



BriefCam User Guide



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All names of people and organizations used in the examples in this text are fictitious.

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BriefCam User Guide

BriefCam is the industry's leading provider of VIDEO SYNOPSIS® and deep learning solutions that make video searchable, actionable, and quantifiable. BriefCam's video analytics platform is built on a unique fusion of computer vision and AI (artificial intelligence) technologies, empowering new and innovative safety, security, and operational efficiency by extracting practical value from video surveillance systems.

BriefCam's platform enables rapid video review and search, quantitative video insights, and smart alerting – dramatically shortening time-to-target to detect and mitigate security threats, and significantly enhancing safety and operational optimization.

BriefCam offers both standalone deployments and multi-site deployments (comprised of multiple site systems and a central Hub). This guide is relevant for all standalone deployments and site deployments. This guide is relevant for all standalone deployments and site deployments. For information about using Hub deployments, see the [BriefCam Nexus Multi-Site Guide](#).



BriefCam Software Solutions

The BriefCam platform comprises the following key modules:

- [The REVIEW Solution](#) – enables VIDEO SYNOPSIS® generation on the basis of video sourced from both offline files and online VMS platforms, with full case management and such powerful features as multi-camera search, appearance similarity and face recognition, and granular filtering.
- [The RESPOND Solution](#) – supports delivery of proactive responses to critical events for increased safety and security, with customizable alerts, alert reporting, and browser notifications.
- [The RESEARCH Solution](#) – facilitates leveraging of quantitative video analysis-derived intelligence for informed, data-driven decision-making, including advanced trend and dimensional (area, path, duration and other) KPI analysis as well as full dashboarding and scheduling capabilities.

See also:

[Sign in to the BriefCam Web Client](#)

[Customizations](#)

[Supported File Formats](#)

Sign in to the BriefCam Web Client


Supported Browsers

The browsers that are currently supported are:

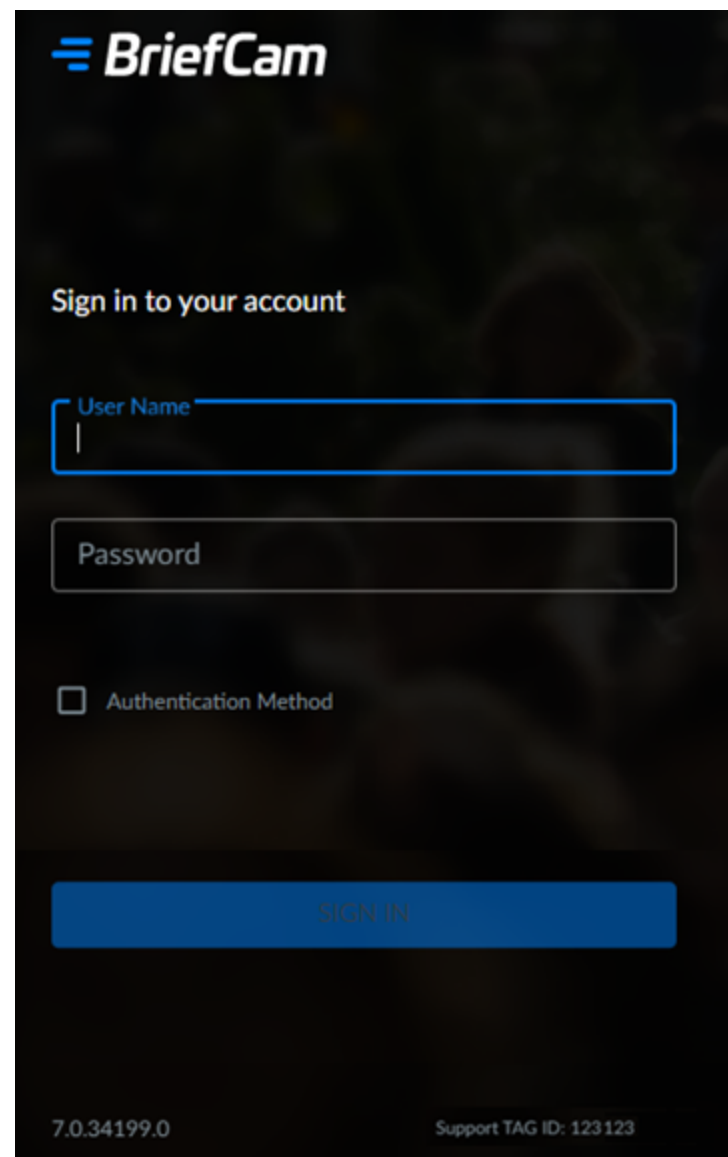
- Google Chrome v. 77.* and above
- Microsoft Edge v. 80 and above

Signing In

In the web browser address bar, enter the internet address of the BriefCam server that you received from your system administrator (example: `http://[server name or IP address]/app` or `https://[[server name or IP address]/app]`) and press **Enter**.

	<p>It is recommended to only open one instance of the BriefCam client at a time. Switching between instances may cause UI problems.</p>
---	---

You will then be presented with the BriefCam sign in page.

The image shows the BriefCam login interface. At the top left is the BriefCam logo. Below it, the text "Sign in to your account" is displayed. There are two input fields: "User Name" and "Password". Below the "Password" field is a checkbox labeled "Authentication Method". A large blue "SIGN IN" button is positioned below the checkbox. At the bottom left, the version number "7.0.34199.0" is shown, and at the bottom right, the "Support TAG ID: 123123" is displayed.

BriefCam

Sign in to your account

User Name

Password

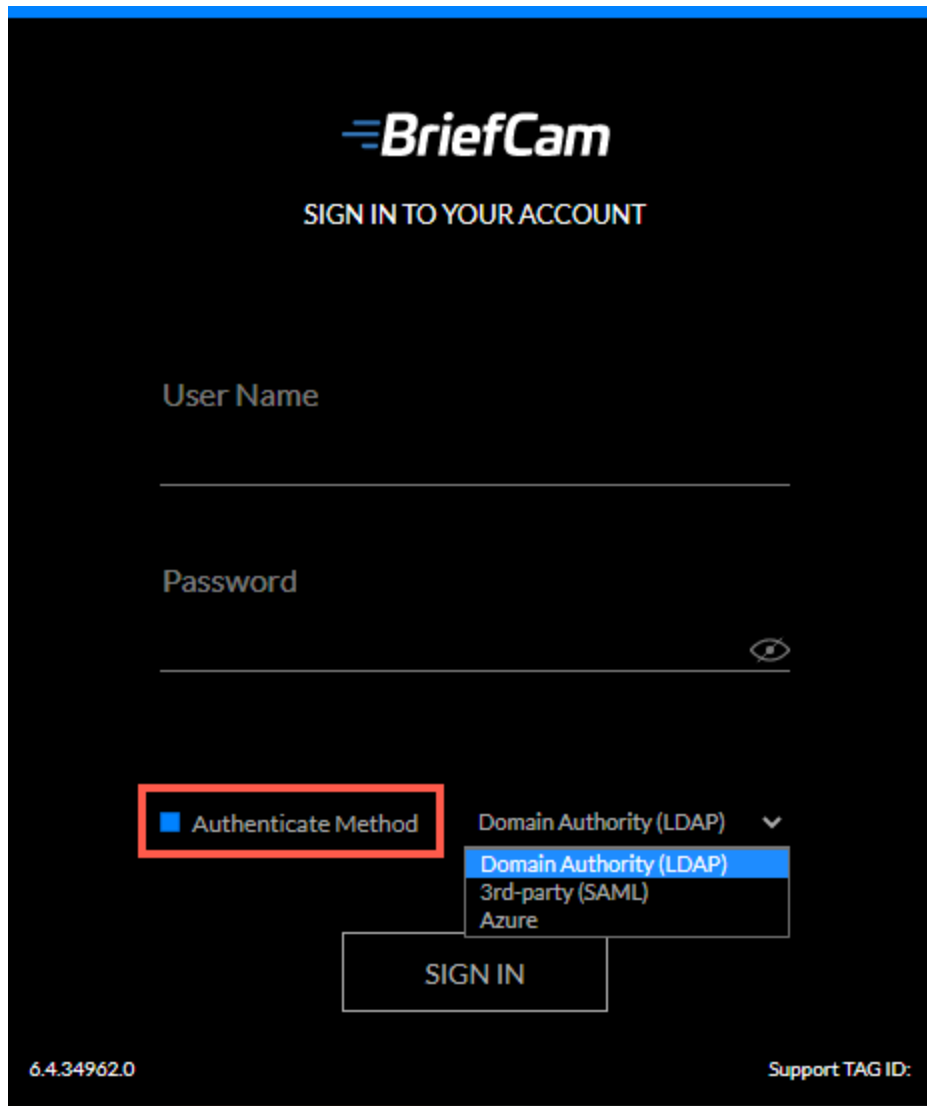
☐ Authentication Method

SIGN IN


7.0.34199.0 Support TAG ID: 123123

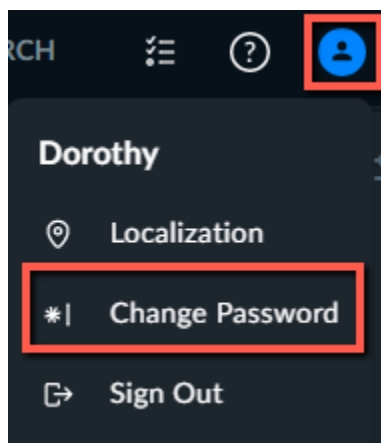
In the **User Name** and **Password** fields, enter the login information that you received from your system administrator.

If you want to sign in with an authenticated method, select the **Authentication Method** checkbox and select **Domain Authority (LDAP)**, **3rd-party (SAML)** or **Azure** and then click **Sign In**. Note that this first needs to be configured by the administrator. In addition, the administrator can limit the client login to a single method and that will be reflected on the sign-in page.



The image shows the BriefCam login interface. At the top, the BriefCam logo is displayed above the text "SIGN IN TO YOUR ACCOUNT". Below this are two input fields: "User Name" and "Password". The "Password" field has a toggle icon (an eye) to its right. Under the "Password" field, there is a section titled "Authenticate Method" which is highlighted with a red box. To the right of this section is a dropdown menu currently showing "Domain Authority (LDAP)". The dropdown menu is open, showing three options: "Domain Authority (LDAP)" (highlighted in blue), "3rd-party (SAML)", and "Azure". Below the dropdown is a "SIGN IN" button. At the bottom left, the version number "6.4.34962.0" is displayed. At the bottom right, the text "Support TAG ID:" is visible.

Once signed in, you can change your password by clicking on the Account user () icon and clicking **Change Password**. Note that non-English characters are not supported for passwords.

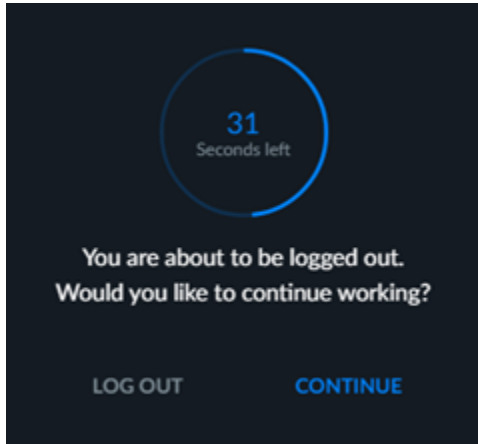


The **TAG ID** at the bottom of the screen is a number for support purposes. When contacting a Support representative, you may be asked to provide this number.

Users are automatically logged out if no activity is detected for 20 minutes (per machine). This allows organizations to do away with licenses being used when the user is no longer using the application and then it is not available for other users. The [administrator](#) can change this default.

However, while the RESPOND module's **ALERTS** tab is open, there is no session timeout.

Before the automatic log out, the following message is displayed.



The REVIEW Solution

BriefCam's REVIEW solution can process both file-based and VMS video sources (depending on the specific license acquired). It supports case management, BriefCam's VIDEO SYNOPSIS[®] (extraction and superimposition of video objects over original scenes to allow simultaneous display of events that occurred at different times), and multi-camera search, enabling the pinpointing of objects of interest via appearance similarity and face recognition as well as a broad range of filter presets.

See also

[Case Management](#)

[Case Collaboration](#)

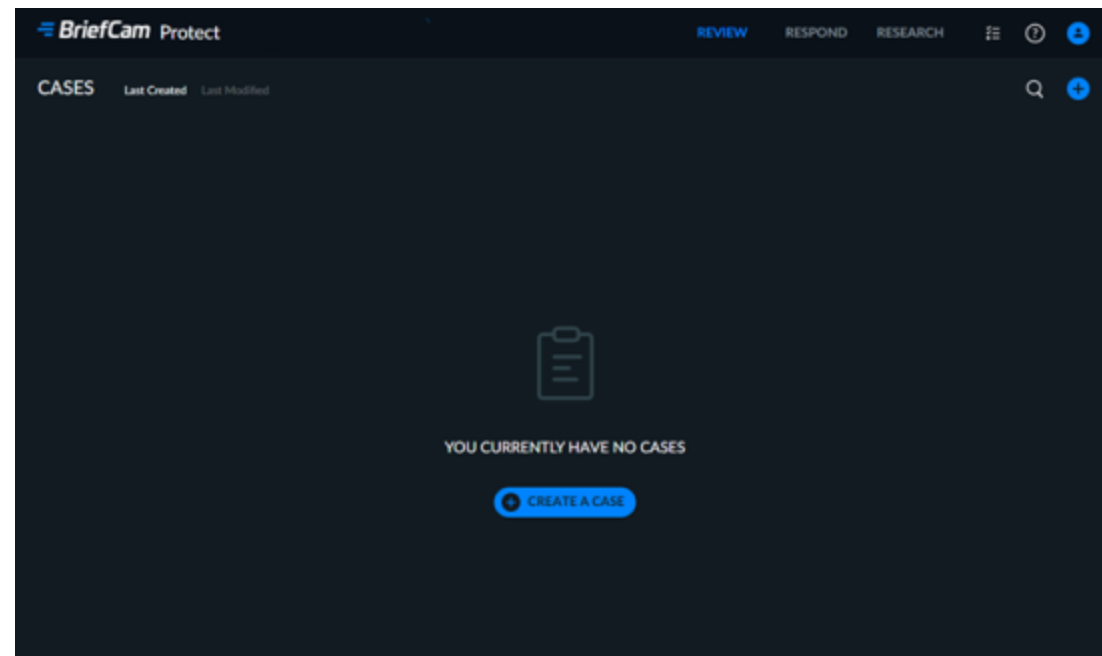
[Case Management Interface](#)

Case Management

At the core of the REVIEW solution is powerful case management. The **CASES** interface – the main page that loads in your browser when you log into the module's Web interface – presents an integrated view of all video assets of an investigation within a single container.

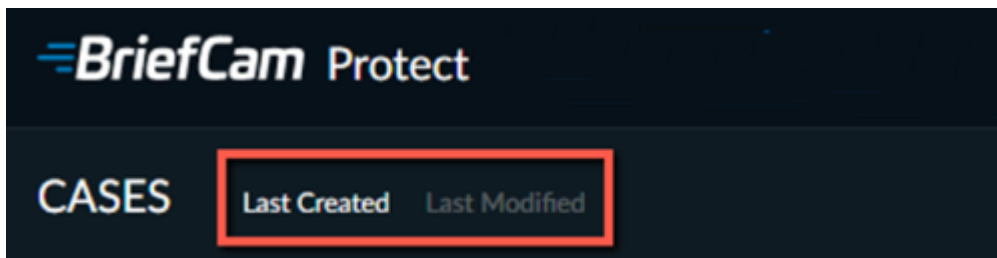
Additional case management features include the ability to bookmark objects of interest and summarize case findings (including relevant exhibits) in reports for truly streamlined investigation workflows.

The first thing you'll be presented with when logging into BriefCam in your browser is the REVIEW solution's **CASES** overview page, which displays cases under your ownership (that is, cases created in your user account and cases that were shared with you).

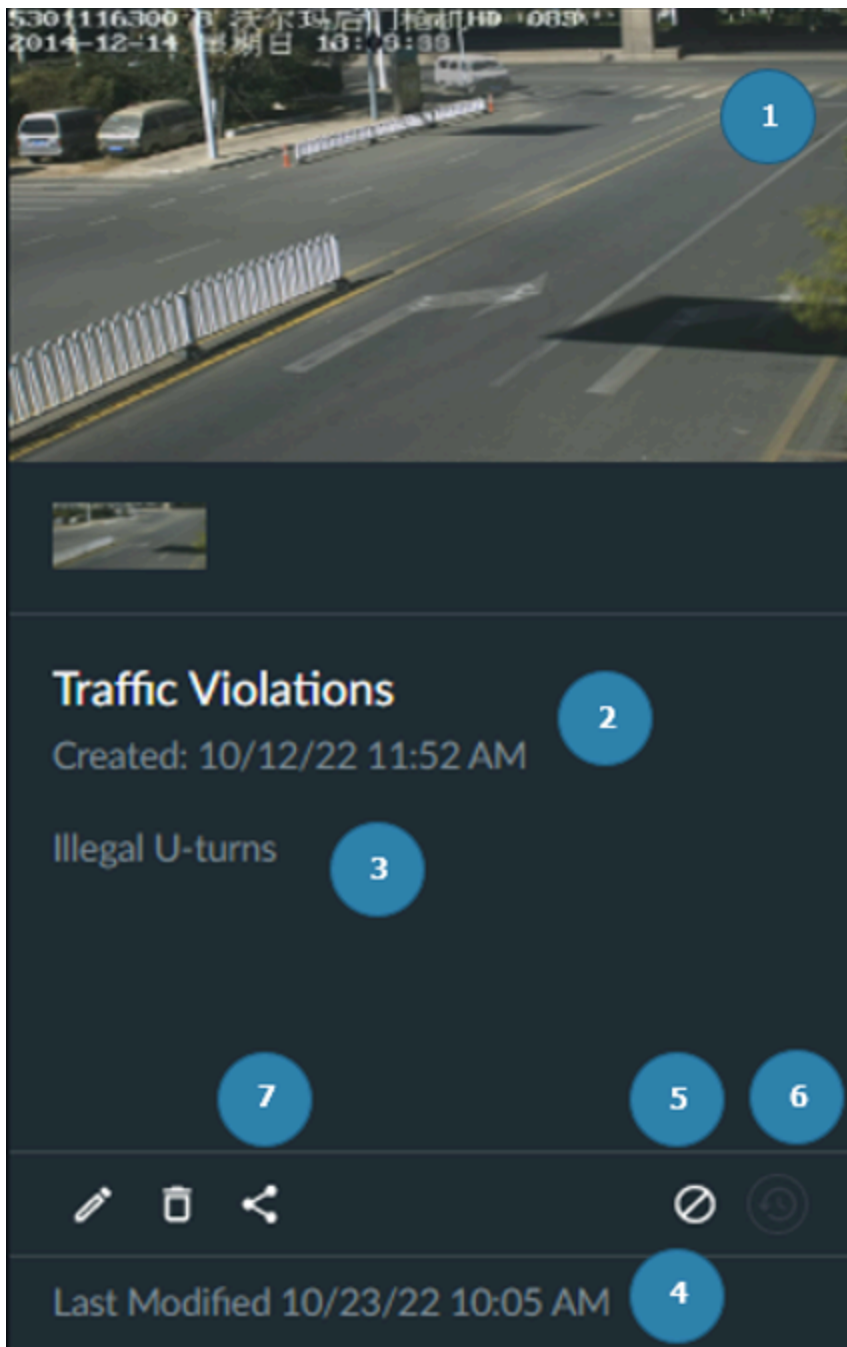


In the top right-hand corner of the page, you can:

- Search for cases via the magnifying glass icon. The case name and case description are searched. Note that searching for the backslash character (\) is not supported.
- Create new cases by clicking **CREATE A CASE**.
- Sort the cases by using the **Last Created** and **Last Modified** options in the top right-hand corner.



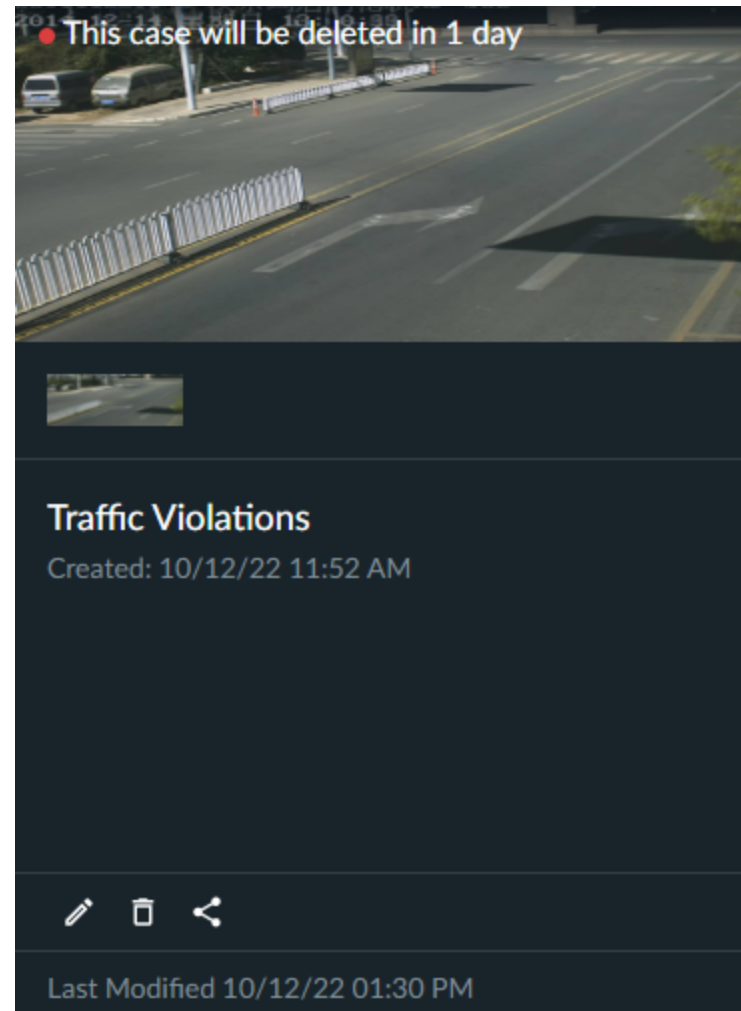
Let's zoom in on a sample case.



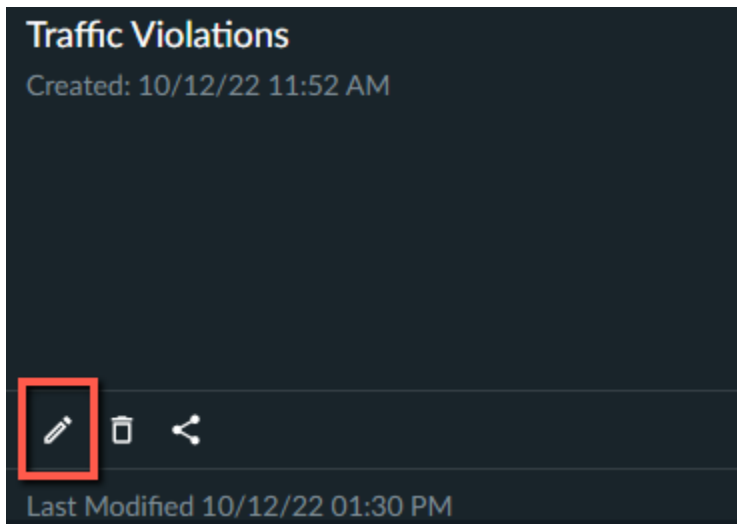
Each of the cases displayed on the **CASES** page features the following:

1. A large cover image taken from the most recent synopsis added to the case, with smaller thumbnails of additional synopses directly below the cover image.
2. The case's name and the date and time of creation.
3. A case description (optional).
4. The date and time of the case's last modification.
5. Indicates that the case was excluded from being automatically deleted during maintenance. You can click on it to edit the behavior.
6. Indicates that the case includes scheduled sources.
7. Indicates the case collaboration status. You can click on it to change the status.

At the top of the screen, you will see when the case will be deleted. For example, in the image below, it says: This case will be deleted in 1 day.



To prevent a case from being deleted during maintenance, when items are automatically deleted, click the edit icon.



In the edit screen, check the **Do not delete during maintenance** checkbox.

CREATE A CASE

Name *

Traffic Violations

Description (optional)

☒ Set up incident time

01/15/23

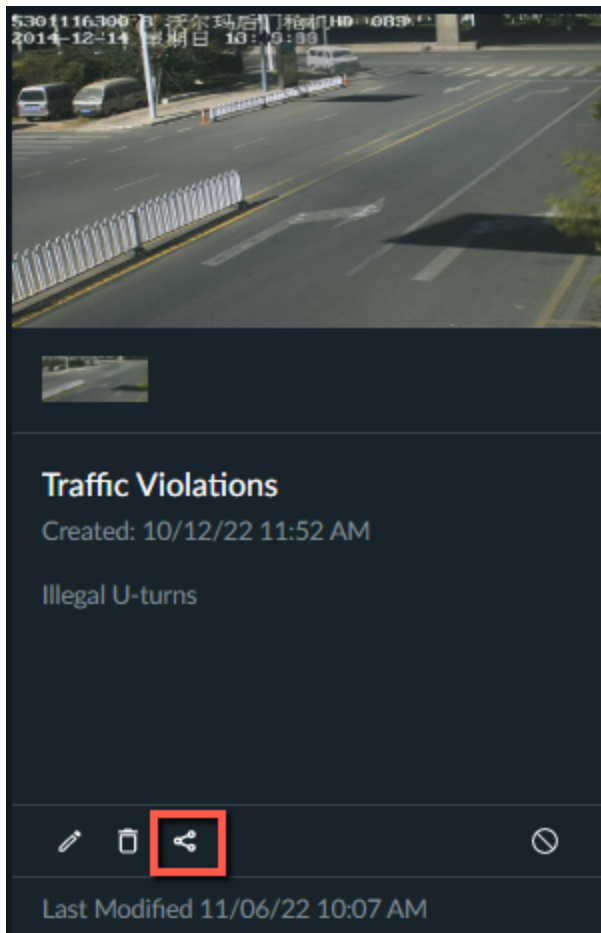
02:44 PM

☐ Do not delete during maintenance

CANCEL SAVE

Case Collaboration

When you are the owner of a case, you can click the **Case Collaboration** icon at the bottom right of the case to share your case with other users or groups.



Select the users or groups that you want to share the case with.

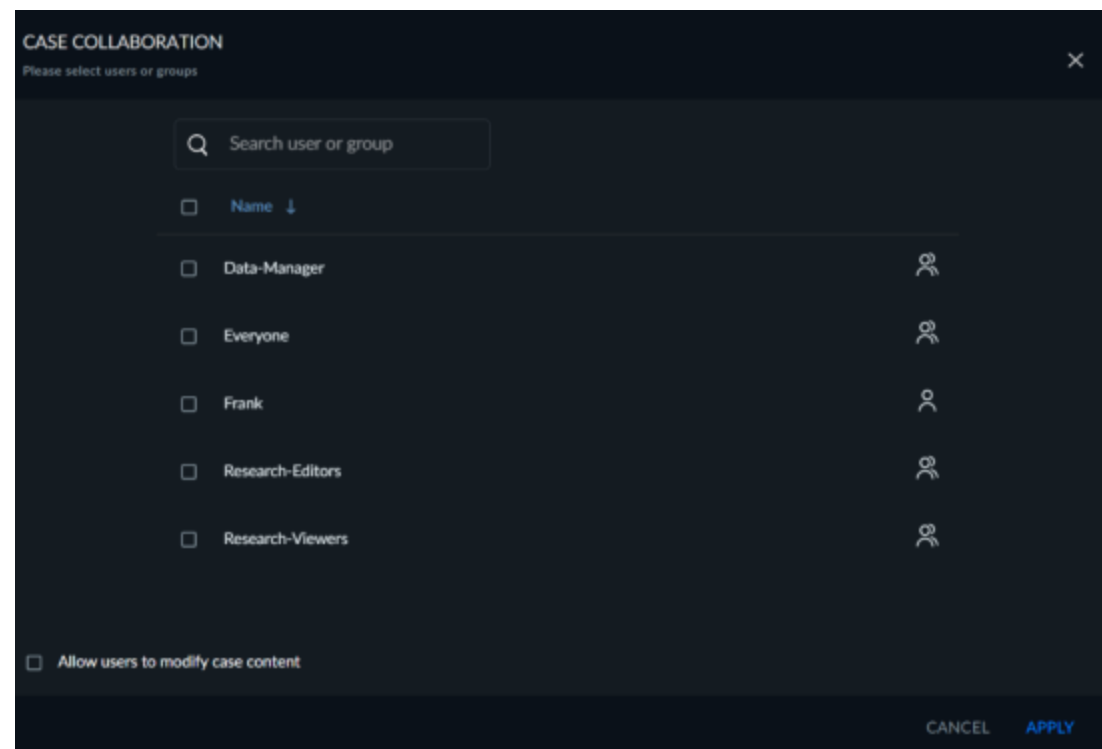
If you want to allow the user to modify the case, select the **Allow users to modify case content** checkbox. If you want them to only have read-only access, then leave the checkbox unchecked. You can only set read-only or read-write permissions for all of the shared users and groups collectively.

A person with read-only access can:

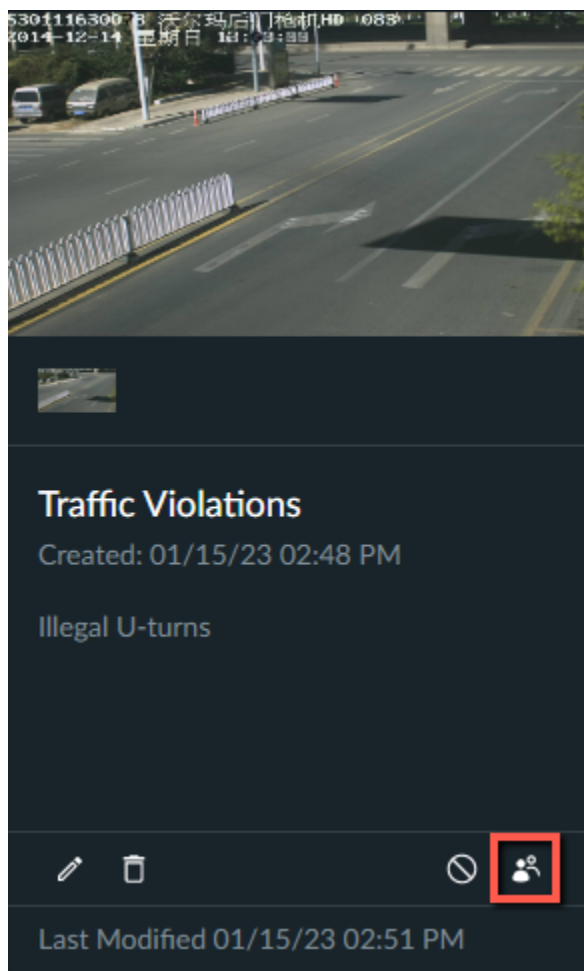
- Add faces from the case to the faces list
- Add identities to a case
- Add identities to a watchlist
- Save and delete presets
- Add, edit and delete bookmarks, including visual layer bookmarks

A person with read-only access cannot:

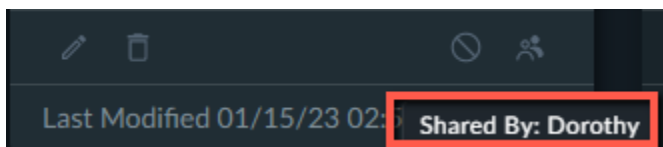
- Update or delete the case
- Add or delete sources
- Retry the processing of sources (in the Status tab)
- Exclude a case from maintenance
- Reshare the case



When you click **APPLY**, the icon will change.

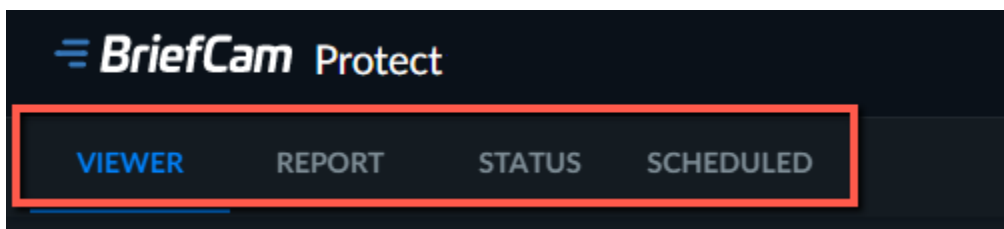


If it is a case that was shared with you, the share icon will be greyed out. If you hover over the share icon, you will see who shared the case with you. If you were not given permissions to modify the case content, all the icons will be greyed out.

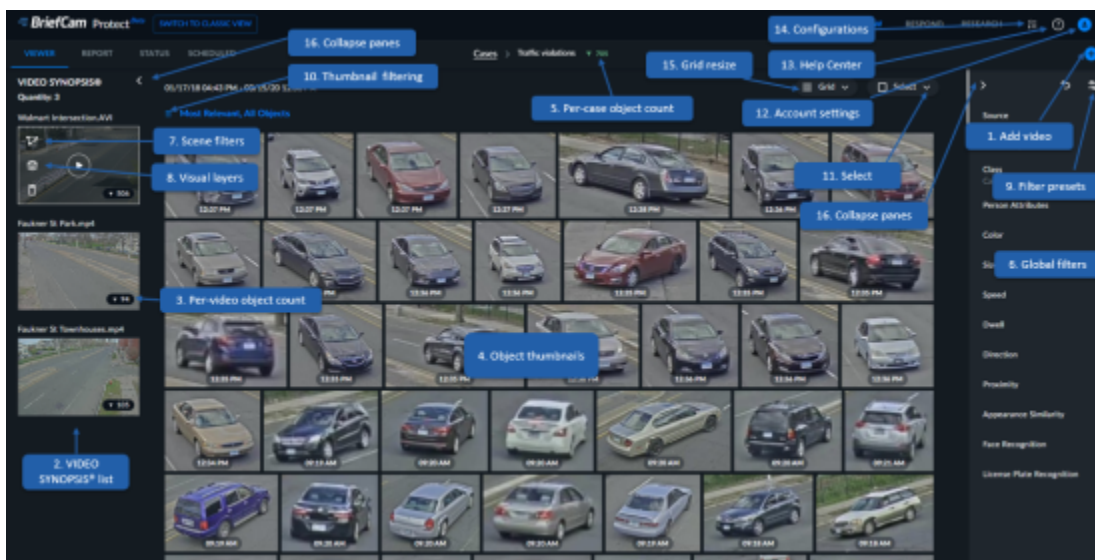


Case Management Interface

Click a specific case and you'll be presented with its detailed case view page, which features four tabs – [Viewer](#), [Report](#), [Status](#) and [Scheduled](#).



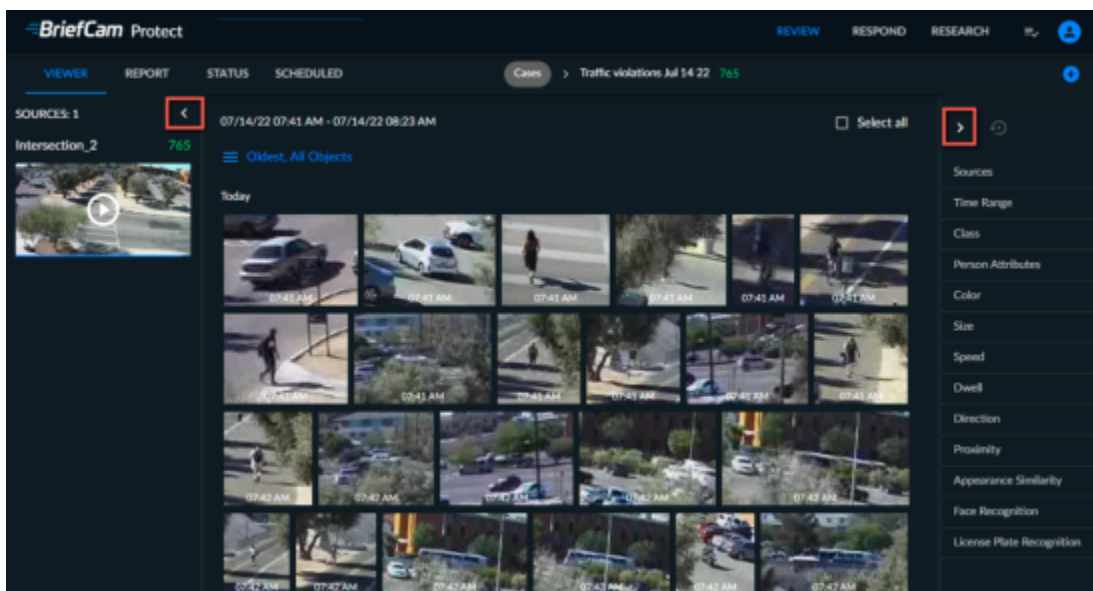
VIEWER Tab



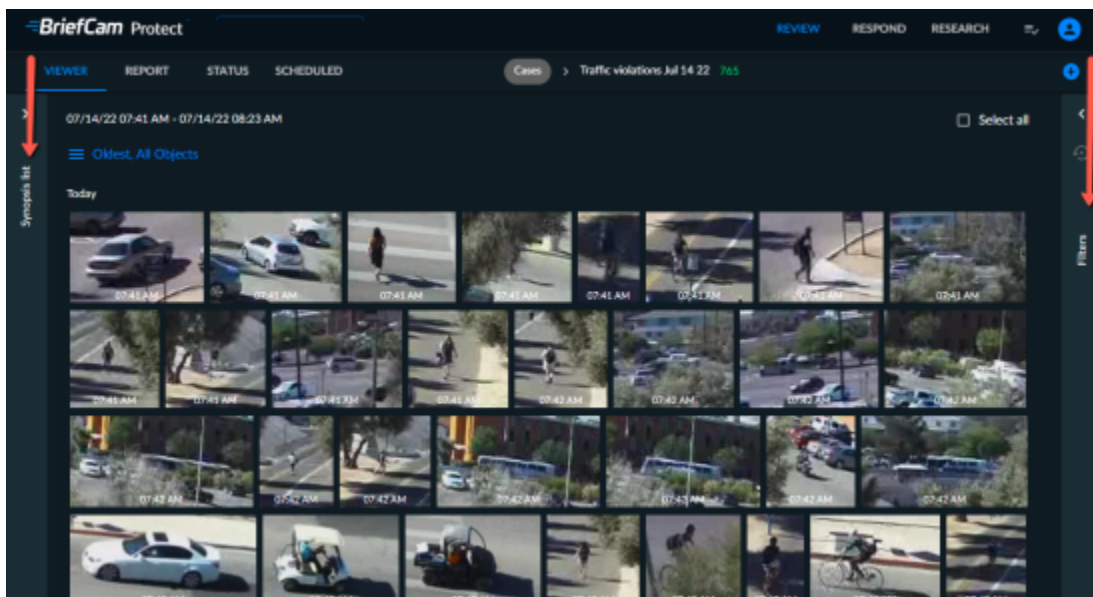
When opening a case, the browser page defaults to the **VIEWER** tab, which includes the following:


1. [Adding Video from Files](#)
2. [Video Sources List](#)
3. [Per-Video Object Count](#)
4. [Object Thumbnails](#)
5. [Per-Case Object Count](#)
6. [Global Filters](#)
7. [Scene Filters \(Area, Path, and Line Crossing\)](#)

8. [Filter Presets](#)
9. [Visual Layers](#)
10. [Thumbnail Sorting](#)
11. [Select](#) – Selects, unselects or clears thumbnails on page
12. [Account Settings](#)
13. [BriefCam Help Center link](#)
14. [Configurations](#)
15. [Grid resize](#)
16. [Collapse panes](#) – You can collapse the SYNOPSIS list and filters for a larger view of the detected objects. You do this by clicking the arrow icons marked below in red. When these sections are collapsed, you can open them again by clicking the arrow icons.



When you click these arrows, your screen will look something like this:







Note that you can copy the time range by hovering over the time range and clicking the copy  icon.

Map View

In the REVIEW module, you can view sources on a map if your administrator has set up the system to allow this. In the Map view, cameras and files are displayed on a map with easy access to the detected objects and quick addition of cameras to the case.


While the default view is the Grid view, if you want the Map view to be the default, ask your BriefCam administrator to set it up.

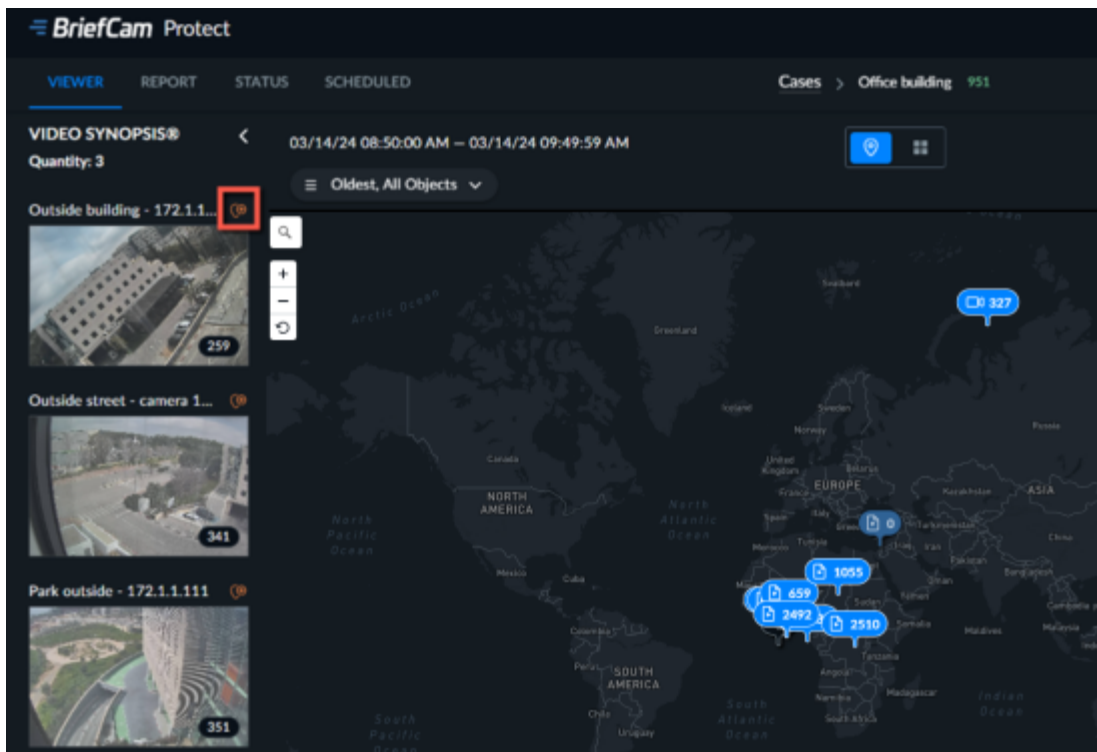
On the map you will see various icons, which are explained in the table below.

	<p>A camera that is added to the case and has coordinates set in BriefCam. The number represents the number of objects detected for the camera. When you apply filters, this count shows the number of objects that match the selected filters. You can hover over the camera icons to see the name of the camera as well as the number of objects by Synopsis (if more than one processing was done per camera).</p> <p>Note that sources that do not have coordinates will not appear on the map.</p>
	<p>A file that is uploaded to the case and has coordinates set in BriefCam.</p>
	<p>Cameras with no objects detected or no objects once filtering was applied. The blue is darker to make it easy for users to quickly identify cameras with or without objects.</p>
	<p>Cameras that were not uploaded to the case but are configured in BriefCam.</p>

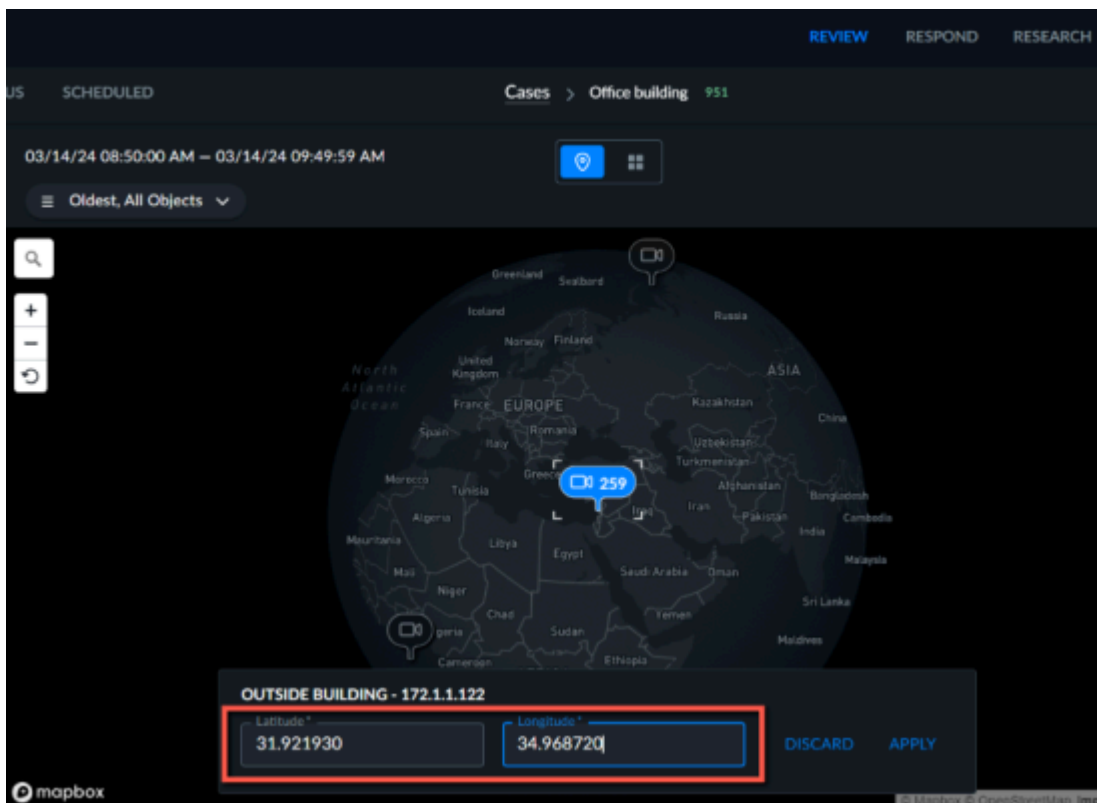
You can zoom in and out of the map using the zoom icons on the map or by dragging the map with the mouse.

To add coordinates to a source (camera or file):

1. Click the Add Coordinates  icon, to the right of the video source name.



2. Enter the **Latitude** and **Longitude** for this source and click **APPLY**.

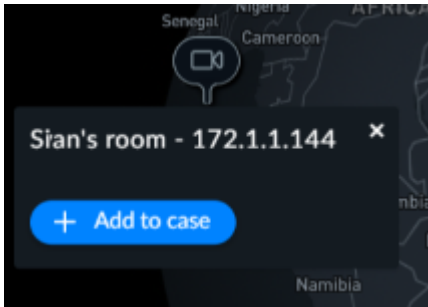


If you do not know the latitude and longitude, contact your organization's BriefCam administrator.

To add a camera to the case directly from the map:



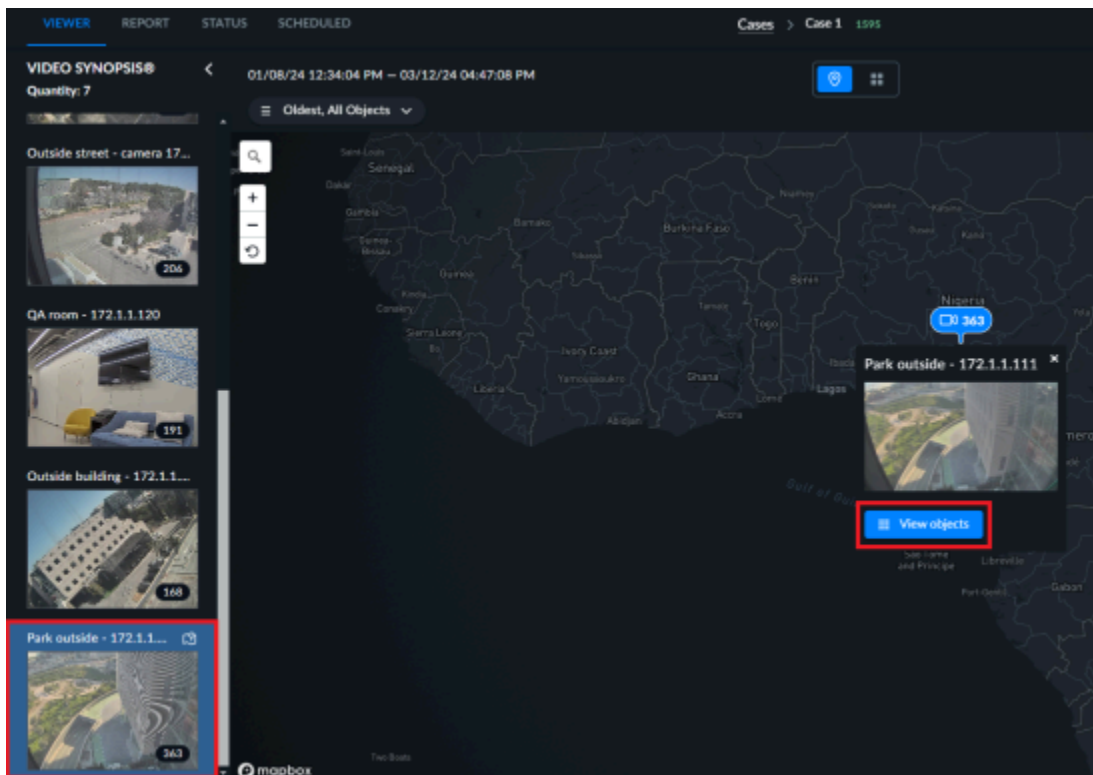
1. Click the camera icon for the camera that you want to add.
2. Click the **Add to case** button.



3. The camera will be automatically selected. Click **NEXT**.
4. If required, set a schedule, and click **PROCESS**.

Once you click on a camera:

1. The relevant source on the left-hand side will appear with a blue background and you can click on the source's map icon to show the source on the map.
2. You'll see additional information about the source including the source name, an image of the source view, and the **View objects** button. Click the **View objects** button to open the Grid view automatically filtered for the specific source. If you click back to the Map view, the Map view will include objects from all sources (the rest of the filters will be untouched).



Adding Videos



It is recommended to limit the number of sources in a case to 200. This is because the load that the filtering puts on the system is dependent on the number of sources and not just the number of objects.

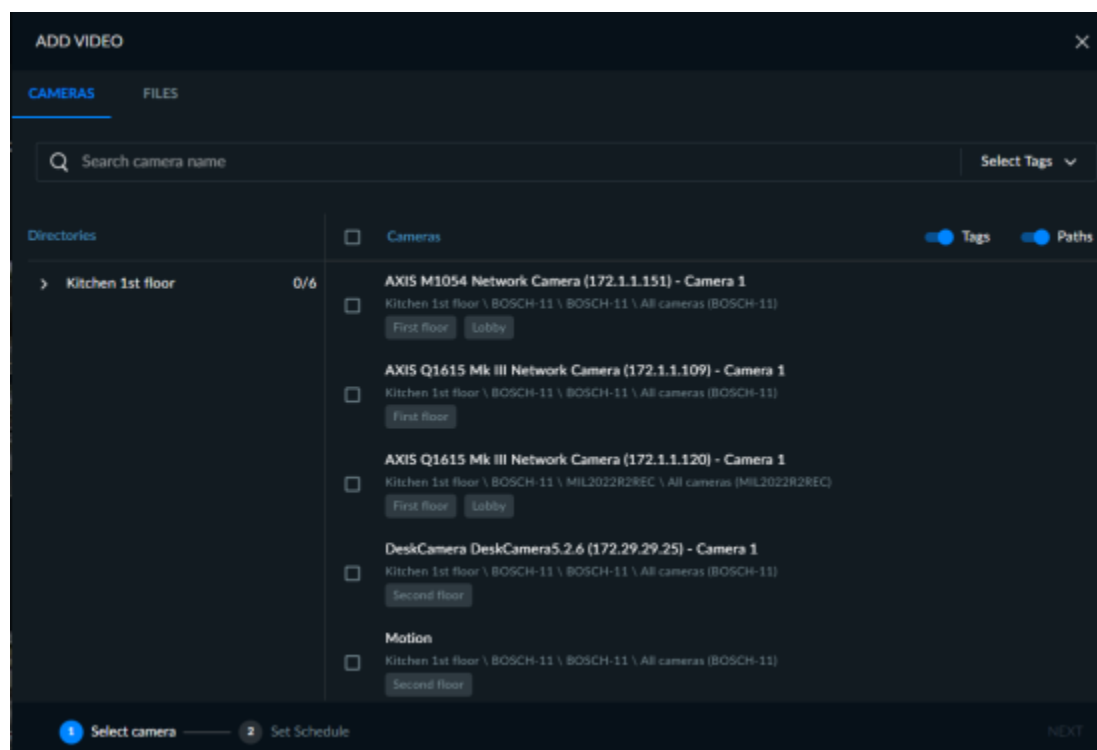
Adding Video from Cameras

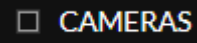


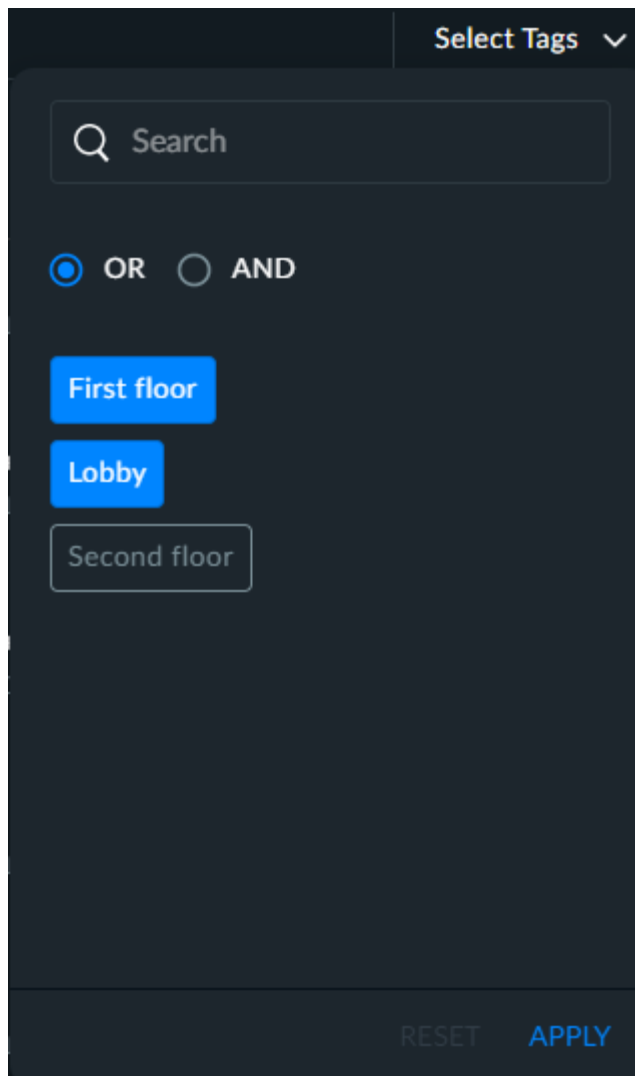
Adding videos from cameras is supported for the following BriefCam platform editions: Rapid REVIEW, Insights, and Protect. If you have the Investigator edition, you will not see the **CAMERAS** tab.

1. Click the  button to access a dialog enabling the addition of new video sources to a case.

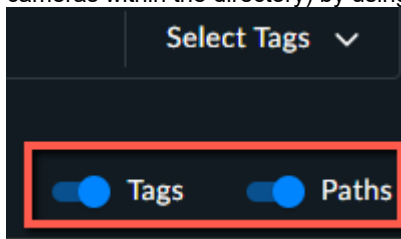
By default, the **CAMERAS** tab opens. This tab displays videos from integrated VMS cameras.



2. Select one or more cameras. Note that you can select all cameras on the current page by selecting the  checkbox.
3. To enhance your search of the cameras, you can select the tags that you want to search for. For example, your administrator may have marked all cameras on the first floor with a tag named "First floor". You can easily search for these cameras by opening the **Select Tags** drop-down list at the top right corner and select the tags that you want. You can also use the **OR** and **AND** options to further your searching capabilities.



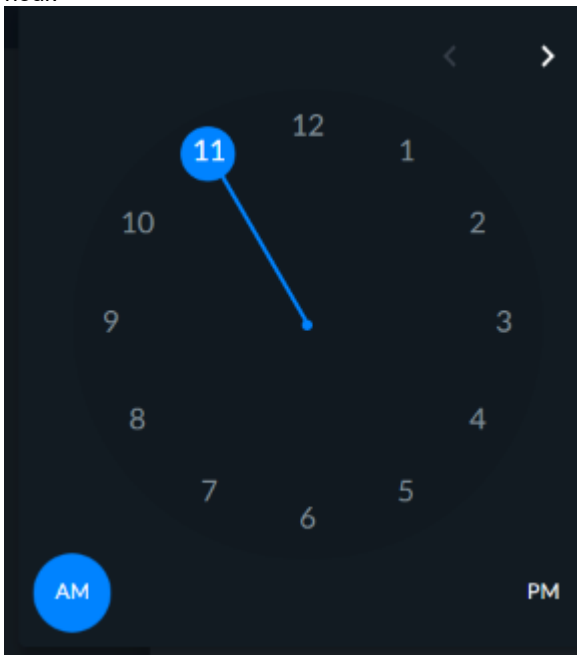
Note that you can display the list of cameras with or without the tags and the paths (which show the hierarchy of the cameras within the directory) by using the **Tags** and **Paths** toggle options.



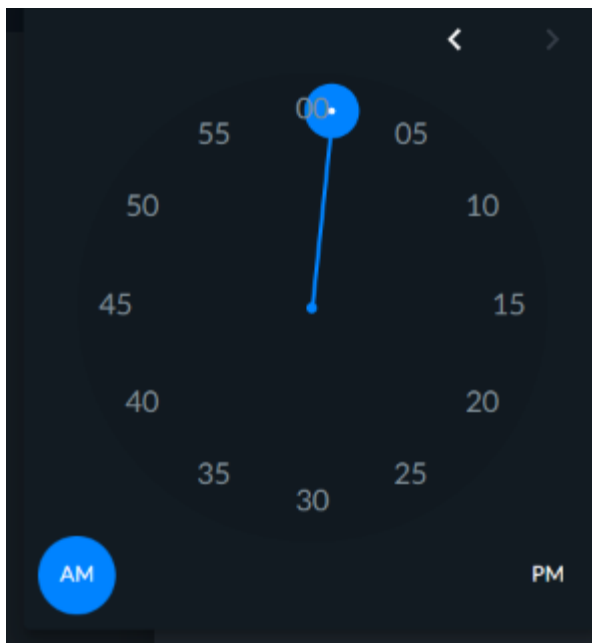
4. Click **Next**.

The screenshot shows the 'ADD VIDEO' window with a dark theme. At the top, there are three tabs: 'RUN ONCE', 'DAILY' (which is selected and highlighted in blue), and 'WEEKLY'. Below the tabs, there are two time selection fields: 'Start Time' and 'End Time'. The 'Start Time' is set to '04:06 pm' and the 'End Time' is set to '05:06 pm'. Each field has a clock icon to its right. Below these, there is a 'Set up run time' section with a blue circle and a line. Underneath, the 'Run time' is set to '05:11 pm' with a clock icon. To the right of the 'Run time' field, there is a note: 'Note: Select when you want the BriefCam server to begin processing the video. To start the schedule today, set the 'Run Time' to at least 5 minutes after the current time.' At the bottom of the window, there is a progress bar with two steps: '1 Select camera' and '2 Set Schedule' (which is currently active). To the right of the progress bar, there are two buttons: 'PREVIOUS' and 'PROCESS'.

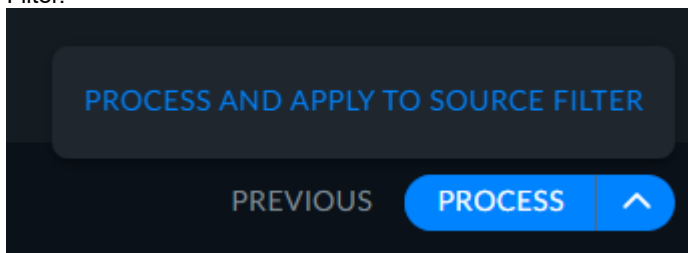
5. Select the schedule for when you want to process the video: **Run Once**, **Daily** or **Weekly**.
6. Set the date and time range of the video that you want to process. Note that the time selected refers to the camera's time zone. To select a time, first select the hour that you want by clicking the blue circle and moving it to the desired hour.



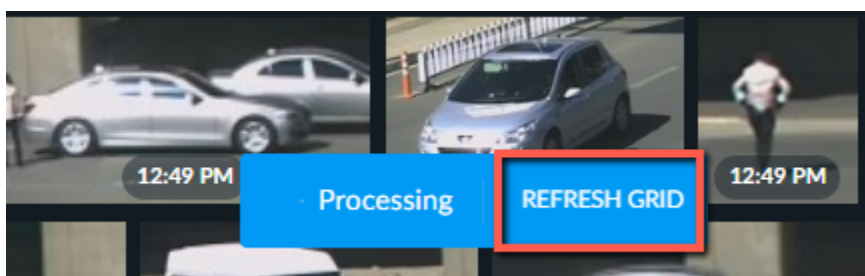
Then, do the same for the minutes.



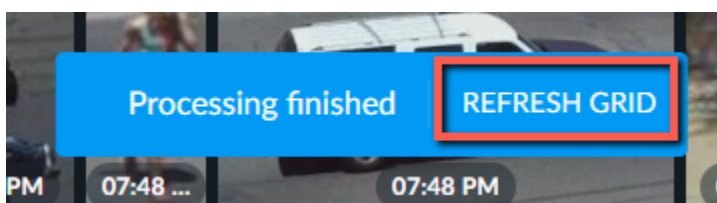
7. When uploading video from a camera and selecting **Run Once**, you can select times that are later than your local computer time. This allows the selection of 'future' times relative to your computer's local time
8. For **Daily** and **Weekly** schedules, you also can set when the scheduled task will run by entering a time in the **Run time** field.
9. All scheduled sources will appear in the **SCHEDULED** tab.
10. Click **PROCESS** to initiate video processing. You can also click on the arrow to the right of the word **PROCESS** and select **PROCESS AND APPLY TO SOURCE FILTER**. This will automatically select these sources in the Source Filter.



While the video is processing, you can click the **REFRESH GRID** button at the bottom of the screen to see the objects that have already been processed.



Once the processing is done, click the **REFRESH GRID** button at the bottom of the screen to add the newly detected objects to the screen.



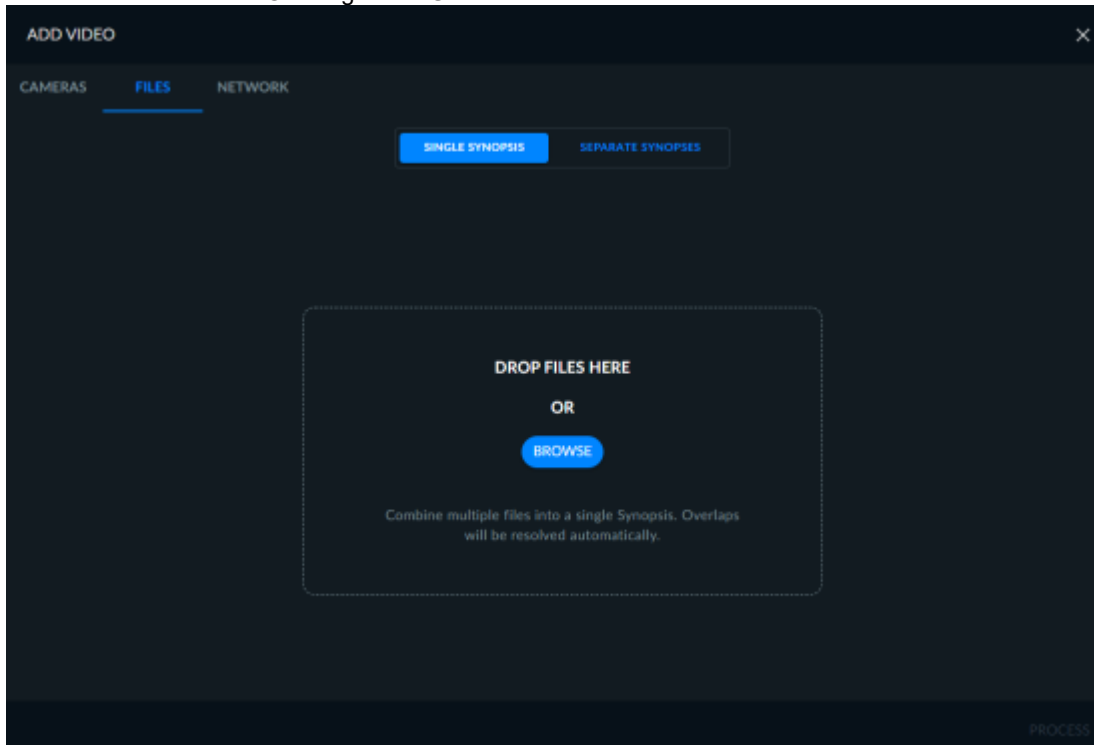
Adding Video from Files



Adding videos from files is supported for the following BriefCam platform editions: Investigator and Protect. If you have the Rapid REVIEW or Insights edition, you will not see the **FILES** or **NETWORK** tabs.

You can upload video files to the BriefCam server as follows:

1. Switch to the **ADD VIDEO** dialog's **FILES** tab.



2. Click **SINGLE SYNOPSIS** to upload video files into one single VIDEO SYNOPSIS® or **SEPARATE SYNOPSSES** to upload each video file as a separate VIDEO SYNOPSIS®.



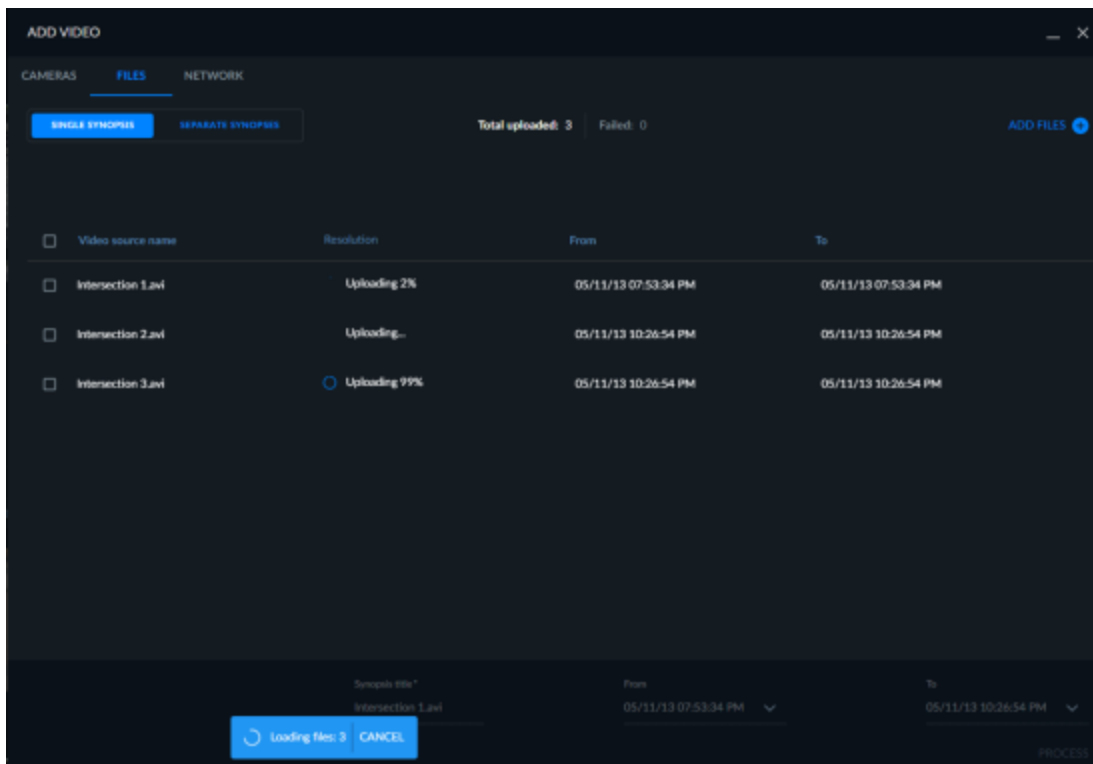
- When uploading from files as separate synopses, you can upload up to 100 files at a time.
- File names can be up to 124 characters long.

- When you select the **SINGLE SYNOPSIS** tab, files will be combined into a single VIDEO SYNOPSIS® in alphabetical order. This is useful when adding multiple files exported from a DVR – all originating from a single video source. All files will be treated as if they were combined.
- When you select the **SEPARATE SYNOPSSES** tab, all files will be treated as different video sources.


Note that once the files are uploaded, you can switch between the **SINGLE SYNOPSIS** and the **SEPARATE SYNOPSSES** tabs to change the originally selected flow.

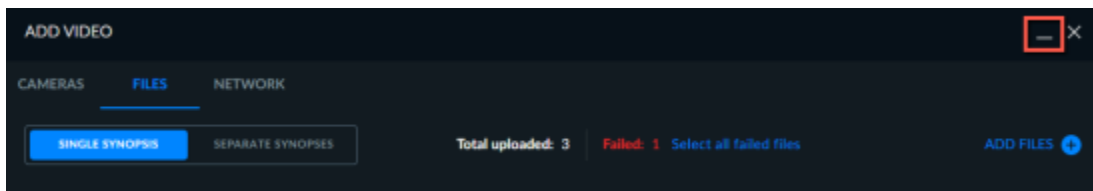
When XBA files are uploaded, each multi-stream file will be generated as a separate VIDEO SYNOPSIS®. XBA files can be uploaded with up to four video streams.


3. Click **NEXT**.
4. Either drag and drop video source files to the dialog or click **Browse** to bring up a standard file selection dialog.

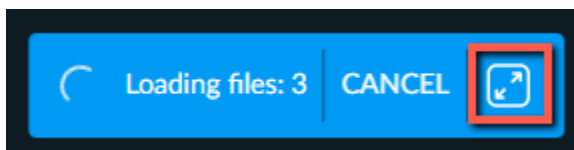


When files are being uploaded a progress-bar will appear for each one.

During uploads, you can minimize the file upload wizard and carry on with your work in other areas of the BriefCam software by clicking the minimize icon  at the top right of the screen.

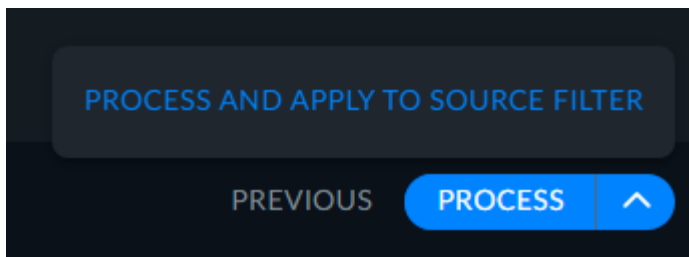


You can return to the wizard by clicking the maximize icon .



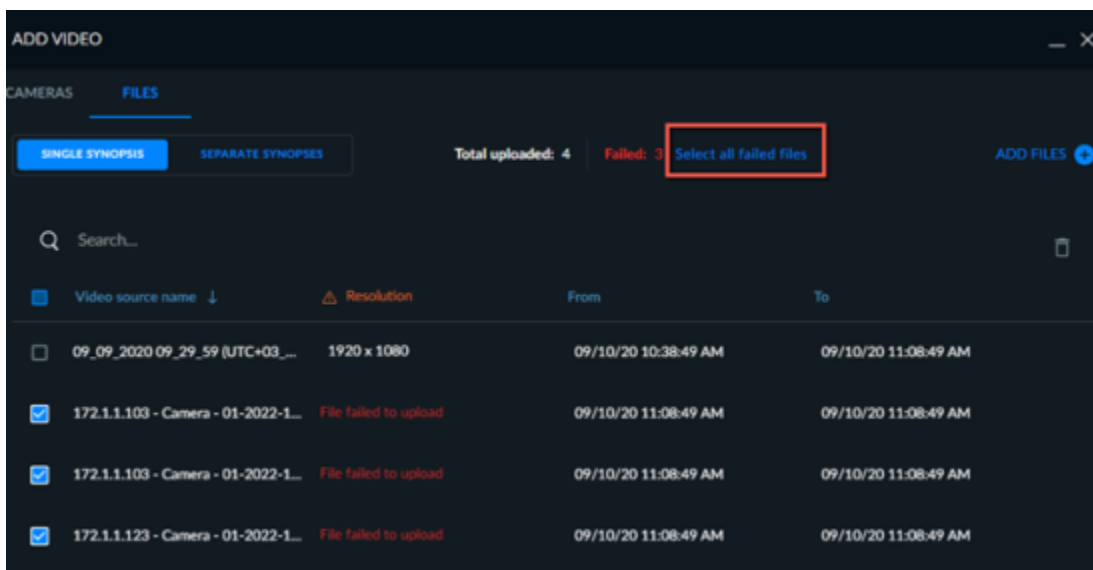
The software will notify you of upload progress and completion, following which you'll be able to return to the wizard.

- When ready, click **PROCESS** to initiate VIDEO SYNOPSIS[®] processing. You can also click on the arrow to the right of the word **PROCESS** and select **PROCESS AND APPLY TO SOURCE FILTER**. This will automatically select these sources in the Source filter.



Deleting Files

1. Select the files you want to delete in one of the following ways:
 - To delete files one by one, checking the checkbox next to the file name.
 - To delete all files, check the **Video source name** checkbox.
 - To delete all files that failed to upload, click the **Select all failed files** link (as shown in the image below).
2. Click the trash can icon in the top right-hand corner of the dialog.



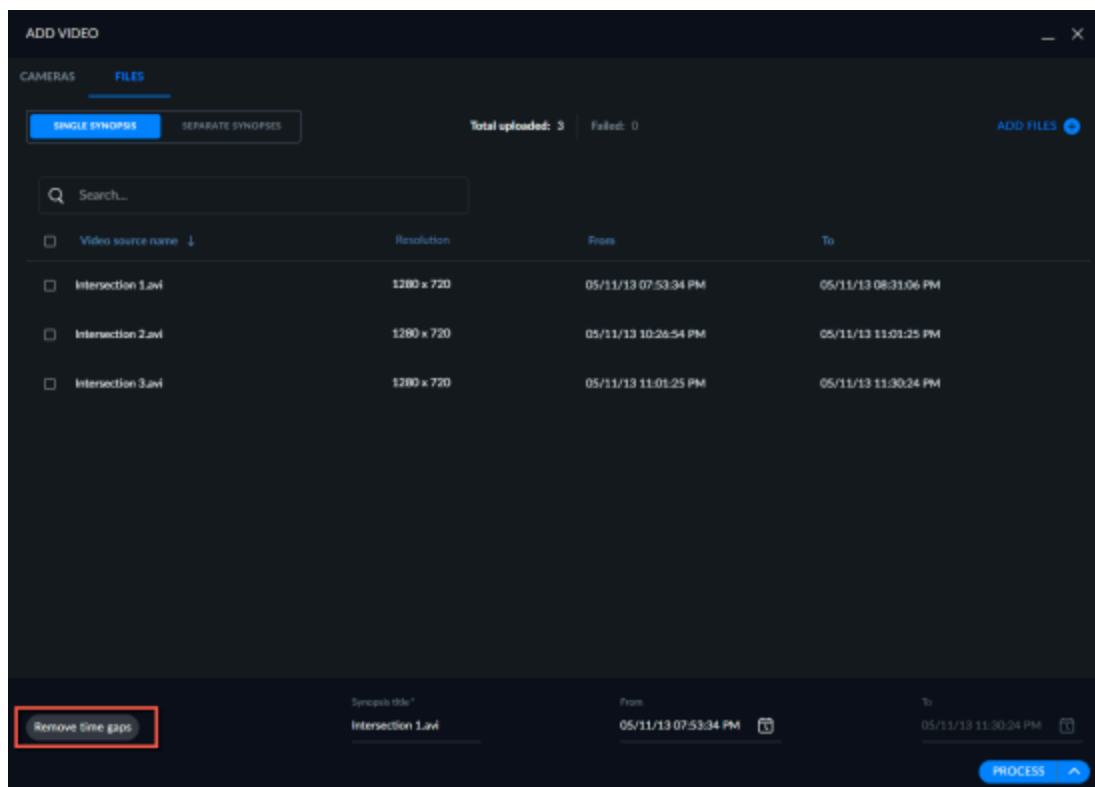
Sorting Files

Once the uploading is complete, you can sort the files by clicking the **Video source name** or **Resolution** column headers.

All the files to be combined in the VIDEO SYNOPSIS® will be sorted chronologically by default with the date taken from the directory where your files were saved.

If the times of the files overlap, BriefCam will automatically adjust the times to resolve any overlaps by moving all times forward according to the videos' durations. The start time and duration of the first file will remain as is, and the times of the subsequent files will be automatically adjusted using the first file as a reference point.

Time gaps are automatically detected. You can click the **Remove time gaps** button (located in the bottom left corner of the screen) if you want to remove these gaps. BriefCam will concatenate file time ranges, with the first file on the list again serving as the starting point.



You can manually set the time and date of the combined video file sequence by editing the start time of the first file on the list. All other files and their start and end times will automatically be offset as per this manually edited start time and arranged by duration.



The time range cannot be modified for the following file types: ave, dvt, g64, g64x, milestonezip, and xba.

The title of the combined synopsis defaults to the name of the first file on the list and can be edited.

The files can also be sorted by video source name. When sorted by video source name, the start and end times of all files on the list will automatically be modified to conform to the new first file on the list and its duration. (You can manually set the time and date by editing these properties for the first file on the list.)

Note that the resolutions all have to be the same when the files are uploaded from the same camera.

NAS File Upload

As an alternative to downloading to the local machine and then uploading to the BriefCam server, you can add sources from video files by loading the files directly from your organization's network drive.



Adding videos from files is supported for the following BriefCam platform editions: Investigator and Protect. If you have the Rapid REVIEW or Insights edition, you will not see the **FILES** or **NETWORK** tabs.

The **NETWORK** tab only appears if the administrator has enabled it.

To upload files from the NAS:

1. Click the **ADD VIDEO** dialog's **NETWORK** tab.
2. Select the network drive (directory) and then the files you want to load.

ADD VIDEO ×

SINGLE SYNOPSIS **SEPARATE SYNOPSSES** Total uploaded: 3 Failed: 0 **ADD FILES**

Search...

<input type="checkbox"/>	Video source name ↓	Resolution	From	To
<input type="checkbox"/>	Freeway_08_11_13.avi	1280 x 720	11/22/22 10:53:23 AM	11/22/22 12:26:35 PM
<input type="checkbox"/>	Intersection_2.avi	1280 x 720	11/22/22 10:53:23 AM	11/22/22 11:30:55 AM
<input type="checkbox"/>	Garden-shop.avi	800 x 600	11/22/22 10:53:23 AM	11/22/22 11:23:21 AM

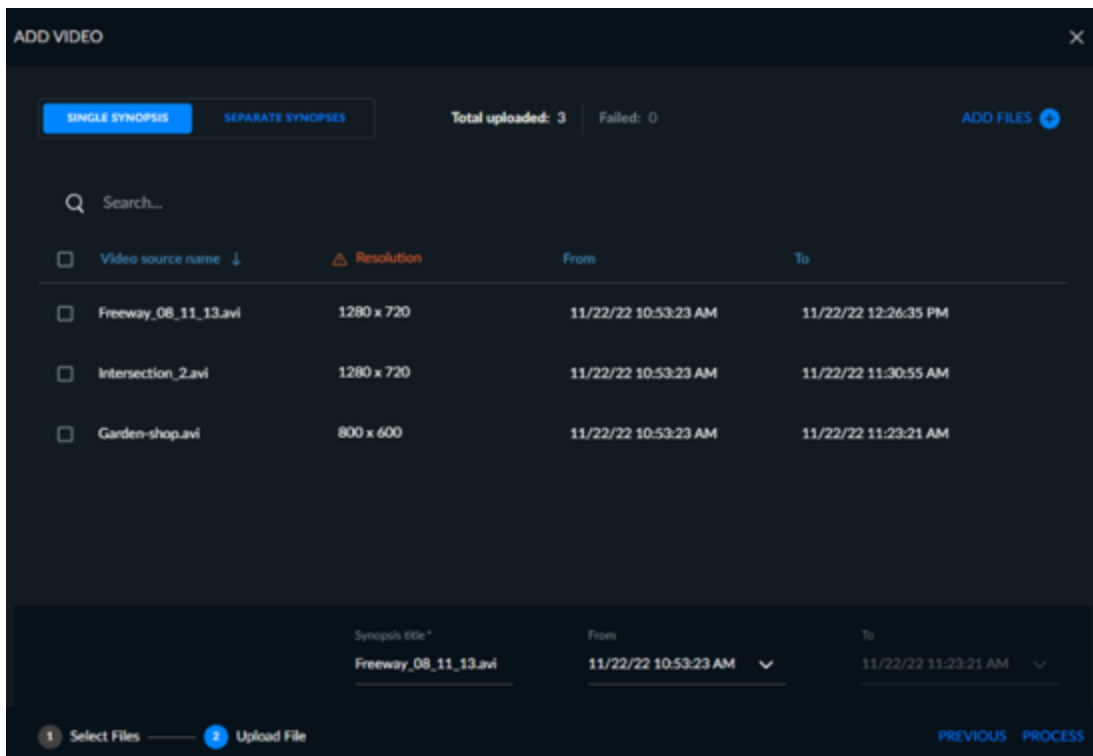
Synopsis title* From To

1 Select Files **2** Upload File **PREVIOUS** **PROCESS**

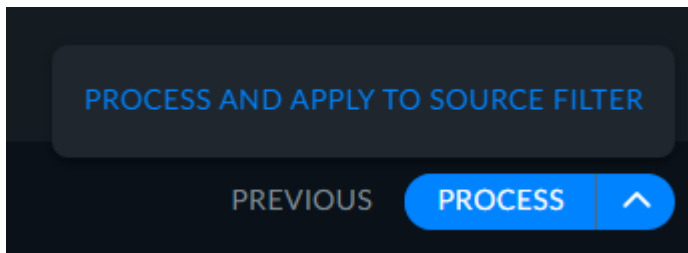


When video files are selected using the Network folder and then moved to a different folder, the selection is removed.

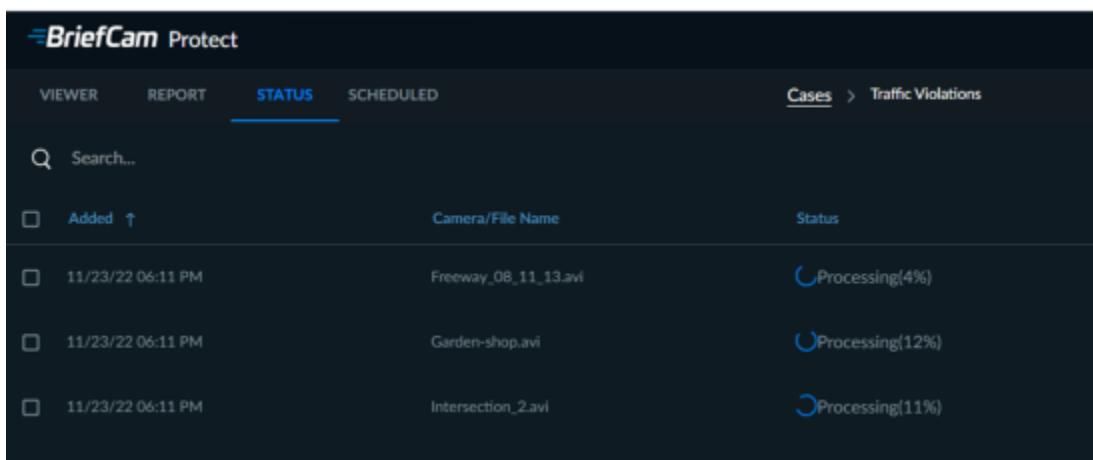
3. Click **NEXT**.
4. Click **SINGLE SYNOPSIS** to combine the selected files into one VIDEO SYNOPSIS® or click **SEPARATE SYNOPSSES** to create a separate VIDEO SYNOPSIS® for each file.
 - The SINGLE SYNOPSIS option is useful when adding multiple files exported from a DVR – all originating from a single video source. All files will be treated as if they were combined.
 - When selecting the SEPARATE SYNOPSSES option, all files will be treated as different video sources.
5. You can change the Synopsis title and the From and To range at the bottom of the screen.
6. You can change the order that the files will appear in the VIDEO SYNOPSIS®. For additional information, see the [Sorting Files](#) section.



- Click **PROCESS**. You can also click on the arrow to the right of the word **PROCESS** and select **PROCESS AND APPLY TO SOURCE FILTER**. This will automatically select these sources in the **Source** filter.




When files are being loaded, a progress bar will appear for each one.



All files are sorted chronologically. You can edit each file's name and start time (any change can be reset), as well as delete single or multiple files (by checking the checkboxes next to their names and clicking the trash can icon in the top right-hand corner of the dialog).



When deleting one stream on Timespace multi-stream files, all other streams from the same file are deleted as well.

Whether you are uploading video files into one VIDEO SYNOPSIS[®] or multiple synopses, any changes made (for example, editing the synopsis title or the start date and time) can be reversed by clicking the Reset icon () in the top right-hand corner of the screen.

VIDEO SYNOPSIS[®] List

Thumbnails of each VIDEO SYNOPSIS[®] added to the case are listed vertically on the left-hand side of the page in the order that they are uploaded.

Every time you process video from a camera, a new VIDEO SYNOPSIS[®] is added for the camera. This is the case if you manually process video from the camera or when a schedule is triggered to process the video.



It is recommended to limit the number of synopses per case to 50. More than 50 synopses may affect the user experience, such as the use of filters.

Protect

VIEWER
REPORT
STATUS
SCHEDULED

VIDEO SYNOPSIS®

Quantity: 2

Intersection_...
690

Freeway_08_...
3490

11/23/22 06:09 PM - 11/23/22 07:42 PM

Oldest, All Objects

Today

06:09 PM

06:09 PM

06:09 PM

06:09 PM

06:09 PM

06:10 PM

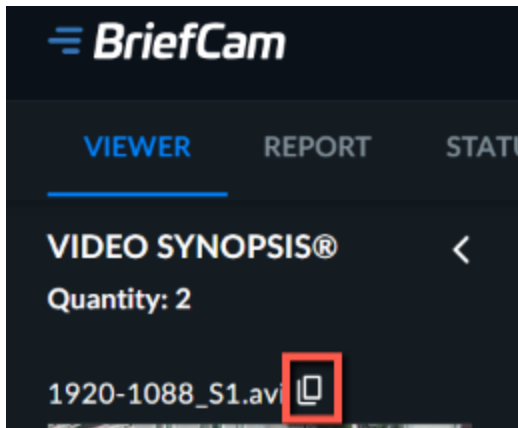
06:10 ...

06:10 PM

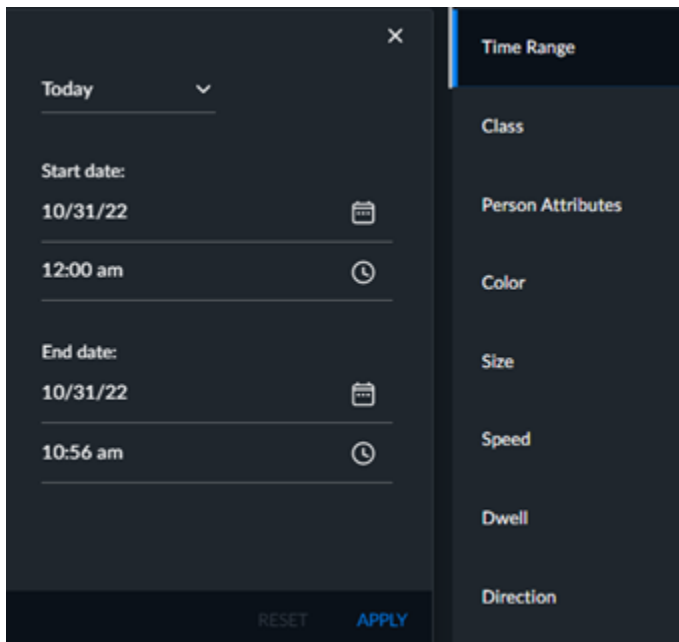
06:10 ...

06:10 ...

Note that you can copy the name of a VIDEO SYNOPSIS by hovering over the name and clicking the copy icon (as shown in the image below).

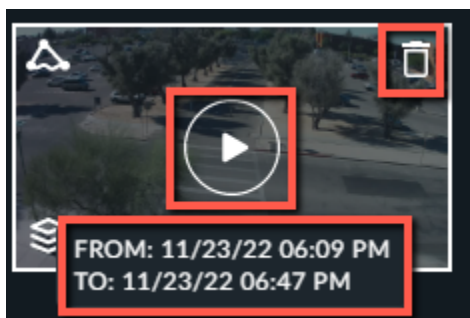


In the **Time Range** filter, you can filter for the last run of the video sources.



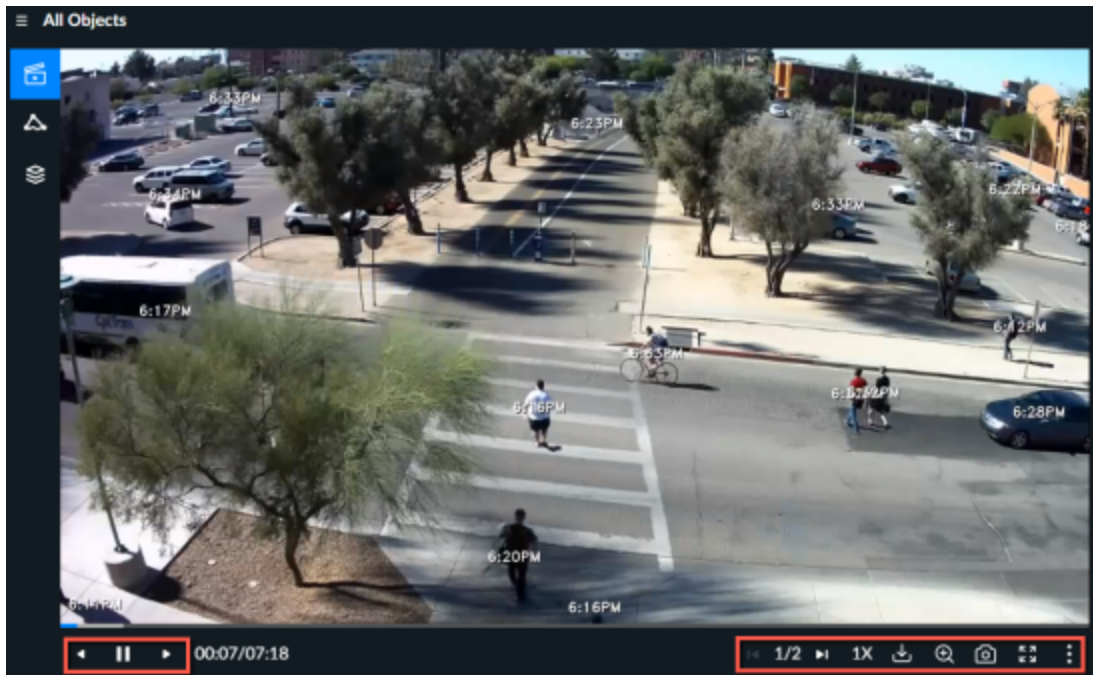
Hovering over any video source thumbnail will reveal the play button, delete button and the start and end time of the video source.

Click the play button to play the VIDEO SYNOPSIS®, which will feature only objects matching currently selected filters.










Video Player

When playing a video, you can use any of the standard playback controls provided.



The following are the available options. For additional information, see the sections below.

Icons	Functionality	Description
	More video options	Expands and collapses additional options.
	Density control	Controls the number of events shown concurrently when playing a VIDEO SYNOPSIS®.
	Toggle timestamps	Determines whether to display the time and date, the time only or to hide the timestamp (off).
	Sort video	Sorts the VIDEO SYNOPSIS® according to relevance and time (oldest to newest). The option that you select here is only applicable for the current VIDEO SYNOPSIS®. The available options are By Relevance and By Chronology (oldest to newest detected objects).
	Toggle bounding boxes	Determines whether to display the bounding boxes.

	Backward, pause/ resume and forward	Moves through the video frame by frame both backwards and forwards. The right and left keyboard keys can also be used to move through the video and the space bar can be used to pause and resume.
	Playback speed selection	Controls the speed of the playback. The available options are four times the speed (4X), double (2X), regular speed (1X), 50% of the speed (0.5X) and a quarter of the speed (0.25X). When you change the playback speed, the new speed remains until you sign out (even when moving between modules).
	Zoom	Zooms in and out of areas of interest. Dragging with the mouse moves the zoom area.
	Export video	Downloads an .mp4 file of the VIDEO SYNOPSIS®.
	Capture	Capture the image or part of it and save it.
	Full-screen and windowed toggling	Determines whether to display the screen in full-screen or windowed mode.
	Chapters	The VIDEO SYNOPSIS® is automatically broken down into chapters. When filters are applied, reducing the number of detected objects, the breakdown into chapters will automatically be altered, accordingly.

To close the video either click the X at the top right of the screen or press the Esc key.

Note that objects are played back in non-chronological order to optimize viewing time. Click individual objects to gain access to additional controls that enable you to play back an object's original video or add it to a case report.



Note that BriefCam's adaptive streaming technology, based on HLS, automatically selects one of two resolution levels (according to available bandwidth) to enable optimal streaming video viewing.

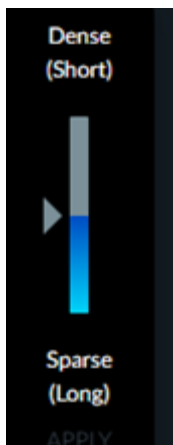
When running or exporting a VIDEO SYNOPSIS®, 4K videos are rendered in half of the resolution for increased performance. The original video of a 4K video is rendered and exported in full size.

Density Control

Density is the number of events shown concurrently when playing a VIDEO SYNOPSIS®.

To adjust the event density:

1. Click the **More video options** icon (.
2. Click the density control (.
3. Slide up or down to increase or decrease the number of events shown at once.



Increasing density will make the VIDEO SYNOPSIS[®] shorter, whereas decreasing it will make the video longer. The adjusted run time will be presented in the playtime progress bar and reflected in the number of chapters (for example, 36 in the image below is the number of chapters).



The density setting is not persistent; it is applicable only for the current VIDEO SYNOPSIS[®]. Opening another VIDEO SYNOPSIS[®] or another case will set the default density.

Toggle Timestamps



The timestamp () option determines whether to display the time and date, the time only or to hide the timestamp (off).



The timestamp option is available in the **More video options** menu ().

Timestamps indicate the date and/or time (hour and minute) at which events first appeared.

Timestamps are displayed continuously while the VIDEO SYNOPSIS[®] is played.


The selection is persistent for all VIDEO SYNOPSIS[®] playbacks by the user on all modules. Once the user changes the timestamps mode, it is saved in the user's settings for all later synopsis playbacks.




Toggle Bounding Boxes

Bounding boxes (see the blue markings in the image below) enable you to keep track of all events shown in the VIDEO SYNOPSIS® and to ensure that no event is overlooked.



The **Toggle Bounding Box** option () can be used to turn the bounding box display on or off (the default is on).

The **Toggle Bounding Box** option is available in the More video options menu ().

When the box is on, the bounding boxes will be shown when a VIDEO SYNOPSIS® is paused and when playing back the original video (only for the selected object).

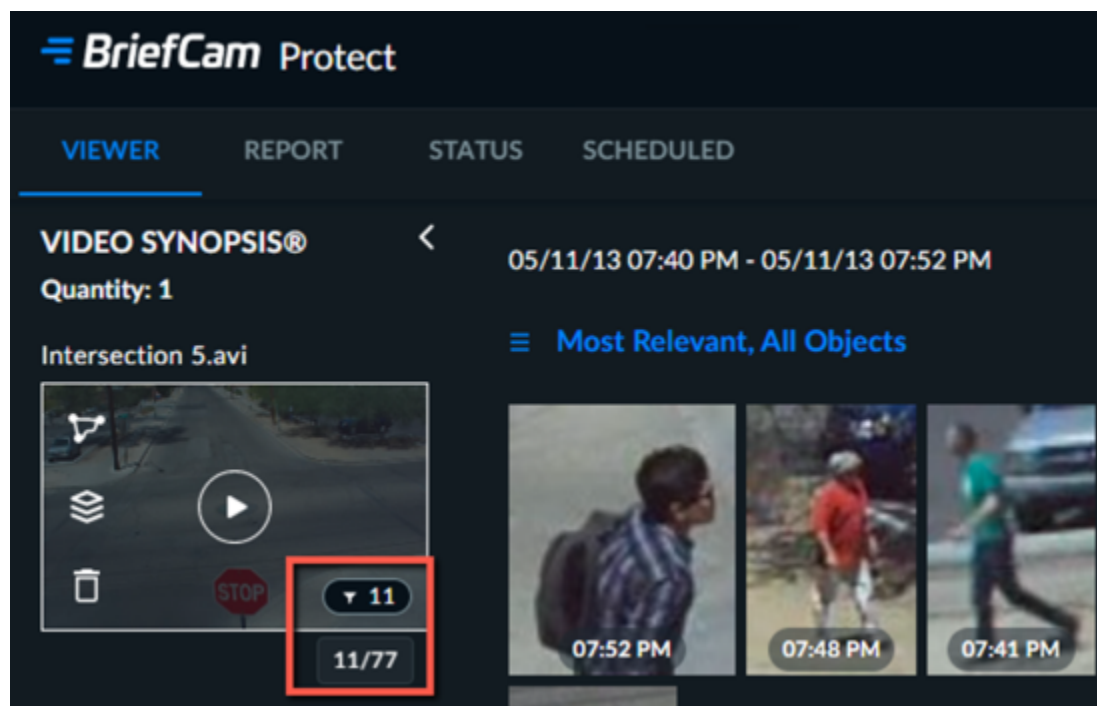


Bounding boxes when playing an original video are not supported for American Dynamics, Axis, Bosch, CASD, Digifort, Digital Watchdog, Exacq, Flir, Genetec, IndigoVision, ISS, NX, and Qognify integrations. This is because these VMSs do not provide accurate timestamps.

Object Counts

Per-Video Object Count

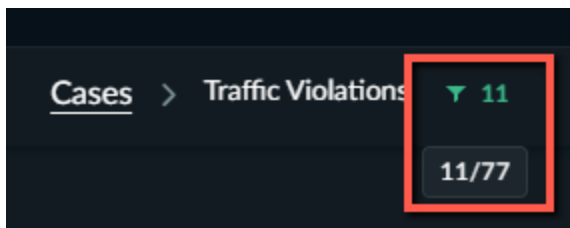
In the right-bottom corner of the VIDEO SYNOPSIS thumbnail, you can see the total number of objects detected in a specific video source. When you apply filters, this count shows the number of objects that match the criteria. If you hover over the number, you can also see the number of objects that match the criteria out of the total number of objects detected in the video source.



When processing the same video a number of times, there may be slight variations in the number of discovered objects, due to BriefCam's parallel computing optimization methods.

Per-Case Object Count

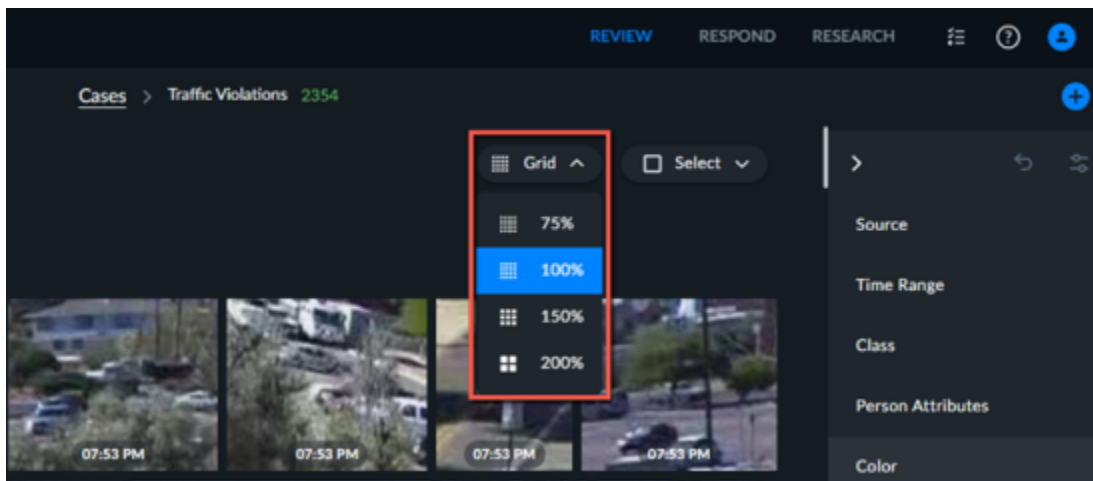
At the top middle part of the screen, you can see an object count per case in green. It will either display the overall number of objects detected in the video synopses associated with the case or the number of case-associated objects that match the applied filters. If you hover over the green number, you can also see the number of objects that match the criteria out of the total number of objects detected in all the video synopses.



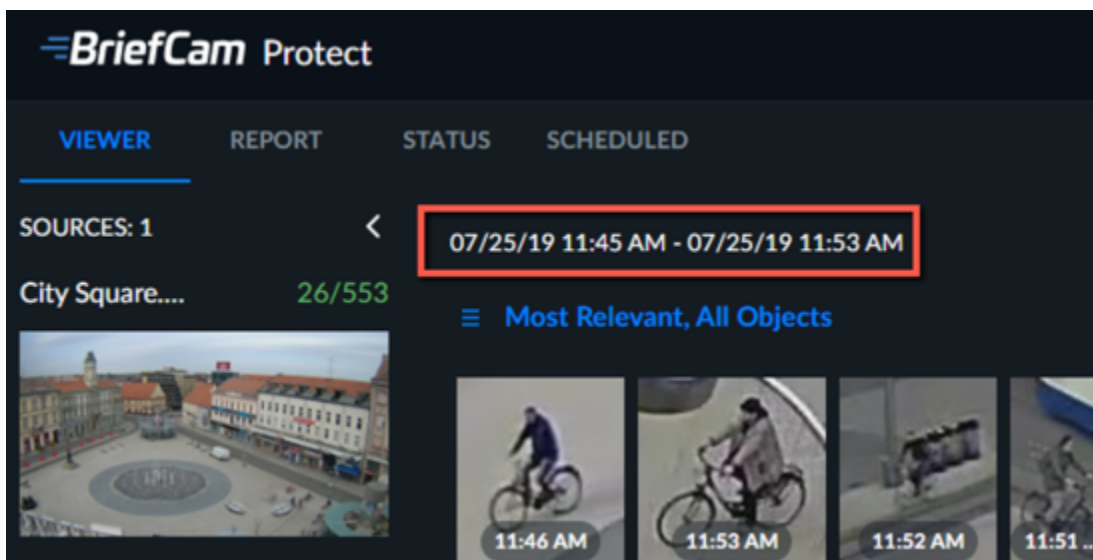
Object Thumbnails

The **VIEWER** tab's main content area features thumbnails of video extracted from all camera sources added to the case. Thumbnails are sorted chronologically by default, and by relevance when filters are applied.

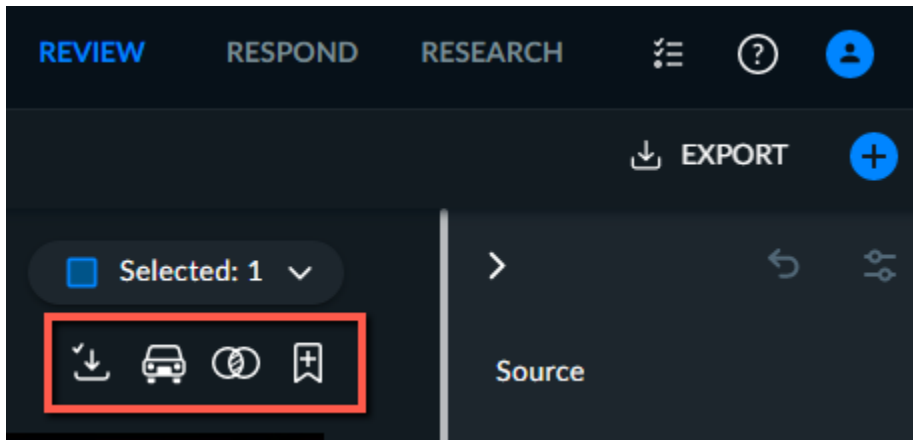
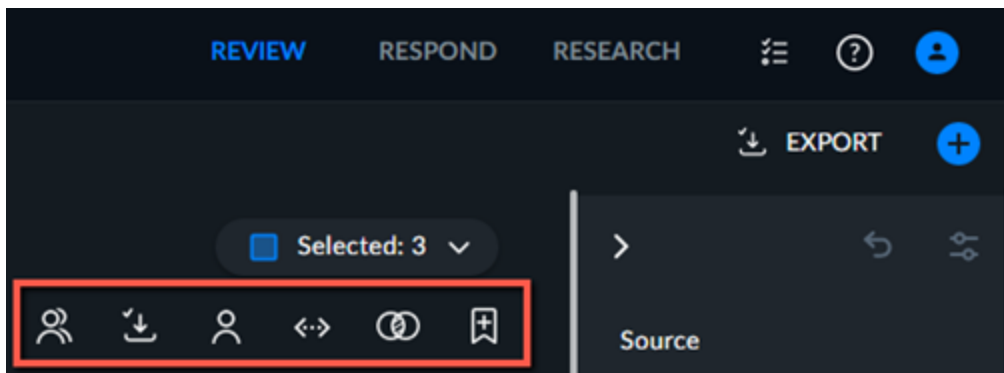
You can change the size of the thumbnails using the **Grid** drop-down list.











The time range bar at the top of the Objects pane indicates the first and last objects in the filtered objects.



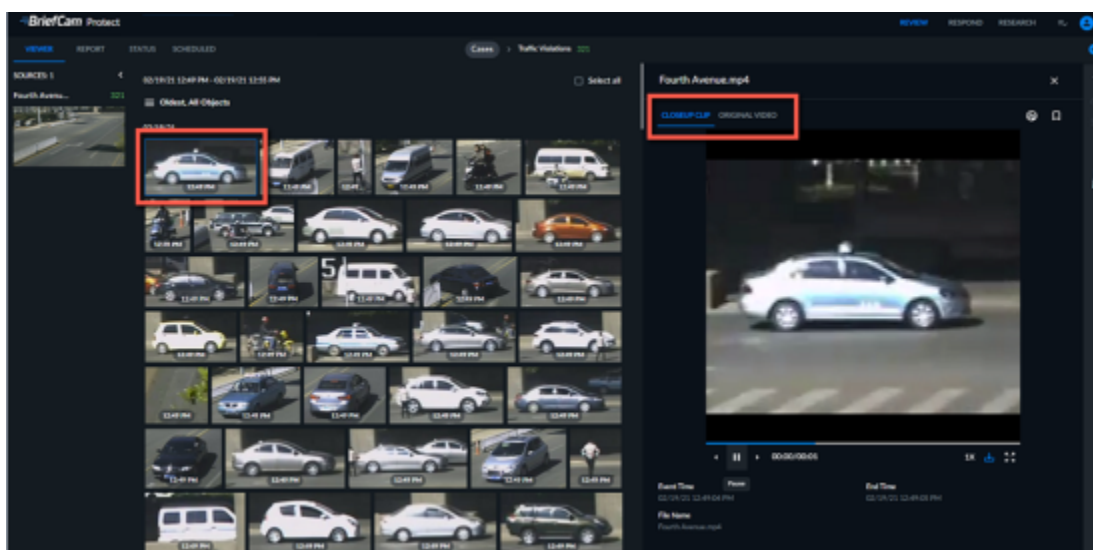
Click the selection button when hovering over object thumbnails to select one or more objects. You can then use the action buttons in the top right-hand corner (see below) to include these objects in the **License Plate Recognition**, **Face Recognition**, **Proximity** or **Appearance Similarity** filters, to add them as bookmarks to a case report or to export the face thumbnails.




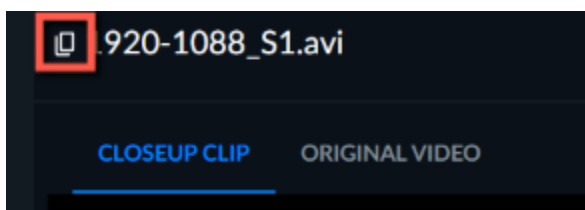
Icons	Description
	Export selected license plates or faces. Note that you can export all the license plates or faces by clicking the EXPORT  EXPORT button at the top right of the screen.
	Add to the Proximity filter.
	Add to the License Plate Recognition filter.
	Add to the Appearance Similarity filter.
	Add to the Face Recognition filter as the same identity.

Icons	Description
	Add to the Face Recognition filter as multiple identities.
	Add to a report. This is added to the Bookmarks tab.

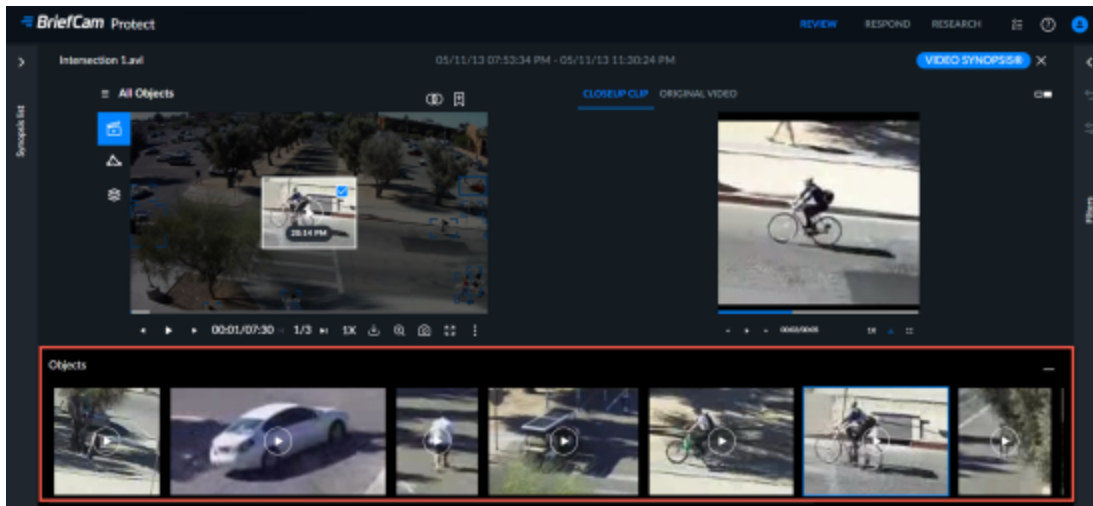
When you click on a thumbnail, the **VIEWER** tab will split in two, with the thumbnail remaining visible in the left-hand pane, and the close-up clip being played back automatically in the right-hand pane. On the right-hand pane, you can also switch to the **Original Video** tab.



Note that you can copy the name of a VIDEO SYNOPSIS by hovering over the name and clicking the copy  icon.



When you click on a close-up clip from a VIDEO SYNOPSIS®, you will see object thumbnails in the stopped scene under the clip.



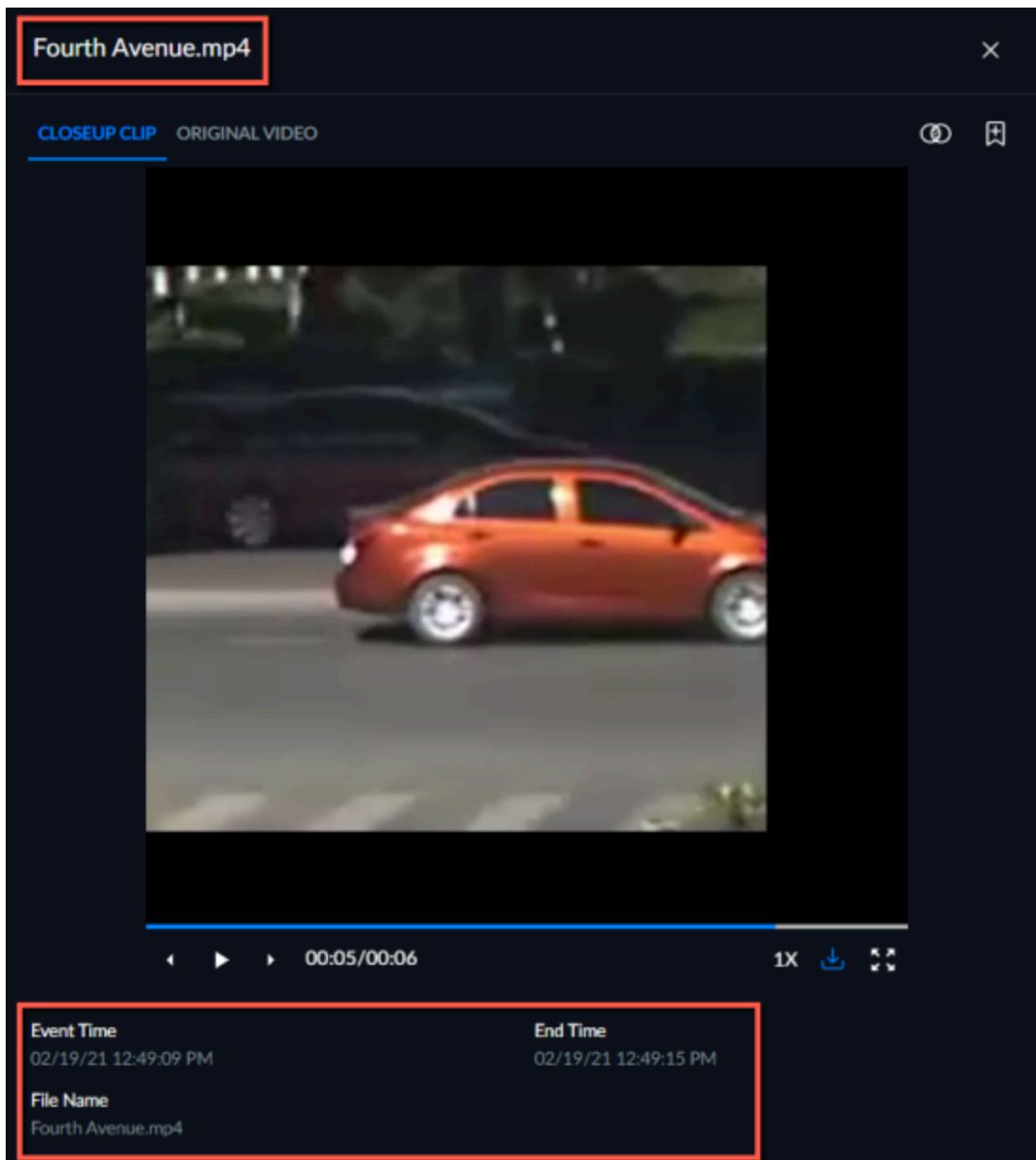
Close-up Clip Display

The name of the VIDEO SYNOPSIS® appears above the close-up clip area.

The following information will appear under the close-up playback area when relevant:


- **Event Time** – the date and time at which the event was first recorded in the original video.
- **End Time** – the date and time when the event ended.
- **File Name** – indicates the original file name for a reference even in a multi-file same-camera synopsis.
- **License Plate** – if the object has a detected license plate, the license plate number will appear.

When face or plate watchlists are used, additional information regarding the watchlist will also be displayed.



Original Video Display

In the **Original Video** tab, you can view the playback of a clip of the original video featuring the object. When you play the original video, by default, a bounding box will surround the object that appeared in the close-up.

	<p>BriefCam can detect objects whose duration in the scene is very short, less than 10 frames. However, for such objects no original video clip is generated.</p>
---	---

At the top of the original video, you'll see the following options (when available):




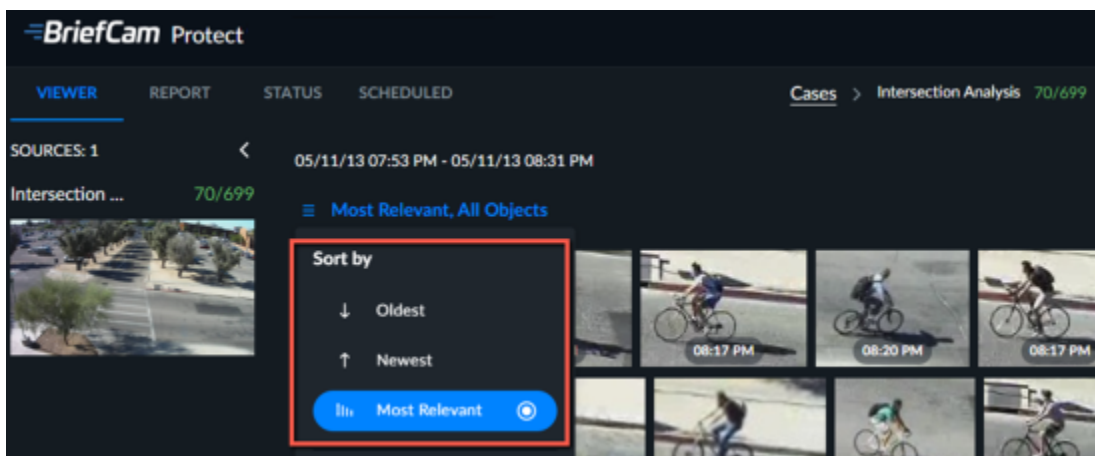
Icons	Description
	If the object is a person and the person's face is captured in sufficient quality, you can use this option to add the face to the Face Recognition filter.
	Click this to add the object to the Appearance Similarity filter.
	Click this to add a captured license plate to the License Plate Recognition filter.
	Click this to add the object to the Proximity filter.
	Click this to bookmark the object and add it to the report (you'll be requested to enter a title and optional description).

At the bottom of the original video, you'll see the [Video Player](#) options.

Object Thumbnail Sorting and Filtering

Thumbnails are sorted chronologically by default, and by relevance when filters are applied.

However, sorting by time (oldest to newest and vice versa) is also available. To change the sorting, click the  icon.



Global Filters

A rich selection of granular filters can be used to include and display only objects matching a range of characteristics on the **VIEWER** tab.

Refer to the following table for all available filtering options.

Filter applied	Case objects included
Source	<p>Objects originating from specific video synopses (if no sources are selected, objects from all sources will be displayed).</p> <p>By default, all sources are selected.</p> <p>Files that were uploaded will appear in a directory named FILES.</p>
Time Range	<p>Objects matching specific time ranges.</p> <p>Note: Only the selected sources are taken into account for the Time Range filter.</p>
Class	<p>Objects matching the following classes:</p> <p>People: Man, Woman, Child</p> <p>Two-Wheeled Vehicles: Bicycle, Motorcycle</p> <p>Other Vehicles: Car, Pickup, Van, Truck, Bus, Train, Airplane, Boat</p> <p>Illumination Changes: Lights On, Lights Off (see also Illumination Changes)</p> <p>Animals</p> <p>Note that:</p> <ul style="list-style-type: none"> • The Car class includes minivans, SUVs, vans, cargo vans, etc. • Vehicles are not detected on cameras set to Overhead or Counting.
Person Attributes	<p>Objects with the following attributes:</p> <p>Upper Wear: Long Sleeves, Short Sleeves, Colors*</p> <p>Lower Wear: Long, Short, Colors*</p> <p>Hat: No Hat, Hat – Hoods are considered hats.</p> <p>Face Mask: No Mask, Mask – The Face mask detector operates only on faces that are 1-star quality or above (objects that appear when you click the Show Faces option in the Face Recognition filter).</p> <p>Bag: No Bag, Backpack, Hand Held – Hand Held may also bring up any item held in a person's hand, such as laptops and cell phones.</p> <p>You can fine tune the tolerance of the attributes by using the Tolerance field. See also Filter Tolerance Adjustment.</p> <p>You can fine tune the colors of the lower and upper wear by using the Shade and Coverage fields. See also Color Tolerance.</p> <p>*Note that:</p> <ul style="list-style-type: none"> • When searching for people using colors in order to get the best possible results, it's recommended

	<p>to use the upper and lower colors in person attributes instead of the Color filter because the person attribute colors are optimized for people.</p> <ul style="list-style-type: none"> Filtering by colors for lower and upper wear only works for people who are standing and does not work on 360 cameras.
Vehicle Make & Model	Vehicles matching a specific make and model. See also Vehicle Make and Model Recognition .
Color	<p>Objects matching any combination of brown, red, orange, yellow, green, lime, cyan, purple, pink, white, gray and black.</p> <p>When searching for people using colors in order to get the best possible results, it's recommended to use the upper and lower colors in person attributes instead of the Color filter because the person attribute colors are optimized for people.</p> <p>See also Color Tolerance.</p>
Size	<p>Objects based on their actual (real-life) size.</p> <p>You can select a size between 0-65 feet (0-20 meters).</p>
Speed	<p>Objects based on their actual speed.</p> <p>You can select a speed between 0-155 mi/hr (0-250 km/hr).</p>
Dwell	Objects having dwelled for a user-specified period or longer in a scene.
Direction	Objects having travelled in a specified direction.
Proximity	Objects appearing below or above a specified distance. See also Proximity .
Appearance Similarity	Objects with similar attributes, either people (People Similarity) or vehicles (Vehicle Similarity). See also Appearance Similarity .
Face Recognition	Objects that have a detected face. See also Face Recognition .
License Plate Recognition	Objects that have a detected license plate number. See also License Plate Recognition .



BriefCam uses a two-tier classification approach. First, BriefCam classifies the class category (e.g. vehicle). For this top level, BriefCam has a 96% accuracy or above. For sub-classes the filtering is more detailed, and the accuracy might not be the same as the top-level classes (e.g. specific vehicle type).

In some cases, the fine-grain classification of sub-classes is not attempted. For example, if you have an object with a very **low resolution** then it might be possible to detect that it's a 2-wheeled vehicle, but the resolution is not high enough to determine if it's a bicycle or a motorcycle.

See also:

[Filter Presets](#)

[Fast Track](#)

Object Classification – Resolution Limits

Minimum large edge (pixels)	Minimum small edge (pixels)	Relevant classes
32	12	High level classes - Person, 2 Wheels, Vehicles, Animals
64	32	Man, Woman, Child & all of the Person Attribute classes
40	20	Car, Pickup, Van, Bus, Truck, Airplane, Train, Boat
32	16	Bicycle, Motorcycle



Classification accuracy on thermal videos will be lower than on regular videos.

Illumination Changes

This feature is disabled by default. The [administrator](#) can enable this.

Use the **Illumination Changes** class to filter for windows or other lights that were turned on and off. You'll see a chronological VIDEO SYNOPSIS® where illumination change events are represented as objects and displayed once for lights-on and once for lights-off.

Here are two examples:



The following changes are not detected:

- Short changes of lights on and lights off. This tolerance level can be changed by the administrator.

- Illumination changes in very small areas. This tolerance level can be changed by the administrator.
- Gradual illumination changes (e.g. light and shadow changes by sun movement).

Other Class

All objects that do not fall into one of the high-level classes with high confidence are classified as **Other**. Usually, this class category will not contain objects of interest.

Note that if, for example, a bag in the scene is detected and classified as **Other** (because it is not a person, vehicle, or animal), it does not mean that all bags will be detected and classified as **Other**.

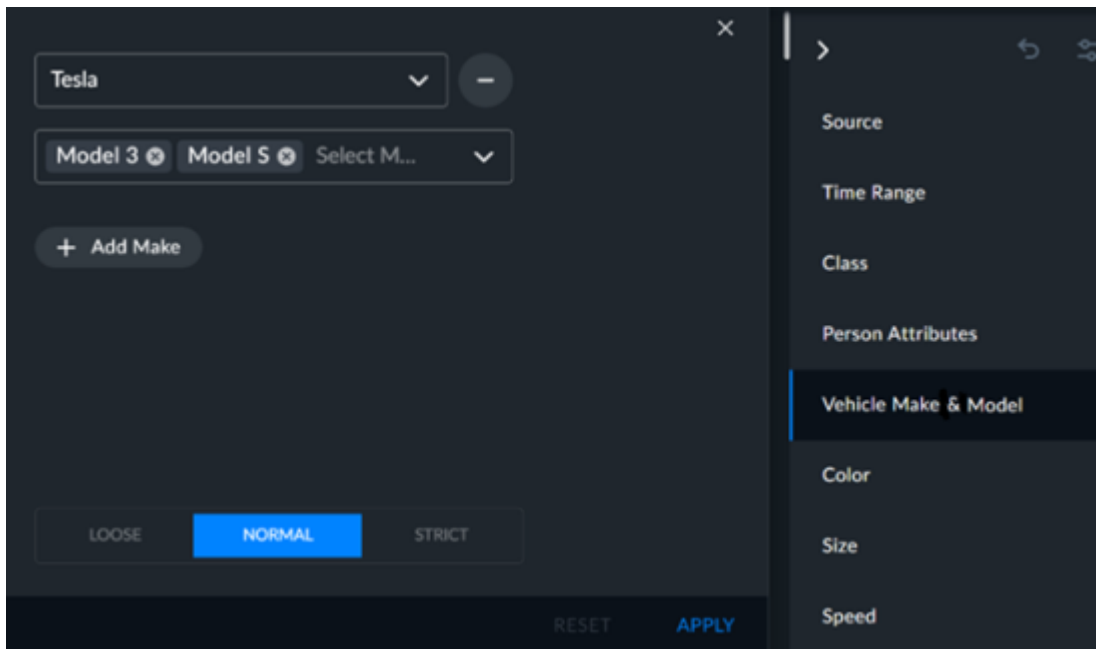
Other objects are not shown unless the **Other** class is selected. This behavior is different than usual classes whose objects are shown if no other filter is selected.

This feature is disabled by default. The [administrator](#) can enable it.

Vehicle Make and Model Recognition


You can search for vehicles of a specific make and model.

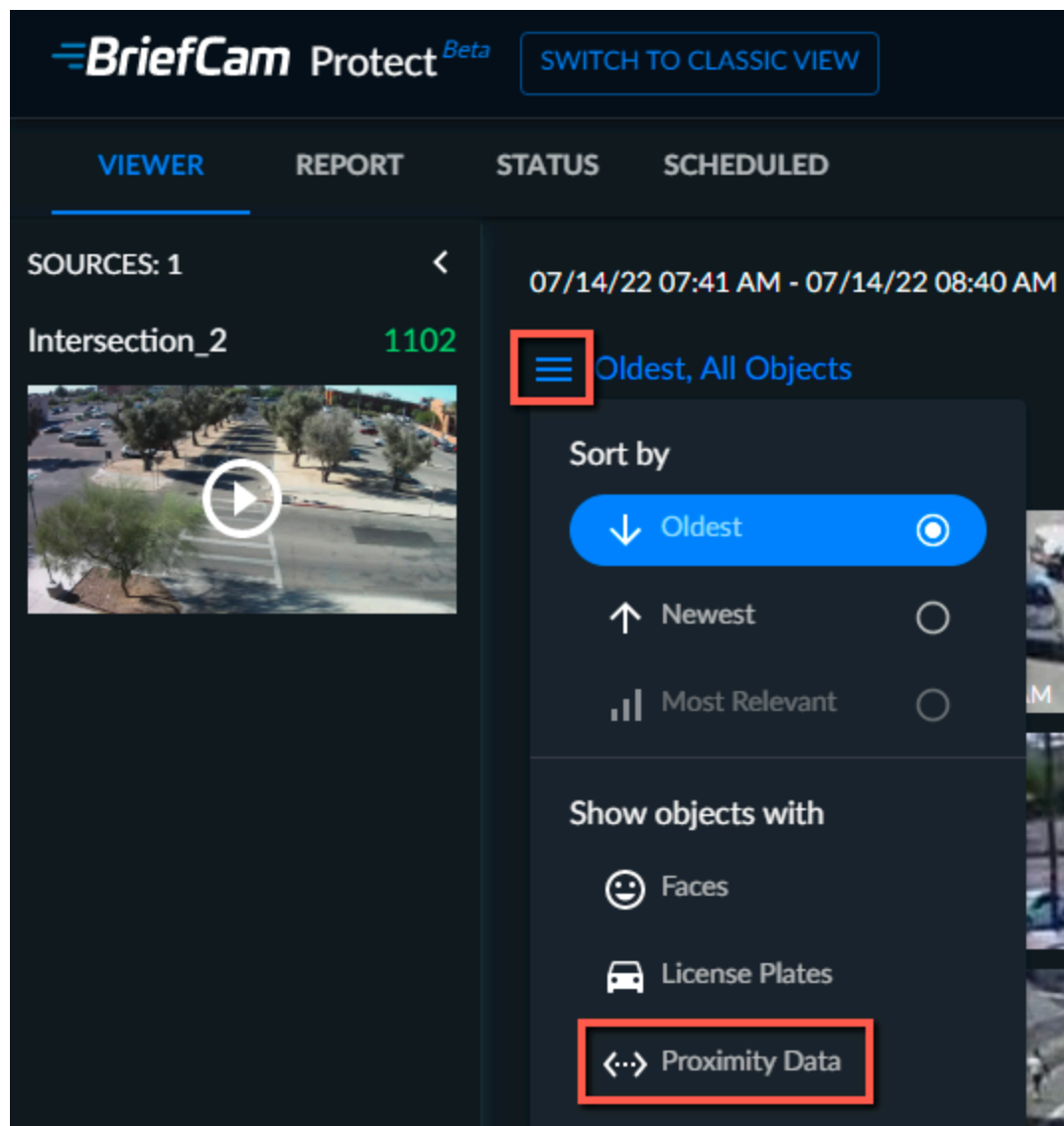
1. Click the **Vehicle Make & Model** filter.
2. Select a make from the drop-down list. You can also type in the name or part of the name of the make to narrow down the selection.
3. You can add models to the search from the second drop-down list.
4. You can add additional makes by clicking the **+Add Make** button.
5. You can fine-tune your search using the **Loose**, **Normal**, or **Strict** tolerance level. For additional information, see the [Filter Tolerance Adjustment](#) section.
6. To apply your selections to the search, click **APPLY**.




Proximity

The Proximity feature is only supported for people.


Click the three-line menu  and in the **Show objects with** section, select **Proximity Data**. Only objects that can be added to the **Proximity** filter will be shown. To reset this selection, unselect **Proximity Data**.



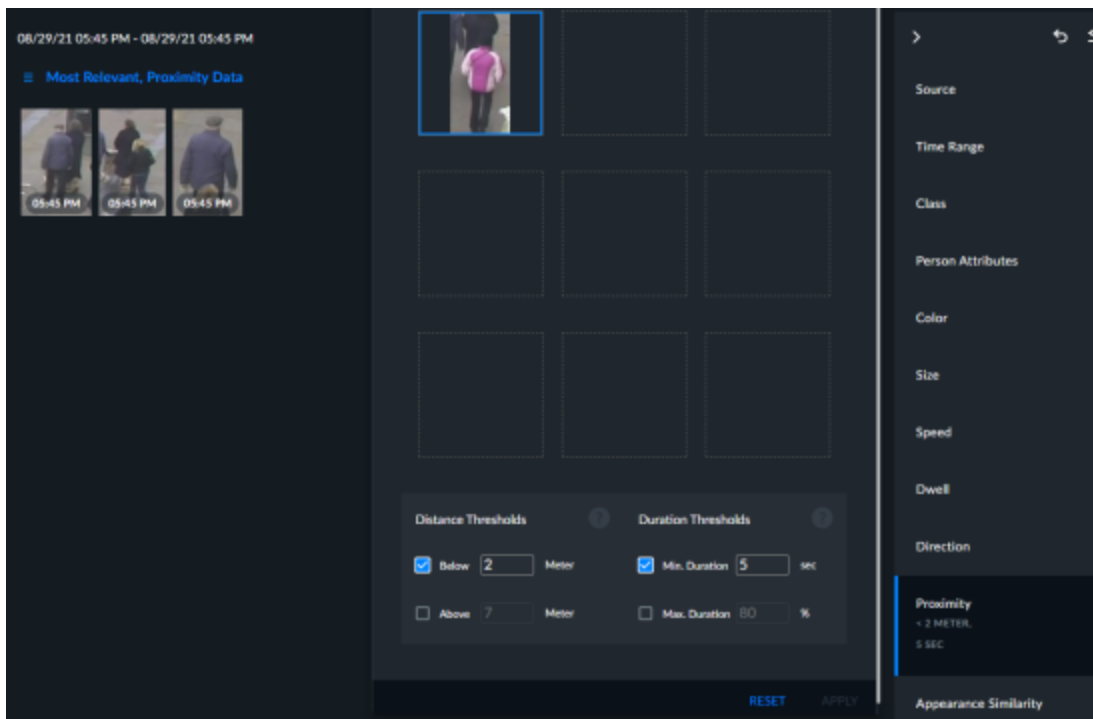
To find which people were above or below a certain proximity from a specific person, add the person to the **Proximity** filter, by clicking the Proximity icon (). The icon will appear when doing one of the following:

- Selecting one or more people.
- Playing a close-up clip.
- Playing a VIDEO SYNOPSIS[®] and then clicking an object.

Only people that appear concurrently in the scene are considered.

	<p>Proximity information is not available when using fisheye cameras.</p> <p>For videos being processed for the first time, it is recommended to start the processing approximately 30 minutes before the time of interest in order to give the system time to analyze people passing through the frame. The geometry algorithm requires several people, with their whole body visible, to pass through different areas of the frame in order to establish an approximation of the scene geometry.</p>
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Once a person is added and selected in the filter and the filter is applied, the results will include all people that were closer (or farther, or both) than the defined threshold(s) for longer than the defined minimum duration (if defined).

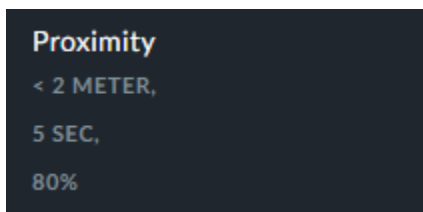


You can select all the objects on the current page by checking the **Select All** checkbox and you can then delete them all. You can also use **Shift+Click** to select multiple consecutive objects.

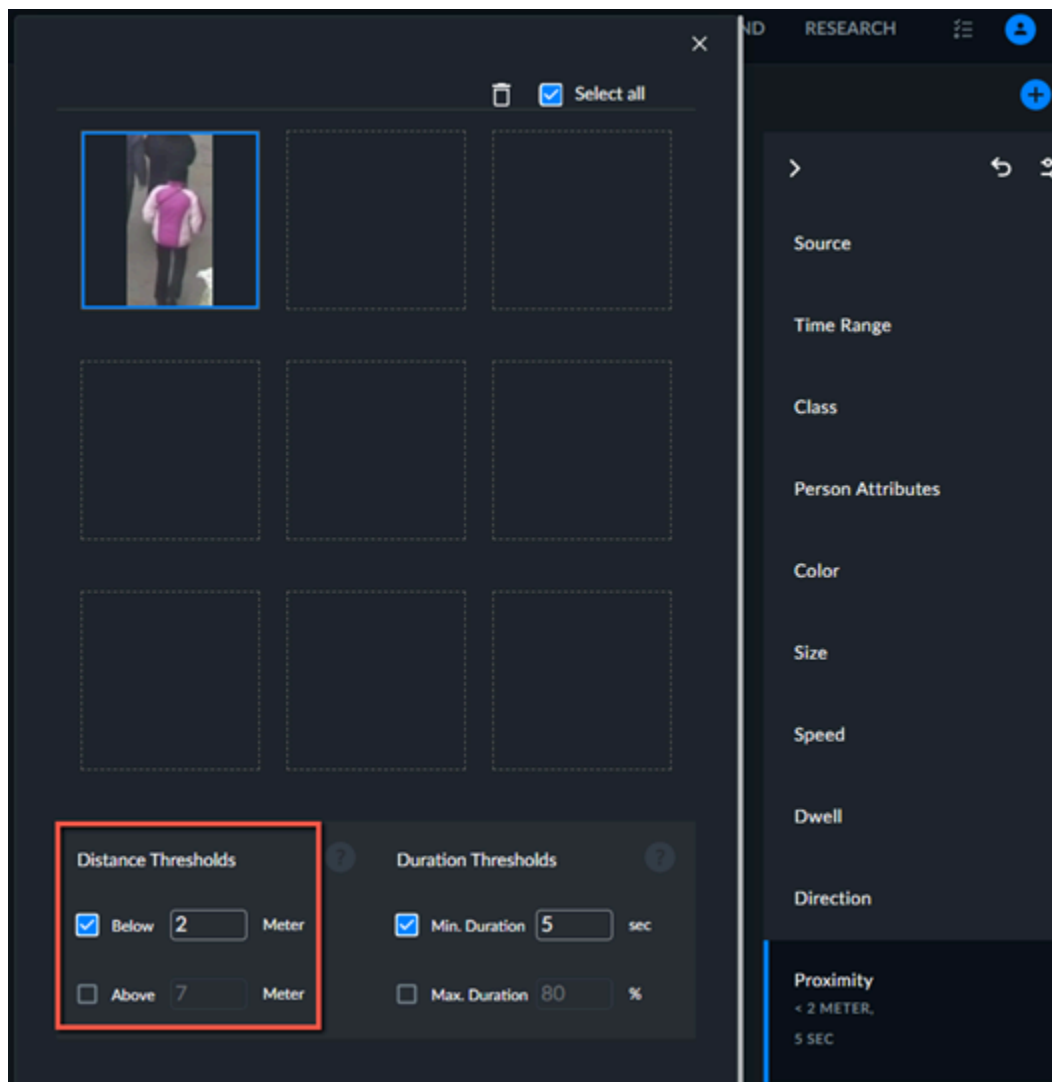
You can hover over an individual object in the **Proximity** filter and click its delete button (trash can) to remove it from the filter or click the zoom button (magnifying glass) to see the entire thumbnail.

In the Filter pane, under the **Proximity** filter, you can see the thresholds that were set in the fields described below.

This example means the below field is set to 2 meters, the **Min. duration** is set to 5 seconds, and the **Max. duration** is set to 80%.



Distance Thresholds



The **Distance Thresholds** let you set how close or far from each other the two people need to be in order to be included in the search results. You can enter numbers with up to one numeral after the decimal point. The valid values for the **Distance Thresholds** are 0.1 m to 20 m (0.3 ft to 66 ft).

The **Below** and **Above** fields are independent, so if you select both, the search results will show people that were below the distance set in the **Below** threshold and also results for people that passed the distance in the **Above** threshold.

Duration Thresholds

The **Duration** fields are optional.

The valid values for the **Min. Duration** threshold are 1- 900 seconds (15 minutes) and the valid values for the **Max. Duration** threshold are 1-100%.

The default value for **Min. Duration** is 15 secs and for **Max. Duration** is 80%.

The **Max. Duration** option lets you ignore groups of people who were closer/farther from the distance threshold(s) for more than the percentage of the duration in the scene.

For example, if the **Max. Duration** option is set to 90% with a minimum distance threshold of 2 meters, people that are closer than 2 meters for more than 90% of their duration in the scene (the duration of the person who appeared the longest in the

scene is used), are considered "associated" and are not included in the filter output (even though they may match the filter's distance and minimum duration conditions). This is useful to exclude groups of people that enter together, exit together, and meet the close proximity conditions together, such as families, that are permitted to be together.

Let's consider a case where person A enters the scene and stays in it for one minute and then person B joins person A in close proximity for another minute – the violation duration will be 50% (1 minute out of the 2-minute max duration of the two persons) and if we set the Max. Duration to a value below 50% – this pair will be ignored.

Known Issues


There are a few known issues to keep in mind when using the **Proximity** filter:

- Objects at the beginning of a new source of video do not have real-world coordinate information. This is because the geometry modeling algorithm needs to analyze a certain number of objects before real-world coordinates are available. These objects (without real-world coordinates) cannot be added to the **Proximity** filter (and will not show up in the **Proximity** filter results). To circumvent this, for new sources, fetch a video time range with a margin at the beginning.
- BriefCam cannot extract geometries for scenes that are too crowded (where objects are not separable and trackable).
- Objects near the horizon have high inaccuracies. This happens mostly when the camera POV is more parallel to the ground. To ignore these objects, it is recommended to use an Area filter in the REVIEW module to filter out people who are moving in the far away area and do not come near.
- The **Proximity** filter triggers an alert when a person violates the proximity thresholds. If two people who have already violated the proximity thresholds violate the thresholds again with one another – an alert will not be triggered.
- The Proximity feature in the RESEARCH module is disabled by default. To enable this feature, contact your [system administrator](#).

See also:

[BriefCam Proximity white paper](#)

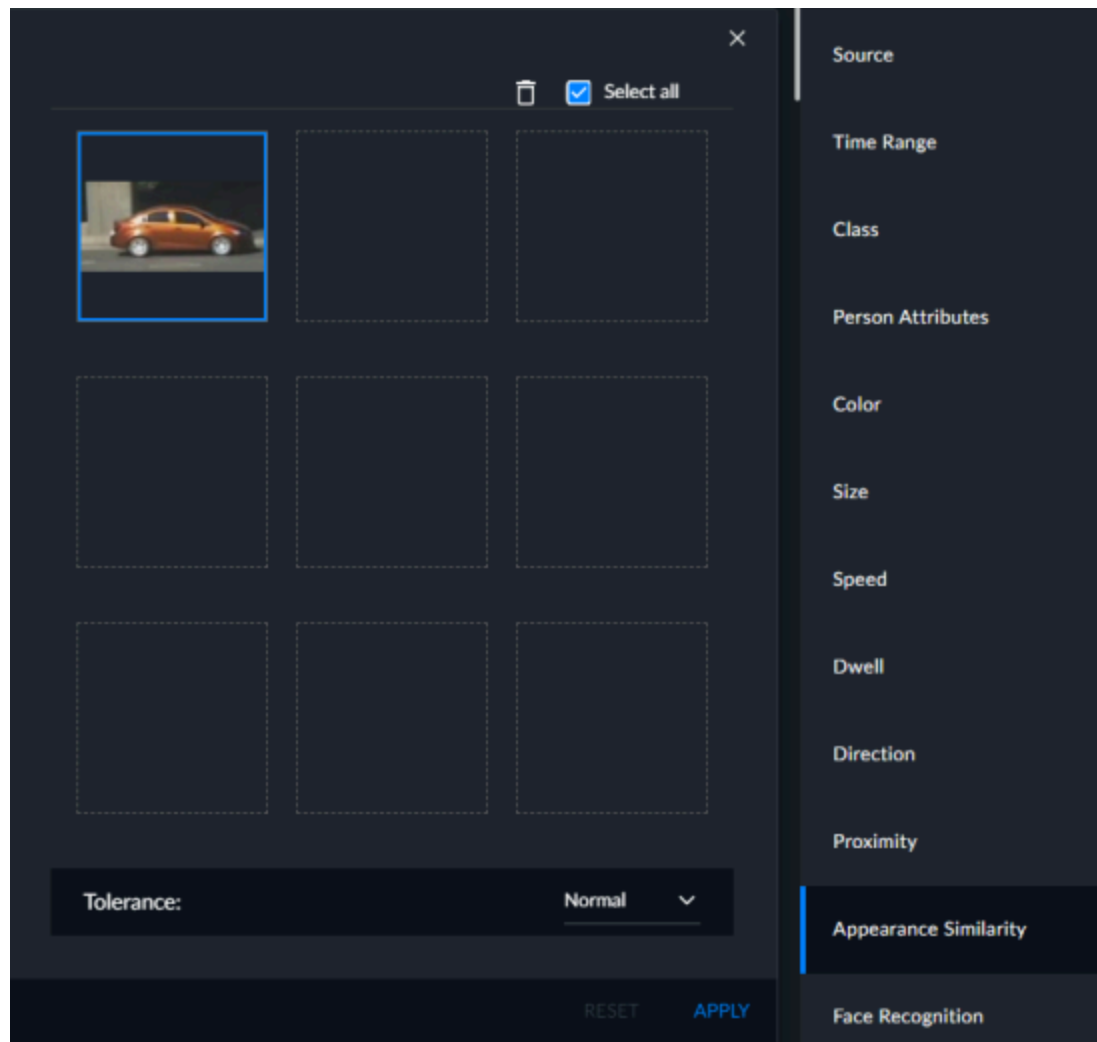
Appearance Similarity

To filter objects down to similar objects only, select one or more objects (by hovering over them and clicking their selection button), then click the **Appearance** activity button () in the top right-hand corner of the screen. You can alternatively do so by clicking the **Appearance Similarity** option displayed to the right of an object's close-up clip playback.

The **Appearance Similarity** filter will open and display all selected objects. Selected objects have a blue frame around them. Once you select the required objects, click **APPLY**. This will filter all case objects to display only objects similar to those selected.

For people, similar objects are objects that look similar to a human operator, mostly when wearing the same clothes in all appearances.

For vehicles and animals, similar objects are objects with the same identified classes and attributes (class, size and color), such as two objects both classified as blue bicycles will be considered "similar" even though a human operator may not consider them similar. Two red pickup trucks may be considered similar by BriefCam, even if they look different to a human eye. The objects' behavior, such as speed and direction, are also taken into account when finding similar objects. Note that this method will also be used for people if the image is of low resolution, there is little visibility, or the person is far away.



You can click **Reset** to remove all selected objects from the filter and resume display of all case objects.


You can hover over an individual object in the **Appearance Similarity** filter and click its delete button (trash can) to remove it from the filter or click the zoom button (magnifying glass) to see the entire thumbnail.

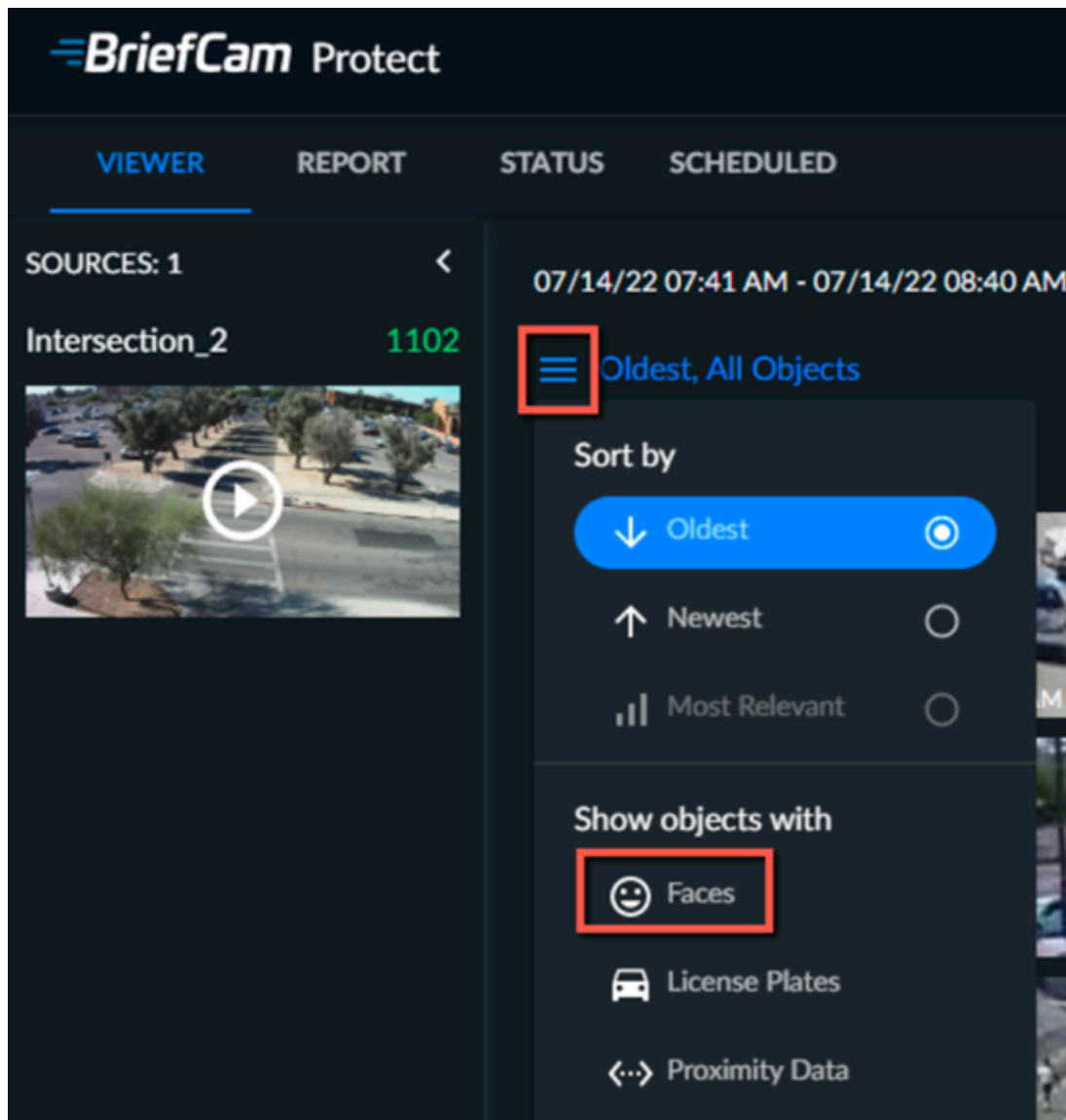
You can select all the objects on the current page by checking the **Select All** checkbox and you can then delete them all. You can also use Shift+Click to select multiple consecutive objects.

Face Recognition

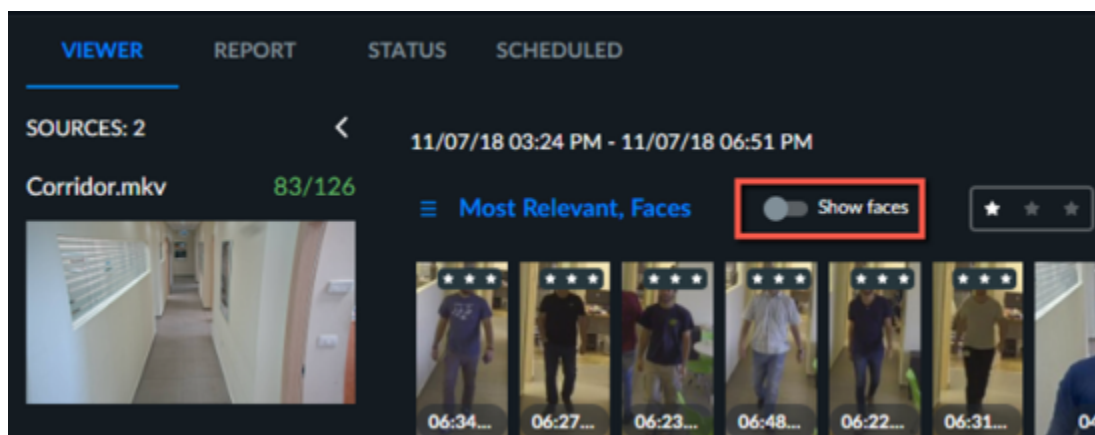
You can search for faces across sources regardless of the angle of the face or the date of the sources.

Many factors affect the performance of face recognition, including camera location (placement), distance of objects from the cameras, camera resolution (pixels), scene lighting, quality of the face image, angle of camera, and type of camera. For more information, see the [BriefCam Face Recognition white paper](#).

Click the three-line menu  and in the **Show objects with** section, select **Faces**. All recognized faces will be shown. However, only objects that are 2-3 star faces can be added to the **Face Recognition** filter. To reset this selection, unselect **Faces**.

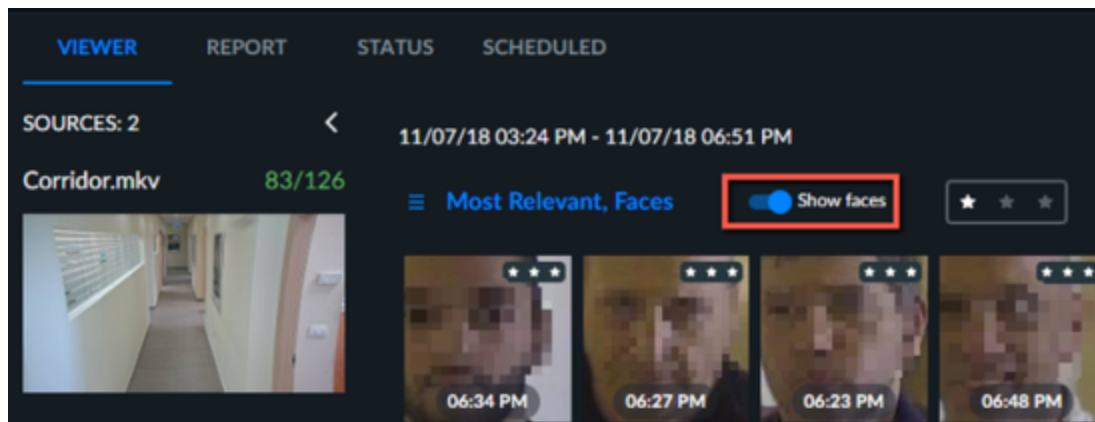


You will see all objects that were detected as having faces.



To see only the faces, turn on the **Show faces** toggle button.

Note that some of the images are blurred in this document to protect the identities of the people. They do not appear blurred in BriefCam.



See also

[Adding Faces to the Face Recognition Filter](#)

[Searching for Identities](#)

[Uploading Identities](#)



[Adding a Face to a Watchlist](#)

[Face Recognition Quality](#)

[Disabling Face Recognition and License Plate Recognition](#)

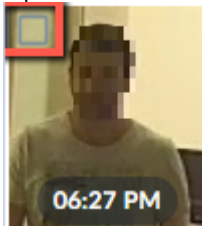
Adding Faces to the Face Recognition Filter

You can add faces to the **Face Recognition** filter from the thumbnails or from the VIDEO SYNOPSIS® by clicking one of the two Face Recognition icons:

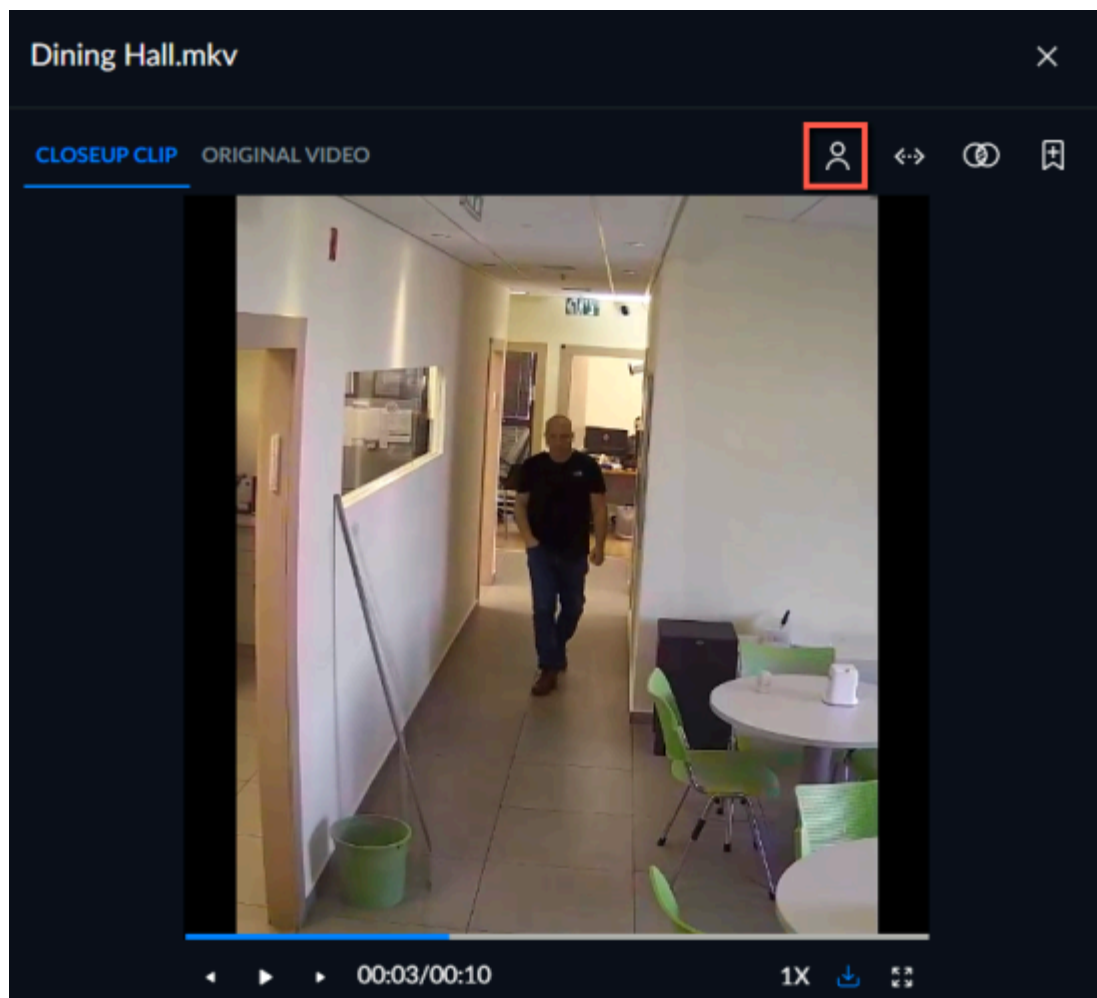
- Click the **Same Identity**  icon to add the faces to a single identity. Use this when all selected faces are examples of the same individual appearing several times in the sources. This increases the likelihood of a successful match when applying the filter.
- Click the **Multiple Identities**  icon to add each face to a separate identity

You can access these icons in three different ways:

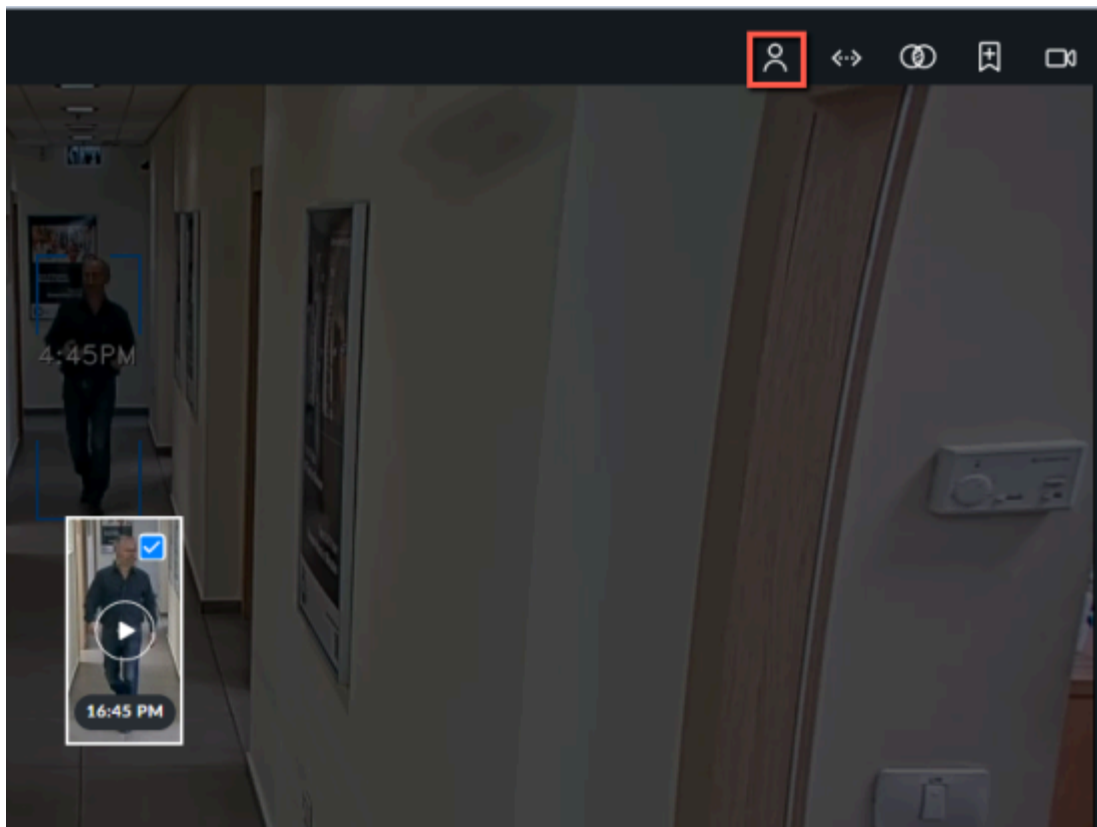
1. When you find the thumbnail with the face that you want to search for, hover over the thumbnail and click the empty square in the left of the object.



2. When you click on a thumbnail, from the **CLOSEUP CLIP** tab you can select the **Same Identity** icon. In this mode, you can only add a single face to the filter at a time.



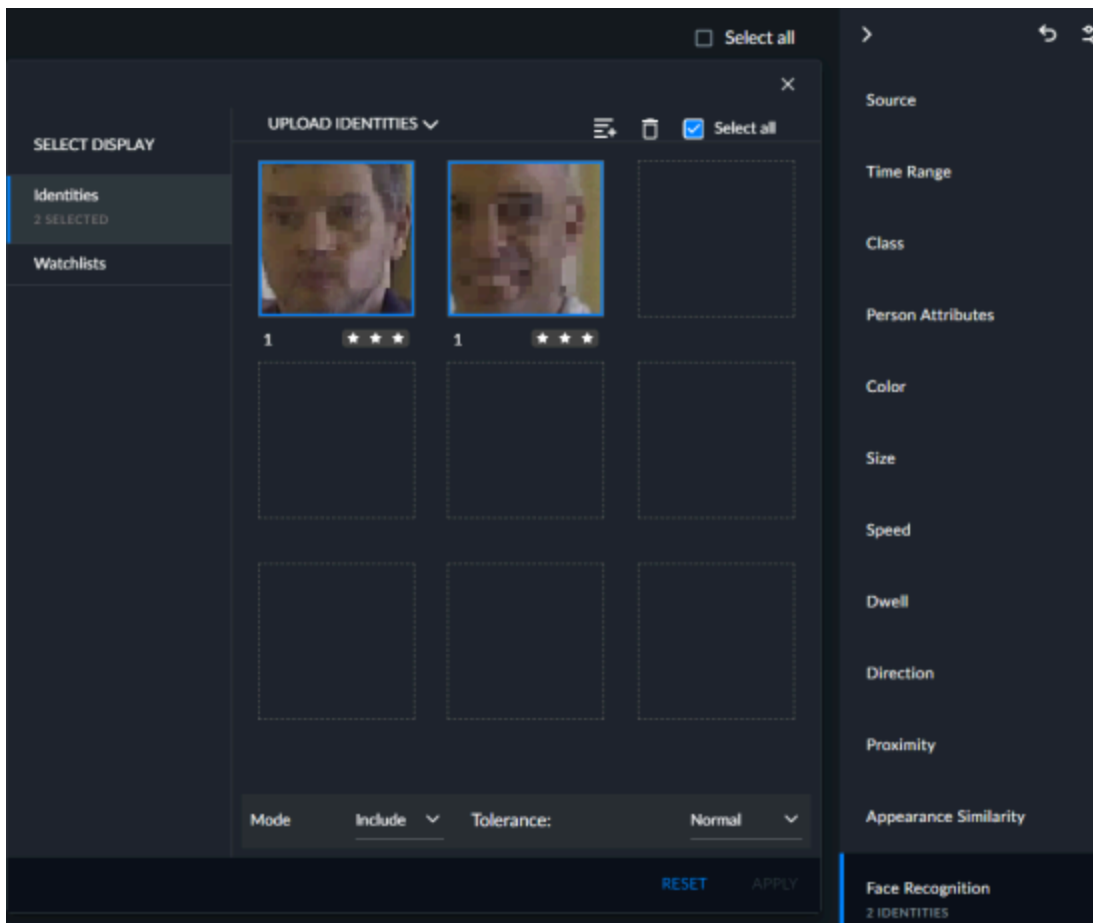
3. When you click on an object from the VIDEO SYNOPSIS®, you can add an individual by selecting the **Same Identity** icon. In this mode, you can only add a single face to the filter at a time.



Searching for Identities

The selected faces will now appear in the **Face Recognition** filter, ready to be searched. In the **IDENTITIES** tab, select the faces you'd like to search for and click **APPLY** to filter all objects by these faces.

All case objects matching the selected identities will appear.



You can select all the objects on the current page by checking the **Select All** checkbox and you can then delete them all. You can also use **Shift+Click** to select multiple consecutive objects.

In the **Mode** field, you can select between two operation modes:

- **Include** (default) – Find all objects that have a recognizable face that matches one or more faces within the selected identities or watchlists.
- **Exclude** – Find all objects that have a recognizable face that matches none of the faces within the selected identities or watchlists.

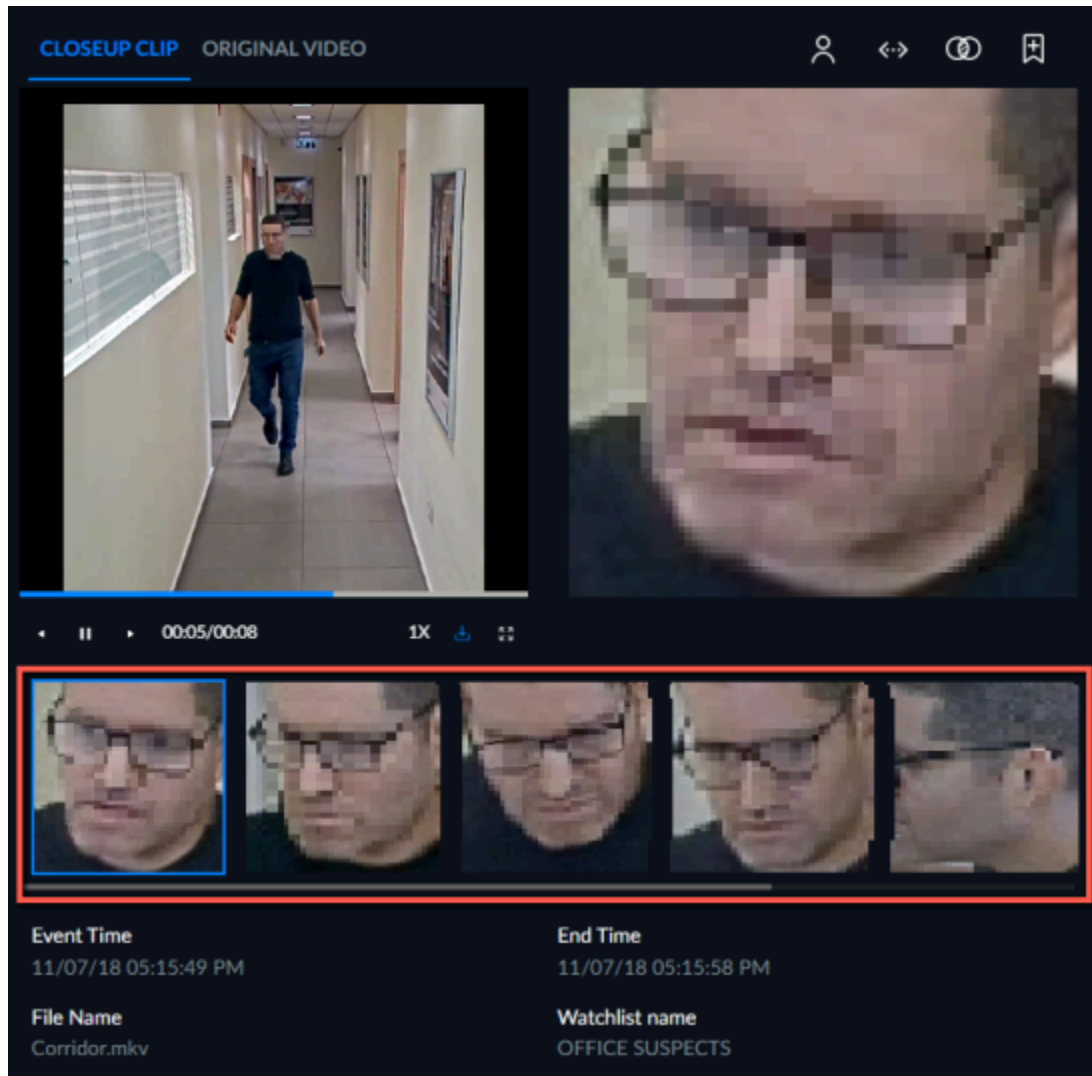
Scenario with Exclude Option	Triggers and Alert
Faces that are not on the watchlist	√
Faces of low quality that are not compared (1-star faces and 2-star faces in RESPOND normal-sensitivity)	√
Persons without a detected head/face	X - default √ - ShowNoFaceInExclude environment setting = true

You can hover over an individual face and click its delete (trash can) button to remove it from the filter or click the zoom button (magnifying glass) to see the entire thumbnail.

You can select **Select all** and click the trash icon to remove all the faces from the current page.

A blue line will appear around the face when it is selected.

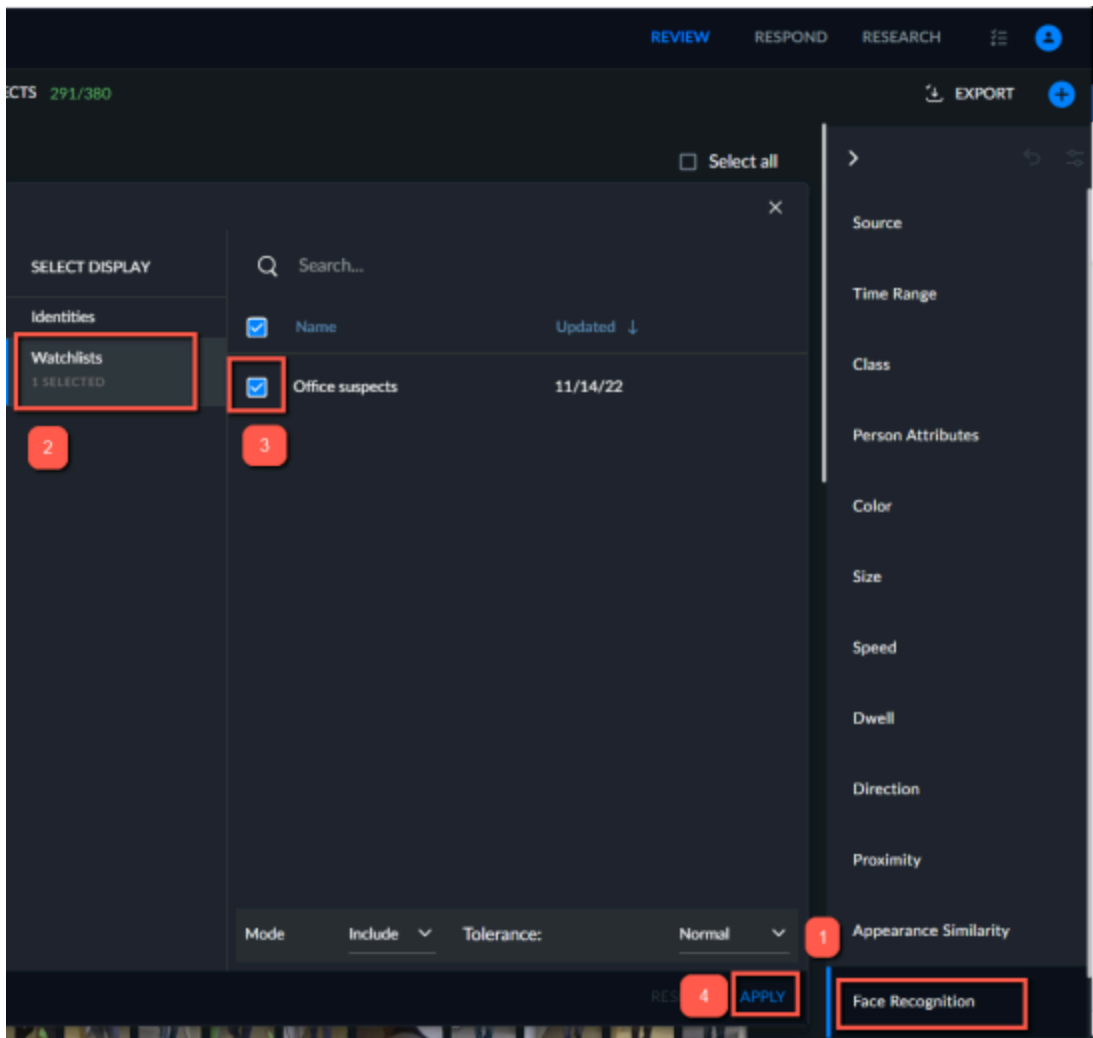
When you search by identities and click **APPLY**, the images of the identity will appear under the clip.



Searching Using Watchlists

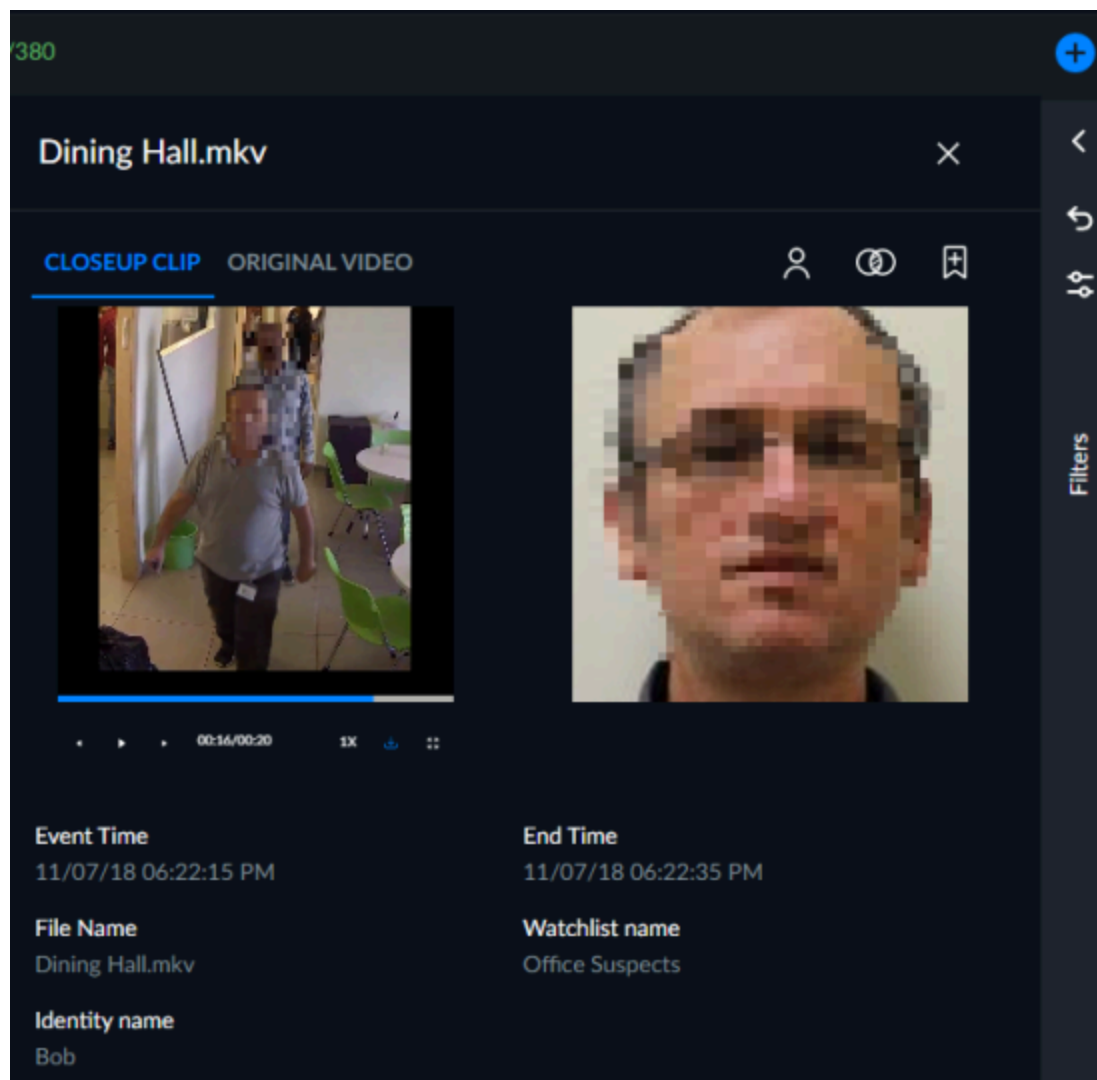
To search for people using a watchlist:

1. Click the **Face Recognition** filter.
2. Select the **WATCHLISTS** tab.
3. Select the watchlist that you want to use in your search.
4. Click **APPLY**.



When you search by using a watchlist, the image from the watchlist will appear together with a video clip.

Under the closeup clip are details about the event, watchlist and identity. This helps the operator verify that the identity matching was correct.




In **Exclude** mode, if faces that are non-matched are found, only the face is displayed (since there is no matched identity).

Watchlists are set in the **Customizations** section and are described in the [Watchlists](#) section.

When searching for identities, faces with a 1-star rating will not be included in the search results and cannot be added to the filter.

Uploading Identities

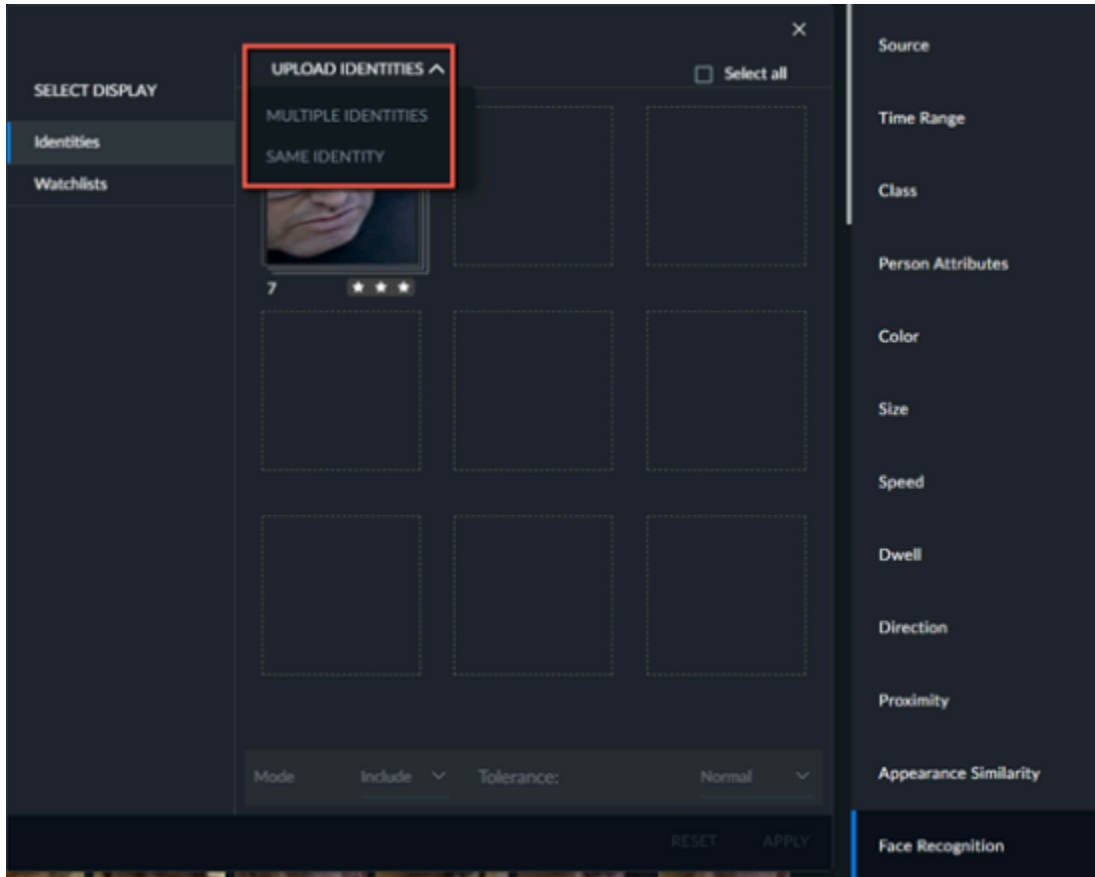
	<p>It is recommended to use images where the face is in the center of the image.</p> <p>It is recommended to upload images with not too much context around the face; the face should not be less than one quarter of the image.</p>
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To upload images of people:

1. Open the **Face Recognition** filter.
2. Click the **UPLOAD IDENTITIES** button.

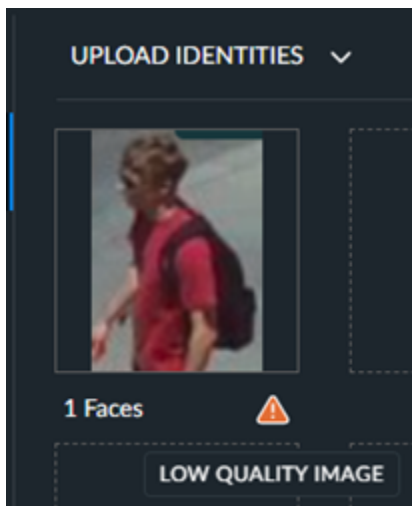
The supported file types for images are .png, .jpg, .gif, .jpeg, and .bmp.

3. Select whether you will add images of the same identity or multiple identities.

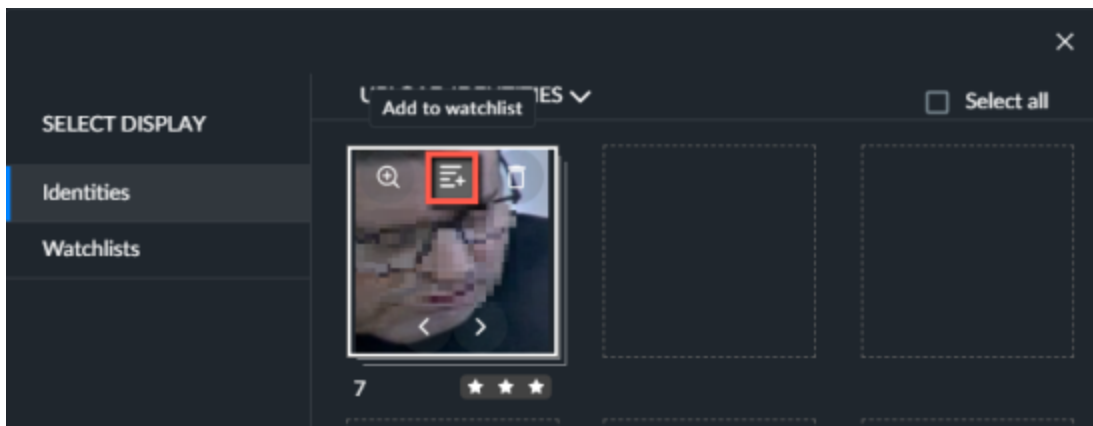


4. Select the files that you want to upload and click **Open**.

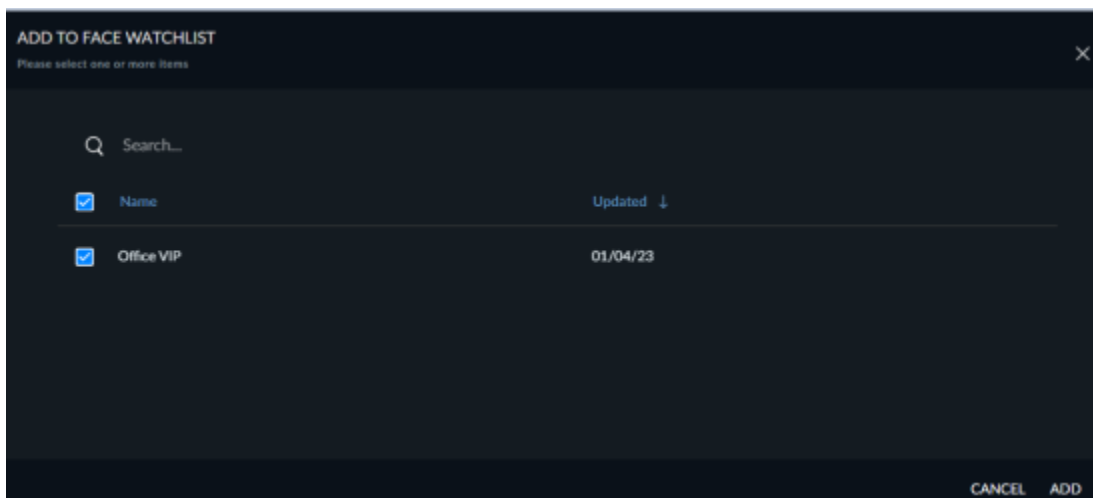
Note that 1-star images cannot be added. If you try to add a 1-star image, you will see a warning  icon. These images will be ignored.



5. To add the image to a watchlist, click on the image and click the **Add to watchlist** icon.



6. Select a face watchlist and click **ADD**. If there are no watchlists, you first need to add one. For additional information, see the [Watchlists](#) section.



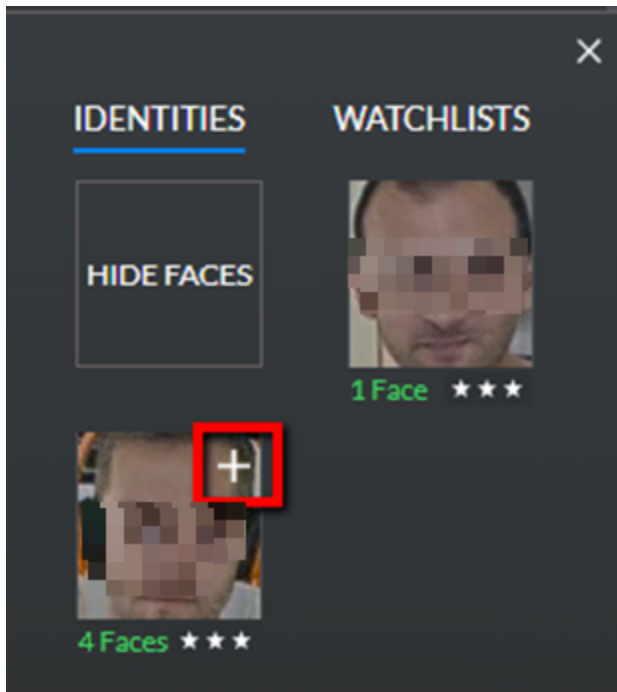
Adding a Face to a Watchlist


To add a face to a watchlist, click on the + icon on the top right of the image and then select what list to add the face to.

In the REVIEW solution, 3-star images can be added to watchlists. 1-star images cannot be added. For additional information, see [Face Recognition Quality](#).



You can make identities available to other modules by adding identities to watchlists.





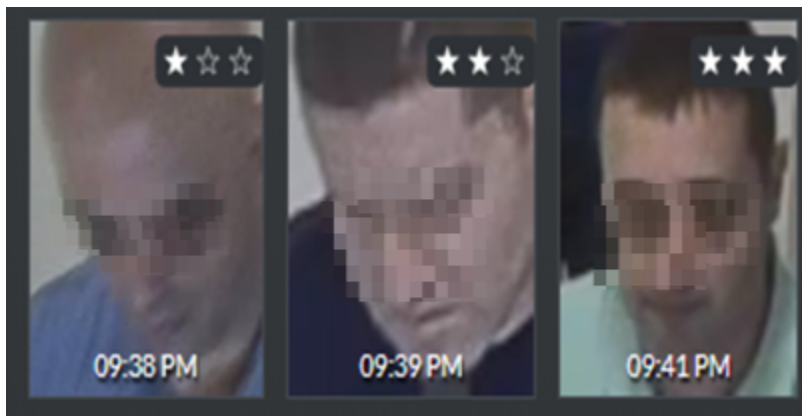
Uploading and managing watchlists is done in the User Settings. For more information, see [Watchlists](#).

Face Recognition Quality

Each identity and face is given a 1-3 star ranking.

The accuracy of face detection and face similarity search is highly dependent on scene characteristics and video quality.

Each image is assigned one, two or three stars.



The star rating is assigned by BriefCam and is a combination of:

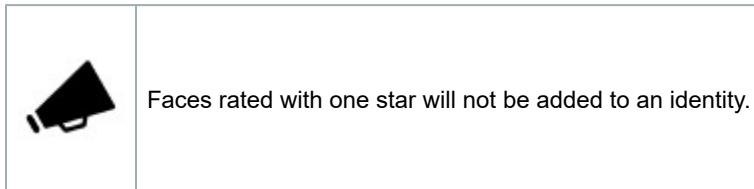
- Face detection
- Face resolution
- Face image quality
- Face landmarks

- Face pose

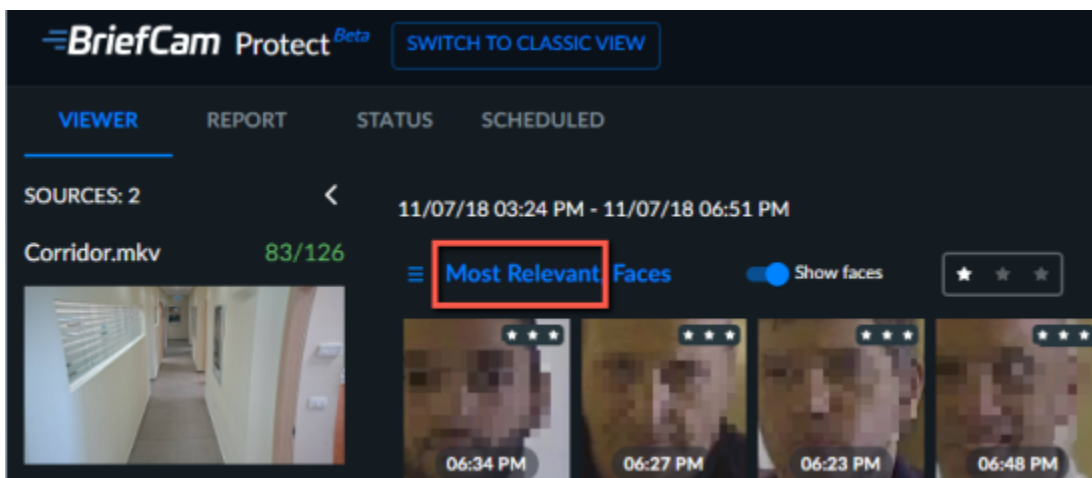
In general, **1 star** is for faces that are not possible for AI to recognize as a person, **2 stars** is for faces that AI can recognize with medium confidence and **3 stars** is for faces that AI can recognize with high confidence.

In the REVIEW solution, 2-star and 3-star images can be added to the filter. 1-star images cannot be added.

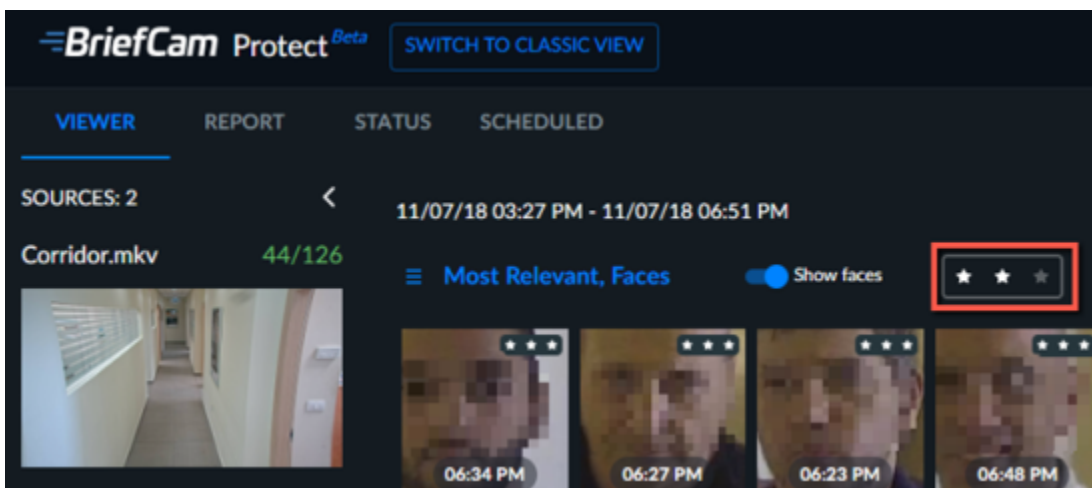
In the RESPOND solution, 3-star images can trigger alerts and 1-star images cannot trigger alerts. By default, 2-star images cannot trigger alerts; however, for high-sensitivity configurations, 2-star images can trigger alerts.



When you select the **Show objects with Faces** option and the **Sort by** is set to **Most Relevant**, the thumbnails will appear with the highest number of stars first (high to low).



You can also click on one of the stars to only show faces starting with a certain score (one, two, or three stars).



When you export the face thumbnails, only the faces with the minimum score or higher will be exported.


The table below summarizes this:

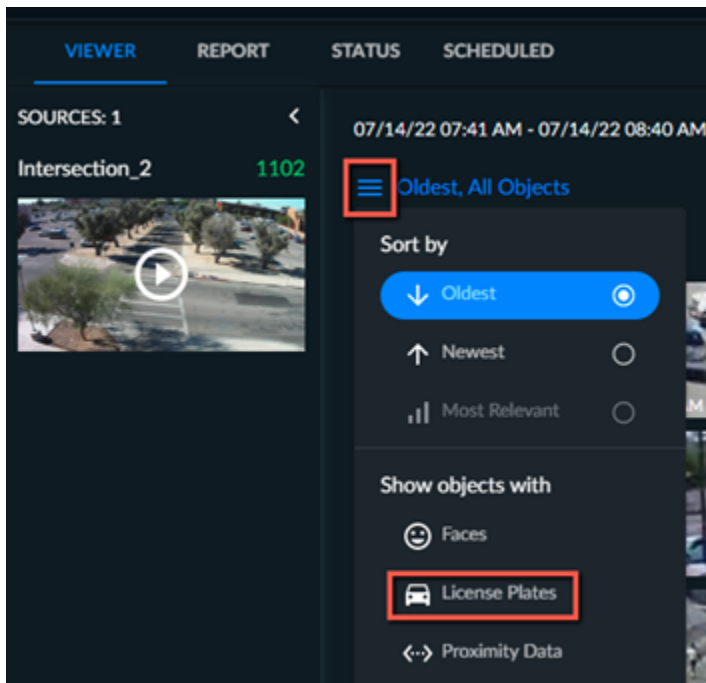
	REVIEW	RESPOND
1 star	X	X
2 stars	√	X - default √ - high-sensitivity
3 stars	√	√

License Plate Recognition

You can search for license plates across sources.

It's important to remember that for license plate recognition many factors affect the performance, including camera location and angles (placement), distance of cameras and resolution (pixels), video quality, lighting, and type of camera. For more information, see the [License Plate Recognition white paper](#).

Click the three-line menu  and in the **Show objects with** section, select **License plates**. Only objects that can be added to the **License Plate Recognition** filter will be shown. To reset this selection, unselect **License plates**.



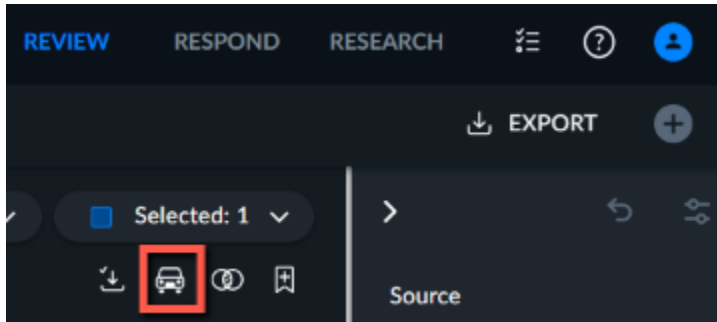
See also:

[Adding Plates to the License Plate Recognition Filter](#)

[Searching for License Plates](#)

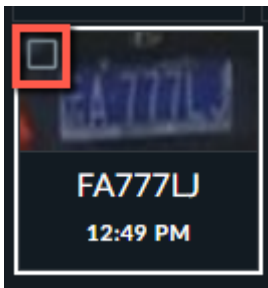
Adding Plates to the License Plate Recognition Filter

You can add plates to the **License Plate Recognition** filter either from the object thumbnails or from the VIDEO SYNOPSIS® by clicking the License Plates icon.



You can access the icon in three different ways:

1. When you find the thumbnail with the plate that you want to search for, hover over the thumbnail and click the empty white square in the left of the object. You can do this for multiple objects (multiple examples of the same plate or multiple plates).



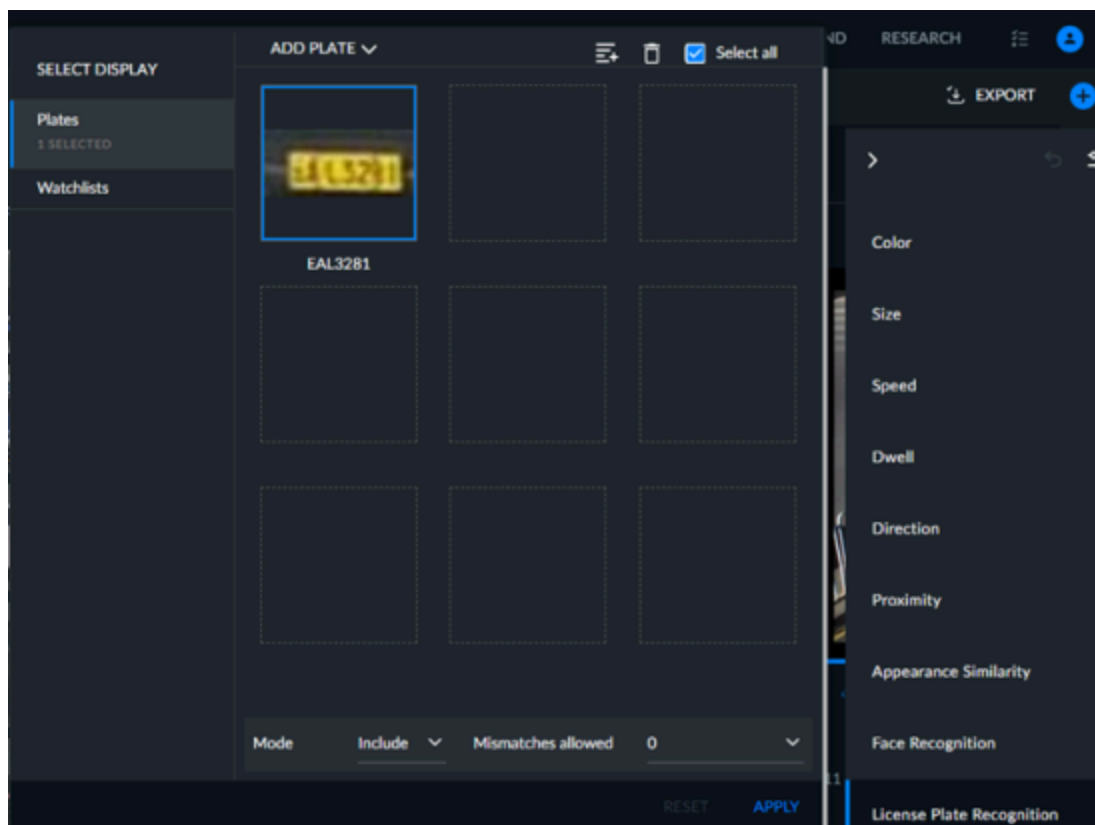
2. When you click on a thumbnail, from the **CLOSEUP CLIP** tab, you can select the LPR icon. In this mode, you can only add one plate to the filter at a time.

Note that the images are blurred in this document to protect identities. They do not appear blurred in BriefCam.

3. When you click on an object from the VIDEO SYNOPSIS®, you can add a vehicle by selecting the LPR icon. In this mode, you can only add a single plate to the filter at a time.

Searching for License Plates

The selected license plates will now appear in the **License Plate Recognition** filter, ready to be searched by.



You can select all the objects on the current page by checking the **Select All** checkbox and you can then delete them all. You can also use **Shift+Click** to select multiple consecutive objects.

In the **Plates** tab, select the license plates you want to search for and click **APPLY** to filter all objects by these license plates.

You can hover over an individual license plate appearing in the **License Plate Recognition** filter and click its delete (trash can) button to remove it from the filter or select the **Select all** option and then click the delete button to remove all the license plates displayed on the current page.

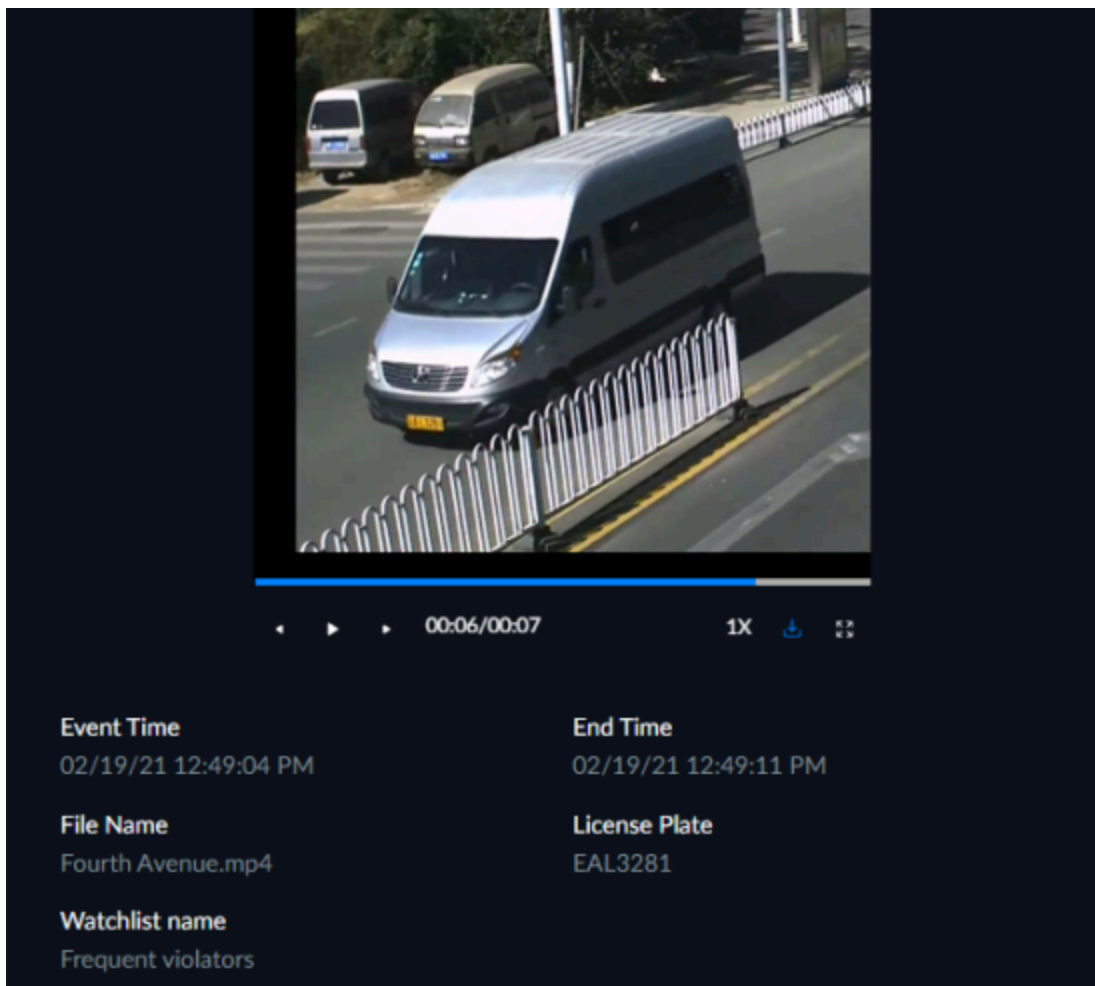
In the **Mode** field, you can select between two operation modes:

- **Include** (default) – Find all objects that have a recognizable license plate that matches one or more license plates within the selected watchlists.
- **Exclude** – Find all objects that have a recognizable license plate that matches none of the license plates within the selected watchlists.

In the **Mismatches allowed** drop-down list, you can select whether to allow between 0 and 8 mismatched characters in the search. For example, if you select 0, only perfect matches will be displayed. If you select 2, plates with 2 mismatches or less will be displayed.

A blue line will appear around an object that is being used in the filter.

Under the image and closeup clip are details about the event and license plate. This helps the operator verify that the automatic license plate transcription was correct.



Watchlists are set in the **Customizations** section and are described in the [Watchlists](#) section.

See also:

[Searching for License Plates in BriefCam](#) (from the BriefCam License Plate Recognition white paper)

Uploading License Plates

You can add license plate text manually by clicking the **Add Plate** button.



When you type in a lower-case letter, it will be automatically converted to an upper-case letter. If you enter a hyphen (-), it will be omitted.

The string can be 4-10 characters long, or 2-10 characters long with wildcards.


The license plate number can include letters and numbers (0-9) as well as wildcards.

The supported wildcards are:

Wildcard	Description
?	Replaces any single character or number. Question marks can be used anywhere in the string. The string ???JK will match any license plate that has J and K as the fourth and fifth character. For example, the following will be found for this search: ABCJK, 251JK and more.
*	Replaces any number (zero or more) of characters and numbers. Asterisks can be used at the beginning or end of the string. For example: The string *JK will match with the following: 0974JK, 25JK, JK and more.
Note that the string *JK? will match with the following: 0974JK2, 25JK0, JK1 and more.	

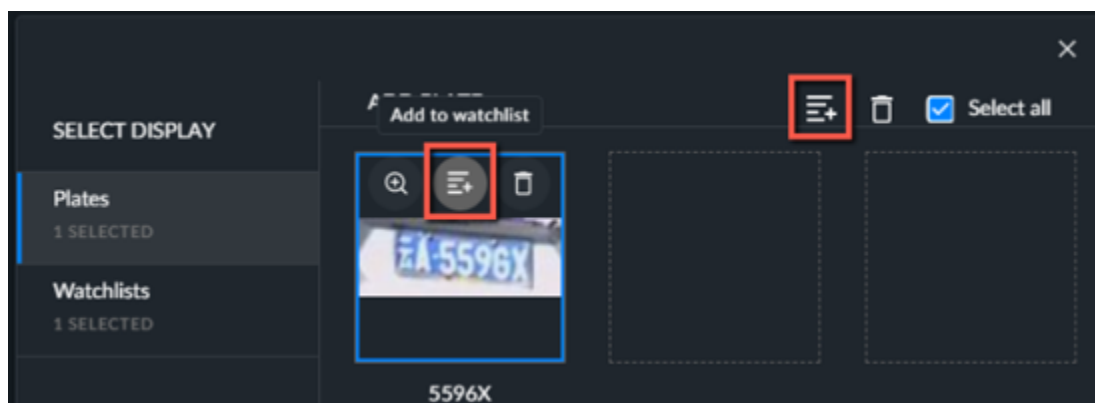
Adding a License Plate from the Filter to a Watchlist



To add a license plate to a watchlist, click on the  button on the top of the image or the top right of the screen and then select what list to add the license plate to.



You can make license plates available to other cases by adding license plates to watchlists and then selecting the watchlist from the other case.




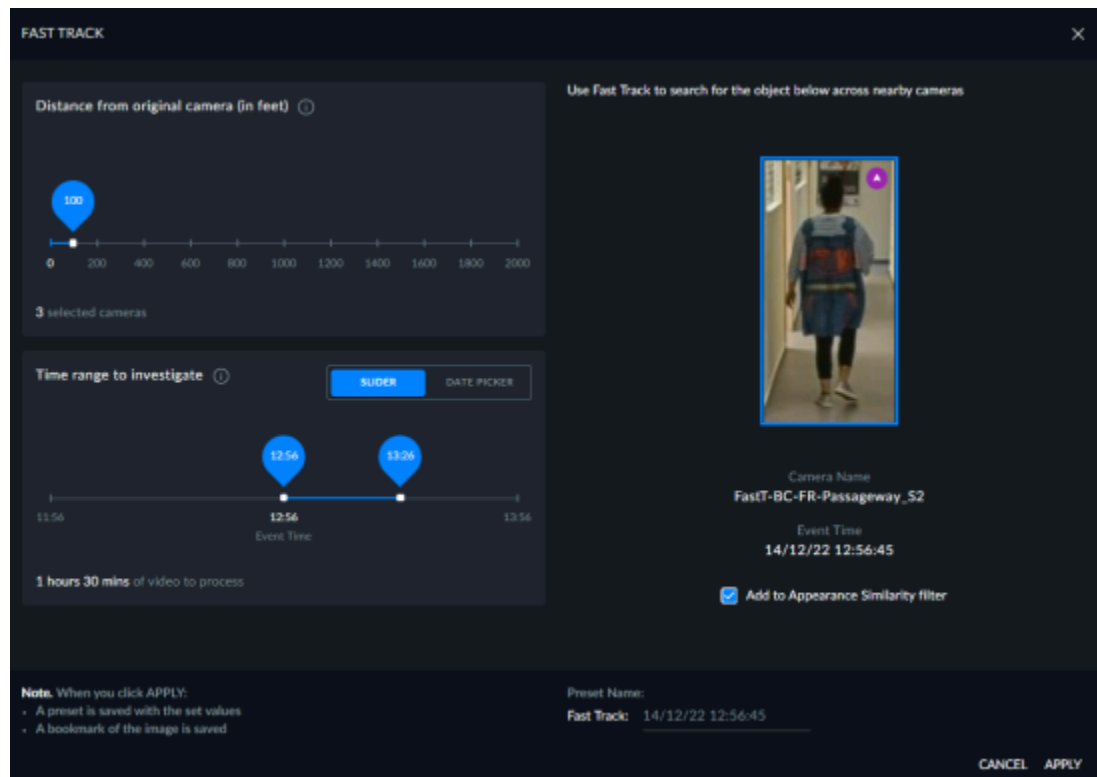
Creating, uploading and managing watchlists is done in the **Customizations** menu. For more information, see [Watchlists](#).

Fast Track

You can search for an object on surrounding cameras using the Fast Track option. This is currently available with Genetec and Milestone integrations where the camera geolocations have been defined.

To quickly search for an object on surrounding cameras:

1. Select an object or play an object.
2. Click the Fast Track  icon.
3. If necessary, adjust the distance from the original camera using the slider.
4. If necessary, adjust the time range that you want to investigate either using the slider or the date picker.
5. Click **APPLY**.



When you click **APPLY** a preset is saved with the set values and a bookmark of the image is saved.

The default time range is 30 minutes. This can be changed in the **FastTrackDefaultTimeRange** environment setting.

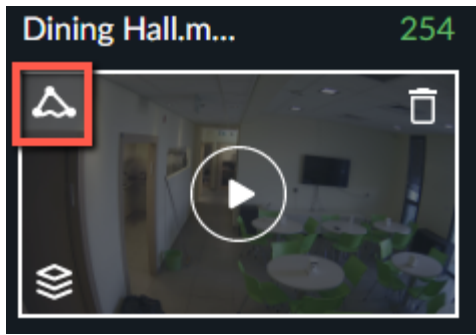
Scene Filters (Area, Path, and Line Crossing)




You can use the scene filters to identify objects included or excluded within an area, objects traveling along a path, or objects crossing a line.

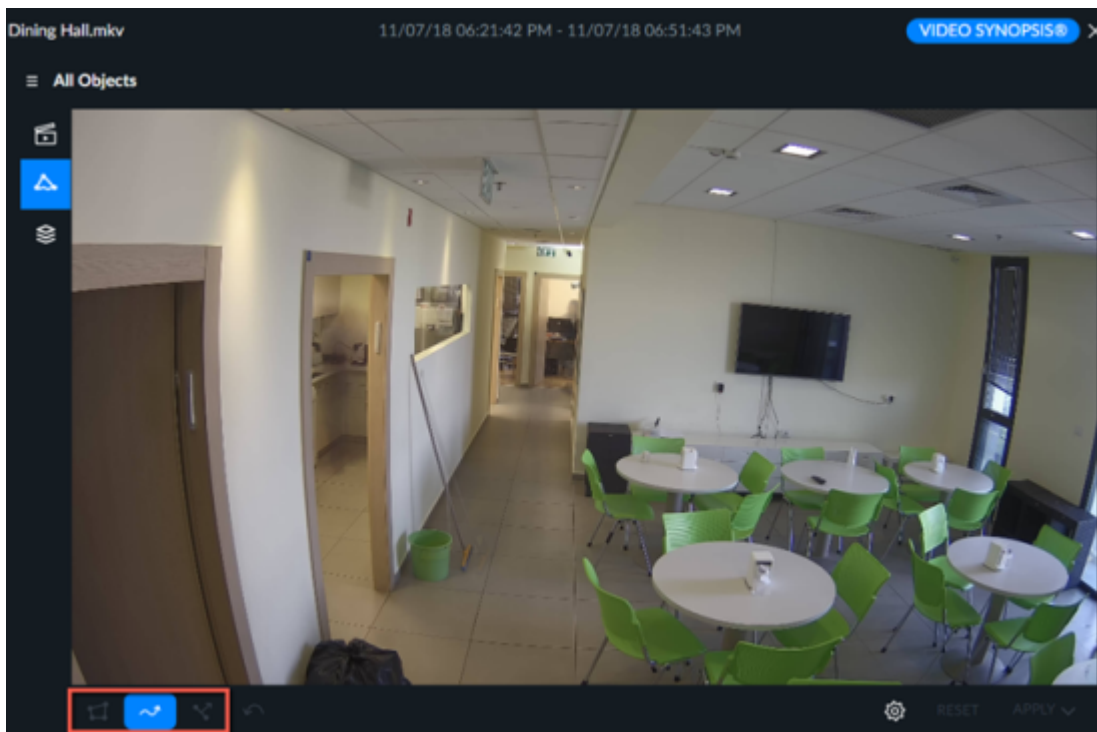
The scene filters are specific to a single video source, whereas the global filters apply to all videos in a case.

To use the scene filters:

1. From the VIDEO SYNOPSIS® list, hover over the VIDEO SYNOPSIS® you want to investigate and click the Scene Filters icon.






2. The Area  filter will be selected by default. If you want to use one of the other filters, from the bottom of the VIDEO SYNOPSIS® screen, click the Path  or Line Crossing  icons underneath an individual VIDEO SYNOPSIS®.

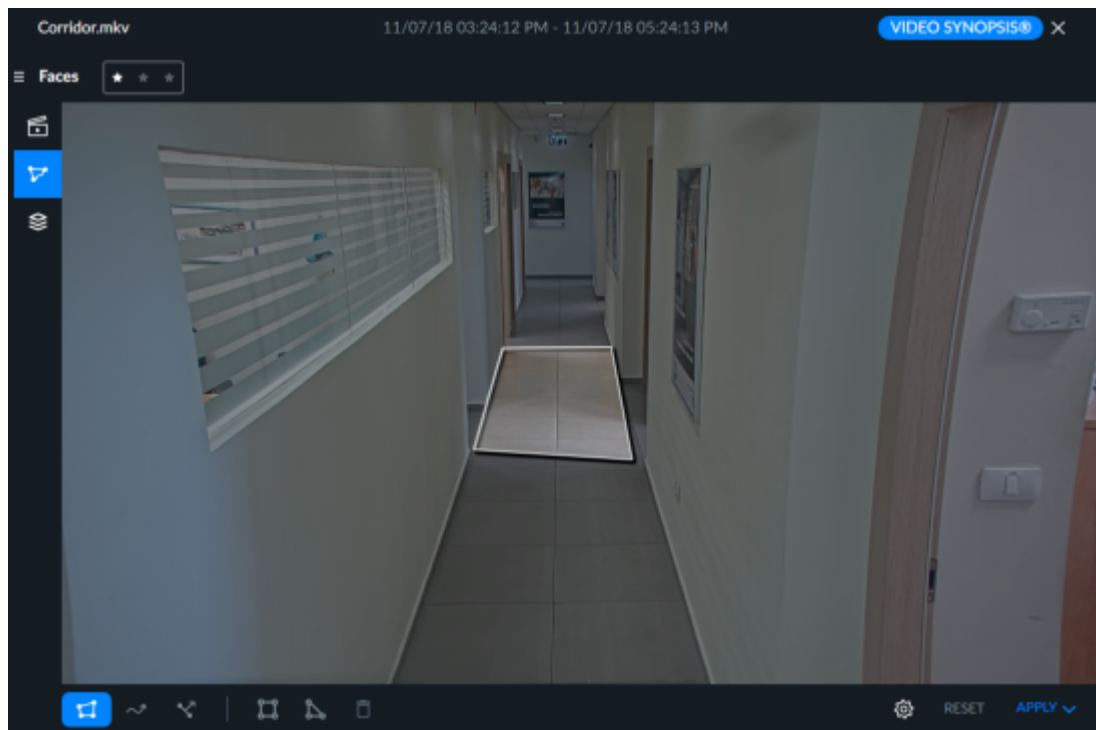


Area Filters

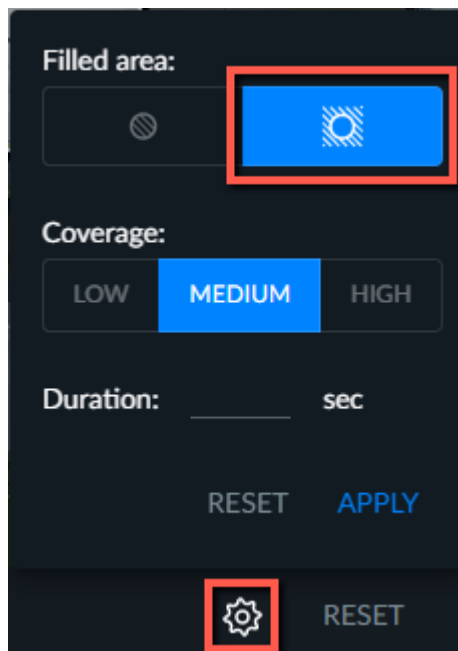
Area filters can be applied to include or exclude objects detected within one or more user-defined three- or four-sided polygonal areas.

To find objects in an area, also known as areas of interest (AOI):

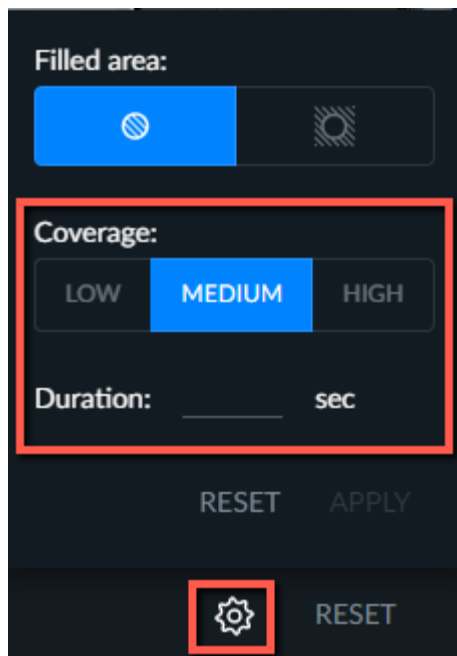
1. Click the Area filter ().
2. Click the triangle  icon at the bottom left of the screen to create a three-sided area. Click the square  icon to create a four-sided area (this is the default). You can add multiple areas.



3. To exclude an area from the search, also known as areas of exclusion (AOE), after drawing the area, click the gear icon and then click the Invert selection icon. Any objects that appear in the excluded area will not be shown.



4. By clicking on the gear icon, you can set the minimum **Duration** the object must spend inside the Area. You can also set the **Coverage** tolerance settings (low, medium and high) can also be applied to areas of interest (AOI) and areas of exclusion (AOE).

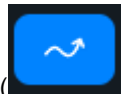


5. Once you finish setting up the filter, click **APPLY**.
6. Click either **APPLY AND CLOSE** or **APPLY AND PLAY** to play the VIDEO SYNOPSIS® with the set filter.

Path Filters

Using the **Path** filter, you can draw freeform paths to detect objects whose lower part (legs, wheels) traveled along those paths. BriefCam takes into account the bottom part of the object for the **Path** filter and not the object's center. Both overall and synopsis-specific object counts will update accordingly.

To draw a path.

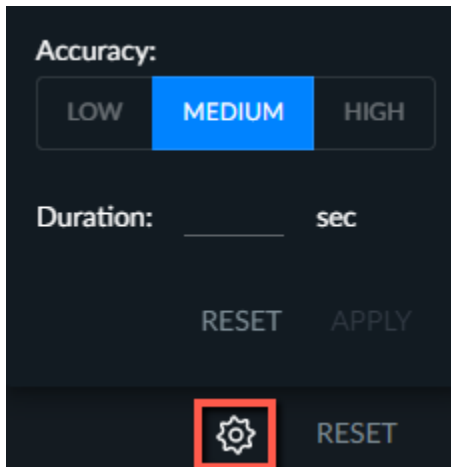


1. Click the Path icon ().
2. Click on the screen where you want the path to begin and drag the mouse to draw the path.



By clicking the gear icon, you can set the minimum **Duration** the object spends on the drawn Path.

By default, **Accuracy** is set to **Medium**. Choosing the **High** accuracy level will result in only events closely adhering to the drawn path being filtered, whereas a **Low** accuracy setting will result in the inclusion of additional events that only loosely follow the defined path.



You can undo the last path that you drew by clicking the Undo icon.



3. Once you finish setting up the filter, click **APPLY**.
4. Click either **APPLY AND CLOSE** or **APPLY AND PLAY** to play the VIDEO SYNOPSIS® with the set filter.


Line Crossing Filters

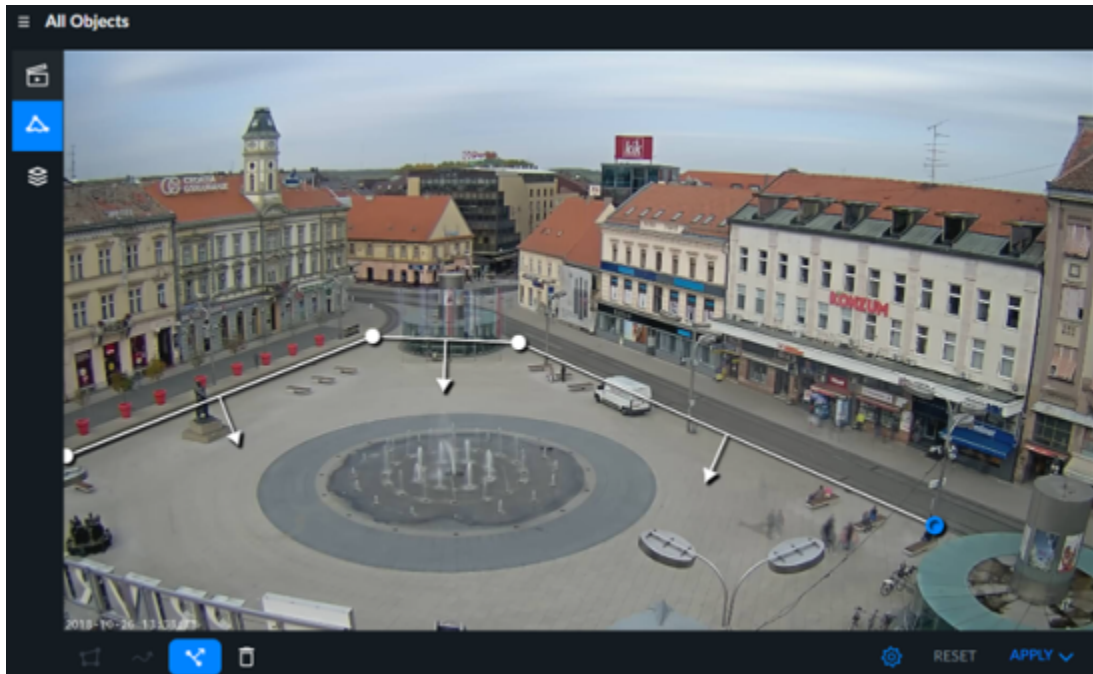
Using the Line Crossing filter, you can detect, filter and count objects that cross a marked line in a certain direction for

perimeter protection and directional object count.

To draw a line:




1. Click the Line Crossing icon () and click on the screen where you want the line to begin. A dot will appear in that location.
2. Click in a second location and a line will appear between the two dots.
3. You can place up to 9 points (dots). For example, in the image below lines were drawn to find objects that entered the city square.

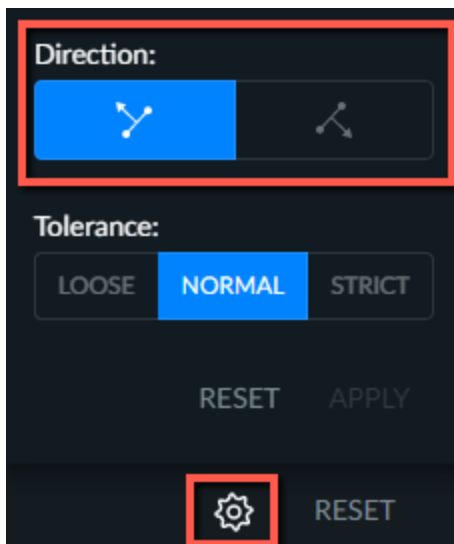


To select or move a point, click on the point. To move a point, drag it to its new location.



To delete a point, click on the point and then click the trash can () icon.

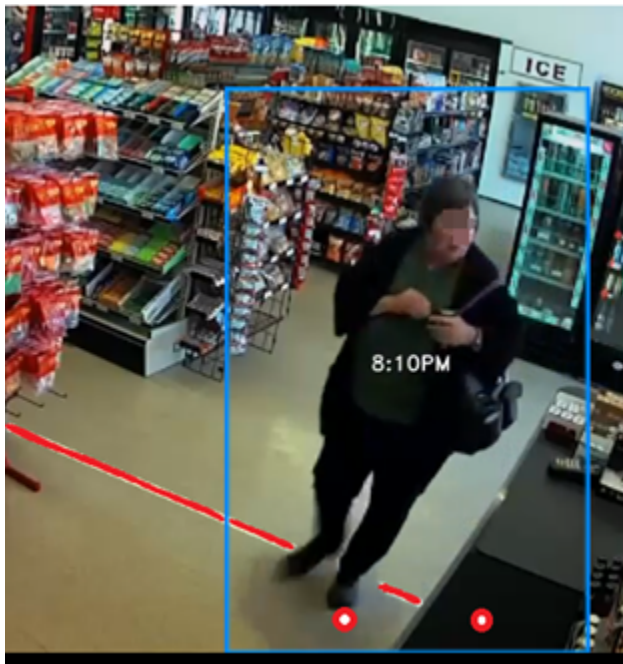
The direction of the line crossing will be the same in all line segments. To switch directions, click the gear icon and then click the direction not marked in blue to switch the direction of all the segments.



You can use the **Tolerance** options to fine-tune your search. The tolerance affects which points in the bounding box interact with the line:

- **Strict** – Search for objects where two points of the bounding box (5% from the bottom and 30% inwards from each side) cross the line.
- **Normal** – Search for objects where one of the two points of the bounding box (5% from the bottom and 30% inwards from each side) crosses the line.
- **Loose** – Search for objects where any of four points at the corners of the bounding box crosses the line.

For example, in the image below the two dots indicate the 5% from the bottom and 30% inwards from each side. This woman will appear in the search with Normal tolerance (since she is touching one of the dots) and may not appear with Strict tolerance (since both dots are not touching the line that was drawn).



4. Once you finish setting up the filter, click **APPLY**.
5. Click either **APPLY AND CLOSE** or **APPLY AND PLAY** to play the VIDEO SYNOPSIS® with the set filter.

See also:

[Filter Presets](#)

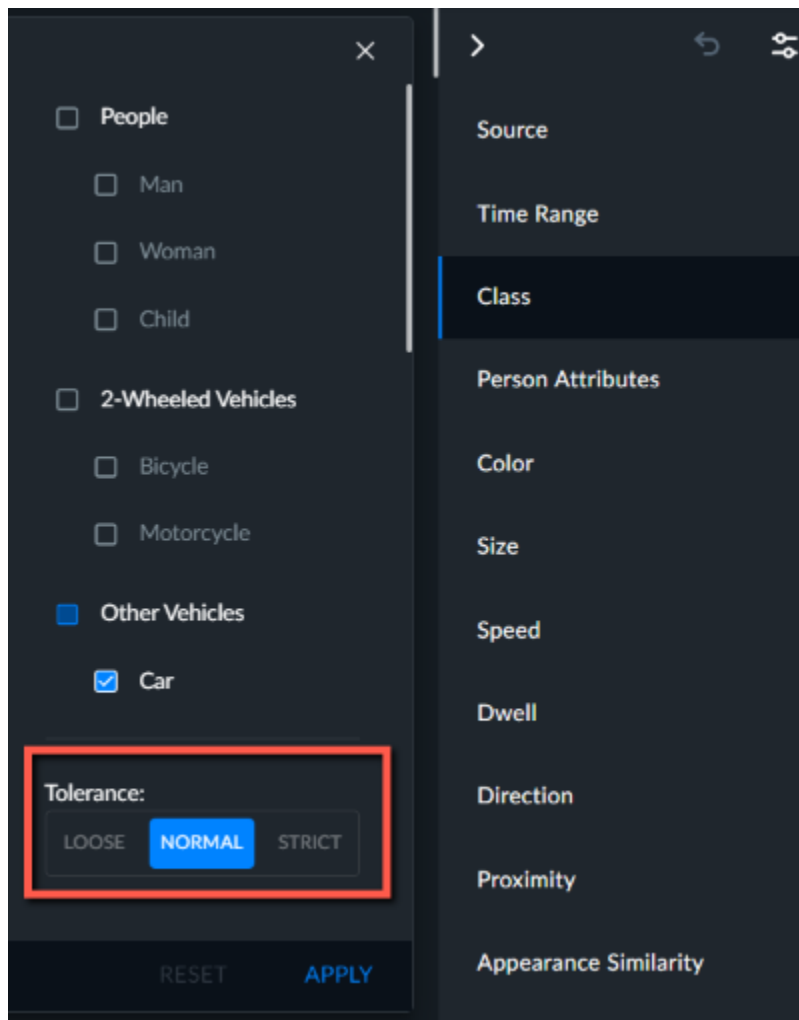
Filter Tolerance Adjustment

The class, attributes, color, dwell time, direction, area, path and face and appearance similarity filters are all configured with a default tolerance level of Normal.

Class, Dwell, Person Attributes, Face Recognition and Appearance Similarity Tolerance

When you open the **Class**, **Dwell**, **Person Attributes**, **Face Recognition** or **Appearance Similarity** filters, you can adjust the **Tolerance** level.

Using the **Tolerance** field, you can adjust the strictness of your search results.



The available values for the **Tolerance** field are:

- **Strict** – With this tolerance level, you will see fewer of the relevant objects in the results, but you will also see fewer non-relevant objects in the results (most of the results will be relevant – but you may miss out on other of the relevant objects due to misdetections).
- **Normal** (default) – With this tolerance level, you will see the majority of the relevant objects in the results and a

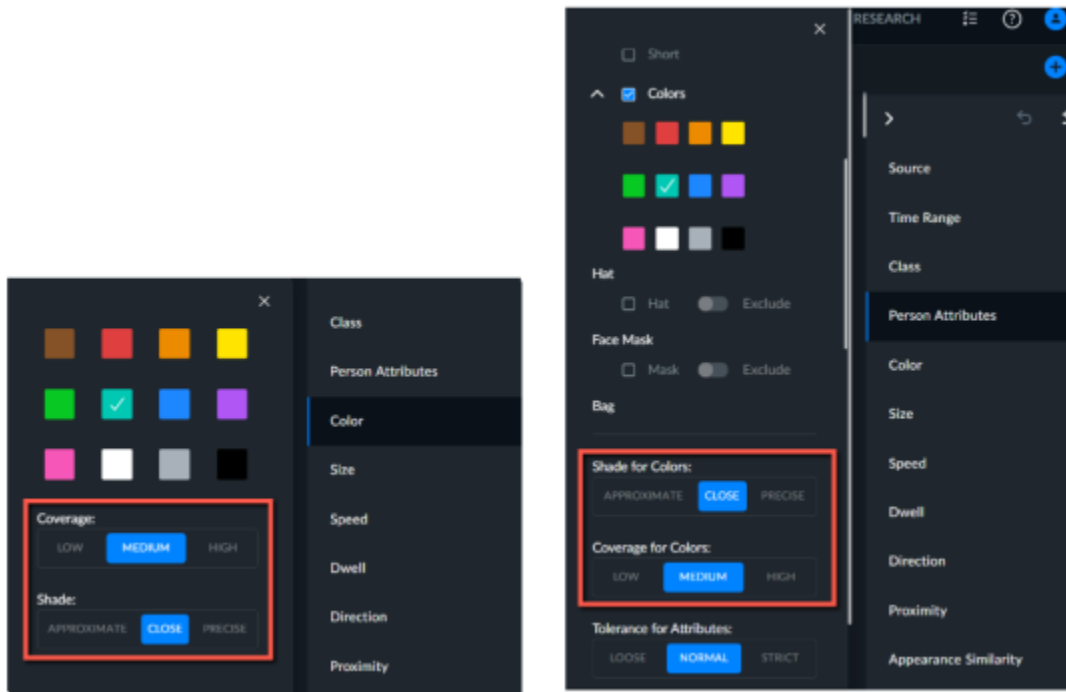
smaller number of wrong matches.

- **Loose** – With this tolerance level, more of the overall relevant objects will appear in the results. However, there may be a large number of non-relevant objects that are also presented in the results.

As the number of objects in the case grows, the number of false matches will increase.

Color Tolerance

The **Color** filter control and the colors for **Upper/Lower Wear** can be fine-tuned using the **Coverage** and **Shade** tolerance settings.



Use the **Coverage** filter (low, medium, or high) to set how much of the object needs to match the selected color in order to be considered a match and to be displayed. If, for example, you are looking for a car that is almost completely blue, then setting the **Coverage to High** would probably give you the most accurate results. This is because objects with a small amount of blue will not appear.

Use the **Shade** filter (approximate, close, or precise) to set how flexible the filter should be in terms of the shade of an item. You are setting here how far the tone of the color can be from the selected color to be considered a match.

If you are looking, for example, for a person with pink hair, select the **Upper Wear** attribute and the pink color. You can also try searching for the pink color in the Color filter) and set the **Coverage to Low**, since the hair of a person usually covers only a small portion of the image, and set the **Shade to Approximate**, since the hair might not be exactly pink, but a lighter or darker shade of pink.

If you are looking for a green hat, select the green color and set the **Coverage to Low**.

These types of results are easier to achieve when using colors that normally would not appear, such as green, yellow and red. Doing this type of search for white, for example, would be less successful, since white and black are very dominant colors.

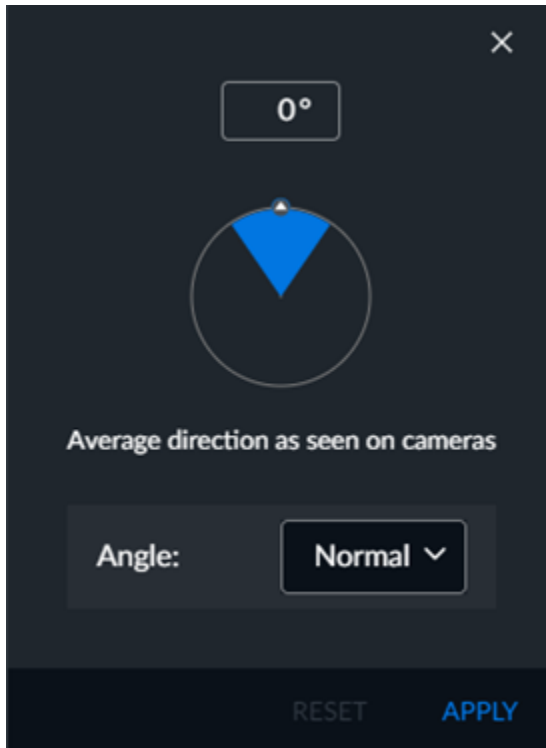
Regarding colors and vehicles, shades can be used, but for blue and black, shade does not work well because of windows and shadows tend to be bluish or black.



Different cameras and different angles can produce slightly different tones than a human perceives. This may affect color filtering across cameras or across different times of the day.



Direction Tolerance

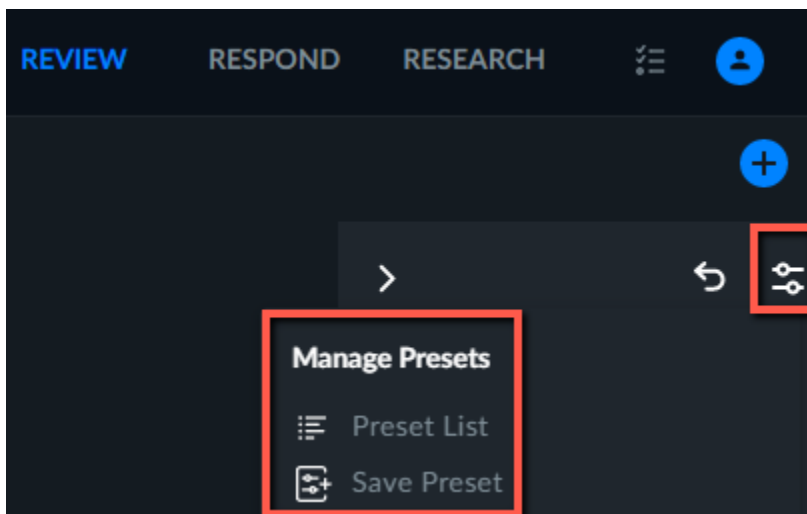
For the **Direction** filter, the default tolerance setting under **Angle** is **Normal**, as shown below.



To assure the strictest adherence to the selected direction, click the **Angle** drop down list to change it to **Narrow**. You can alternatively change the setting to **Wide**. You can also enter the degrees for the angle.


Filter Presets

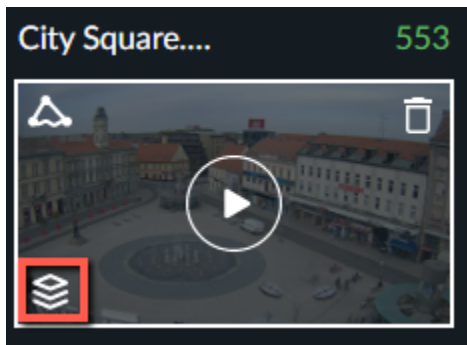
You can apply any combination of global and scene (**Area**, **Path** and **Long Crossing**) filters to case objects. Once you have done this, you can click the preset  icon located at the top right of the screen – and click the **Save Preset** option. To see the list of existing presets, click the **Preset List** option. To clear the preset filters, click the reset filters  icon.



You can use presets that include Scene filters in the RESEARCH module. For additional information, see [Using REVIEW Presets](#).

Visual Layers


The Visual Layers control () provides users with visibility into statistical visual analysis of object activity and dwell areas and popular event paths in a synopsis.




The visual layers are available for viewing only after synopsis processing is complete. Clicking the control opens the VIDEO SYNOPSIS® and there are four icons at the bottom left of the screen for each of the visual layers (as shown in image below).

Visual layers can be created per specific search criteria. For example, when a user refines the search and filters for bicycle, the generated visual layer will be created according to the filtered objects.



For each visual layer, clicking the close icon () closes the visual layer, and resumes the event thumbnail view.

You can also click the full screen icon () from any of the visual layers.

See also:

[Activity Heat Map](#)

[Dwell Heat Map](#)

[Common Paths Visual Layer](#)


[Background Changes Layer](#)

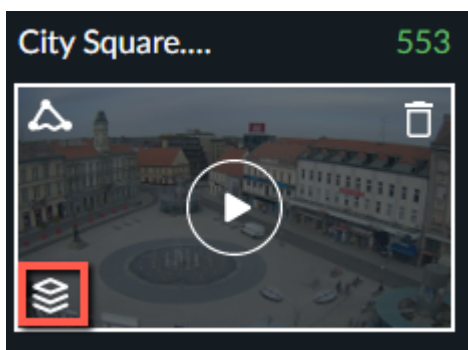
[Adding a Visual Layer to a Report or Exporting an Image](#)


[Displaying a Specific Visual Layer in the RESEARCH solution](#)

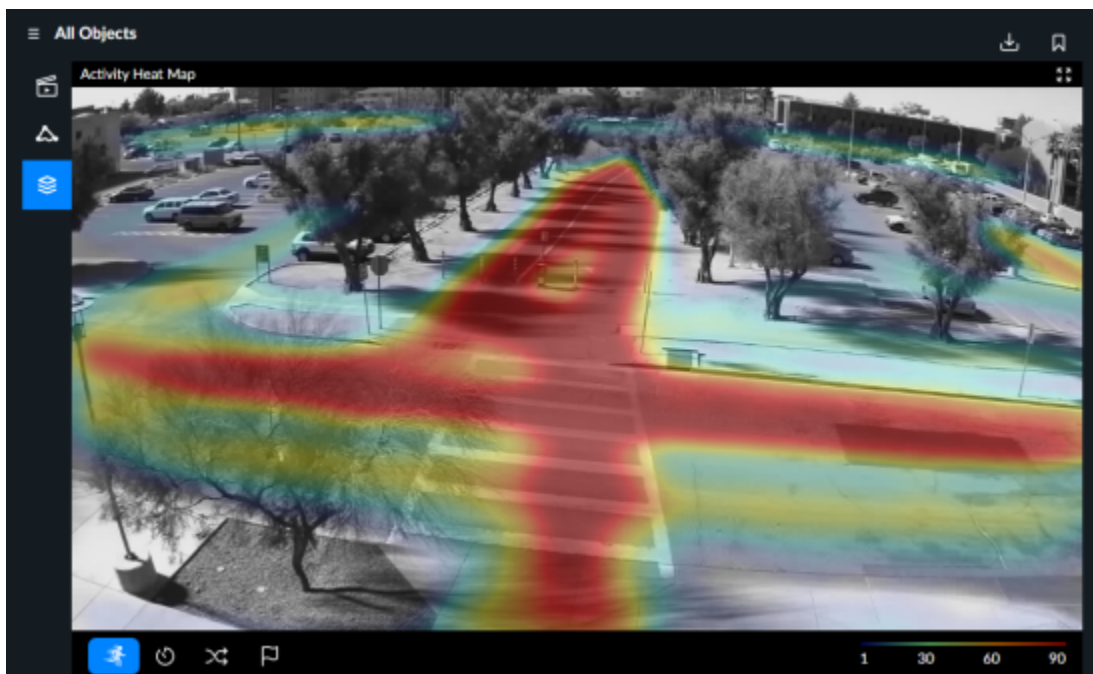
Activity Heat Map

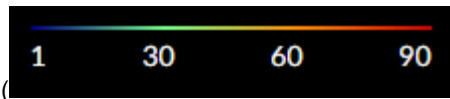
To generate an activity heat map:

1. Click the Visual Layers control ().



2. Click the Activity icon () to display an activity heat map layer, which highlights areas in which increased event movement has been detected (see below).



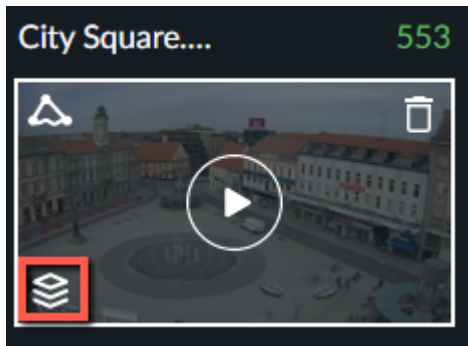


The activity heat map legend () available at the bottom of the synopsis playback window indicates the number of detected objects associated with each of the various heat map colors.

Dwell Heat Map

To generate a dwell heat map:

1. Click the Visual Layers control ().



2. Click the Dwell icon () to display a dwell heat map layer highlighting area, in which events lingered for extended periods of time (see below). The minimum time an object needs to dwell in order to appear in the Dwell heat map layer is 10 seconds.

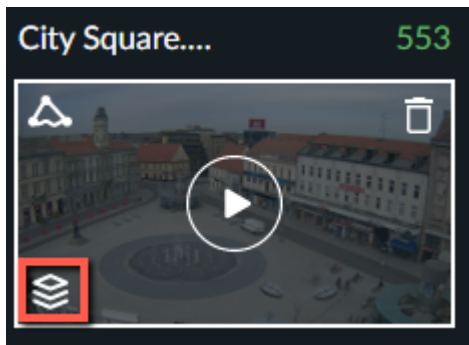



The dwell heat map legend () available at the bottom of the synopsis playback window indicates the number of detected objects having dwelled at the highlighted areas.

Common Paths Visual Layer

To generate a common path heat map:

1. Click the Visual Layers control ().



2. Click the Common Paths icon () to display a common paths layer, which highlights the paths most commonly taken by objects detected in the video (see below).

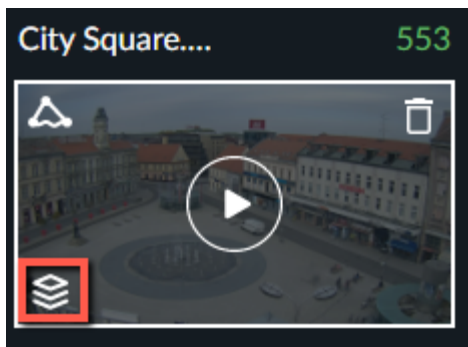



The common paths legend () available at the bottom of the synopsis playback window indicates the number of detected events having followed the paths indicated via the different colors.

Background Changes Layer

To generate a background changes heat map:

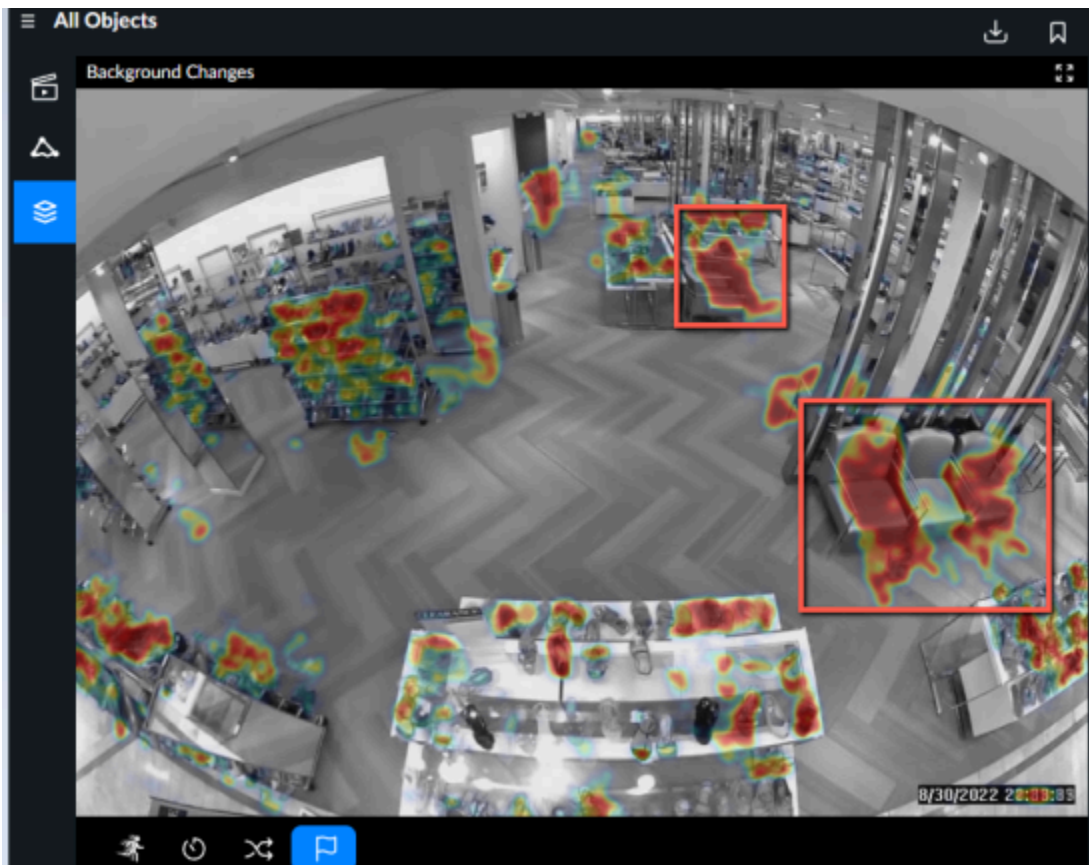
1. Click the Visual Layers control ().



- Click the Background Changes icon () to display where changes occurred in the background.

This visual layer can be used to understand which items were interacted with more than others, and which objects haven't moved at all. This is useful to see places where changes in the scene have taken place – such as static objects that have been moved around (e.g. the popular items on display at a store, and parked cars that have moved).

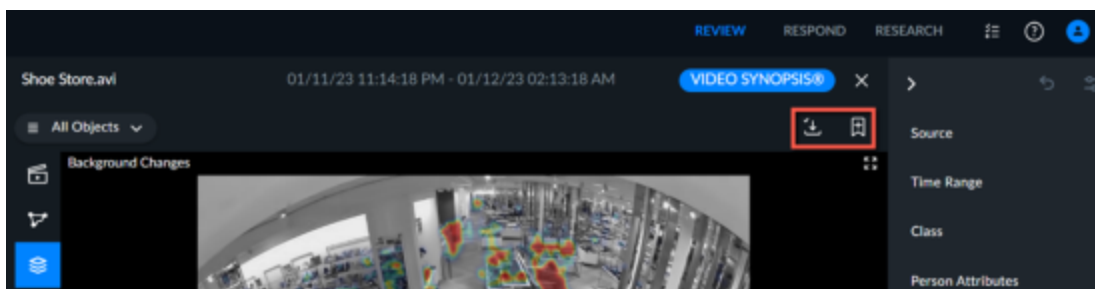
Note that camera movements and severe lighting changes may also reflect as background changes, although no item interactions occurred.



The objects circled in red are objects that did not move for a long time. This is a side effect of the background changes feature.

Adding a Visual Layer to a Report or Exporting an Image

You can add Visual Layer images to case report or export a still image.



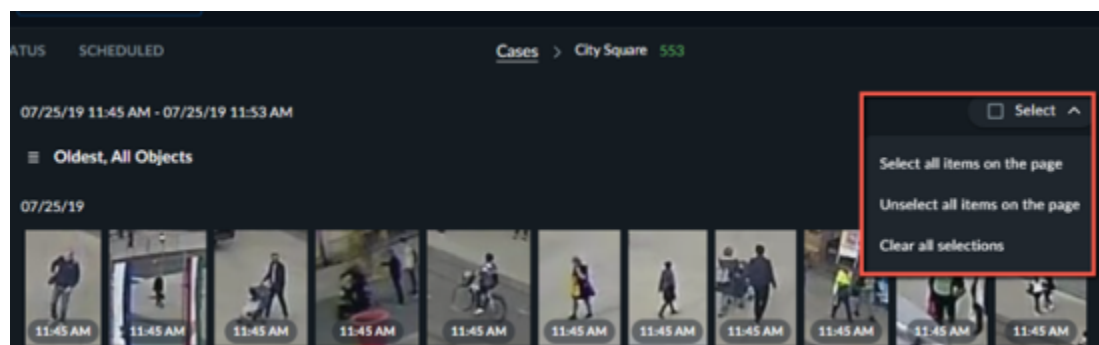
Click the Add to Report button () and enter title and description.

Click the Export button () to export and download a .PNG image file with the filtered visual layer.

Select

If you check the **Select** checkbox, all displayed objects on the page will be selected. Once selected, you can perform various options, including adding an image to the **Face Recognition** filter, the **Appearance Similarity** filter or to a report.

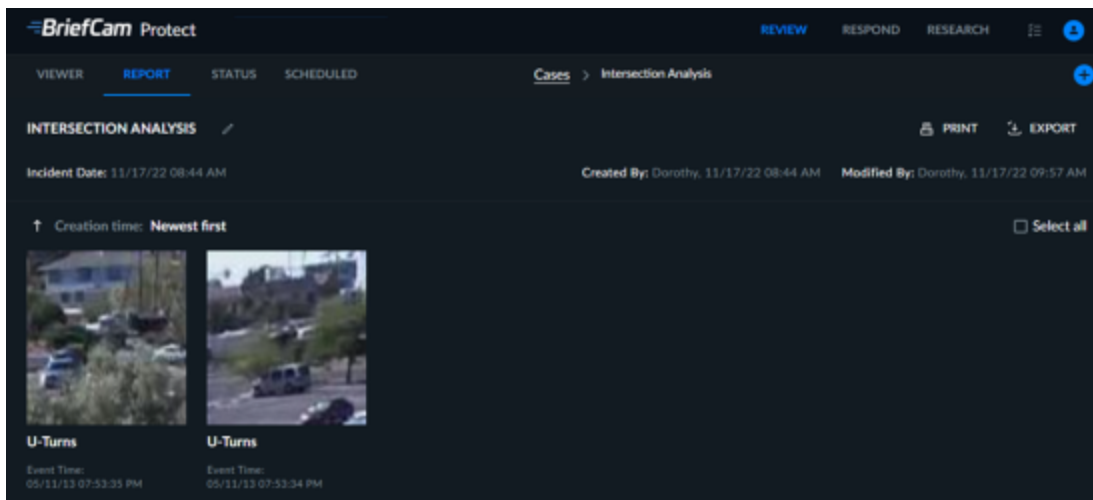
If you click the drop-down arrow, you can select all items on the page (the same as selecting the checkbox), unselect all items, or clear all selections.



Report Tab

Case findings can be summarized in concise reports with all relevant exhibits.

To view reports, access the REVIEW module's **REPORT** tab.



Reports feature a case title and description as well as bookmark thumbnails for all objects and visual layer images added via the Add to Report button (📌), each with a title and description (entered when adding objects to the report on the **VIEWER** tab). Hover over bookmark thumbnails to reveal the selection, editing and playback buttons.

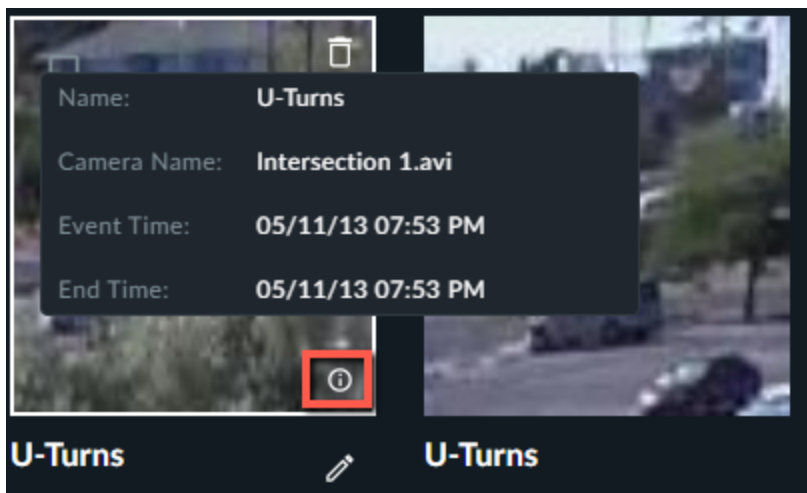
Note that you can copy the time range by hovering over the time range and clicking the copy 📋 icon.

When you click the playback button, on the right-hand side you will also be able to view the original video featuring the relevant object and the closeup clip. The action buttons available are the same as described in the [Video Player](#) section. In addition, you can copy the source name by hovering over the source name and clicking the copy 📋 icon.

When hovering over the bookmark, you can then click the edit icon (✎) to edit a bookmark's title and description.

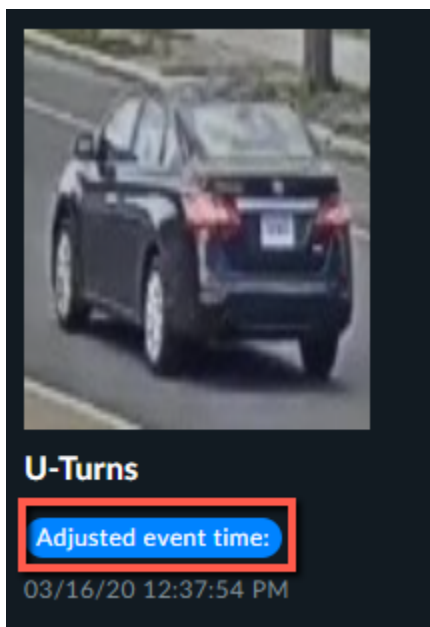


By hovering over the information icon, you will see information about the bookmark (as shown in the image below).

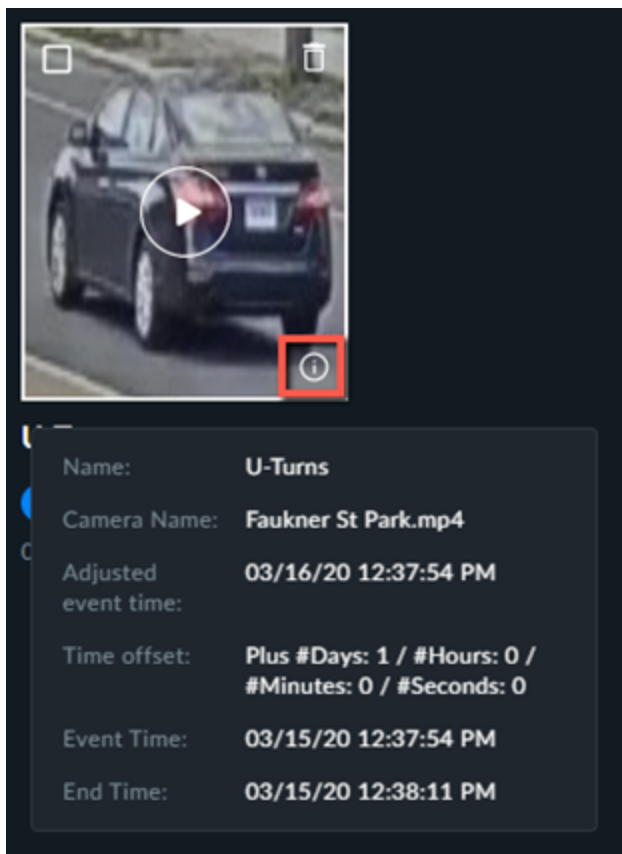



If the [video time was adjusted](#) in the **STATUS** tab, you will see the adjusted time instead of the event time.

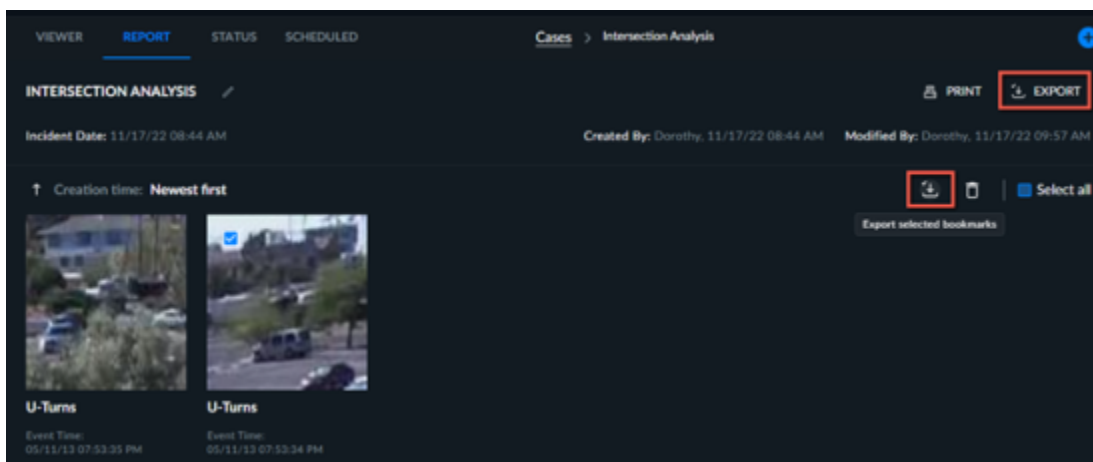
Every bookmark that contains adjusted time will show it instead of event time. If an adjustment was added after the creation of the bookmark, the bookmark will not show the time adjustment.




You can also hover over the information  icon to view additional information.




You can export bookmarks by selecting one or more bookmarks or by selecting the **Select all** option to select all the bookmarks on the current page, then clicking the export icon ( **EXPORT**) on the right-hand side of the Report tab. You can also export only the selected bookmarks by clicking the export icon next to the delete icon.



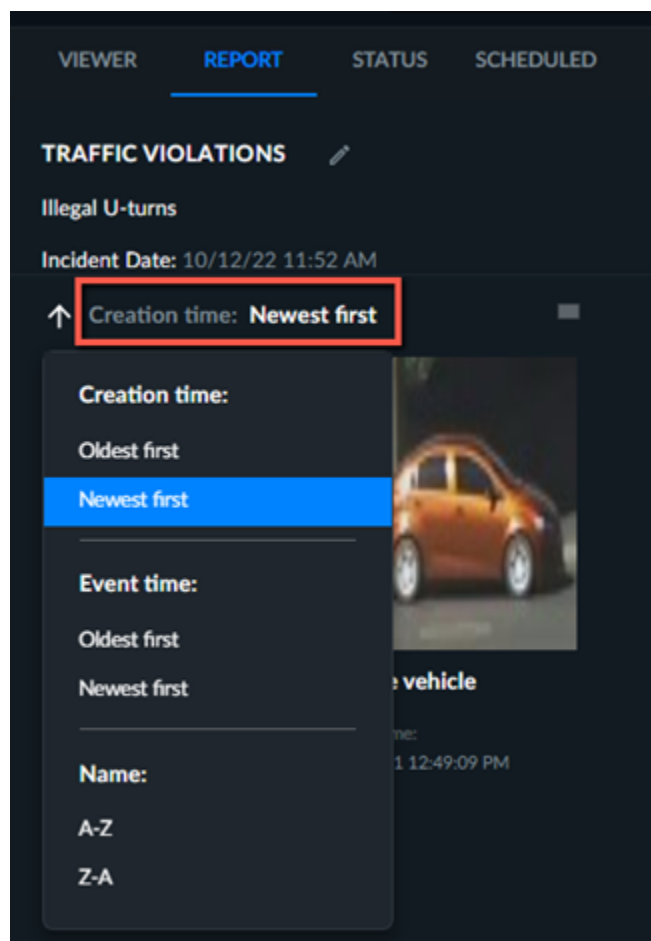
When an object is exported, a zip file will be created containing the selected objects' original video, close-up clip and thumbnail. When a visual layer is exported, a zip file is created containing a jpg of the visual layer.

You can print bookmarks by selecting one or more bookmarks and clicking the Print icon ( **PRINT**).

You can delete bookmarks by selecting one or more bookmarks for deletion, then clicking the trash can icon () in the top right-hand corner of the Report tab to delete all selected bookmarks.

You can reorder the bookmarks by creation time, event time, or name, by clicking the currently selected order (marked in red in the image below)

You can also click the arrow button to switch the order.



Status Tab

To view the VIDEO SYNOPSIS® processing status, access the REVIEW module's **STATUS** tab.

Added	Camera/File Name	Status	Time Range
11/02/22 09:47 AM	Dining Hall.mkv	✓ Success	11/07/18 06:21 PM - 11/07/18 06:51 PM
11/02/22 09:03 AM	Corridor.mkv	✓ Success	11/07/18 03:24 PM - 11/07/18 05:24 PM

Each video added will appear here, along with the date on which it was added to the case, its source file or source camera, its video synopsis processing status, and the time range selected for its VIDEO SYNOPSIS®.

VIDEO SYNOPSIS® processing status indications include the following:


- **Queued** – a new VIDEO SYNOPSIS® was requested, but it was not started yet.
- **Processing** – VIDEO SYNOPSIS® processing is in progress.
- **Success** – VIDEO SYNOPSIS® processing has been completed and the synopsis is ready.
- **Error (or Partial Error)** – VIDEO SYNOPSIS® processing has failed (due to server connection failure, lack of recordings on VMS, video fetch failures, etc.).


- **No Objects** – VIDEO SYNOPSIS® processing has completed, and no objects have been detected.
- **Cancelled** – VIDEO SYNOPSIS® processing was cancelled.

You can hover over the status for more information about the error.

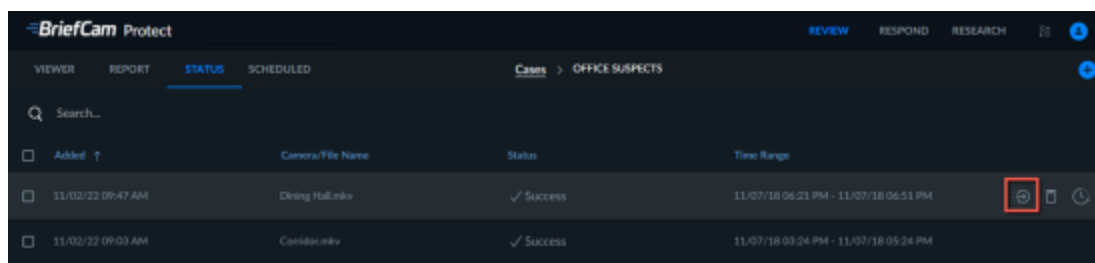
You can click on the **Status** tab to sort the requests according to the request status. They will appear in the following order or vice versa: **Queued, Processing, Error, Partial Error, Cancelled, No Objects, Success**.

You can right-click anywhere in the table to copy text, move a request, or delete a request.

Clicking the Retry button () , which is presented when videos have failed either partially or completely, will trigger a new attempt to process the failed videos.

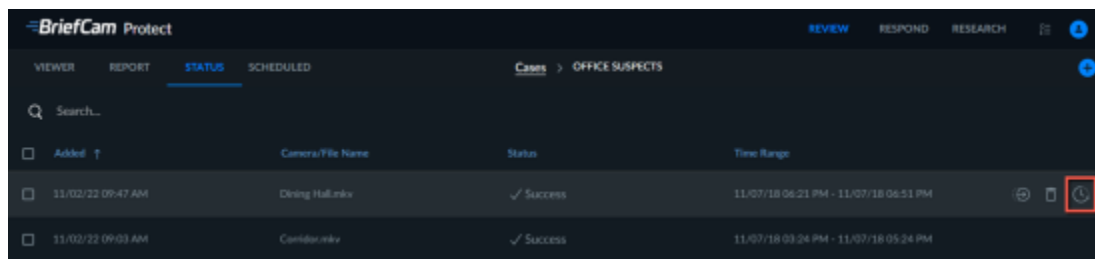
Sources can easily be moved between cases by going to the case's **STATUS** tab, right-clicking on the row or hovering over the relevant row and clicking the Move request icon (.

If you click the delete icon, the source is deleted from the screen, but not from the database. The source is only deleted from the database after the maintenance process occurs.




Video Time Adjustment

You can add a time offset for a video after file upload and processing. Some videos have offsets between real-world time and their recorded time, which is a major issue when law enforcement collect videos after an event. This feature allows law enforcement to improve their DEM (digital evidence management).





To add a time offset:

1. In the **Status** tab, click the Time adjustment  icon for one of the rows. You can also select multiple rows and click the Time adjustment icon in the top right corner.
2. In the **Time Adjustment** screen, either:
 - From the **Time Picker** tab, select the new date and time.

TIME ADJUSTMENT ✕

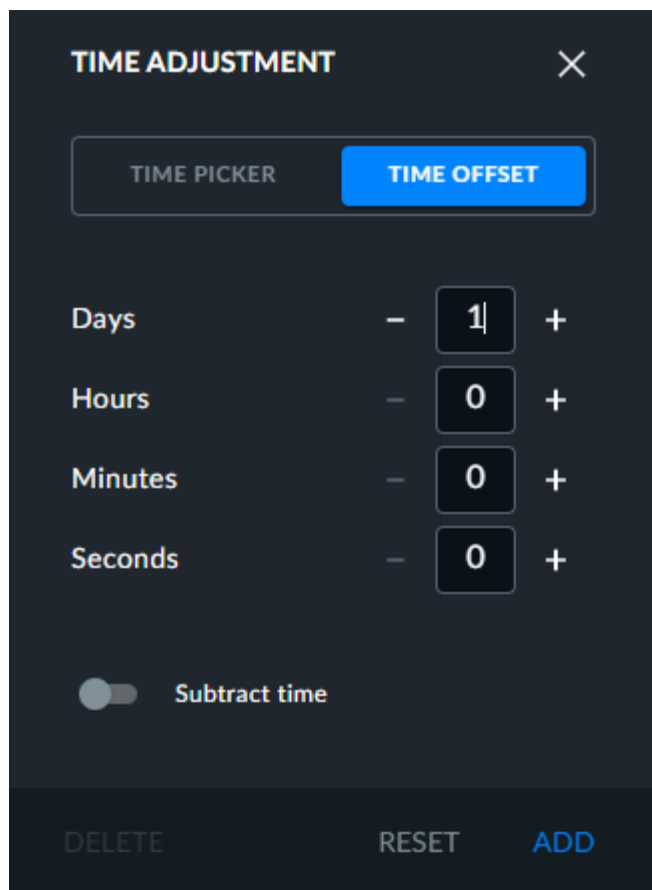
TIME PICKER TIME OFFSET

New date
MM/DD/YY 

New time
hh:mm A 

DELETE RESET ADD

- Or open the **Time Offset** tab and select the amount of time that you want to add to the start time. If you want the selected time to be subtracted from the start time, turn on the **Subtract time** toggle switch.



TIME ADJUSTMENT [X]

TIME PICKER TIME OFFSET

Days - 1 +

Hours - 0 +

Minutes - 0 +


Seconds - 0 +

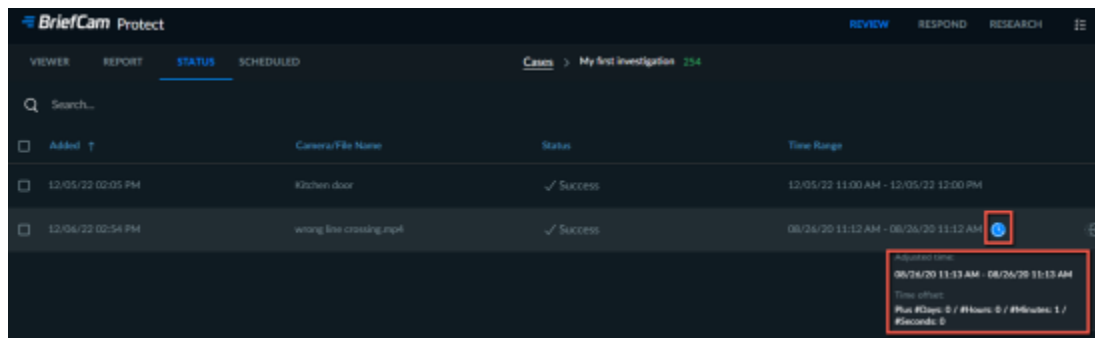
☐ Subtract time


DELETE RESET ADD

3. Click **ADD**.

The start time will be changed and the end time will be automatically calculated based on the length of the video.

When there is an offset, the  icon will appear next to the time range. You can hover over the icon to view the time range of the new adjust time and the time offset.



Added	Camera/File Name	Status	Time Range
12/05/22 02:05 PM	Kitchen door	✓ Success	12/05/22 11:00 AM - 12/05/22 12:00 PM
12/06/22 02:54 PM	wrong line crossing.mp4	✓ Success	08/26/20 11:12 AM - 08/26/20 11:12 AM 

Adjusted time:
08/26/20 11:13 AM - 08/26/20 11:13 AM

Time offset:
Plus #Days: 0 / #Hours: 0 / #Minutes: 1 /
#Seconds: 0

The adjusted time will be seen in the **REPORT** tab's bookmarks.

If a user changes the offset for a file, another user will only see the offset in the **STATUS** and **BOOKMARKS** tabs after the screen is refreshed.

Scheduled Tab

BriefCam offers powerful scheduling functionality that enables video review personnel to streamline and automate their work.

Scheduling may be used to initiate VIDEO SYNOPSIS® generation on a one-time basis, or at timed (daily, weekly or monthly)

intervals. Scheduled tasks are automatically registered and processed by the BriefCam server queue at the predefined time, with resulting video synopses automatically delivered to their owner's BriefCam client.

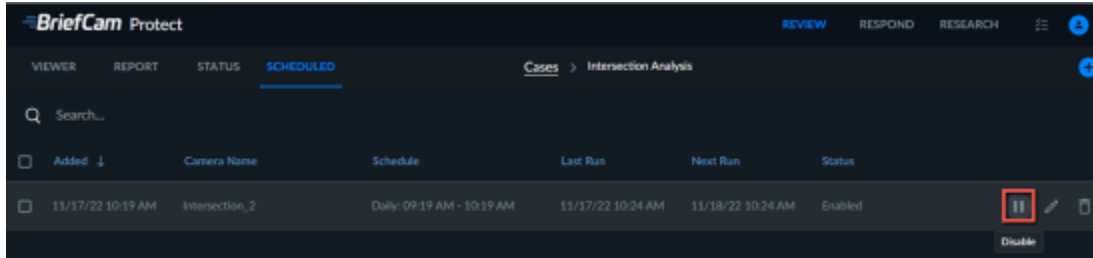
The schedules are defined when adding a video to a case and the **SCHEDULED** tab displays all scheduled REVIEW sources.

The **Last Run** column shows the start date and time of the last processing.

The **Next Run** column displays the date and time of the start of the next processing.

When hovering over a schedule, you can click the edit icon (✎) to edit the schedule. Changes will apply from the time of change forward. Past runs are not deleted.

The disable scheduling icon will prevent any future run of the source. It will not delete past runs.

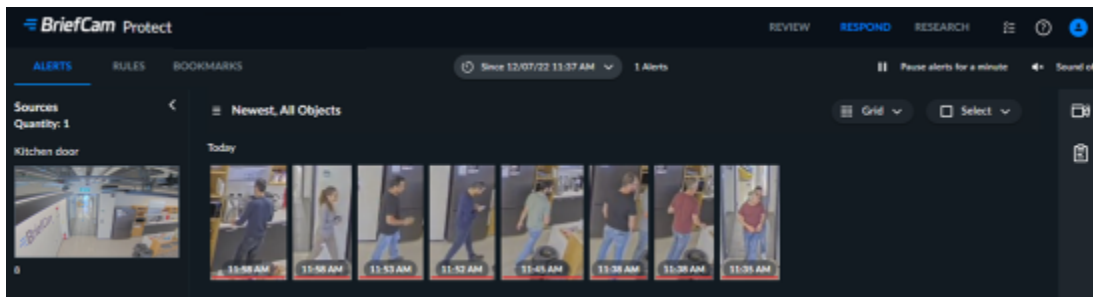


Each scheduled source represents the scheduling and not an actual run of the source (the processing). Processing requests are located in the [STATUS](#) tab.

The RESPOND Solution

BriefCam's RESPOND solution helps you receive alerts of critical events and increase safety and security with proactive responses.

To use the solution, click the **RESPOND** tab.

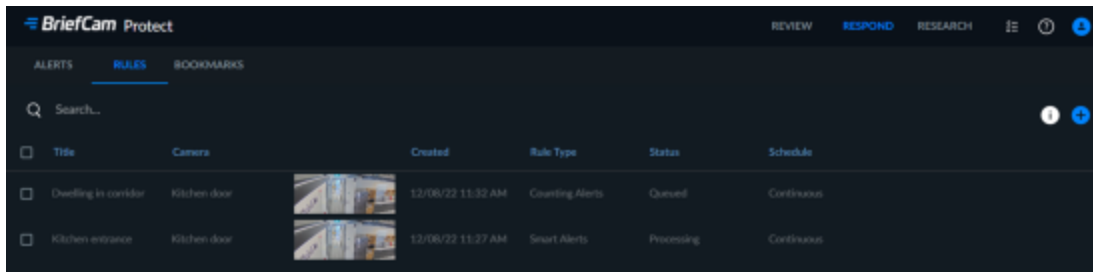


The RESPOND solution features three tabs:

- **ALERTS** – displays thumbnails of objects that have triggered alerts.
- **RULES** – enables definition of alert-triggering rules.
- **BOOKMARKS** – contains alerts bookmarked by the user.

The RULES Tab

The RESPOND solution's **RULES** tab displays a searchable list of defined rules that trigger alerts when events captured by specific cameras match predefined filter conditions. This list will be empty if no rules have been added.



	Title	Camera	Created	Rule Type	Status	Schedule
<input type="checkbox"/>	Dwelling in corridor	Kitchen door	12/06/22 11:32 AM	Counting Alerts	Queued	Continuous
<input type="checkbox"/>	Kitchen entrance	Kitchen door	12/06/22 11:37 AM	Smart Alerts	Processing	Continuous

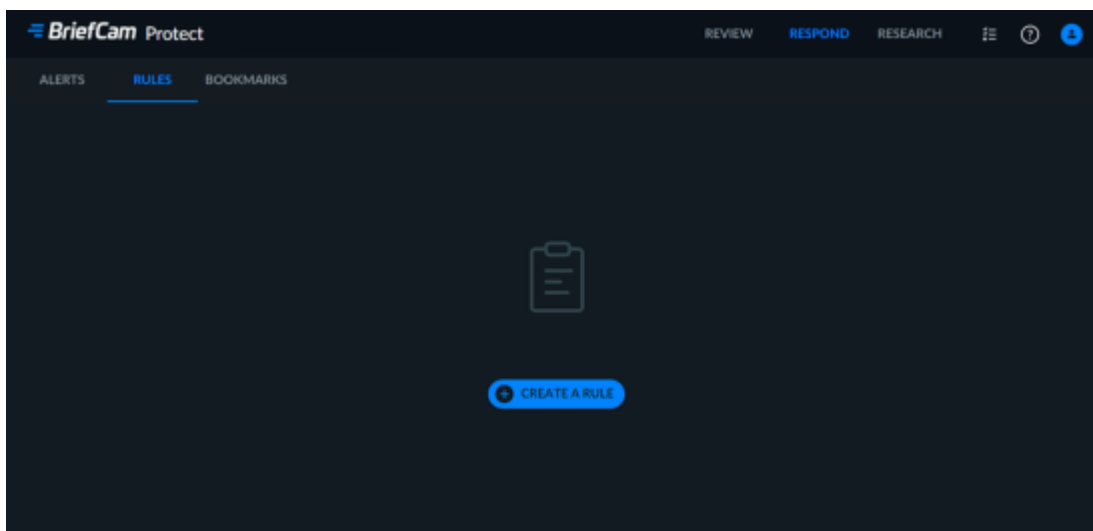


RESPOND rules are only possible to set if there are available RESPOND licenses (which also signify the available number of real-time GPU workers). For scheduled RESPOND rules, different rules and cameras can consume the same license as long as they don't overlap in time. For example, a new rule can be set if there are available licenses at the desired schedule.

Creating a New Rule

To create a new rule that will trigger an alert:

1. In the **RULES** tab, click the **CREATE A RULE** button.



2. Select either **Smart Alerts**, **Real-Time Alerts** or **People Counting Alerts**. Note that if you are using the Next-Gen engine, you will not see this screen. For additional information, see the [BriefCam Next-Gen Engine](#) document.
3. Click **NEXT**.

CREATE A RULE

New Rule Name

REAL-TIME ALERTS SMART ALERTS PEOPLE COUNTING ALERTS

Alerts will be triggered 5 seconds after the event occurred. Face Recognition, Class Category and Area filters are available.

1 Alert type — 2 Select camera — 3 Rule refinement — 4 Set schedule

PREVIOUS NEXT

4. In the screen that opens, specify a name for the rule.
5. Select the desired source camera from the list and click **NEXT**.

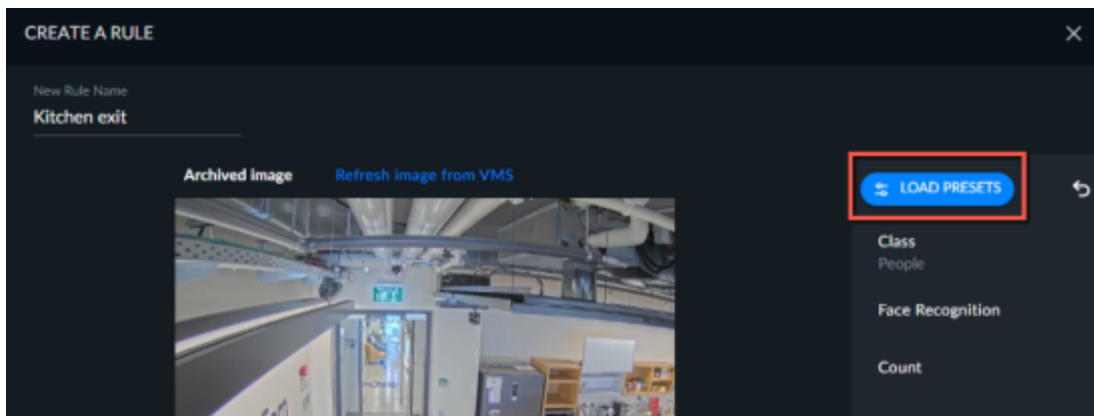
CREATE A RULE

New Rule Name

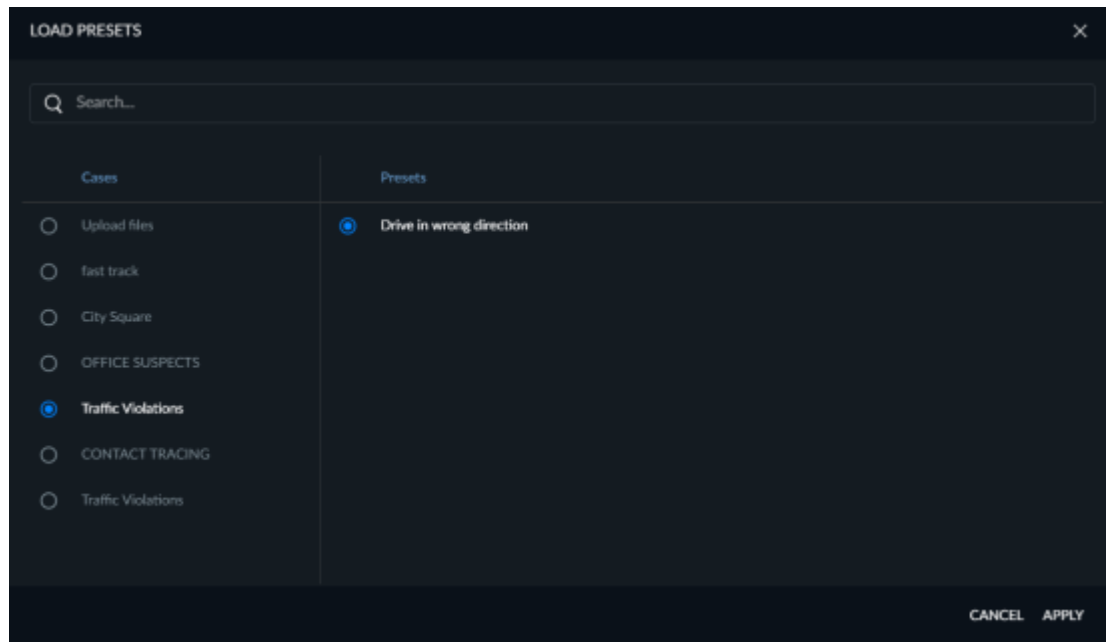
Kitchen 1st floor \ BOSCH-11 Search camera name

Directories	Cameras
> Kitchen 1st floor 0/6	<input type="radio"/> M1054 Network Camera - Camera 1 Kitchen 1st floor \ BOSCH-11 \ BOSCH-11 \ All cameras (BOSCH-11)
	<input checked="" type="radio"/> Q1615 Mk III Network Camera - Camera 1 Kitchen 1st floor \ BOSCH-11 \ BOSCH-11 \ All cameras (BOSCH-11)
	<input type="radio"/> Q1615 Mk III Network Camera - Camera 1 Kitchen 1st floor \ BOSCH-11 \ MIL2022R2REC \ All cameras (MIL2022R2REC)
	<input type="radio"/> DeskCamera DeskCamera5.2.6 - Camera 1 Kitchen 1st floor \ BOSCH-11 \ BOSCH-11 \ All cameras (BOSCH-11)
	<input type="radio"/> Motion Kitchen 1st floor \ BOSCH-11 \ BOSCH-11 \ All cameras (BOSCH-11)
	<input type="radio"/> Recording Kitchen 1st floor \ BOSCH-11 \ BOSCH-11 \ All cameras (BOSCH-11)

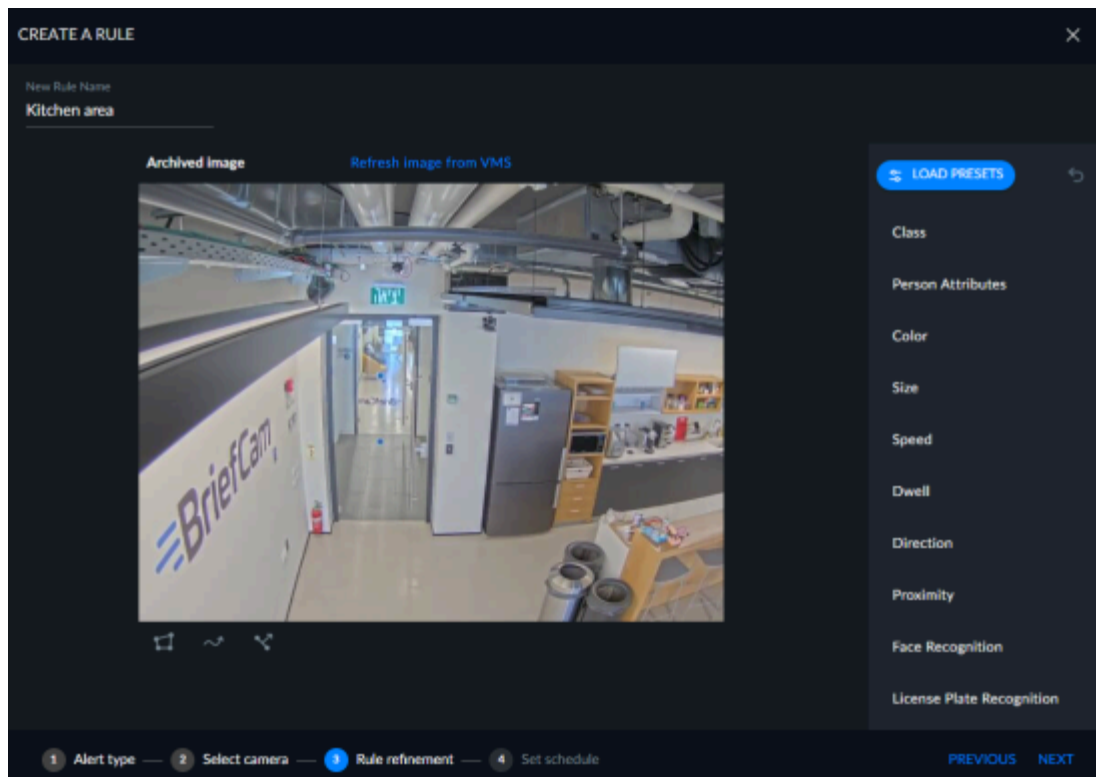
6. Give the rule a name and apply any desired filters.
7. You can also click the **LOAD PRESETS** button and use a preset that was defined in the REVIEW module.



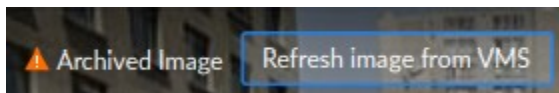
- a. From the **Load Presets** screen, select the case where the preset was defined.
- b. Select the preset that you want to use. Note that if the **Source**, **Time Range**, and/or **Appearance Similarity** filters are saved in the preset, they will be ignored since those filters are not available in the RESPOND module.
- c. Click the **APPLY** button.



8. Click **NEXT**.



Notice that the image that is displayed is an archived image (as shown in the top left corner of the image). The archive image is displayed because getting a fresh image from the camera might take some time due to the VMS. The background image is saved by default every five minutes while processing the stream – the latest background image is used temporarily when setting up a rule/dimension. When there is a newer image available, you can click on the **Refresh image from VMS** button also in the top left corner.

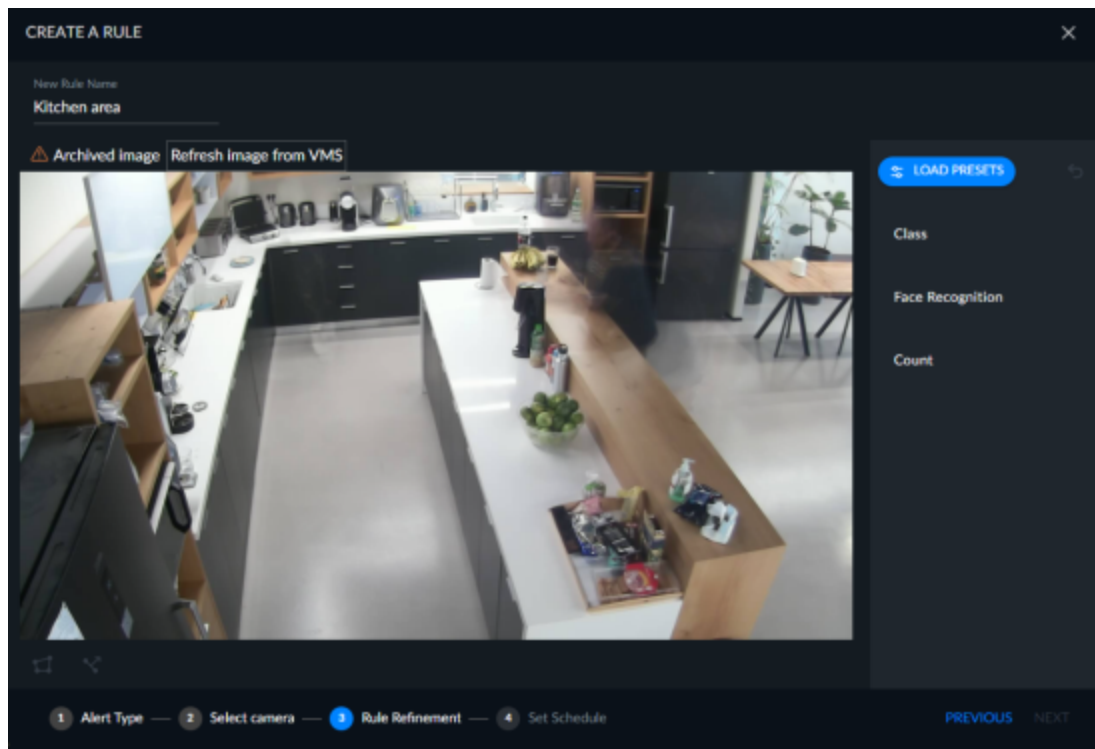


You cannot create a rule if there is no live image available. In this case, the **NEXT** button will be disabled.

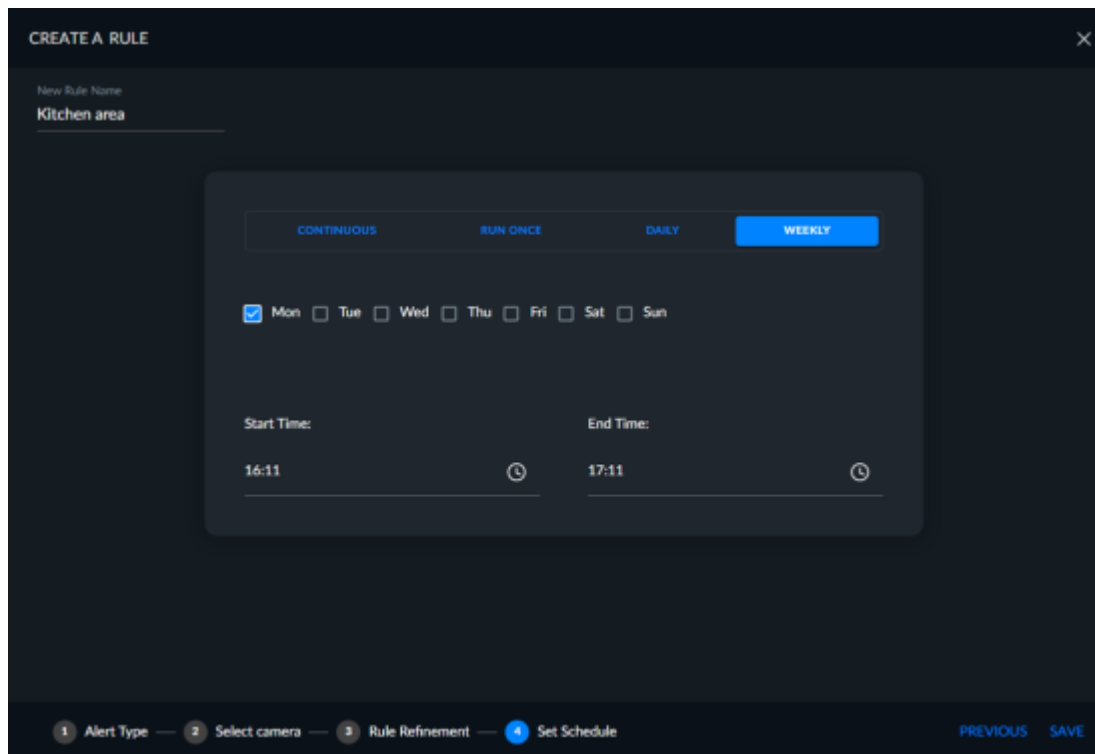


Note that for real-time alerts:

- Not all filters are available for real-time alerts.
- You cannot select both the **Class** and **Face Recognition** filter in the same rule.
- The **Count** filter can be selected in addition to either the **Class** or **Face Recognition** filter.



9. Set a schedule for the rule: **Continuous**, **Run Once**, **Daily** or **Weekly** and then click **NEXT**.



See also:

[Creating a Rule with Proximity](#)

[Creating a Rule with Face Recognition](#)

[Creating a Rule with License Plate Recognition](#)

[Real-Time or Smart Alerts with Count Filter](#)

[Creating a People Counting Rule \(Next-Gen Engine Only\)](#)

[Creating a Crowd Counting Rule \(Next-Gen Engine Only\)](#)

[Creating a Group Detection Rule \(Next-Gen Engine Only\)](#)

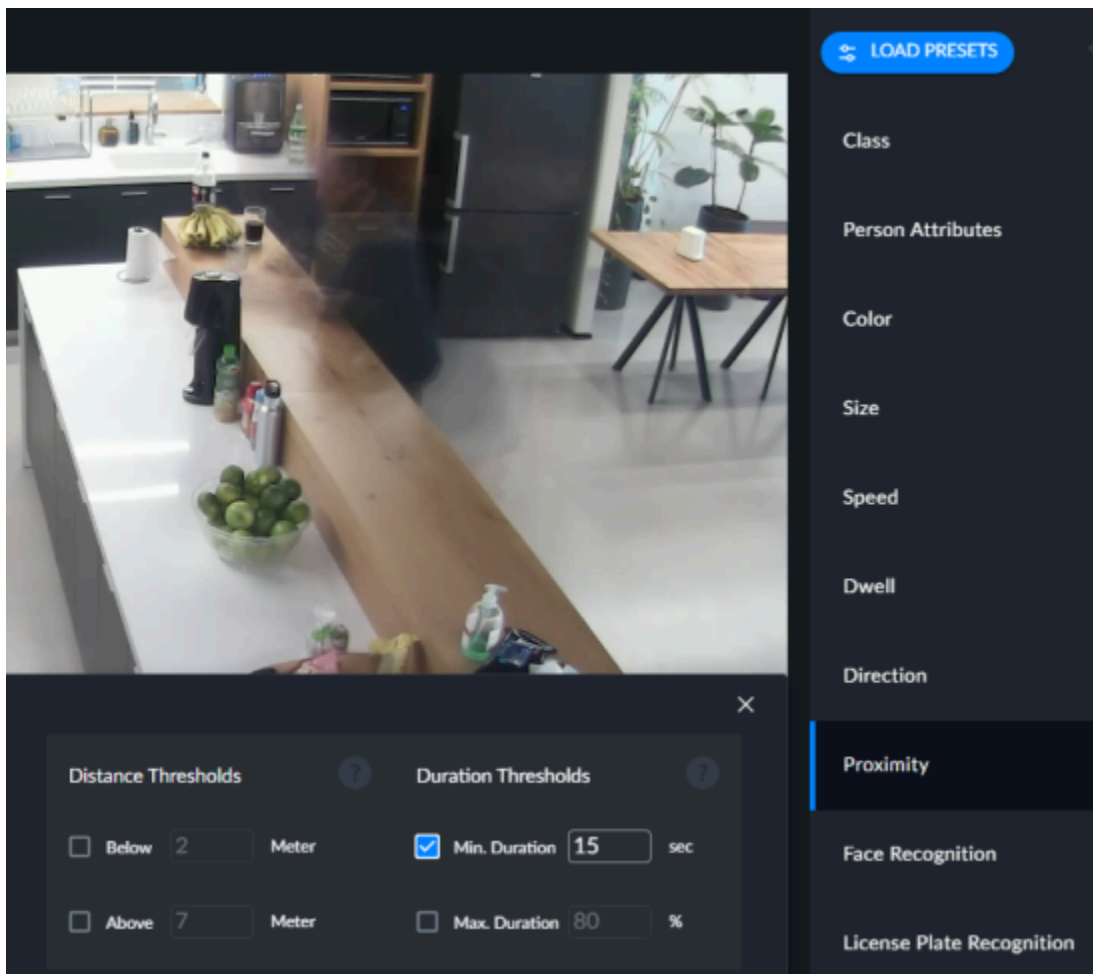
[Creating an Airplane Counting Alert \(Next-Gen Engine Only\)](#)

Creating a Rule with Proximity

You can create a rule that will issue an alert when the distance between people is less or more than a predefined threshold(s). Only people that appear concurrently in the scene are considered.

Alerts with **Proximity** are available for Smart alerts only.

Note that an alert will be sent once per group of people.



The **Below** and **Above** fields are independent of each other and they will be activated (if they have an input in them) or deactivated via the checkboxes. If you select both, alerts will be triggered for people that were below the distance set in the **Below** threshold and also for people that passed the distance in the **Above** threshold.

If you also define a **Min. duration** threshold, an alert will be triggered when the distance between people has been less (or more) than the predefined threshold(s) for longer than the time selected in the **Min. duration** threshold.

If you include a **Max. duration** threshold, an alert will be triggered only when there are pairs of people that were closer (or farther) than the predefined distance threshold for shorter than the defined percentage of the track. Objects that were closer/farther than the distance thresholds for longer than the **Max. duration** threshold will not trigger an alert.

The duration percentage will be calculated by the duration of the violation divided by the longest duration in the scene of one member of the offending couple. For example, if person A is in the scene for 1 minute, and then person B joins person A and is in violation with that person for another minute, the duration percentage of the violation between A and B is 50%.

The Duration thresholds will relate to the aggregate duration (the total time that the distance was below the threshold, even if there were times in between that the distance was farther than the threshold before going back to being closer).

The Proximity filter can be used together with any of the other filters (except for the License Plate Recognition and Count filters).

When another filter is used in conjunction with the **Proximity** filter, BriefCam will detect proximities where at least one of the people match the other filters. For example, if you select the **Proximity** filter and red upper wear, BriefCam will look for groups (of 2 or more) in proximity where at least one person is wearing a red shirt (not necessarily the person who will appear in the alert thumbnail). When using a Scene filter (**Area**, **Path**, or **Line Crossing**) with the **Proximity** filter, the proximity events are not limited to people detected in the Scene filter. BriefCam will take all the people who triggered the Scene filter and see if they were in proximity with other people anywhere in the entire scene.

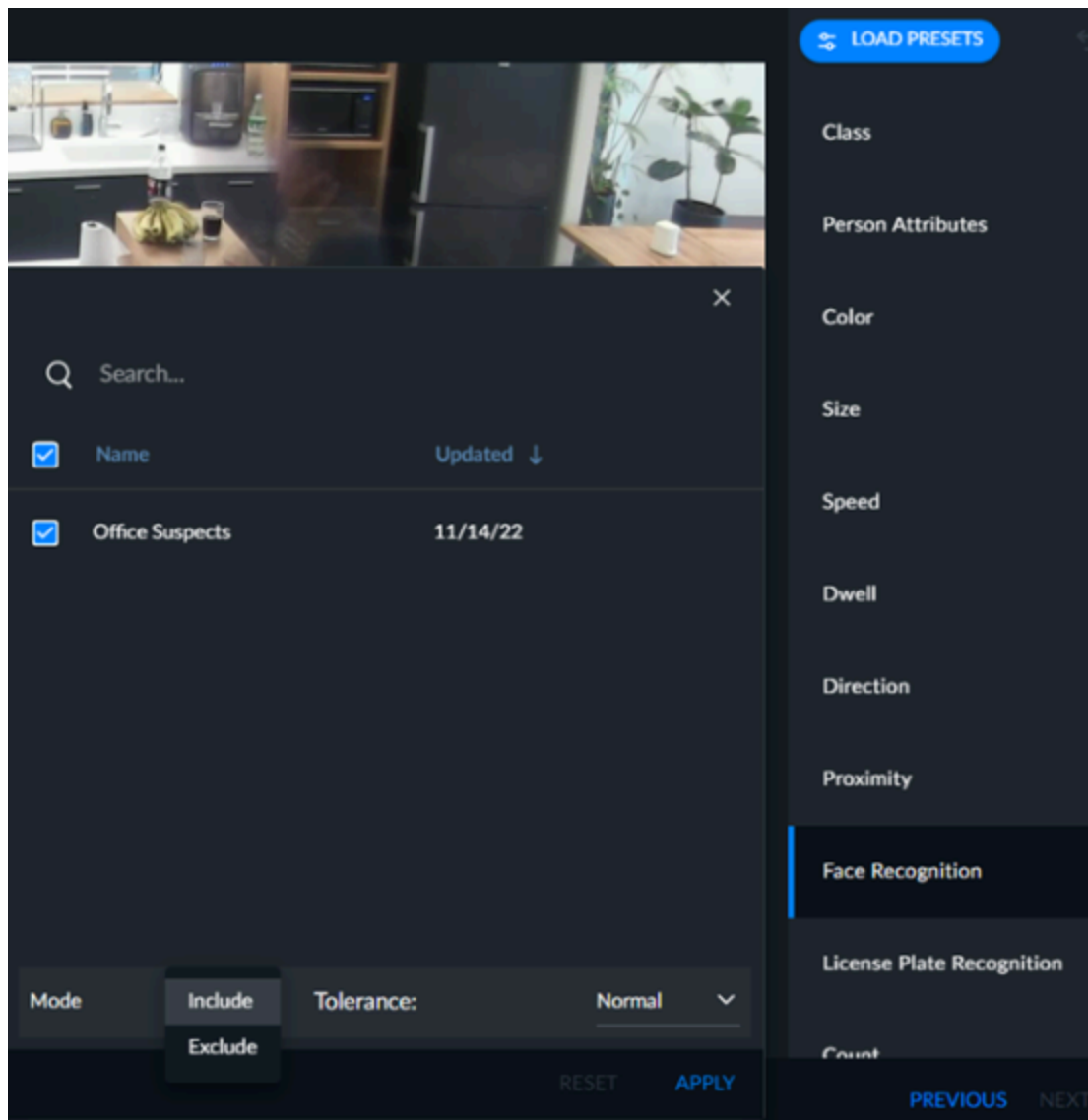
Creating a Rule with Face Recognition

You can create a rule that will issue an alert when a person on a watchlist or multiple watchlists appears in the scene.

In the RESPOND solution, 3-star images can trigger alerts and 1-star images cannot trigger alerts. By default, 2-star images cannot trigger alerts; however, for high RESPOND sensitivity configurations, 2-star images can trigger alerts. For additional information, see [Face Recognition Quality](#).

If you add several images of a person, BriefCam will alert whenever the person is detected from any of the faces associated with the person.

Alerts with face recognition have a cool down period of 30 seconds. This means that when an identity triggers an alert, the same identity will not trigger another alert for 30 seconds.



In the **Mode** field, you can select between two operation modes:

- **Include** (default) – Create an alert if an identity on the selected watchlist is found.
- **Exclude** – Create an alert if an identity is found that does not appear on the selected watchlist(s).

The table below summarizes when an alert will be triggered when the **Exclude** option is selected:

Scenario with Exclude Option	Triggers a Smart Alert	Triggers a Real-Time Alert
Faces that are not on the watchlist	√	√
Faces of low quality that are not compared (1-star faces and 2-star faces)	√ – default X – only 1-star (if the administrator changed the configuration to only include 1-star faces)	X

Persons without a detected head/face	X – default ✓ – If the administrator changed the default to include persons without a detected head/face	X
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You can also use the **Tolerance** field to fine tune your search. For additional information, see the [Filter Tolerance Adjustment](#) section.

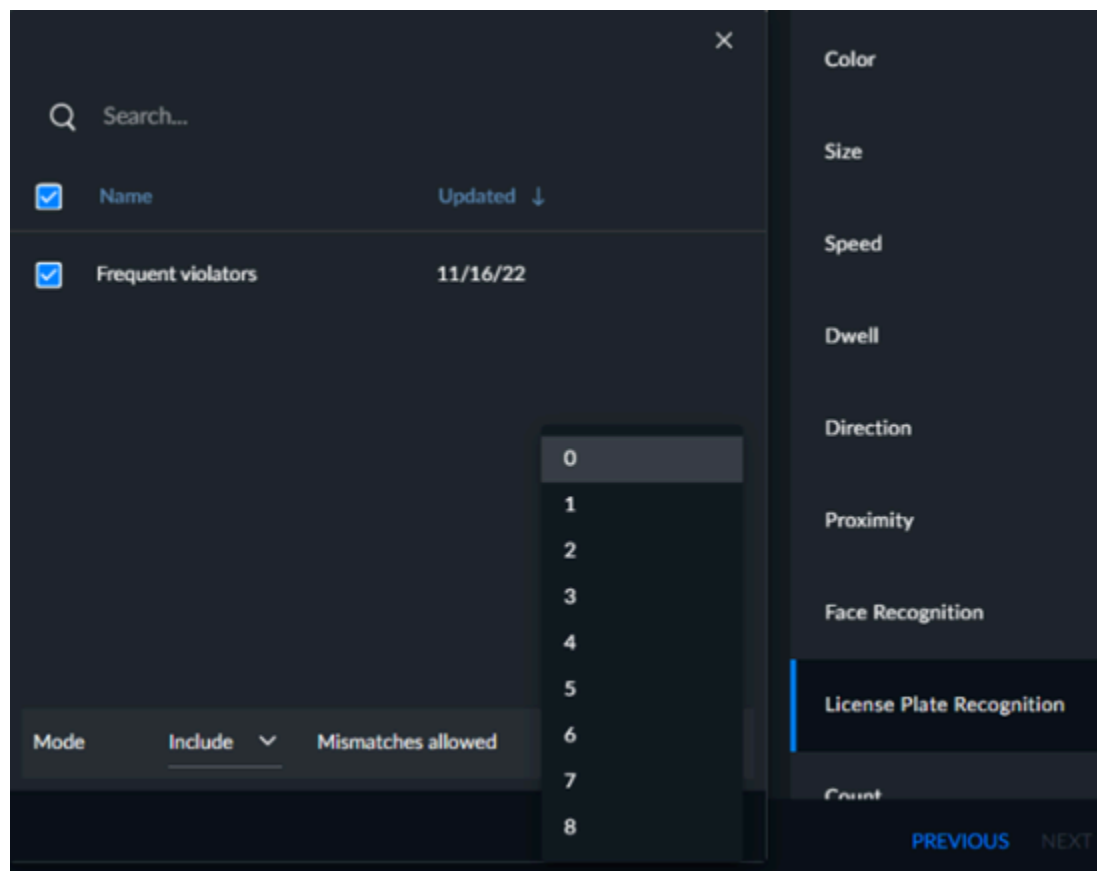
Creating a Rule with License Plate Recognition

You can create a rule that will issue an alert when a license plate that appears in a watchlist appears in the video or does not appear in the video.

Alerts with License Plate Recognition are available for Smart alerts only.

An alert will not be triggered if:

- The quality of the extracted plate is too low to be compared to the watchlist.
- A vehicle without an extracted plate, such as a vehicle with no plates.




In the **Mode** field, you can select between two operation modes:


- **Include** (default) – Create an alert if a license plate on the selected watchlist(s) is found.
- **Exclude** – Create an alert if a license plate is found that does not appear on the selected watchlist(s).

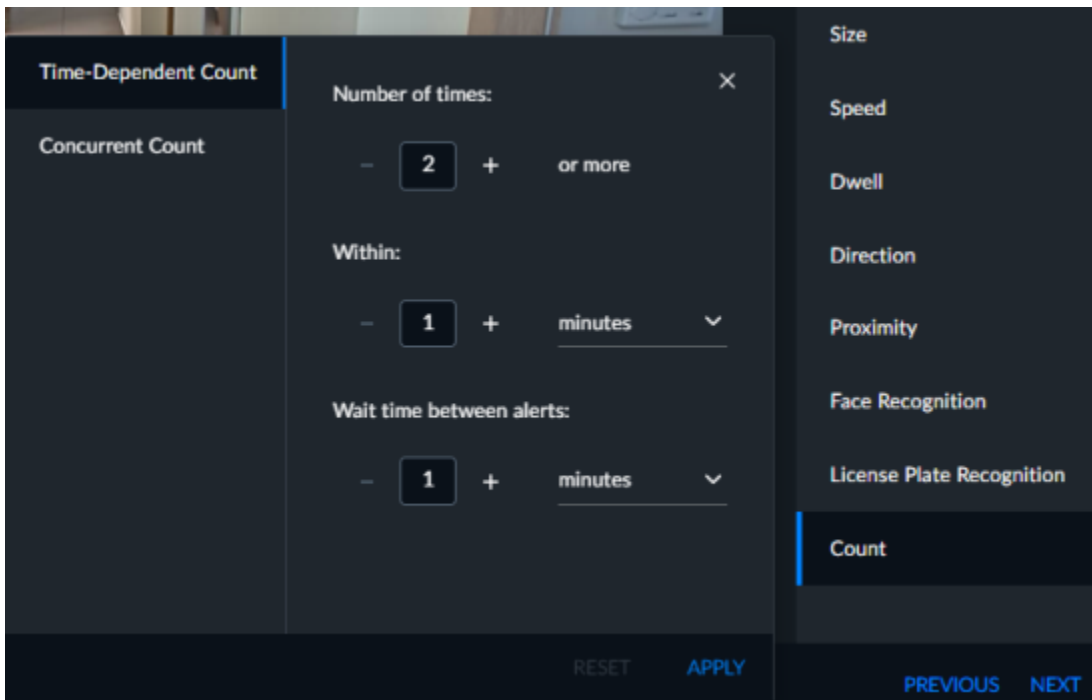
In the **Mismatches allowed** drop-down list, set how accurate the match needs to be to trigger the alert. You can select whether to allow between 0 and 8 mismatched characters in the search. For example, if you select 0, only perfect matches will trigger an alert. If you select 2, plates with 2 mismatches or less will trigger an alert.

Real-Time or Smart Alerts with Count Filter

The last filter option is the **Count** option. Click on this option and you can then create alerts that are triggered when a certain number of objects meets a set filter in a predefined period (**Time-Dependent Count**) or concurrently (**Concurrent Count**).

	<p>When using the Next-Gen engine, you will also have a People Counting, Crowd Counting, Group Detection, and Airplane Counting option.</p>
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	<p>For queue counting, use People Counting alerts. People Counting alerts are ideal when you want to count people in semi-crowded scenes and people that are static (not moving a lot).</p>
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The screenshot shows the 'Time-Dependent Count' configuration window. On the left, there are two tabs: 'Time-Dependent Count' (selected) and 'Concurrent Count'. The main area contains three settings:

- Number of times:** A numeric input set to '2' with a '+' button and the text 'or more'.
- Within:** A numeric input set to '1' with a '+' button and a dropdown menu set to 'minutes'.
- Wait time between alerts:** A numeric input set to '1' with a '+' button and a dropdown menu set to 'minutes'.

At the bottom of the window are 'RESET' and 'APPLY' buttons. To the right of the configuration window is a sidebar with a list of filter categories: Size, Speed, Dwell, Direction, Proximity, Face Recognition, License Plate Recognition, and Count (which is highlighted with a blue bar). At the bottom of the sidebar are 'PREVIOUS' and 'NEXT' buttons.

Time-Dependent Count is applicable both for Smart and Real-time alerts.

Concurrent Count is only applicable for Smart alerts.

Time-Dependent Count

Select **Time-Dependent Count** to create an alert when a certain number of objects meets a certain filter in a predefined period of time.

For example, you can set an alert that is triggered when more than 100 people entered a park in a single hour after 9 PM. Or, you can set an alert when more than three employees on the watchlist entered a certain area of the store.

In the **Number of times** field, enter the number of objects that will trigger the alert. The maximum number of objects that can be set is 1,000 and the maximum time period is 24 hours.

In the **Within** field, enter the period of time within which the objects must appear in order to trigger an alert.

In the **Wait time between alerts** field, set the time to wait before starting to count objects again for the next alert. The counter starts at zero when the cool-down period ends. The minimum cool-down period is 1 second and the maximum is 24 hours.

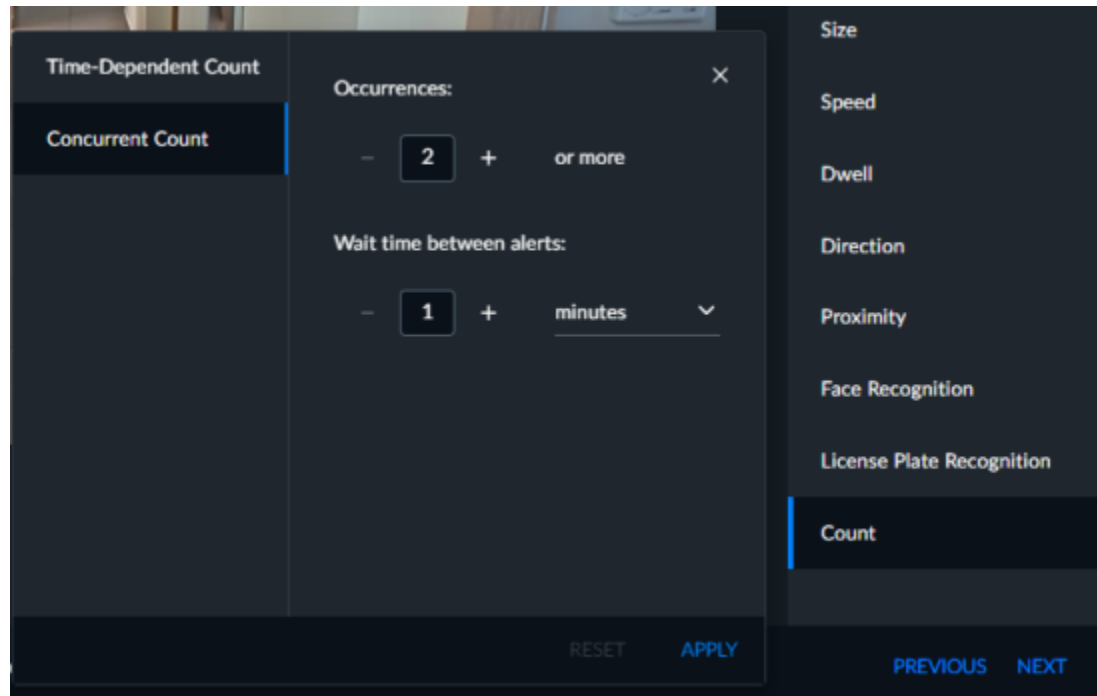
Concurrent Count

Select **Concurrent Count** to create an alert that is triggered when a certain number of objects meets a certain filter concurrently.

For example, you can set an alert that is triggered when more than 10 people are in a predefined area concurrently. However, if one person left the area before the tenth person entered, the alert will not be triggered. Another example is that you can trigger an alert when there are less than five people in a predefined area in a given time.

In the **Occurrences** field, enter the number of objects that will trigger the alert. The maximum number of objects that can be set is 1,000 and the maximum time period is 24 hours.

In the **Wait time between alerts** field, set the time to wait before starting to count objects again for the next alert. The counter starts at zero when the cool-down period ends. The minimum cool-down period is 1 second and the maximum is 24 hours.



Creating a People Counting Rule (Next-Gen Engine Only)

To create a people counting rule (when using the Next-Gen engine):

1. Select the **Count** filter and then **People Counting**. Note that this option cannot be combined with other filters.
2. Select either the **Above** or the **Below** checkbox.
3. Set the number of people in the selected checkbox.
4. Click **APPLY**.

The screenshot shows the 'People Counting' configuration window. On the left, a sidebar lists filter categories: 'Time-Dependent Count', 'Concurrent Count', 'People Counting' (selected), 'Group Detection', and 'Airplane Counting'. Below this is a note: 'Note: This kind of filter can't be combined with other filters.' The main area is titled 'People Counting' and contains: 'Above' and 'Below' checkboxes, both with numeric input fields (0 and 1 respectively); 'Wait time between alerts:' set to 1 minute; and 'Tolerance' buttons for 'LOOSE', 'NORMAL' (selected), and 'STRICT'. On the right, a vertical list of filter types includes 'Speed', 'Dwell', 'Direction', 'Proximity', 'Face Recognition', 'License Plate Recognition', and 'Count' (highlighted with a blue bar).

If you are using the Windows-based OX5 engine, and want to create a People Counting rule, see: [People Counting alerts](#).


Creating a Crowd Counting Rule (Next-Gen Engine Only)

If you are using the Next-Gen engine, you can use cameras that your administrator configured as Crowd Counting cameras to create a rule.

When you select a Crowd Counting camera, you will see the **Count** filter only. No other filters are available except for the **Area** filter.

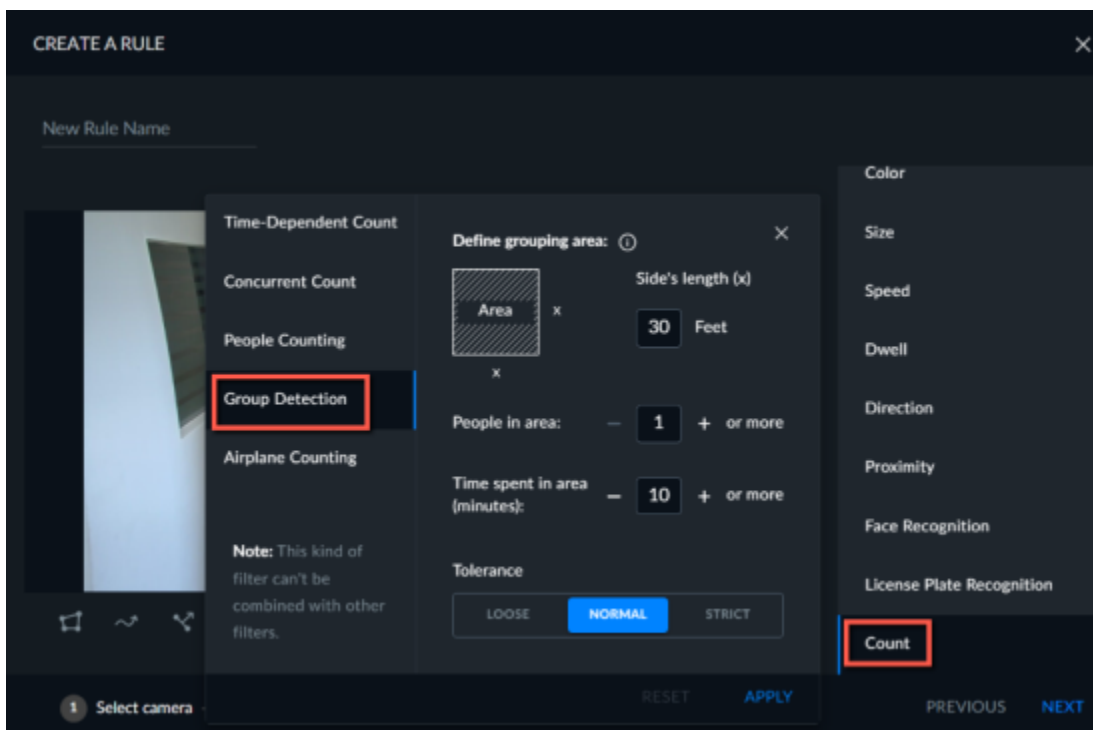
The screenshot shows the 'Crowd Counting' configuration window. The sidebar on the left is identical to the previous screenshot. The main area is titled 'Crowd Counting' and contains: 'Above' and 'Below' checkboxes, both with numeric input fields (56 and 56 respectively); 'Wait time between alerts:' set to 1 minute; and 'Tolerance' buttons for 'LOOSE', 'NORMAL' (selected), and 'STRICT'. On the right, the 'Count' filter is highlighted with a blue bar. At the bottom of the window, there are buttons for 'RESET', 'APPLY', 'PREVIOUS', and 'NEXT'.

Creating a Group Detection Rule (Next-Gen Engine Only)

	<p>If you are using the Next-Gen engine, you can receive alerts when a group of a pre-defined size forms for a certain amount of time. This helps prevent crowds and allows you to monitor groups for public safety or for quality of service</p>
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To create a Group Detection alert:

1. In the RESPOND module, select the **ALERTS** tab.
2. Click the **CREATE A RULE** button.
3. Select the **Count** filter.
4. Select the **Group Detection** option. Note that this option cannot be combined with other filters except for the **Area** scene filter. If you combine group detection with an **Area** scene filter, the group detection will only take into consideration the area that you defined in the **Area** scene filter when looking for the formation of groups.



Now you'll define what a group is. For example, you can send an alert when there are 10 people in a 5x5m area for over 2 minutes.

1. Define the grouping area, which can be a square area only, by defining the side of the square. For example, if you enter 5, the area will be 5x5.
2. Define the minimum number of people that need to appear in the grouping area to trigger an alert.
3. Define the minimum amount of time the people need to dwell in that area for it to be concerned a group.
4. You can change the **Tolerance**.
5. Click **APPLY**.

Note that:

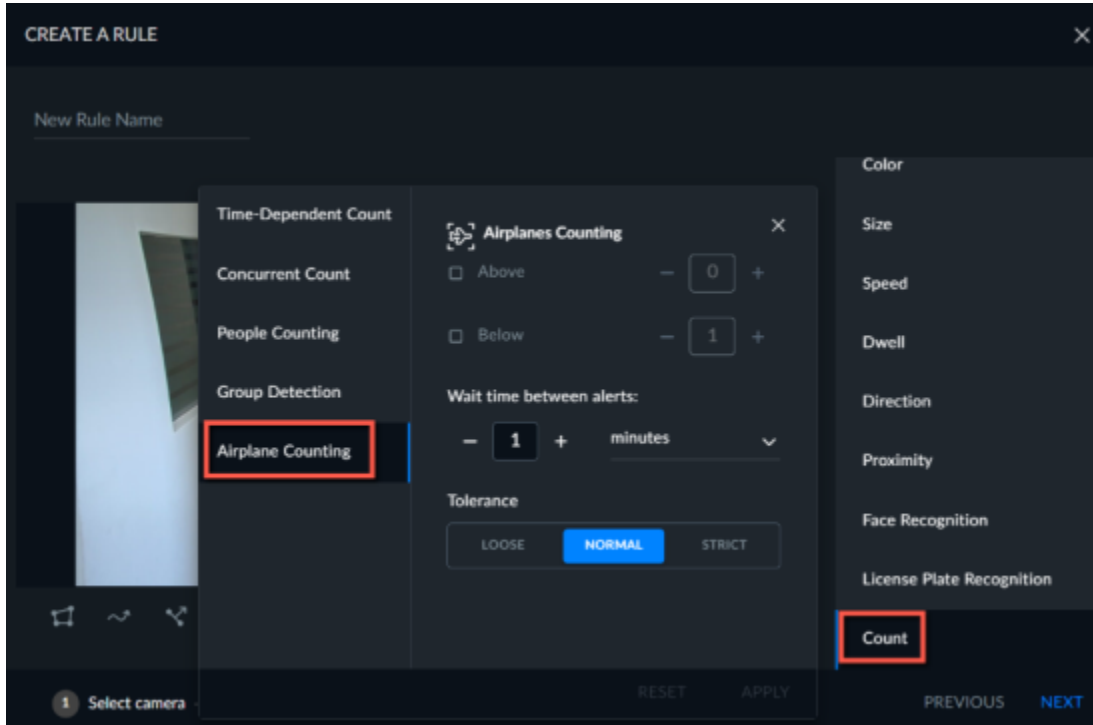
- The grouping algorithm will run once every 120 seconds (2 minutes) by default.
- The algorithm will extract the XY-locations of people via their feet.
- The alert will contain a snapshot of the frame when the alert was sent.

Creating an Airplane Counting Rule (Next-Gen Engine Only)

When using the Next-Gen engine, you can set a rule to count airplanes.

To count airplanes:

1. Select the **Count** filter and then **Airplane Counting**.
2. Select either the **Above** or the **Below** checkbox.
3. Set the number of airplanes in the selected checkbox.
4. Click **APPLY**.




Rules Screen

Each rule is listed along with its name, the name of the source camera selected in the rule, its creation date, rule type and status (Disabled or Active).

The status is updated every 15 seconds.

For schedules that are Active, additional information will be displayed in parentheses: Processing, Queued, or Recovering.

Click on the information () icon to see a summary of the number of rules and their status.



RULES STATUS

×

Total 3

Queued

0

Recovering

0

Processing

1

Disabled

2

If you have a rule that remains in Queued status, contact your local BriefCam administrator.

Actions

When you right-click or hover over a rule, various icons are displayed.




Action	Description
	Enable or disable a rule.
	Duplicate a rule. BriefCam will create the selected rules for each of the selected cameras and apply the same global filters to the rules (but not the Scene filters). The newly created rule is owned by the user who duplicated the rule.
	Share a rule. See also Rule Collaboration .
	Edit a rule.
	Delete a rule. If a rule is deleted, alerts created by the rule are also deleted. However, bookmarks of the alerts are not deleted.
	Copy the text that you right-clicked on.

If you select more than one rule, an additional option will appear at the top of the screen enabling you to either simultaneously enable or disable multiple rules.



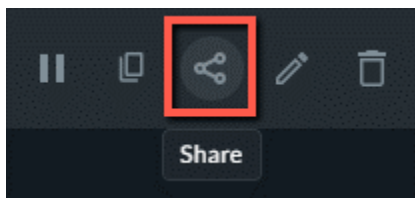
Any events captured by the source camera selected and matching the filters applied in a running rule will trigger alerts in the RESPOND solution's **ALERTS** screen, enabling operators to rapidly respond to incidents as they unfold.



If a RESPOND rule fails due to stream loss or another issue, it will try to recover every 60 minutes by default. The time can be changed in the **MaxRetryDelaytimeMinutes** environment setting. To stop the rule from retrying, disable it.

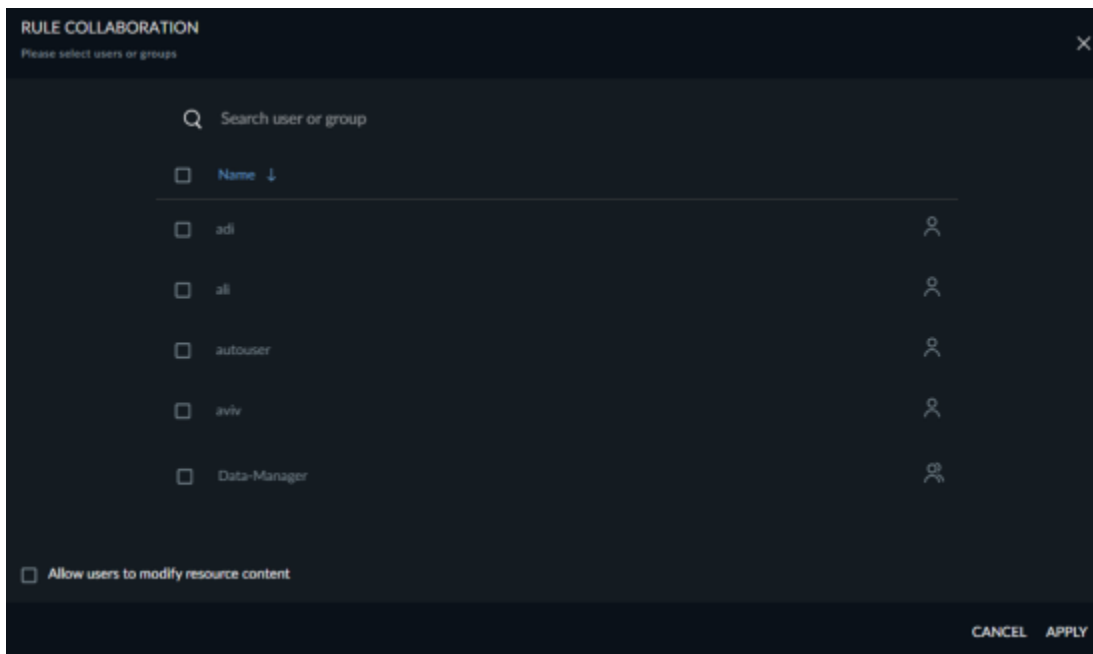
Rule Collaboration

Click the share icon to share a rule. The share icon is only available for rules owned by the user.



Select the users and/or groups that you want to share the rule with.

By default, rules are shared as "read only". However, if you want to allow the user read-write access, select the **Allow users to modify resource content** checkbox.



BriefCam will check that all selected users and groups:

- Have permissions to view the Rule camera.
- Already have permissions to the watchlists that the sharing user does not own (the external and shared watchlists).

When a rule is configured to use watchlists, those watchlists must be shared as well.

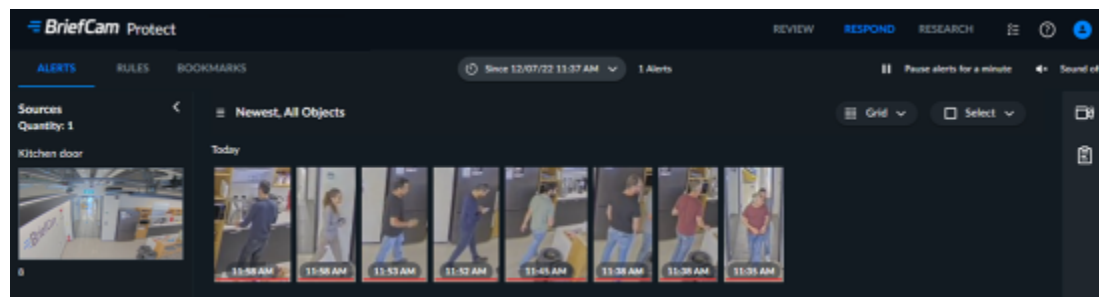
The sharing process will not share watchlists that the user does not own (shared and external watchlists). On the right of the screen you will see a list of watchlists that are owned by you and another list of watchlists that are not owned by you and can, therefore, not be shared by you.

Watchlists are shared in read-only mode with the users/groups with one exception: If the watchlist was already shared in advance with one of the users or groups in full control mode, this sharing mode won't change.

When un-sharing a rule, the shared users will no longer receive alerts from this rule and all received alerts from this rule will disappear from the user's RESPOND view.

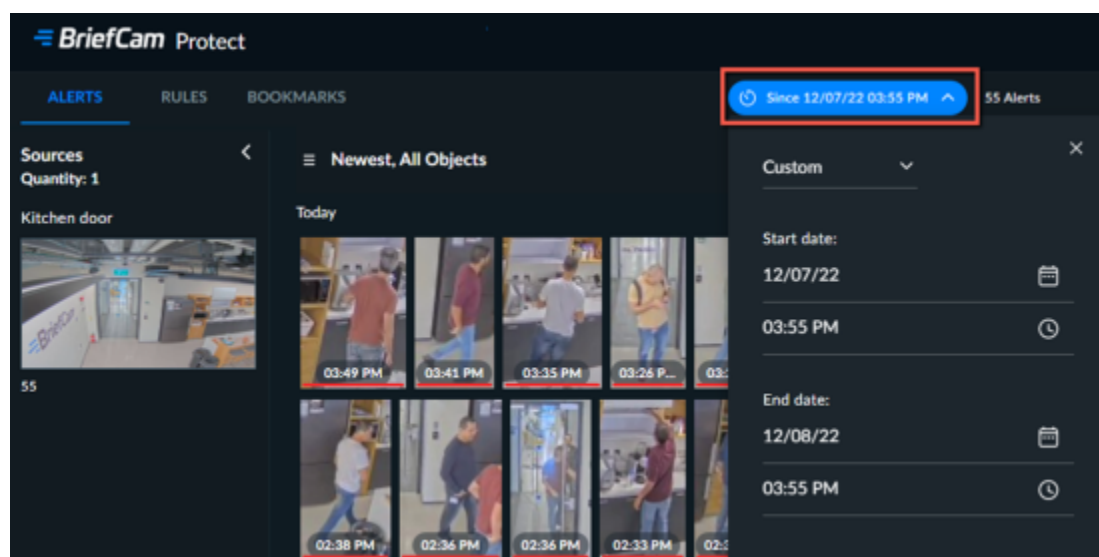
The ALERTS Tab

The **ALERTS** tab contains three sections: a video source pane on the left, thumbnails in the middle and filters on the right.




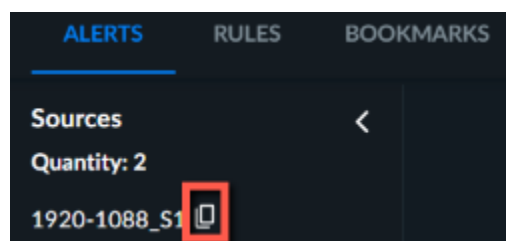
By default, the **ALERTS** tab opens displaying the last 24 hours of alerts. The **Since** time will remain as-is until you refresh the screen.

You can change the display using the drop-down list at the top of the screen.




When a new alert comes in from a camera, it is added to the video source for that camera.

You can copy the name of the source by clicking on the source name and clicking the copy  icon.

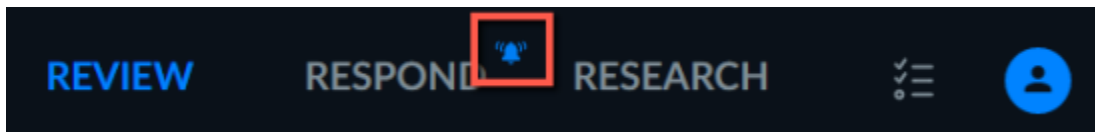


You can sort the alerts by time (oldest to newest and vice versa).

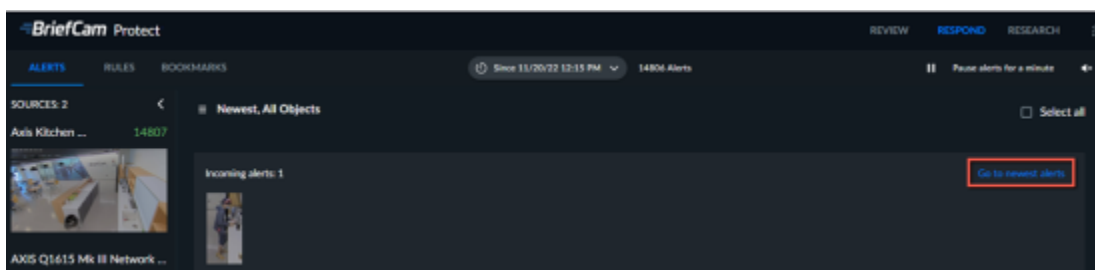
By default, the order of the video sources is only changed right after you change the **Sort by** time or when you set a filter. If you want the video source pane to also be sorted when there is a new alert, your administrator can change this for you.

To activate sound notifications when a RESPOND alert is received, click on the  icon. The sound will play only when you are logged into BriefCam and have activated the sound. You will need to activate it each time you log into BriefCam. The administrator can remove or change the sound file.

An alarm icon appears near the RESPOND tab to signify that new alerts are available. When navigating to the ALERTS tab, the alarm icon disappears.



If you are on a page that is not the first page and new alerts come in, you will see them in the first row. You can then click the **Go to newest alerts** link to display the newest alerts.



Video Source

Each video source represents a camera that has alerts in the selected time range.

Cameras that have more than one rule are shown as a single video source.



In the RESPOND solution, it takes five minutes for the video source to be playable after it was created.

Click the playback button to play back the video source. Video playback will feature only objects matching currently selected filters.

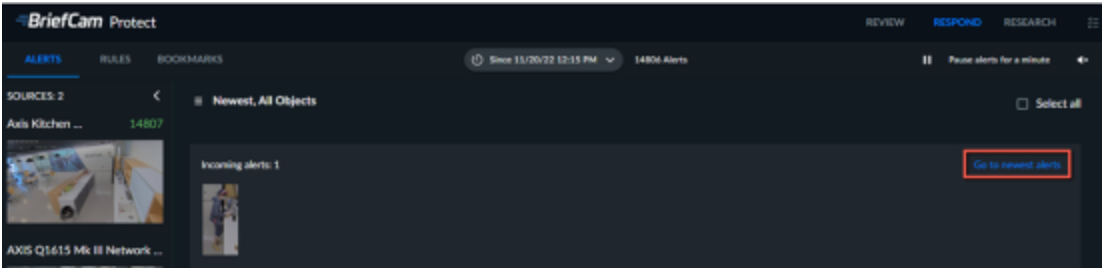
For information about the video player, see [Video Player](#).

Alert Thumbnails

The **ALERTS** tab contains thumbnails of all alerts that were generated in the **RULES** tab of the RESPOND solution. The time that the alert was created appears on the thumbnail.

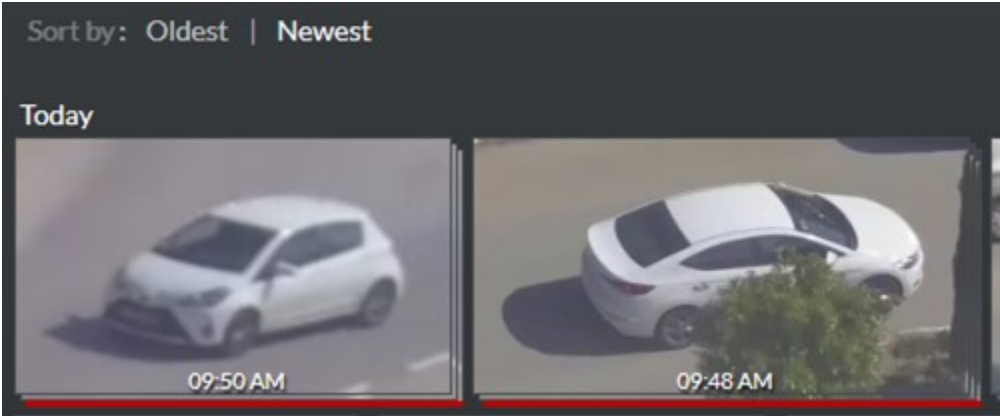
New alerts will appear in the first row. Once the row is filled, the alerts will move down to the next row.

If you are on any page besides the first page and new alerts come in, you will see an **Incoming Alerts** row. Above the row, you can click the **Go to newest alerts** button and the first page will open.








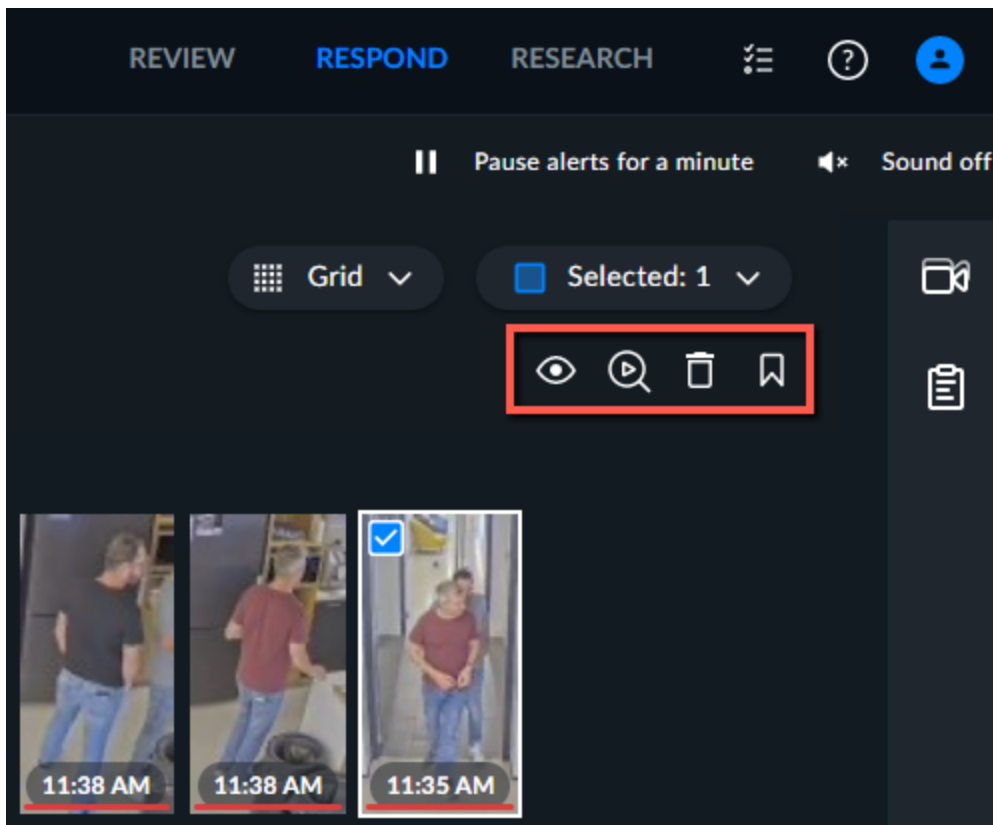
A red line under the thumbnail indicates that the thumbnail has not yet been watched.

Count-based alerts display the thumbnails, one on top of another, of all of the objects that were counted in the alert.



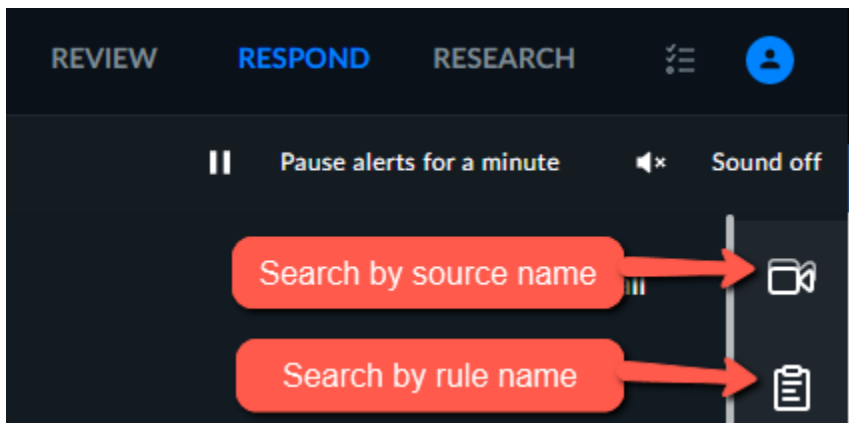
When you select an alert or multiple alerts, four icons will appear at the top right of the screen.

Icons	Description
 	Mark as Watched/Unwatched
	Start a Review Case
	Delete
	Create Bookmark. Additional information about creating bookmarks can be found in The Bookmarks Tab section.

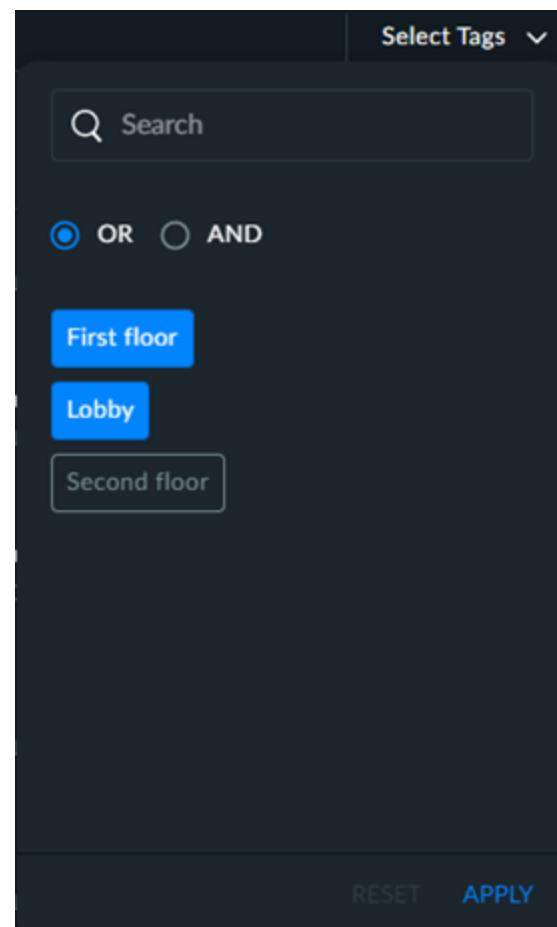


Filters

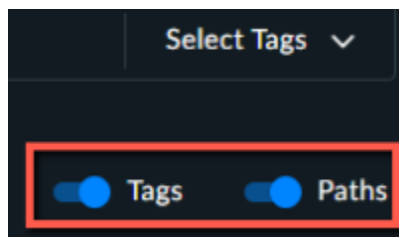
On the right side of the screen, you can filter by the source name or rule name.




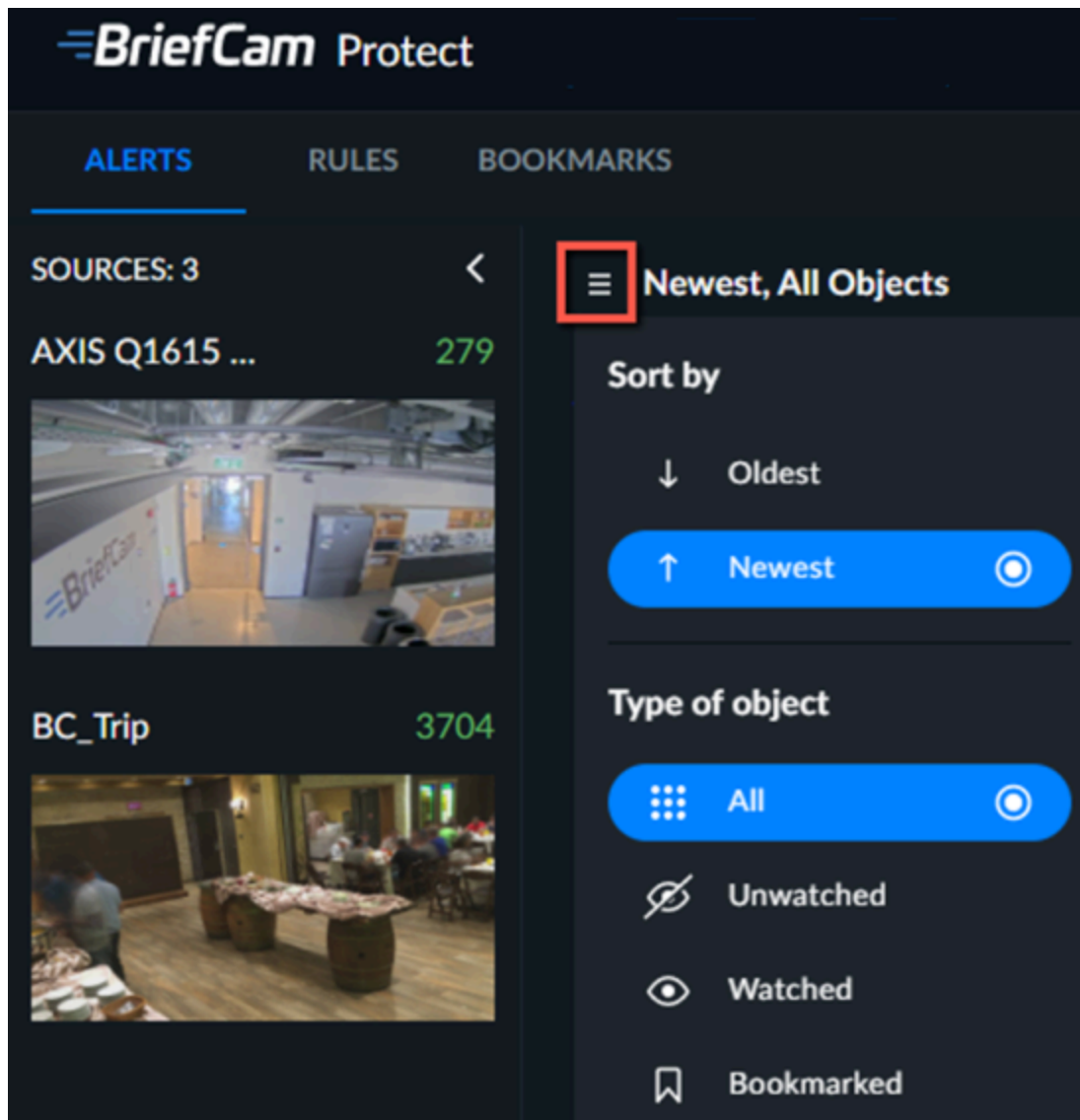
When searching by source name, to enhance your search of the cameras, you can select the tags that you want to search for. For example, your administrator may have marked all cameras on the first floor with a tag named "First floor". You can easily search for these cameras by opening the **Select Tags** drop-down list at the top right corner and select the tags that you want. You can also use the **OR** and **AND** options to further your searching capabilities.



Note that you can display the list of cameras with or without the tags and the paths (which show the hierarchy of the cameras within the directory) by using the **Tags** and **Paths** toggle options.

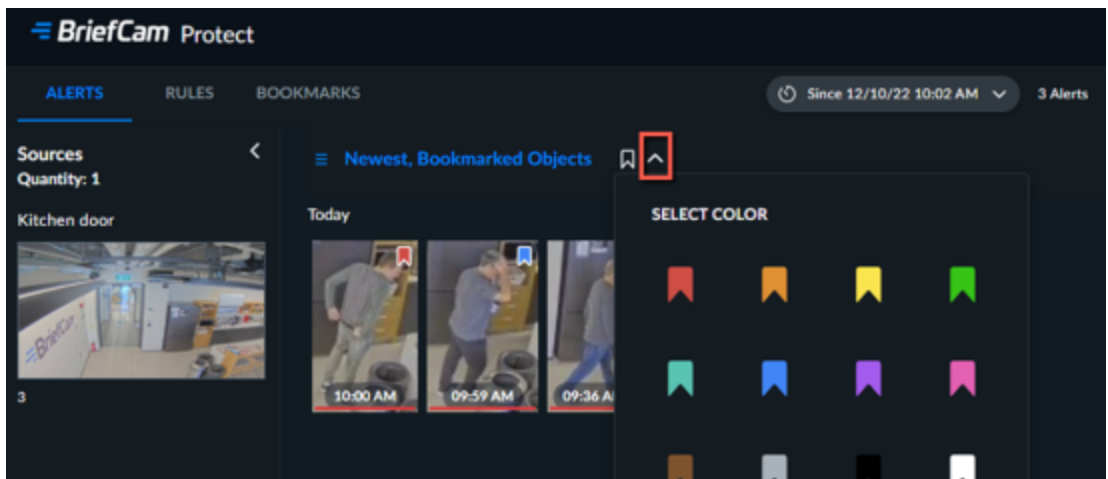


Click the three-line menu  where you can sort by oldest or newest and select to show all alerts or to show bookmarked, watched, or unwatched alerts only.

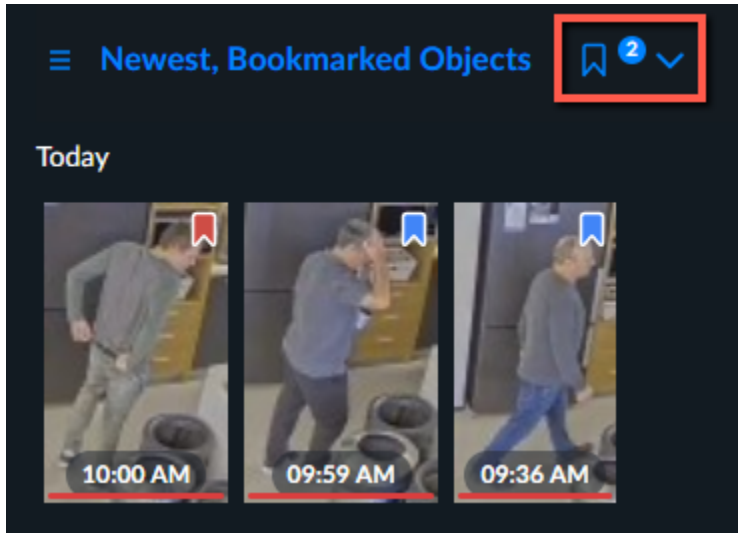


When using the **Bookmarked** filters, it will only show bookmarks that were not deleted during the maintenance. Afterwards the bookmark will only appear in the **BOOKMARKS** tab.

When you select the **Bookmarked** filter, you can click on the arrow icon and further filter by color.



If you select multiple colors, the number of colors selected will appear to the right of the bookmark icon.



See also:

- [Alert Types](#)
- [Viewing Alerts](#)
- [Alerts and Watchlists](#)
- [Sending Alerts to Other Systems](#)

Alert Types

Smart Alerts and Real-Time Alerts

The differences between the smart alert and real-time alerts are detailed in the table below. Note that when using the Linux-based Next-Gen engine, there is one type of alert that covers all the alert types.

	Smart Alerts with Linux-based Next-Gen Engine	Smart Alerts	Real-Time Alerts with Windows-
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		with Windows-based Classic Engine	based Classic Engine
Advantage	Higher accuracy in crowded scenes, longer dwell times possible, better handling of static objects, better in overhead cameras, and more accurate object counting.	More accurate because it uses more frames per object	Better in crowded scenes for face recognition because it uses face tracking instead of full body tracking
Alert time	Up to 5 seconds	30-60 seconds	Up to 5 seconds
BriefCam object type	Still image and video clip	Video clip	Still image
Available filters	All	All	Class, Face Recognition, Count (time-dependent only), Area and Line Crossing

People Counting Alerts



When using the Next-Gen engine, the People Counting alerts are defined using the Count filter. For additional information, see the [People Counting Alerts \(Next-Gen Engine Only\)](#) section.

These alerts take a snapshot every few minutes (two minutes by default) of one frame and count the people in the whole frame or in a defined area.

People counting alerts are triggered when the number of people appearing in an area pass the defined thresholds. The people count cannot be further filtered by BriefCam's filters (e.g. the number of women in red).

These alerts are ideal for queue counting and for counting people in crowds and people that are semi-static (not moving a lot). With the count functionality available in Smart and Real-Time alerts, people who are sitting or not moving a lot (static) are not always tracked since they blend in with the background and are therefore not counted accurately.

You can set both an **Above** and **Below** threshold.

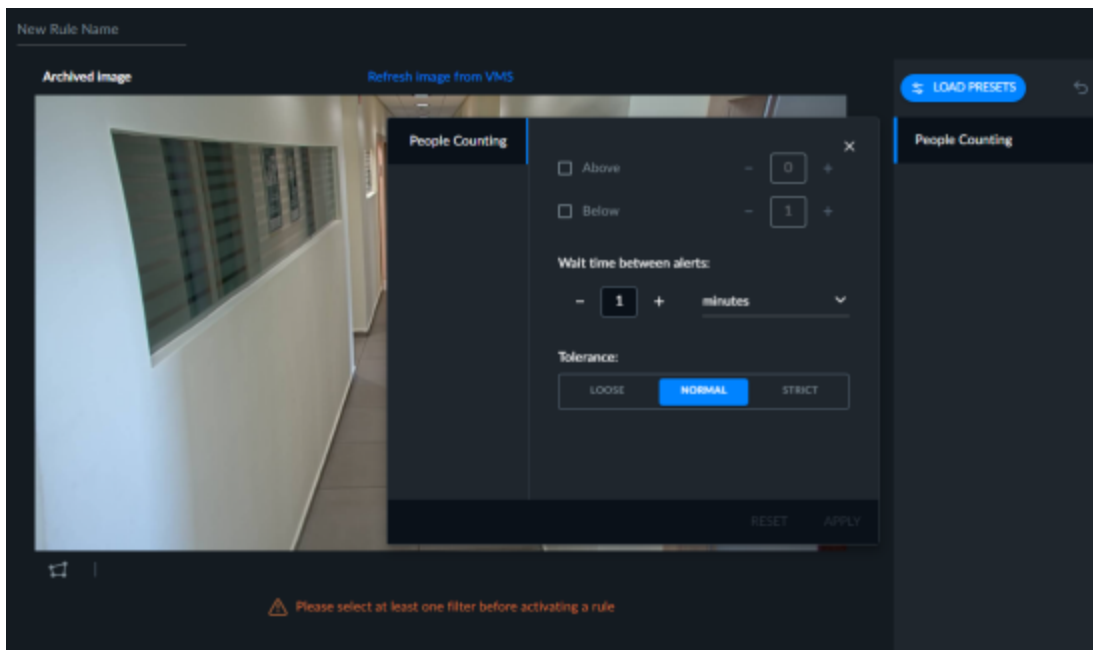
For example, you can set the people counting alert to alert when there are more than 20 people in a premises (indicating a surge in customers) or to alert if there are less than 7 people in a checkout line, or both.

This alert can also be used to alert if there is a number between, for example, 30-35 people.

The valid values for the **Above** threshold are 0-250 and for the **Below** threshold are 1-250.

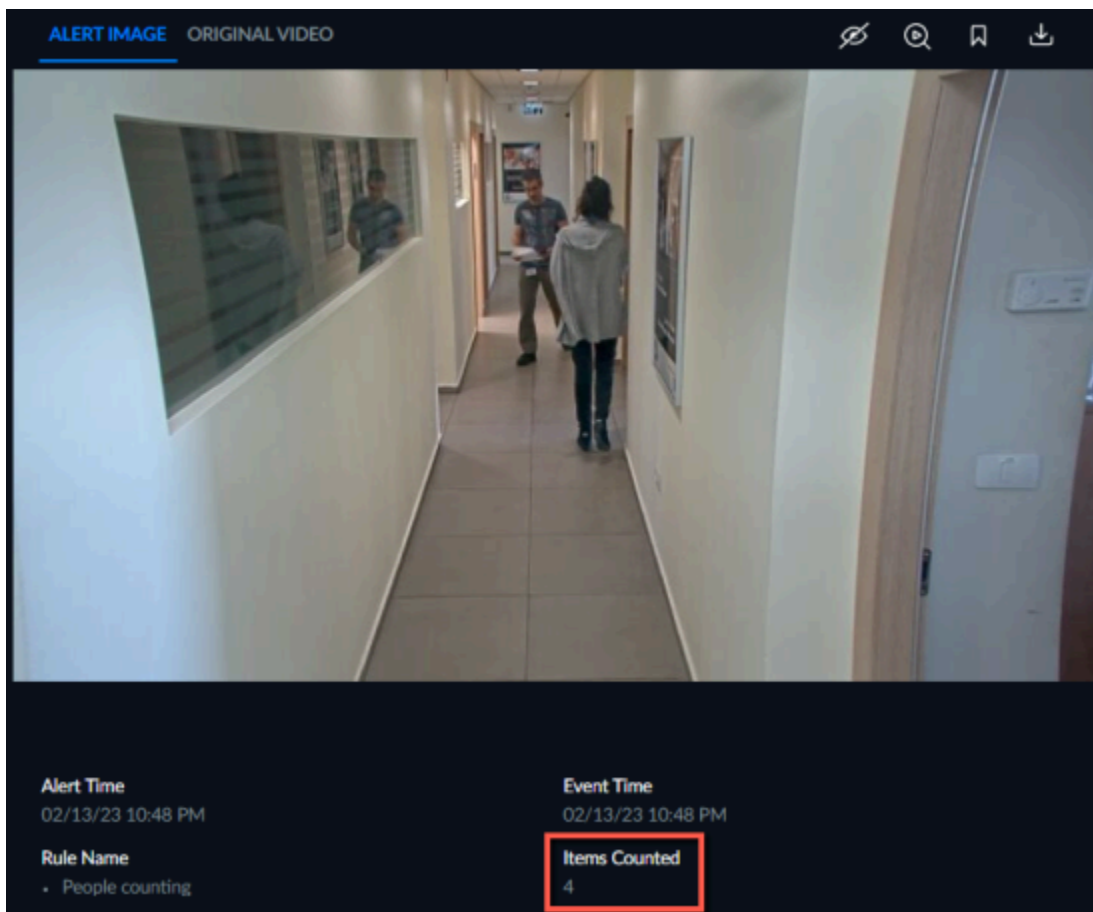
In the **Wait time between alerts** field, set how long to wait before carrying out the next count of people. The valid values are between 0 seconds and 24 hours. Use this to prevent multiple alerts when the thresholds are met.

The only filter available with People Counting alerts is the **Area** filter. Only people whose heads appear inside the marked area are counted.



The people counting accuracy depends on many factors, such as occlusions and clutter in the scene. The statistical accuracy for large count numbers is $\pm 10\%$, but it may be larger for smaller counts or in challenging scenes.

Each alert will appear with the number of people counted at the bottom of the image (as shown in the image below).





Alerts and Watchlists






When there are several watchlists selected in the same rule, the rule will return the single best match out of all the watchlists.

If there are several rules that an object triggers, the rules will be combined into a single alert (for that object) – even retroactively if needed. This ensures that there are no duplicate alerts of an object for several rules.


The Outbound API behaves differently, and rules are not aggregated. Thus, several rules triggered by one object will result in several alerts. If there are multiple objects – there will be multiple alerts (even if they all trigger the same rule).

Viewing Alerts

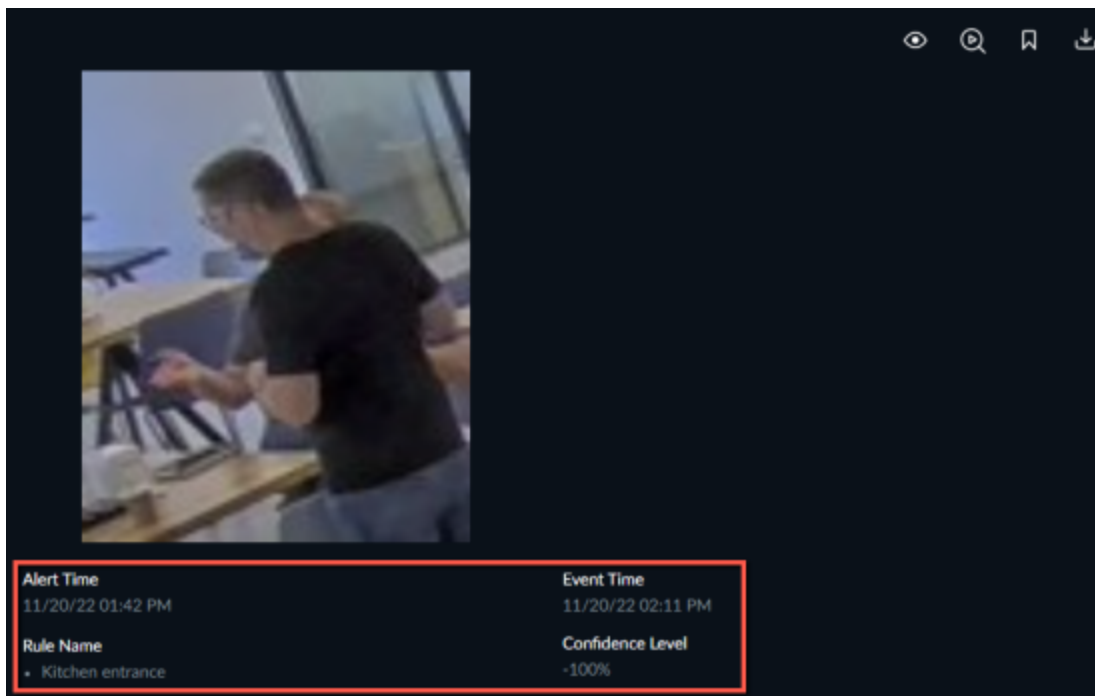
When you click on the alert thumbnail a larger image will appear with the following four icons at the top right of the image:

Icons	Functionality	Description
 	Mark as Watched/Unwatched	A red line will appear under the thumbnail if the video alert was unwatched.
	Start a Review Case	Add footage from the video of one or more alerts to a new or existing REVIEW case. See also: Start A Review Case .
	Create Bookmark	Flag the alert for later review. To view the bookmarks, open the BOOKMARKS tab. See also: The BOOKMARKS Tab .
	Download Image	Download a thumbnail image.

You can also click the **Original Video** tab to view the full context of the original feed where the event was captured (i.e. uncropped and at 1:1 zoom).


	Bounding boxes are not supported for OX5 Real-Time alerts and OX6 alerts.
---	---

Under the image you'll see information about the alerts, including the alert time (the viewer's local time), event time (the event's local time), and rule name. When relevant, additional information will also be seen, such as the watchlist name and, when a face was matched, a match score between 0-100%, indicating the similarity between two faces. The match score is displayed at the alert's **Confidence Level**. Matches that have low confidence levels should be considered with caution (and perhaps other comparison instances should be considered) as there is more chance that this is a false match.



Smart Alerts

This section is only relevant when the administrator has configured the environment to process all visual assets.

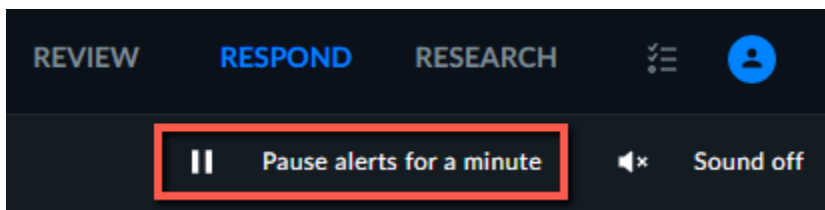
For Smart alerts, hovering over an individual alert's thumbnail will reveal a play button (). Click it for a close-up playback of the alert-generating event.

Click the download () icon, to download an .mp4 file of the close-up clip.

You'll also see information about the alerts, including the alert time (the viewer's local time), event time (the event's local time), and rule name. When relevant, additional information will also be seen, such as the watchlist name, plate number, and the comment from the LPR watchlist.

Pause Alerts

At the top right of the Alerts tab, there is an icon for pausing alerts.




This option stops alerts from being inserted to the thumbnails area. This option is specific per user.

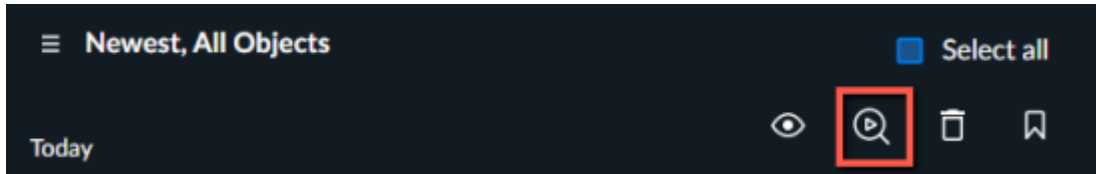
The Pause mode can be configured by the administrator to be constant (until the user resumes) or to be automatically released after a predefined time frame, which, by default, is 60 seconds.

When the alerts are paused, the incoming alerts will not appear in the Alerts pane, but the number of waiting alerts will appear to the right of the **Alerts paused** icon.

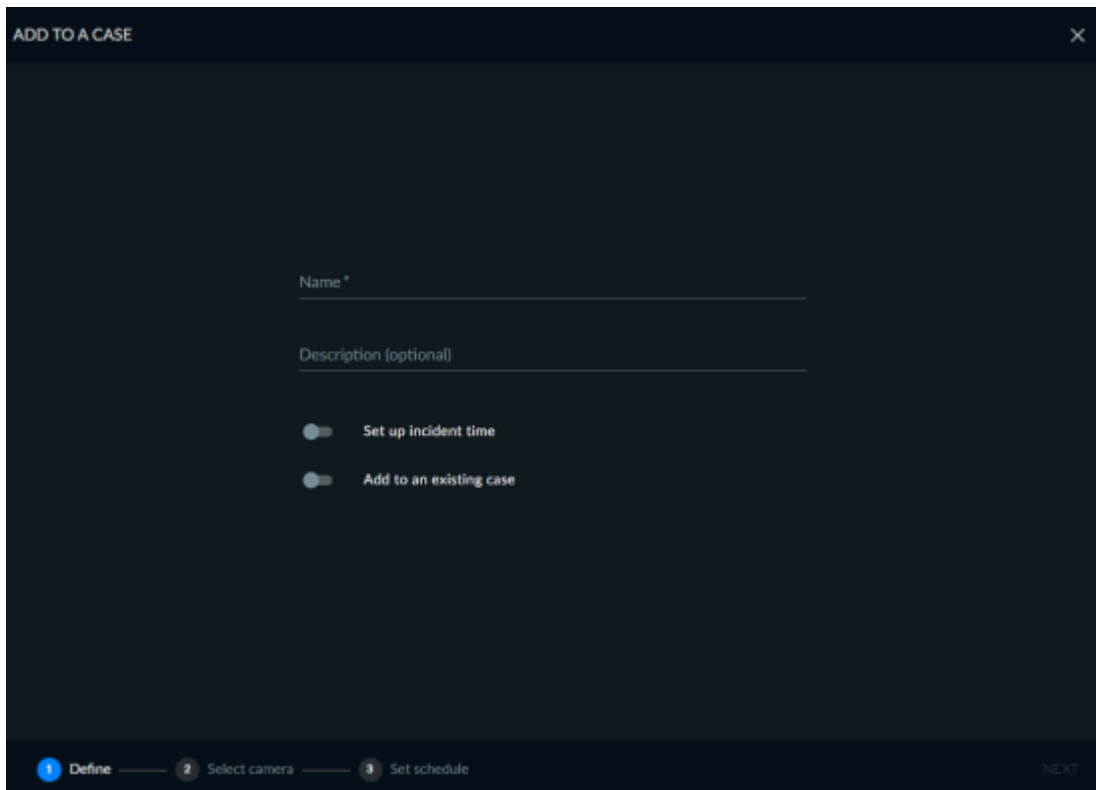
Start A Review Case

If there is an alert that you want to investigate further, you can add the clip and any part of the original video to the REVIEW solution.

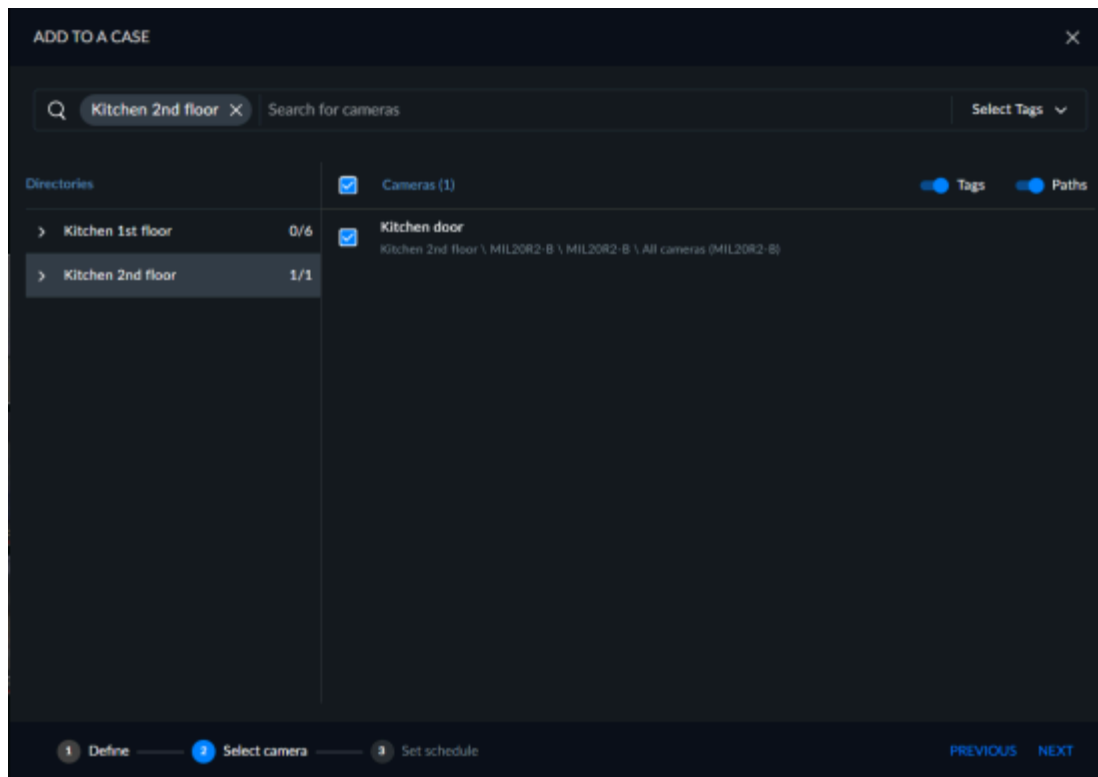
1. Click the **Start a Review Case**  option at the top of the thumbnail, closeup clip, or original video. You can also add multiple alerts by selecting the thumbnail and clicking the Start a Review Case icon in the action bar at the top right of the screen.



2. Enter a title in the screen below. You can also enter a description and the incident time.
3. If you want to add the alert to an existing case, check the **Add to an Existing Case** checkbox. If you want to create a new case for the alert, leave it unchecked, and click **NEXT**.

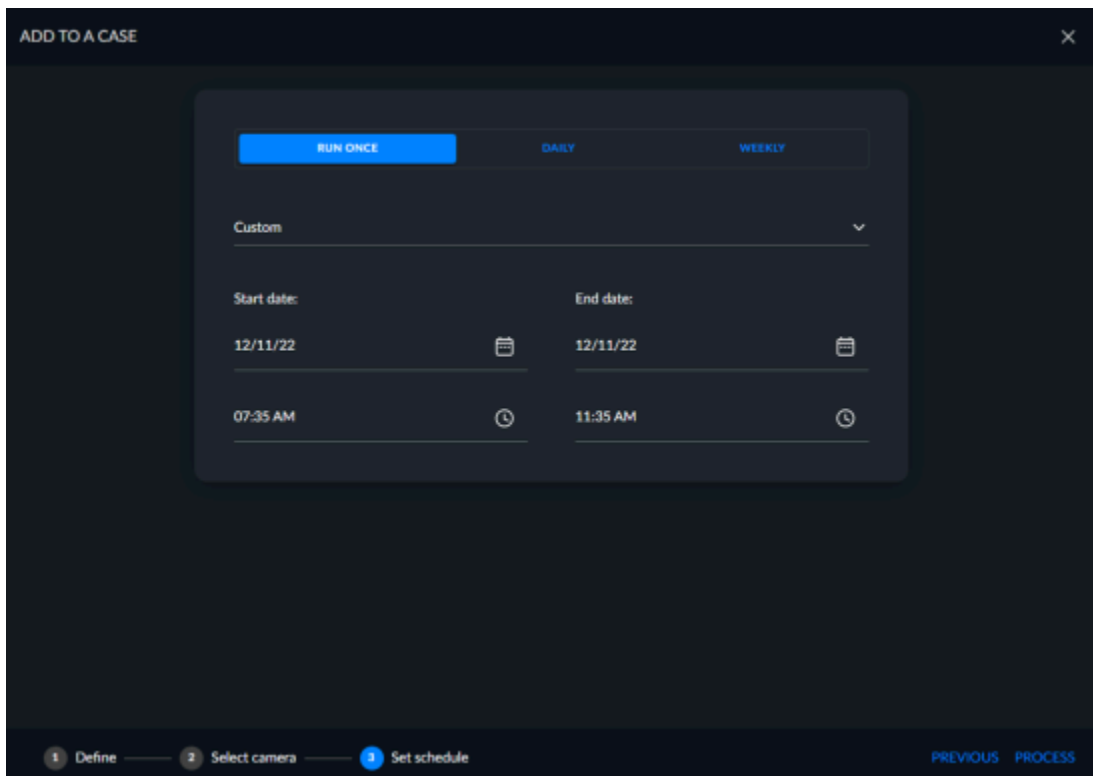
A screenshot of a modal window titled 'ADD TO A CASE' with a close button (X) in the top right corner. The form has a dark background. It contains two text input fields: 'Name *' and 'Description (optional)'. Below these are two toggle switches. The first toggle is labeled 'Set up incident time' and is currently turned off. The second toggle is labeled 'Add to an existing case' and is also currently turned off. At the bottom, there is a progress bar with three steps: '1 Define' (active), '2 Select camera', and '3 Set schedule'. A 'NEXT' button is located at the bottom right of the modal.

4. Select the cameras to add to the case. By default, the camera(s) that consisted of the object that caused the RESPOND alert are selected.
5. Click **NEXT**.



6. In the next screen, select the time range from the original clip that you want to be added to the case. The default is two hours before the event until two hours after the event.
7. Click **PROCESS** and the video file with the alert will be added to a REVIEW case.

If the video was already processed, no processing will need to take place.



Sending Alerts to Other Systems

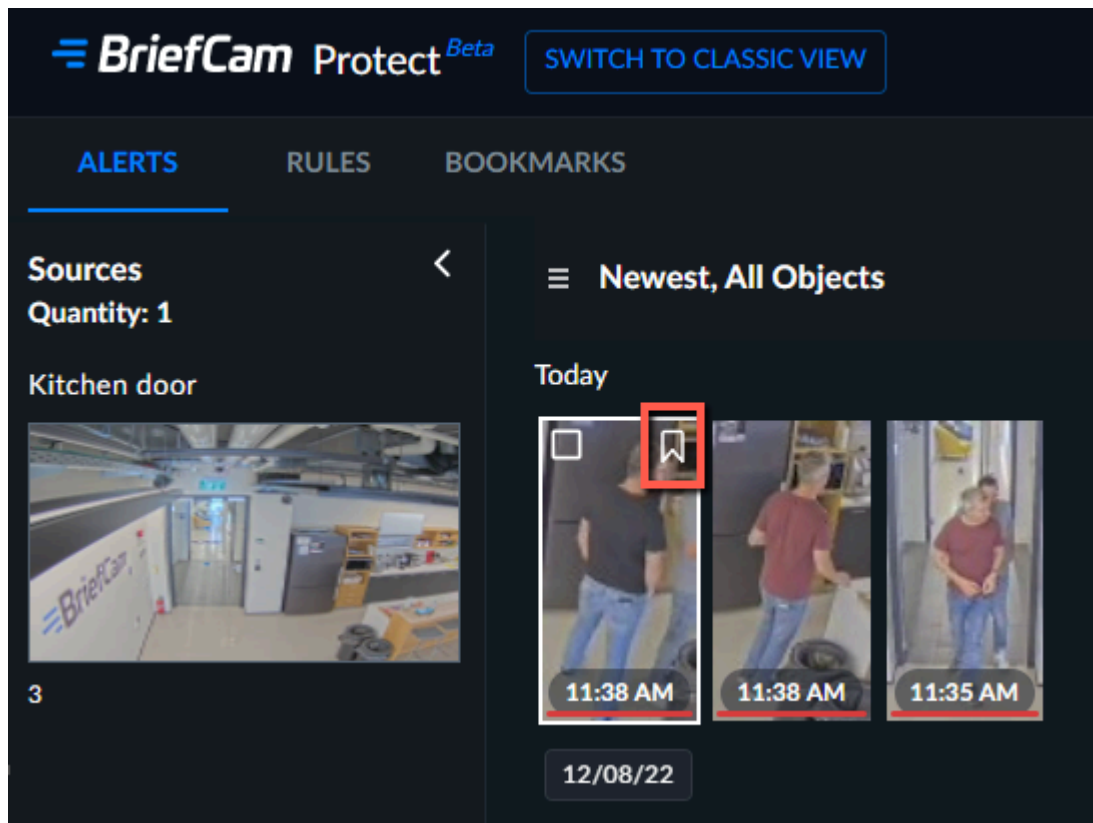
Using BriefCam's Outbound API, developers can send the alerts to other systems, such as PSIM and C&C, or directly to users via mobile push notifications, SMS or others. For more information, see the **Respond Alerts Outbound API** section of the **BriefCam Developer Tools** document. This document is available at: <https://www.briefcam.com/lp/request-briefcams-developer-tools-documentation/>.

Alerts can also be sent to Axis ACS, Digifort Enterprise, Genetec Security Center's Alarm monitoring tab, Milestone XProtect's Alarm Manager, IndigoVision's Control Center, Qognify's (formerly OnSSI) Ocularis user interface and Verint's EVMS. There are additional integrations created by vendors. For more information, see the [BriefCam Installation Guide](#).

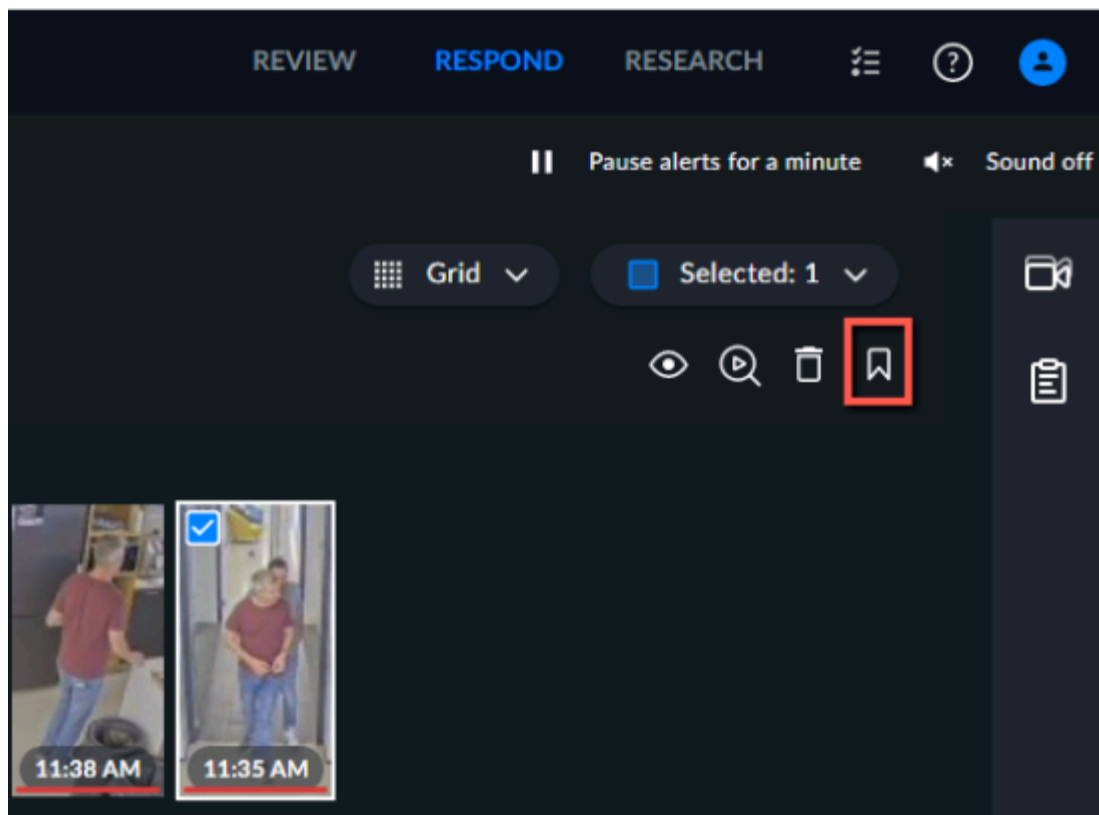
The BOOKMARKS Tab

You can add a bookmark by one of the following methods:

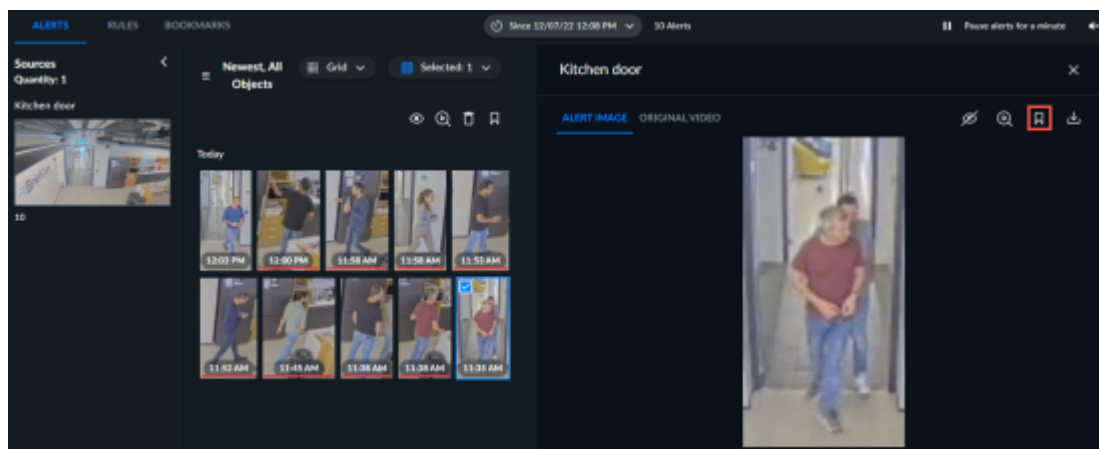
1. Hovering over the thumbnail and clicking the bookmark icon.



2. Selecting the alert and clicking the bookmark icon.

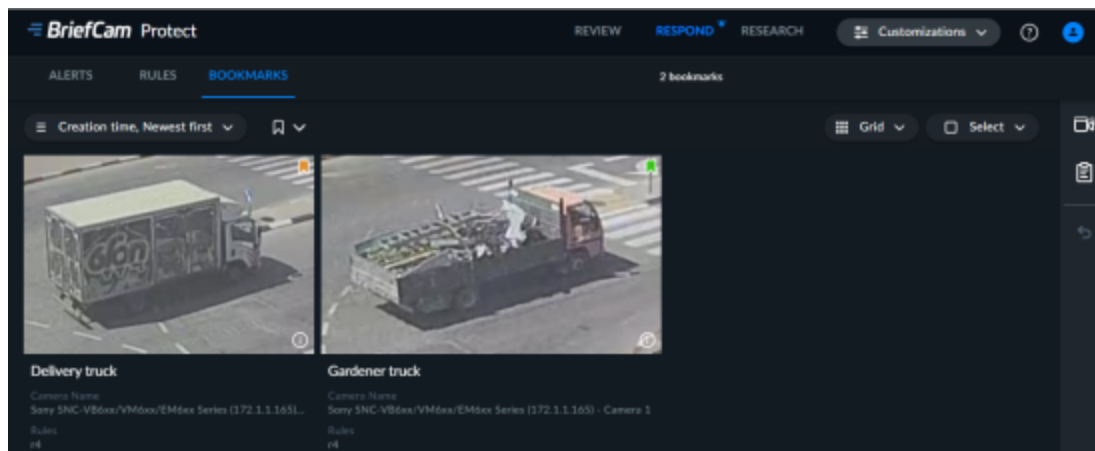


3. Playing an alert and clicking the bookmark icon.



Once you add a bookmark, you can click again on the bookmark icon and select a color for the bookmark.

Any alert that you bookmarked will appear in the **BOOKMARKS** tab.



You can filter the alerts by sources or rules using the options in the right-hand pane.

Hovering over any bookmark will reveal a white checkbox for selecting the bookmark.

You can delete or edit bookmarks by selecting one or more bookmarks for deletion and clicking the delete or edit icon (



) in the top right-hand corner of the Report tab.

The RESEARCH Solution



The **RESEARCH** tab is only enabled for users belonging to the **Research-Editors** group (typically limited to one member) or Research-Viewers group (typically limited to four members). The system administrator can add users to groups. If you need access to RESEARCH, but receive a message indicating that RESEARCH cannot be used, contact your local BriefCam administrator to request membership.

BriefCam's RESEARCH solution enables you to leverage quantitative video analysis to make informed, data-driven decisions. The module features the following four tabs:

- **DASHBOARDS** – This tab features an embedded BI (business intelligence) platform based on aggregate video metadata. The tab allows you to visualize a range of analytics, such as key performance indicators, and perform trend analysis.
- **SOURCES** – This tab allows you to schedule daily or one-time generation of dashboards for any VMS video source and to define custom dimensions enabling detailed analysis of KPIs.
- **SOURCE GROUPS** – This tab lets you create groups of sources to be used for face matching and other grouping needs within the dashboards, such as grouping all the cameras on the 1st floor.
- **EXTERNAL DATA** – This tab lets you add data files consisting of data from non-video sources that are generated outside of the BriefCam platform.

The RESEARCH sources and source groups are configured on the site systems. Keep in mind that the data coming in from the sites may be coming in at different rates. The rates are defined separately when each site is configured.



RESEARCH dashboards do not open when using localhost or an IP in the Web client URL with some versions of the Chrome browser. To solve this issue, use the hostname or use the Firefox browser. To solve this issue, use the hostname, use the Firefox browser or see the [RESEARCH Troubleshooting](#) section and the [Supported Browsers](#) section.

See also:

[Creating Your Own Analytics](#)

[Tracking People Across Cameras Based on Face Recognition](#)

[Sample Workflows](#)

[Sharing Sheets](#)

[Reusing Existing Sheets](#)

[Synchronization of Sources and Dashboards](#)

[Differences Between REVIEW and RESEARCH Data](#)

[External Data](#)

Sources

In the **SOURCES** tab, you define all of the video and data sources that you want to use in your dashboard.

You can schedule daily, one-time or continuous dashboard generation for any VMS video source, as well as the ability to define custom dimensions that enable advanced, detailed analysis of KPIs. In order to utilize custom dimensions, the dimensions need to be set before starting to process the video.

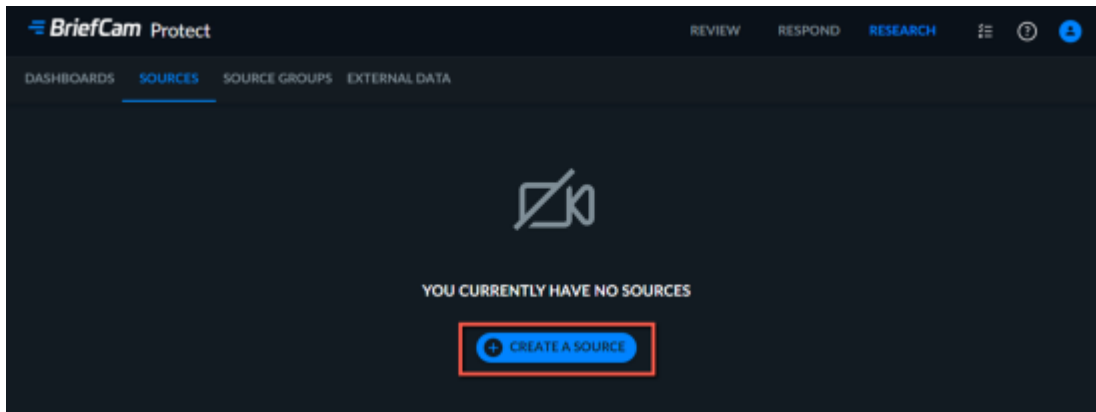


Data for the RESEARCH source begins to be gathered when the source is created. If you previously created a case in the REVIEW module using the same camera, the data gathered from the case before the creation of the RESEARCH source will not be available in the RESEARCH module.

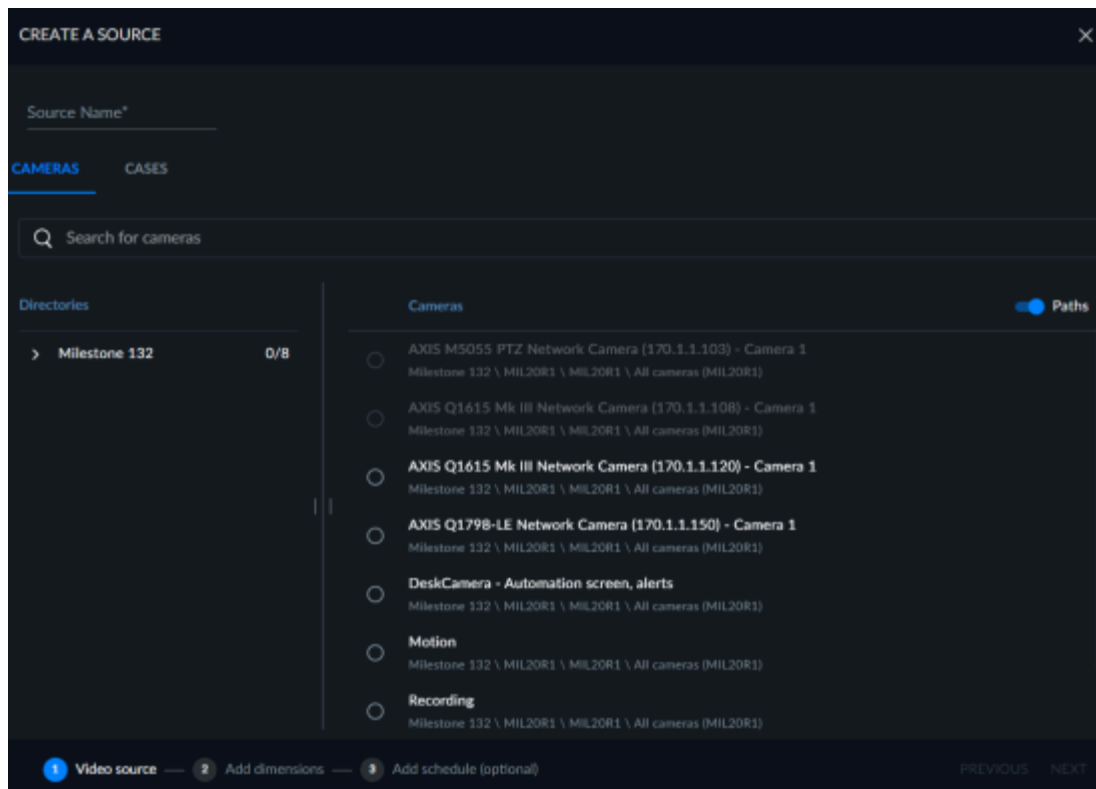
Creating/Editing a Source

To create or edit a source:

1. Click the **CREATE A SOURCE** button.



2. Name the source. The source name must be unique.



3. Select the video source, either **Cameras** or **Cases**.

If you select **Cameras**, you can configure a source for a single camera (that is not already associated with another source). If the camera is already added to another source, it will be greyed out.

If you select **Cases**, you can configure a source using a video file from a REVIEW case, including cases shared with you. Note that this functionality is not available for Camera sources. Therefore, if you are unable to select a case, this is because there are no uploaded files associated with the case or the uploaded files were not successfully processed.

For sources created from a REVIEW case:

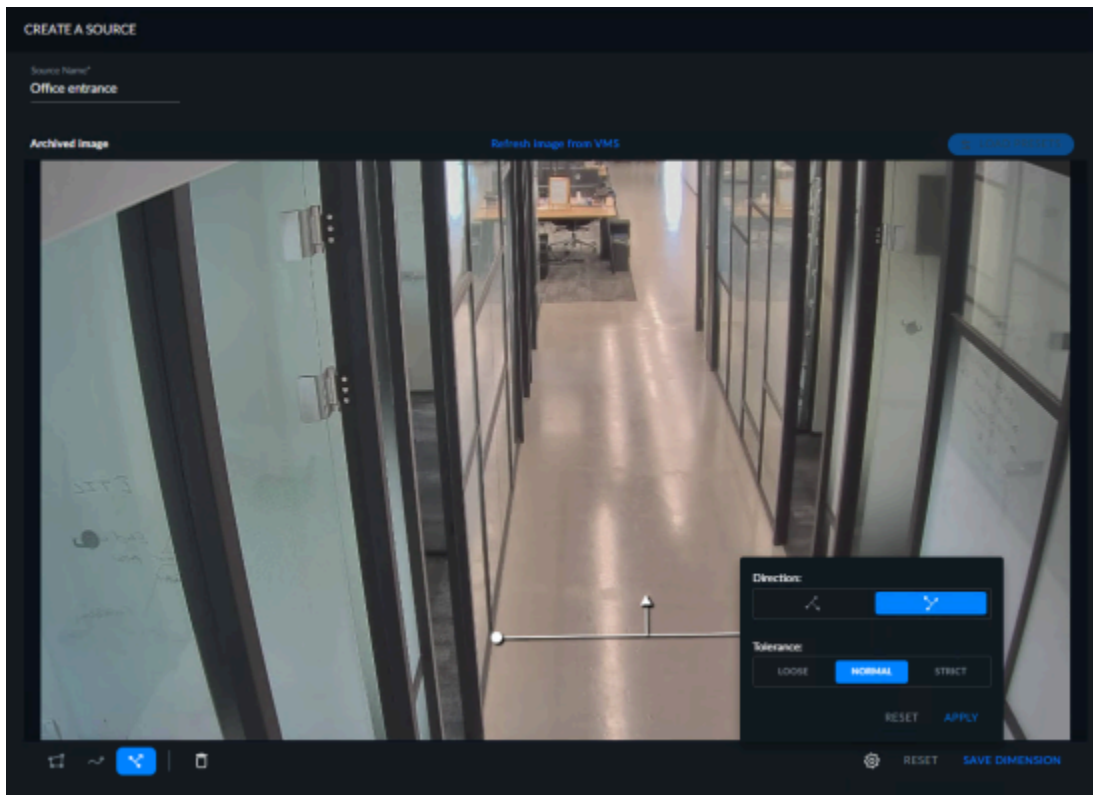
- The file can only be configured once as a RESEARCH source.
 - Scheduling is not enabled for this type of source since the data was already processed in the REVIEW solution.
 - Videos with up to 100,000 objects are supported. Videos with more than 100,000 objects are also supported. However, it may consume a lot of hardware resources and may take additional time to add the objects to the dashboards. When uploading 100,000 objects or more, it is recommended to first consult with your administrator to make sure that the required hardware resources are available.
 - If the video was deleted from the case, this source including its data will still appear in the RESEARCH solution.
4. In the next screen you can click **NEXT** or you can first set custom dimensions. You can use a preset that was defined in the REVIEW module (for more information, see the Using REVIEW Presets section) or choose from the following dimension types:
- **Area** – count the number of objects entering one or more user-defined areas. Areas can be set as three-sided (triangular) or four-sided (square) polygonal areas. Click the inclusion/exclusion button to choose whether to count the objects included in the area or excluded from the area.
 - **Path** – count the number of objects traveling along one or more user-defined paths.
 - **Line Crossing** – count the number of objects crossing over the line in a pre-defined direction.



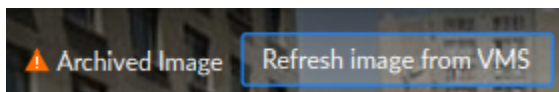
You can set the **Duration** in Path or **Duration** in Area by clicking the gear icon and setting the minimum duration time. For example, by setting the **Duration** to 10 seconds, you will be able to count the number of objects whose duration within the path is at least 10 seconds.

Coverage tolerance settings (Low, Medium and High) can also be applied to Area, Path or Line Crossing settings (default is Medium). A high coverage tolerance level will result in the inclusion only of objects closely adhering to the drawn Path, Area or

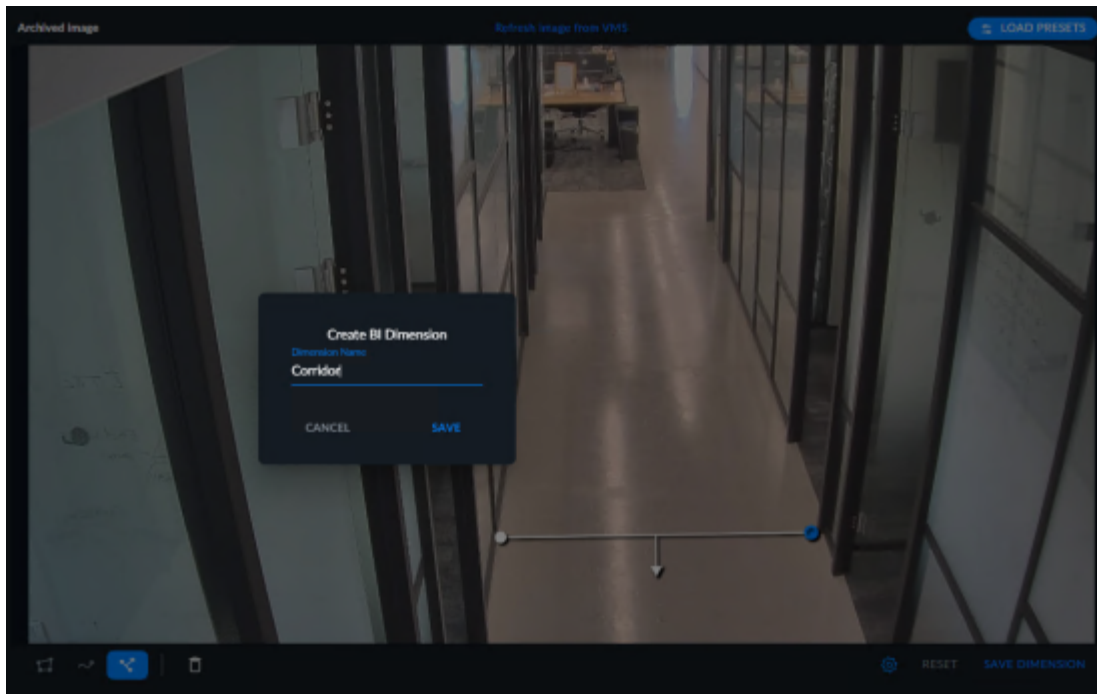
Line Crossing, whereas a Low coverage tolerance setting will result in the inclusion of additional objects that only loosely follow the defined **Path**, **Area** or **Line Crossing**.



Notice that the image that is displayed is an archived image (as shown in the top left corner of the image). The archive image is displayed because getting a fresh image from the camera might take some time due to the VMS. The background image is saved by default every five minutes while processing the stream – the latest background image is used temporarily when setting up a rule/dimension. When there is a newer image available, you can click on the **Refresh image from VMS** button also in the top left corner.

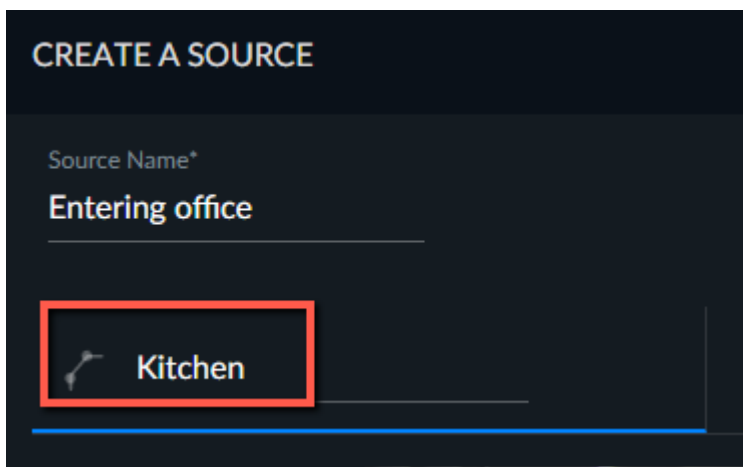


5. Click **APPLY**.
6. Click **SAVE DIMENSION** and name the custom dimension (the name must be unique to the source).



7. Click **SAVE**.

Once named, the custom dimension will appear in the left-hand corner.



8. You can now add a schedule by clicking the **ADD SCHEDULE** button or you can skip this step by clicking the **CREATE** button.
9. If you are adding a schedule, select the schedule type (**Continuous**, **Run Once**, **Daily** or **Weekly**) and click **SAVE**.

Continuous scheduling is used to schedule RESEARCH sources to run in real-time mode, which is useful for up-to-date dashboards.

To use the Continuous mode, you must have the RESPOND solution (including a dedicated GPU).



When continuous scheduled sources fail, recovery will be attempted after 6 minutes and then for an exponentially increasing amount of time between failures, up until 60 minutes, and then every 60 minutes.

To stop the source from retrying, disable the scheduled source.

When creating a Continuous schedule fails due to the license check (status is "disabled"), to enable the

schedule, you will need to delete the Continuous schedule and recreate it.

For **Run Once** and **Daily** schedules, you also can set when the scheduled task will run by entering a date and time in the **Run on** fields.

- Click the **CREATE** button.

You can create multiple dimensions for the same source.

For sources created from REVIEW cases, if you want to add, edit or remove a custom dimension, you need to reload the video from within the REVIEW solution.

If you delete a custom dimension, the data collected regarding the custom dimension will be saved in database but will no longer be displayed in the dashboards.



Research Editors can view and edit the sources created by other users and themselves. They can also create, edit and publish dashboards.

Research Viewers can edit sources that they created, and view the sources created by other users, including the areas and paths created. They can view and filter published dashboards and create stories.

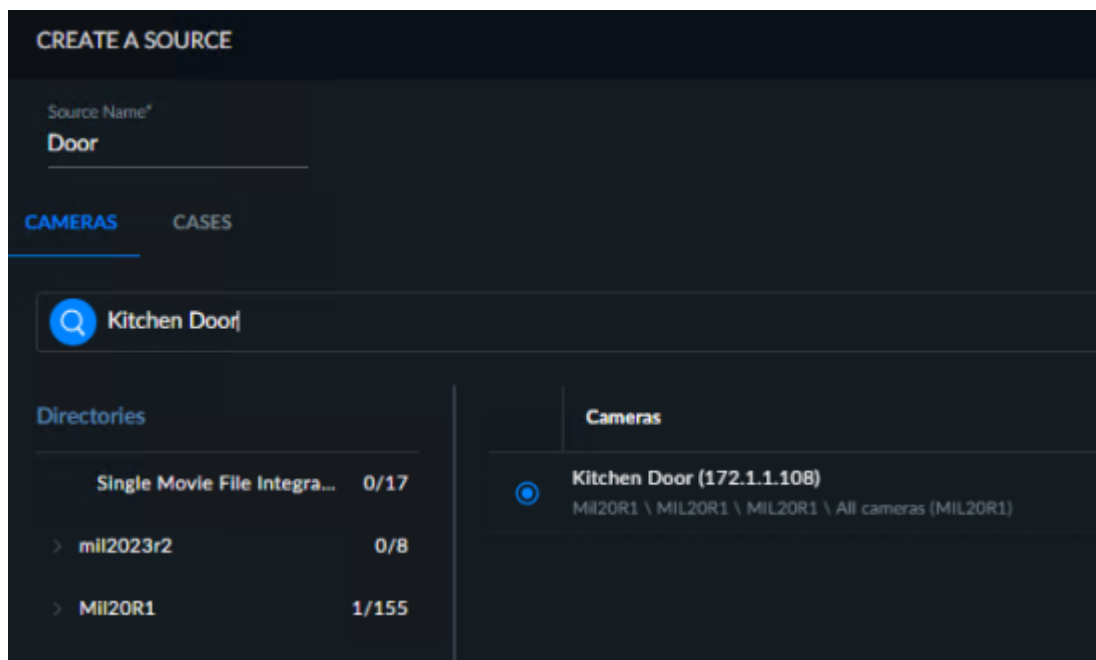
Both Research Viewers and Research Editors are defined by the administrator.

Note that you can right-click to access action icons including copying the text in the table.

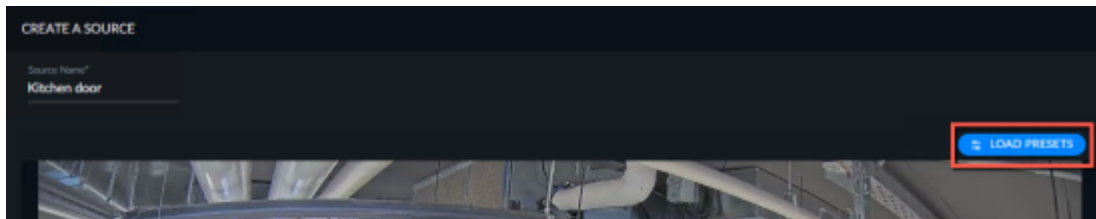
Using REVIEW Presets

If you created a preset in the REVIEW module that included Scene filters (**Area**, **Path**, or **Line Crossing**), you can use it when creating a RESEARCH custom dimension.

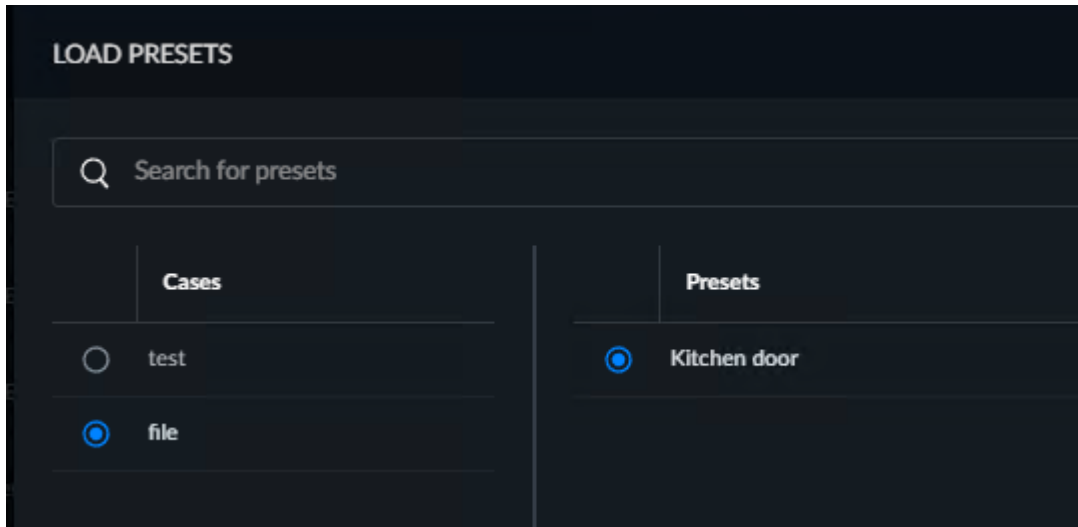
- Create a source and select the same camera used in the REVIEW module.



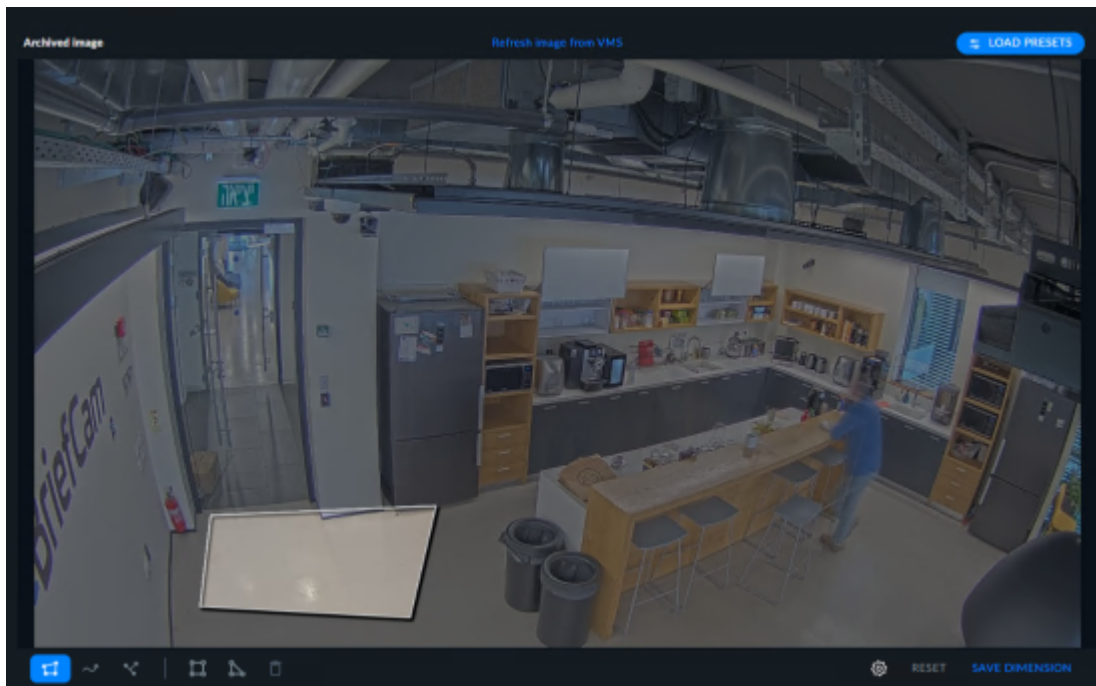
- Click the **LOAD PRESETS** button.



3. Select the case that includes the preset and then select the preset.



4. Click **APPLY** and then **CONFIRM**.
5. The screen will appear with the Scene filters created in the REVIEW module. Click **SAVE DIMENSION**.

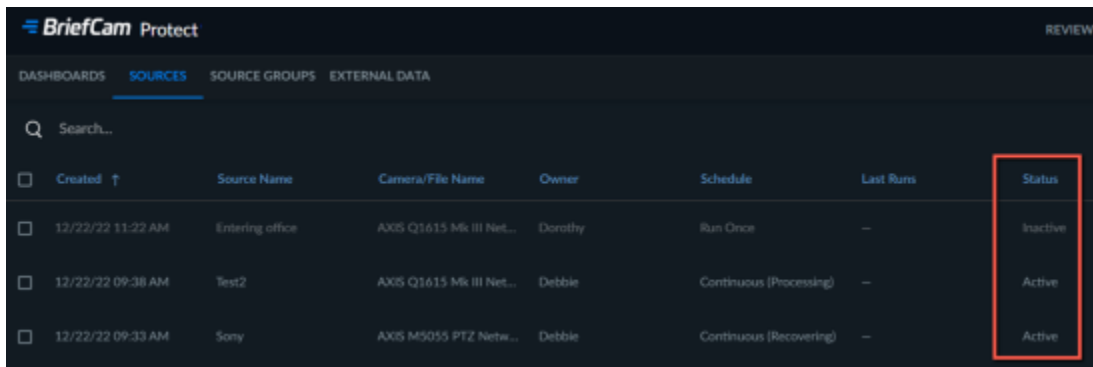


6. Give the dimension a name and click **SAVE**.
7. Click **NEXT** and add a schedule as described in the section above.



Status

In the **SOURCES** tab, the scheduling status of each source is indicated as one of the following:

- **Active** – Activated by the user (or scheduler) and running with no error. For Continuous schedules that are Active, additional information will be displayed in parenthesis: **Processing**, **Queued**, or **Recovering**.
- **Inactive** – Disabled by the user or scheduler.



Created	Source Name	Camera/File Name	Owner	Schedule	Last Runs	Status
12/22/22 11:22 AM	Entering office	AXIS Q1615 Mk III Net...	Dorothy	Run Once	—	Inactive
12/22/22 09:38 AM	Test2	AXIS Q1615 Mk III Net...	Debbie	Continuous (Processing)	—	Active
12/22/22 09:33 AM	Sony	AXIS M5055 PTZ Netw...	Debbie	Continuous (Recovering)	—	Active

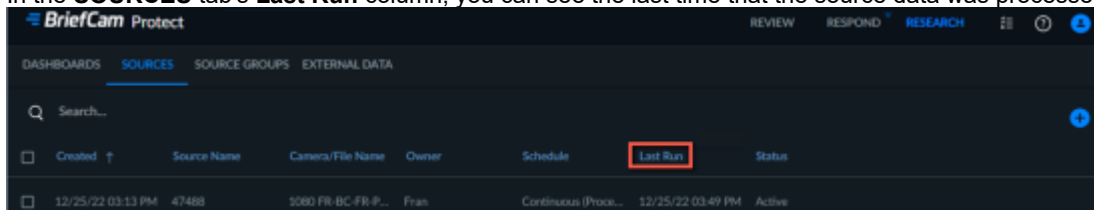
You can change the status of a source by hovering over the source and clicking the Disable  or Enable  buttons.

If RESEARCH source is disabled, all of its scheduling tasks area also disabled.

Last Run of Source

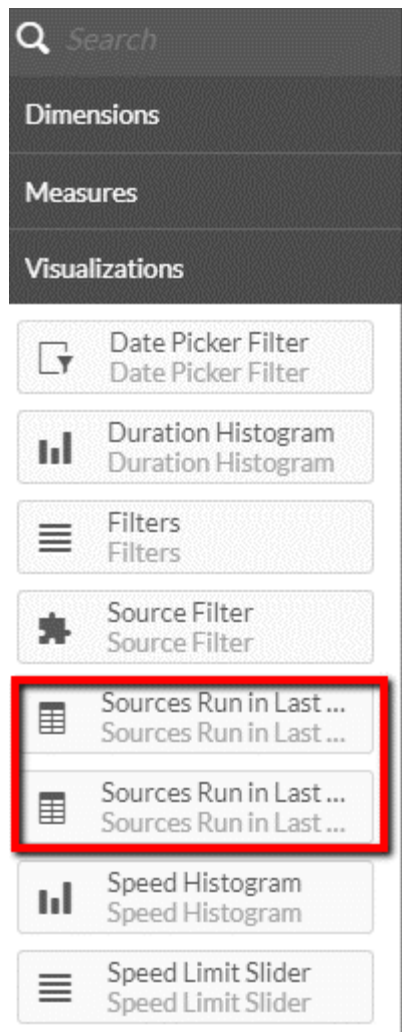
There are two places for you to get information about when sources run within the RESEARCH platform.

1. In the **SOURCES** tab's **Last Run** column, you can see the last time that the source data was processed.



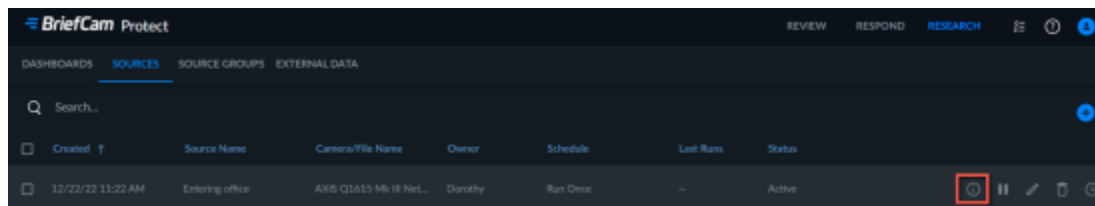
Created	Source Name	Camera/File Name	Owner	Schedule	Last Run	Status
12/25/22 03:13 PM	47488	5080 FR-BC-FR-P...	Fran	Continuous (Proce...	12/25/22 03:49 PM	Active

2. Within Dashboards, you can add from the **Master item's Visualizations** section the **Source Run in Last 30 Days** or **Source Run in Last 30 Days (by hour)** tables to monitor the number of objects loaded to the BI platform per source and date.



Source Information

You can get information about the loading data to the RESEARCH platform by clicking on the information icon.



The table that appears lists all the groups related to the source and includes information from the last 30 days about the number of objects processed for the source vs. the number of objects that are ready to be uploaded to the dashboards in the RESEARCH module. The table can be grouped by date or hour and each column can be sorted. Searching is also available.

NEW KITCHEN
Source id: 43

Part Of The Following Source Groups:

Kitchen cameras

Group By: ☒ Date ☐ Hours

Q Search...

Date ↑	Number Of Objects Processed	Number Of Objects Ready For Dashboards
12/27/22	160	160
12/26/22	1042	1042

Source Groups

The **Source Groups** tab lets you create groups of sources to be used for face matching and other grouping needs within the dashboards, such as grouping all the cameras on the 1st floor or all ATM cameras.

BriefCam Protect

REVIEW RESPOND RESEARCH

DASHBOARDS SOURCES **SOURCE GROUPS** EXTERNAL DATA

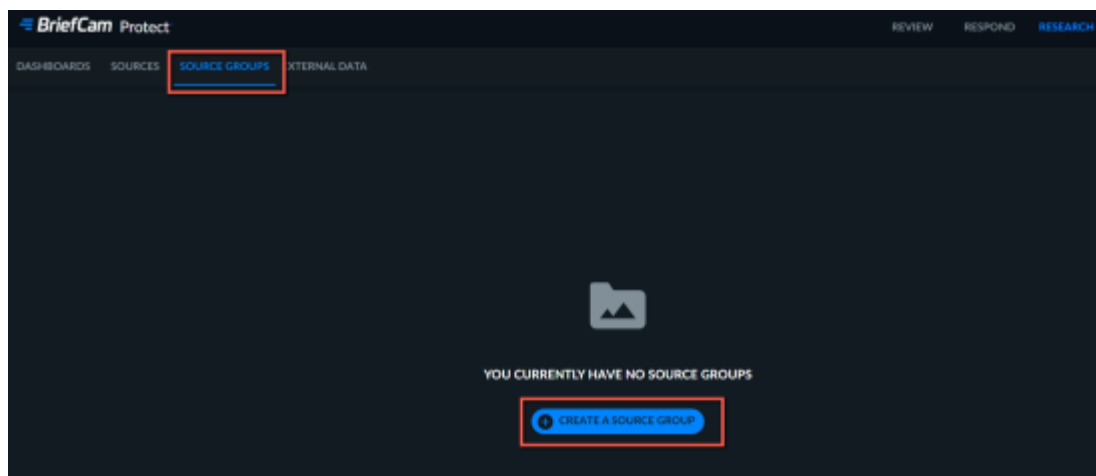
Q Search...

Group Name	Sources	Description	Created ↑
Office elevators	1		12/22/22 11:51 AM
Kitchen entrance	1		12/22/22 11:47 AM

Creating/Editing a Source Group

To create or edit a source group:

1. From the **SOURCE GROUPS** tab, click the **CREATE A SOURCE GROUP** button.



2. Name the source and click **NEXT**. The source name must be unique.

The screenshot shows a 'CREATE A SOURCE GROUP' modal window. It has a dark background with white text. At the top left is the title 'CREATE A SOURCE GROUP' and a close button 'X'. Below the title are two input fields: 'Name *' and 'Description (optional)'. At the bottom, there is a progress bar with three steps: '1 Create a Title' (active), '2 Source Selection', and '3 Face Matching'. To the right of the progress bar is a 'NEXT' button.

3. Select the sources (either camera or file) to add to the group and click **NEXT**. Note that the same camera can be linked to more than one group.

4. Select whether to enable face matching for the group. Note that enabling face matching is available for groups with no more than 50 sources.

The Face Recognition feature can be disabled by the administrator.

5. If you check the **Enable Face Matching for this group** checkbox, set the number of days to compare the faces. It is recommended to set this value to 3 days or less for each group. Increasing the number of days increases the amount of resources needed and decreases the accuracy. Note that the allowed number must be lower or equal to the RESEARCH maintenance settings set by your administrator.

The Enable Face Matching works for sources that are cameras (not files), when the scheduling of the cameras is **Continuous**, **Daily**, or **Weekly** (not **One Time**).

6. In this screen, select relevant watchlists to correlate the faces to (if needed), such as Employees. Setting whether to search for people included or excluded in the watchlists will be done within the dashboards. This screen displays the watchlists that you have permissions to use.
7. Click **SAVE**.

CREATE A SOURCE GROUP ✕

☒ Enable Face Matching for this group

Compare to faces in the last days

Correlate to watchlists

☐ Watchlist

☐ Multiple Identities

☐ w1

1 Create a Title — 2 Source Selection — 3 Face Matching

[PREVIOUS](#) [SAVE](#)



If you add a RESEARCH source (from a camera) to a source group, the face matching will only start from the time that the source was added to the group.

If you add a RESEARCH source from a case to a source group, the face matching will start from the time that the source was added to the REVIEW module.


Note that you can right-click to access action icons including copying the text in the table.



If you select to enable face matching, in the **SOURCE GROUPS** tab, the face icon () will be displayed next to the group name.

BriefCam Protect REVIEW RESPOND RESEARCH

DASHBOARDS SOURCES SOURCE GROUPS EXTERNAL DATA

<input type="checkbox"/> Group Name	Sources	Description	Created ↑
<input type="checkbox"/> Office elevators	1		12/22/22 11:51 AM
<input type="checkbox"/> Kitchen entrance 	1		12/22/22 11:47 AM

Source Group Permissions

User belonging to the **Research-Editors** group can view and edit Source Groups (created by other users and themselves).

User belonging to the **Research Viewers** group can edit the Source Groups for groups that they created and view the Source Group for groups created by other users.

The system administrator can add users to groups.

Dashboards



When using a multi-site deployment (comprised of multiple site systems and a central Hub), dashboards are not available in Site deployments.

Only users belonging to the **Research-Editors** or **Research-Viewers** groups are allowed to access the RESEARCH solution's **DASHBOARDS** tab. The administrator can [add users to groups](#).



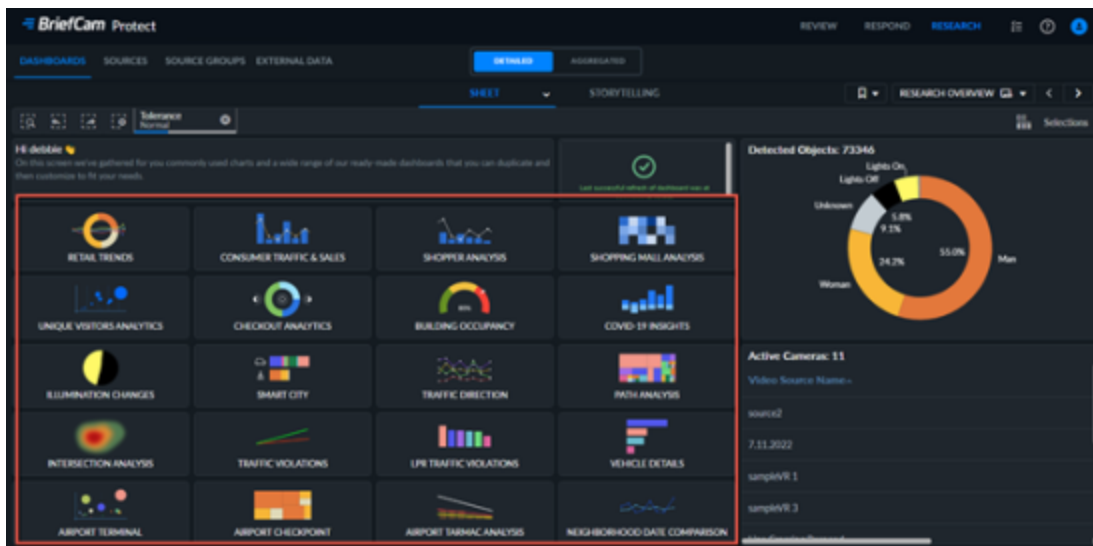
RESEARCH Overview Screen

Base dashboards are a library of dashboards available out-of-the-box with the RESEARCH solution for quick and easy onboarding.

When you click the RESEARCH tab, you'll see the **RESEARCH Overview** screen. This screen displays:

- All the dashboards available out-of-the-box with the RESEARCH solution for quick and easy onboarding. This is marked in the image below in red.
- A summary of the detected objects in the environment and the active cameras.
- The last time the dashboards were refreshed allowing you to see the last time the RESEARCH task ran successfully.

Research-Editors can edit this screen and add customized dashboards.



For Arabic, Danish, Finnish, Hebrew, Thai and Vietnamese, the translation is partial in RESEARCH dashboards. (The UI is not translated, but internal values are translated.) The translation of RESEARCH dashboards is not available for Bulgarian.

Aggregated and Detailed Dashboards

RESEARCH data is set in two models:

- **Aggregated** (summary) – A summarized hour-level data model that aggregates the data of all the objects that were captured in each hour. This data model can be used for longer retention periods (years).
- **Detailed** – A complete data model that includes all the objects and their details. This data model is designed to support short retention periods (weeks/months).

You will see two options at the top center of the screen where you can toggle between the **AGGREGATED** and **DETAILED** dashboards.



Data about the following is not included in the **Aggregated** mode: **Proximity**, **Face Recognition**, **License Plate Recognition**, **Visual Layers**, and **People Counting**. The only **Tolerance** level for the **Aggregated** mode is **Loose** tolerance. In addition, the **Filters** visualization contains a smaller number of filters than with the **Detailed** dashboards.

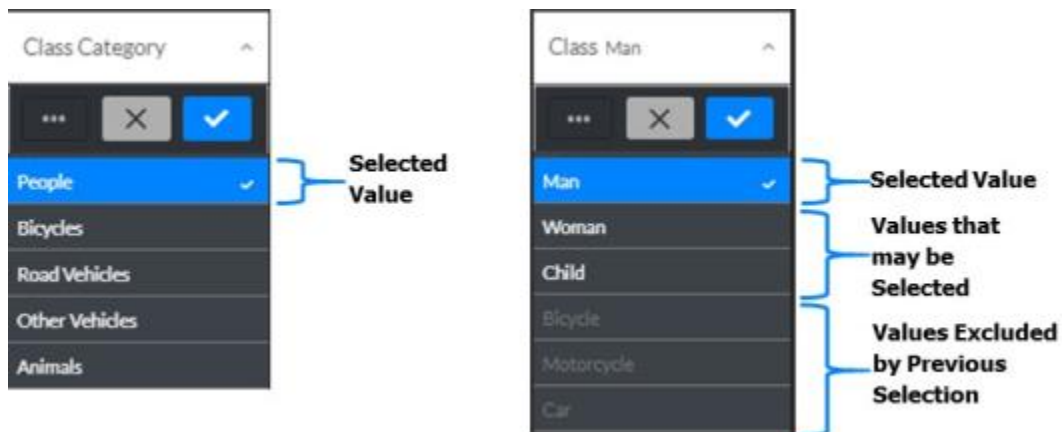
The **Aggregated** mode includes its own out-of-the-box dashboards.



Filters

Filter Selection States

When you make selections, the colors of selection fields and their values change according to whether fields are selected or excluded and what values can be selected for them. For example, when selecting **People** in the **Class Category** filter, the values shown below will appear in the **Class** filter.



Filter Expression Search

You can use expressions to perform searches and make selections in filter panes and selectable items. Search expressions are evaluated for each field value in the search field (see example below).





Search for Dwell (Sec)
higher than 5 and
lower than 10



Search for class with
"tr"

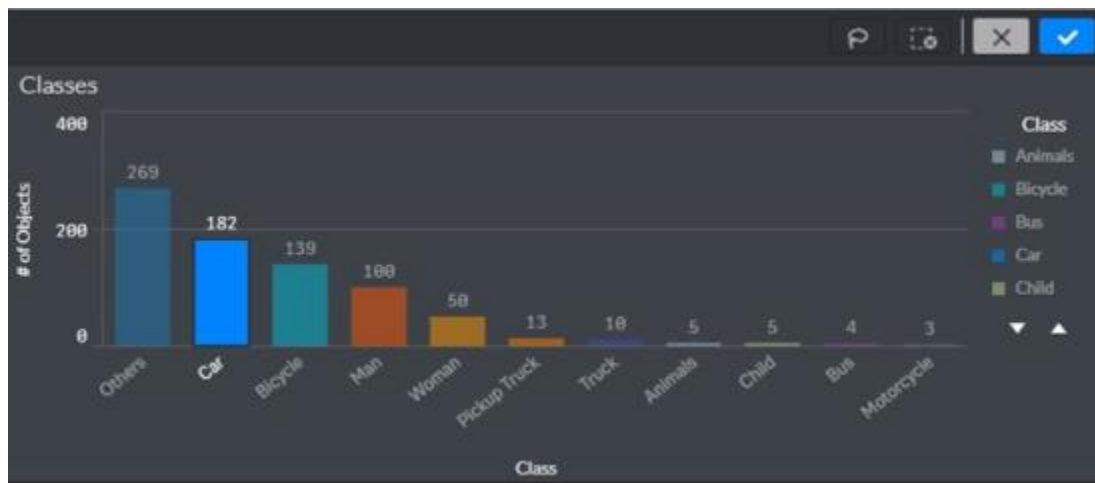
Chart Filters



There are different ways to select filters in charts. To confirm a selection, click  outside the visualization or press **Enter**; to cancel a selection, click  or press **Esc**.

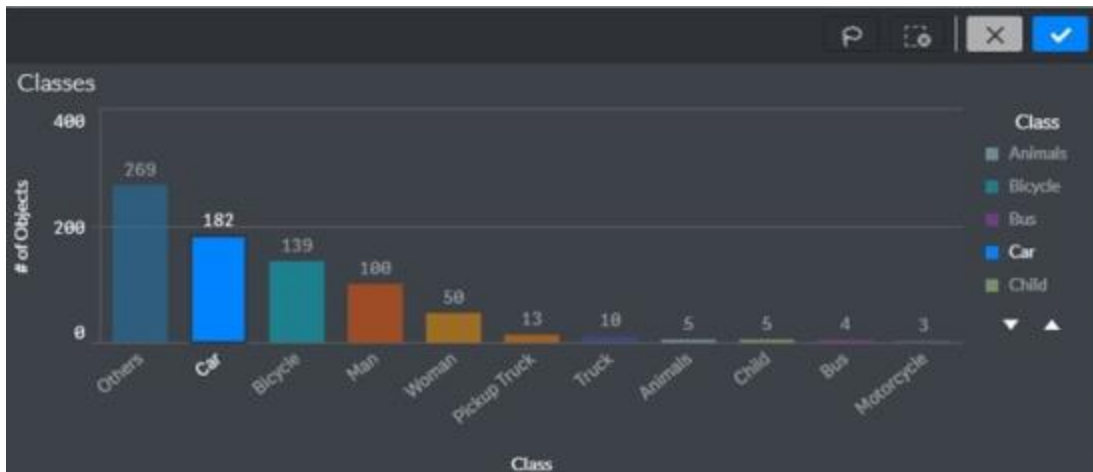
Click Selection

You can select or deselect bars by clicking them one at a time.



Legend Selection

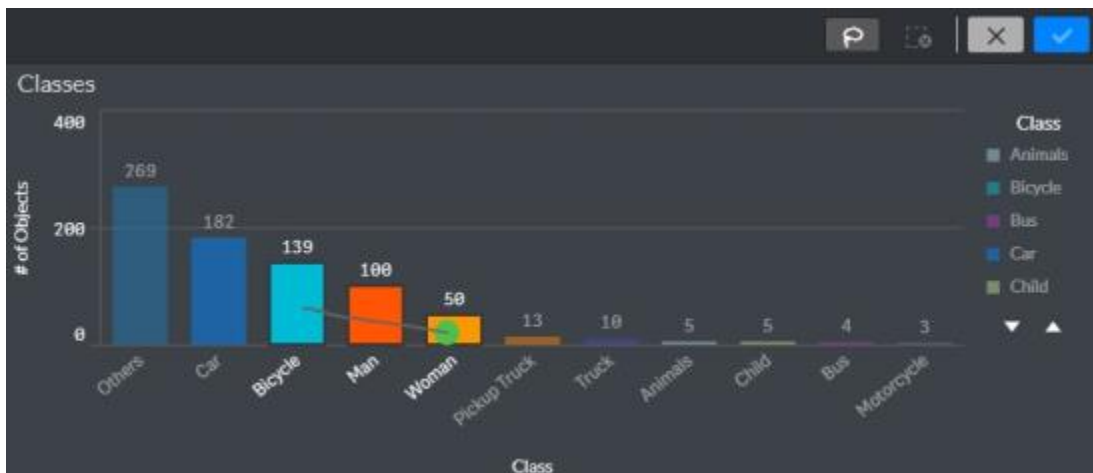
You can also select and deselect legend items one at a time by clicking them.



Draw Selections

You can alternatively select bars by drawing one or more lines in the chart as follows:

1. Click inside the visualization.
2. Click the lasso selection tool.
3. Draw a freehand line to select several values/data points at a time.



Range Selection

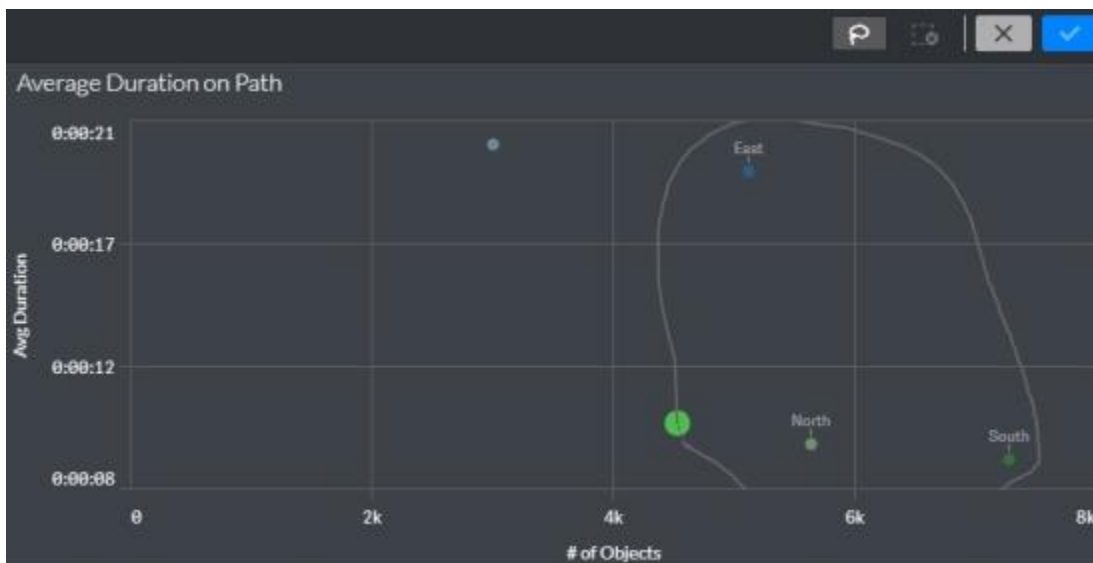
Make selections on either the x or y axis as follows:

1. Click inside the visualization.
2. Draw your selections on the desired axis.




Lasso Selection

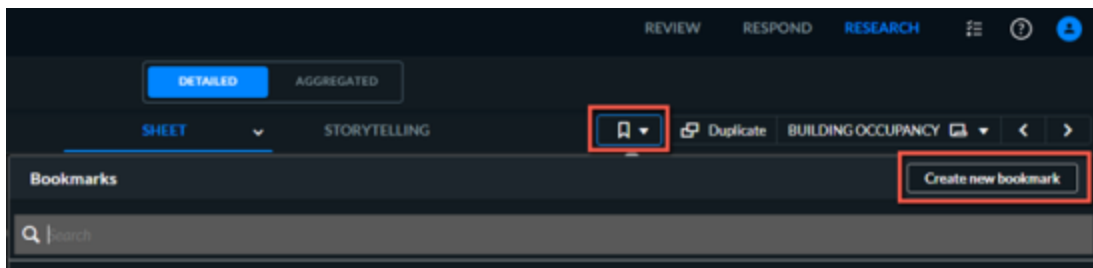
1. Click inside the visualization.
2. Click the lasso selection tool.
3. Draw a freehand circle to capture and select data points. Be sure to close off the selected area by returning to the selection starting point in your freehand drawing.



Bookmarks

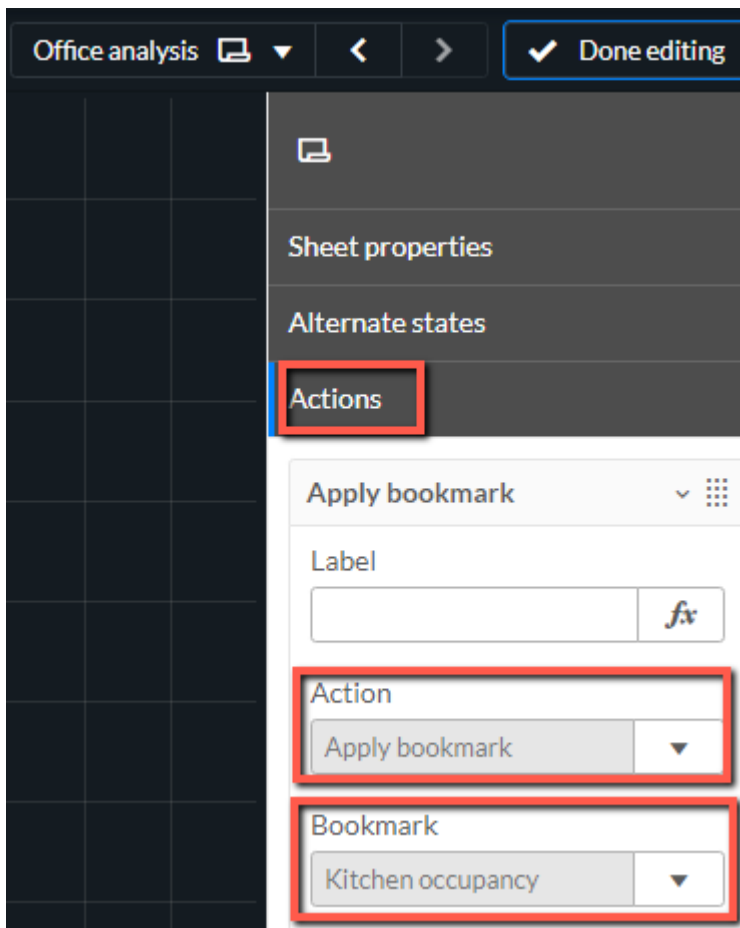
You can add bookmarks to save your selections within the sheet. A bookmark can later restore your filters and dashboard

selection. To create or restore a bookmark, click  and then click the **Create new bookmark** button.



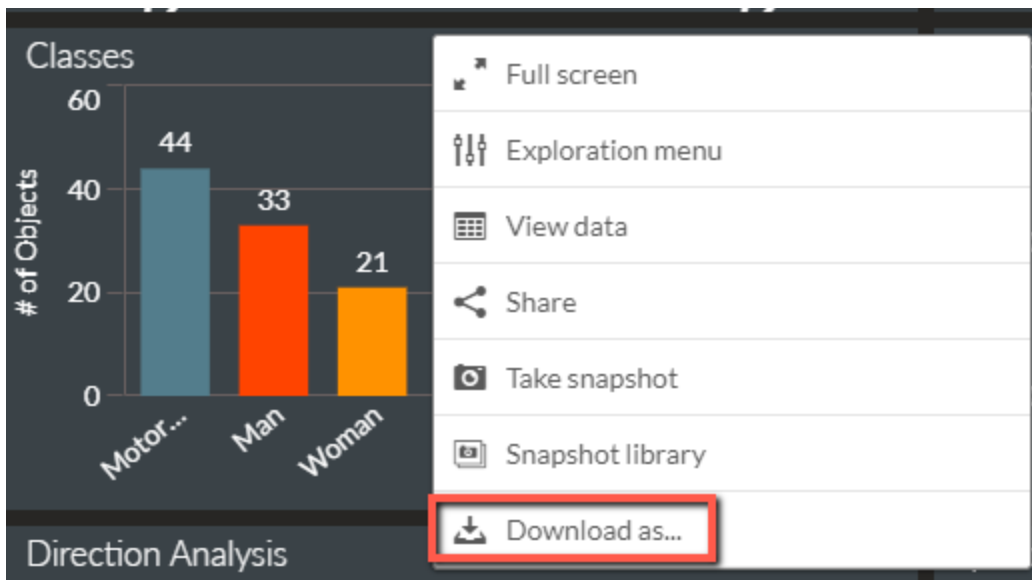
You can set a bookmark to be activated automatically when you open the dashboard as follows:

1. From the dashboard, click the **Edit sheet** button.
2. Open the **Sheet Properties**.
3. Select the **Actions** tab.
4. Click the **Add action** button.
5. From the **Action** drop-down list, select **Apply bookmark**.
6. From the **Bookmark** field, select the bookmark that you want to use when opening the dashboard.
7. Click the **Done editing** button.

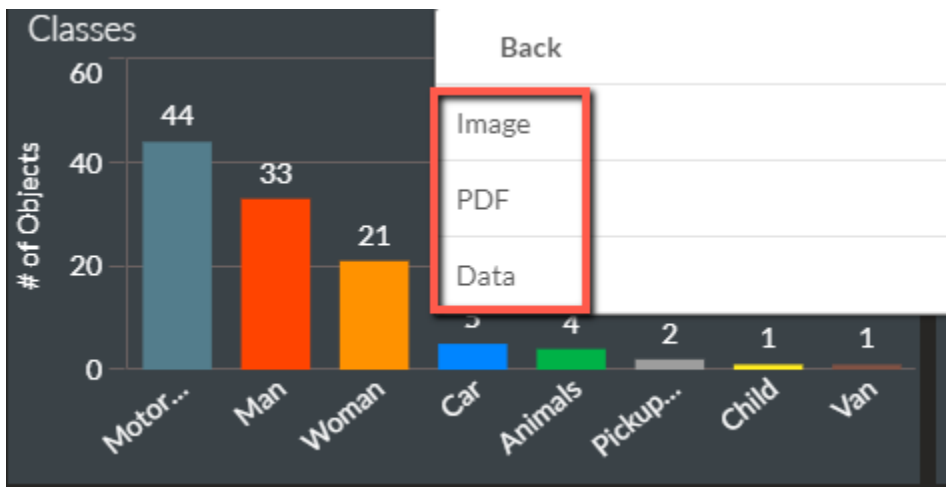


Downloading Charts

To download a chart, right-click on the chart and select **Download as**.

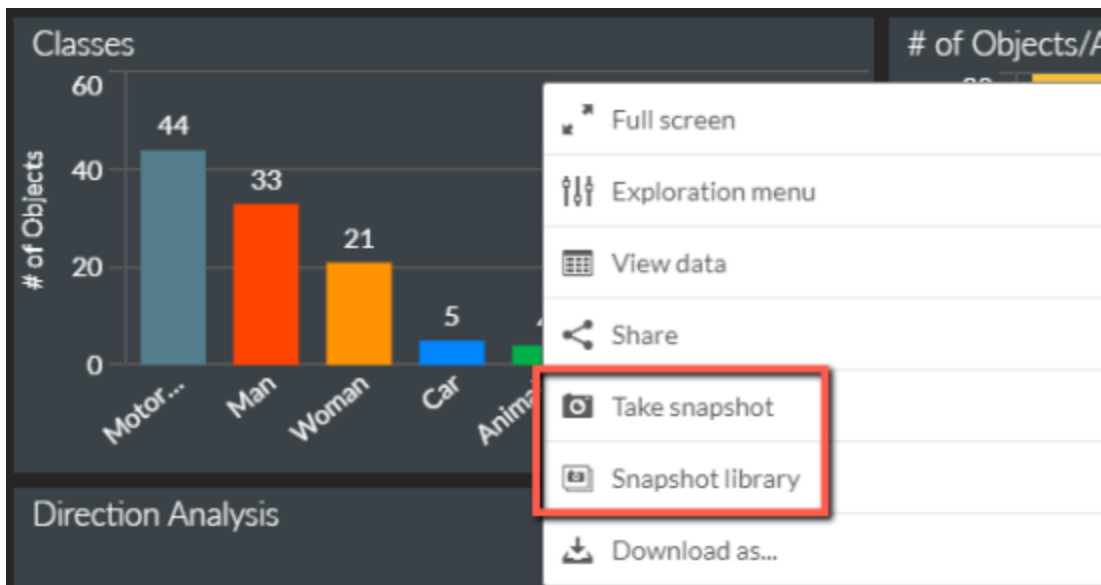


Then select whether to download the chart as an image or PDF or whether to export the data as an .xlsx file (**Data**).



Taking Snapshots

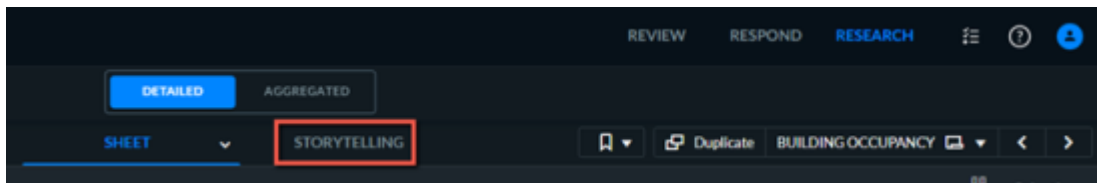
To take a snapshot of the chart, right-click on the chart and take a snapshot by clicking the **Take snapshot** option. You can then click the **Snapshot library** option to view the images that you saved.



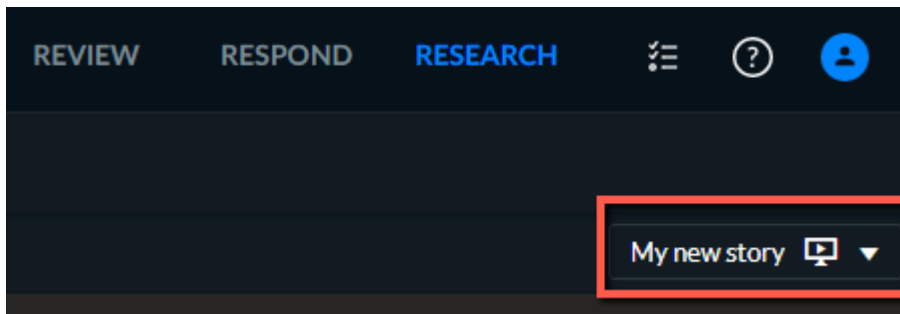
Creating a Story (Presentation)

You can create customized stories (presentations) that include snapshots of your charts and embed sheets for an interactive story.

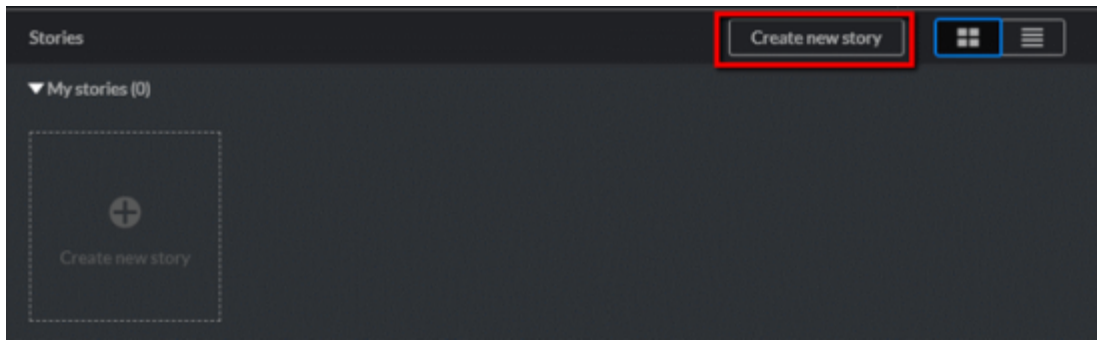
1. From the toolbar, click the **Storytelling** tab.





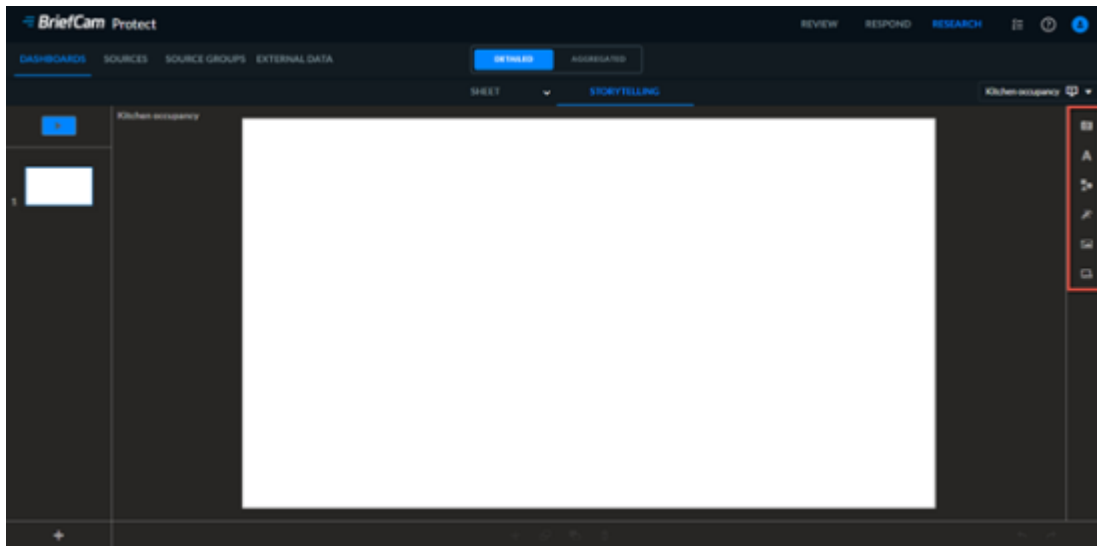
2. Click the story icon.



3. Click the **Create new story** button.



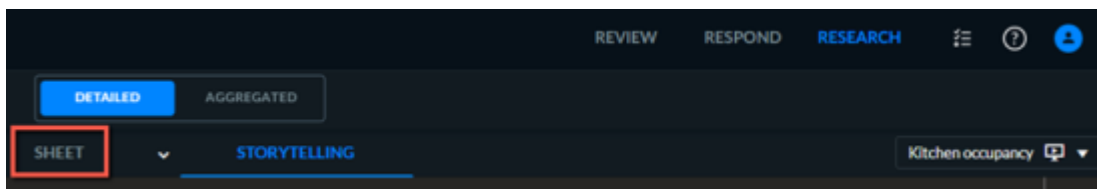
4. In the **Title** field, give your story a name and press **Enter**.
5. Click on your new story.
6. Use the icons on the right-hand of the screen to create your story. For example, click the Snapshot library () icon to add one of your snapshots to the presentation or the Sheet library () icon to add a live data sheet into your story.



7. You can also use the icons at the bottom of the screen.




8. Click the play () button to play the story.
9. To get to the dashboards, click the **Sheet** tab.



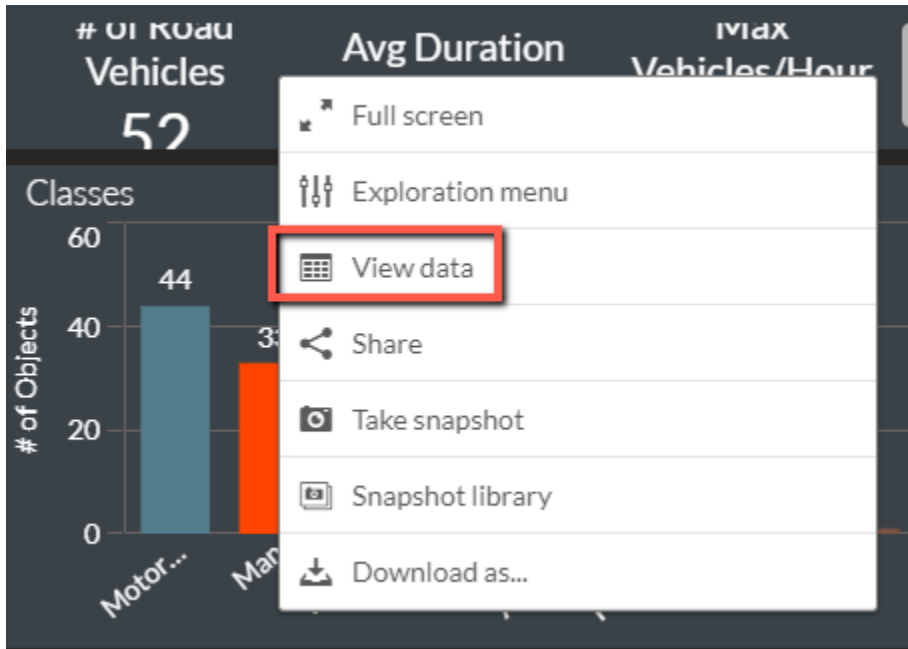
Editing Properties with the Exploration Menu

From any chart, right-click and select the **Exploration menu** option to zoom into the chart and make changes to the properties without having to go into Edit mode.

To close the menu, click the  icon.

Viewing a Chart's Data

You can quickly view any chart's data in a table format by right-clicking on the chart and selecting the **View data** option.



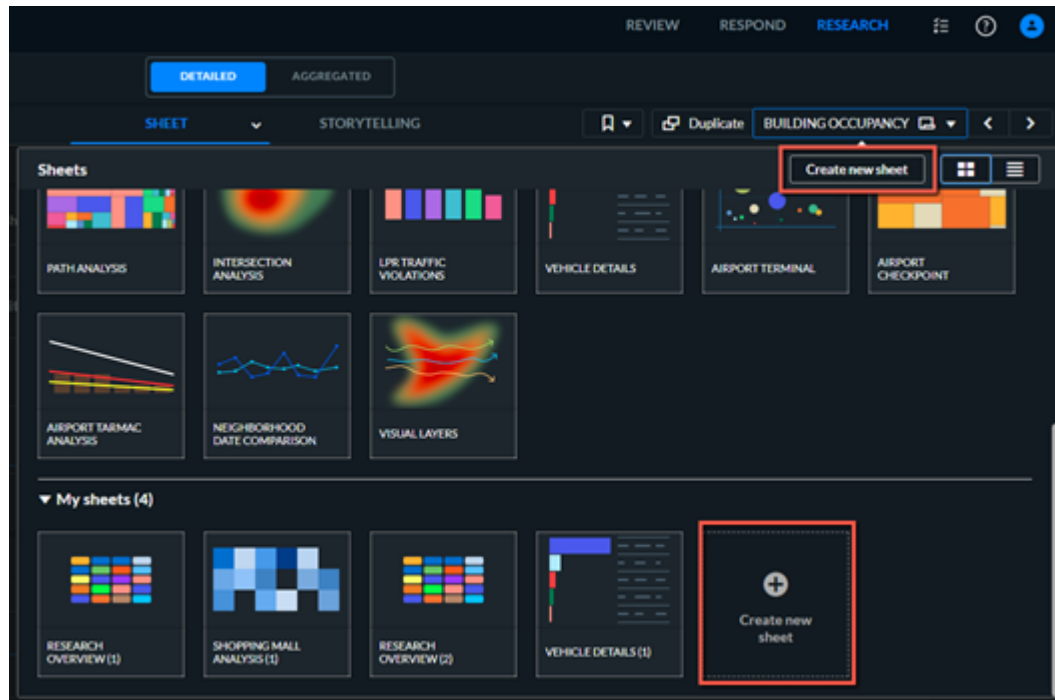
The chart's data will be displayed in a table similar to the image below.

Speed (mi/h)				
Speed	Q	Class	Q	# of Objects
0 to 10		Man		880
0 to 10		Woman		428
0 to 10		Unknown		71
0 to 10		Car		31
0 to 10		Airplane		3
0 to 10		Child		3
0 to 10		Boat		1
0 to 10		Truck		1
10 to 20		Car		31
10 to 20		Man		15
10 to 20		Unknown		11
10 to 20		Truck		5

Creating Your Own Analytics

Creating a New Sheet

1. Click the sheets section on the top right of the screen.
2. Click **Create new sheet**.



3. Give a title to the sheet.
4. If you want, you can add a thumbnail by clicking the thumbnail image.



5. Select an image from the list or you can add your own image by clicking the **Upload media** option.

Media library	
In app	Airport Checkpoint.jpg
Default	Airport Tarmac Analysis.jpg
	Airport Terminal.jpg
	Building Occupancy.jpg
	Compare Two Dates.jpg
	Consumer Traffic & Sales.jpg
	H2.jpg
	Intersection Analysis.jpg
	Lighting Changes.jpg
	M1.jpg
	Marc.png
	Path Analysis.jpg
	Retail Trends.jpg
	Screenshot_1.png
Upload media	Screenshot_2.png
	Shopper Analysis.jpg

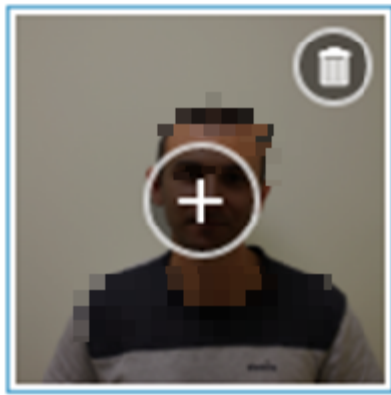
6. To select a file of your own, drop a file or click to select the file.

Drop files here or click to select files



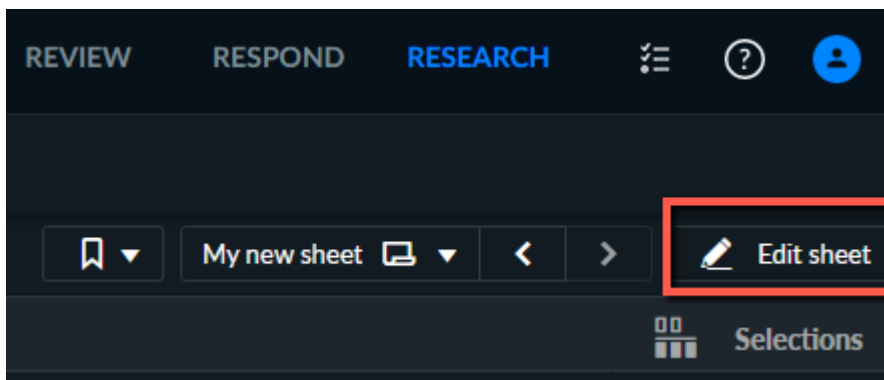
Available space: 196.6 MB

7. Click on the image and click the insert (+) button.



S1.JPG

8. Press **Enter**.
9. Open the dashboard and click **Edit** to edit the new sheet.

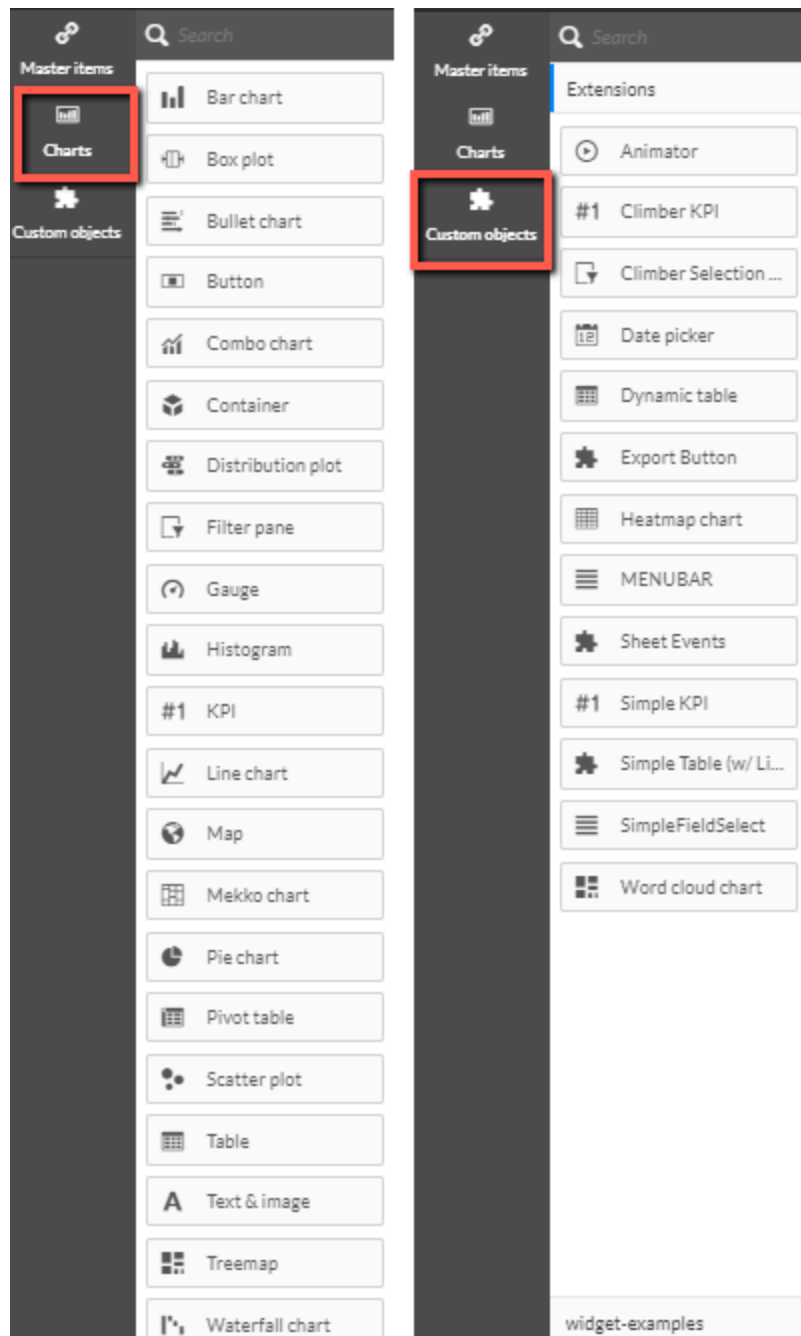


See also:

[Adding Visualizations](#)[Adding Dimensions and Measures](#)[Out-of-the-box Visualizations](#)[Insight Advisor](#)[Chart Suggestions](#)[Showing or Hiding Specific RESEARCH Dashboards](#)[Useful Expressions](#)

Adding Visualizations

To create a new visualization (bar chart, pie chart, etc.), drag an object from the left-hand **Charts** or **Custom objects** panel to the sheet.



The table below provides brief descriptions of the available charts:

Chart	Description
Bar chart	The bar chart displays a bar for each dimension value. The bar length corresponds to its numerical measure value.
Box plot	The box plot is suitable for comparing range and distribution for groups of numerical data, illustrated by a box with whiskers, and a center line in the middle.

Bullet chart	The bullet chart displays a gauge with extended options. Bullet charts can be used to visualize and compare performance of a measure to a target value and to a qualitative scale, such as poor, average, and good.
Button	Buttons are suitable for adding quick links for easy selection and navigation in your app and for reloading data.
Combo chart	The combo chart combines bars and lines in the same chart. The bars and lines have different axes to enable comparisons of percentages and sums.
Container	The container is an object that lets you add visualizations in a limited space using tabs. You can also show or hide the visualizations inside the container based on conditions.
Distribution plot	The distribution plot is suitable for comparing range and distribution for groups of numerical data. Data is plotted as value points along an axis.
Filter pane	The filter pane allows you to control what data is shown in the visualizations on a sheet. The filter pane can filter the data of several dimensions at once.
Gauge	The gauge is used to display the value of a single measure lacking dimensions.
Histogram	The histogram is suitable for visualizing distribution of numerical data over a continuous interval, or a certain time period. The data is divided into bins.
KPI	The KPI is used to present central performance figures. You can add a link to a sheet.
Line chart	The line chart displays data lines between values. Line charts are often used to visualize trends in data over intervals of time.
Map	The map is used to combine geographical data and measure values, such as sales in a region or store.
Mekko chart	The mekko chart is suitable for comparing groups, while being able to compare category items contained within these groups. The dimension axis shows the groups, while the measure axis shows the normalized percentage value for each category item. The size of each group shows its value.
Pie chart	The pie chart shows the relationship between a single dimension and a single measure.
Pivot table	The pivot table presents dimensions and measures as rows and columns of a table. The pivot table allows you to analyze data in multiple dimensions simultaneously. The data in a pivot table can be grouped based on a combination of the dimensions, and partial sums can be shown.
Scatter plot	The scatter plot presents values from two measures. This is useful when you want to show data in which each instance has two numbers, for example, country (population and population growth). An optional third

	measure can be used and is reflected in the size of the bubbles. When showing large data sets colors will be used instead of bubble size to represent the measure size.
Table	The table displays values in record form so that each row of the table contains fields calculated using measures. Typically, a table includes one dimension and multiple measures.
Text image	Use the text image visualization to add text, images, measures and links to a sheet. To add an image, enable the Use Background Image setting, click on the image, and select an image from the list or add your own image by clicking the Upload media option (then click the image and the plus icon).
Treemap	The treemap shows hierarchical data. A treemap can show a large number of values simultaneously within a limited space.
Waterfall chart	The waterfall chart is suitable for illustrating how an initial value is affected by intermediate positive and negative values. The starting and the final values are represented by whole bars, and intermediate values by floating bars. You can also show subtotals in the chart.

The table below provides brief descriptions of the available extensions in the custom objects:

Extensions	Description
Animator	Animates the changes in values in your visualizations over a range of values.
Climber KPI	Presents KPIs, such as trendlines and navigation from your dashboard to details on other sheets.
Climber Selection Bar	Horizontal selection bar with initial selection capabilities via clicks and swipes.
Date picker	Select a single date or a range of dates from a calendar.
Dynamic table	A table with support for sortable columns and the ability to limit the number of records that are retrieved.
Export Button	Export data to an XLS or CSV file without having to load the data to the memory, which impacts performance.
Grid chart	A grid from two dimensions with symbols of varying size based on a measure.
Heatmap chart	A two-dimensional heatmap.
Menubar	A menu bar with vertical and horizontal buttons, selections and trigger-based actions.

QS Custom Report	This object is for internal purposes and cannot be edited.
Sheet Events	Trigger actions (related to fields, bookmarks and variable) when a dashboard is opened.
Simple KPI	Display one or more KPIs using measures and one dimension.
Simple Table (w/ Links)	A simple table with conditional logic for detecting hyperlinks, images and raw HTML input.
SimpleFieldSelect	Enables field and variable selections, including the ability to set the background color of the dashboard, hide the title bar, modify all borders, remove the Insights button and more.
Word Cloud Chart	Visualize text data or free form text. Single words are displayed with their size based on a measure value. You can customize your chart with different shapes, fonts, layouts, and color schemes.
Video player	Embed and play videos directly in dashboards.

Adding Dimensions and Measures

Once a visualization (bar chart, pie chart, etc.) has been added, you should complete it by selecting the relevant measures and dimensions from the **Master items** menu.

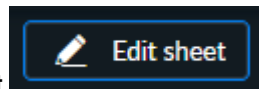
A visualization consists of at least one measure or one dimension; in most cases, a visualization has both, and sometimes it has more than one dimension or measure.

See also:

[Adding Dimensions](#)

[Adding Measures](#)

Adding Dimensions



You need to click **Edit sheet** to see the **Master items**.

Dimensions determine how the data in a visualization are grouped (this often refers to time, class, etc.).

The screenshot shows the BriefCam software interface. On the left is a dark sidebar with three main sections: 'Master items' (with a link icon), 'Charts' (with a bar chart icon), and 'Custom objects' (with a puzzle piece icon). The main area on the right is titled 'Dimensions' and contains a list of dimension categories, each with a light gray button-like background. The categories are: '1-min. Intervals', '10-min. Intervals', '30-min. Intervals', 'Class', 'Class (People)', 'Class (Road Vehicles)', 'Class Category', 'Color', 'Date', 'Date Time', 'Day', 'Day (Num)', 'Direction', 'Direction Label', and 'Duration'. Below this list are three more menu items: 'Measures', 'Visualizations', and 'Alternate states'.

Category	Item
Dimensions	1-min. Intervals
	1-min. Intervals
	10-min. Intervals
	10-min. Intervals
	30-min. Intervals
	30-min. Intervals
	Class
	Class
	Class (People)
	Class (People)
	Class (Road Vehicles)
	Class (Road Vehicles)
	Class Category
	Class Category
	Color
Color	
Measures	Date
	Date
	Date Time
Visualizations	Date Time
	Date Time
	Date Time
Alternate states	Day
	Day
	Day
	Day (Num)
	Day (Num)
	Day (Num)
	Direction
	Direction
	Direction
	Direction Label
	Direction Label
	Direction Label
	Duration


The table below provides a brief description of each of the dimensions available:

Dimension Name	Description	Sample values
1-min. Intervals	Groups of the data in 1-minute time intervals	02:10, 02:11, 02:12
5-min. Intervals	Groups of the data in 5-minute time intervals	04:10, 04:15, 04:20
10-min. Intervals	Groups of the data in 10-minute time intervals. People counting has its own dimension for this functionality.	03:10, 03:20, 03:30
15-min. Intervals	Groups of the data in 15-minute time intervals. People counting has its own dimension for this functionality.	05:00, 05:15, 05:30
30-min. Intervals	Groups of the data in 30-minute time intervals. People counting has its own dimension for this functionality.	04:00, 04:30, 05:00
Class	Object class	Man, Woman, Car, Truck
Class (People)	Only "People" object classes, meaning: Man, Woman and Child	Man, Woman, Child
Class (Road Vehicles)	Only "Road Vehicles" object classes, meaning: Motorcycle, Car, Pickup Truck, Van, Truck, Bus	Motorcycle, Car, Pickup Truck, Van, Truck, Bus
Class Category	Contains the following class categories: <ul style="list-style-type: none"> • People: Man, Woman, Child • Bicycles: Bicycle • Road Vehicles: Motorcycle, Car, Pickup Truck, Van, Truck, Bus • Other Vehicles: Train, Airplane, Boat • Illumination Changes: Lights On, Lights Off • Animals: Animals 	People, Bicycles, Road Vehicles, Other Vehicles, Animals
Color	Object main color	Black, Green, Orange
Custom Dimensions	Custom dimension name (as configured in the Sources module). This includes the Path, Area and Line Crossing filters. For people counting, use the People Counting: Area dimension.	Shoes, Accessories, North, East

Date	Object date. People counting has its own dimension for this functionality.	19/03/2018
Date Time	Object date time. People counting has its own dimension for this functionality.	19/03/2018 13:03
Day	Object day. People counting has its own dimension for this functionality.	Mon, Tue, Wed
Day (Num)	Object day number (for example, 19 if the date is 19/03/2018). People counting has its own dimension for this functionality.	1,2,15,17,19
Direction	Object direction in degrees	18°, 45°
Direction Label	Object general direction: <ul style="list-style-type: none"> Up: $0^{\circ} < \text{direction} < 45^{\circ}$ or $315^{\circ} < \text{direction} < 360^{\circ}$ Right: $45^{\circ} \leq \text{direction} \leq 135^{\circ}$ Down: $135^{\circ} < \text{direction} < 225^{\circ}$ Left: $225^{\circ} \leq \text{direction} \leq 315^{\circ}$ 	Up, Right, Down, Left
Duration	Object duration in seconds, calculated as the difference between Object start time and Object end time in the frame	0:00:02
Dwell (Sec)	Objects having dwelled for a user-specified period of time or more, in seconds	11, 21
Face Mask	Object's Face Mask classification: Mask, No Mask or Unknown.	Mask, No Mask, Unknown
Handheld Bag	Object's Handheld classification: Handheld Bag, No Handheld Bag or Unknown	Handheld Bag, No Handheld Bag or Unknown
Hour	Object time in hour range format. People counting has its own dimension for this functionality.	04:00-05:00, 21:00-22:00
Hour (hh)	Object time in hour format. People counting has its own dimension for this functionality.	06:00
Hour (Num)	Object time in hour number format. People counting has its own dimension for this functionality.	16, 21
License	Objects detected as license plates	6DN3168,

Plates		1049189
Make	Object's vehicle make.	
Make & Model Drill Down	Drill down from vehicle to make to model. Note that all cars may not have Make & Model in the RESEARCH module. This is because Make & Model is only presented when the Make and the Model are consistent with each other. If the engine generates a Make & Model that is inconsistent (such as Honda Highlander) it will not be saved into the database.	
Model	Object's vehicle model.	
Month	Object time in month format. People counting has its own dimension for this functionality.	Mar, Apr
Month (Num)	Object time in month number format. People counting has its own dimension for this functionality.	3, 4
Object End Time	Object end time in the frame	19/03/2018 13:04:11
Object Start Time	Object start time in the frame	19/03/2018 13:00:02
People Counting has separate filters, dimensions and measures. People Counting data will not be seen together with other objects' data. For example, if you filter on a specific date it will not affect the data of the people counting.		
People Counting: 10-min. Intervals	Groups of the data in 10-minute time intervals for people counting	03:10, 03:20, 03:30
People Counting: 15-min. Intervals	Groups of the data in 15-minute time intervals for people counting	05:00, 05:15, 05:30
People Counting: 30-min. Intervals	Groups of the data in 30-minute time intervals for people counting	04:00, 04:30, 05:00
People Counting:	Custom area dimension name (as configured in the Sources module) for people counting	Shoes, Accessories,

Area		North, East
People Counting: Date	Date that people were counted	19/03/2018
People Counting: Date Time	Date and time that people were counted	19/03/2018 13:03
People Counting: Day	Day of the week that people were counted	Mon, Tue, Wed
People Counting: Day (Num)	Number of the day that people were counted (for example, 19 if the date is 19/03/2018)	1,2,15,17,19
People Counting: Hour	Time, in hour range format, that people were counted	04:00-05:00, 21:00-22:00
People Counting: Hour (hh)	Time, in hour format, that people were counted	06:00
People Counting: Hour (Num)	Time, in hour number format, that people were counted	16, 21
People Counting: Month	Time, in month format, that people were counted	Mar, Apr
People Counting: Month (Num)	Time, in month number format, that people were counted	3, 4
People Counting: Source	Source name (as configured in the Sources tab) for people counting	Airport, Floor A
People	Time drill down within object visualization for people counting, according to: Date, Hour,	

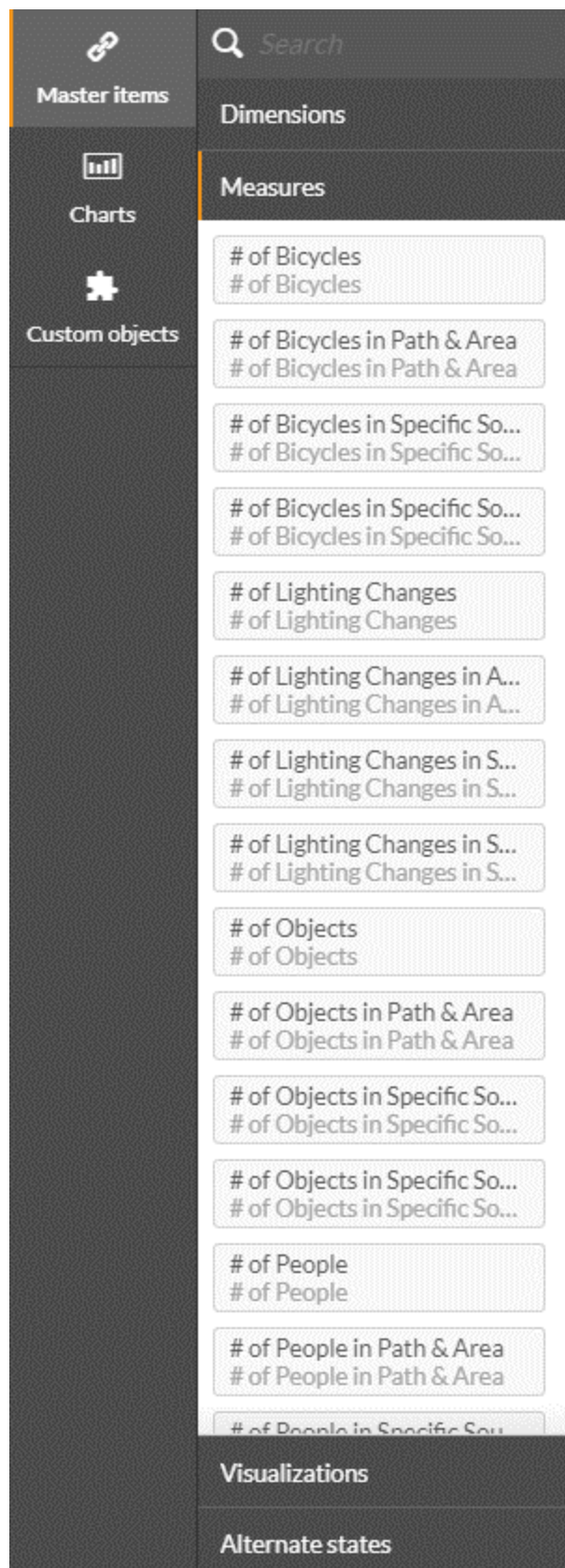
Counting: Time Drill Down-Time	30-min, 10-min	
People Counting: Week #	Time, in week number format, that people were counted	9, 14, 20
Site dimensions	Values from the Hub's SITES tab, including Site Address, Site City, Site Country, Site Name, Site Phone Number, Site State, Site Status, and Site Type. These are only available on Hub machines.	
Size	Object size in meters or feet (as per user settings)	1.8, 0.5
Source	Source name (as configured in the Sources tab). People counting has its own dimension for this functionality.	Airport, Floor A
Source Group	Source Group name (as configured in the Source Group tab). Only groups that are active in the UI will appear.	First floor, ATM machines
Source Group Watchlist	The name of the external watchlists associated with a Source Group.	VIPs, Employees
Speed	Object speed in km/hour or miles/hour (as per user settings)	10, 78, 111
Time Drill Down	Time drill down within object visualization, according to: Date, Hour, 30-min, 10-min, 5-min, 1-min. People counting has its own dimension for this functionality.	
Tolerance	<div>  This dimension is currently not supported. </div> <p>Allows users to select the threshold of the object quality included in the dashboard. The threshold impacts the detection sensitivity: Loose, Normal, Strict. For example, Loose tolerance might include in the dashboard, items that are not detected as objects, such as shadows and lighting.</p> <p>Note that this dimension does not affect the tolerance of the Custom Dimensions, which can be set when editing the Custom Dimension and will be applicable from the time it was set.</p>	Loose, Normal, Strict
Watchlist Identity	The identity name within a watchlist. This is only available if this face is related to an external watchlist.	Sam, Margaret



Week #	Object time in week number format. People counting has its own dimension for this functionality.	9, 14, 20
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Adding Measures

Measures are the results of calculations (these are often aggregates, such as sum, count, or average).



The following table provides a brief description of each of the measures available:

Measure Name	Description	Sample Values
# of Bicycles	Total count of objects identified as bicycles	104, 50
# of Bicycles in Custom Dimensions	Total count of objects identified as bicycles within the custom dimensions, areas, paths or line crossing. An object can be counted in more than one area/path/line crossing.	104, 50
# of Bicycles in Specific Source	Total count of objects identified as bicycles in a specific source.	104, 50
# of Bicycles in Specific Source and Custom Dimensions	<p>Total count of objects identified as bicycles in a specific source and path, area or line crossing.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	104, 50
# of Bounced Visitors	<p>The number of unique visitors to a particular Source Group who navigate away from the site after less than 1 minute (by default) within the same day (by default).</p> <p>To change the defaults, unlink the measure as defined in the Changing a Default Value in Visitors Measures section.</p>	
# of Bounced Visitors in Custom Dimensions	<p>The number of unique visitors to a particular Source Group with a custom dimension (area, path, or line crossing) who navigate away from the site after less than 1 minute (by default) within the same day (by default).</p> <p>To change the defaults, unlink the measure as defined in the Changing a Default Value in Visitors Measures section.</p>	
# of Bounced Visitors in Specific Source, Source Group and Custom Dimensions	<p>The number of unique visitors in a specific source, source group and custom dimension (path, area or line crossing), who navigate away from the site after less than 1 minute (by default) within the same day (by default).</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p> <p>To change the defaults, see the Changing a Default Value in Visitors Measures section.</p>	
# of Illumination Changes	Total count of objects identified as illumination changes (Lights on, Lights off)	104, 50
# of Illumination Changes in Area	Total count of objects identified as illumination changes within the	104, 50

	custom dimension, area. An object can be counted in more than one area.	
# of Illumination Changes in Specific Source	<p>Total count of objects identified as illumination changes in a specific source.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	104, 50
# of Illumination Changes in Specific Source and Area	<p>Total count of objects identified as illumination changes in a specific source and area.</p> <p>This measure is used, for example, to count the number of illumination changes in the same sheet.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	104, 50
# of License Plates	Total count of objects identified by license plates.	104, 50
# of License Plates in Custom Dimensions	Total count of objects identified by license plates within the custom dimensions, areas, paths or line crossing. An object can be counted in more than one area/path/line crossing.	104, 50
# of License Plates in Specific Site, Source and Custom Dimensions	<p>Total count of objects identified as license plates in a specific site, source and path, area or line crossing.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	104,50
# of License Plates in Specific Source	<p>Total count of objects identified by license plates in a specific source.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	104, 50
# of License Plates in Specific Source and Custom Dimensions	<p>Total count of objects identified as license plates in a specific source and path, area or line crossing.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	104, 50
# of New Unique Identities	Total count of new identities with a unique face ID. These identities will be counted only when they are first detected on the cameras.	
# of Objects	Total count of objects.	104, 50

# of Objects in Custom Dimensions	Total count of objects within the custom dimensions, areas, paths or line crossings. An object can be counted in more than one area/path/line crossing.	104, 50
# of Objects in Specific Source	<p>Total count of objects in a specific source.</p> <p>This measure is used, for example, to count objects from different sources in the same sheet.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	104, 50
# of Objects in Specific Source and Custom Dimensions	<p>Total count of objects in a specific source and path, area or line crossing.</p> <p>This measure is used, for example, to count the number of objects in different areas in the same sheet.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	104, 50
# of People	Total count of objects identified as people (Man, Woman, Child)	104, 50
# of People in Custom Dimensions	Total count of objects identified as people within the custom dimensions, areas, paths or line crossings. An object can be counted in more than one area/path/line crossing.	104, 50
# of People in Specific Source	<p>Total count of objects identified as people in a specific source.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	104, 50
# of People in Specific Source and Custom Dimensions	<p>Total count of objects identified as people in a specific source and path, area or line crossing.</p> <p>This measure is used, for example, to count the number of people in different areas in the same sheet.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	104, 50
# of People Not Wearing Face Mask	Total count of objects identified as people not wearing a face mask.	
# of People Not Wearing Face Mask in Custom Dimensions	Total count of objects identified as people not wearing a face mask within the custom dimensions (areas, paths or line crossings).	
# of People Not Wearing Face Mask in	Total count of objects identified as people not wearing a face mask	

Specific Source	<p>in a specific source.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	
# of People Not Wearing Face Mask in Specific Source and Custom Dimensions	<p>Total count of objects identified as people not wearing a face mask in a specific source and path, area or line crossing.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	
# of People Wearing Face Mask	<p>Total count of objects identified as people wearing a face mask.</p>	
# of People Wearing Face Mask in Custom Dimensions	<p>Total count of objects identified as people wearing a face mask within the custom dimensions (areas, paths or line crossings).</p>	
# of People Wearing Face Mask in Specific Site, Source and Custom Dimensions	<p>Total count of objects identified as people wearing a mask in a specific site, source and path, area or line crossing.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section</p>	
# of People Wearing Face Mask in Specific Source	<p>Total count of objects identified as people wearing a face mask in a specific source.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	
# of People Wearing Face Mask in Specific Source and Custom Dimensions	<p>Total count of objects identified as people wearing a mask in a specific source and path, area or line crossing.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	
# of People with Backpack	<p>Total count of objects identified as people holding a backpack. This measure is available for aggregated dashboards only. Since version: 2024 R2</p>	
# of People with Handheld Bag	<p>Total count of objects identified as people holding a bag</p>	
# of People with Handheld Bag in Custom Dimensions	<p>Total count of objects identified as people holding a bag within the custom dimensions (areas, paths or line crossings).</p>	
# of People with Handheld Bag in Specific Source	<p>Total count of objects identified as people holding a bag in a specific source.</p> <p>To use this measure, unlink the measure as detailed in the Setting a</p>	

	Specific Source and Custom Dimension section.	
# of People with Handheld Bag in Specific Source and Custom Dimensions	<p>Total count of objects identified as holding a bag in a specific source and path, area or line crossing.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	
# of People without Handheld Bag	<p>Total count of objects identified as people not holding a bag. This measure is available for aggregated dashboards only. Since version: 2024 R2</p>	
# of Returning Unique Identities	Total count of returning identities with a unique face ID.	
# of Road Vehicles	Total count of objects identified as road vehicles (Motorcycle, Car, Pickup Truck, Van, Truck, Bus)	104, 50
# of Road Vehicles in Custom Dimensions	Total count of objects identified as road vehicles within the custom dimensions: areas, paths or line crossings. An object can be counted in more than one area/path/line crossing.	104, 50
# of Road Vehicles in Specific Site, Source and Custom Dimensions	<p>Total count of objects identified as road vehicles in a specific site, source and path, area or line crossing.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	104, 50
# of Road Vehicles in Specific Source	<p>Total count of objects identified as road vehicles in a specific source.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	104, 50
# of Road Vehicles in Specific Source and Custom Dimensions	<p>Total count of objects identified as road vehicles in a specific source and path, area or line crossing.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	104, 50
# of Speeding Road Vehicles	Total count of objects identified as road vehicles (Motorcycle, Car, Pickup Truck, Van, Truck, Bus) whose speed exceeds the speed specified on the Speed Limit Slider (available in the visualization folder)	104, 50
# of Unique Identities	Total count of identities with a unique face ID.	
# of Unique Identities in Custom	Total count of identities with a unique face ID within the custom	

Dimensions	dimensions: areas, paths or line crossings.	
# of Unique Identities in Specific Site, Source, Source Group and Custom Dimensions	<p>Total count of identities with a unique face ID in a specific site, source, source group and path, area or line crossing.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	
# of Unique Identities in Specific Source, Source Group and Custom Dimensions	<p>Total count of identities with a unique face ID in a specific source, source group and path, area or line crossing.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	
# of Unique Identities on a Specific Route	<p>Total count of identities that appeared in specific sources (in no particular order).</p> <p>To use this measure:</p> <ol style="list-style-type: none"> 1. Drag the measure to the sheet. 2. Unlink the visualization by right-clicking on the filter, selecting Unlink visualization and clicking OK. 3. Go to the Actions menu's Value field and click the expression icon (fx). 4. Uncomment the expression for the relevant use case (by removing the two slashes before the row) and comment out the default. 5. Replace the text 'SourceExample[1-3]' with the name of your sources. <p>Note that an asterisk (*) in the expression stands for plus and the hyphen (-) stands for minus.</p>	
Avg # of New Unique Identities	Average count of new identities with a unique face ID.	
Avg # of Objects	Average object count (per day)	104, 50
Avg # of Objects in Custom Dimensions	Average object count (per day) within the custom dimensions: areas, paths or line crossings. An object can be counted in more than one area/path/line crossing.	104, 50
Avg # of Objects in Custom Dimensions by Hour	Average object count (per hour) within the custom dimensions: areas, paths or line crossings. An object can be counted in more than one area/path/line crossing.	104, 50
Avg # of Objects in Specific Site, Source and Custom Dimensions	Average object count (per day) within the site, custom dimensions, areas, paths or line crossings. An object can be counted in more than one area/path/line crossing.	104, 50

	<p>This measure provides the average object counts in different areas/ paths/line crossings in the same sheet.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	
Avg # of Objects in Specific Source	<p>Average object count (per day) in a specific source.</p> <p>This measure provides the average object count from different sources in the same sheet.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	104, 50
Avg # of Objects in Specific Source and Custom Dimensions	<p>Average object count (per day) within the custom dimensions, areas, paths or line crossings. An object can be counted in more than one area/path/line crossing.</p> <p>This measure provides the average object counts in different areas/ paths/line crossings in the same sheet.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	104, 50
Avg # of Proximity Violation Contacts	<p>Average number of people who have passed the proximity threshold with the selected person.</p> <p>Note that the Proximity feature in the RESEARCH module is disabled by default. To enable this feature, contact your system administrator.</p>	104, 50
Avg # of Proximity Violation Contacts in Specific Site and Source	<p>Average number of people who have passed the proximity threshold with the selected person in a specific site and source.</p> <p>This measure provides the average count of proximity threshold violations from different sources in the same sheet.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p> <p>Note that the Proximity feature in the RESEARCH module is disabled by default. To enable this feature, contact your system administrator.</p>	104, 50
Avg # of Proximity Violation Contacts in Specific Source	<p>Average number of people who have passed the proximity threshold with the selected person in a specific source.</p> <p>This measure provides the average count of proximity threshold violations from different sources in the same sheet.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p> <p>Note that the Proximity feature in the RESEARCH module is</p>	104, 50

	disabled by default. To enable this feature, contact your system administrator.	
Avg # of Returning Unique Identities	Average count of returning identities with a unique face ID.	
Avg # of Unique Identities in Custom Dimensions	Average count of identities with a unique face ID (per day) within the custom dimensions: areas, paths or line crossings.	
Avg # of Unique Identities in Custom Dimensions by Hour	Average count of identities with a unique face ID (per hour) within the custom dimensions: areas, paths or line crossings.	
Avg # of Unique Identities in Specific Site, Source, Source Group and Custom Dimensions	<p>Average count of identities with a unique face ID (per day) within a specific site, source, source group and custom dimensions (areas, paths or line crossings).</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	
Avg # of Unique Identities in Specific Source, Source Group and Custom Dimensions	<p>Average count of identities with a unique face ID (per day) within specific source, source group and custom dimensions (areas, paths or line crossings).</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	
Avg Crowd Counting	Average size of crowd counted. This measure is available for aggregated dashboards only. Since version: 2024 R2	
Avg Crowd Counting in Custom Dimensions	Average size of crowd counted within a specific custom dimension (areas, path, or line crossings). This measure is available for aggregated dashboards only. Since version: 2024 R2	
Avg Duration	Average object duration in seconds	0:00:14
Avg Duration Bicycles	Average duration in seconds of objects identified as bicycles	0:00:14
Avg Duration in Custom Dimensions	Average duration in seconds of objects within the custom dimensions: areas, paths or line crossings	0:00:14
Avg Duration in Specific Site, Source and Custom Dimensions	<p>Average object duration time in seconds of objects within a specific site, source and custom dimensions (areas, paths or line crossings).</p> <p>This measure provides the average duration of different areas/path in the same sheet.</p> <p>To use this measure, unlink the measure as detailed in the Setting a</p>	0:00:14

	Specific Source and Custom Dimension section.	
Avg Duration in Specific Source	<p>Average duration in seconds of objects within a specific source.</p> <p>This measure provides the average duration of different Sources in the same sheet.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	0:00:14
Avg Duration in Specific Source and Custom Dimensions	<p>Average object duration time in seconds of objects within the custom dimensions: areas, paths or line crossings.</p> <p>This measure provides the average duration of different areas/path in the same sheet.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	0:00:14
Avg Duration License Plates	Average duration in seconds of objects with detected license plates	0:00:14
Avg Duration People	Average duration in seconds of objects identified as people (Man, Woman, Child)	0:00:14
Avg Duration Road Vehicles	Average duration in seconds of objects identified as road vehicles (Motorcycle, Car, Pickup Truck, Van, Truck, Bus)	0:00:14
Avg Max Proximity	<p>Average maximum distance that a person had with other people for a certain amount of time.</p> <p>Note that the Proximity feature in the RESEARCH module is disabled by default. To enable this feature, contact your system administrator.</p>	5.25, 6.40
Avg Max Proximity in Specific Site and Source	<p>Average maximum distance that a person had with other people for a certain amount of time in a specific site and source.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p> <p>Note that the Proximity feature in the RESEARCH module is disabled by default. To enable this feature, contact your system administrator.</p>	5.25, 6.40
Avg Max Proximity in Specific Source	<p>Average maximum distance that a person had with other people for a certain amount of time in a specific source.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	5.25, 6.40

	Note that the Proximity feature in the RESEARCH module is disabled by default. To enable this feature, contact your system administrator.	
Avg Min Proximity	<p>Average minimum distance (in meters) that a person had with other people for a certain amount of time.</p> <p>Note that the Proximity feature in the RESEARCH module is disabled by default. To enable this feature, contact your system administrator.</p>	3.16, 4.70
Avg Min Proximity in Specific Site and Source	<p>Average minimum distance (in meters) that had a person had with other people for a certain amount of time in a specific site and source.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p> <p>Note that the Proximity feature in the RESEARCH module is disabled by default. To enable this feature, contact your system administrator.</p>	3.16, 4.70
Avg Min Proximity in Specific Source	<p>Average minimum distance (in meters) that had a person had with other people for a certain amount of time in a specific source.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p> <p>Note that the Proximity feature in the RESEARCH module is disabled by default. To enable this feature, contact your system administrator.</p>	3.16, 4.70
Avg Speed	Average speed per object in km/hour	0:00:14
Avg Size	Average size per object in meters or feet (as per user settings)	1.8, 0.5
Avg Visit Duration Unique Identities	<p>The average visit duration time of identities with a unique face ID, calculated within the same day (by default), across cameras within the same Source Group.</p> <p>The duration time is calculated by taking the person's latest appearance time and subtracting by the first appearance time.</p> <p>To change the defaults, unlink the measure as defined in the Changing a Default Value in Visitors Measures section.</p>	
Avg Visit Duration Unique Identities in Custom Dimensions	The average visit duration time of identities with a unique face ID, calculated within the same day (by default), across cameras within the same Source Group and within the custom dimensions (areas, paths or line crossings).	

	<p>The duration time is calculated by taking the person's latest appearance time and subtracting by the first appearance time.</p> <p>To change the defaults, unlink the measure as defined in the Changing a Default Value in Visitors Measures section.</p>	
Avg Visit Duration Unique Identities in Specific Site, Source, Source Group and Custom Dimensions	<p>The average visit duration time of identities with a unique face ID, calculated within the same day (by default), across cameras within a specific site and source in the same Source Group and within the custom dimensions (areas, paths or line crossings).</p> <p>The duration time is calculated by taking the person's latest appearance time and subtracting by the first appearance time.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p> <p>To change the defaults, see Changing a Default Value in Visitors Measures section.</p>	
Avg Visit Duration Unique Identities in Specific Source, Source Group and Custom Dimensions	<p>The average visit duration time of identities with a unique face ID, calculated within the same day (by default), across cameras within a specific source in the same Source Group and within the custom dimensions (areas, paths or line crossings).</p> <p>The duration time is calculated by taking the person's latest appearance time and subtracting by the first appearance time.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p> <p>To change the defaults, see Changing a Default Value in Visitors Measures section.</p>	
Max # of New Unique Identities	Maximum count of new identities with a unique face ID.	
Max # of Returning Unique Identities	Maximum count of returning identities with a unique face ID.	
Max Avg Visit Duration Unique Identities	<p>The maximum visit duration time of identities with a unique face ID, calculated within the same day (by default).</p> <p>The duration time is calculated by taking the person's latest appearance time and subtracting by the first appearance time.</p> <p>To change the defaults, unlink the measure as defined in the Changing a Default Value in Visitors Measures section.</p>	
Max Bicycles/Hour	Maximum count of objects per hour, identified as bicycles	15
Max Crowd Counting/Hour	Maximum size of a crowd per hour. This measure is available for aggregated dashboards only. Since version: 2024 R2	
Max Crowd Counting/Hour in Custom	Maximum size of a crowd per hour within a custom dimension	

Dimensions	(areas, paths, and line crossings). This measure is available for aggregated dashboards only. Since version: 2024 R2	
Max Illumination Changes/Hour	Maximum count of illumination changes per hour	15
Max License Plates/Hour	Maximum count of license plates per hour	15
Max Objects/Hour	Maximum count of objects per hour	15
Max Objects/Hour in Custom Dimensions	Maximum count of objects within the custom dimensions: areas, paths or line crossings, per hour	15
Max Objects/Hour in Specific Source	<p>Maximum count of objects in a specific source, per hour.</p> <p>This measure is used, for example, to present the maximum number of objects per hour in different sources in the same sheet.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	15
Max Objects/Hour in Specific Source and Custom Dimensions	<p>Maximum count of objects in a specific source within the custom dimensions: areas, paths or line crossings, per hour.</p> <p>This measure is used, for example, to present the maximum number of objects in a specific source per hour of different areas/paths/line crossings in the same sheet.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	15
Max People/Hour	Maximum count of objects identified as people (Man, Woman, Child), per hour. People counting has its own measure for this functionality.	
Max People Not Wearing Face Mask/Hour	Maximum count of objects identified as people not wearing a face mask, per hour.	
Max People Wearing Face Mask/Hour	Maximum count of objects identified as people wearing a face mask, per hour.	
Max Road Vehicles/Hour	Maximum count of objects identified as road vehicles (Motorcycle, Car, Pickup Truck, Van, Truck, Bus), per hour	15
Max Unique Identities/Hour	Maximum count of identities with a unique face ID per hour	
Max Unique Identities/Hour in Custom	Maximum count of identities with a unique face ID within the custom	

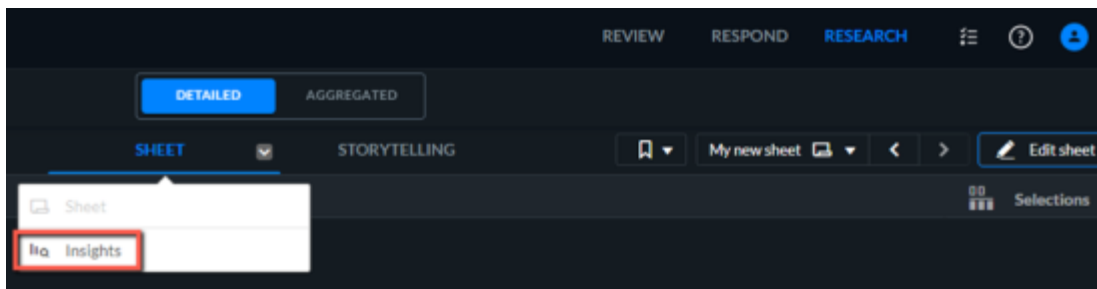
Dimensions	dimensions (areas, paths or line crossings), per hour	
Max Unique Identities/Hour in Specific Source, Source Group and Custom Dimensions	<p>Maximum count of identities with a unique face ID in a specific source and source group within the custom dimensions (areas, paths or line crossings), per hour.</p> <p>This measure is used, for example, to present the maximum number of face IDs in a specific source per hour of different areas/paths/line crossings in the same sheet.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	
Note: People Counting has separate filters, dimensions and measures. People Counting data will not be seen together with other objects' data. For example, if you filter on a specific date it will not affect the data of the people counting.		
People Counting: Avg # of People	Average people count (per day)	104, 50
People Counting: Avg # of People in Area	Average people count (per day) within the custom area dimensions. A person can be counted in more than one area.	104, 50
People Counting: Avg # of People in Specific Source	<p>Average people count (per day) in a specific source.</p> <p>This measure provides the average people count from different sources in the same sheet.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	104, 50
People Counting: Avg # of People in Specific Source and Area	<p>Average people count (per day) in a specific source within the custom area dimension. An object can be counted in more than one area.</p> <p>This measure provides the average object counts in different areas in the same sheet.</p>	104, 50
People Counting: Max # of People/Hour	<p>Calculates the average # of people per hour and then finds the maximum value.</p> <p>This measure is used, for example, to present the maximum number of people per hour in the same sheet.</p>	15
People Counting: Max # of People/Hour in Area	<p>Calculates the average # of people per hour within the custom area dimensions and then finds the maximum value.</p> <p>This measure is used, for example, to present the maximum number of people per hour of different areas in the same sheet.</p>	15

People Counting: Max # of People/Hour in Specific Source	<p>Calculates the average # of people per hour in a specific source and then finds the maximum value.</p> <p>This measure is used, for example, to present the maximum number of people per hour in different sources in the same sheet.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	15
People Counting: Max # of People/Hour in Specific Source and Area	<p>Calculates the average # of people per hour in a specific source within the custom area dimensions and then finds the maximum value.</p> <p>This measure is used, for example, to present the maximum number of people in a specific source per hour of different areas in the same sheet.</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p>	15
Visitors Bounce Rate	<p>The percentage of bounced visitors (see # of Bounced Visitors measure) out of the number of unique identities (see # of Unique Identities measure) within the same day (by default).</p> <p>To change the defaults, unlink the measure as defined in the Changing a Default Value in Visitors Measures section.</p>	
Visitors Bounce Rate in Custom Dimensions	<p>The percentage of bounced visitors within custom dimensions (see # of Bounced Visitors in Custom Dimensions measure) out of the number of unique identities (see # of Unique Identities in Custom Dimensions measure) within the same day (by default).</p> <p>To change the defaults, unlink the measure as defined in the Changing a Default Value in Visitors Measures section.</p>	
Visitors Bounce Rate in Specific Source, Source Group and Custom Dimensions	<p>The percentage of bounced visitors within specific source, source group and custom dimensions (see # of Bounced Visitors in Specific Source, Source Group and Custom Dimensions measure) out of the number of unique identities (see # of Unique Identities in Specific Source, Source Group and Custom Dimensions measure) within the same day (by default).</p> <p>To use this measure, unlink the measure as detailed in the Setting a Specific Source and Custom Dimension section.</p> <p>To change the defaults, see the Changing a Default Value in Visitors Measures section.</p>	

Insight Advisor

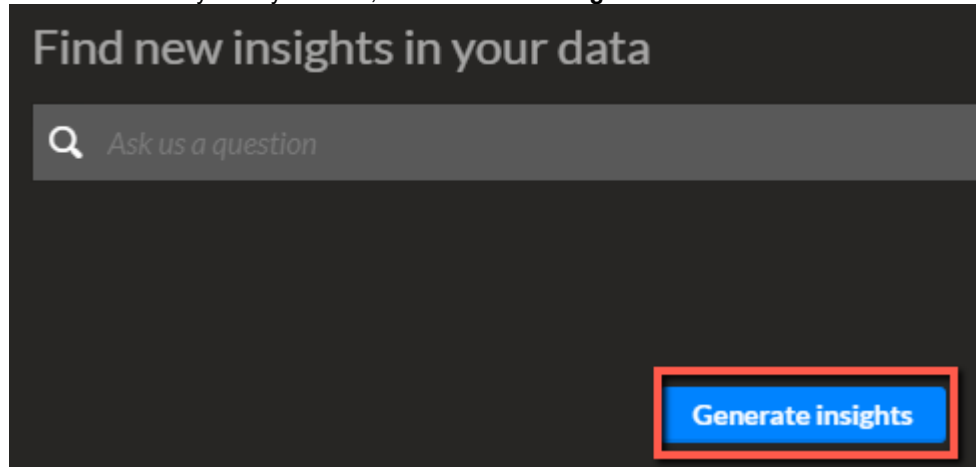
The Insight Advisor uses a cognitive engine to suggest and prioritize charts and analytics, based on previous selections.

1. From a sheet, click the arrow next to the word **Sheet** and click **Insights**.

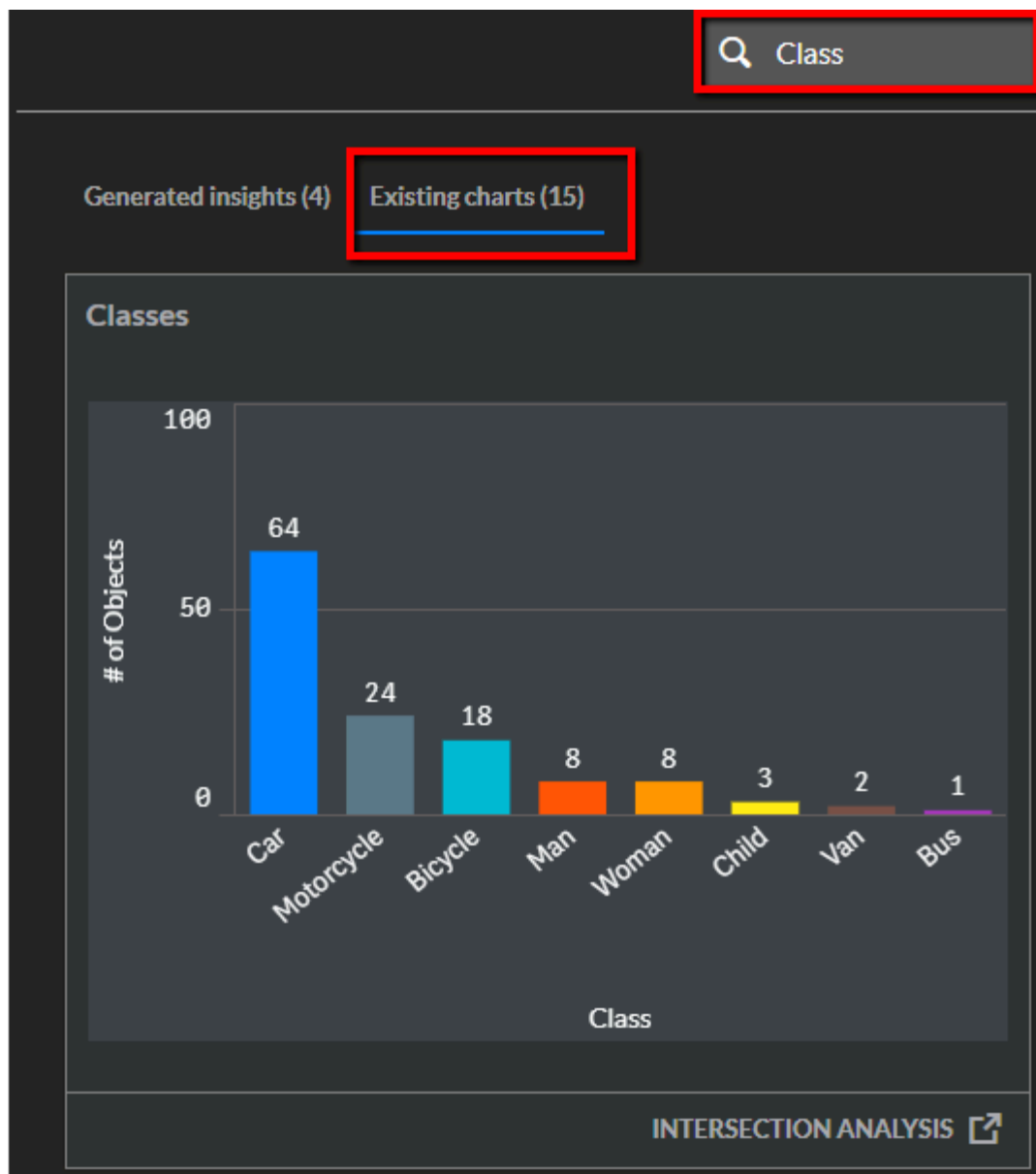


2. To generate charts:

- Based on an analysis of your data, click **Generate insights**.



- Based on specific data, select which master items to use (dimensions and measures) or search for them by name in the **Existing charts** tab.



- Click **Add to sheet** to add an insight chart.

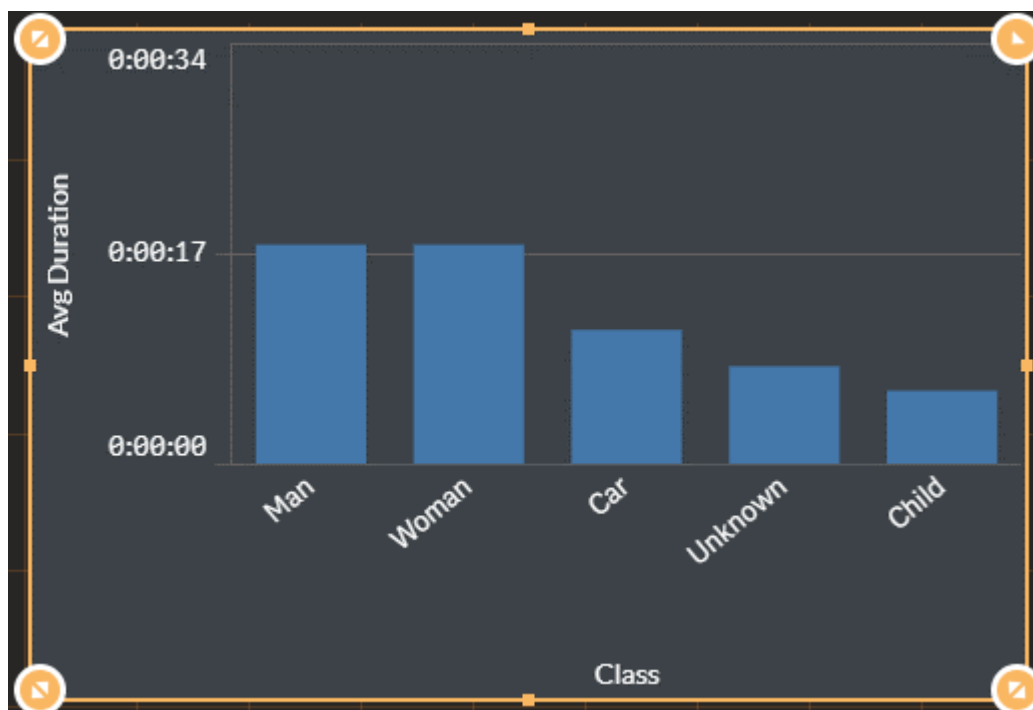
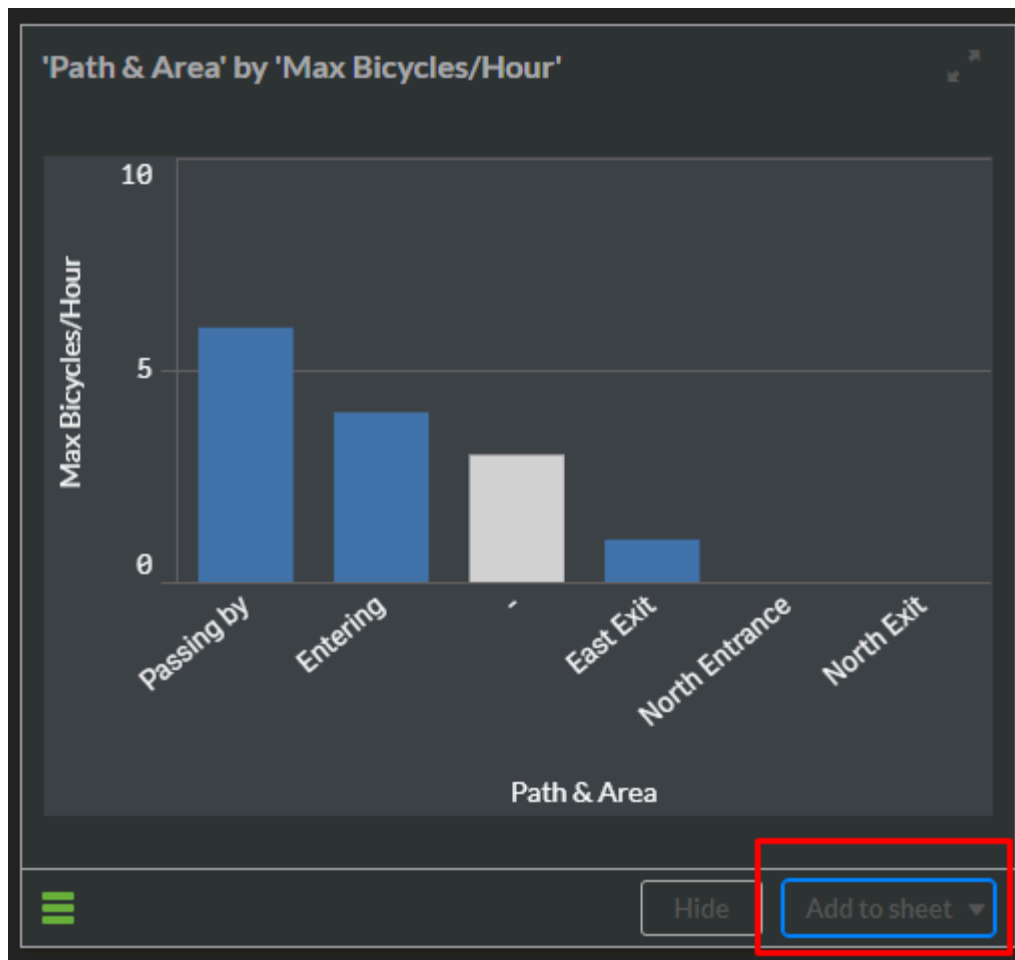


Chart Suggestions

BriefCam will suggest charts for you based on measures and dimensions that you add to the dashboard. This is useful if you are not sure what chart to use.

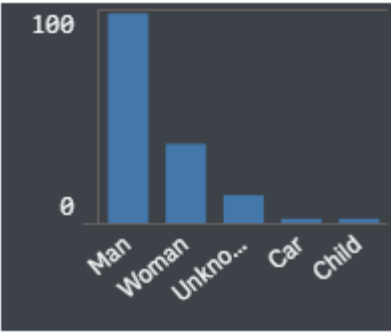
- While editing a dashboard, drag a dimension and/or a measure onto the dashboard.
- BriefCam will suggest a chart for you.
- To see other suggestions, click the arrow to the right of the word **Auto**.
- You can select one of the other recommended charts by clicking on it.

Chart type

Select a chart

The following chart types are available for your current data-set.

Recommended charts

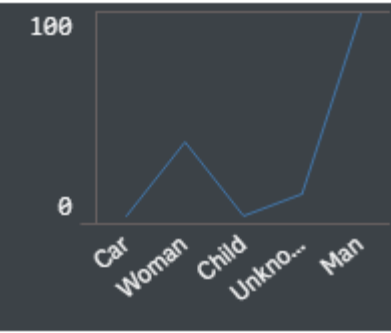


Bar chart

Class	Avg # of Objects
Totals	152
Car	2
Child	2
Man	98
Unknown	13

Table

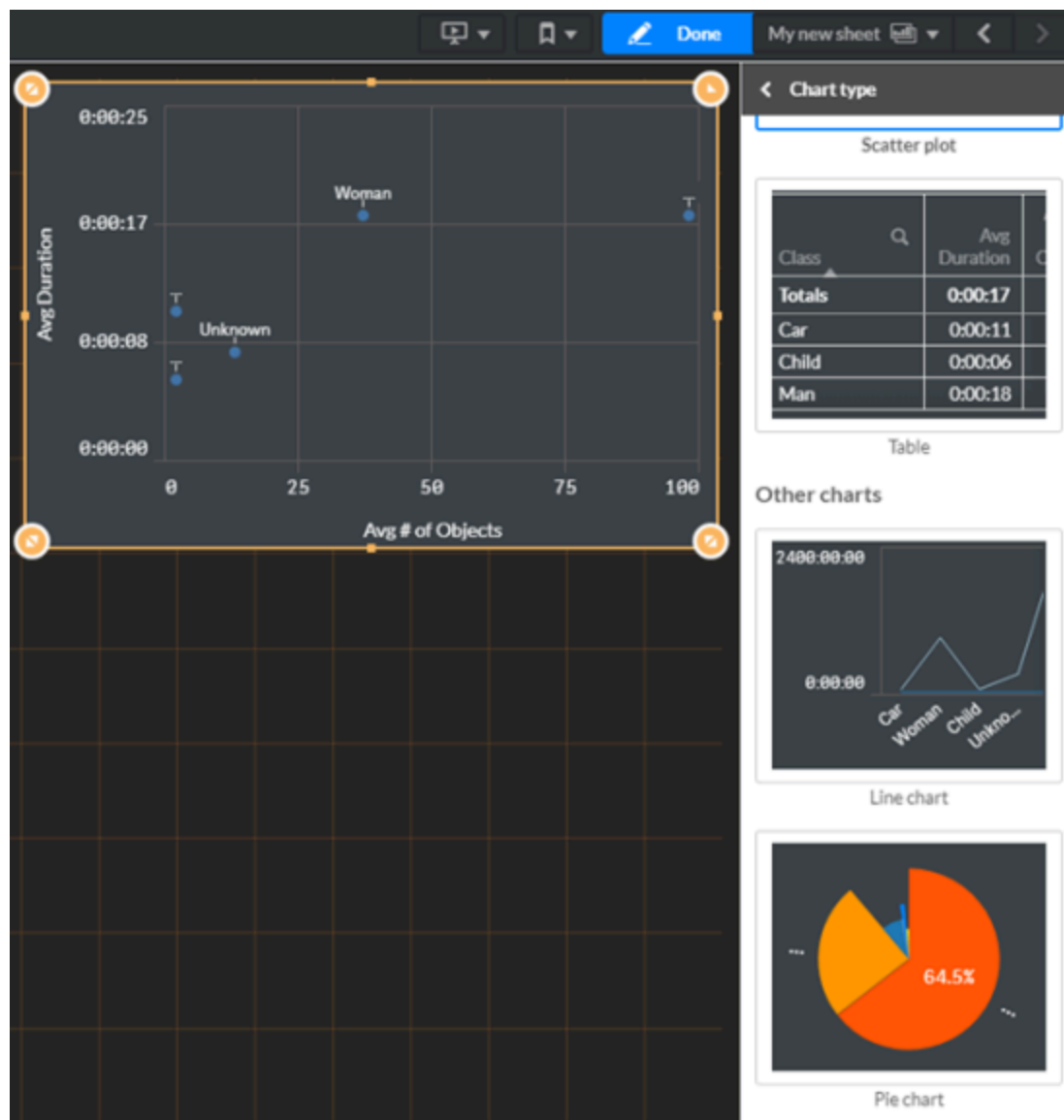
Other charts



Line chart

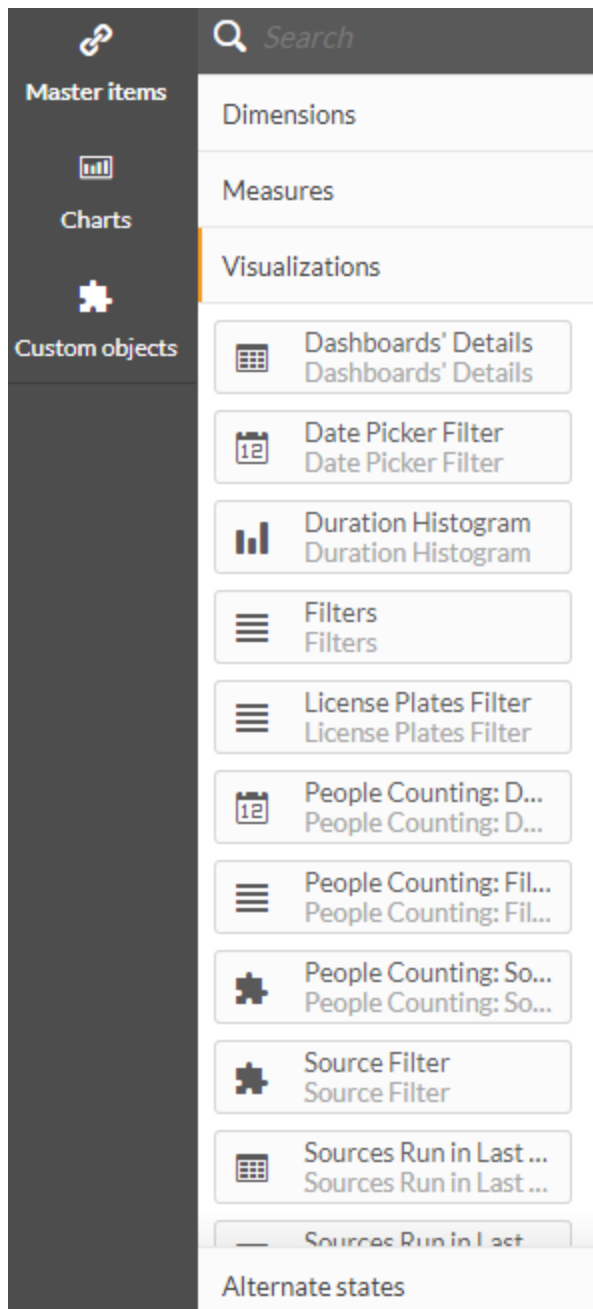
As you add or remove fields, the suggested visualization adjusts itself based on your changes.

186



Out-of-the-box Visualizations

You can reuse common visualizations by dragging an object from the left-hand side **Master items > Visualizations** menu to the sheet.



Currently, the available out-of-the-box visualizations are:



Visualization name	Description
Dashboards' Details	A table that presents all the names and IDs of the dashboards. This is useful for changing the default dashboard that opens when opening the RESEARCH module. To change the default, contact your administrator.
Date Picker Filter	<p>Add this filter to select a specific time range within a sheet.</p> <p>People counting has its own visualization for this functionality.</p>



Duration Histogram	Histogram (spread) chart of different objects' durations.
Filters	<p>Add these filters to filter different attributes within a sheet: Source Group, Source, Day, Hour, Class Category, Class, Color, Size, Speed, Dwell (Sec), Direction, Direction Label, Custom Dimensions, Face Mask, Tolerance, Reset Filters.</p> <p>People counting has its own visualization for this functionality.</p>
License Plates Filter	Add this filter to select license plates from a list (or search).
People Counting: Date Picker Filter	Add this filter to select a specific time range within a sheet for people counting.
People Counting: Filters	Add these filters to select different People Counting attributes within a dashboard, such as People Counting: Hour (Num).
People Counting: Source Filter	This lets you set preset dashboard filters for people counting. For more information, see the Source Filter item below.
Source Filter	<p>This lets you set preset dashboard filters (across users).</p> <p>Note that this same behavior can now be achieved by selecting a source in the properties of the Actions section.</p>




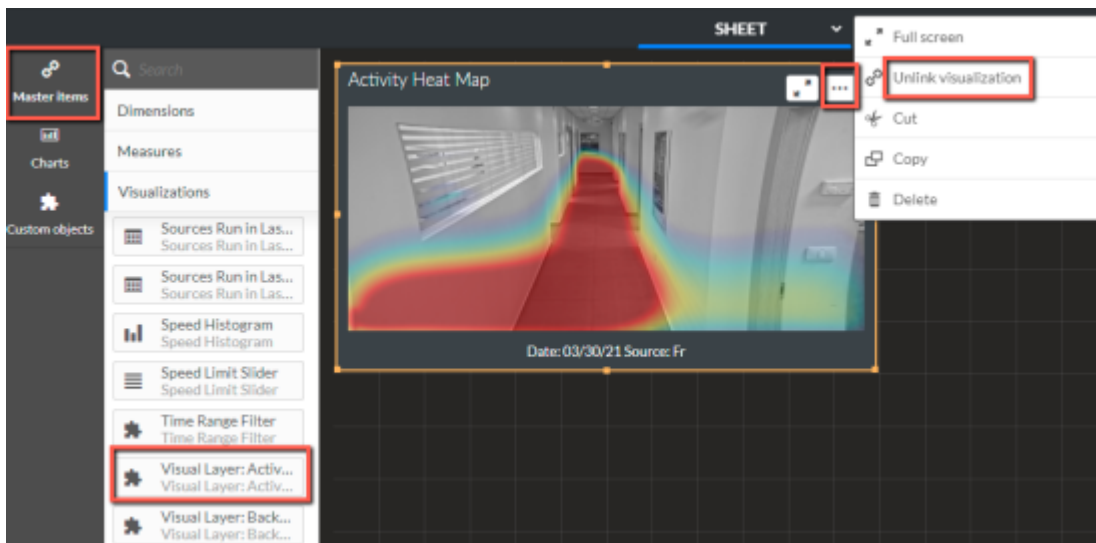
	<div><div><div><div><div></div><div>Sheet properties</div></div><div><div></div><div>Alternate states</div></div><div><div></div><div>Actions</div></div></div></div><div><div><div>Tolerance</div><div>▼</div><div></div></div><div><div>Label</div><div><div>Tolerance</div><div><i>fx</i></div></div></div><div><div>Action</div><div><div>Select values in a field</div><div>▼</div></div></div><div><div>Field</div><div><div>Source</div><div>▼</div></div></div><div><div><input type="checkbox"/> Overwrite locked selecti...</div></div><div><div>Value</div><div><div>= 'LPR1'</div><div><i>fx</i></div></div></div><div><div> Delete</div></div><div><div>Add action</div></div></div></div>
Source Run in Last 30 Days	<p>This visualization remains in the product for backward compatibility.</p> <p>People counting has its own visualization for this functionality.</p> <p>Add this table to monitor the number of objects loaded per Source and Date. The table is sorted by the last update date and contains only sources whose data was loaded in the last 30 days.</p>


Source Run in Last 30 Days (by hour)	Add this table to monitor the number of objects loaded per Source , Date and Hour . The table is sorted by the last update date and contains only sources whose data was loaded in the last 30 days.
Speed Histogram	Histogram (spread chart) of different objects' speeds.
Speed Limit Slider	Use the Speed Limit Slider together with the # of Speeding Road Vehicles measure to count Road Vehicles whose speed exceeds the limit specified on the slider.
Time Range Filter	<p>The dashboard will automatically open filtered according to the time range that you set using this visualization. This filter is useful when you want a dashboard to always show a certain time range relative to today without having to manually set the timer range every time the dashboard is opened.</p> <p>The Time Range filter will be displayed in the top left of the dashboard.</p>  <p>The default filter is the last 30 days.</p> <p>To change the default:</p> <ol style="list-style-type: none"> 1. Drag the filter to the sheet. 2. Unlink the visualization by right-clicking on the filter, selecting Unlink visualization and clicking OK. 3. Go to the Actions menu's Value field and click the expression icon (). 4. Uncomment the expression for the relevant time range (by removing the two slashes before the row) and comment out the default. For example, if you want the time range to be set to the last 90 days, find the row that says: // Last 90 days and remove the // from the row below it. The two rows should now look like this: // Last 90 days =>= & Date(Today())-90 & '<=' & Date(Today()) 5. Close and reopen the dashboard for the new filter to take effect.
Visual Layer: Activity Heat Map	<p>Add the activity heat map image of a RESEARCH source. If a source is not selected, BriefCam will display the most recent image that comes first alphabetically. To display the heat map for a different source, add the Filters visualization and select the required source. See also Displaying a Specific Visual Layer.</p> <p>Note that the visual layer visualizations are only affected by the Source and Date filters.</p>
Visual Layer: Background Changes	<p>Add the background changes heat map image of a RESEARCH source. If a source is not selected, BriefCam will display the most recent image that comes first alphabetically. To display the background changes for a different source, add the Filters visualization and select the required source. See also Displaying a Specific Visual Layer.</p> <p>Note that the visual layer visualizations are only affected by the Source and Date filters.</p>
Visual Layer:	Add the common paths heat map image of a RESEARCH source. If a source is not selected, BriefCam will display the most recent image that comes first alphabetically. To display the common paths for a different

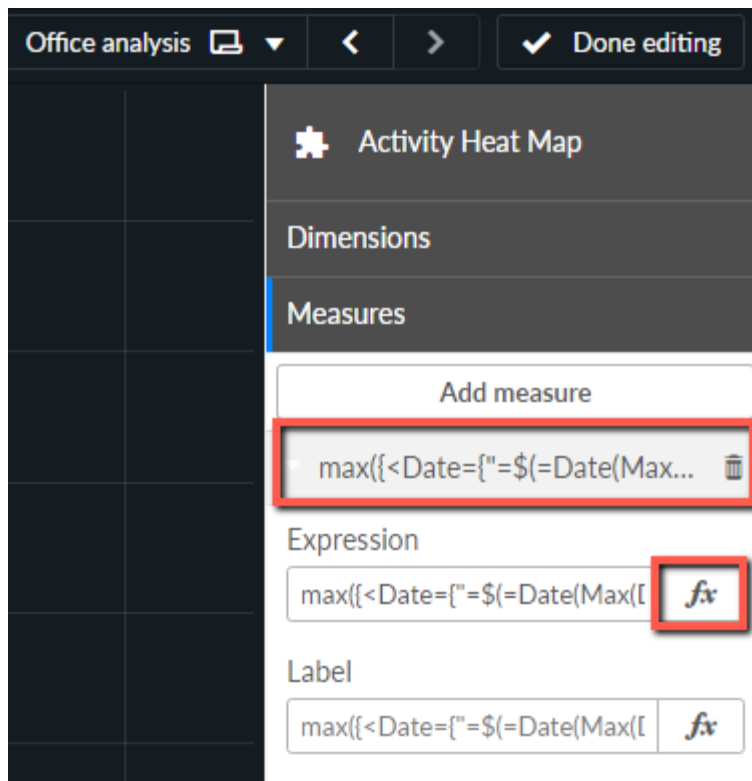
Common Paths	<p>source, add the Filters visualization and select the required source. See also Displaying a Specific Visual Layer.</p> <p>Note that the visual layer visualizations are only affected by the Source and Date filters.</p>
Visual Layer: Dwell Heat Map	<p>Add the dwell heat map image of a RESEARCH source. If a source is not selected, BriefCam will display the most recent image that comes first alphabetically. To display the dwell heat map for a different source, add the Filters visualization and select the required source. See also Displaying a Specific Visual Layer.</p> <p>Note that the visual layer visualizations are only affected by the Source and Date filters.</p>

Displaying a Specific Visual Layer

1. Open the **Master items**, and drag a **Visual Layer** visualization, such as **Visual Layer: Activity Heat Map** onto the dashboard.
2. Unlink the visualization by clicking on the more () button and clicking **Unlink visualization**.

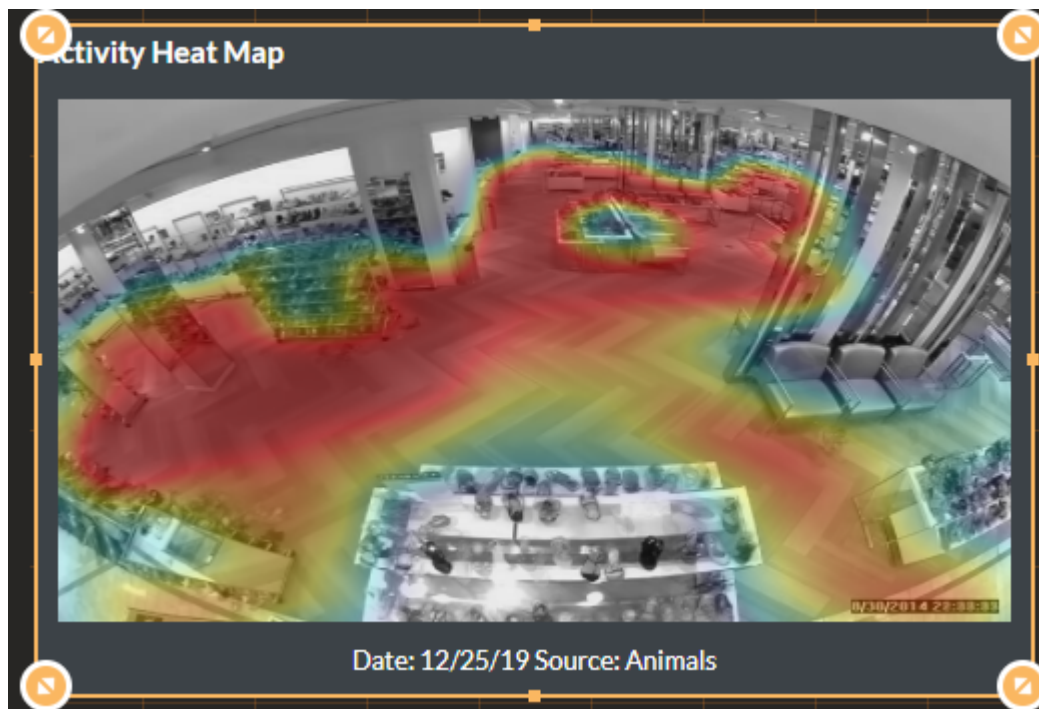


3. Click **OK**.
4. In the properties, open the **Measures** section and click on the expression.
5. Click on the expression () button.

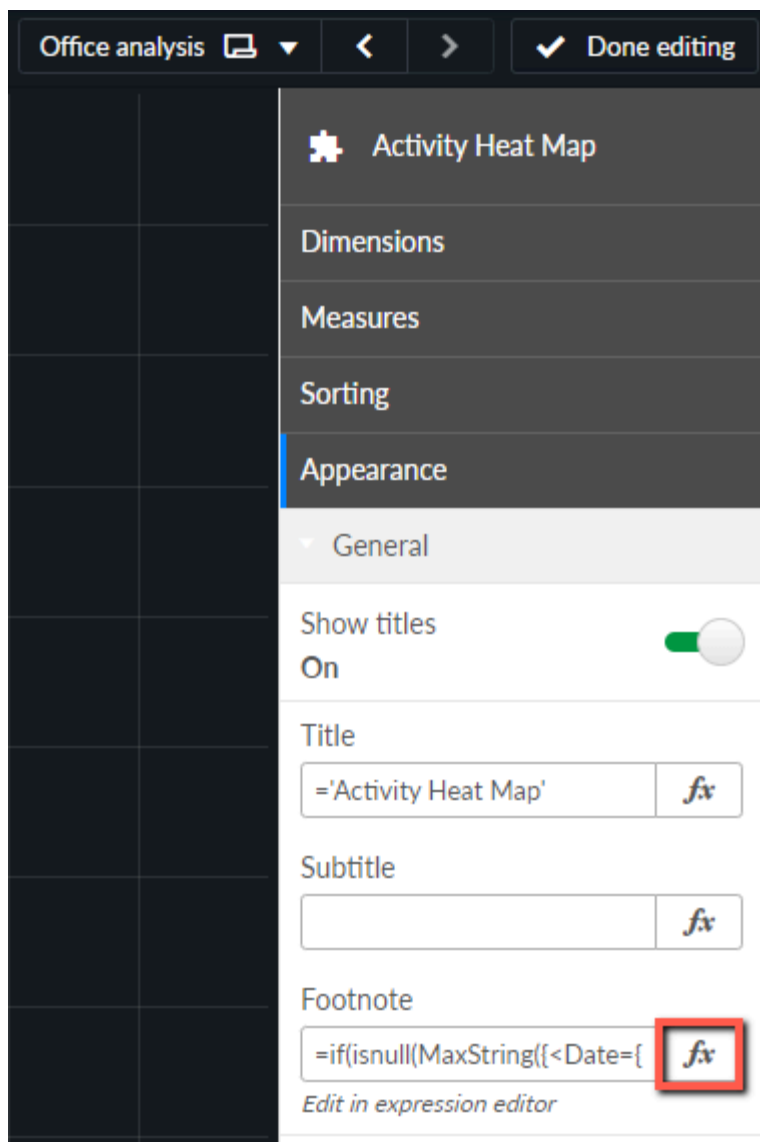


6. Delete the existing expression and enter the following string:
`=max(({<Date={\"=\\$ (=Date(Max(Date),'DD/MM/YYYY'))\"}),[Source] = {\"Source Name\"}>} Date)`
7. In the {\"Source Name\"} string, replace the words Source Name with the name of your source, such as {\"Shoe Store\"}, and click **Apply**.

The image on the dashboard will change. However, notice that the footer at the bottom did not change.



8. To change the footer, go to the **Appearance** section and from the **Footnote** field, click the expression button.



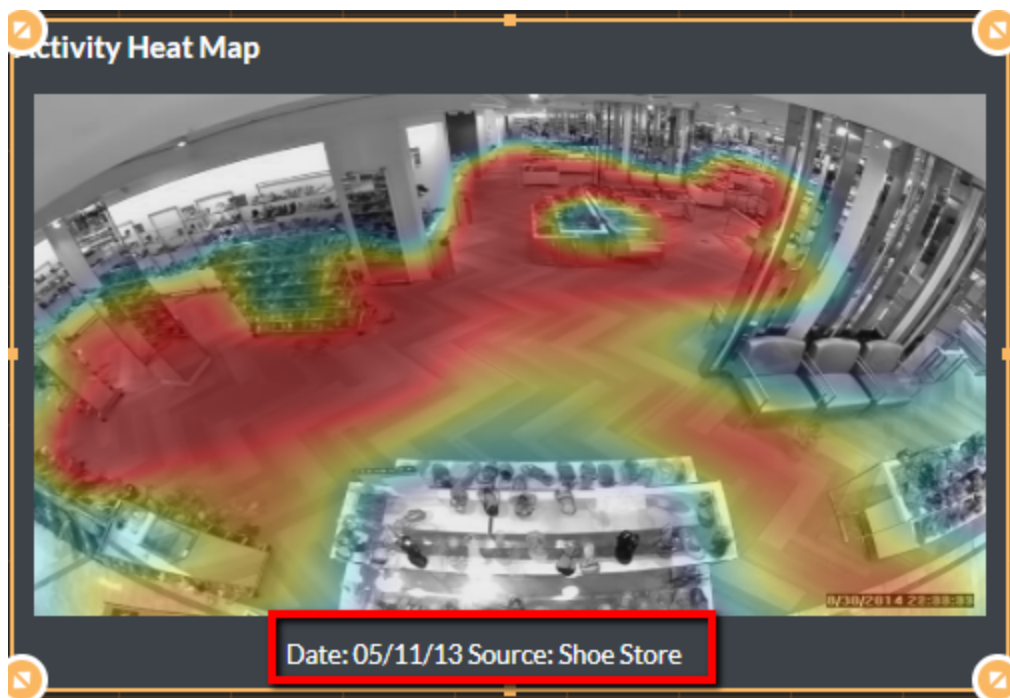
9. Delete the expression and copy and paste the following string:

```
=if(isnull(MaxString({<Date={'=$(<Date(Max(Date), 'DD/MM/YYYY'))')', [Activity_Heat_Map_URL]-={'-'>}}Source)),MaxString({<Master_Item_Name={'No Image Found'},Master_Item_Type={'Others'},Materlanguage={$(<vLanguage>)}>Master_Item_Label), 'Date: ' & max({<Date={'=$(<Date(Max(Date), 'DD/MM/YYYY'))'), [Source] = {"Source Name"}, [Activity_Heat_Map_URL]-={'-'>}}date(Date, VDate)) & ' Source: ' & MinString({<Date={'=$(<Date(Max(Date), 'DD/MM/YYYY'))'), [Source] = {"Source Name"}, [Activity_Heat_Map_URL]-={'-'>}}Source))
```

Note that the string above is for Activity Heat Map visual layers. For other visual layers, see the strings at the end of this section.

10. In the two instances of the {"Source Name"} string, replace the words Source Name with the name that you want to appear in the footnote, such as {"Shoe Store"}, and click **Apply**.

The footnote on the dashboard will change (as shown in the image below).



The footnote strings for the other visual layers are as follows:

Background Changes Footnote

```
=if(isnull(MaxString({<Date="{="$($=Date(Max(Date),'DD/MM/YYYY'))"}, [Background_Changes_URL]-="{ "-">}Source)),MaxString({<Master_Item_Name="{No Image Found"},Master_Item_Type="{Others"},Materlanguage={$(vLanguage)}>}Master_Item_Label),'Date: ' & max({<Date="{="$($=Date(Max(Date),'DD/MM/YYYY'))"},[Source] = {"Source Name"}, [Background_Changes_URL]-="{ "-">}date(Date,VDate)) & ' Source: ' & MinString({<Date="{="$($=Date(Max(Date),'DD/MM/YYYY'))"},[Source] = {"Source Name"}, [Background_Changes_URL]-="{ "-">}Source}))
```

Common Paths Footnote

```
=if(isnull(MaxString({<Date="{="$($=Date(Max(Date),'DD/MM/YYYY'))"}, [Common_Path_URL]-="{ "-">}Source)),MaxString({<Master_Item_Name="{No Image Found"},Master_Item_Type="{Others"},Materlanguage={$(vLanguage)}>}Master_Item_Label),'Date: ' & max({<Date="{="$($=Date(Max(Date),'DD/MM/YYYY'))"},[Source] = {"Source Name"}, [Common_Path_URL]-="{ "-">}date(Date,VDate)) & ' Source: ' & MinString({<Date="{="$($=Date(Max(Date),'DD/MM/YYYY'))"},[Source] = {"Source Name"}, [Common_Path_URL]-="{ "-">}Source}))
```

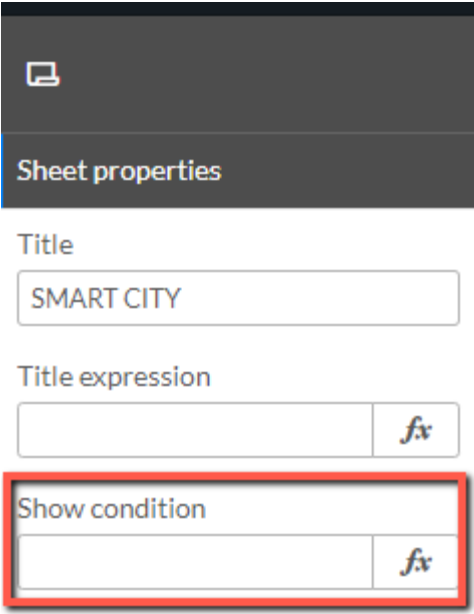
Dwell Heat Map Footnote

```
=if(isnull(MaxString({<Date="{="$($=Date(Max(Date),'DD/MM/YYYY'))"}, [Dwell_Heat_Map_URL]-="{ "-">}Source)),MaxString({<Master_Item_Name="{No Image Found"},Master_Item_Type="{Others"},Materlanguage={$(vLanguage)}>}Master_Item_Label),'Date: ' & max({<Date="{="$($=Date(Max(Date),'DD/MM/YYYY'))"},[Source] = {"Source Name"}, [Dwell_Heat_Map_URL]-="{ "-">}date(Date,VDate)) & ' Source: ' & MinString({<Date="{="$($=Date(Max(Date),'DD/MM/YYYY'))"},[Source] = {"Source Name"}, [Dwell_Heat_Map_URL]-="{ "-">}Source}))
```

Showing or Hiding Specific RESEARCH Dashboards

Research-Editors can determine who can see a dashboard. You do this as follows:

1. Open the properties of a dashboard (**Sheet properties**).



Sheet properties

Title

SMART CITY

Title expression

fx

Show condition

fx

2. In the **Show condition** field, enter an expression using the example syntax below.
 - To hide a dashboard for one user named Frank: =if (UserId='frank' ,0,1)
 - To show the dashboard for one user named Frank: =if (UserId='frank' ,1,0)
 - To hide the sheet for multiple users: =if ((UserId='frank') or (UserId='dorothy') or (UserId='eli'),0,1)



The usernames and group names should be written in lower case only.

Useful Expressions

Below are a number of examples of expressions that you can use to customize your dashboards.

Count Expressions

Count the Number of Objects

For Aggregated dashboards	For Detailed dashboards
sum({\$<[Class Category ID]={Category ID}>}TotalObjects)	count({\$<[Class Category ID]={Category ID}>}ObjectID)


Where:

Category ID	Category
0	People
1	Bicycles
2	Road Vehicles
3	Other Vehicles
4	Animals
5	Illumination Changes

For example:

- People counting for aggregated dashboards: `sum({$<[Class Category ID]={0}>}TotalObjects)`
- People counting for detailed dashboards: `count({$<[Class Category ID]={0}>}ObjectID)`

In this chart below, you can see which classes are included in each of the categories:

Class Category 	Class 
Animals	Animals
Bicycles	Bicycle
Illumination Changes	Lights Off
Illumination Changes	Lights On
Other Vehicles	Airplane
Other Vehicles	Boat
Other Vehicles	Train
People	Child
People	Man
People	Woman
Road Vehicles	Bus
Road Vehicles	Car
Road Vehicles	Motorcycle
Road Vehicles	Pickup Truck
Road Vehicles	Truck
Road Vehicles	Van

Count the Number of People

- From 60 days ago:

For Aggregated dashboards	For Detailed dashboards
<code>sum({\$<[Class Category ID]={0}, Date={"\$ (=Date(Today()-60,'DD/MM/YYYY'))"}>} TotalObjects)</code>	<code>count({\$<[Class Category ID]={0}, Date={"\$ (=Date(Today()-60,'DD/MM/YYYY'))"}>} ObjectID)</code>

Note that in the examples where the name Entry is used, it is given as an example of the name of a custom dimension. You can replace this with the name of any of your custom dimensions.

- In an area called Entry:

For Aggregated dashboards	For Detailed dashboards
<code>sum({\$<[Class Category ID]={0}, [Path & Area]='Entry'>} TotalObjectsCustomDimension)</code>	<code>count({\$<[Class Category ID]={0}, [Path & Area]='Entry'>}ObjectID)</code>

- From the previous seven days (last week) in an area called Entry:

For Aggregated dashboards	For Detailed dashboards
<code>sum({\$<[Class Category ID]={0}, [Path & Area]='Entry', Date={">=\$(=Date(Today()-7,'DD/MM/YYYY'))"}>} TotalObjectsCustomDimension)</code>	<code>count({\$<[Class Category ID]={0}, [Path & Area]='Entry', Date={">=\$(=Date(Today()-7,'DD/MM/</code>

TotalObjectsCustomDimension)	YYYYY'))">} ObjectID)
------------------------------	-----------------------

- **From the last two weeks in an area called Entry:**

For Aggregated dashboards	For Detailed dashboards
sum({<[Class Category ID]={0}, [Path & Area]='Entry', Date="{>=\$ (=Date(Today()-14,'DD/MM/YYYY')) ">} TotalObjectsCustomDimension)	count({<[Class Category ID]={0}, [Path & Area]='Entry', Date="{>=\$ (=Date(Today()-14,'DD/MM/YYYY')) ">} ObjectID)

- **From two weeks ago until one week ago in an area called Entry:**

For Aggregated dashboards	For Detailed dashboards
sum({<[Class Category ID]={0}, [Path & Area]='Entry', Date="{>=\$ (=Date(Today()-14,'DD/MM/YYYY'))<=\$ (=Date(Today()-7,'DD/MM/YYYY'))">} TotalObjectsCustomDimension)	count({<[Class Category ID]={0}, [Path & Area]='Entry', Date="{>=\$ (=Date(Today()-14,'DD/MM/YYYY'))<=\$ (=Date(Today()-7,'DD/MM/YYYY'))">} ObjectID)

For example, if today is 20/8/2020 and the expression is run, it will count people from 6/8/2020 (>today-14) until 13/8/2020 (<today-7).

- **From watchlists who visited the Left Wing camera and the Exit 1 camera, but not Entrance 2 camera:**

For Aggregated dashboards	For Detailed dashboards
N/A	Count(DISTINCT {\$<Identity = P({<[Source] = {'Left Wing'}}) * P({<[Source] = {'Exit 1'}}) - P({<[Source] = {'Entrance 2'}})} Identity)

Note that if the word DISTINCT occurs before the function arguments, duplicates resulting from the evaluation of the function arguments are disregarded.

- **In Camera 4 in the “Entry” path together with the number of people in Camera 15 in all paths and areas except the “Passing by” path:**

For Aggregated dashboards	For Detailed dashboards
sum({\$<Source='Cam 4',[Class Category ID]={0}, [Path & Area]='Entry'}>} TotalObjectsCustomDimension)+sum({\$<Source='Cam 15',[Class Category ID]={0}, [Path & Area]='Passing by'}>} TotalObjectsCustomDimension)	count({\$<Source='Cam 4',[Class Category ID]={0}, [Path & Area]='Entry'}>}ObjectID)+count({\$<Source='Cam 15',[Class Category ID]={0}, [Path & Area]='Passing by'}>}ObjectID)

- **Who are employees (based on the watchlist named Employees):**

For Aggregated dashboards	For Detailed dashboards
N/A	Count(DISTINCT {\$<[Watchlist]='Employees',[Class Category ID]={0}>} FaceID)

- **In the “Entry” area (not including employees on the “Employees” watchlist):**

For Aggregated dashboards	For Detailed dashboards
N/A	Count(DISTINCT {\$<[Path & Area]='Entry',[Class Category ID]={0},[Watchlist]='Employees'}>}FaceID)

Date and Time Expressions

- Number of days in the current year and month with more than 1000 people:

For Aggregated dashboards	For Detailed dashboards
<code>=sum(aggr({\$<[Class Category ID]={0},Year={\$(=Year(Today()))},[Month Num]={\$=(=Month(Today()+0))}>}if(sum(TotalObjects) > 1000,1,0),Date))</code>	<code>=sum(aggr({\$<[Class Category ID]={0},Year={\$(=Year(Today()))},[Month Num]={\$=(=Month(Today()+0))}>}if(count(ObjectID) > 1000,1,0),Date))</code>

- Number of days in the entire time range that have more than 1000 people:

For Aggregated dashboards	For Detailed dashboards
<code>=sum(aggr({\$<[Class Category ID]={0}>}if(sum(TotalObjects) > 1000,1,0),Date))</code>	<code>=sum(aggr({\$<[Class Category ID]={0}>}if(count(ObjectID) > 1000,1,0),Date))</code>

- Time gap between last two persons in same camera and day:

This is relevant, for example, to make sure that the last two employees in the branch are not walking out together.

For Aggregated dashboards	For Detailed dashboards
N/A	<ul style="list-style-type: none"> Last object: <code>firstsortedvalue([End Time], -[End Time],1)</code> Second last object: <code>firstsortedvalue([End Time], -[End Time],2)</code> Gap: <code>firstsortedvalue([End Time], -[End Time],1) - firstsortedvalue([End Time], -[End Time],2)</code>

- 10-minute increments of time between the hours of 4am and 8am:

For Aggregated dashboards	For Detailed dashboards
N/A	<code>=if(Time >= 4/24 and Time <=8/24,time([10 Min],'\$(vTimeFormat)'))</code>

- Automatically open a sheet to show today and the previous seven days:

- In the **Sheet properties**, open the **Action** section.
- From the **Action** property, select **Select values matching search criteria**.
- From the **Field** property, select **Date**.
- In the **Value** property, enter: `= '>=' & Date(Today()-7) & '<=' & Date(Today())`

The screenshot shows the BriefCam interface. At the top, there is a navigation bar with a dropdown arrow, left and right arrows, and a 'Done editing' button. Below this is a sidebar menu with options: 'Sheet properties', 'Alternate states', and 'Actions' (which is highlighted). The main area displays a configuration panel for a chart. It includes a 'Tolerance' section, a 'Select values matching sear...' section, a 'Label' field with an 'fx' button, an 'Action' dropdown menu, a 'Field' dropdown menu, a checkbox for 'Overwrite locked selecti...', and a 'Value' field with an 'fx' button.

- **Ensure a chart starts with the proper days of the week order:**
 1. Click on the chart that includes days.
 2. From the chart's properties, select the **Sorting** section.
 3. Select a dimension that includes **Day**.
 4. Make sure the **Sort by expression** is checked.
 5. Make sure the order is set to **Ascending**.
 6. In the **Expression** property, enter the following: `match(Day, 'Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun')`

Chart suggestions

Data

Sorting

1 Time Drill Down

Sorting Custom

Day

☒ Sort by expression

Ascending

Expression

match(Day,'Mon','Tue','Wed','Th

Expressions for Maximums and Minimums

Note that if the word DISTINCT occurs before the function arguments, duplicates resulting from the evaluation of the function arguments are disregarded.

- **Max People/Hour (multiple Path & Area)**

For Aggregated dashboards	For Detailed dashboards
<code>max(aggr(sum({\$<[Class Category ID]={0},[Path & Area]={ 'custom_dimension_name_A ', 'custom_dimension_name_B'>} TotalObjectsCustomDimension), [Hour (hh)],Date))</code>	<code>max(aggr(count({\$<[Class Category ID]={0},[Path & Area]={ 'custom_dimension_name_A ', 'custom_dimension_name_B'>} ObjectID),Hour,Date))</code>

- **Maximum number of visitors per hour on a daily basis (not including employees on the “Employees” watchlist):**

For Aggregated dashboards	For Detailed dashboards
N/A	<code>max(aggr(count({\$<[Path & Area]='C-01-PC-OverHeadEntr',[Class Category ID]={0}>} ObjectID) - (count(distinct {\$<[Watchlist]='Employees',[Class Category ID]={0}>} FaceID)),Hour,Date))</code>

- **Minimum number of visitors per hour on a daily basis (not including employees on the “Employees” watchlist):**

For Aggregated dashboards	For Detailed dashboards

N/A	if (Min(aggr(count({\$<[Path & Area]='C-01-PC-OverHeadEntr'},[Class Category ID]={0}>}ObjectID) - (count(distinct {\$<[Watchlist]='Employees',[Class Category ID]={0}>} FaceID)),Hour,Date)) < 0 , 0, Min(aggr(count({\$<[Path & Area]='C-01-PC-OverHeadEntr'},[Class Category ID]={0}>}ObjectID) - (count(distinct {\$<[Watchlist]='Employees',[Class Category ID]={0}>} FaceID)),Hour,Date)))
-----	--

Expressions for Averages

- Average number of people per day in custom dimension named Entry:

For Aggregated dashboards	For Detailed dashboards
avg(Aggr((sum({<[Path & Area]='Entry'>} TotalObjectsCustomDimension)),Day))	avg(Aggr((count({<[Path & Area]='Entry'>}[ObjectID])),Day))

- Average number of people per hour in custom dimension named Entry:

For Aggregated dashboards	For Detailed dashboards
avg(Aggr((count({<[Path & Area]='Entry'>}[ObjectID])),Date,Hour))	avg(Aggr((count({<[Path & Area]='Entry'>}[ObjectID])),Date,Hour))

- Average number of people every 10 minutes:

For Aggregated dashboards	For Detailed dashboards
N/A	avg(Aggr((count({<[Class Category ID]={0}>}[ObjectID])),Date,[10 Min]))

- Average number of times there were 50+ people within 10 minutes:

For Aggregated dashboards	For Detailed dashboards
N/A	sum(aggr(if(avg(Aggr((count({<[Class Category ID]={0}>}[ObjectID])),Date,[10 Min])) > 50,1,0),Date,[10 Min]))

- Top 10 Sources according to the longest Avg dwell time (people only), per max date:

- Add a Bar chart with one of the below measure's expressions (per your need):
 - Measure expression for Avg dwell time (people only), across all dates:
For Aggregated dashboards: sum({\$<[Class Category ID]={0}>}WeightedAvgDwellSec) / sum({\$<[Class Category ID]={0}>}TotalObjects)
For Detailed dashboards: Avg({\$<[Class Category ID]={0}>}[Dwell (Sec)])
 - Measure expression for Avg dwell time (people only), per max date:
For Aggregated dashboards: Avg({\$<[Class Category ID]={0},[Date]='\$(=Max(Date))'>}[Dwell (Sec)])
For Detailed dashboards: sum({\$<[Class Category ID]={0},[Date]='\$(=Max(Date))'>}WeightedAvgDwellSec) / sum({\$<[Class Category ID]={0},[Date]='\$(=Max(Date))'>}TotalObjects)
- Change the name of the measure to **Avg Dwell**.
- Add a **Dimension** and select **Source**.
- Add a limitation on the Source Dimension to set top 10 Sources as shown in the image below.

Data

Dimensions

Bar

Source ▼ ⋮

Dimension

Source 🔗

☒ Include null values

Limitation

Fixed number ▼

Top **Bottom**

10 fx

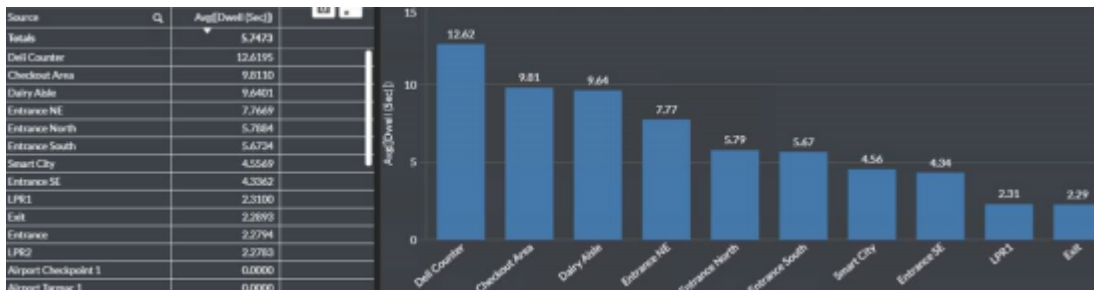
Calculated on measure:
 Avg({\$<[Class Category ID]={0},
 [Date]={"\$ (=Max(Date))">}[Dwell
 (Sec)])

5. Sort the chart by the expression (by having the Avg Dwell measure as the first item in the Sorting list).

Sorting

1	▶ Avg Dwell	≡
2	▶ Source	≡

6. See the result:



Exclusion Expressions

- Exclude specific custom dimensions:

For Aggregated dashboards	For Detailed dashboards
<code>sum({<[Class Category ID]={0},[Path & Area]-='custom_dimension_name'}>}TotalObjectsCustomDimension)</code>	<code>count({<[Class Category ID]={0},[Path & Area]-='custom_dimension_name'}>}[ObjectID])</code>

- **Exclude weekends for 'On-Demand' Mon-Fri scheduling.**

For Aggregated dashboards	For Detailed dashboards
<code>=if (Weekday(Date(Today()))=0,Date(Today()-3),Date(Today()-1))</code>	<code>=if (Weekday(Date(Today()))=0,Date(Today()-3),Date(Today()-1))</code>



To remove gender from graphs, replace vClass with vClassCategory.

Vehicle Expressions

- **Bicycle Counting** – Counts bicycles only:

For Aggregated dashboards	For Detailed dashboards
<code>sum({\$<[Class Category ID]={1}>} TotalObjects)</code>	<code>count({\$<[Class Category ID]={1}>}ObjectID)</code>

- **Road Vehicle Counting** – Counts the following classes: **Bus, Car, Motorcycle, Pickup Truck, Truck, and Van**:

For Aggregated dashboards	For Detailed dashboards
<code>sum({\$<[Class Category ID]={2}>} TotalObjects)</code>	<code>count({\$<[Class Category ID]={2}>}ObjectID)</code>

- **Other Vehicle Counting** – Counts the following classes: **Airplane, Boat, and Train**:

For Aggregated dashboards	For Detailed dashboards
<code>sum({\$<[Class Category ID]={3}>} TotalObjects)</code>	<code>count({\$<[Class Category ID]={3}>}ObjectID)</code>

- **Vehicle U-turn counts from the previous 7 days:**

For Aggregated dashboards	For Detailed dashboards
<code>sum({<[Class Category ID]={2}, [Path & Area]='U-Turn',Date='{>=\$ (=Date(Today()-7,'DD/MM/YYYY'))'}>} TotalObjectsCustomDimension)</code>	<code>count({<[Class Category ID]={2}, [Path & Area]='U-Turn',Date='{>=\$ (=Date(Today()-7,'DD/MM/YYYY'))'}>} ObjectID)</code>

- **Vehicle U-turns per hour:**

For Aggregated dashboards	For Detailed dashboards
<code>sum(Aggr((count({<[Class Category ID]={2}, [Path & Area]='U-Turn'}>} TotalObjectsCustomDimension)),Date, [Hour (hh)]))</code>	<code>Count(Aggr((count({<[Class Category ID]={2}, [Path & Area]='U-Turn'}>}[ObjectID])),Date,Hour))</code>

- **Duration for date per LPR:**

For Aggregated dashboards	For Detailed dashboards
N/A	<code>Interval(avg(Aggr((max({<[LPR]='{>}[End Time])-min({<[LPR]='{>}[Start Time])),GroupID,LPR,Date)))</code>

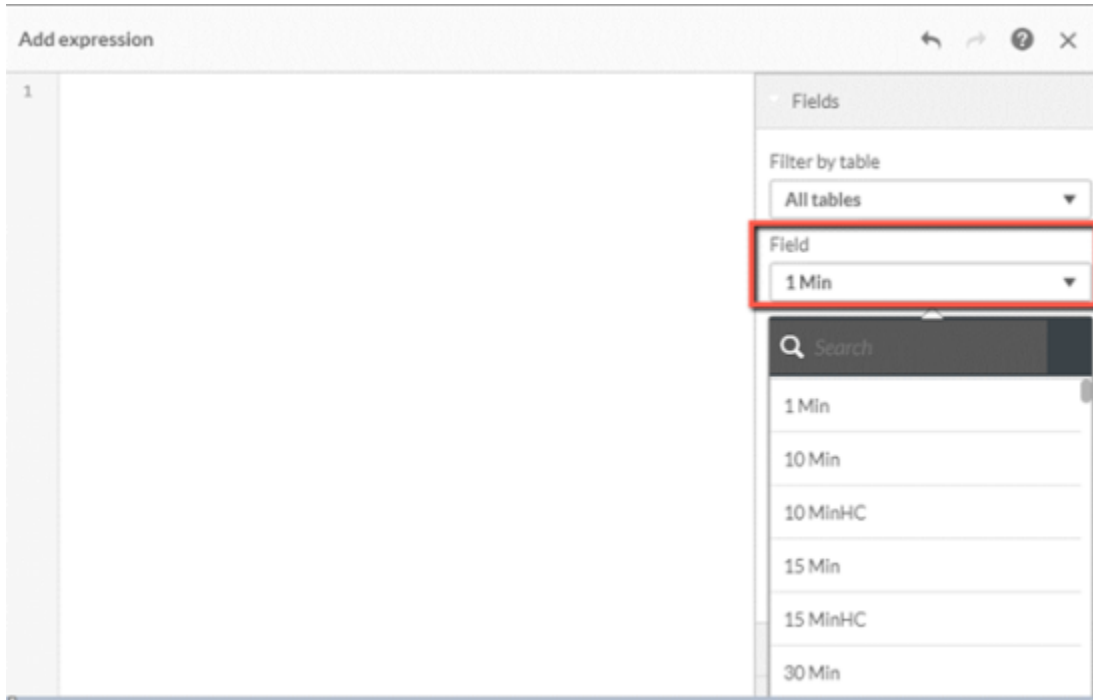
Miscellaneous Expressions

Counts objects that moved in a direction higher than 299.5 or lower than 60.5:

For Aggregated dashboards	For Detailed dashboards
N/A	count({\$<[Direction]=">=299.5<=60.5">}ObjectID)

Fields in Expressions

In the Expression Editor, there is a **Field** drop-down list.



Most of the fields are for internal use by BriefCam programmers or already in use in the various **Master Items**. However, you can use them in your expression as well. For example, if you're looking to fine tune date or time information, you can make use of these fields:

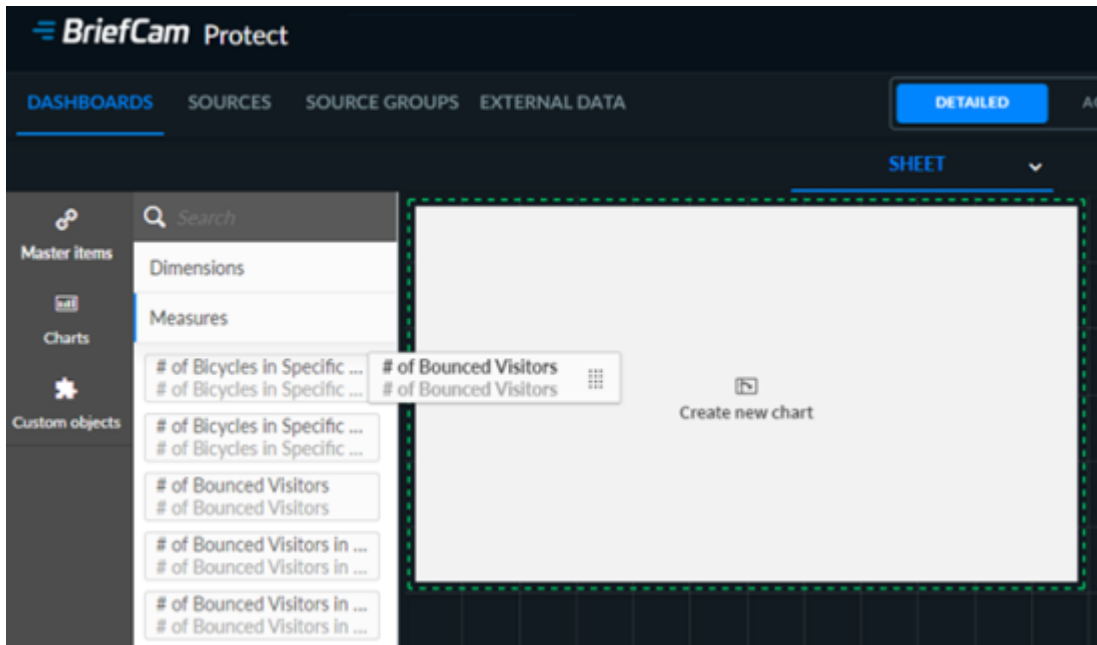
- Year, Qtr, Median, Month, Week, Day
- WeekDay_Num, Day (Num), Month Num
- Median, Median Year, Median Diff
- Year-Qtr, Year-Month, Year-Month Num, Year-Week, Year Diff
- Date Diff, Week Diff, Month Diff, Qtr Diff
- YYYYMM

A number of other useful fields that are not currently part of the **Master Items** or are not self-explanatory are listed below:

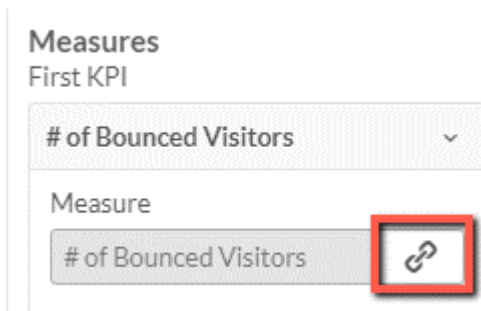
- isnew – Indicates whether this is a new customer (=1) or returning customer (=0). A new customer means that this is the first occurrence of this face within the Source Group. Note that this indication is dependent on the history saved in the database (by default it's 30 days). For example, if the same customer appeared on the current day and 60 days ago, then it will be identified as a new customer on both occurrences.
- Faceid – Retrieved to identify an object according to his/her face feature vector. The same Face ID can be returned multiple times in a view. For example, if the same person appeared in a few cameras within the same Source Group, or if the same person appeared both on current and previous days in the same camera.
- headcountid – The Source snapshot ID (a record is added every 2 minutes) for People Counting alerts.
- motiondirection – The object's direction (degrees).
- motionquality – The object's quality.

Changing a Default Value in Visitors Measures

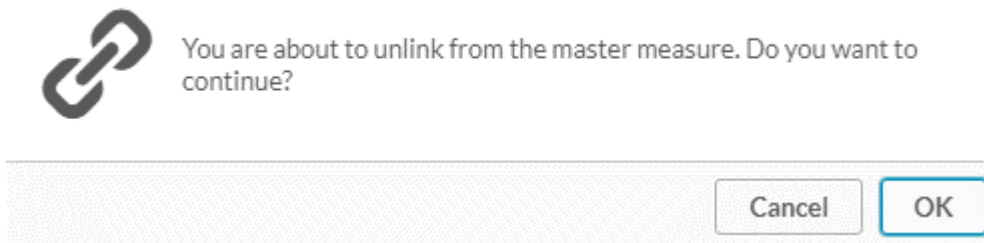
1. Drag the measure onto the dashboard, such as **# of Bounced Visitors**.




2. Unlink the measure by clicking the unlink () icon.



3. Click **OK**.



4. In the **Expression** field, click the function () button.

Measures

First KPI

=MaxString({<Master_Item_... ▾

Expression

sum(aggr({<[FaceID]-=""



5. You can change and add values to the **Start Time** section, for example:
 - a. To change the number of seconds, change the number 60 (highlighted below).

```
{[Start Time]]),GroupID,FaceID,Date))) *24*60*60 < 60,1,0),GroupID,FaceID,Date))
```

- b. To change the time range to the last week, add ,Week in two locations as shown below.

```
{[Start Time]]),GroupID,FaceID,Date,Week)) *24*60*60 < 60,1,0),GroupID,FaceID,Date,Week))
```

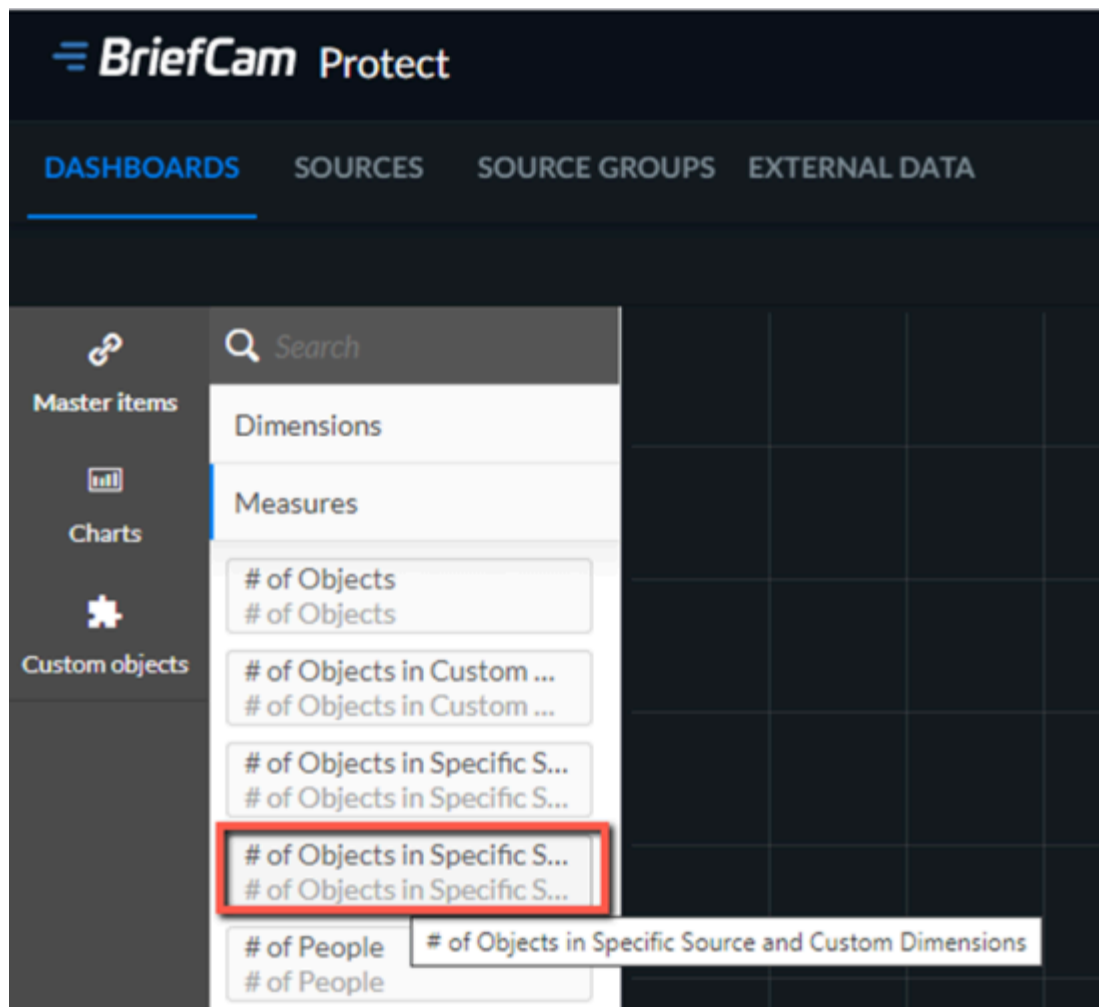
- c. To change the time range to the last hour, add ,Hour in two locations as shown below.

```
{[Start Time]]),GroupID,FaceID,Date,Hour)) *24*60*60 < 60,1,0),GroupID,FaceID,Date,Hour))
```

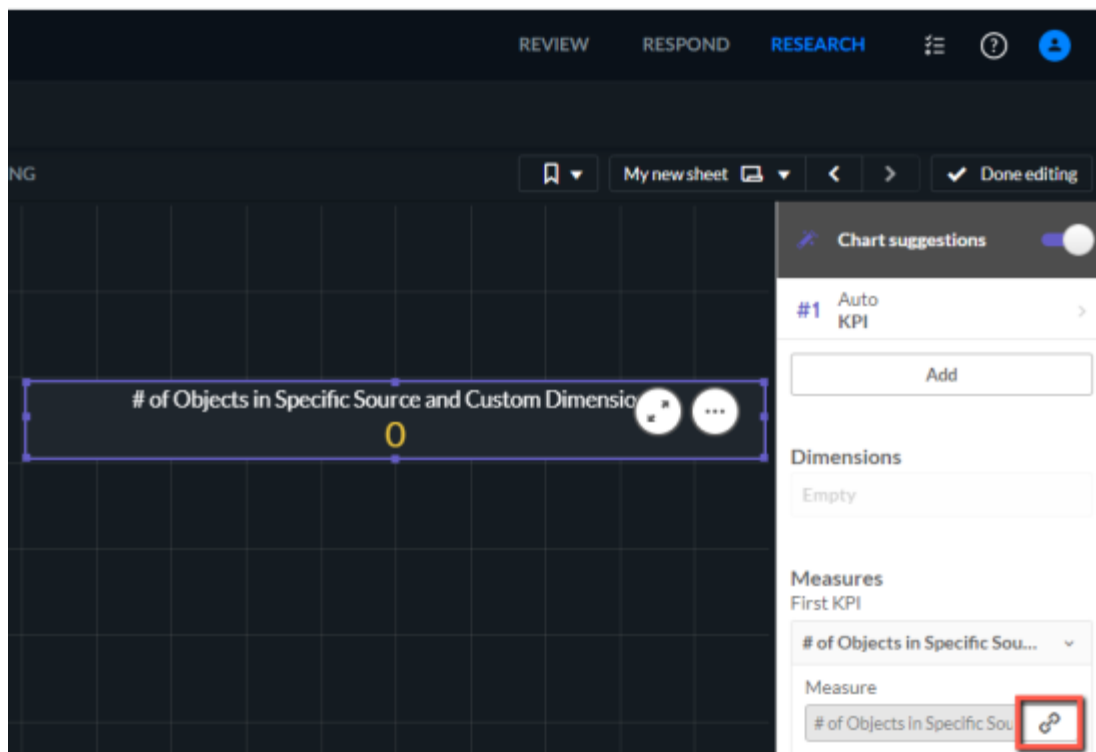
6. Click **Apply**.

Setting a Specific Source and Custom Dimension

1. When using a measure that has the words "in Specific Source" and/or "in Custom Dimensions" in the name, you need to set the source and custom dimension that you want this measure to use. You do this as follows:
2. Drag the measure onto the dashboard, such as **# of Objects in Specific Source and Custom Dimensions**.



3. Unlink the measure by clicking the unlink () icon.



4. Click **OK**.



You are about to unlink from the master measure. Do you want to continue?

Cancel

OK

5. In the **Expression** field, click the function (*fx*) button.

Measures

First KPI

=MaxString({<Master_Item_...})

Expression

count({\$<Source={'Source

fx

6. Depending on what appears in the expression for the measure (whether it includes sources and/or custom dimensions), replace the string SourceExample with the requested source name and/or the string CustomDimensionsExample with the requested area, path, or line crossing.

Edit expression


1 count({\$<Source={'SourceExample'}, [Path & Area]-{'CustomDimensionsExample'}>ObjectID})

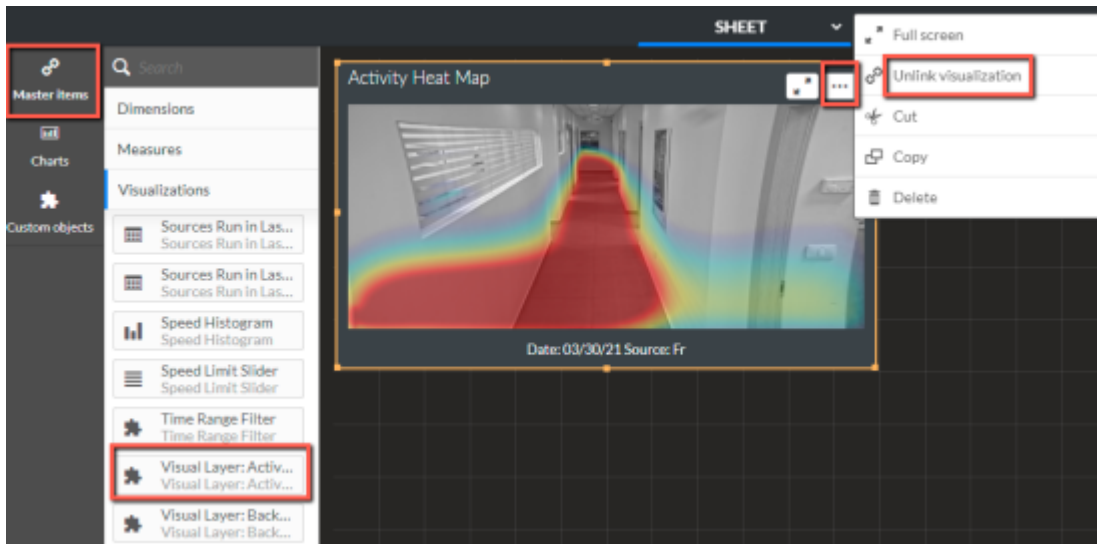
For example:


```
count({$<Source={'Store Entrance'}, [Path & Area]='Accessories Section'}>>ObjectID)
```

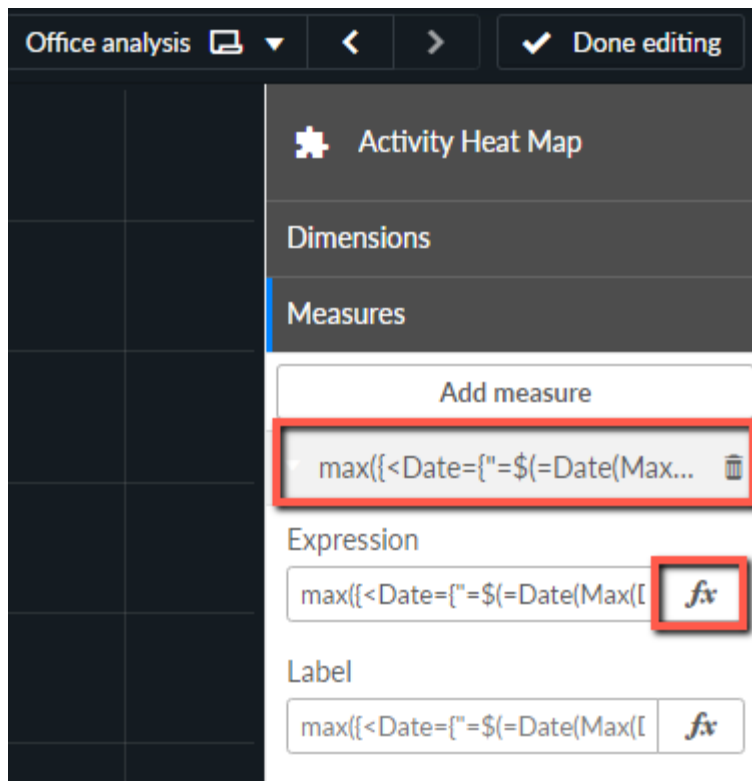
7. Click **Apply**.

Displaying a Specific Visual Layer

1. Open the **Master items**, and drag a **Visual Layer** visualization, such as **Visual Layer: Activity Heat Map** onto the dashboard.
2. Unlink the visualization by clicking on the more () button and clicking **Unlink visualization**.

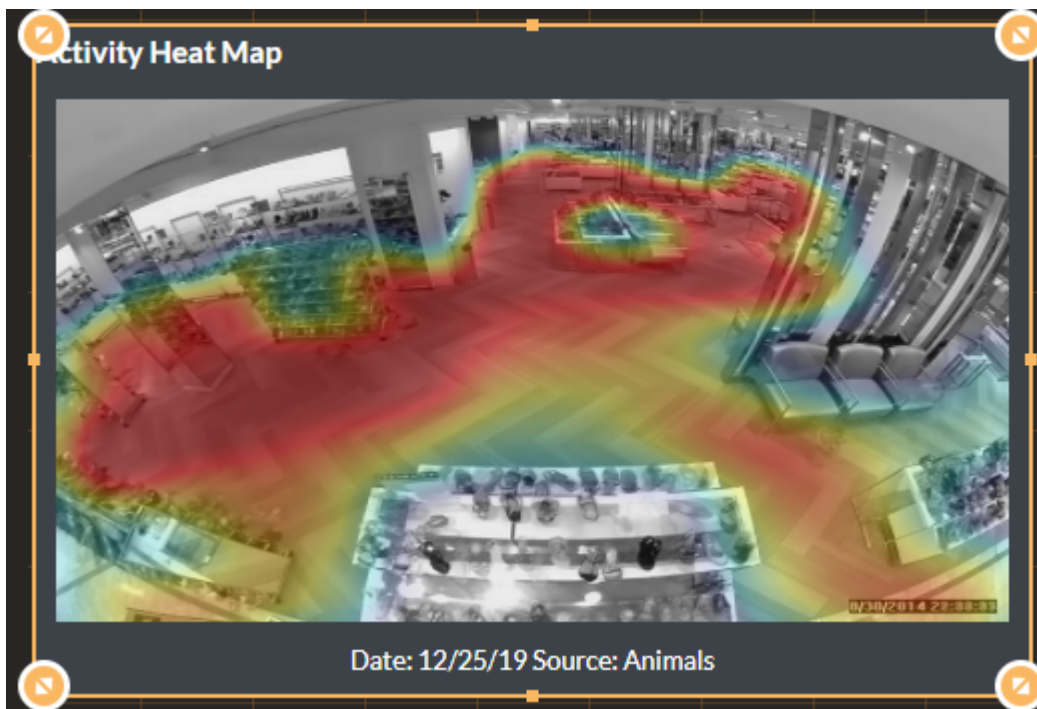


3. Click **OK**.
4. In the properties, open the **Measures** section and click on the expression.
5. Click on the expression () button.

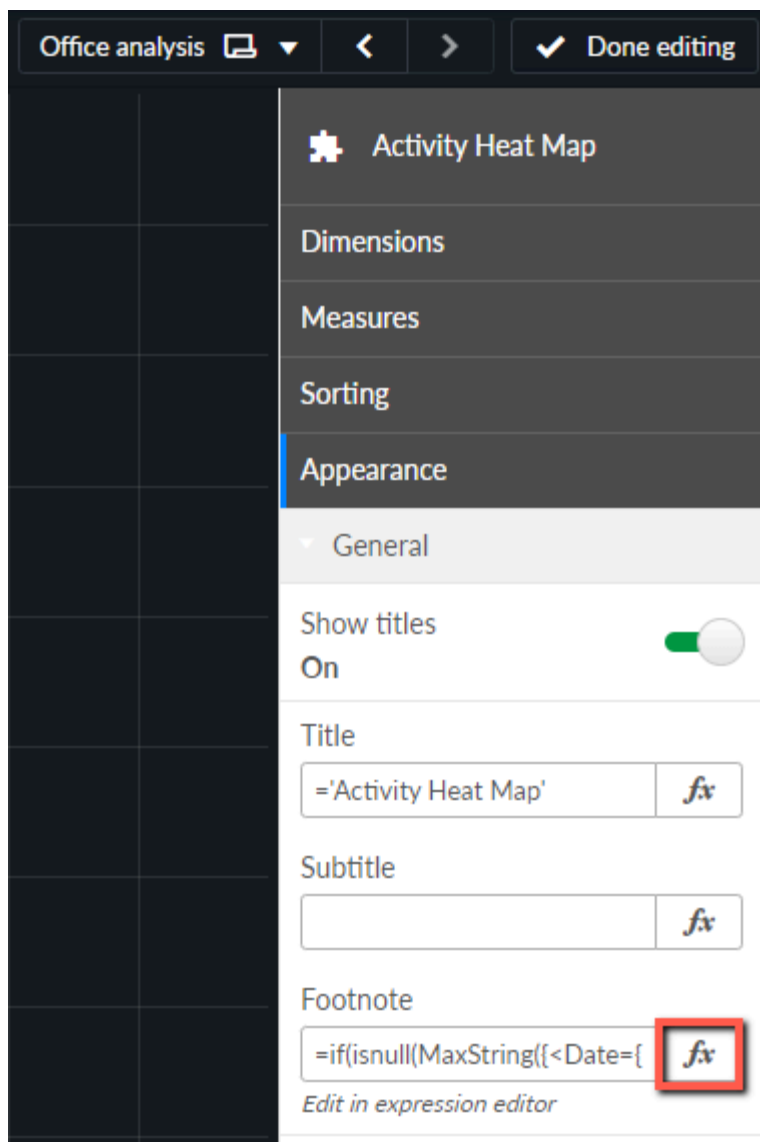


6. Delete the existing expression and enter the following string:
`=max({<Date={\"=\\$ (=Date(Max(Date),'DD/MM/YYYY'))\"},[Source] = {\"Source Name\"}>} Date)`
7. In the {\"Source Name\"} string, replace the words Source Name with the name of your source, such as {\"Shoe Store\"}, and click **Apply**.

The image on the dashboard will change. However, notice that the footer at the bottom did not change.



8. To change the footer, go to the **Appearance** section and from the **Footnote** field, click the expression button.



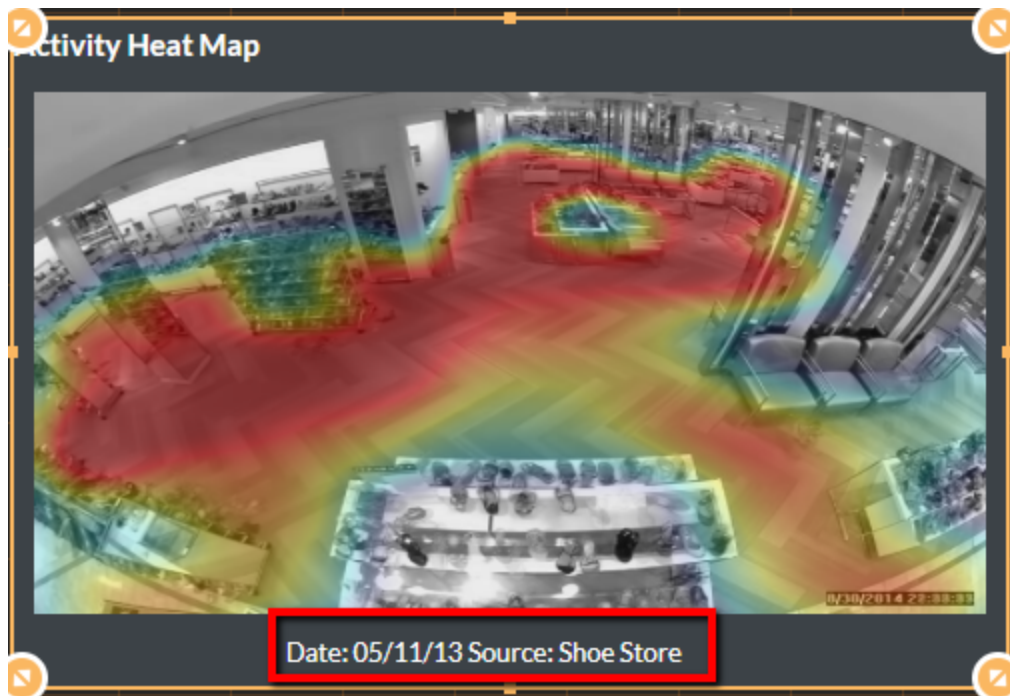
9. Delete the expression and copy and paste the following string:

```
=if(isnull(MaxString({<Date={'=$(<Date(Max(Date),\'DD/MM/YYYY\'))\'}, [Activity_Heat_Map_URL]-=\'<br>'}>Source)),MaxString({<Master_Item_Name=\'No Image Found\',Master_Item_Type=\'Others\',Materlanguage={$(<vLanguage>)}>Master_Item_Label},\'Date: \' & max({<Date={'=$(<Date(Max(Date),\'DD/MM/YYYY\'))\'},[Source] = {"Source Name"}, [Activity_Heat_Map_URL]-=\'<br>'}>date(Date,VDate)) & \' Source: \' & MinString({<Date={'=$(<Date(Max(Date),\'DD/MM/YYYY\'))\'},[Source] = {"Source Name"}, [Activity_Heat_Map_URL]-=\'<br>'}>Source}))
```

Note that the string above is for Activity Heat Map visual layers. For other visual layers, see the strings at the end of this section.

10. In the two instances of the {"Source Name"} string, replace the words Source Name with the name that you want to appear in the footnote, such as {"Shoe Store"}, and click **Apply**.

The footnote on the dashboard will change (as shown in the image below).



The footnote strings for the other visual layers are as follows:

Background Changes Footnote

```
=if(isnull(MaxString(<{<Date="{="$($=Date(Max(Date),'DD/MM/YYYY'))"}>}, [Background_Changes_URL]-="{ "-">}Source)),MaxString(<{<Master_Item_Name="{No Image Found"}>,Master_Item_Type="{Others"}>,Materlanguage="{$(vLanguage)}>}Master_Item_Label'),'Date: ' & max(<{<Date="{="$($=Date(Max(Date),'DD/MM/YYYY'))"}>,[Source] = {"Source Name"}, [Background_Changes_URL]-="{ "-">}date(Date,VDate)) & ' Source: ' & MinString(<{<Date="{="$($=Date(Max(Date),'DD/MM/YYYY'))"}>,[Source] = {"Source Name"}, [Background_Changes_URL]-="{ "-">}Source))
```

Common Paths Footnote

```
=if(isnull(MaxString(<{<Date="{="$($=Date(Max(Date),'DD/MM/YYYY'))"}>}, [Common_Path_URL]-="{ "-">}Source)),MaxString(<{<Master_Item_Name="{No Image Found"}>,Master_Item_Type="{Others"}>,Materlanguage="{$(vLanguage)}>}Master_Item_Label'),'Date: ' & max(<{<Date="{="$($=Date(Max(Date),'DD/MM/YYYY'))"}>,[Source] = {"Source Name"}, [Common_Path_URL]-="{ "-">}date(Date,VDate)) & ' Source: ' & MinString(<{<Date="{="$($=Date(Max(Date),'DD/MM/YYYY'))"}>,[Source] = {"Source Name"}, [Common_Path_URL]-="{ "-">}Source))
```

Dwell Heat Map Footnote

```
=if(isnull(MaxString(<{<Date="{="$($=Date(Max(Date),'DD/MM/YYYY'))"}>}, [Dwell_Heat_Map_URL]-="{ "-">}Source)),MaxString(<{<Master_Item_Name="{No Image Found"}>,Master_Item_Type="{Others"}>,Materlanguage="{$(vLanguage)}>}Master_Item_Label'),'Date: ' & max(<{<Date="{="$($=Date(Max(Date),'DD/MM/YYYY'))"}>,[Source] = {"Source Name"}, [Dwell_Heat_Map_URL]-="{ "-">}date(Date,VDate)) & ' Source: ' & MinString(<{<Date="{="$($=Date(Max(Date),'DD/MM/YYYY'))"}>,[Source] = {"Source Name"}, [Dwell_Heat_Map_URL]-="{ "-">}Source))
```

Tracking People Across Cameras Based on Face Recognition

In the RESEARCH module, people can be tracked across cameras (reidentification/Re-ID) using the face recognition functionality when a high-quality face recognition camera is used. This feature can be used to count the number of distinct visitors according to face in store, measure the average time people stay in a store, calculate bounce rates, exclude employees from visitor counts and measure new versus repeat visitors.

This feature can be used for people whose faces are visible and of high quality (2-star and 3-star images) on all the relevant cameras.

To support this feature, RESEARCH has many [built-in measures](#), such as **# of Unique Identities**, **# of New Unique**

Identities, # of Returning Identities, Avg Visit Duration Unique Identities, # of Bounced Visitors, Visitors Bounce Rate, and more. In order to use this feature, all relevant camera sources need to be added to the same Source Group in the **SOURCE GROUPS** tab.

The Re-ID mechanism can be modified to account for the general similarity between people in the environment. For example, if most people wear a hair covering or have distinct facial features, such as mustaches or glasses, it may be necessary to adjust the sensitivity of this feature using the **BIFaceRecognition.FaceMatchingThreshold** setting in the BriefCam Administrator Console.



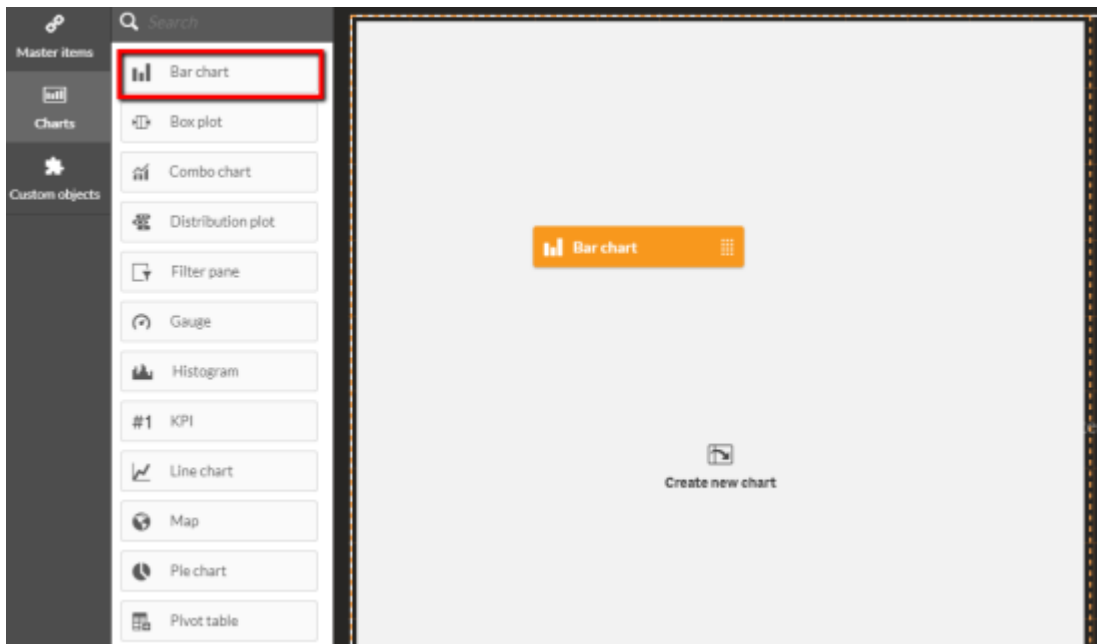
Faces are saved as unidentified vectors in the database.

Sample Workflows

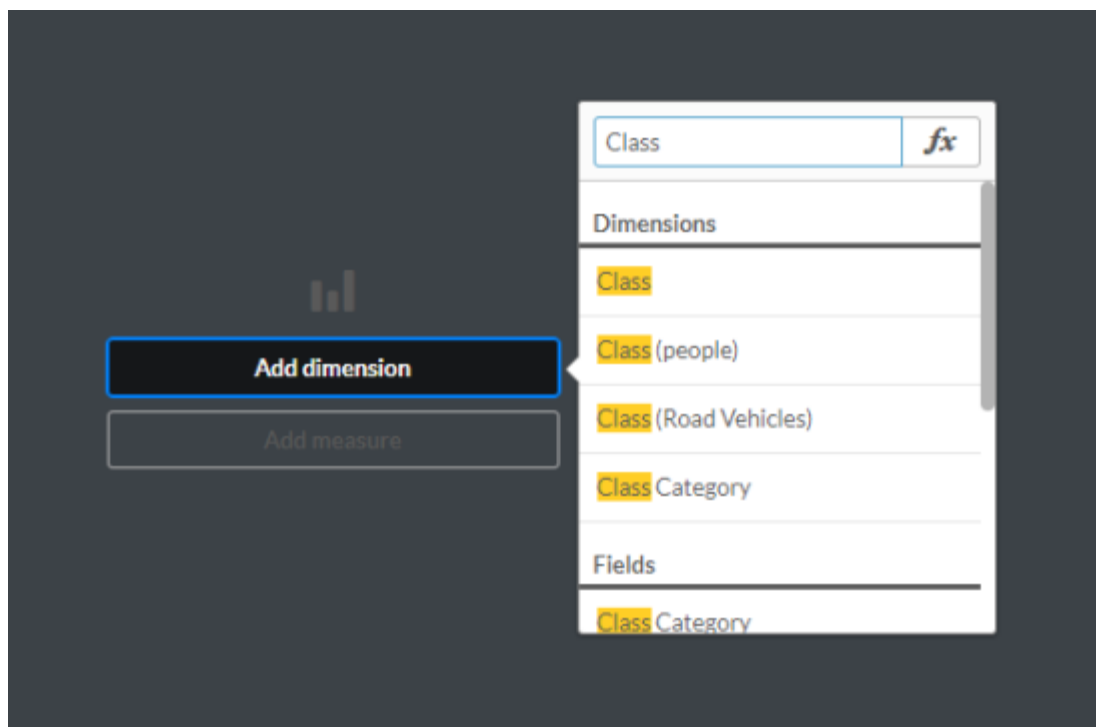
Creating a Dashboard

Create a new sheet as explained in [Creating a New Sheet](#), then follow the steps described below.

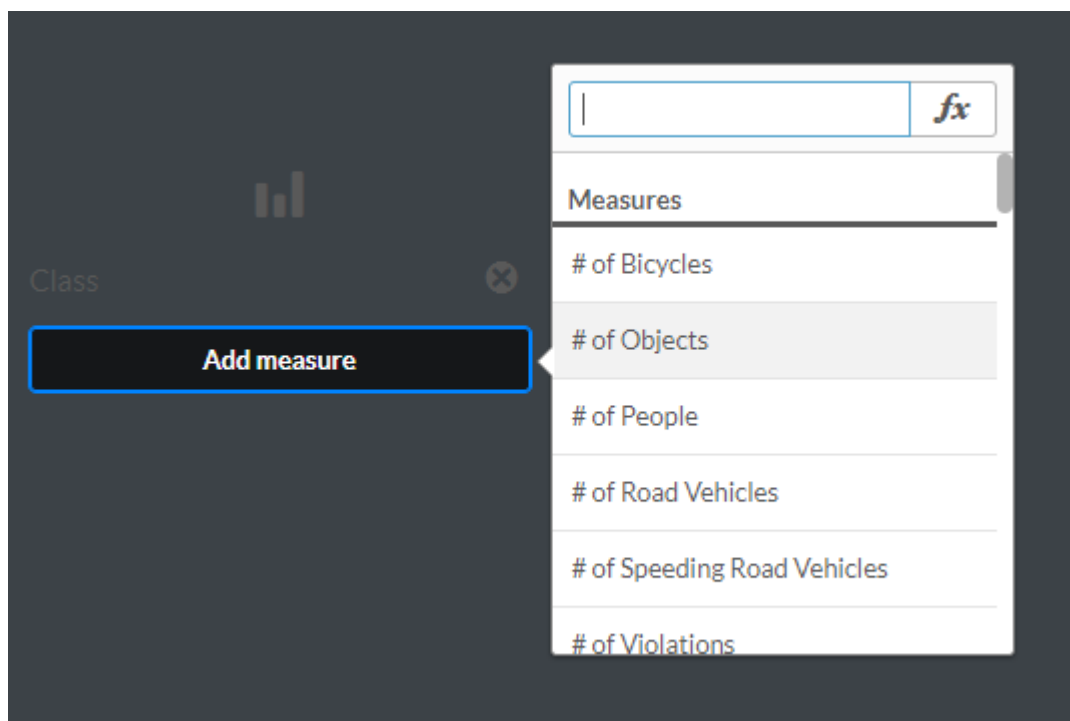
1. Drag a Bar chart to the sheet.



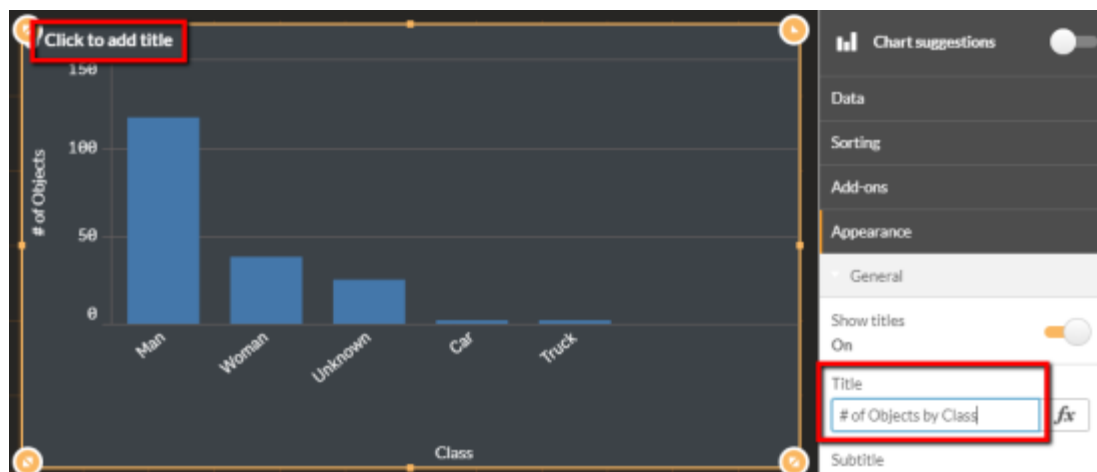
2. Click **Add dimension** and select **Class**.



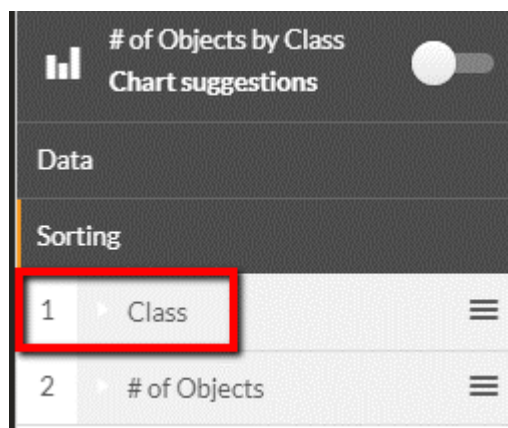
3. Click **Add measure** and select **# of Objects**.




4. Add a title to the chart.



5. Change sorting by dragging items on the right-hand menu, so that **Class** precedes **# of Objects**.



6. Expand **Class**, select **Custom sorting** and check **Sort alphabetically**.



of Objects by Class
Chart suggestions

☐

Data

Sorting

1 ▾ Class ≡

Sorting
Custom ☐

☐ Sort by expression

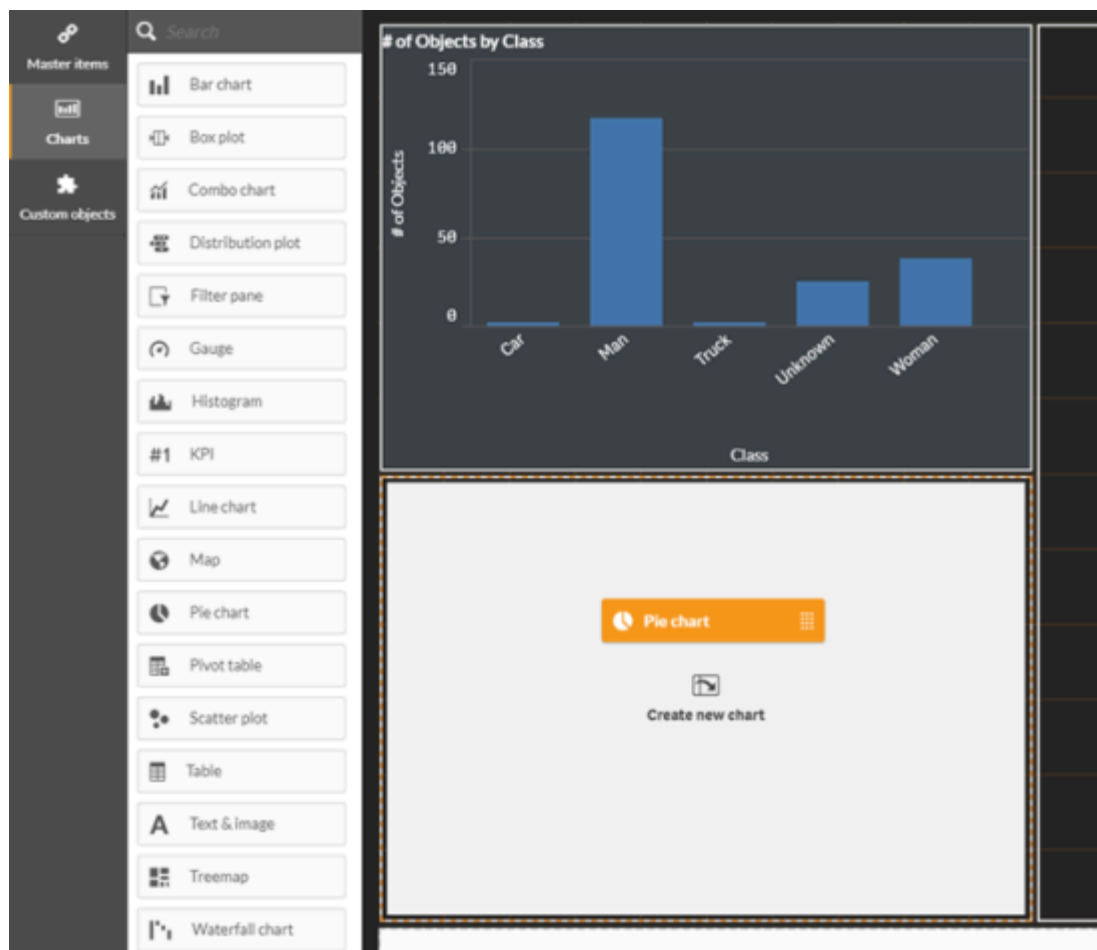
☐ Sort numerically

☒ Sort alphabetically

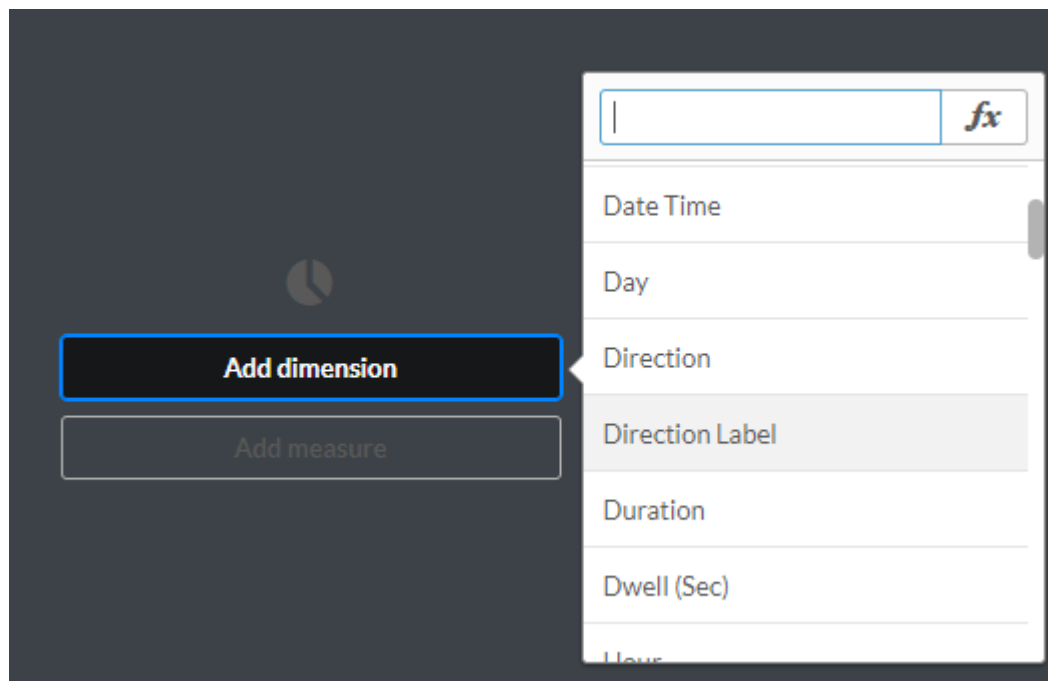
Ascending ▾

2 ▸ # of Objects ≡

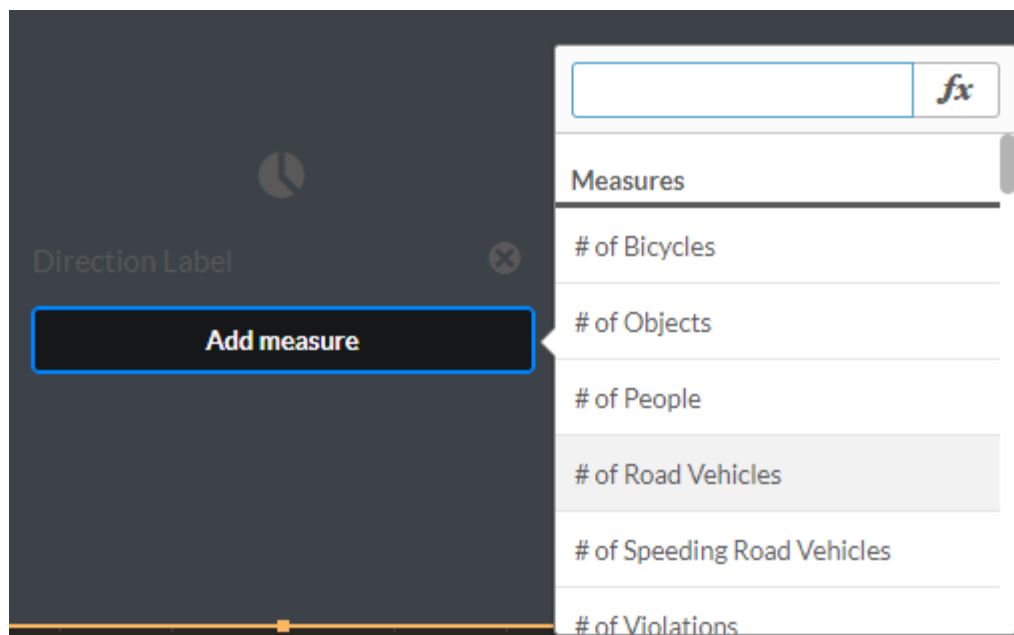
7. Drag a Pie chart onto the dashboard.



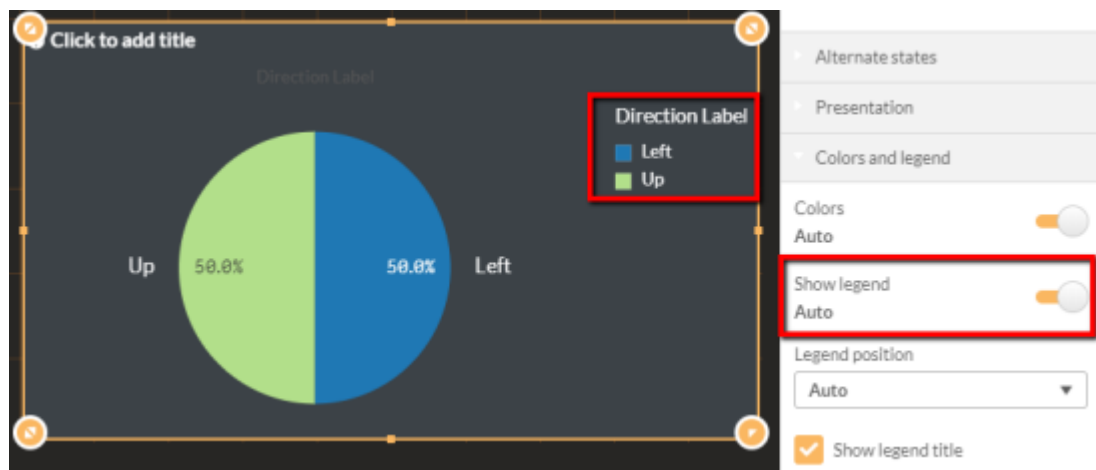
8. Click **Add dimension** and select **Direction Label**.



9. Click **Add measure** and select **# of Road Vehicles**.



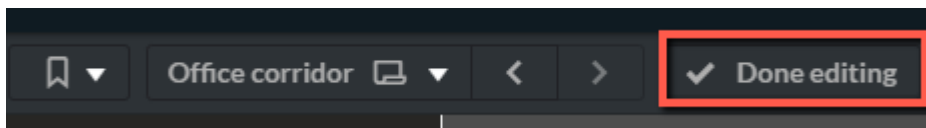
10. If you do not see a legend, change **Show Legend** to **Enabled**.



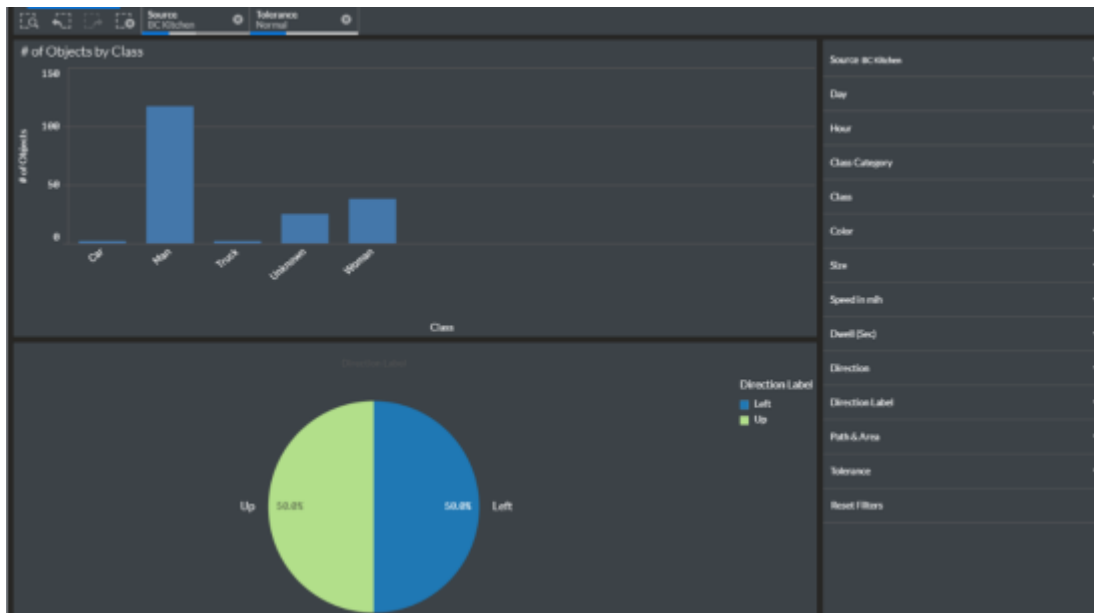
11. Drag the **Filters** visualization to the dashboard.



- Click the **Done editing** button.



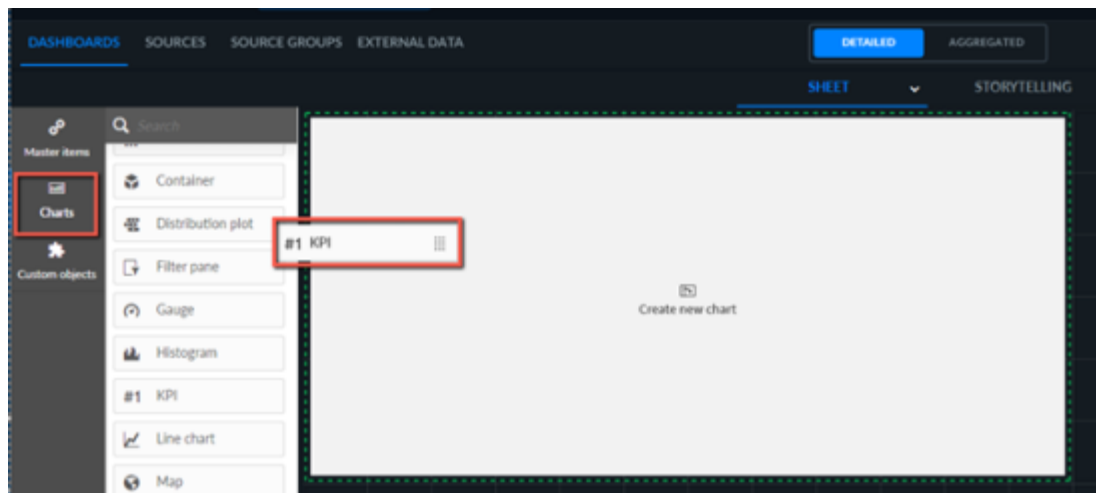
Congratulations! You've created a new dashboard.



Multi-Camera Dashboard


To create a Multi-Camera Dashboard that presents object counts from multiple sources in the same sheet, follow the steps described below:

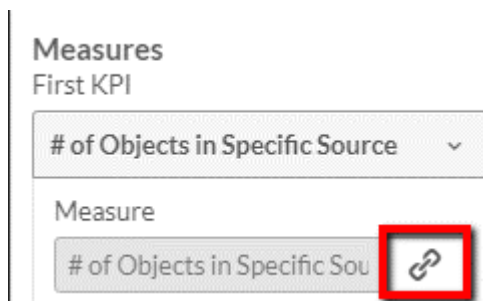
- Drag the KPI chart onto the dashboard.



2. Select the **# of Objects in Specific Source** measure.
3. The result will currently be 0 objects.



4. Unlink the measure within the visualization object by clicking the unlink () icon.



5. Click **OK**.



You are about to unlink from the master measure. Do you want to continue?

Cancel

OK

- In the **Expression** field, click the function (*fx*) button.

Measures
First KPI

=MaxString({<Master_Item_... ▾

Expression

count({\$<Source={'Source

fx

- Replace the string SourceExample with the requested Source name.

```
1 count({$<Source={'SourceExample'}>}ObjectID)|
```

```
1 count({$<Source={'Intersection 1'}>}ObjectID)|
```

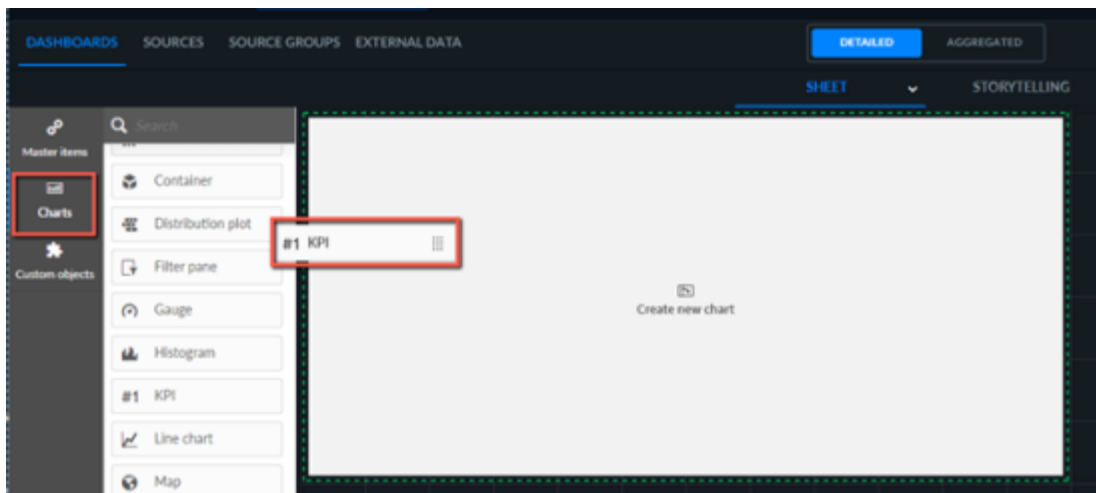
- See the result.



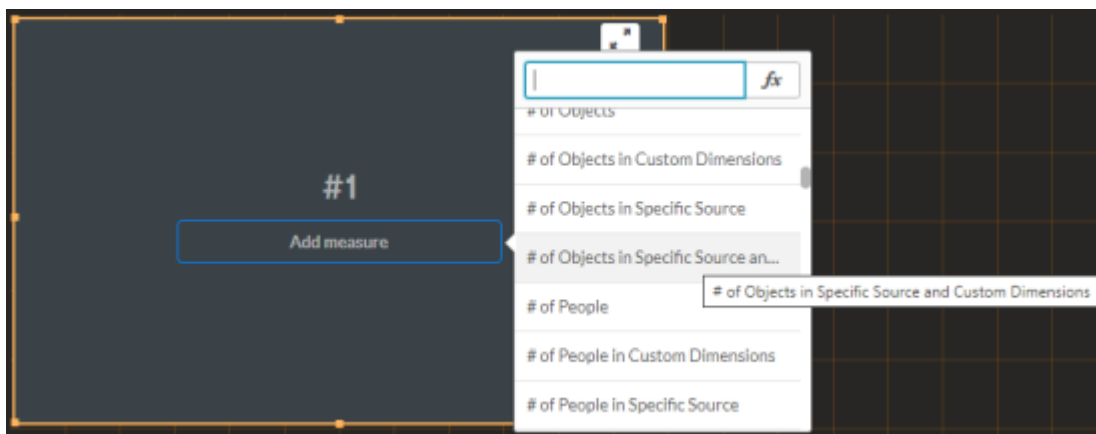
Multi-Path, Area or Line Crossing Dashboard

To create a Multi-Path, Area or Line Crossing Dashboard that presents object counts from multiple paths/areas/line crossings in the same sheet, follow the steps described below:

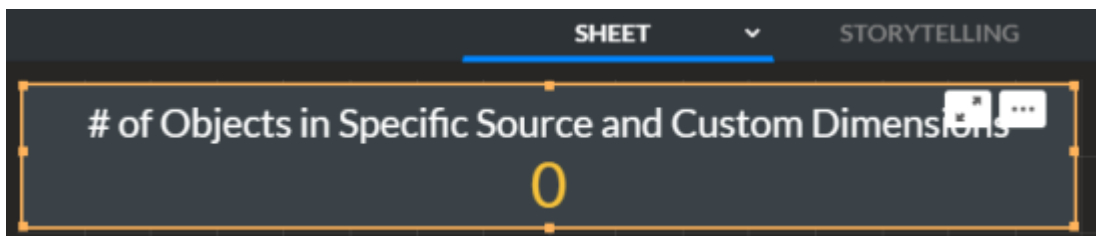
- Drag the KPI chart onto the dashboard.




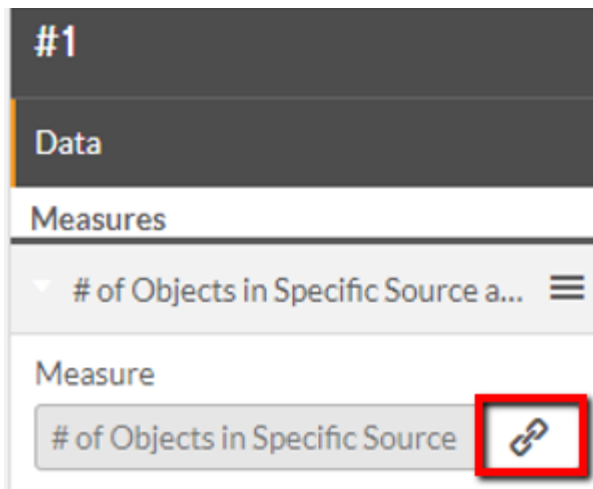
2. Select the **# of Objects in Specific Source and Custom Dimensions** measure.



3. The result will currently be 0 objects.



4. Unlink the measure within the visualization object by clicking the unlink () icon.



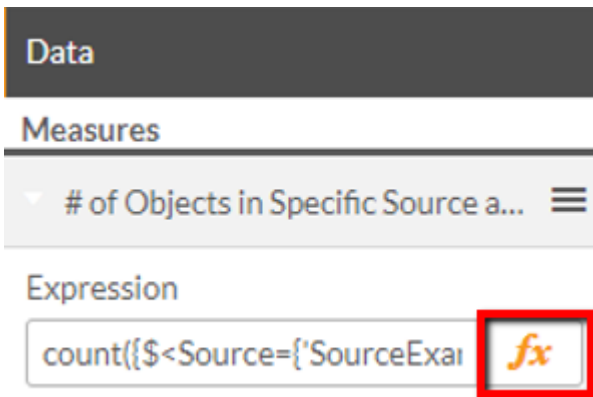
- Click **OK**.



You are about to unlink from the master measure. Do you want to continue?



- In the **Expression** field, click the function (*fx*) button.



- Replace the string SourceExample and CustomDimensionsExample with the requested source and custom dimension name.

```
1 count({$<Source={'SourceExample'}, [Path & Area]={'CustomDimensionsExample'}}ObjectID)
```

```
1 count({$<Source={'Intersection 1'}, [Path & Area]={'North'}}ObjectID)
```

- See the result.

of Objects in Specific Source and Custom Dimensions

8

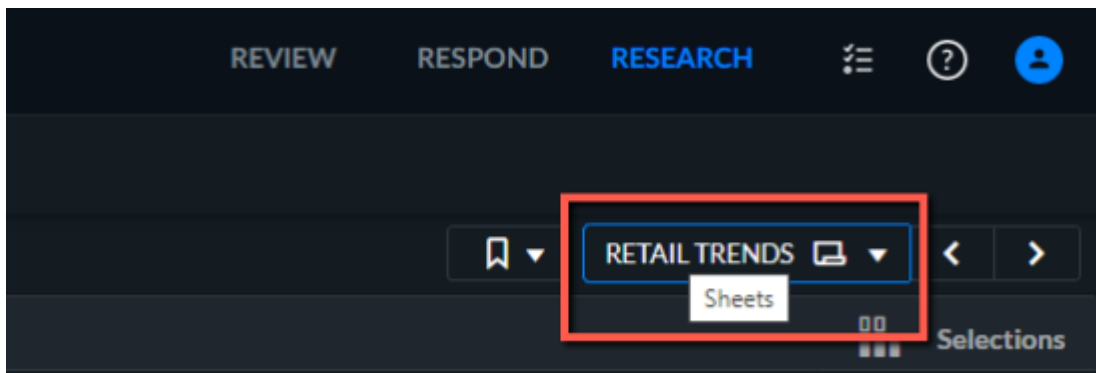
Sharing Sheets

The following sheet types are available in Sheets view:

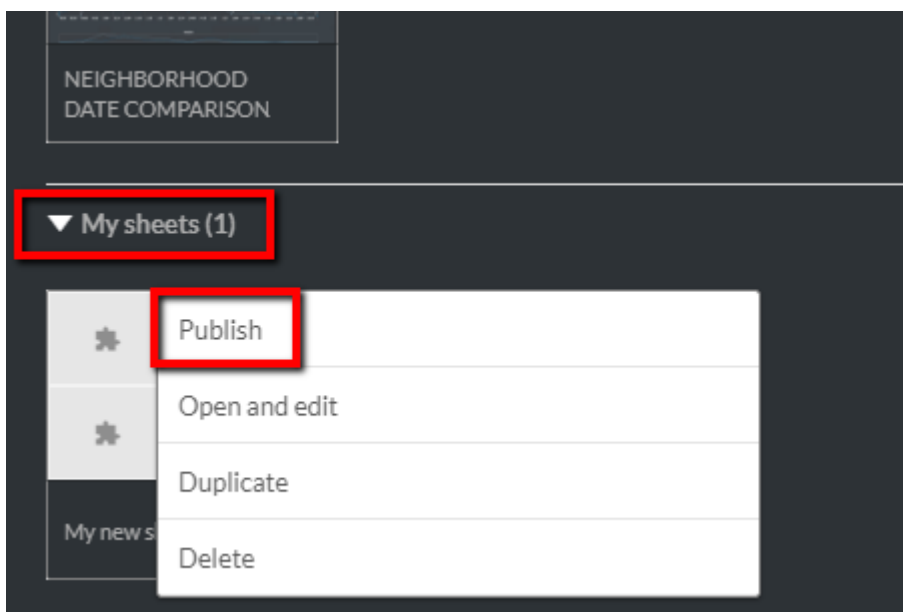
- **Base sheets** – out-of-the-box sheets for quick and easy onboarding.
- **Community** – sheets shared by other users in your organization.
- **Published by me** – sheets shared by your user account with the community.
- **My sheets** – sheets created by your user account that are visible only to you.

To publish a sheet to share with the community, follow the steps described below.

1. Open the **Sheets** view.



2. Right-click the dashboard (sheet) you want to share and click **Publish**.



3. Click **Publish**.

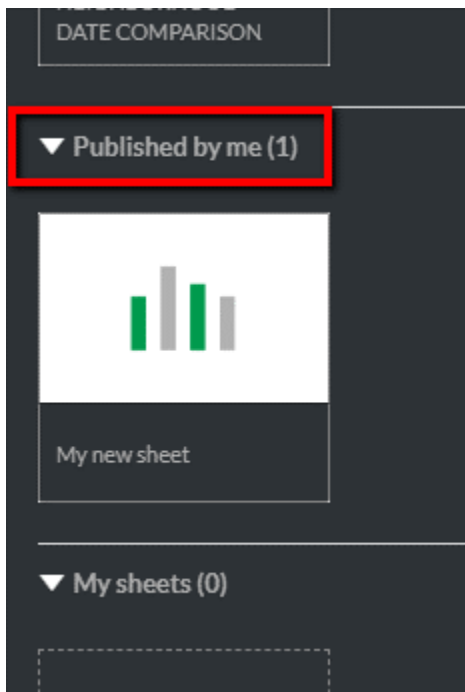
Publish sheet?

You are about to publish 'My new sheet' to the 'Research' community. Click "Publish" to make the sheet available to other users.

Cancel

Publish

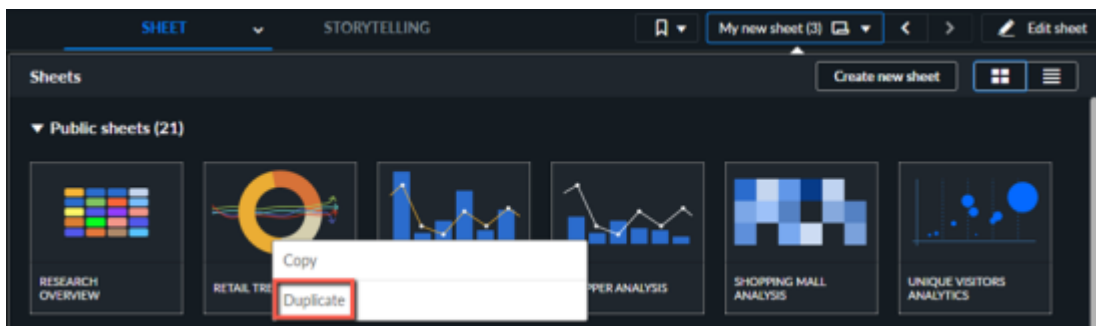
The dashboard will now appear in the **Published by me** section. (Other users will see the dashboard in the **Community** section.)



Reusing Existing Sheets

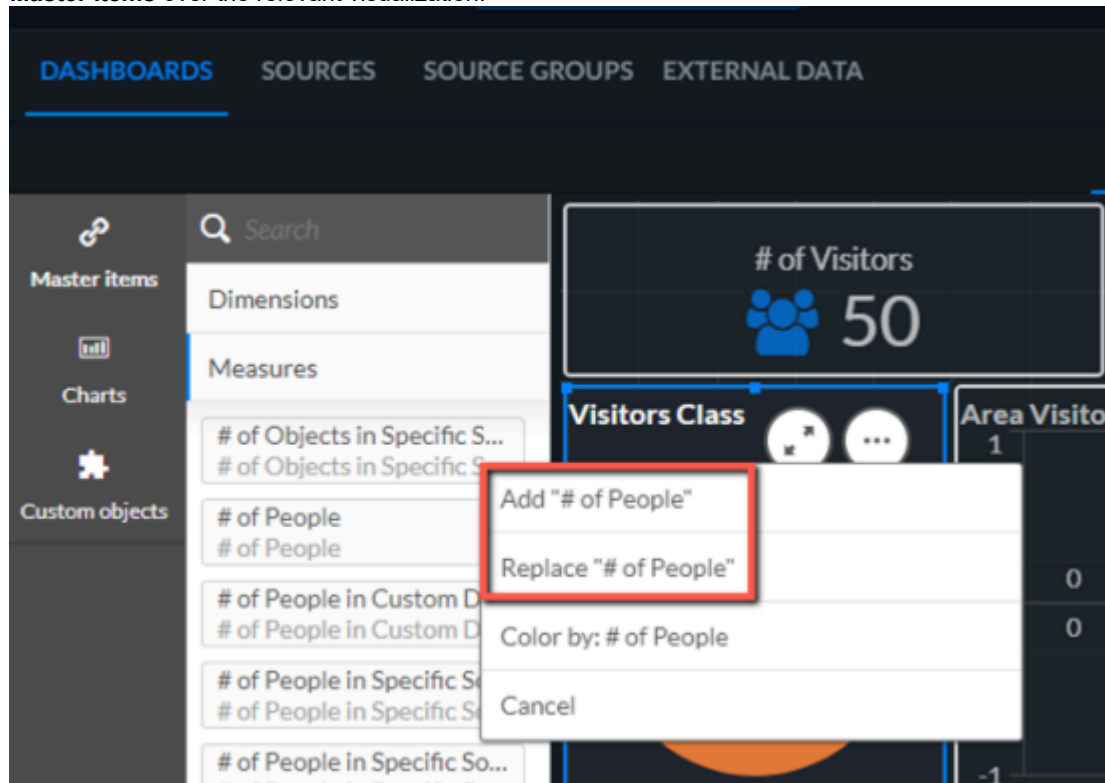
To reuse an existing sheet:

1. Right-click on the sheet you want to reuse and click **Duplicate**.

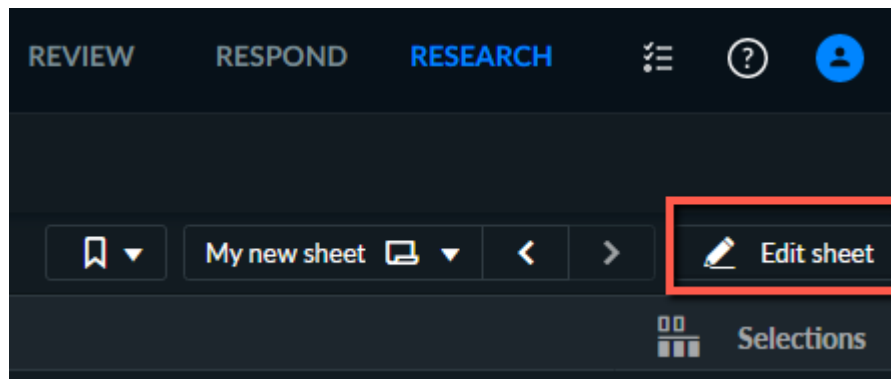


2. Give a name to the duplicated sheet and click **Edit** on the duplicated sheet.
3. You can now replace and add different measures and dimensions by dragging a measure or dimension from the

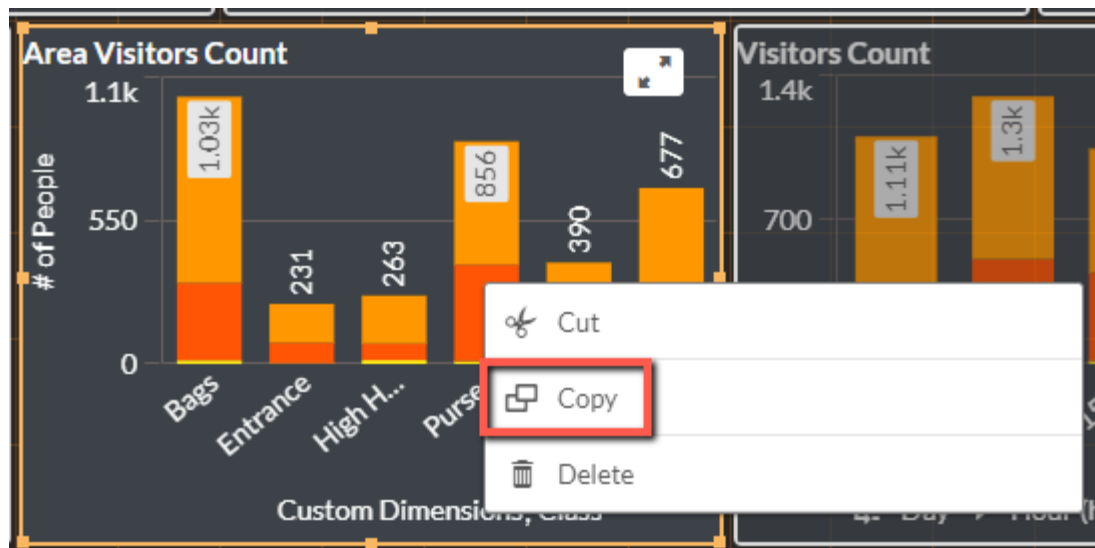
Master Items over the relevant visualization.



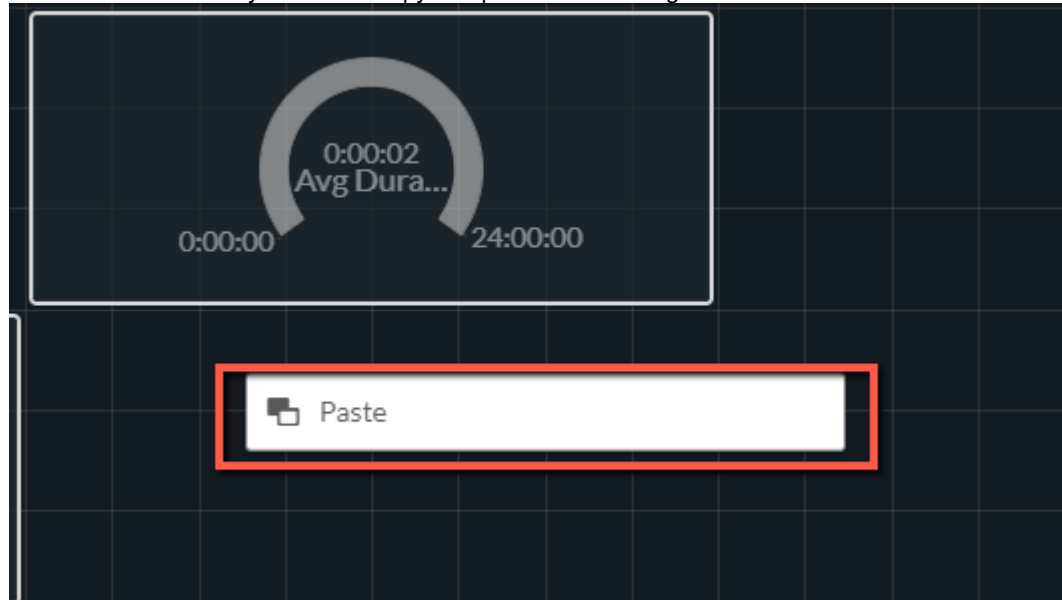
4. If you want to copy charts from one dashboard to another:
 - a. Open a dashboard from your **My sheets** section or duplicate a dashboard where you want to copy the chart from and click **Edit**.



- b. Click on the chart that you want to copy and press **Ctrl+C** or right-click on the chart and select **Copy**.



- c. Open the dashboard where you want to paste the dashboard and click **Edit**.
- d. Click on the chart that you want to copy and press **Ctrl+V** or right-click on the chart and click **Paste**.



Synchronization of Sources and Dashboards

If you do not set a time for the task to run, an automation process updates BI platform data as per the sources configured in the **SOURCES** tab.

The process is triggered by one of the following conditions:

The time set in the **Run Task at** field.

If that field was not set, five minutes have elapsed since the end of a scheduled source period (for example, if the source is scheduled to run between 8:00 and 19:00 daily, updating will start at 19:05).

If a specific camera has been configured as a source, and a user has requested that it be processed within the REVIEW or RESPOND solution, the RESEARCH platform will also be updated during processing (with a latency of a few minutes).

Processing time depends on a range of parameters such as video length, the number of objects, etc.

In addition to processing, the RESEARCH platform's update process runs every 5 minutes and loads data incrementally to the RESEARCH platform. (Note that if you are using aggregated data, the RESEARCH platform's update process runs one time

per day.)

Here is an example of the synchronization.

If you have a source scheduled from 10:00 – 14:00 (10 am to 2 pm), it will run five minutes later at 14:05 (2:05 pm).

Let's assume that the processing runs so that:

- At 14:10 (2:10 pm) you have 1,000 objects. In the dashboard at 14:10 (2:10 pm) or a minute later, you will also see 1,000 objects.
- At 14:25 (2:25 pm), the processing ends and you have 2,500 objects. However, in the dashboard you still see only 1,000 objects per this source.
- At 14:30 (2:30 pm) or a minute later, you will have 2,500 objects in the dashboard.

Differences Between REVIEW and RESEARCH Data

There may be some differences between the number of objects detected in the REVIEW and RESEARCH modules, mainly because the use case for each of these modules is different. REVIEW, used for investigations, may include an object in more than one classification value to ensure the investigator will not miss anything, whereas RESEARCH is geared toward accurate and consistent presentation of the number of people or cars, therefore only counts each object once.

Differences in Applying Filters

REVIEW data is based on probability data, which means that an object can appear under multiple attribute values. For example, if an object is detected wearing a shirt with a red and blue pattern, the object will appear in the REVIEW solution when filtering to both red and blue.

RESEARCH data is based on the maximum value of all object attribute probability values. In the example described above, if the main color of the shirt detected is red, the object will be associated only with the color red in the RESEARCH solution.

In another example, if an object has been classified with 40% probability as a **Man** and 60% probability as a **Woman**, the object will be included when objects are filtered to both the **Man** and **Woman** classes in the REVIEW solution (as long as it passes the tolerance threshold). In the RESEARCH solution, that same object will only be included when objects are filtered to the **Woman** class.

Therefore, filter results may differ between the REVIEW and RESEARCH solutions.

Differences in Accounting for Multiple Appearances

In the REVIEW module, every appearance of a person is shown as a different thumbnail to provide the investigator with all relevant information for the investigation. When this data is transferred to the RESEARCH module, another mechanism, called [Re-ID](#), is applied to link the appearances of a person into a single identity. This is intended to ensure that people counting is accurate and consistent.

External Data

External data is a data file consisting of data from non-video sources that are generated outside of the BriefCam platform.

This data can be displayed on the same dashboard widgets and graphs as data extracted from video, and by that assist in the later analysis of correlations between the external data and foot-traffic, vehicle-traffic, duration, paths, areas or any other analysis that can be done only based on video metadata BriefCam extracts.

The correlation between the external data video data is done with one of five data integration templates as described below.

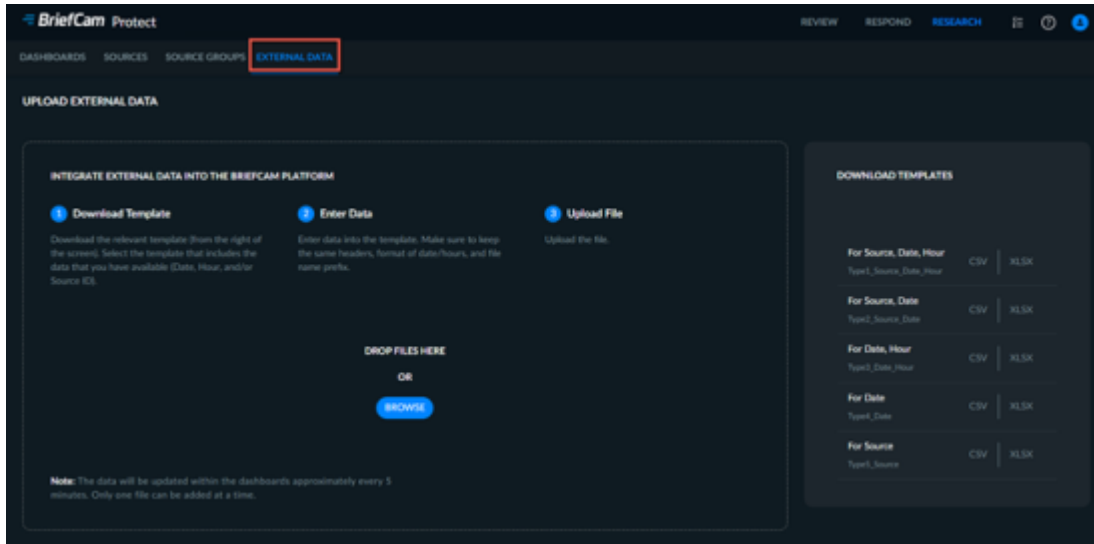


External sources can be ingested into BriefCam based on files in a self-served manner or integrated into a continuous data source through ODBC, Oracle, MySQL or other databases. The latter can be done with BriefCam's assistance through professional service.

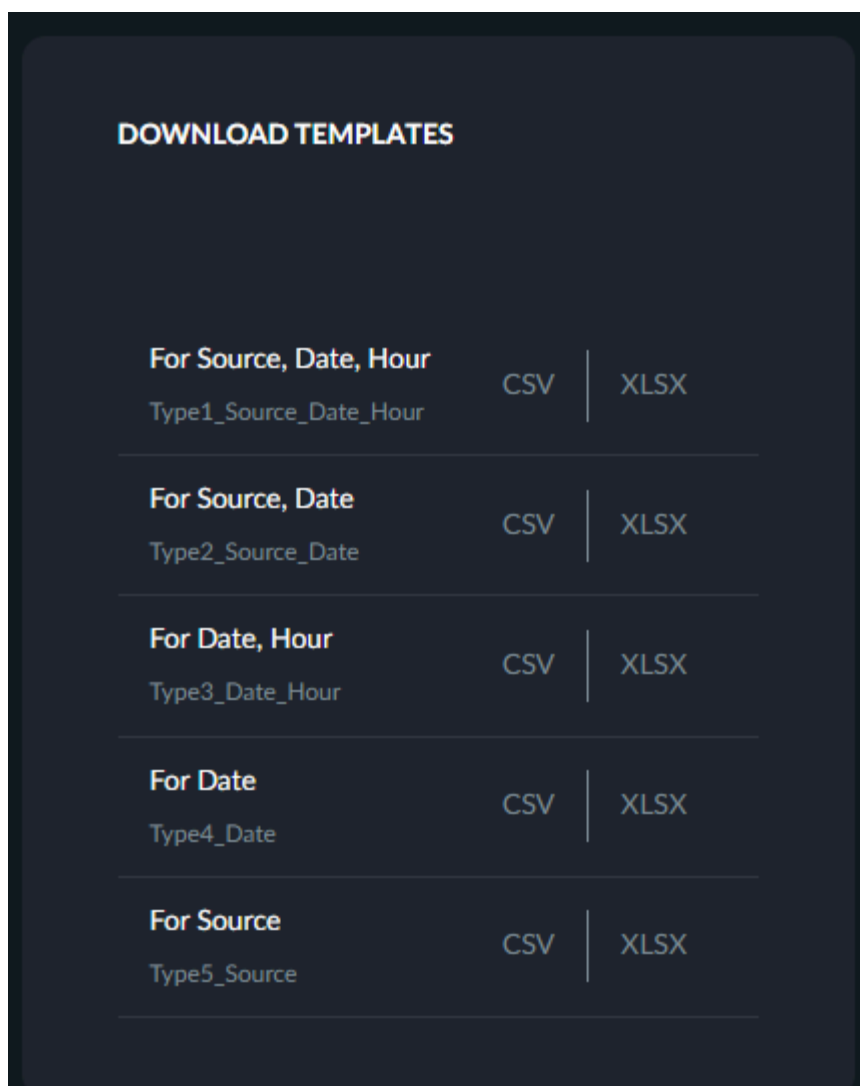
Uploading External Data

To add an external .csv or .xls file:

1. Click the **EXTERNAL DATA** tab.



2. Decide which elements (source, date, and/or hours) from your external source will be the link to the data in BriefCam. Download the template that includes those elements in its description.



3. Enter your data into the template files by following the steps in the **External Source File Format Instructions** section below.
4. You can either drag and drop video source files to the dialog or click **Browse** to bring up a standard file selection dialog.
5. Click **Upload**.

The data will be available within the dashboards on the next BI platform run (usually every 5 minutes).

External Source File Format Instructions

Keep the structure and header names of the template so that BriefCam will know how to import the data. Each file type contains key columns which the data will be matched according to, and optional additional columns that contain the customer's external data:

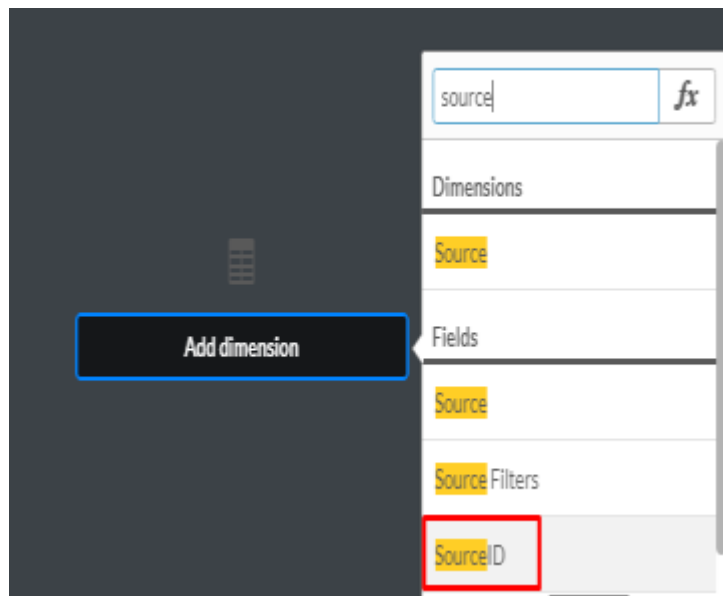
	Matching Key	External Data			
Type	Source	Date	Hour	Dimension_1..10	Measure_1..10

Type1	v	v	v	Optional	Optional
Type2	v	v		Optional	Optional
Type3		v	v	Optional	Optional
Type4		v		Optional	Optional
Type5	v			Optional	Optional

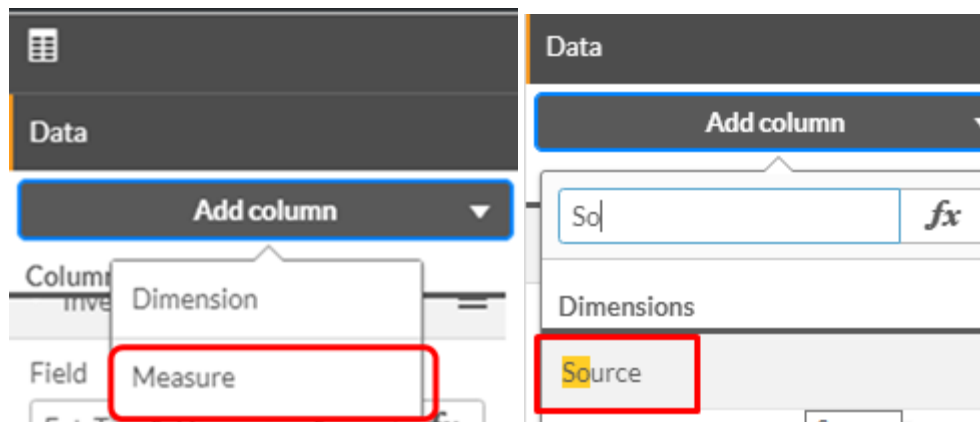
The cells that are marked with a checkbox in the table above need to be filled in with the values from your sources in BriefCam.

The format of the columns should be as follows:

- **Source** – The **Source** column needs to contain the source ID, for example: 22. See the example below to determine how to find your source's ID.
 - Create a new sheet, drag a table chart onto the sheet, and click **Add dimension**.
 - Type source and from the **Fields** list, select **SourceID**.



- Add the **Source** dimension to the table.



- You'll now have a table with the sources' IDs and names.

SourceID	Source
1	Shoe Store
5	Handbag Store

- **Date** – Add another column with the **Date** dimension. The date format is DD/MM/YYYY, for example: 24/09/2018 (If you're not sure if the month or day is appearing first, add another dimension: **Month**, to the table).
- **Hour** – Add another column with the **Hour** dimension.
Hour (hh) in 24H format, for example: 13:00, 09:00 (you should add the leading zero).
- **# of People** – Add another column with the **# of People** measure.

You now have a table with the Source, SourceID, Date, Hour and # of People.

Source	SourceID	Date	Hour (hh)	# of People
Totals				2036
Handbag Store	5	03/01/18	01:00 PM	337
Handbag Store	5	03/01/18	02:00 PM	397
Handbag Store	5	03/01/18	03:00 PM	334
Shoe Store	1	03/01/18	01:00 PM	324
Shoe Store	1	03/01/18	02:00 PM	349
Shoe Store	1	03/01/18	03:00 PM	295

The columns of the table should be matched to the Excel columns as shown in the image below.

Type1_Source_Date_Hour Jan Tabla - Excel														
File	Home	Insert	Page Layout	Formulas	Data	Review	View	Help	ACROBAT	Tell me what you want to do				
P5														
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	source	Date	Hour	Dimension_1	Dimension_2	Dimension_3	Dimension_4	Dimension_5	Dimension_6	Dimension_7	Dimension_8	Dimension_9	Dimension_10	Measure_1
2	5	3/1/2018 13:00		Dan										30
3	5	3/1/2018 14:00		Dan										32
4	5	3/1/2018 15:00		Dan										42
5	1	3/1/2018 13:00		Jeanette										13
6	1	3/1/2018 14:00		Jeanette										17
7	1	3/1/2018 15:00		Jeanette										17

Add data in at least one dimension or measure. You can enter whatever values you want in these columns, but it's important that you don't change the name of the text in the first row. It's also a good idea to make a list of what each of the dimensions and measures stand for in a separate document. For example, Dimension 1 = Employee name.

- **Dimension 1..10**
These are optional columns to import textual data into the dashboards, so that the data can be grouped accordingly, such as the department or manager name.

- **Measure 1..10**

These are optional columns to import numeric data into the dashboards, so that the data can be aggregated accordingly, such as total sales and number of employees.

Remember that the file name must include the correct prefix from the following prefixes:

- Type1_Source_Date_Hour for files with a Source, Date and Hour columns.
- Type2_Source_Date for files with a source and dates.
- Type3_Date_Hour for files with a source and hours.
- Type4_Date for files with dates.
- Type5_Source for files with a source.

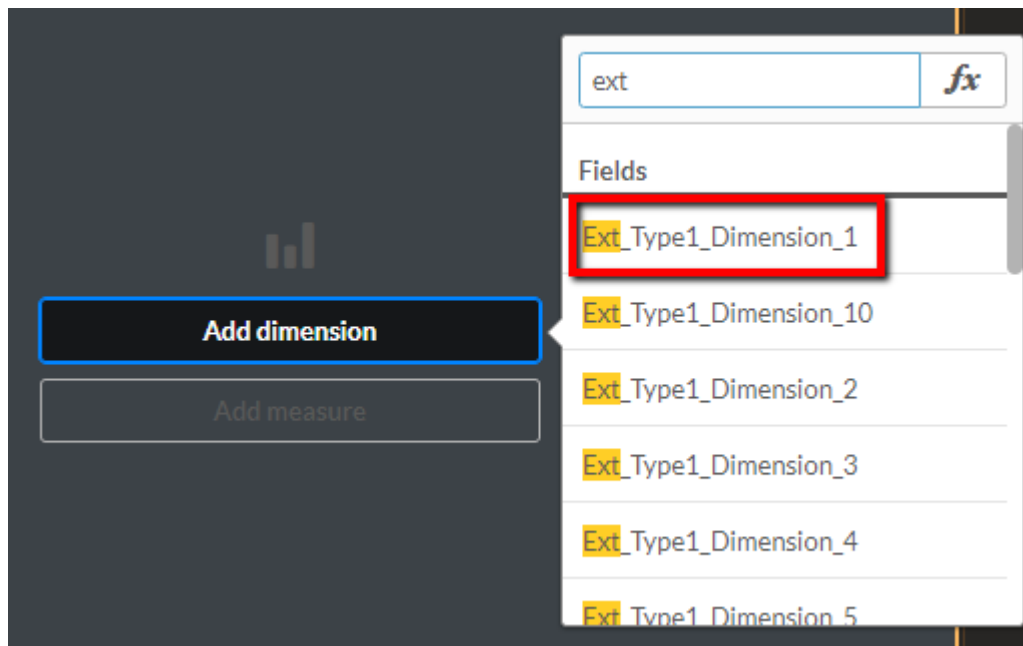
Adding External Data Sources to Dashboards

The following is an example of how to add an external data source to the dashboards.

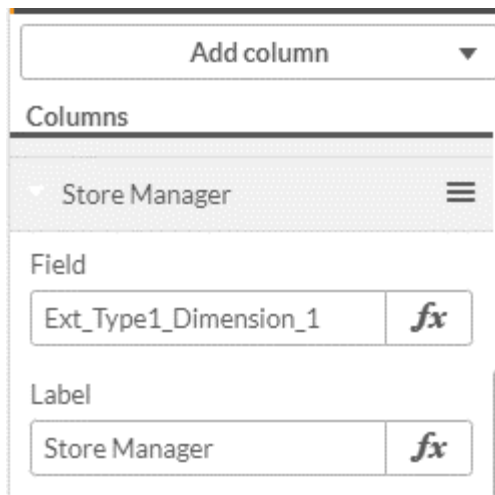
1. Click the **EXTERNAL DATA** tab.
2. Upload your file. The data will be available when the RESEARCH platform is updated (about every 5 minutes).
3. Click on the table that you created earlier.
4. Click **Add column** and then **Dimension**.

Source	SourceID	Date	Hour (hh)	# of People
Totals				2036
Handbag Store	5	03/01/18	01:00 PM	337
Handbag Store	5	03/01/18	02:00 PM	397
Handbag Store	5	03/01/18	03:00 PM	334
Shoe Store	1	03/01/18	01:00 PM	324
Shoe Store	1	03/01/18	02:00 PM	349
Shoe Store	1	03/01/18	03:00 PM	295

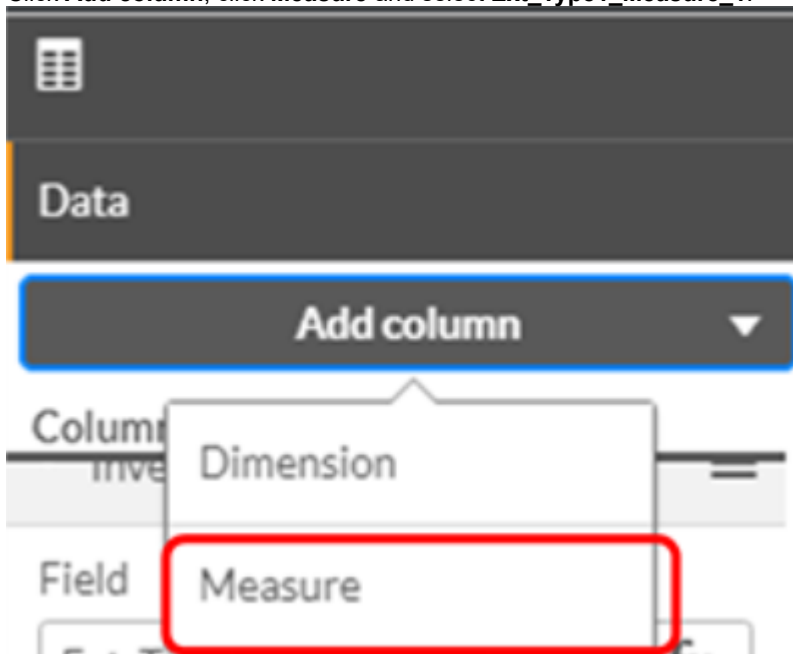
5. Type ext and select **Ext_Type1_Dimension_1**.

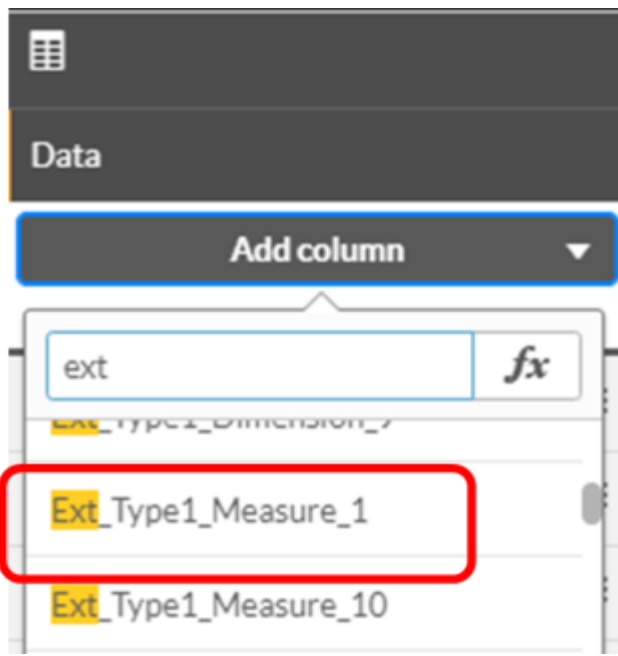


6. Give the extension a meaningful name.

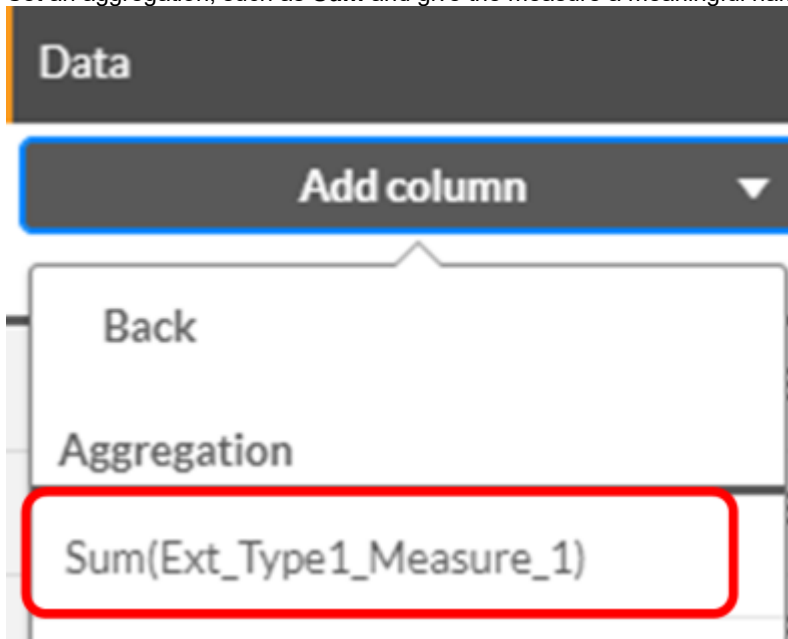


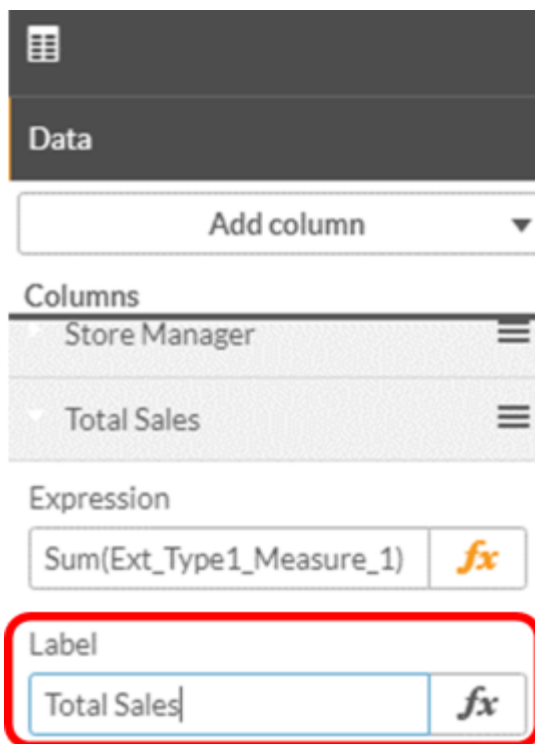
7. Click **Add column**, click **Measure** and select **Ext_Type1_Measure_1**.





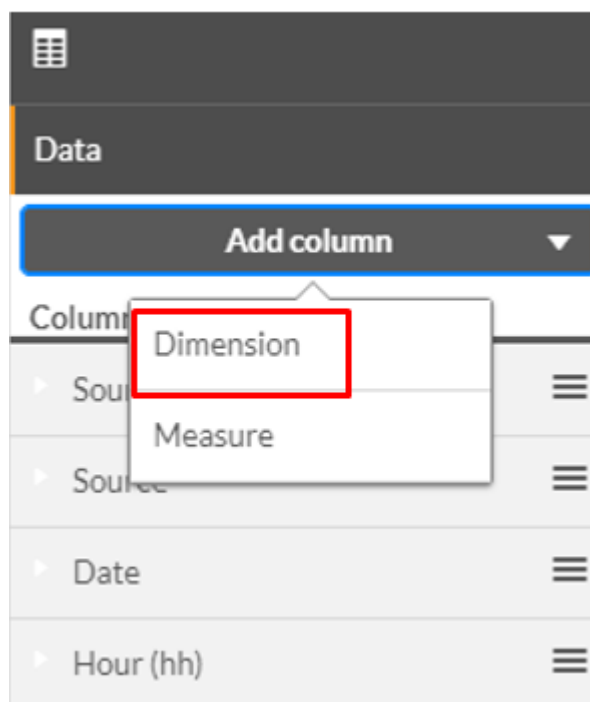
8. Set an aggregation, such as **Sum** and give the measure a meaningful name.



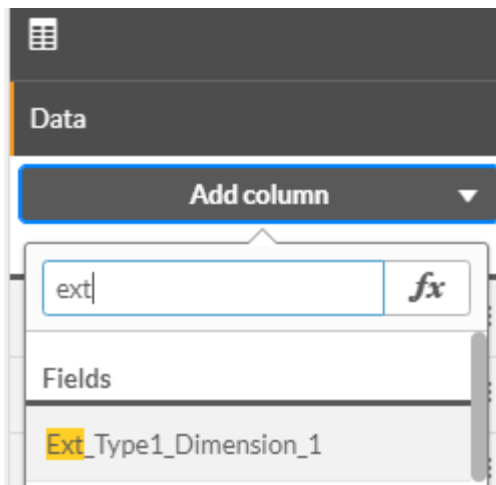


Now you'll add a Treemap chart.

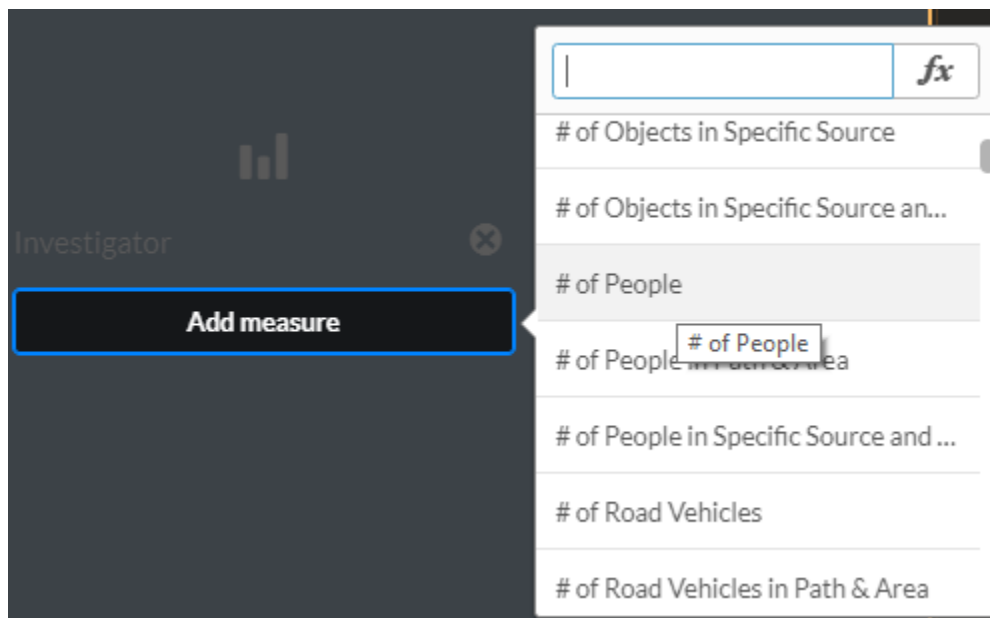
1. Drag a Treemap chart onto the dashboard.
2. Add the external data source dimension to the chart:
 - Click **Add column** and select **Dimension**.



- Type ext and select **Ext_Type1_Dimension_1**.

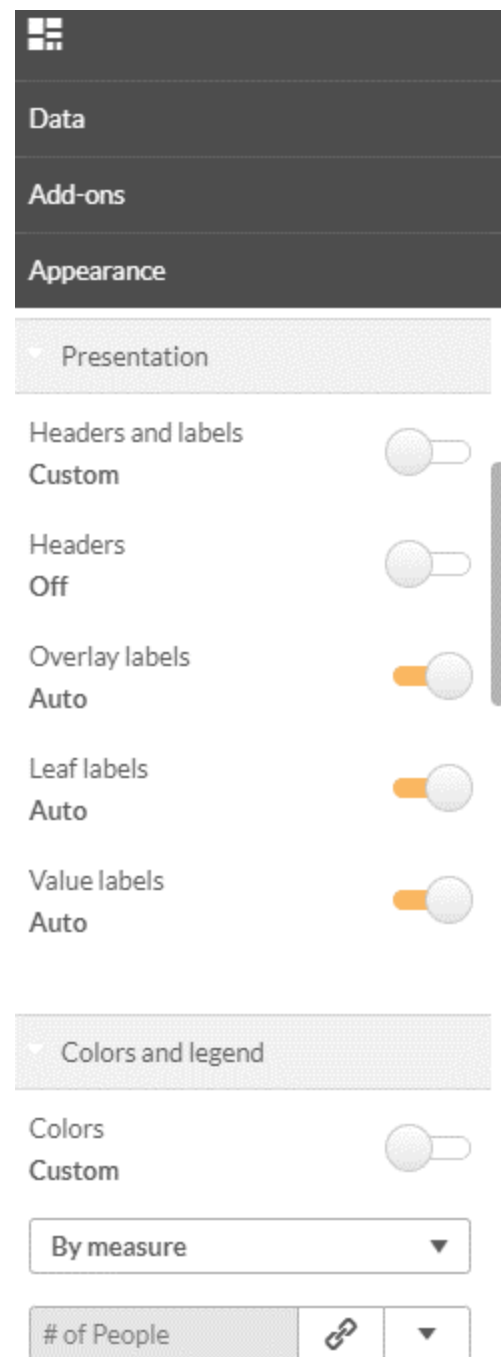


3. Add the measure: **# of People**.



You'll now set the presentation.

1. Set the **Headers and labels** to **Custom**.
2. Set the **Headers** to **Off**.
3. Set the **Value labels** to **Auto**.
4. Set the **Colors** to **Custom**.
5. Select **By measure**.



The image shows a settings panel for BriefCam. It has a dark grey header with a grid icon and three menu items: 'Data', 'Add-ons', and 'Appearance'. Below this is a 'Presentation' section with a dropdown arrow. It contains five toggle switches: 'Headers and labels' (set to 'Custom'), 'Headers' (set to 'Off'), 'Overlay labels' (set to 'Auto'), 'Leaf labels' (set to 'Auto'), and 'Value labels' (set to 'Auto'). Below the 'Presentation' section is a 'Colors and legend' section with a dropdown arrow. It contains a 'Colors' toggle switch set to 'Custom'. Below the 'Colors' toggle is a dropdown menu currently showing 'By measure'. At the bottom is a field containing '# of People', a link icon, and a dropdown arrow.

Data

Add-ons

Appearance

▼ Presentation

Headers and labels
Custom

Headers
Off

Overlay labels
Auto


Leaf labels
Auto

Value labels
Auto

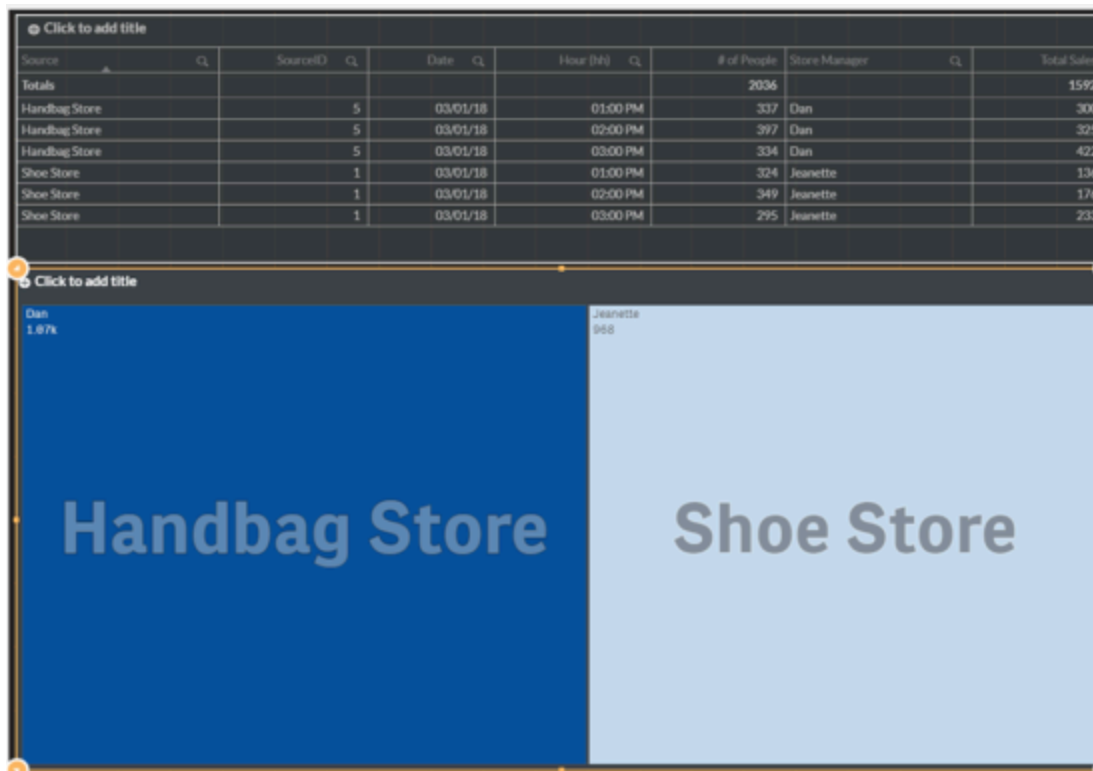
▼ Colors and legend

Colors
Custom

By measure ▼

of People  ▼

You now have a tree chart with data from an external source (Store Manager) and data from BriefCam (# of People) for the two sources (Handbag Store and Shoe Store).



Important Notes

- The external data source data is loaded within the dashboards every time that the BI platform runs (usually every 5 minutes). The data is inserted completely every run, meaning a full load and not incremental.
- All the external data source files are loaded to the following shared folder on the RESEARCH server: `qlikshare\ExternalData`.
- If the same record exists more than once within the external data source file(s), it will be inserted as only one record within the BI platform.

If within the external data source file(s), there are two different records with the same key, but with different measures, then two records will be inserted into the BI platform and their measures can be aggregated within the dashboards.

For example, when loading the following external data source file:

source	Date	Hour	Dimension_1	Dimension_2	Dimension_3	Dimension_4	Dimension_5	Dimension_6	Dimension_7	Dimension_8	Dimension_9	Dimension_10	Measure_1
1	03/01/18	13:00	Example1										500
1	03/01/18	13:00	Example1										320

The data appears as two records in the dashboards:

SourceID	Date	Hour (hh)	Ext_Type1_Dimension_1	Ext_Type1_Measure_1
1	03/01/18	01:00 PM	Example1	320
1	03/01/18	01:00 PM	Example1	500

And can be aggregated to one record:

SourceID	Date	Hour (hh)	Ext_Type1_Dimension_1	Sum(Ext_Type1_Measure_1)
1	03/01/18	01:00 PM	Example1	820

If within the external data source file(s), there are two different records with the same key, but with different dimensions, then two records will be inserted into the BI platform based on the two different dimensions.

For example, when loading the following external data source file:

source	Date	Hour	Dimension_1	Dimension_2	Dimension_3	Dimension_4	Dimension_5	Dimension_6	Dimension_7	Dimension_8	Dimension_9	Dimension_10	Measure_1
1	03/01/18	13:00	Example1										500
1	03/01/18	13:00	Example2										450

The data appears as two records in the dashboards:

SourceID	Q	Date	Q	Hour (hh)	Q	Ext_Type1_Dimension_1	Q	Ext_Type1_Measure_1	Q
1		03/01/18		01:00 PM		Example1		500	
1		03/01/18		01:00 PM		Example2		450	

Customizations

To access and change the watchlists or to access the **Data Protection** tab, open the **Customizations** menu at the top left of the browser page.

Up to three options will appear:

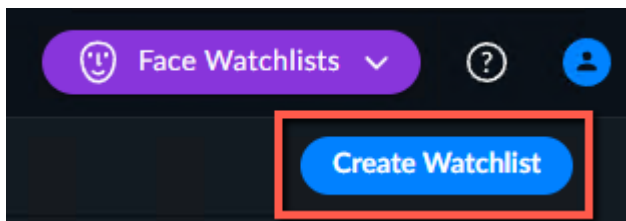
- [Face Watchlists](#)
- [LPR Watchlists](#)
- [Data Protection](#) – The **Data Protection** tab will only appear for users that are part of the **Data-Manager** group.

Face Watchlists

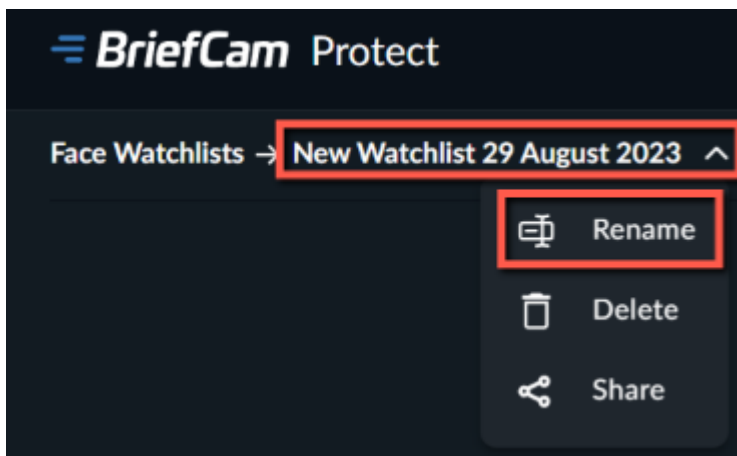
To search for a person in real-time, a watchlist needs to be used.

To add a face watchlist:

1. Open the **Customizations** menu at the top right-hand side of the screen.
2. Click the **Face Watchlists** option.
3. From the middle or top right-hand corner of the screen, click **Create Watchlist**.

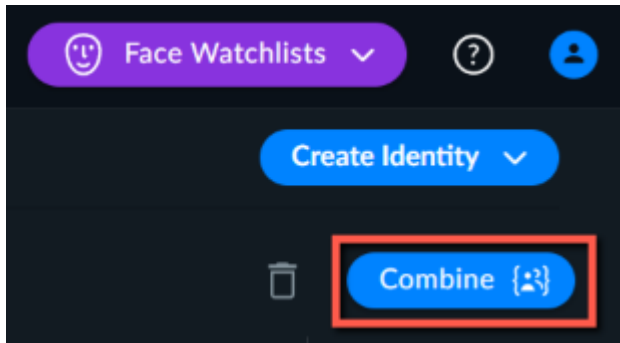


4. Give the watchlist a name by clicking on the **New Watchlist** entry and clicking **Rename**.

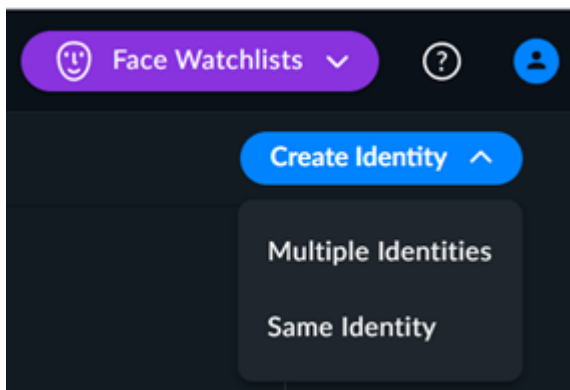


5. When you finish typing in the new name, click the checkmark to the right of the name.
6. Upload the images.

7. If you have multiple images of the same person, select the images of that person and click **Combine**.



8. You can add additional identities by clicking **Create Identity** and then select whether to upload files of the same person (**Same Identity**) or for various individuals (**Multiple Identities**).



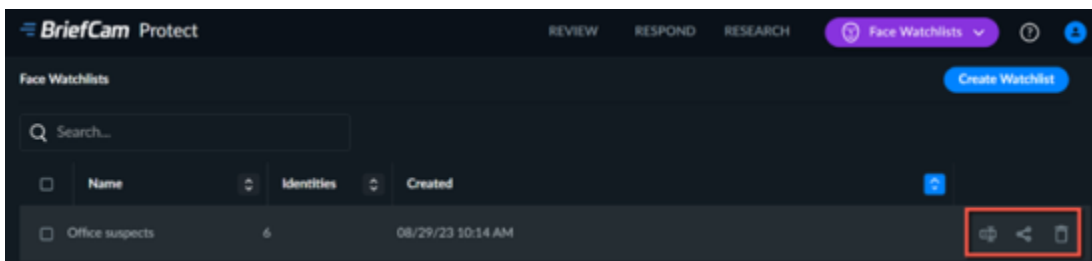
Note that if you upload a one-star image, the images will be displayed in the **Unusable images** section.

You can also upload multiple faces from a folder. For more information, see [Uploading Multiple Faces from a Folder](#).

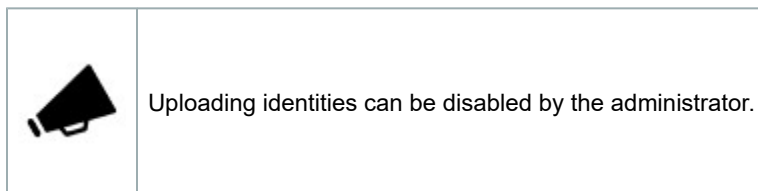
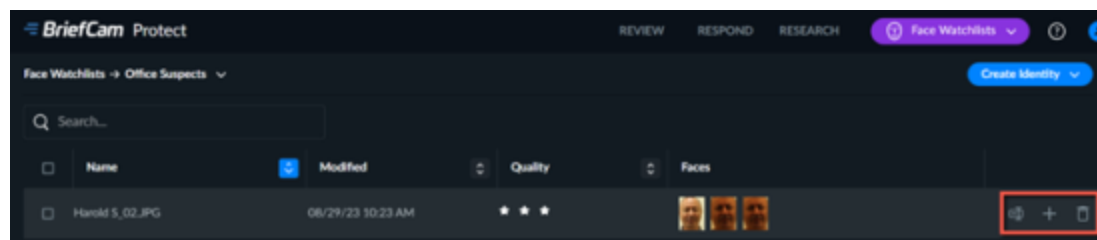
Click **Next**, rename the images if you want and then click **Save**.

	<p>The recommended maximum number of objects for a watchlist is 200,000.</p> <p>You can upload up to 500 images at a time, while each face file is limited to 20MB. Your administrator can change these limits. If you have more than 500 images, divide them up into batches of up to 500 or upload the images using the monitored folder feature. When using a Chrome version below 72.0.3626.81, the limit is 125 images per upload.</p>
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When you hover over a watchlist, you have options to rename, share or delete the watchlist.



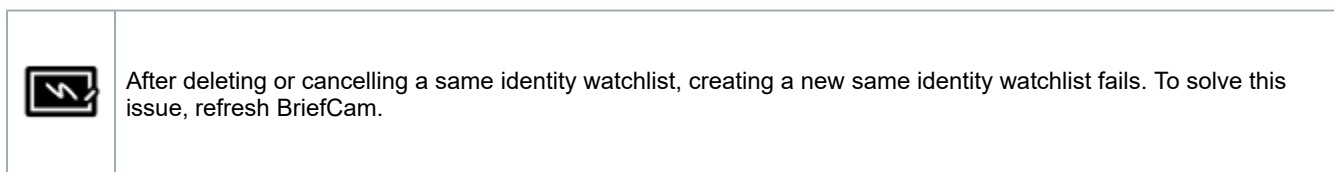
When you hover over an identity, you have options to rename, add additional images, or delete the identity.



Faces added to a watchlist remain in the case filter even when the user exits the case.

Once an identity is added to a watchlist it will not be deleted when the case is deleted (by the user or by maintenance).

When adding an identity to multiple watchlists, the identity is duplicated to the selected watchlists and it will no longer be the same identity, but duplicates of the original identity.



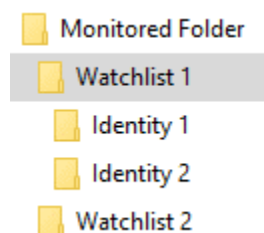
Uploading Multiple Faces from a Monitored Folder

You can upload multiple faces from a monitored folder that will be synced to a watchlist. You can upload multiple faces for identities and multiple identities for each batch.

The monitored folder is on the VS server machine. The default path is: `C:\briefcam\ServerData\ExternalWatchLists`. Your administrator can change this path for you.

To use this folder on a distributed environment, make sure that BCUser has permissions to access the folder. For an all-in-one installation, this is not necessary.

Every 60 minutes the system checks whether there is anything new and then imports it to a watchlist or watchlists. In the `ExternalWatchList` folder you can create a subfolder using the name of the watchlist. In the subfolder you need to create folders with names of identities and in each identity's folder place at least one photo of the identity's face.



There is an option to either overwrite the watchlist every sync (so if you delete identities from the folder they'll be deleted in the system) or merge to only load new items. The default is to overwrite.

The default settings for this functionality can be changed by an admin.

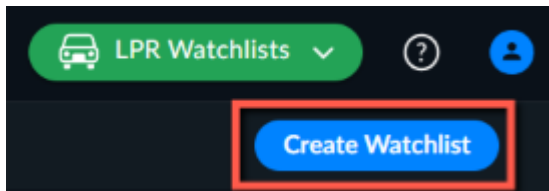
Note that all images added using a monitored folder will be added to the watchlist, including images that are below the minimum threshold for face matching, such as no-star images (no face detected) and 1-star images (a face was detected but insufficient quality for Face Recognition). BriefCam will ignore the non-matchable images. If you do not want these images to

appear on the watchlist, you need to manually delete them from the folder.

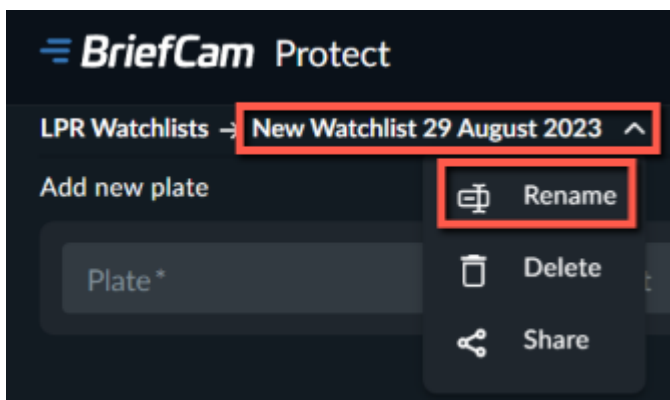
License Plate Recognition (LPR) Watchlists

To add an LPR watchlist:

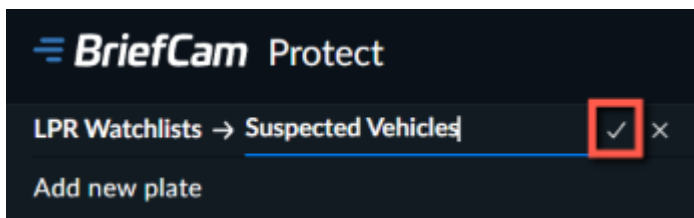
1. Open the **Customizations** menu at the top right-hand side of the screen.
2. Click the **LPR Watchlists** option.
3. In the top right-hand corner of the screen, click **Create Watchlist**.



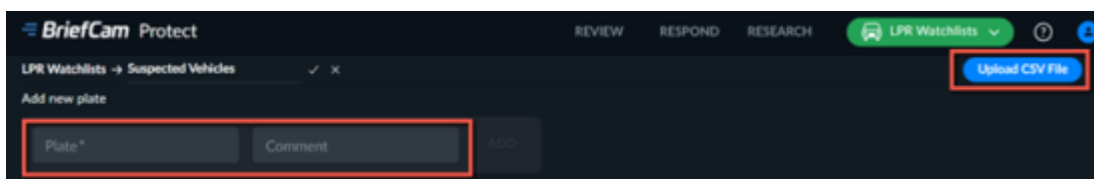
4. Give the watchlist a name by clicking on the **New Watchlist** entry and clicking **Rename**.



5. When you finish typing in the new name, click the checkmark to the right of the name.



6. Manually enter the license plate numbers in the **Plate** field or upload them using a file by clicking the **Upload CSV File** button.



7. If you are manually entering the license plates, for each license plate enter the license plate number and a comment if you want and then click **Add**.

The string can be 4-10 characters long, or 2-10 characters long with wildcards.

The license plate number can include letters and numbers (0-9) as well as wildcards.

The supported wildcards are:


Wildcard	Description
?	Replaces any single character or number. Question marks can be used anywhere in the string. The string ???JK will match any license plate that has J and K as the fourth and fifth character. For example, the following will be found for this search: ABCJK, 251JK and more.
*	Replaces any number (zero or more) of characters and numbers. Asterisks can be used at the beginning or end of the string. For example: The string *JK will match with the following: 0974JK, 25JK, JK and more.
The string *JK? will match with the following: 0974JK2, 25JK0, JK1 and more.	

- If you clicked the **Upload CSV File** button, upload a CSV file with data about the license plates in two headerless columns: License Plate Number and Description. Note that you can only upload one CSV file at a time.

If there is an error in the CSV file that you uploaded (such as too many characters in a license plate), an error will appear with the line number of the first error.

When you hover over a watchlist, you have options to rename, share or delete the watchlist.

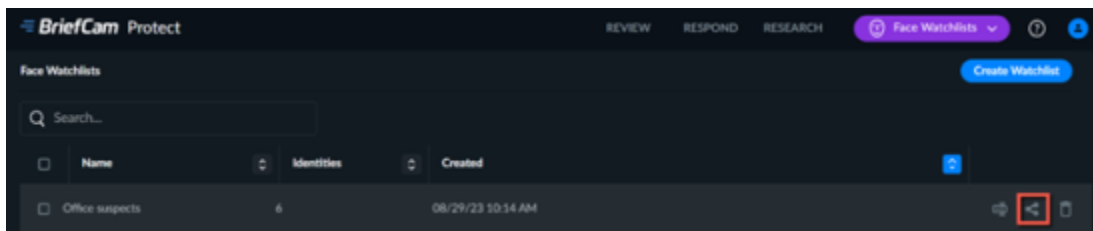
Watchlists added via the Watchlist tabs are not deleted by the maintenance process. However, an internal watchlist that was created within a case will be deleted once the case is deleted (by maintenance or by the user).



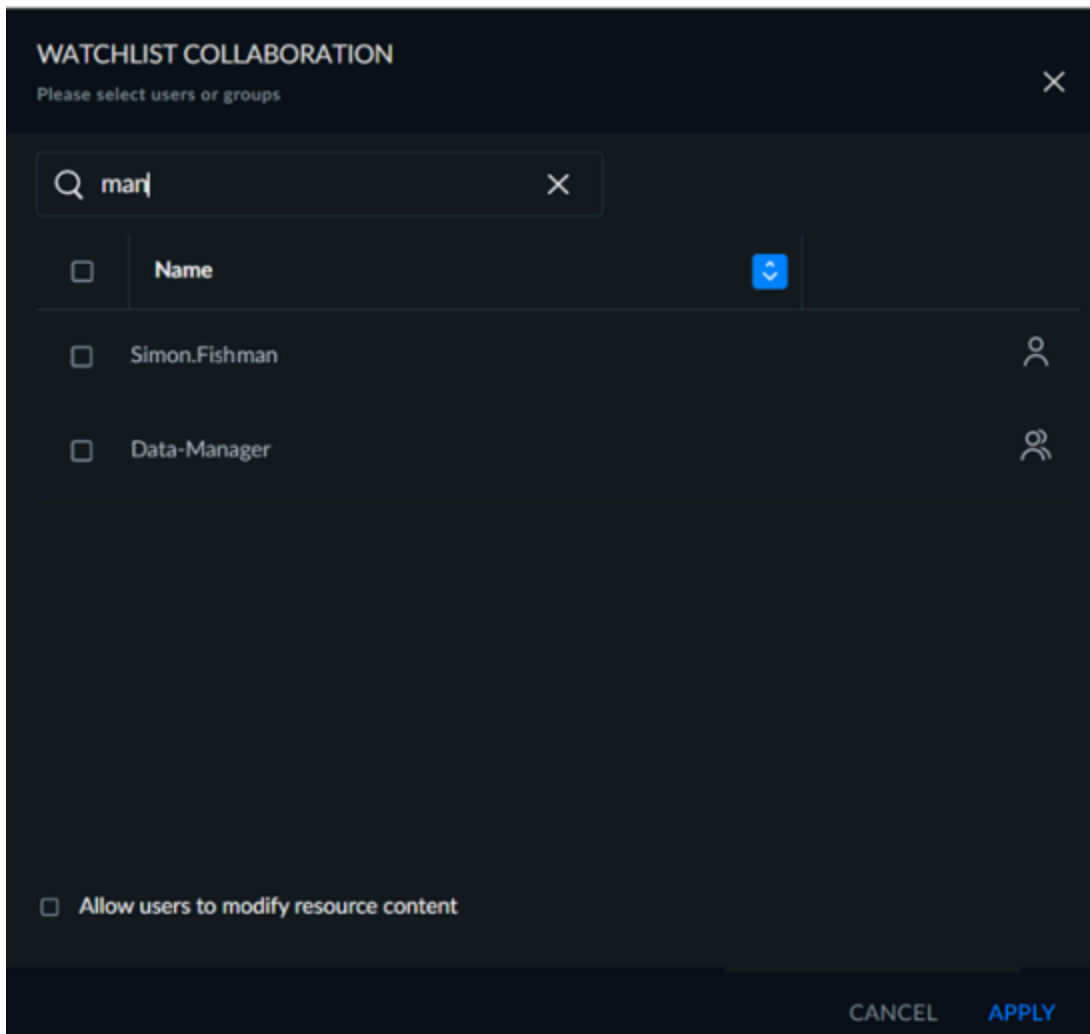
The recommended maximum number of objects for a watchlist is 200,000.

Sharing Watchlists

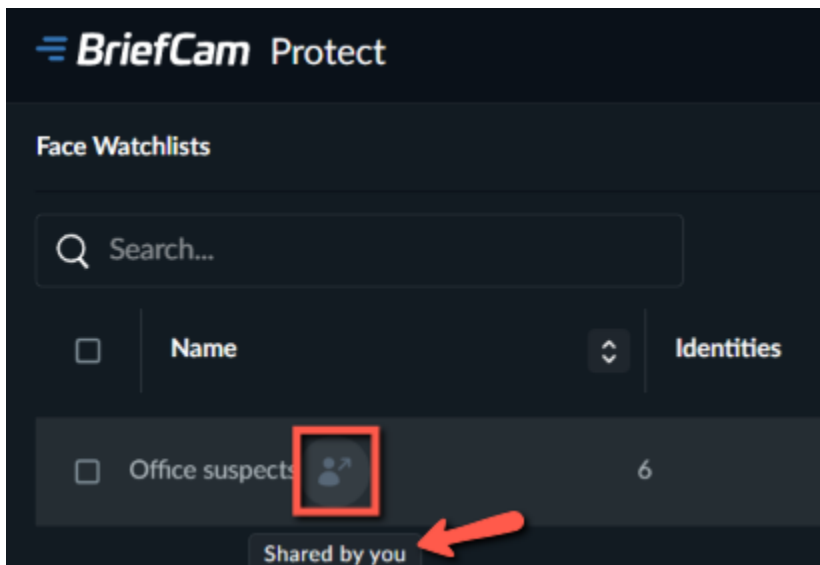
Click the share icon to share a watchlist. The share icon is only available for watchlists owned by the user.



Once you click **Share**, you can select the groups and/or users that you want to share the watchlist with. You can select the **Allow User to Modify Watchlist Content** checkbox to give the selected users and groups modify permission for the watchlist.




When you click **Share**, an icon will appear next to the watchlist. You can hover over the icon and see who shared the watchlist.



You cannot share external watchlists. View permissions of external watchlists can be assigned by the administrator to users and groups.

From the **REVIEW** tab, you can click the **Face Recognition** filter and you can select the watchlists that you defined in the

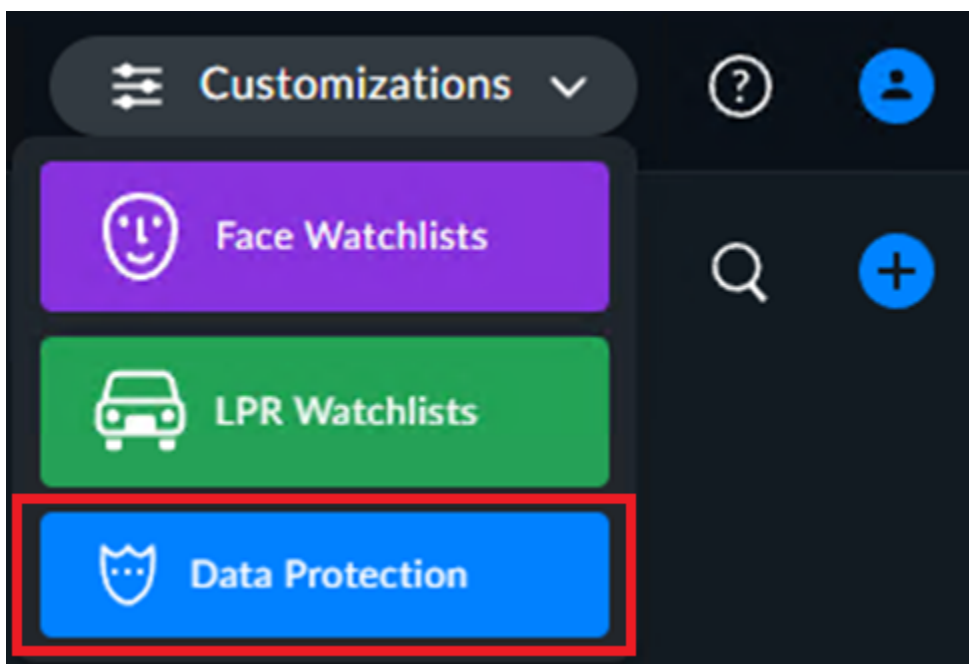
settings.



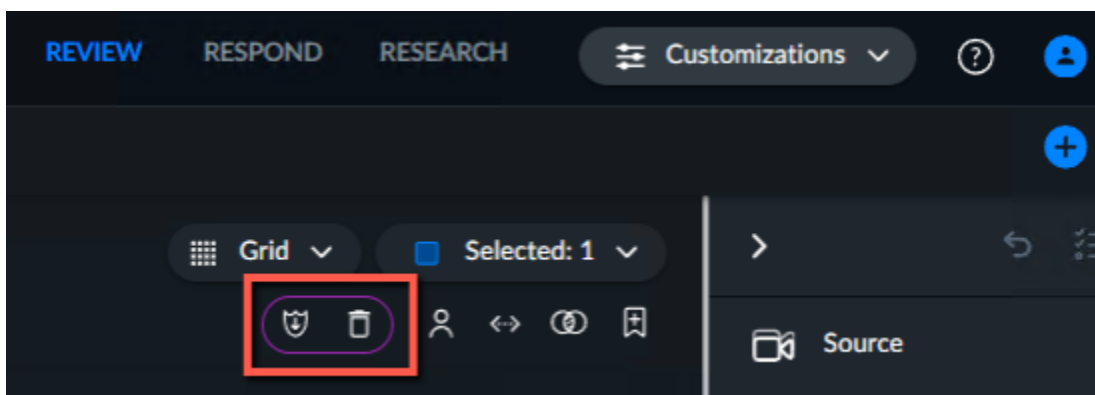
You can upload up to 500 images at a time, while each face file is limited to 20MB. Your administrator can change these limits. If you have more than 500 images, divide them up into batches of up to 500 or upload the images using the [monitored folder](#) feature. When using a Chrome version below 72.0.3626.81, the limit is 125 images per upload.

Data Protection

The **Data Protection** section is enabled for users that were added by the administrator to the **Data-Manager** group. This section allows data managers to view, export, and delete data on individuals that are stored in your systems.




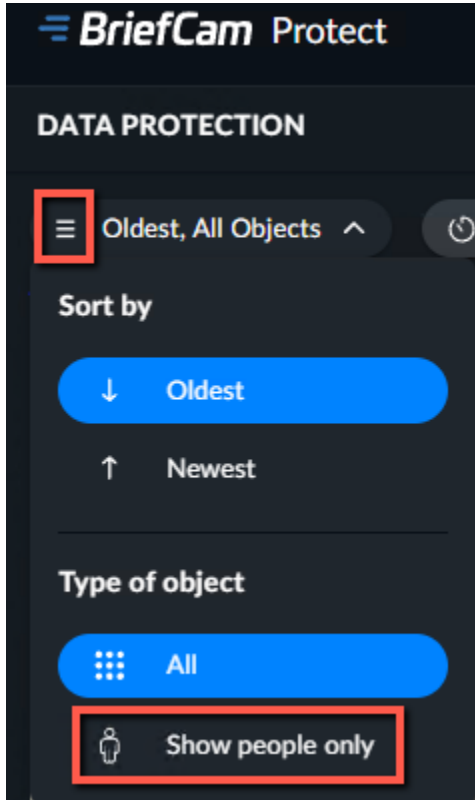
In addition, data managers can export and delete data from cases. When the data manager selects objects in a case, there are two additional icons surrounded in purple for exporting and deleting.




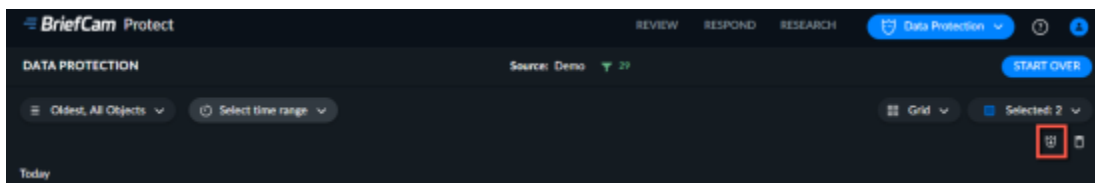
In the **Data Protection** section, locate the cameras or files where the person or vehicle exists. Select the item or items that you want to view, export, or delete.

Note that you can narrow down the results using the **Select time range** filter.

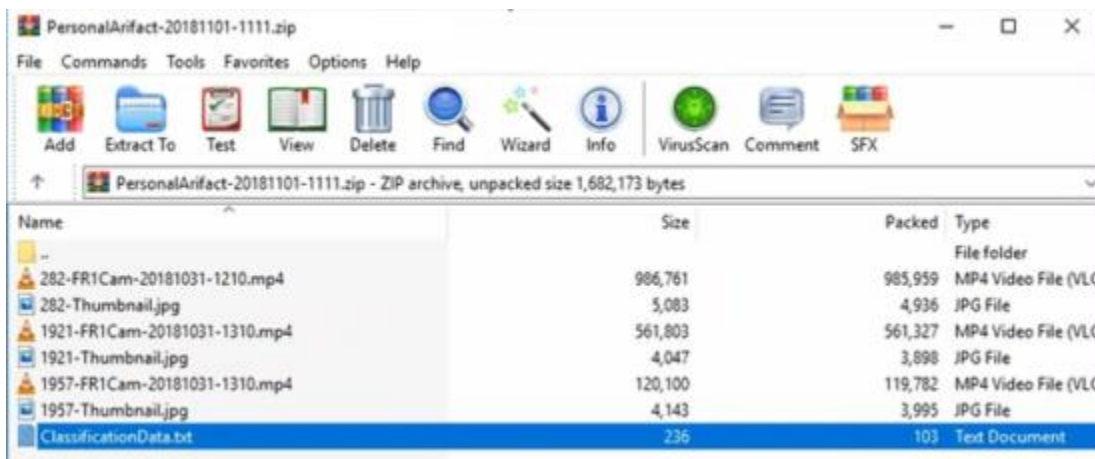
To narrow down your search to people only, click the three-line menu  and select the **Show people only** option.



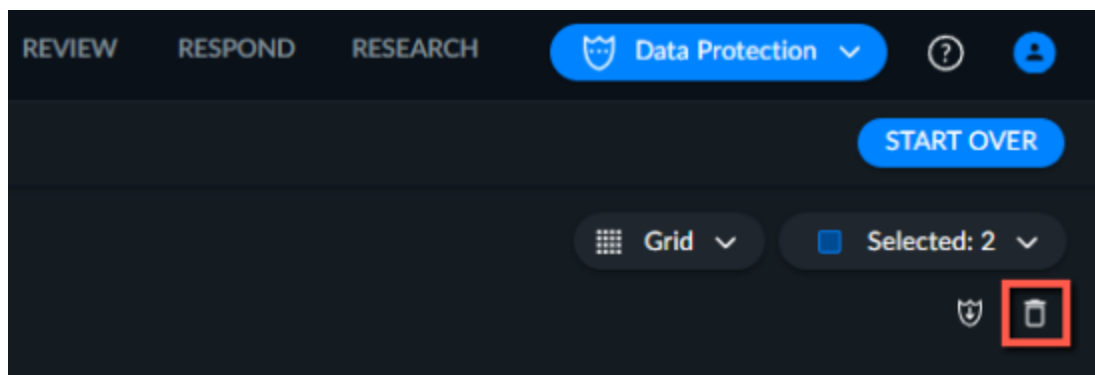
A data manager can download the items and send them as a report by clicking the download icon ().



BriefCam creates a zip file that includes the close-up clips (mp4 file), thumbnail (jpg file) and a text file with the metadata of the individual's personal information (the individual's classification, such as gender, as determined by BriefCam's algorithm).



To delete data, mark the items to delete and click the delete icon.



Here is a list of the items that are deleted:


- Object metadata (times, classification, color, speed, size, etc.)
- Object internal binary artifacts (path, bounding boxes, masks, etc.)
- Object visual artifacts – thumbnails and movie clips
- Bookmark data (if there were bookmarks, based on this object) – metadata and thumbnail
- Original video – either uploaded file or footage, fetched from VMS – the minimum required to cover the selected object (depends on the granularity of the actual files). However, it's quite possible that the original video of other objects will also be deleted and in some cases even the entire original video. In that case, the video will no longer be available for other investigation purposes of other people.

Note that the objects are immediately removed from the database and will be removed from the memory cache after the object has not been in use for one hour. If you need the removal from the cache to be immediate, contact your system administrator.

See also:

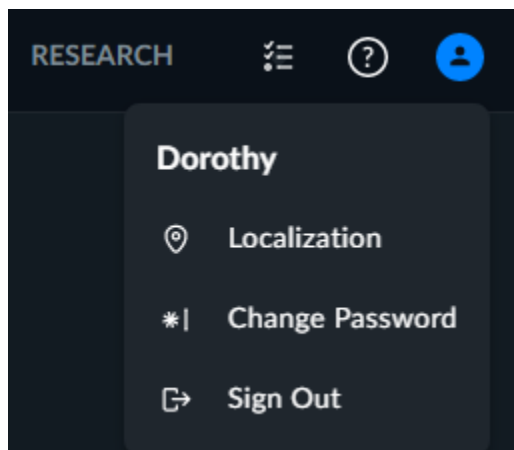
[Data Protection white paper](#)

Account Settings

To change the [Localization](#) settings or password, or to sign out from the BriefCam web client, click the account icon () at the top right-hand side of the browser page.



The account settings are specific and persistent for each user independently (the settings apply to all solutions – REVIEW, RESEARCH and RESPOND).

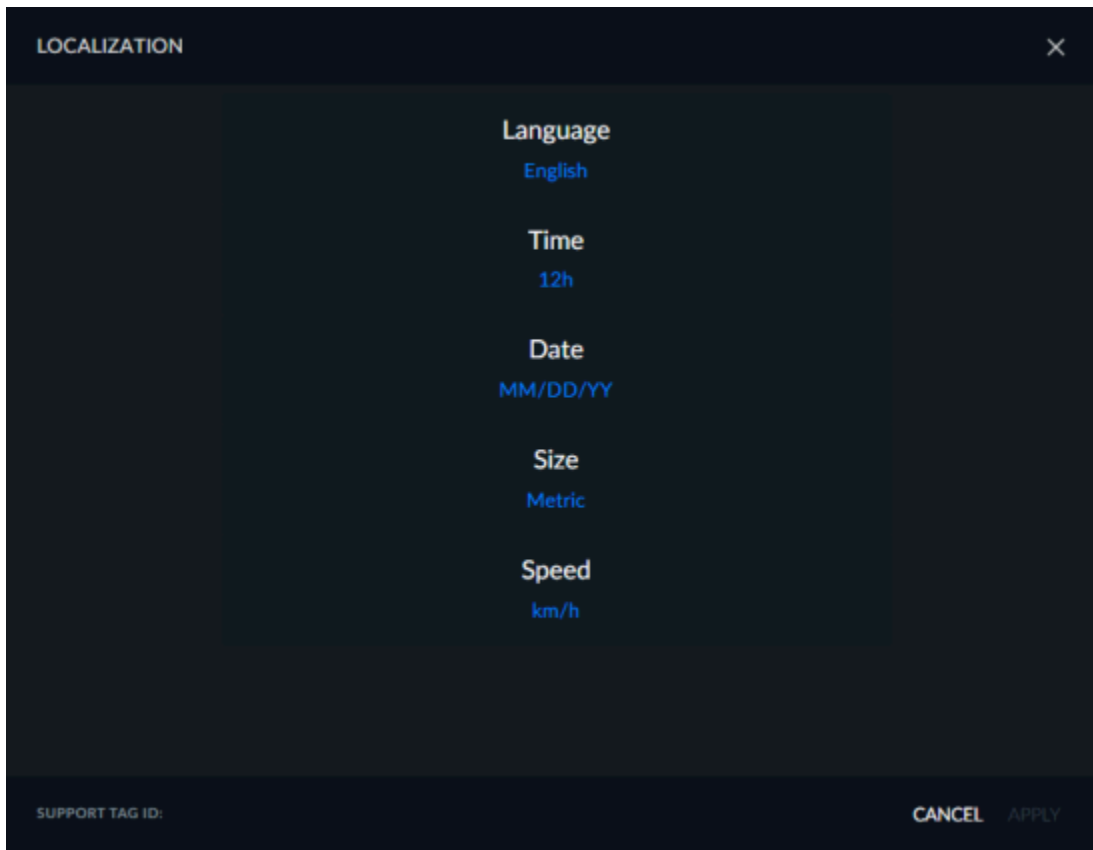


Localization - Account Settings

When the **Localization** tab menu option is clicked, you can change the various options:

- **Language:** Arabic, Brazilian Portuguese, Bulgarian, Chinese (Simplified), Chinese (Traditional), Danish, Dutch, English, Finnish, French, German, Hebrew, Italian, Japanese, Korean, Russian, Spanish (Latin American), Thai, Turkish, Ukrainian, and Vietnamese. Note that the RESEARCH module is not available in Bulgarian.
- **Time:** 12h or 24 hours (default value is 12h).
- **Date:** DD/MM/YY or MM/DD/YY (default value is MM/DD/YY).
- **Size:** Imperial or metric (default value is imperial).
- **Speed:** mi/h or km/h (default value is mi/h).

The **TAG ID** at the bottom-right of the screen is a number for support purposes. When contacting a Support representative, you may be asked to provide this number **Support TAG ID: ABC3123**.



BriefCam Platform Components and Variants

The BriefCam platform comprises the following:

- **VS (VIDEO SYNOPSIS® server)**, responsible for Web, video streaming, data analytics and aggregation services, metadata database management, video file storage, load balancing, VMS (Video Management System) plug-ins, and user management.
- **RS (RESEARCH Server)**, hosting an advanced business intelligence platform for the analysis of video sources and the production of interactive quantitative dashboards tailored to users' business objectives.
- **PS (Processing Server)**, equipped with one or more GPU cards and responsible for video decoding, rendering, object extraction, and classification. Multiple servers can be deployed at a single site to scale video processing requirements.

BriefCam is offered in a number of variations as detailed in the table below:



Variant	BriefCam Investigator	BriefCam Investigator for Teams	BriefCam Rapid Review	BriefCam Insights	BriefCam Protect
Video sources	File-based	File-based	VMS	VMS	File-based and VMS
Modules included	REVIEW	REVIEW	REVIEW	REVIEW, RESEARCH, RESPOND	REVIEW, RESEARCH, RESPOND
User count	Single-user	Multi-user	Multi-user	Multi-user	Multi-user

Supported VMS Platforms and File Formats

BriefCam supports a wide range of [VMS platforms](#) and video file formats as listed below:

Supported Video File Formats	.264, .3GP, .ASF, .AVI, .DAV, .DIVX, .DVR*, .FLV, .G64, .G64X, .GE5, .MKV, .MOV, .MP4, .RAW, .RT4, .TS, .WMV, .XBA (single & multi-stream)
Supported Codecs	H.264, H.265/HEVC, MPEG-4, H.263 (H.265 is supported for selected VMSs and cameras)
Supported Pixel Formats	Yuv420p and Yuvj420p
Recommended Video Stream Resolution	Minimum CIF (352 x 240), Maximum 4K (3840 X 2160) Resolutions between archive and real-time multi-streams can be different – as long as they both have the same aspect ratio.
Supported Resolutions of Client's Monitor Screen	The minimum supported resolution is: 1366 X 768.
Supported VMS Platforms (supported by BriefCam Protect, Insights and Rapid REVIEW)	American Dynamics, Arcanes Technology, Avigilon, Axis, Bosch, CASD, Dallmeier, Digifort, Digital Watchdog, Exacq, FLIR (formerly DVTel), Genetec, Geutebrück, IndigoVision, Intellicene, IPConfigure, ISS, LenelS2*, March Networks, Milestone, NX (Network Optix), i-PRO Americas*, Pelco*, Qognify (formerly Nice and OnSSI/SeeTec), Salient, Surveillus*, Synectics*, Teleste *This plug was developed by the VMS partner and certified by BriefCam.

About BriefCam

BriefCam® is the leading provider of video analytics software that enables people, companies, and communities to unlock the value of video surveillance content. Delivering accurate, flexible, and comprehensive solutions, BriefCam's video analytics platform provides valuable insights for accelerating investigations, increasing situational awareness and enhancing operational intelligence.

For more information about BriefCam's video content analytics solutions, visit <https://www.briefcam.com>