



AVIGILON Unity Video Face Recognition User Guide

[Home](#) » [aVIGILON](#) » AVIGILON Unity Video Face Recognition User Guide 

Contents

- 1 AVIGILON Unity Video Face Recognition
- 2 Product Information
- 3 Product Usage Instructions
- 4 Face Recognition
- 5 Enabling Face Recognition Analytics on Cameras
- 6 Configuring a Face Recognition List
- 7 Configuring a Face Recognition Event Rule
- 8 Configuring an Alarm for Face Watch List Match Events
- 9 Creating a Schedule for Face Recognition Rules and Alarms
- 10 Setting the Retention Period of Face Recognition Events
- 11 Exporting a Face Recognition List to Another Site
- 12 Documents / Resources
 - 12.1 References

AVIGILON™

AVIGILON Unity Video Face Recognition



Product Information

Specifications:

- **Product Name:** Avigilon Unity Video
- **Feature:** Face Recognition
- **Compatibility:** Enterprise Edition
- **License Requirement:** Separate license for Face Recognition

Product Usage Instructions

Enabling Face Recognition Analytics on Cameras

Before setting up face recognition lists, follow these steps:

1. Click on the New Task menu and select Site Setup.
2. Select a server, then click on Server Analytics.
3. If connected to an AI Appliance, expand the site and click on Server Analytics.

Configuring a Face Recognition List

To create a face recognition list:

1. Select the type of Face Recognition list you want to create.
2. Add profiles or photos to the list.
3. Add profiles from an appearance search if needed.

FAQ

• What is required to enable Face Recognition on cameras?

Face Recognition requires a separate license and can only be enabled on cameras with the Avigilon Appearance Search feature. It also requires either the AI NVR or an NVR with the Unity Analytics Service.

• What steps are involved in completing the Face Recognition setup?

To complete the Face Recognition setup, you need to enable site cameras, configure a Face Recognition list, set up rules, alarms, retention period, and display events in Focus of Attention. Refer to the user manual for detailed instructions.

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Face Recognition

NOTE

Face Recognition requires a separate license, and can only be enabled on cameras that already have the Avigilon Appearance Search feature enabled. It also requires either the AI NVR as a comprehensive analytics solution or an NVR with the Unity Analytics Service.

The Face Recognition feature helps to identify people of interest and speed up response times. Administrators can upload images or use recorded videos to create lists of known or unknown faces. These lists can be associated with cameras of high security or restricted access. When a camera identifies a familiar or unfamiliar face that is unauthorized in the area, it alerts the security operator. The operator can then track or look for live sightings or watch video of the person detected by the camera.



This guide describes how to set up a face recognition list, add profiles including adding faces from an appearance search, define rules to trigger alerts and notifications, set up alarms, find face recognition events, and manage the retention period of face recognition events.

Steps to complete the Face Recognition setup include:


1. Enabling site cameras that will be linked to the Face Recognition list. For more information, see [Enabling Face Recognition Analytics on Cameras](#) on the next page.
2. Configuring a Face Recognition list by adding a list type and profiles. For more information, see [Configuring a Face Recognition List](#) on page 6.
3. Configuring a rule. For more information, see [Configuring a Face Recognition Event Rule](#) on page 9.
4. Configuring an alarm for Face Watch List Match events. For more information, see [Configuring an Alarm for Face Watch List Match Events](#) on page 11.
5. Configuring how long to retain Face Recognition events in the system. For more information, see [Setting the Retention Period of Face Recognition Events](#) on page 14.
6. Displaying Face Recognition Events in Focus of Attention. For more information, see [Enabling Face Recognition Events in Focus of Attention](#) on page 16.

Enabling Face Recognition Analytics on Cameras

Before setting up face recognition lists, you must enable the Face Recognition feature on cameras that will be used to track known or unknown faces.

1. In the New Task menu , click Site Setup.
2. Select a server, then click Server Analytics .

IMPORTANT

If your site is connected to an AI Appliance to provide analytics processing on the video streams from non-analytics cameras, expand the site and then click on Server Analytics .

3. To enable Face Recognition on specific cameras:
 - **a.** Select the Appearance Search tab, and then select the check boxes of required cameras.
 - **b.** Select the Face Recognition tab, and then select the check boxes of required cameras. These must be the same cameras selected in the Appearance Search tab.

TIP If you do not see the Face Recognition tab, you need to purchase a Face Recognition license.

Only cameras that you have access to are displayed in each tab.
4. To exit the Server Analytics panel, click Close.

Configuring a Face Recognition List



A face recognition list contains profiles with snapshots of people and descriptions. To create a list, you first need to select the type of Face Recognition list you want to make, and then add profiles or photos to the list. Profiles can also be added from an appearance search.

Adding a Face Recognition List

Face Recognition lists allow operators to monitor and search for specific people across your site. There are two types of face recognition lists:

- **Face Watch List** — use for face watch matching to trigger an alert when the face on the watch list appears in a specific area.
- **Unknown Face Exclusion List (Preview)** — use for unknown faces to trigger an alert when a face is not on the watch list.

To set up a face recognition list:

1. In the New Task menu , click Site Setup.
2. Click the site name, and then click Face Recognition Lists .
3. In the Face Recognition Lists tab, click the Add Face Recognition List button.
4. From the List Type: drop-down menu, select either Face Watch List or Unknown Face Exclusion List.
5. Select a list type, and edit the settings, and then click OK.
 - **Name:** — The watch list name.
 - **Description:** — Information about the watch list.
6. Change or select the settings as desired from the panel on the right side of the page:
 - **Default Sensitivity:** (Unknown Face Exclusion List only) — How likely an unknown face will trigger an event. For example, the higher the sensitivity the more matches of unknown face results the system will find, and trigger an event. The recommended sensitivity is Medium.
 - **Default Minimum Match Confidence:** (Face Watch List only) — The default minimum confidence required for a profile match to trigger an event. The recommended confidence is Medium.

- **Default Profile Expiry:** — Select how long profiles are stored in the list. After this time, profiles are removed from the watch list and will no longer generate events. You can still view past events after this period if the recorded video is available.

This setting only affects the expiry date for new profiles. Existing profiles will continue to use their previously set expiry date.

- **Camera:** The camera selection option is only available for an Unknown Face Exclusion List whereas a Face Watch List is associated with every camera that has Face Watch List enabled.

NOTE



Selected cameras for an Unknown Face Exclusion List must have a Face Recognition license for alarms to be triggered on those cameras.


- **Alarms (Face Watch List only)**— Toggle whether profiles in this watch list trigger a Face Watch List Match alarm. To add an alarm, see [Configuring an Alarm for Face Watch List Match Events](#) on page 11.

Next, you need to set up entries or profiles for the watch list. For more information, see [Adding Face Profiles](#) below.

Adding Face Profiles

Face recognition list entries are called profiles. You can have up to 5000 profiles across all lists in a site. Avoid creating multiple profiles of the same person. You can also add a person from recorded video. For more information, see [Adding a Person to a Face Recognition List from an Appearance Search](#) on the next page.

1. In the New Task menu , click Site Setup.
2. Click the site name, and then click Face Recognition Lists .
3. Select a list, and then click Add Profiles.

TIP The default view for an appearance watch list is gallery mode. To switch to list view, click the View List button  on the top-right corner of the page.

4. Select the profile images to upload. Use the Ctrl and Shift keys to select multiple files.
5. Click Open.

The upload progress is displayed. If any errors occur during the upload process, they will appear in an exportable list.


6. Click Close.

TIP

A good profile is like a passport photo — a high-resolution, front-facing image of a person's face that includes the shoulders and some distance above top of head. After uploading an image, review the added profile's quality for matching by clicking on it. See [Profile Status and Quality](#) on the next page.

Adding a Profile from Recorded Video

You can add profiles from recorded video from any camera across a site licensed for Face Recognition, even cameras that do not have Face Recognition enabled.

1. In a View tab or in an Avigilon Appearance Search result, find the person of interest. A front-facing image works best.
2. In the top-right corner of the image panel, click .
3. Click and drag to select a reference image. A square box that includes the person's shoulders and some distance above top of head is ideal.

4. In the following dialog box, describe the person of interest.

- **Short Description:** — Identifies the person of interest in event search results and Focus of Attention events. Use a unique description for each profile.
- **Long Description:** — Displays when viewing an event search result or Focus of Attention event. Provide additional information about the person of interest, like what operators should do if a match is detected.

5. Select a watch list to add the profile to.




6. Click OK.

A notification confirms that the image is queued to be added.

Profile Status and Quality

Select a profile to see its status and quality on the right-hand side.

If a server cannot process an image, it is listed under Errors:

-  — Pending. If processing takes longer than a couple of minutes, the Avigilon Unity Video Server or Avigilon Unity Video Analytics Service may be unavailable.
-  — Rejected. The server cannot reach the Avigilon Unity Video Analytics Service, is a different version, or the image failed to upload. This may also occur if the system could not detect a face, multiple faces were detected, or the image resolution is poor.
-  — The status is unknown.

After they are processed, profiles of Good, Average, or Poor quality will be used to detect matches throughout the site. The profile quality impacts the match performance, so replace poor quality profiles if possible.

Adding a Person to a Face Recognition List from an Appearance Search

When recorded video from an appearance search shows a person of interest, you can quickly add the person to a face recognition list.

1. In the Appearance Search Results area, identify a person of interest in the video.

2. Select  Add to Face Recognition List.

3. Draw a square box around the person of interest. Use a front-facing image that includes the person's shoulders and some extra space above the head.

4. Add a description in the Short Description: and Long Description: boxes.

- **Short description** — Identifies the person of interest in event search results and Focus of Attention events. Use a unique description for each profile.
- **Long description** — Displayed in event search results and Focus of Attention events. Use to provide additional information about the person of interest; for example, what action to take if person of interest match is detected.



5. Select the appropriate face recognition list to add the profile to, and click OK.

The profile image is now saved under the selected face recognition list, and will trigger an event in Focus of Attention.

Configuring a Face Recognition Event Rule




After creating a Face Recognition list and profiles, you can set up a rule to specify conditions and actions that trigger system alerts or notifications when a person of interest is detected by a camera. For example, you can set up a rule to send security operators an email or text message when a known or unknown face appears in a

restricted area. Or you can set up a rule to display a pop-up message on specific monitors or send an alarm. These are the steps to set up an onscreen message, an alert on the Focus of Attention dashboard, and an alarm for Face Recognition events.

1. In the New Task menu , click Site Setup.
2. Select your site, and then click  Rules.
3. Click Add.
4. In the Select Rule Event(s) area, under Device Events, click:
 - Face watch list match started to trigger an alert when a device detects a face on the Face Watch List.
 - Unknown face detected to trigger an alert when a device detects a face on the Unknown Face Exclusion List.

TIP

Events, Actions, and Conditions can be further defined if they appear as blue text after being selected.
5. Do the following:
 - **a.** To pick one or more specific devices, click the any device blue text. > Select Any of the following cameras: > Select one or more devices. > Click OK.
 - **b.** Click the any watch list blue text > Click Any of the following watch lists: > Select the check box of the required watch list. > Click OK.
6. Click Next.
7. To select an action for the rule, in the Select Rule Action(s) area:
 - Under User Notification Actions, select the Display on-screen message check box > Click the message blue text and add a custom message. > Click OK.
 - Under Monitoring Actions, select the Focus of Attention check box > Click the device devices that should be linked to the event blue text. > Choose how often to notify users. > Click OK. Face detection events display as a yellow-colored hexagon in Focus of Attention.
 - **TIP**

To enable alerts in Focus of Attention, in the New Task menu , click  Focus of Attention >  Settings. For more information, see Enabling Face Recognition Events in Focus of Attention on page 16.

 - Under Alarm Actions, select the Trigger an alarm check box. > Click the an alarm blue text, and select an alarm. > Click OK.
8. Click Next.
9. On the Select Rule Properties dialog box:
 - **a.** Add the rule name and a description. The name should be unique throughout the site.
 - **b.** Create a schedule. For more information, see Creating a Schedule for Face Recognition Rules and Alarms on page 13.
 - **c.** Select the Rule is enabled check box.
10. Click Finish to create the rule.




Now, operators with permission can also search the timeline of recorded video for face watch list events. For more information, see Searching Face Recognition Events in Recorded Video on page 17.

Configuring an Alarm for Face Watch List Match Events

NOTE

Configuration for unknown face alarms is not supported at this time.



Configure an alarm to trigger when a Face Recognition event is detected. Alarms will appear on the Alarms page under the New Task > View section, appear as an alarm (in red) in Focus of Attention, and appear as an alert on the Avigilon Unity Video mobile app.



1. In the New Task menu , click Site Setup.
2. Click Alarms , and then click Add.
3. On the Select Alarm Trigger Source dialog box:
 - **a.** From the Alarm Trigger Source: drop-down list, choose Face Watch List Match.
 - **b.** Select the check box of the required face recognition list.
 - **c.** (Optional) To require an operator to acknowledge an activated alarm, select the Auto-acknowledge alarm immediately after it activates check box.
 - **d.** Click Next.
4. On the Select Linked Devices dialog box:
 - **a.** Select the devices that will trigger the alarm.
 - **b.** (Optional) Adjust pre-alarm recording and duration settings.
 - **c.** (Optional) To show devices when an alarm is triggered, select the View linked devices when alarm is triggered check box.
 - **d.** Click Next.
5. On the Select Alarm Recipients dialog box:
 - **a.** To select users who will be notified when the alarm is triggered:
 1. Click Add Recipients....
 2. Select the check boxes of users to receive alarm notifications, and click Add.
 - **b.** (Optional) To add a sound to the alarm when triggered, click Play sound when alarm is triggered:, and choose an audio file.
TIP
To listen to an audio track, click .
 - **c.** Click Next.
6. On the Select Alarm Acknowledgment Action dialog box:
 - **a.** (Optional) Select the Require a comment when acknowledging alarm check box to require users to add a comment when they acknowledge the alarm.
 - **b.** (Optional) Select the Activate selected digital output(s) on alarm acknowledgment check box, and then select one or more devices. If you require the user to confirm before activating the digital output, select the Require user confirmation before activating digital output(s) check box.
7. On the Select Alarm Properties dialog box:
 - **a.** Enter a name for the alarm, assign a priority, and choose a schedule. For more information, see [Creating a Schedule for Face Recognition Rules and Alarms](#) on the next page.
 - **b.** To enable the alarm, select the Enable alarm check box.
8. Click Finish to complete the alarm setup.

Creating a Schedule for Face Recognition Rules and Alarms

When you configure a rule or alarm, you can assign a schedule. Schedules control when rules or alarms are

triggered — at specific times during a day, or only on specific days.

To create a schedule, click  then select . Complete the following steps:

1. Give the new schedule a name. This should be unique throughout the Avigilon Unity Video site.
2. Give the first recurrence a unique name.
You can add multiple recurrences to create a detailed schedule. For example, you could create one recurrence to cover every weekend, plus extra recurrences to cover public holidays.
 - To add extra recurrences, click .
 - To delete a recurrence, select the recurrence then click .
3. For each recurrence, define the duration by entering a Start: and End: time.

NOTE

If you enter an End: time that is earlier than the Start: time, the event will span two days. For example, if the schedule is set to start at 12:00 pm and end at 11:59 am, the event is automatically enabled from 12:00 pm on day 1 and will end at 11:59 am on day 2.

4. In the Start Date: field, enter when the recurrence should begin.
5. In the Recurrence pattern area, select the frequency of the recurrence.

Option	Description
Daily	The event is enabled during the same time every day. <ul style="list-style-type: none">• Select the number of days between each schedule recurrence.
Weekly	The event is enabled during the same day and time every week. <ul style="list-style-type: none">• Select the day(s) of the week, then select the number of weeks between each schedule recurrence.
Monthly	The event is enabled during the same day and time every month. <ul style="list-style-type: none">• Select the specific day or weekday, then select the number of months between each schedule recurrence.
Yearly	The event is enabled during the same day and time every year. <ul style="list-style-type: none">• Select the specific day or weekday and month, then select the number of years between each schedule recurrence.



6. Add and complete any other recurrences that need to be part of the schedule.
7. Click OK to save the new schedule.

Setting the Retention Period of Face Recognition Events

You can manage the retention of Face Recognition video footage. Depending on your privacy policy or regional regulations, you may only be able to retain identifying data for a specific amount of time.

NOTE

These settings override protected bookmarks and video retention settings




1. In the New Task menu , click Site Setup.
2. Click the site name, then click Identity Data Retention .
3. Select the Face Recognition events check box and enter the maximum number of days to retain data.
4. Click OK.

Exporting a Face Recognition List to Another Site

Face Recognition lists are site-specific. You can copy a watch list from one site to another using the backup and restore settings.

NOTE

Both sites should use the same version of the Avigilon Unity Video Server software. Existing Face Recognition lists will be overwritten.



1. In the New Task menu , click Site Setup.
2. Click the site name with the Face Recognition list you want to export, and then click  Backup Settings.
3. Enter and confirm a password, and click OK. The password will be used to restore the backup file.
4. Select where to save the AVS file, and click OK.
5. Click the name of the site you want to copy the Face Recognition list to.
6. Click  Restore Settings, and select the saved AVS file.
7. Enter the password, and click OK.
8. To ensure that only the Face Recognition list is restored, click Use custom settings, and then click Choose Settings.
9. Clear all settings except Face Recognition Lists, and then click OK.

The list is exported to the selected site.

Enabling Face Recognition Events in Focus of Attention

Focus of Attention shows hexagons that each represents cameras grouped by sites and folders. It allows security operators to monitor cameras at a high level. When alerts and alarms are set up, Face Recognition alerts are highlighted in yellow while active alarms are highlighted in red.

To enable Face Recognition alarms and events to show in Focus of Attention:

1. In the New Task menu , click  Focus of Attention.
2. In the Change Focus of Attention settings dialog box, select either Face Watch List Match or Unknown Face, or both.
3. Select the cameras that will display the Face Recognition events and alarms.
4. Click OK.



Active camera alarms are highlighted in red until acknowledged.

As new alarms and events occur, the video appears in the Recent Events list and the corresponding camera changes color in the Overview.

Searching Face Recognition Events in Recorded Video

A security operator can search for Face Recognition events in recorded video to view the actions of a person of interest.

To search for a person of interest in recorded video:

1. In the New Task menu , under Search, click Events .
2. Select the cameras to include in your search.
3. Enter a Date Range or use the Timeline range markers to set the date and time of your search.

4. In Events to Search For:, select either the Face Watch List Match and Unknown Face check box, or both.
5. Click Search.

Your search results are displayed.

More Information & Support

For additional product documentation and software and firmware upgrades, visit support.avigilon.com.


Technical Support

Contact Avigilon Technical Support at support.avigilon.com/s/contactsupport.

Third-Party Licenses

- help.avigilon.com/avigilon-unity/video/attribution-report/VSA_FixedVideo.html
- help.avigilon.com/avigilon-unity/video/attribution-report/VSA_Avigilon_ACC.html
- help.avigilon.com/avigilon-unity/video/attribution-report/VSA_Avigilon_ACS.html

Documents / Resources

	AVIGILON Unity Video Face Recognition [pdf] User Guide Unity Video Face Recognition, Unity Face Recognition, Video Face Recognition, Face Recognition
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References

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- [△ help.avigilon.com/avigilon-unity/video/attribution-report/VSA_Avigilon_ACC.html](https://help.avigilon.com/avigilon-unity/video/attribution-report/VSA_Avigilon_ACC.html)
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