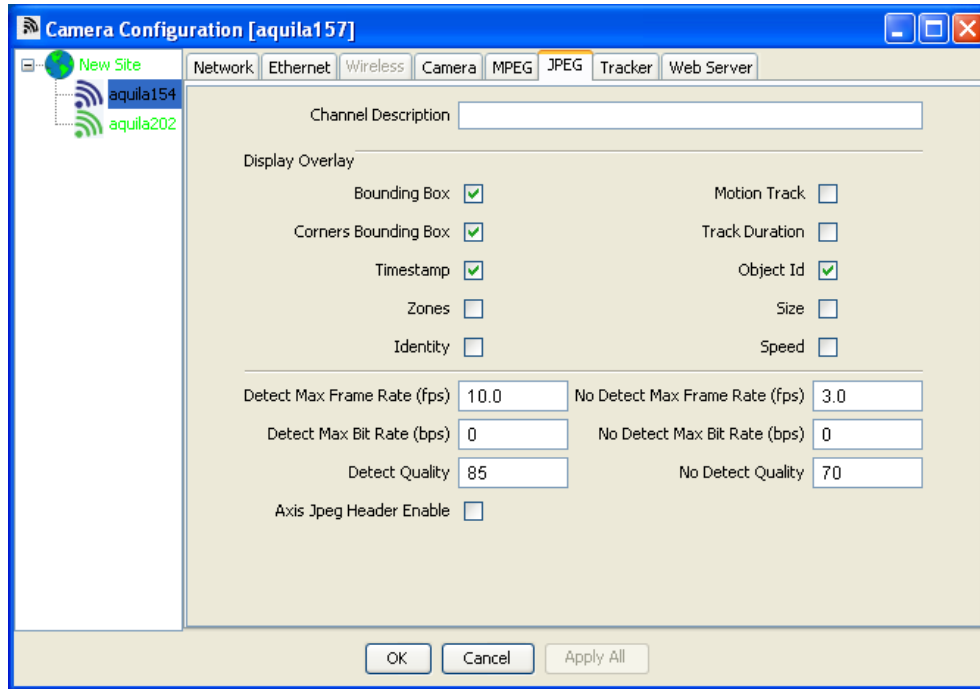
⚠ **Note:**

For the HD, the Display Overlay options are grayed out on the JPEG tab. All options chosen for the MPEG stream (on the MPEG tab) will also apply to the JPEG stream.
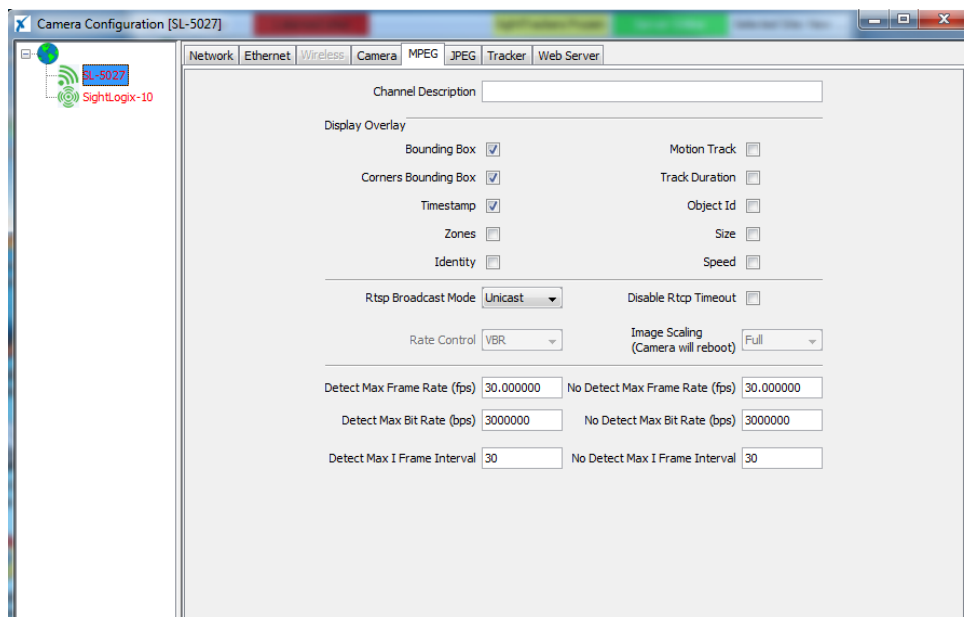
Table 5.1 Video channel settings	
Setting	**Description**
Rtsp Broadcast Mode	Choose Unicast or Multicast
Disable Rtscp Timeout	Can be used to prevent the video stream from shutting down with some VMS systems. Note that this may cause video to continue streaming unnecessarily on the network when no client is listening.
Rate control & Image scaling	Only available on earlier SightSensor models.
Detect/No Detect Max Frame Rate*	Requested frame rate, stated as frames per second (fps). Note that the actual rate might be lower if frames are being dropped due to insufficient computing resources (this can occur when frames are very complex). The default is 30 fps (SightSensor HD maximum frame rate is 15 fps, despite a higher value requested) for MPEG and 3 fps for JPEG when there are no alarms (10 fps when alarmed).
Detect/No Detect Max Bit rate*	Specifies a bit rate for MPEG. The default is 3000000 bits per second. The bit rate for motion JPEG is 0, meaning unconstrained by a maximum number (bits are transmitted as fast as can be supported).
Detect/No Detect Max I frame interval*	Specifies how often a full-resolution frame (an I frame) is transmitted; frames in the intervals between I frames carry only enough information to describe scene changes. Since I frames require more bandwidth, increasing the interval reduces the network load and a longer I frame interval is less resistant to packet loss. The default is 30 frames.

* Can be set independently for both the alarmed state (detect) and unalarmed (non-detect) state.

Controlling object tracking

Tracker controls determine how sensitive the system is to movement and how quickly the system identifies a moving object as a target or recognizes that a now-stationary object should no longer be identified as a target. You control tracking from the Tracker tab on the Camera Configuration dialog (right-click a camera icon and select Configuration):

Refreshes the image and immediately stabilizes on the new image

Clears all currently tracked objects.
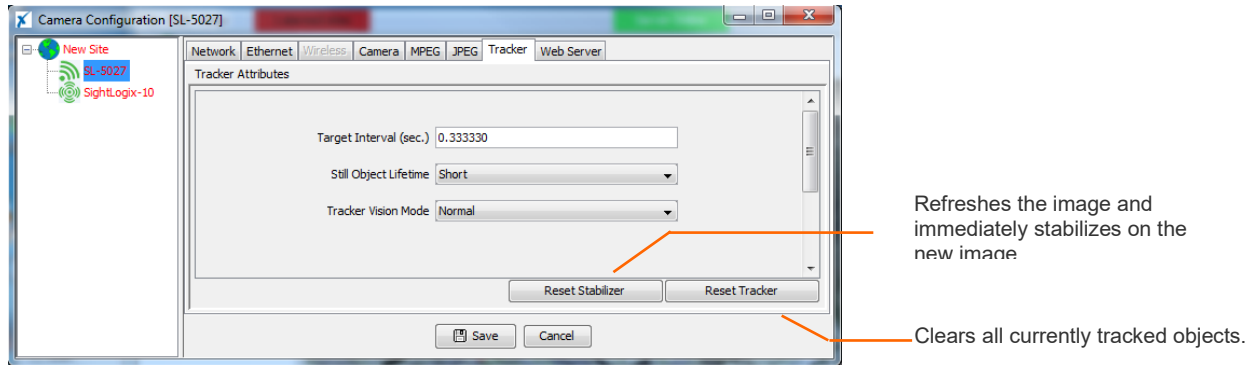
Select a tracker mode that applies to the particular environmental conditions. Click OK after changing a setting.

Table 5.2 Tracker configuration settings	
Field	**Value range**
Object interval	Specifies how often the camera reports the position of a tracked object to the Coordination System. A smaller interval reports more often and results in smoother map tracking motion but uses more network bandwidth. Larger numbers use less network bandwidth but may result in jerky tracking in the map overlay.
Still Object Lifetime	The length of time required before a target that stops moving is no longer identified as a target. The interval can be short, medium, or long. (Although there is some variation depending on certain factors, short is usually around 30 seconds, medium around 1 minute, and long around 2 minutes.)
Tracker Vision Mode	Normal: Default vision mode; used for most circumstances. Water: Use this mode when the device is looking out over water. Falling Object: Use this mode for primarily detecting falling objects. Grassy: Use this mode when the device's field of view contains primarily a grassy area. Long Object Detection: Use this mode when the device will be used primarily to detect long objects such as trains or large boats. Water mode (Large Object Detection): Use this mode when detecting large objects in a body of water. Water mode (Large Slow Object Detection): Use this mode when detecting large, slow moving objects in a body of water. Normal No Stabilizer: Turns stabilization off. This mode may be useful if moving objects occupy a large amount of the sensor field of view. Such as a walkway with many people moving or a busy road or railway. Grassy No Stabilizer: Use this mode when the device's field of view contains primarily a grassy area and large moving objects may occupy a significant portion of the Field of View (e.g., trains)

Resetting the stabilizer

To ensure a smooth video image, video is continuously stabilized at the camera before it is relayed over the network.

Sometimes while re-orienting the camera to change the view, the stabilizer may maintain the old camera view. In this case, click Reset Stabilizer to refresh the current camera view.

Configuring Web Authentication

Web authentication is used to send video and other information to the VMS (as well as other programs and devices) and requires a username and password. The default username is *sightlogix* (or *root*), and the default password is *push2edg* It is recommended you assign your own username and password.

The default web authentication is basic, which is supported by all VMS programs. However, basic does not encrypt network data and is therefore not as secure as the digest method.

If your VMS supports the digest authentication, it is recommended you change the authentication type to use digest. Changing the type of authentication will cause the SightSensor or other SightLogix device to reboot.

Note: HTTP Pipelined Requests is provided only for compatibility with specific VMS programs.

To configure web authentication, right-click the device icon→Configure→Web Server.
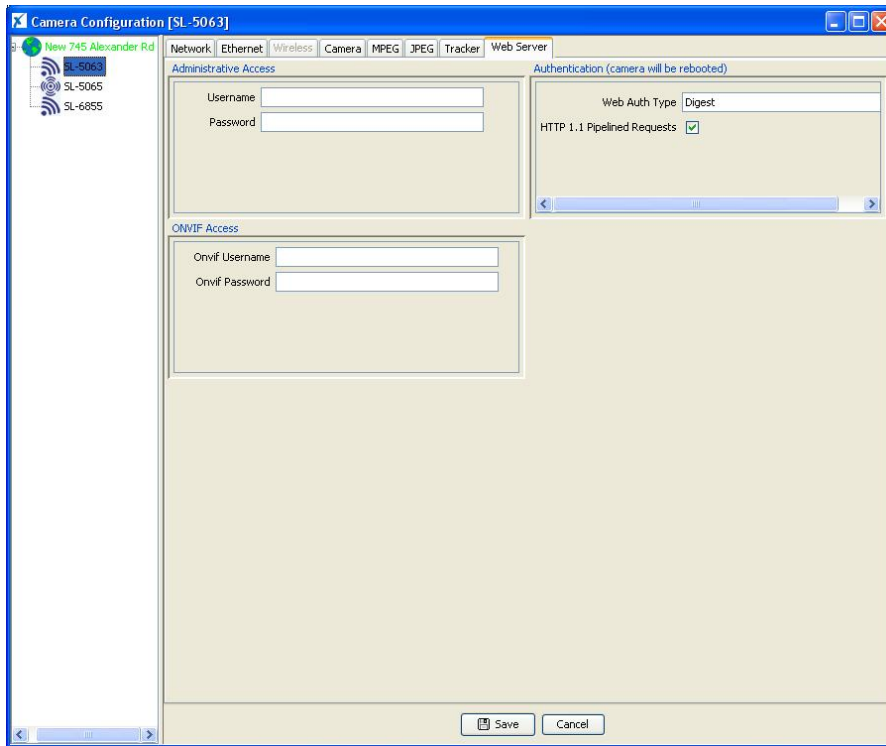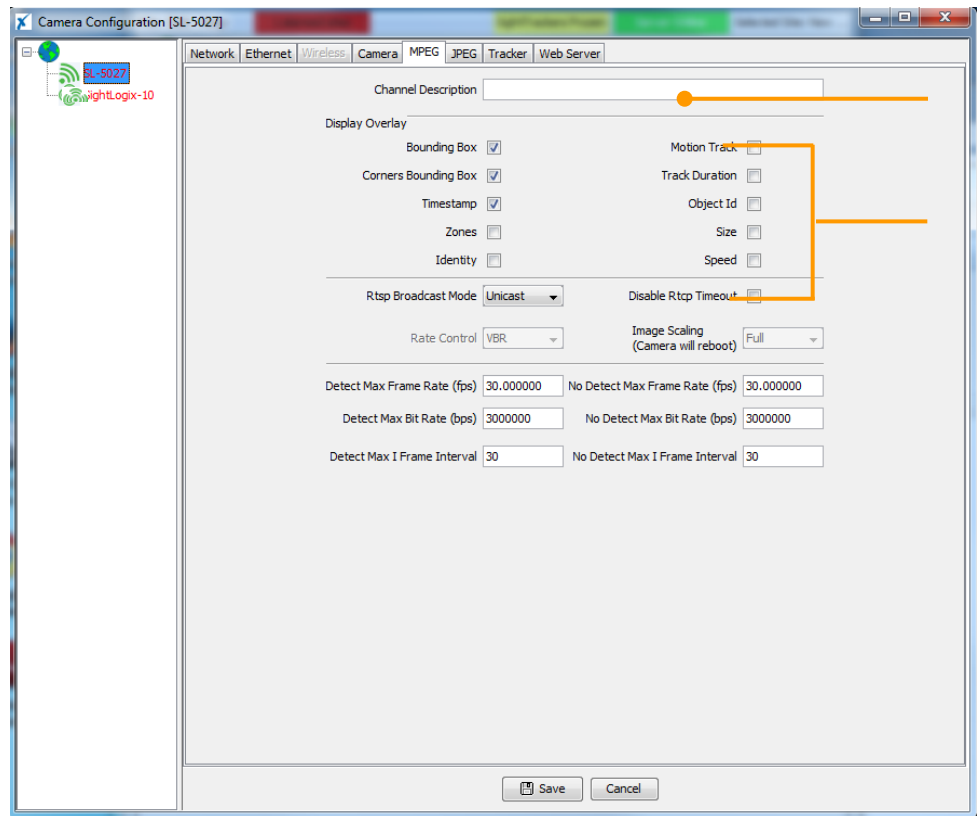
Configuring Access to the Camera Using ONVIF Authentication

Set ONVIF authentication by entering the ONVIF Access username/password on the Web Server tab, as shown. This features are provided for 3rd Generation SightSensors running both 10.x and 15.x firmware. (ONVIF default username is *service* and the password is *test1234*).

Overlaying information on video

By default, date/time information is superimposed on the video image for both channels. However, you can superimpose additional information, or turn off display of the date and time. To do so, right-click a SightLogix device icon, select Configure, and go to the MPEG or JPEG tab. Select or deselect the appropriate checkboxes (see page 44 for examples of overlays); click OK.

Specifies text overlaid on video to identify channel.

Overlay options

Note: Only the timestamp can be overlayed on the video of a dome camera.

Table 5.3 Video overlay information*	
Information	**Description**
Bounding box	Encloses a target in red if the target is in an alarm zone, or in yellow if target is outside an alarm zone.
Corners bounding box	Rather than completely enclosing an object in a bounding box, you can display only the corners of the bounding box.
Time stamp	Current date and time.
Zones	Overlays any defined alarm, mask, or ignore zones.
Identity	Serial number and Mac address.
Motion track	Transitory tracks that follow a target, fading after a few seconds. Gives a rough indication of a target's speed and direction.
Track duration	Length of time (in seconds) object was tracked.
Object ID	A unique ID assigned to a target.
Size	Displays object size in feet for US unit or meter for SI unit.
Speed	Displays approximate speed of target in mph for US unit or mps for SI unit.

* SightTracker supports only the time stamp.

Date/time stamp

Channel description

Speed

Zone

Bounding box, corners on

Object ID

Speed in mps

Motion track

Bounding box (corners off)

Duration
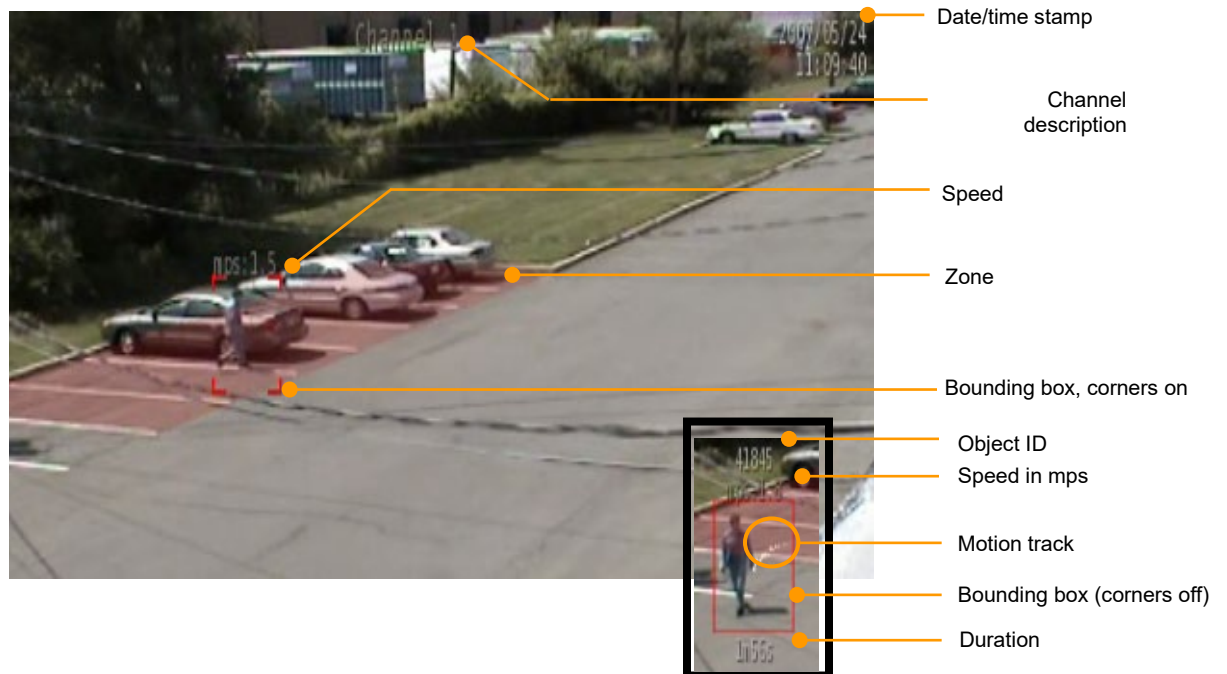
Client Timeout

For added security, SightMonitor clients can be configured to automatically log out after a specified period of inactivity.
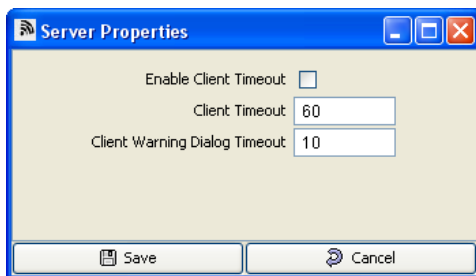
Choose Server Properties from the SightMonitor Edit menu and place a check mark in the Enable Client Timeout field.

The following options are provided:

Client Timeout: Enter the period of inactivity that must pass before timing out.

Client Warning Dialog Timeout: Enter the period of time that the warning message will display prior to timeout.

When done, click Save.

Note that Client Timeout is a global setting and applies to all SightMonitor clients logged into the Configuration System. Users must re-enter their Configuration System credentials in order to log back into the system.

Setting Up SightTrackers with PTZ Cameras

SightTrackers enable PTZ cameras to automatically aim at a target's GPS position when an alarm occurs, enabling security personnel to get an immediate, close-up view of the event triggering the alarm.

The SightTracker is a separate unit that receives target GPS information from one or more associated SightSensors and then converts the information to pan/tilt settings to control the PTZ camera.

Currently, there is support for select analog and IP domes. Refer to the SightLogix Support Portal for the most up-to-date list: http://portal.sightlogix.com/help/sighttracker-third-party-ptz-support. .

The field of view of each PTZ camera attached to a SightTracker is represented within the site map by cones that dynamically update as the camera zooms or pans, either in response to an alarm or when controlled by the site's VMS.

SightTracker icon
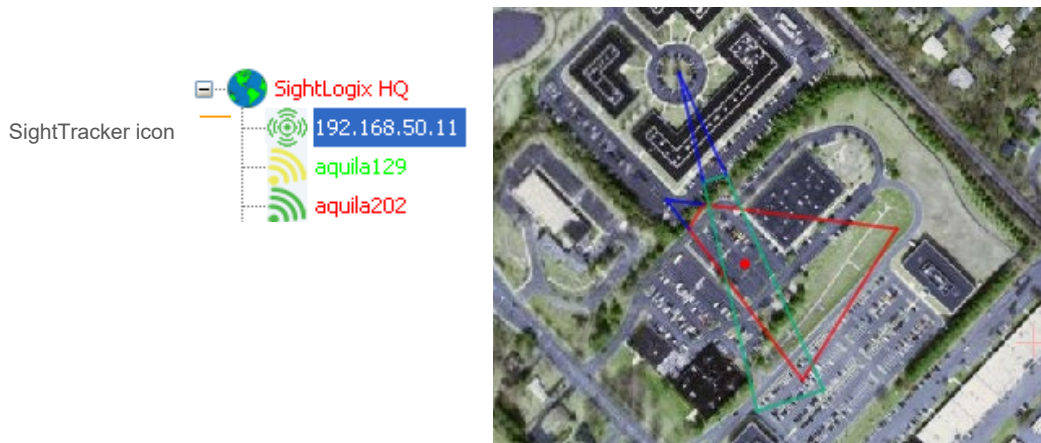
PTZ cameras will continue to track an object as long as it remains in view of an associated SightSensor or until one of the following occurs:

> Another target becomes higher priority. In case of multiple targets, the default is to assign

the highest priority to the newest target. However, you can specify a different priority (see page 53).

> The VMS operator takes control of the camera. Joystick control from the VMS is always able to immediately take control of the camera.

> The SightTracker is frozen.

Main Set Up Steps

1. Installing SightTrackers
2. Add SightTracker to Camera List in SightLogix CS software
3. Turning off Line Sync Settings in camera
4. Calibrating PTZ Camera with SightTracker in SightLogix CS software
5. Associating PTZ Camera with SightSensor in SightLogix CS software
6. Performing Pair Wise Calibration in SightLogix CS software
7. Testing Camera Tracking in SightLogix CS software
8. (Optional) Changing Track Priority in SightLogix CS software

SightTracker Wiring Terminations

3rd Generation SightTrackers have two different wiring termination blocks. Version 2 (PN ST3-020) supports IP PTZ cameras only. Version 1 (ST3-000) supports analog PTZs.
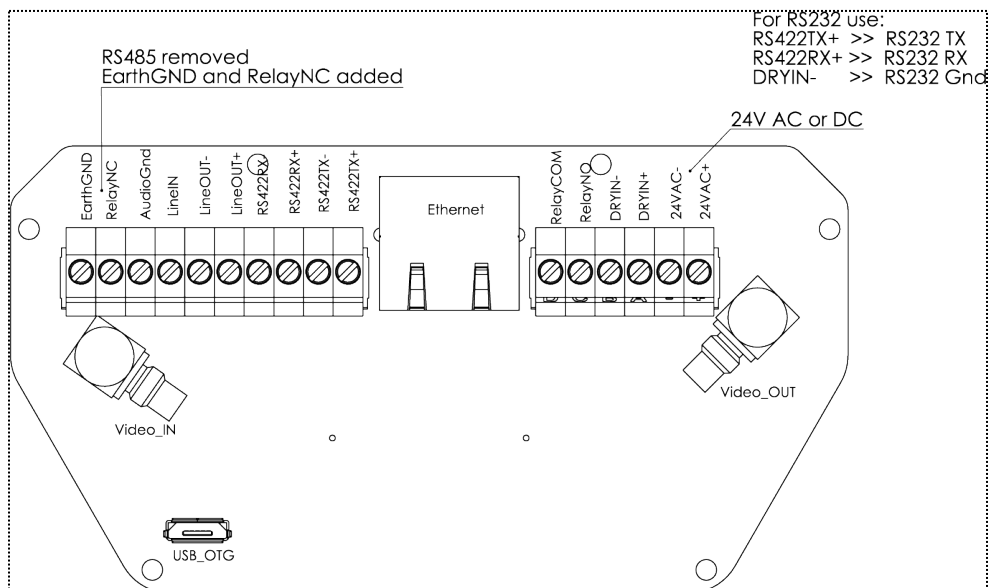
3rd Generation SightTracker Wire Terminations (Version 2, For IP PTZ)
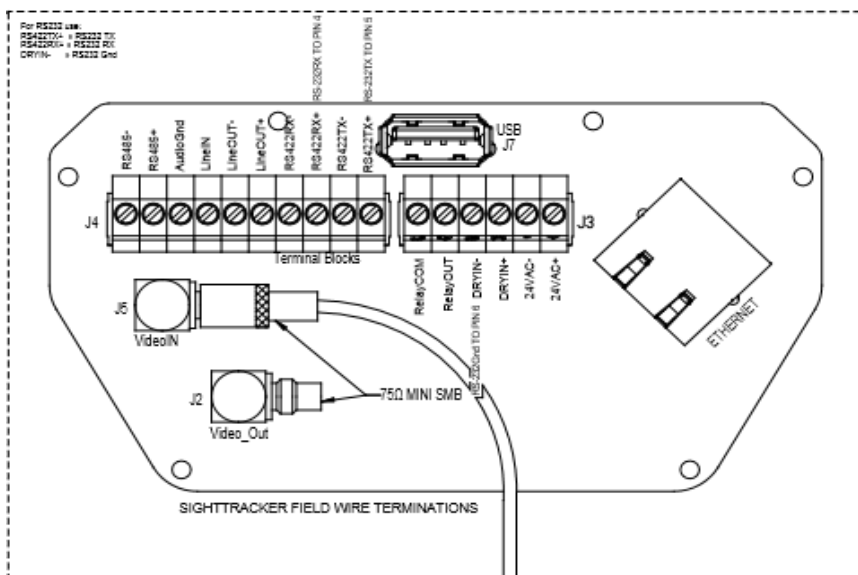
3rd Generation SightTracker Wire Terminations (Version 1, For Analog PTZs)

Adding SightTrackers to the Camera List

To add a SightTracker to a site's camera list, use the discovery procedure (refer to the SightSensor Installation Guide) as you would with SightSensors.

To individually add a SightTracker, right click the site icon and select Add Camera; enter the IP address when prompted. The IP address is the only required information.
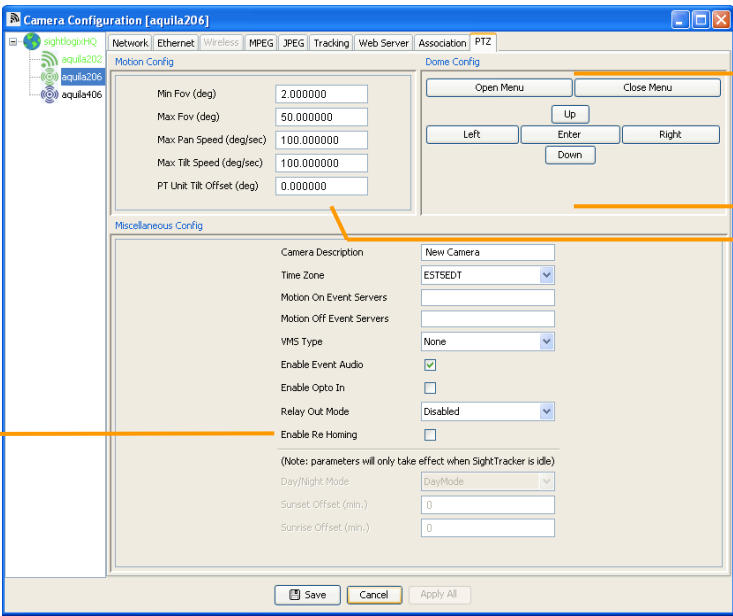
However, it is recommended to open the SightTracker's Network dialog (right-click on the icon and select Configure→Network) to enter a descriptive camera name and verify that the serial number shown is the one expected. Click Save if you change the name or make any other change.
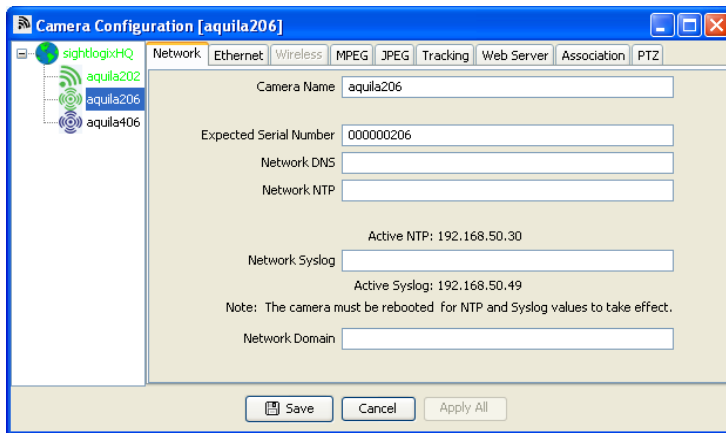
Changing time zone and line sync settings

The PTZ camera's line sync setting must be turned off from the SightTracker's PTZ dialog:

1. Open the PTZ tab.

Navigation controls for accessing the dome camera's internal menu.

Range of values for camera's field of view (in degrees) and the maximum speed allowed for panning and tilting (in degrees per second).

This information is entered automatically for some camera types (for field of view, changes must be within the supported range). If values are not entered, refer to your camera manual and enter the information here.

Enter an offset if a perfectly horizontal camera is reporting a tilt (this may occur due to some factory adjustments). When a camera is looking at the horizon, the tilt offset reported in the camera tab of the site map should be 0. Enter a value equal to the offset. This will be subtracted from the offset commands sent to the camera (e.g., if the tilt offset reported for the horizon is +1.4, insert +1.4 as the offset).

Disables re-homing, which is performed once every 24-hours and takes up to 1 minute to perform; during this time, the camera cannot detect targets or respond to commands.

2. Click Open Menu to open the camera menu within the VMS.

3. Use the dialog's navigation buttons to move through the camera's menu until you get to the line sync setting. Menu systems differ according to the camera, but look for a Camera or Settings menu.

4. Turn off line sync. Then use the Exit option on the VMS menu.

5. From the PTZ tab, click Close Menu.

6. Set the time zone by choosing the appropriate zone from the dropdown menu.

7. If your PTZ camera supports day/night mode and you want to turn this feature on, select Day/Night from the Relay Out Mode dropdown menu.

8. Click OK.

Calibrating PTZ Cameras

This procedure describes how to use the SightTracker to calibrate the PTZ camera image with GPS coordinates. The procedure is similar to calibrating a SightSensor, except that only a single calibration point is needed (not two).

If you haven't yet added the PTZ camera to your VMS, do it now. For more information, see the *SightLogix VMS Integration Guide*).

To calibrate a PTZ camera, view the PTZ camera's video from the VMS. Then in the SightMonitor, open the Calibrate dialog for the SightTracker (right-click its icon, select Configure→Calibrate) and do the following:
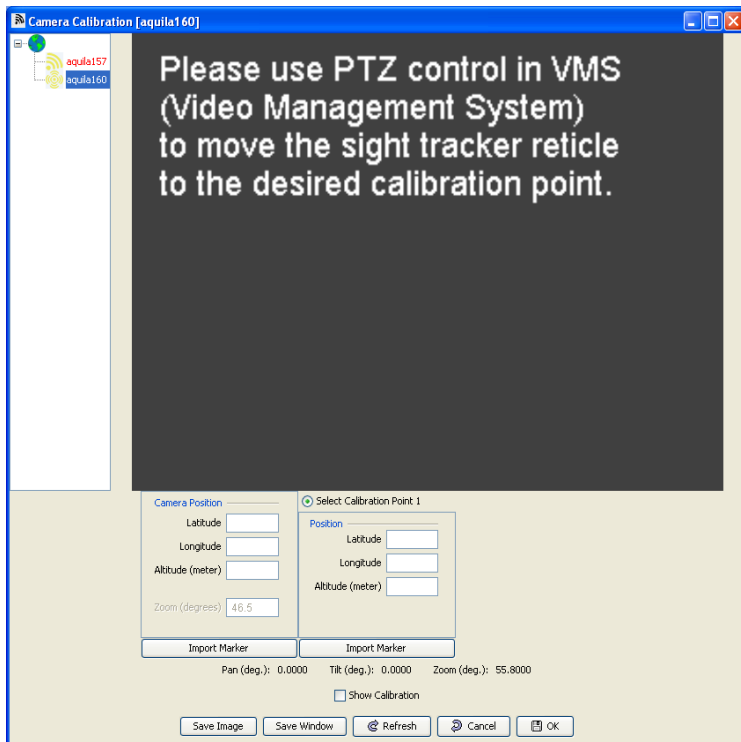
1. Enter the SightTracker's position as follows: Double-click in the site map at the location of the camera to place the marker. Enter the height of the camera. Then click Import Marker under Camera Position in the Calibrate dialog.

2. Select a landmark to use for calibration. Then in the site map, double-click at the location of the landmark.

   As with SightSensors, choose a point at ground level next to a landmark or other permanent object and always select a point that can be easily identified in both the site map and the camera view.

3. Using the VMS, orient the camera so the selected landmark is at the center of the image, which is denoted by the cross overlay.

4. In the Calibrate window under Calibration Point 1, click Import Marker to transfer the GPS location information and populate the pan, tilt, and zoom settings.

⚠️ **Important:**

Always complete step 1 (entering the SightTracker's position) before continuing to step 4.

5. Click OK.

Associating a SightTracker with a device

Associating a SightTracker with a SightSensor enables GPS target data to be relayed to the SightTracker so it can properly aim the PTZ camera. Each SightTracker can be associated with up to 20 SightSensors, allowing PTZ cameras to provide close-up views of targets detected by all neighboring devices. SightSensors can provide target data for up to 20 SightTrackers, allowing multiple PTZs to provide coverage of an area.

You associate a SightTracker with a SightSensor as follows:

1. Open the Association dialog. (Right-click SightTracker icon → Configure → Association.)
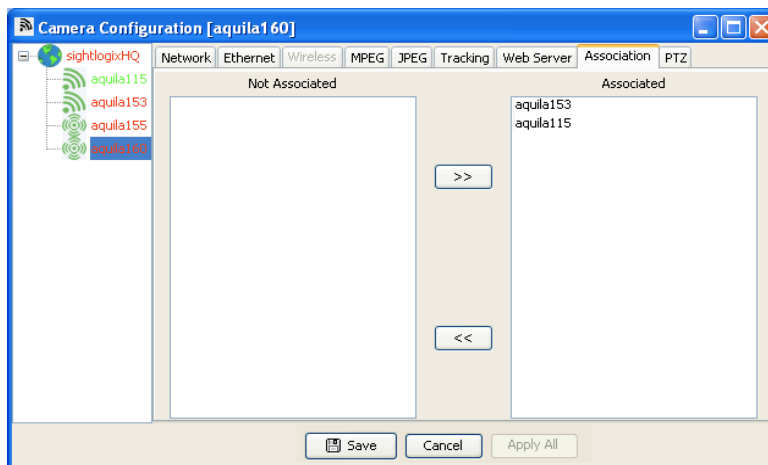
2. Move a SightSensors from the Not Associated to the Associated. Up to 20 SightSensors can be associated with each SightTracker.

3. Click OK.

Performing a Pairwise Calibration

The pairwise calibration more precisely aligns the GPS coordinates within the view of a dome camera with the GPS coordinates used to calibrate an associated SightSensor. This is an optional procedure but it is highly recommended since it improves tracking accuracy.

Good Pairwise Calibrations are achieved by choosing widely spaced points that cover a large percentage of the SightSensor field of view.

1. Right-click the SightTracker icon and select Pairwise Calibration.

2. In the dialog, select a SightTracker and an associated SightSensor. You'll see video from the selected device.
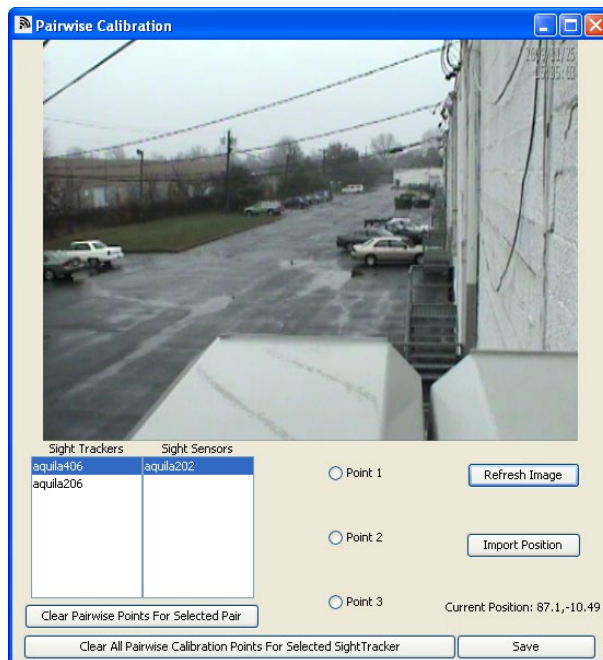
All pairwise calibrations are stored until you click Clear All Pairwise Calibration even if the association no longer exists.

Thus if you change a SightTracker's associations to different SightLogix devices, the calibrations will be saved in case you change the associations back to the original devices.

3. In the video image, double-click a reference point. This should be a point easily identified in both camera's views—that of the PTZ and that of the associated SightSensor

4. In the PTZ camera video image in the VMS, use the PTZ controller to align the cross overlay to the same reference point selected in the camera's image

5. Click Import Position.

6. Repeat for two additional points, selecting the appropriate radio button. Pairwise calibration works best when using reference points represent the entire field of view.

7. Click Save. Then repeat the procedure for each of the SightTracker's associations.

Testing that PTZ cameras track

The Follow Test option on the Calibrate dialog (right-click a SightSensor icon→Calibrate) enables you to test whether a PTZ camera will track a target.

When you select the Follow Test checkbox and then double-anywhere within the video image, verify from the VMS that the PTZ camera aims at the location selected.

Prioritizing targets to track

In case of multiple targets, a SightTracker will track the newest one by default. Thus if it's currently tracking a target and a new target appears, the PTZ camera will aim at the new target. Note that if two SightTrackers are associated with the same SightSensor and are set to the same priority, they will track the same target even in the case of multiple targets.

Set the priority from the SightTracker's Tracking tab (right-click icon→ Configure→Tracking):

> Change the default priority of targets to be one of the following: Track Newer Priority (default), Track Closer Priority (closer to the PTZ camera), Track Faster Priority, Track Bigger Priority, Track Older Priority, Track Farther Priority, Track Slower Priority, Track Smaller Priority.

> Specify the minimum time the PTZ camera tracks (or dwells on) the target currently being tracked before switching to a higher priority target if one exists. The default is 2 seconds. Use a longer time if you want to follow a target for more time before tracking a higher priority target.

> Select a zoom setting: Normal, to view a 12-meter scene around the target (default), Enlarged (8-meter scene), and Reduced (20-meter scene).

> Specify how long after the last VMS command, the Coordination System must wait before taking control of the camera to track a target (Reactivation Time). The default is 2 seconds.
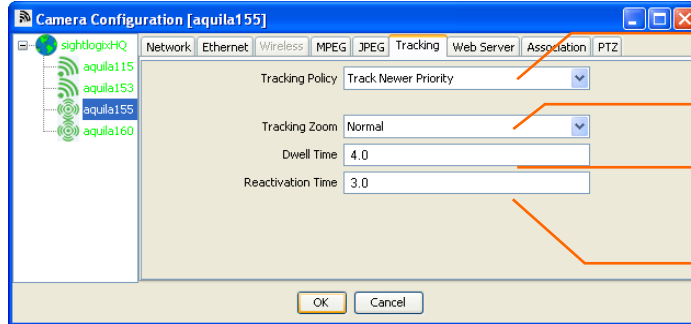
Prioritize targets according to age, distance from dome, size, or speed.

Choose Normal, Enlarged (zoomed in), or Reduced.

Minimum time the camera tracks a target before switching to another.

How long after the last VMS command the SightTracker can direct the camera.

Freezing SightTrackers

To stop SightTrackers from automatically directing PTZ cameras to aim at targets, right-click the site icon and click Freeze SightTrackers. Note that this suspends the functionality of *all* SightTrackers. The status bar updates to indicate that SightTrackers are frozen.

To re-activate SightTrackers, right-click the site icon and select Unfreeze SightTrackers.

Installing SightTrackers with Certified PTZs

SightTrackers work with IP-based and analog PTZ cameras which have been certified by SightLogix. Instructions for each type are provided in the sections that follow.

Refer to the SightLogix Support Portal for the most up-to-date list of supported IP cameras: http://portal.sightlogix.com/help/sighttracker-third-party-ptz-support.

Installing SightTrackers with Certified IP PTZs

This section describes the steps for installing a SightTracker with supported IP-based PTZs. For instructions on installing supported analog PTZs, refer to the SightLogix Support Portal: http://portal.sightlogix.com.

⚠️ **Note:**

 If your SightTracker has been configured to work with a particular IP PTZ, and you want to change to a different PTZ, you must factory reset the SightTracker before adding the new PTZ camera. Follow instructions here: http://portal.sightlogix.com/help/factory-reset

General Information

One SightTracker is required for each PTZ camera, and each SightTracker has two required functional external connections on the terminal block:

> 24V power or PoE

> Ethernet

The following is a complete list of what's required to attach a SightTracker to an IP PTZ camera:

> SightTracker unit

> NTP server available on the network (Required to allow auto-tracking function and configured in SightLogix CS)

> Compatible third-party IP PTZ camera

> Ethernet network (RJ45)

> Power source for camera and SightTracker unit

Select the SightTracker, right-click and select Configure.
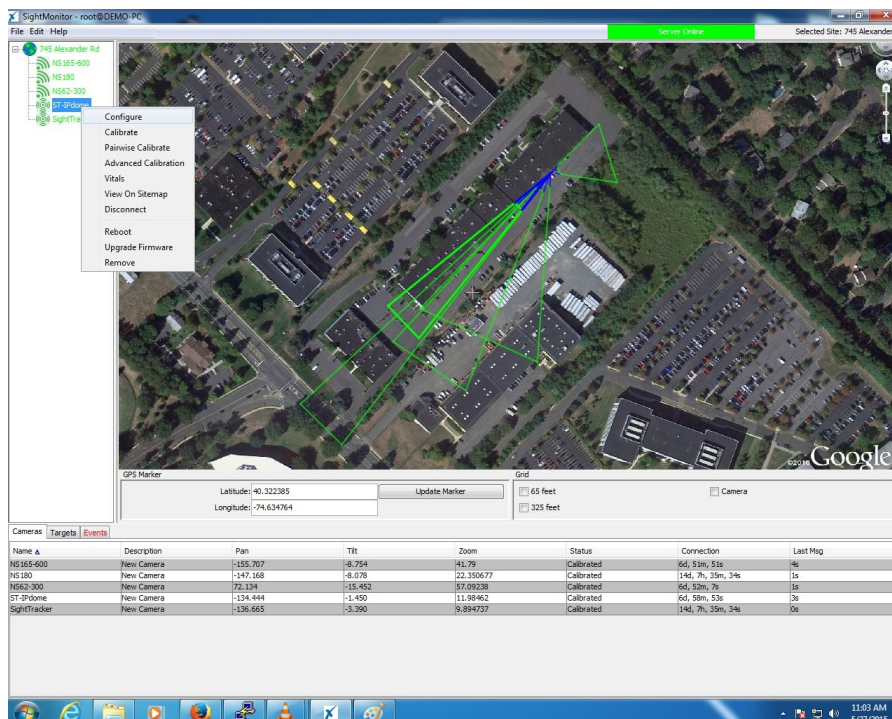
Under the PTZ tab, look for the Selected PT Unit Type field and select ONVIF.

An example follows:

> On the right-hand side, enter the information for ONVIF:

  o ONVIF Username field: Enter the IP dome username

  o ONVIF Password: Enter the IP dome password

  o ONVIF Address: The IP address of the IP Dome.

> **>** Click Save. The SightTracker will reboot.
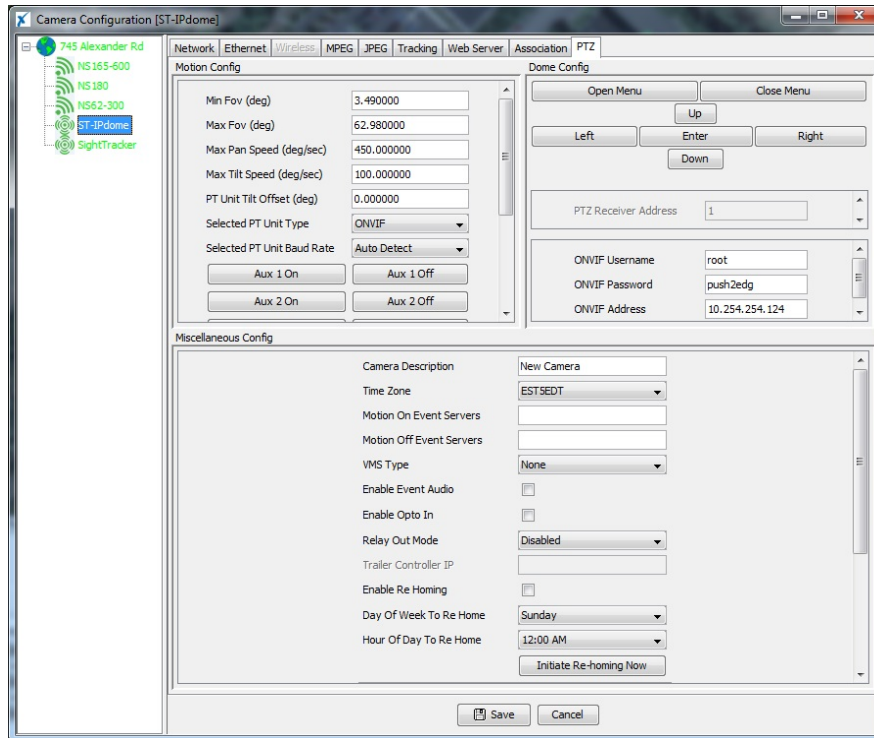
Adding an NTP Server

An NTP server is required for the SightTracker and the IP Dome to work properly.

Adding an NTP Server on an Axis IP PTZ

Use a browser and type in the IP Address of the IP Dome and login with the password.
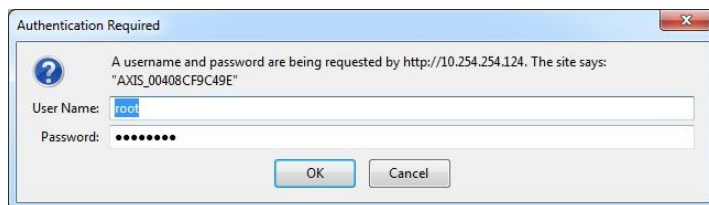
Select Setup.
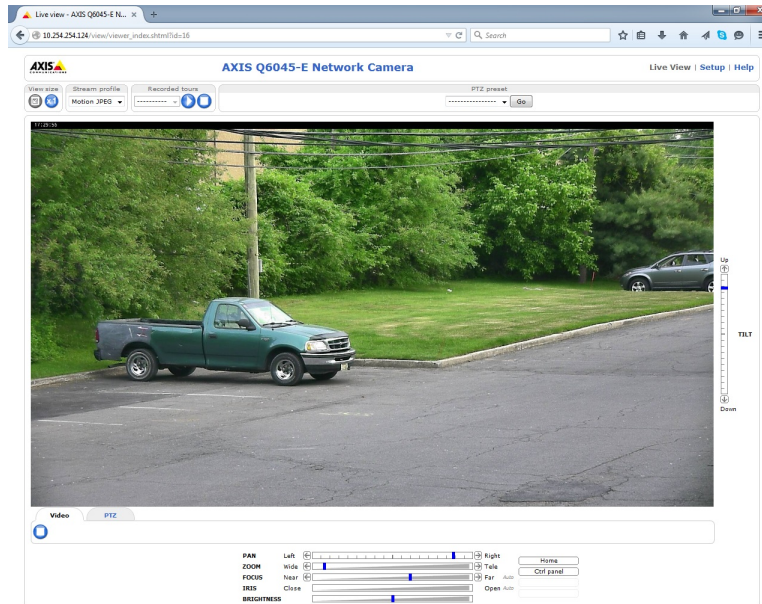
Select Date & Time.
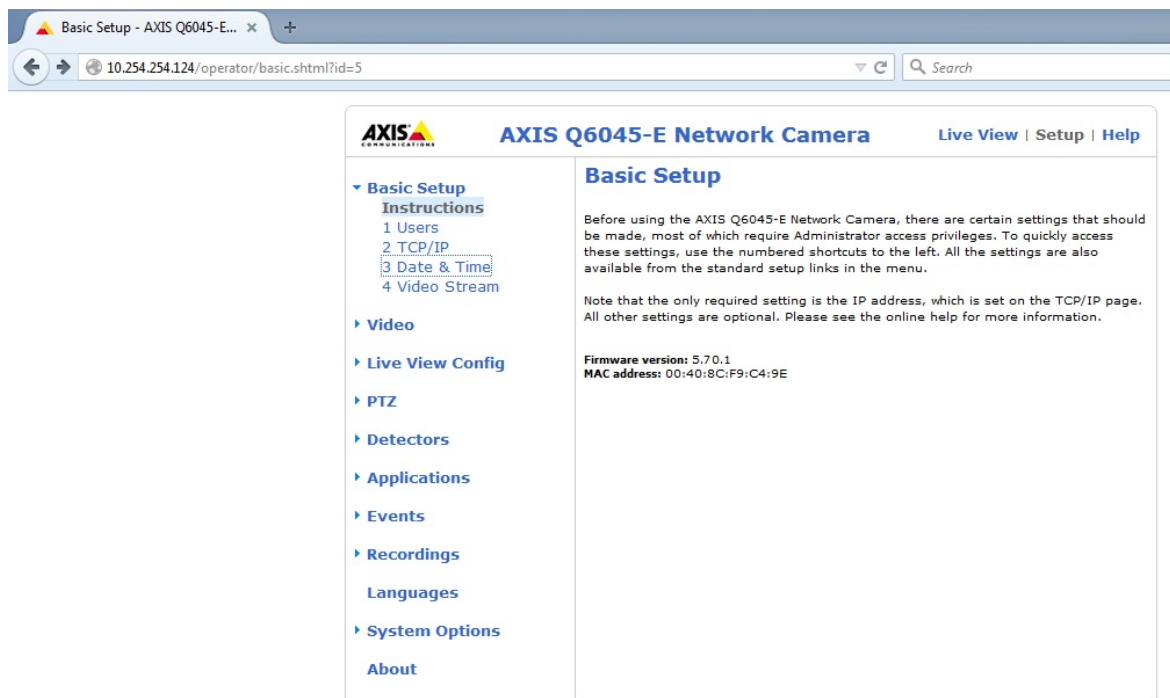
Enter the IP address of the NTP server under NTP Configuration section.

Adding an NTP Server on an Infinova IP PTZ

The following image shows where to configure the NTP server for Infinova. Please refer to your Infinova documentation for more detailed help.

Adding an NTP Server on Samsung IP PTZ

The following screenshot shows where to configure the NTP server for Samsung. Please refer to your Samsung documentation for more detailed help.
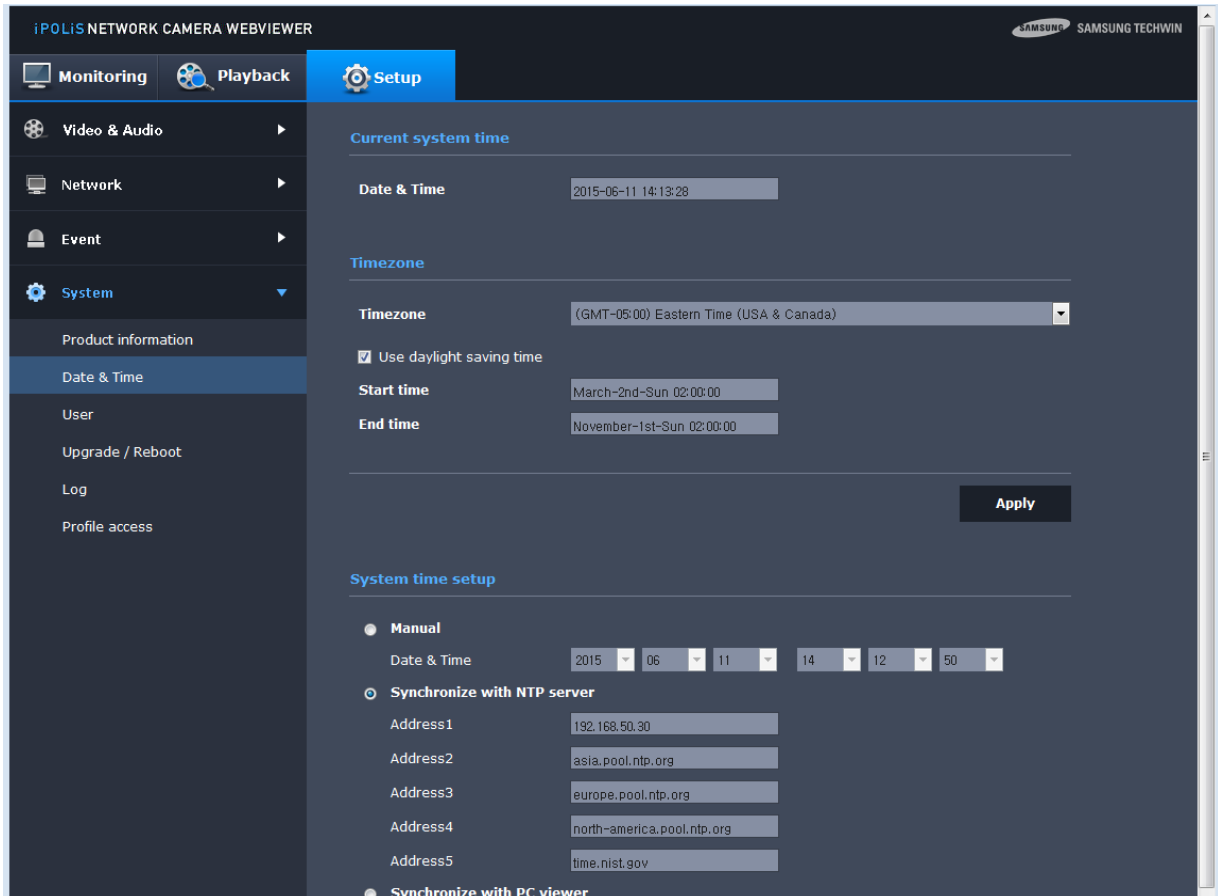
Troubleshooting

When problems occur with device performance, you can quickly check statistics such as camera time, temperature, and voltage consumption, by right-clicking on the device icon in the SightMonitor camera tree and selecting Vitals.

Currently selected device.

Each time you open a Vitals screen, a tab is created for that device so you can easily re-access it. See Table A.1 for descriptions of each field.

Table A.1 Vitals statistics	
Setting	Description
Model	Shows the SightSensor model.
Uptime	Length of time since the camera was last rebooted.
Description	Hostname or IP address
Message Protocol	Revision number for SightLogix software used to communicate with the cameras.
Serial Number	Unique ID assigned before shipping to identify camera and housing parts.
Imager	Information about the type of imager.
Temperature, pressure	Temperature (in Celsius) and pressure reported by the device. Problems may occur if temperature exceeds 70° C.
Voltage information (VMain, Current)	Voltage usage for various device components. Too much Out of range voltage can indicate a failure.
Pan, tilt, zoom	Camera orientation information
Position	GPS location of device (as entered in the Calibration dialog).
Non-alarmed Objects Enabled	Specifies whether moving targets are displayed if they are not triggering alarms.
Target Alarm Mode	Displays the Target Alarm Mode selected on the Site Settings page.
Boot code	Description for reboot. It includes the reason for the reboot, which can be a hardware reboot (such as power recycle), a user-requested software reset, or a software watchdog, which occurs when the device reboots itself after detecting a problem. In addition, the code gives the progress made during a reboot and numerical ID for the boot.
Power On Self Test	

When reporting problems, use the Help menu's Generate Support Information to save device information to a file, and email this file to SightLogix with questions. From the Help menu, select Generate Support Information and save the support file (which will be time-stamped) to a directory.

Erasing targets that persist

Targets may occasionally persist on screen although they no longer identify a moving object. This can occur, for example, when a vehicle moves into an alarm zone and parks for a period of time (or when a car drives away, leaving a ghost target).

To erase such targets, right-click on the SightSensor icon and select Reset Tracker, which resets the scene from scratch. (Reset Tracker is also available on the Tracker tab of the Camera Configuration dialog.) Note that this erases all target information for the camera.

Symptoms & solutions

Problem: A device is offline

Solution: This problem is almost always due to power not being present or cables being unconnected. So check both the power and network connections.

If the problem is not caused by disconnected cables, check whether the device is disabled in the Configuration Window. Then open the Vitals screen (right-click on the device icon and select Vitals) to see the last reported state. Check the temperature. If the temperature is too high (70° C or above), contact SightLogix.

Problem: A ghost image remains in the camera view even though the original target is gone.

Solution: An object that was present when the Tracker learned a scene will leave a ghost target when it moves from the scene. To erase such targets, right-click on the SightSensor icon and select Reset Tracker. Such targets will typically clear themselves after a few seconds.

Problem: The image quality is not good.

Solution: Decrease the quant value (right-click the appropriate device icon, select Configure, and then open the MPEG page) to increase the information used to describe the scene. Note that the quant value is nonlinear, with increasing impact at lower values.

If this does not appreciably increase the image quality, also increase the

maximum bit rate (be sure VBR is selected) to ensure enough bits are allocated.

Problem: The motion in the video image is jerky.

Solution: Frames may be dropping out. First verify whether you are looking at the MPEG, which is set for 30 frames per second. (By default, the JPEG channel, which is meant for archiving, is set for 3 frames per second when no alarms are being reported.)

If frames are being dropped from the MPEG channel, increase the quant value to allow more frames to be transmitted (right-click the device icon and select Configure; go to the MPEG tab). Note that image quality will decrease as the quant value increases.

Problem: When you move or re-aim the camera, the previous camera view remains

Solution: The camera has stabilized on the previous camera view and is attempting to match up the new view with the previous one.

Reset the tracker as follows: Right-click the SightSensor and select Reset Tracker.

Problem: When using the Alarm Test option on the Camera dialog to verify that alarm information is relayed to the VMS program via Motion On Event Server, no alarm is received at the VMS

Solution: There may be an inconsistency between the IP address that was entered in the Camera dialog vs. actual the IP address of the server.

Verify that the correct IP address was entered in the Camera Configuration Motion on Event Server dialog. If possible, configure the Camera with a Syslog server address and check the log for errors delivering the events. If this problem persists, contact SightLogix.

Appendix

This chapter contains general information not included in the SightLogix Installation Guide.

For installing SightLogix cameras and configuring basic video analytic rules and security policies, refer to the SightLogix Installation Guide, located on your CD or the SightLogix Support Portal:
http://portal.sightlogix.com/help/getting-started.

Setting Up Dry Contact Alarm Options

A dry contact alarm output is available at Relay /COM and Relay/Out pins of the IO Connector. A closed circuit will indicate alarm condition detected by the SightSensor. The maximum applied voltage across the dry contacts must be 30 volts or less and current of 100 mA or less.

A dry contact input is available at DryIN–/ DryIN+ pins of the IO Connector. A closed circuit will indicate active input when IO state is queried over the network or open circuit would indicate enclosure breach (SightTracker).

Note that dry contact functionality must also be enabled on the SightLogix device configuration window.

For SightSensors, open the Camera tab (right-click the device icon, choose Configure, then go to the Camera tab), and select Enable Opto In or Relay Out Mode as desired.

For SightTrackers, open the PTZ tab and select Enable Opto In or Relay Out Mode as desired.

Enabling Audio Alarm Broadcast

SightSensors can broadcast a pre-recorded message when an alarm is triggered. Connect LineOut+ and LineOut –to an amplifier and speaker to broadcast the default audio message when an alarm is triggered.

Replacing a SightLogix Device

1. Using a test computer or laptop on an isolated network configure new SightSensor or SightTracker with the same IP address and networking settings as the sensor or tracker to be replaced.

2. Start SightMonitor on the security network log in and select the SightSensor or SightTracker to be replaced using left mouse button.

3. Press right mouse button and select *configure* and make note of the Expected Serial Number of the device being replaced located on Network tab. Close configure window.

4. Press right mouse button on device to be replaced and select *Disconnect*.

5. Remove and replace sensor or tracker to be serviced.

6. Apply power to newly replaced sensor or tracker and pause one minute to allow device to initialize.

7. In SightMonitor of security network select sensor or tracker to be replaced using left mouse button. Press right mouse button and select *configure* in Network tab.

8. Change the Expected Serial Number from the old to the new serial number and press save.

9. Press right mouse button and select *Connect*. Pause up to one minute, new device will reset.

10. SightMonitor will now connect to the new device and it will inherit all calibration detection and rule settings as previous device.

11. Re-check detection rules if a SightSensor was replaced because new devices will likely not be pointed exactly as the previous. If necessary move policies using SightMonitor to match previous settings.

Default Usernames and Access Rights

Starting up SightMonitor prompts you for a username and password that determine your level of access. By default, four security groups are defined: chief, admin, officer, and guest.

Security Group	Username	Password	Access
Chief security officer	chief	change	All access of other groups, plus user and site configuration, and adding/removing devices.
Administrator	admin	change	Alarm policies, software & network settings.
Security officer	officer, guest	change	View target information and event notifications; reset tracker.

Use one of the assigned usernames and passwords listed here. For initially setting up the system, log in as chief security officer so you access all functionality. For more specific information on the tasks allowed each security group and to add or modify users, see page 30.

It is highly recommended that you immediately update the usernames and passwords to be unique and secure for your site.

Note: Some VMS programs assume a username of *root* (though the password may change). Check the SightLogix Support Portal (http://portal.sightlogix.com/help/vms-and-ptz-integrations to see if your VMS requires a specific username.

To change the username or password, select Users from the Edit menu in the SightMonitor (specific instructions are given in the section "Adding and Managing Users" on page 30).

It is important that at least one person be defined as chief security officer; however, for security reasons, restrict chief security officer and administrator group to properly trained essential users only. Day-to-day monitoring should be performed by users in the security officer group only.

Creating and Using Configuration Templates

The template is used to selectively update configuration parameters to all devices at a site.

The template includes settings such as the time zone, day/night mode, usernames and passwords, network information, the choice of MPEG or JPEG and other video selections, the video overlay text fields, etc. (These fields are described later in this guide.)

The template does not include settings that must be set per individual device, such as the IP address.

Note: Machine-specific information such as the IP address is inserted automatically by the discovery method. If you don't use discovery, you'll need to enter the IP address manually.

To access the template, right-click the site icon or right-click within the site map and select Edit Camera Template. This opens the Configuration dialog (with the tabs for camera, MPEG/JPEG, Tracker, Web Server, Ethernet/Wireless tab).
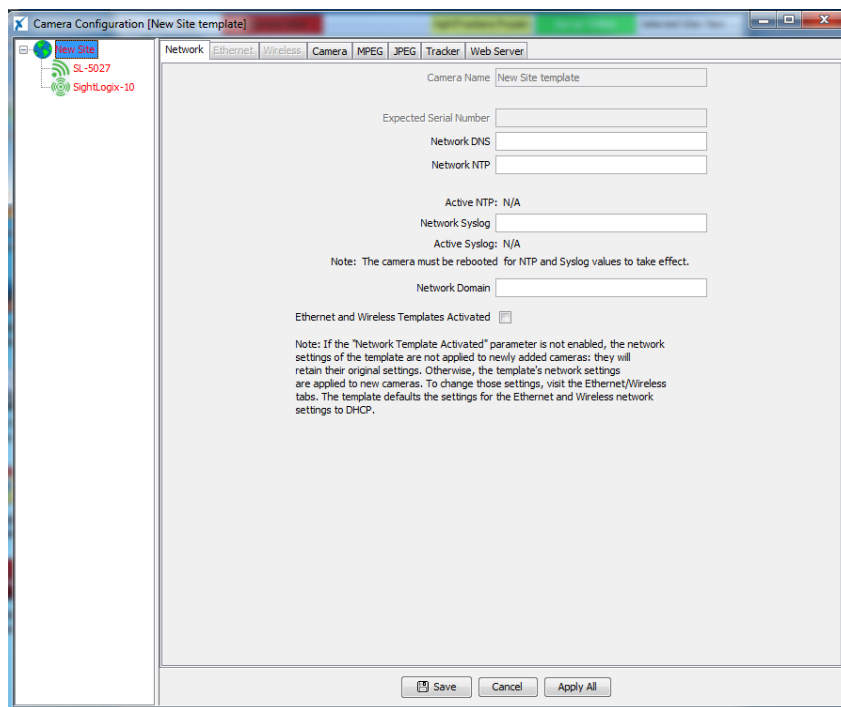
Clicking Save saves changes to the template (but doesn't apply changes to devices).

Clicking Apply All saves changes and updates all devices at a site.

To use the template to apply changes to the configuration:

1. Open the template (right-click the site icon or right-click within the site map and select Edit Camera Template).

2. Make a change.

3. Click Apply All for the change to be applied in all devices at a site.

4. When asked to confirm an update to the site, click Yes.

Note: The Apply All button only makes changes in devices for the settings that are different from the saved template and will not overwrite other settings.

However, if a setting is currently correct on the template and you want to update all devices to be the same as the template, you must first change the template, and then apply the desired changes.

For example, if the MPEG overlay is on in the template but off in some devices and you want the overlay on for all devices, you would first turn it off in the template (but not apply to the devices) and then turn it on and apply to all devices.

The order of steps is as follows:

1. Open the template and change the setting so it is how you want to change it *from*.

2. Click Apply All but when asked to apply to site, click No.

3. In the template, change the setting to how you want it for all devices.

4. Click Apply All and when asked to apply to site, click Yes.

Using templates and network settings

When a camera is added to the system, its settings (such as timezone, stream type, etc.) are changed by the site template; however, by default the device's network parameters retain their existing settings. This ensures that devices will keep operating at the same network address when the template is applied.

In some instances, you may prefer to apply network settings to newly added devices via templates. To do so:

1. Open the template (right-click the site icon or right-click within the site map and select Edit Camera Template).

2. Click the Network tab of the Site settings, and check the box for Ethernet Templates Activated. This will allow the network template settings to apply.

Note that the template defaults the Network settings for Ethernet to DHCP.

Naming the Device and Making Changes

After adding a device, it's recommended you verify that the serial number entered is the one expected (found on the back of the camera): right-click the device icon→ Configure→ Network.

You may also want to enter a descriptive name for the device. Click OK to save changes.
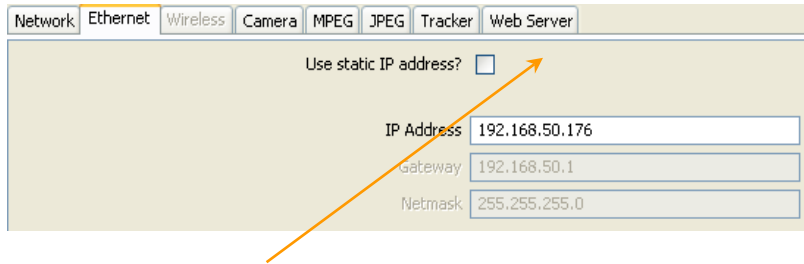
If you want to make the IP address static, do so from the Ethernet dialog (right-click the device's icon→Configure→Ethernet):

Use Static IP Address should not be selected until after the cameras are fully installed. When this option is not selected, the camera makes a DHCP request at boot-time and must receive a response to complete booting successfully. Any IP address received is used to populate the field on this form and they are not then editable. When this option is enabled, the camera saves its current network settings and does not use the DHCP to acquire new settings at boot time.

The following table describes the fields of the Network dialog box:

Table 2.1 Network field descriptions	
Active Interface	Must be Ethernet during the initial installation.
Network DNS	IP address for a domain name server. Optional; not required when using IP addresses.
NTP address	Enter the address of the network time protocol server. This field is especially important since it defines the server that will be used by the camera to synchronize its clock. If the camera is not synchronized, it may not display the correct time in the video stream. Note: Sight Tracker(s) require NTP service availability. Windows time service is not compatible.
Network Syslog	(Optional) IP address of the machine on which the syslog server is installed. Knowing the syslog address allows the logging information created by the camera to be accessed, which can be helpful for troubleshooting. Leave this field blank if you do not wish the camera to log over the network.
Network Domain	Not implemented in this release.

Setting the Time Zone and Other Information

To set the correct time zone for a device and other important functions, select the Camera tab on the Configuration dialog. The fields are described below.

Enter your Motion On Event Server and Motion Off Event Server addresses here, as explained in the table below.

Equivalent to having the camera detect an alarmed target. Used for testing alarm reporting between device and the VMS.
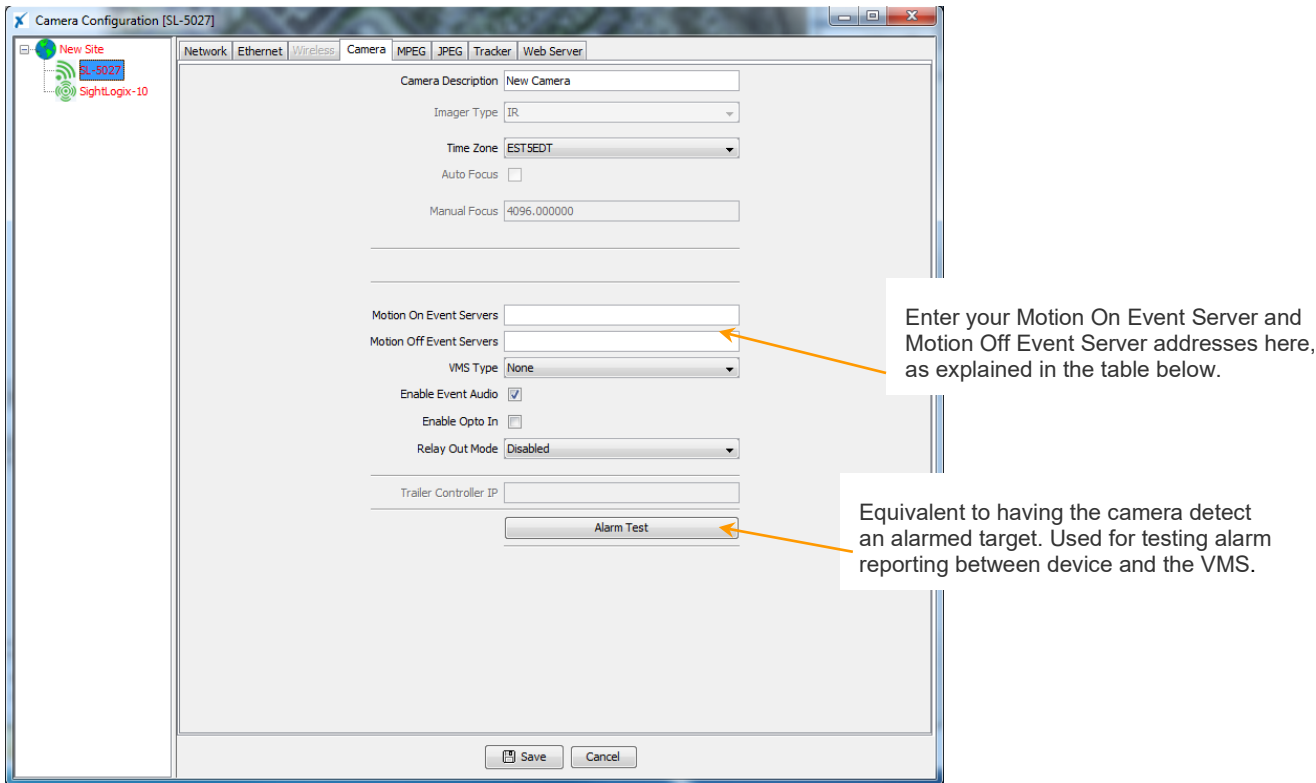
Camera Tab Field Descriptions	
Camera Description	(Optional) Enter a descriptive name for the device (the name entered here appears in the Targets list; see page 14).
Time Zone	To set the device's time zone, select the country in which the device is located. If the country contains multiple time zones, a city selector appears. Select a city located in the same time zone as the device. By default, the time zone is set for Eastern Standard Time (or Eastern Daylight Savings time depending on time of year; the system updates automatically between daylight and savings time).

Motion On/Motion Off Event Servers	These fields are for VMS systems that require events to be reported using specific protocols. A URL containing the protocol and the IP address of the associated system is entered in each of these fields. Example URLs: Cisco: Motion On "http://192.168.50.35/vsom/service/event_notify.php?id=1" DVTEL 6.0: Motion On and Off "dvtel://192.168.50.75:16000" Verint 6.0: Motion On "192.168.50.35:8081"
VMS Type	For setting up the connection to a VMS system. For an ONVIF VMS connection, selet either ONVIF H.264 (recommended) or ONVIF MPEG4. For non-ONVIF VMS connections, select "None." For IndigoVision, choose your desired connection from the list.
Enable Event Audio	Enables the broadcast of a pre-recorded message when an alarm is triggered. Requires an amplifier and speaker to broadcast the default audio message.
Enable Opto In	Controls the dry-contact input behavior. Applications of Opto In could be reading door open/close states. *Enabled*: Allows monitoring of the input signal for SightSensors or enclosure breach event for SightTrackers. *Disabled* (default): Input is not used.
Relay Out Mode	Enable the dry contact output on the device. Three options are available: *Alarm:* The device's alarm state is reflected on the dry contact output. Useful for sounding a siren or flashing a light. *DayNight* : The dry contact output reflects the day/night state (before/after sunrise or sunset). Useful for controlling illumination. *Disabled* (default): Output is not used.

Glossary

alarm. A condition triggered when a target (a tracked moving object) moves into or within an alarm zone and meets all conditions defined by the zone's alarm policies. The actual alarm is triggered by a motion event at a SightSensor.

alarm policy. A zone and its associated alarm rules. Together the zone and alarm rules specify the exact location and the conditions under which an alarm is (or is not) generated. For example, one alarm policy may specify that alarms be generated only in designated zones within the camera view or only during nonworking hours; another may specify that only objects entering a zone generate an alarm.

alarm rule. A condition applied to the generation of alarms within an alarm zone. Such rules restrict the generation of alarms according to time, time spent in an alarm zone, type of object, or other attributes.

alarm zone. A defined area of the camera view in which alarms may be generated. An alarm zone can be associated with alarm rules that restrict alarms according to time, type of object, or other attributes.

bit rate. A measure of the rate of data content in a video stream, given as bits per second. Generally, the higher the bit rate, the higher the video quality. Lowering the bit rate enables lower-bandwidth networks to carry more video streams.

dome camera. A camera, normally a PTZ camera, that can adjust to different settings (pan, tilt, and zoom) to get a better view of an area or object. Dome cameras can be associated with SightSensors to automatically aim at a preset location when the SightSensor detects a target.

frame rate. The number of frames that are shown or sent each second. Video is usually displayed at 30 frames per second. At slower rates, motion is less smooth and may become jerky.

from-zone. A designation applied to an alarm zone when defining an illegal path. If an object has previously passed into a from-zone before it enters the current zone (the one being defined by an alarm rule), an alarm will be generated.

I frame. As defined by the MPEG video compression format, an I frame contains all information necessary to completely describe a scene. By default I frames are sent once per second. Frames relayed during the interval between I frames contain only enough information to describe changes between it and the preceding I frame. Image quality degrades as the length of time between I frames lengthens.

JPEG. A compression method for still images. SightSensors transmit sequences of JPEG-compressed images to transmit video over the network. See also *motion JPEG*.

ignore zone. A defined area of the camera view in which new objects—objects originating within the zone—are not tracked. However, objects already being tracked, such as those coming from alarm zones or undefined areas, will continue to be tracked. No alarms are generated while targets remain in an ignore zone.

MPEG. Moving Pictures Experts Group. A set of standards established for the compression of digital video and audio data. One channel of SightSensors transmits MPEG video over the network.

mask zone. A defined area of the camera view in which motion is never tracked. No targets are identified (even if they were previously tracked) nor are alarms ever generated from a mask zone, making mask zones useful for reducing nuisance alarms generated from moving tree branches, birds, traffic, or other nuisances.

motion detection. Video analysis that identifies objects moving independently of the background.

motion JPEG. A video clip composed of a sequence of JPEG video frames that can be transmitted over a network. One channel of SightSensors transmits video over the network using this technique.

resolution. A measure of the amount of detail contained in an image. Image sharpness and clarity improve as resolution increases.

SightSensor. An intelligent surveillance camera with built-in processing that analyzes video to detect objects that violate a site's alarm policies. When calibrated, SightSensors also return the GPS coordinates of all targets.

SightTracker. A device that enables PTZ cameras to automatically and immediately aim at a target identified by a SightSensor, providing for immediate, close-up inspection of detected targets. SightTrackers receive GPS coordinates and other tracking information from SightSensors and convert this information to pan/tilt/zoom settings.

site map. An aerial view of an entire site showing the correct geographic locations of cameras and targets.

stabilization. The process of removing camera motion to make objects remain stable even when the camera is moving.

target. In motion detection, an object that has been identified as moving independently of the background and that has been determined not to be caused by environmental conditions such as rain or wind-blown foliage. Targets generate alarms when they occur in alarm zones and meet the conditions imposed by the user-defined alarm rules.

tripwire alarm. An alarm that is not generated until an object crosses the boundary of a zone. If a zone is defined as a tripwire zone, objects that move entirely within the zone do not generate an alarm. To create a tripwire alarm, create an alarm policy that defines a zone as a tripwire zone (for entering or exiting a zone, or both).

zone. A defined area of the camera view associated with specific instructions on when, how, and whether alarms should be generated or whether objects should be tracked. Supported zones include alarm zones, mask zones, and ignore zones

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