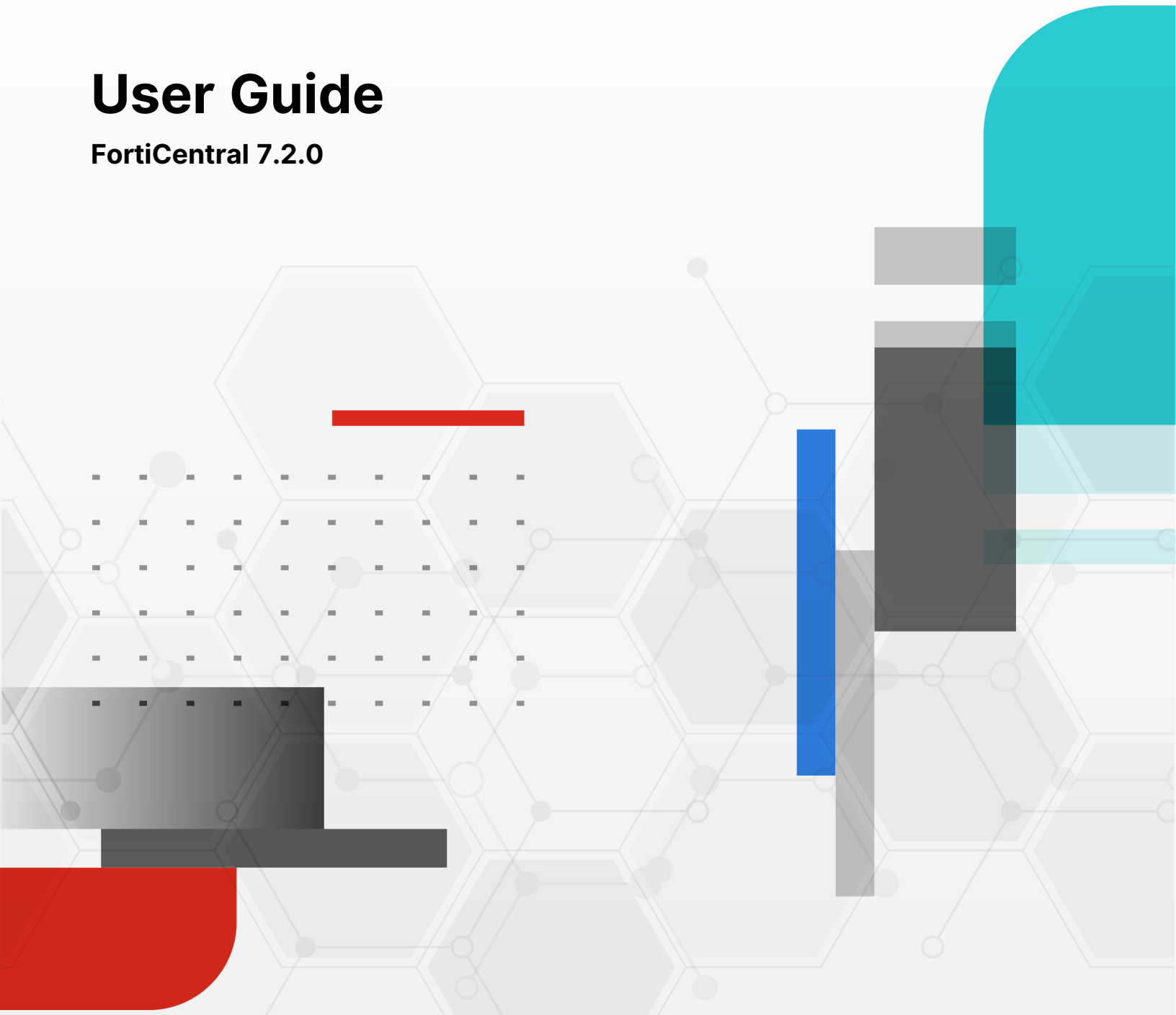
User Guide

FortiCentral 7.2.0



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April 08, 2025
FortiCentral 7.2.0 User Guide
00-720-000000-20250408

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Change log

The following is a list of documentation changes. For a list of software changes, see the Release Notes.

Date	Change Description
2024-04-19	Initial release of FortiCentral 7.2.0 User Guide.

Getting started

Before you can use FortiCentral, you need to install it and configure some basic settings.

System requirements

Operating System	Windows 7 (32- or 64 bit) Home or Professional, 8, 8.1, 10, or 11
CPU	Intel i5 3.2 GHz
RAM	8 GB
Hard Disk	50 GB
Graphics Card	2 GB video RAM (must be a separate graphics card, not integrated with motherboard)
Screen Resolution	1920 x 1080 pixels

If you only require video streams from one or two cameras, then you can run FortiCentral on a computer with less powerful hardware, such as an Intel Atom 1.3 GHz CPU, 2 GB RAM, and integrated graphics card.

Computers need more powerful hardware if you have multiple people that run FortiCentral on the same computer at the same time, such as with Microsoft Remote Desktop Connection or a Citrix virtual desktop. Resources are divided between them, which results in slower performance for each user. You will also need more powerful hardware if you:

- use high-resolution video streams from your cameras
- want a greater frame rate
- display many video streams in your view panes at the same time
- use more CPU-intensive features such as face recognition or detail analysis in object recognition

Fast network connections to FortiRecorder also improve performance.

To monitor performance, see Toolbar area on page 19.

Tip: Keep CPU usage below 50% if possible.

Networking requirements

If you have a firewall or router between FortiCentral and your FortiRecorder or other devices that you want to connect with FortiView, then the network must allow outgoing connections from FortiCentral to them on:

- TCP port number 8850
- TCP port number 443

If you want to use Google Maps to build a 3D map of your building, you also must allow TCP 443 (HTTPS) connections to the Internet.

Direct connections with the cameras from FortiCentral are not required.

Installing FortiCentral

1. Download the FortiCentral software installer from Fortinet Support:

   https://support.fortinet.com/

   If you will use face detection, mask detection, object detection, or video privacy features, then also download those installers.
2. Run the installers. They will install:
   - FortiCentral
   - Support for face recognition etc.
   - Microsoft .NET Framework 4.5.2
   - Microsoft Visual C++ 2013 Redistributable

Multiple instances

By default, only one FortiCentral program runs at a time. It stores its configuration in your Windows user account's local `AppData` folder. If you start FortiCentral again when another copy that uses the same settings folder is already running, then it will close the other instance.

However, you can configure a custom location for the settings folder. This can also be used to start multiple instances.

For example, you might do this for a:

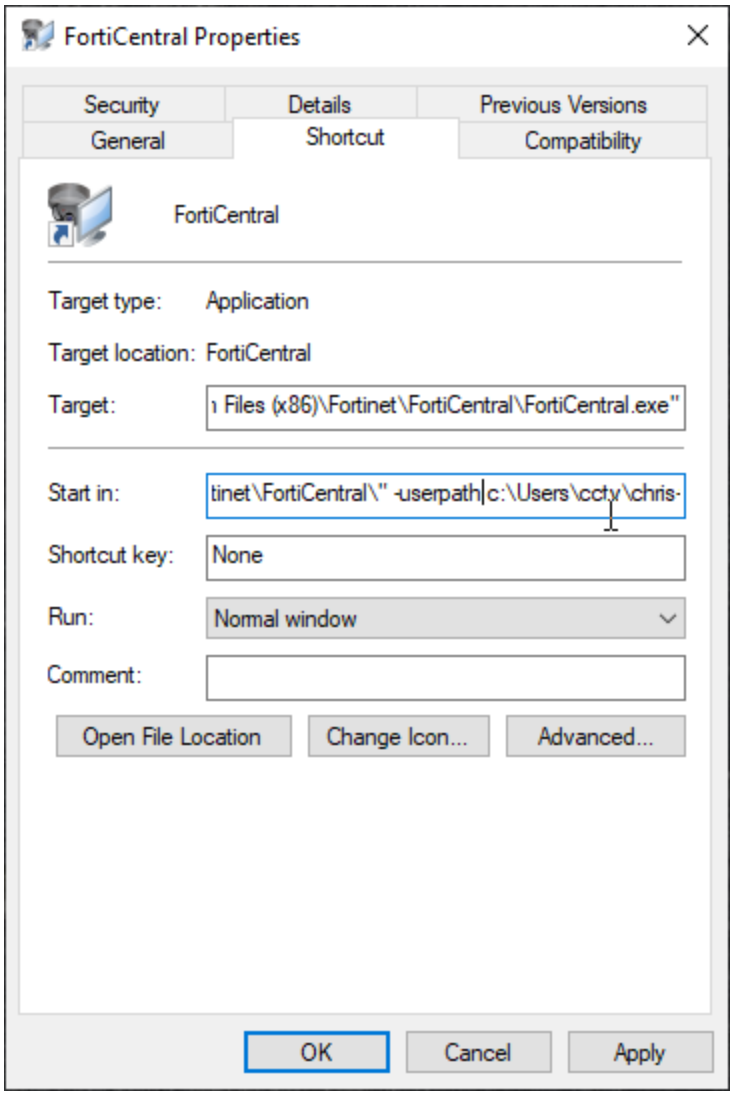
- Portable configuration on each user's USB stick drive
- Microsoft Remote Desktop or Citrix virtual desktop deployment, where multiple people connect to the same computer with the same Windows user account. If multiple people connect at the same time, then they need separate instances of FortiCentral, and separate settings folders.

You can move a settings folder later. Just be sure to delete any copies of files in the old location to avoid accidentally working with the old configuration, and then use these same instructions to update the shortcut icon to point to the new location.

To configure the location of the settings folder

1. Duplicate the FortiCentral shortcut icon on the desktop until you have an icon for each custom settings folder.
2. Rename each shortcut icon to distinguish them. For example, " FortiCentral for Jaya", " FortiCentral for Chris", etc.

3. Right-click a shortcut icon and select *Properties*.
4. Go to the *Shortcut* tab.
5. In the *Target* field, put your cursor after the EXE file path. Type `-userpath` and the path to the settings folder. For example:
   - `-userpath c:\Users\cctv\chris-FortiCentral-settings`
     (Multiple people log in with the username "cctv". This instance is for Chris, and uses their settings folder.)
   - `-userpath %cd%\config`
     (Each person will have a settings folder named "config" on their USB stick drive.)



Each FortiCentral instance **must** use a unique configuration path.

If you append `-userpath` but do not specify a configuration folder, then that instance will use the default location, inside the username's local `AppData` folder. Multiple instances could use the same default folder. If multiple instances try to use the same settings folder at the same time, then the newer instance will close the older instance. This disconnects the other person, and they will not be able to use FortiCentral at the same time. Their setting changes will also affect the other person.

Initial login

1. After the installer finishes, double-click the FortiCentral icon to start the program.
2. In the *Language* dropdown list, select the display language. The following languages are currently supported:
   - English
   - French
   - German
   - Spanish
   - Simplified Chinese
   - Traditional Chinese
3. In *User Name*, type the default user name, `admin`. (Initially, there is no password.)
4. Click *Login*.

For security reasons, after logging in, immediately click the *Settings*  button in the top right corner and go to *Settings* > *Users*, click the *Username* `admin`, and then in *Password* enter a password.

Unauthorized people could access FortiCentral if you do not change the default password.

For more information, see Configuring a user account on page 10.

Configuring a user account

To access your FortiRecorder, you must first create a user account.

There are multiple user login methods. The following instructions assume that you will use a simple synchronized login (the same username and password to log in to both FortiCentral and FortiRecorder).

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *Users*.

3. Configure the following settings:

Setting	Description
Enabled	Select this checkbox to activate the user account.
Username	Enter a unique username. For a simple synchronized login, it should be the same as your username on FortiRecorder.
Password	Click the *Change Password* button and then enter a password. For better security, the password should be at least 8 characters, and have a mix of upper and lower case letters, numbers, and special characters.
User Type	Select the user's role, which is similar to an administrator profile on FortiRecorder: • *Admin*: Similar to *SuperAdminProfile*. • *Operator*: Similar to *OperatorProfile*. • *Viewer*: Similar to *ViewerProfile*. This setting grants FortiCentral permissions, including who has control over other FortiCentral installations for remote control. For example, you select *Admin* to allow the user change all settings, including to remotely control another FortiCentral. As a best practice, you should create a separate username for each person, and limit them to the least privileges that are required. **Note:** Permissions are also determined by, for example, access controls for cameras on FortiRecorder.For details, see the *FortiRecorder Administration Guide*.
Login Type	Select *Local Authentication*for a simple synchronized login. **Tip:** Alternatively, you can select *RADIUS*, or *LDAP*. Instead of maintaining a list of users on every FortiCentral and FortiRecorder, you can instead use a centralized directory. FortiCentral and FortiRecorder can connect to the directory via RADIUS or LDAP whenever a user needs to log in. For details, see RADIUS or Microsoft Active Directory login on page 13.
Alias	If you want multiple FortiCentral users to share the same login that is used to connect to FortiRecorder, then select the name of the alias that each person uses. For details, see Alias login on page 12.
Autologin	Enable to automatically log in with this username when FortiCentral starts.
Startup View	Select the initial layout of the view panes that you want to display when you log in. See also Configuring views on page 24.
May Control Other Clients	Select this checkbox if you want this username to be able to connect to and control other FortiCentral installations. See also Using remote control on page 46.
List Grouping Size	Enter the maximum number of items to display per page when there is a long list, such as search results.
User is LDAP/RADIUS wildcard	Select this option if you want to use the settings in this account as a template.

Setting	Description
	If most user accounts are not defined on FortiCentral, but on a RADIUS or LDAP directory, then when those users log into FortiCentral, they would not have any associated preference settings. In that case, by default, FortiCentral uses the default values for preferences. If you prefer to copy the preferences of this user account instead, then enable this option.

4. Click the *New* button, and then click the *OK* button.

Alternative login methods

FortiCentral supports the following methods to log in to FortiRecorder.

Simple synchronized login

If you want to use the same login for both FortiCentral and FortiRecorder, then use this login method. See Configuring a user account on page 10.

Fixed login

If you have multiple FortiRecorder units and each one has its own login credentials, then you must enter a login for each one when you add the FortiRecorder. In this case, a FortiCentral username and password can be different from the user accounts on FortiCentral.

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *Recorders*.
3. Add the FortiRecorder NVR and then click *Login*.
4. Enter the username and password for the FortiRecorder.
5. Click *Apply* and then click *OK*.
6. Repeat the previous steps for every FortiRecorder.

Alias login

An alias account is a special type of account on FortiCentral. Multiple usernames on FortiCentral can point to the alias, which corresponds to only one user account on FortiRecorder.

This simplifies user management. In this way, you do not need to create many accounts for all of your FortiCentral users on every connected FortiRecorder. Similarly, when you need to remove user accounts on FortiCentral, you do not have to remove all of their associated user accounts on every FortiRecorder.

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *Users*.
3. In *Username* and *Password*, type the login credentials for the alias account. These will be used by FortiCentral to log into FortiRecorder.
4. From the *User Type* dropdown list, select *Alias*.
5. Click *New* and then *OK*.

   When you create new users, you can now select the alias from the *Alias* dropdown list.

RADIUS or Microsoft Active Directory login

If your organization has centralized user accounts in a RADIUS or LDAP directory such as FortiAuthenticator, Red Hat Identity Management, or Microsoft Active Directory, then FortiCentral and FortiRecorder can also use it. This saves time, so that you do not need to repeatedly maintain the list of users again on every FortiCentral installation and every FortiRecorder.

The LDAP login type supports user properties.

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *Login*.
3. Click either the *New LDAP* or *New RADIUS* button.
4. Configure the connection settings as the directory requires, such as its IP address and listening port number.

   To verify your connection settings, enter a valid login into *Test User Name* and *Test Password*, and then click the *Test Login* button.
5. Click *Apply*.
6. Go to *Settings* > *Users*.
7. Create a new username entry, such as "radius1". Configure the *Login Type*setting and, optionally, *User is LDAP/RADIUS wildcard*.
8. Click the *Apply* button, then click the *OK* button.

Adding a FortiRecorder

Once you have configured the initial login, you can add FortiRecorder to FortiCentral. This will let you view the videos of cameras connected to FortiRecorder.

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *Recorders*.
3. In the field under the *Host* column, type the domain name or IP address of FortiRecorder. Keep the default port number.
4. In the field under the *Name* column, type a descriptive name.

5. If you want FortiCentral to connect to FortiRecorder using a different login than your current one, click *Login* and specify the user account.
   The FortiRecorder and its connected cameras now appear in the *Devices* panel.

Remote management of FortiRecorder devices and cameras

Instead of logging in to each camera and FortiRecorder for multiple buildings individually, you can save time and manage their firmware and configuration files with one FortiCentral installation.

In the interface, there are two columns:

- *Remote Recorders*: Your connected FortiRecorder devices and their connected cameras. On the right side of each FortiRecorder is a connection status indicator icon. The icon must be green for FortiCentral to be able to manage them.
- *Local Repository*: Your FortiCentral installation.

To delete a file that you do not need anymore, select it and then click the *Delete* button that is between the columns.

Between the two columns, you can also transfer camera profiles, video profiles, schedules, and configuration files, and update firmware.

To download or upload profiles and configuration files

1. On a view pane, click the *Settings* button.
2. Go to *FortiRecorder Management*.
3. In the *Remote Recorders* column, select the checkbox of one or more camera profiles, video profiles, schedules, configuration files that you want to download. If you are unsure and need to preview the profile's settings, you can click the profile's name to display it.
   Similarly, if you want to upload a file instead, then select it from the *Local Repository* column.

If a camera is currently using a profile, and you transfer a profile with the same name, then it replaces and immediately activates it. The camera will pause recording while this occurs. If you don't want to activate the profile immediately, then either wait to upload it, or make a copy of it with a different name and then upload that copy instead. You can activate the copy later.

Profiles, configuration files, and firmware cannot be uploaded at the same time. (A configuration file would overwrite a profile. If you are reverting to an older firmware, then the configuration file or profile might be invalid for that version.)

4. Deselect the checkboxes of any items that you do **not** want to transfer.
   Checkboxes are not automatically cleared after an action. To avoid repeatedly transferring files and accidentally making many copies, remember to deselect the checkboxes before your next action.
5. Click the *Transfer* (arrow) button that is between the columns.

The *Transfer* button always transfers items from the column on the left to the right side. By default, *Remote Recorders* is on the left side. If you want to transfer items in the opposite direction—from *Local Repository* to *Remote Recorders*—then click the *Switch side* (two arrows) button first, so that the *Local Repository* column is on the left side.

6. In the dialog that appears, click the *OK* button to confirm.

   The file now appears in the *Local Repository* column.

To upload a firmware or configuration file

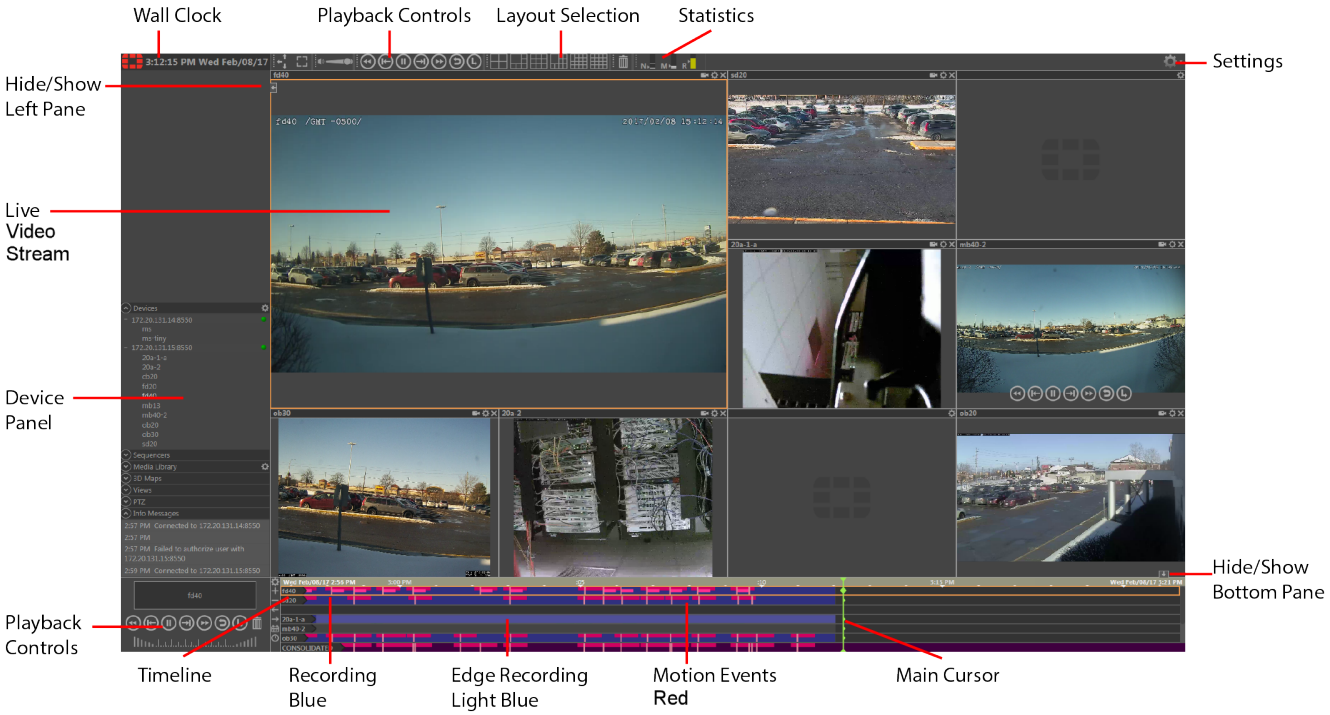
1. On a view pane, click the *Settings* button.
2. Go to *FortiRecorder Management*.
3. Click the menu button (it has three horizontal lines) that is above the *Local Repository* column.
4. Go to *Import Recorder Firmware* or *Import Camera Firmware*.
5. Find the firmware file on your computer, and then click *Open*.

   The firmware now appears in the *Firmwares* section of the *Local Repository* column.
6. If new FortiRecorder firmware has new settings and you want to import a configuration file for it, then also click the menu button and go to *Import Recorder Config*.
7. Click the *Switch side* (two arrows) button that is between the columns so that the *Local Repository* column is on the left side.
8. In the *Local Repository* column, select the checkbox of the firmware that you want to upload.
9. In the *Remote Recorder* column, select the checkboxes of the cameras or FortiRecorder devices that you want to update.
10. Deselect the checkboxes of any cameras or FortiRecorder devices that you do **not** want to update.
11. Click the *Transfer* (arrow) button that is between the columns.
12. In the dialog that appears, click the *OK* button to confirm.

    The camera or FortiRecorder receives the file, installs it, and reboots. The *Info Messages* panel displays when the device went offline to install the file. Time varies by the model and size of the file, but the update might take a few minutes. When the update is complete, the connection status indicator icon is green again.

Interface overview

The following section contains information on understanding the FortiCentral windows.



The FortiCentral main window contains the following main areas:

- Left: resource column
- Bottom: video timeline
- Top: toolbar area
- Center: view panes

Resource column

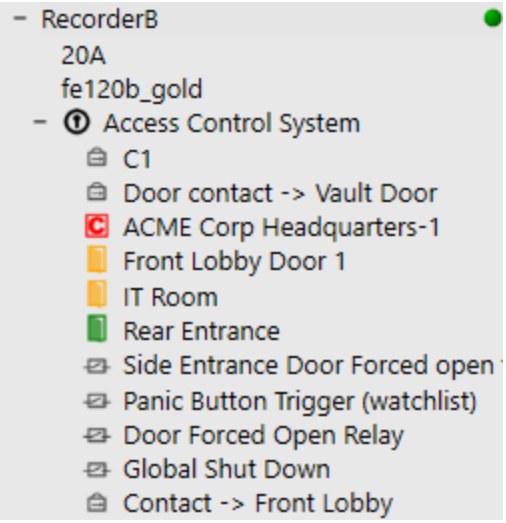
The column on the left side of the window contains collapsible panels such as *Devices* and *Info Messages*. By default, empty panels are hidden, so you might not see the panels until you begin to add items. To add cameras, sequencers, media files, etc. to this column, you can either drag them into the column, or add a FortiRecorder that is connected to your devices.

The *Devices* panel has all connected FortiRecorder devices and the cameras connected to them. Connection status indicators appear next to every FortiRecorder.

Connection Status Indicator	Description
Green	FortiRecorder is connected with a successful login and authorization.
Yellow	FortiRecorder is reachable on the network, but FortiCentral could not log into FortiRecorder. The reasons vary. For example, the username and password might not match.
Red	FortiRecorder is not reachable on the network. It might be disconnected, misconfigured, or blocked by a firewall or router.
Black	FortiRecorder was manually disabled in FortiCentral.

The same user account is used on both FortiCentral and FortiRecorder. Any user permissions changes on FortiRecorder will also affect their permissions on FortiCentral.

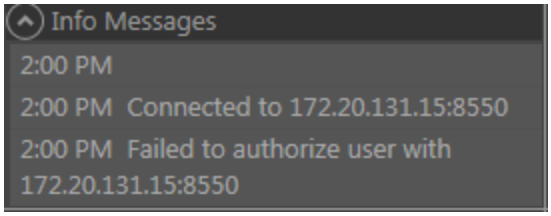
If FortiRecorder is connected to an access control system (ACS), then the panel also has indicators for ACS components. Status indicators vary by the type of ACS device. For example, a door can be held open, but a relay cannot. Colors of the icons have meanings similar to the connection status: green is normal, orange needs some attention, red is more severe, and black is disabled. Hover your mouse cursor over an item to see a more specific status, such as *ACTIVE* or *UNLOCKED*.



ACS Device Type Indicator	Description
	ACS controller
	Door

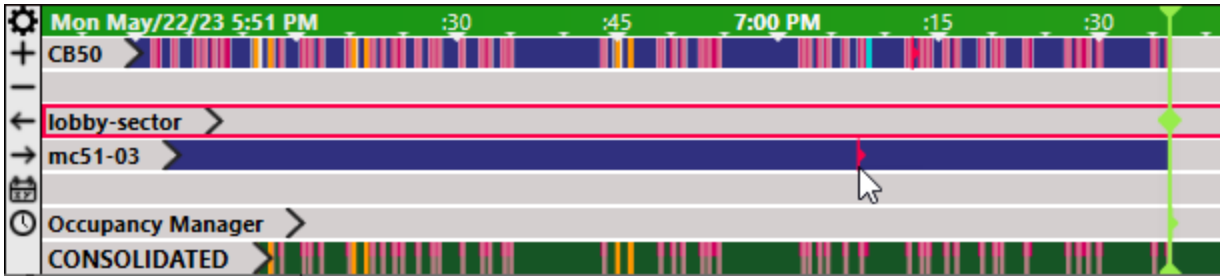
ACS Device Type Indicator	Description
	Switch for relays or outputs in the ACS system
	Port for inputs or contacts for the ACS system

The *Info Messages* panel displays log messages generated by FortiCentral at specific times, or by your scripts. For example, the log message below shows you the exact time a connection failed for a specific FortiRecorder.



Timeline

When you drag a device onto a view pane, its events (if any) and video feed appear in a row on the timeline.



Timeline rows are color-coded to indicate recording status, video annotations, and events from the occupancy manager, motion detection, and more. When you click a view pane, both it and its associated row in the timeline are outlined in the "highlight" color of your theme. For details, see Appendix: Timeline indicators on page 102.

Unless you drag it, the timeline follows the current time.

To show previous or later times on the timeline, drag it to the left or right.

To zoom in or zoom out on the timeline, scroll your mouse wheel.

To play a specific time on a video, you can either:

- Click that time in the timeline. If you click a motion detection event, it plays the video clip that shows movement.
- Drag the green timeline slider to rewind to a previously recorded time. The slider is red while playing a previous time. When you drag the slider back to the current time to play the live video feed, the slider becomes green again.

If you use edge recording (saving the video onto an SD card on the camera, instead of immediately saving it on FortiRecorder), and you click on the timeline, FortiRecorder downloads the video so that you can view it in FortiCentral. Once the download is complete, the camera deletes the recording from its SD card.

Some items on the timeline, such as annotations, display details about the event if you hover your mouse cursor over it.

At the bottom of the timeline is the row named *CONSOLIDATED*. This can be useful if there are many cameras in your view panes, and you need to monitor all of them for events. Instead of using the scroll bar at the right side of the timeline, and repeatedly scrolling up and down in the list of video feeds, you can simply monitor the *CONSOLIDATED* row, which shows all events from all cameras together, in one row.

Toolbar area

The toolbar area contains tools such as grid layout icons to organize the view pane area, and buttons to trigger scripts.

If you click a view pane that contains the live video stream of a camera, the toolbar might also have:

- video player controls
- sound volume slider
- pan-tilt-zoom (PTZ) controls

The toolbar area also indicates system resource usage and performance.

Icon	Description
N	Network usage in megabits per second (Mb/s). If there is too much delay when FortiRecorder needs to send video streams to FortiCentral, or if too many network packets are dropped, then the video motion will not be smooth. PTZ controls will also be less responsive.
M	RAM memory usage in gigabytes (GB).
R	Rendering performance in megapixels per second (MP/s). CPU usage is a factor in this benchmark. For example, to render video with smooth motion, you need approximately 30 frames per second (fps). If the size of the view pane is 1 MP, then the rendering rate must be at least 30 MP/s. If you play many live video streams at the same time in FortiCentral, you will eventually reach your computer's hardware performance limit. If that happens, then the video decoder must skip rendering of some frames to keep up with the video stream. Motion in the video will be less smooth.

If you click and hold down your mouse button on the icon, it shows the current, maximum (*Peak*), and average of the system resource.

Color codes of the resource usage icons indicate their status:

- **Grey**: Normal performance.
- **Yellow**: Reduced performance.
- **Red**: Poor performance. For example, many packets might be lost, many video frames might be skipped, or FortiCentral controls might be slow to respond.

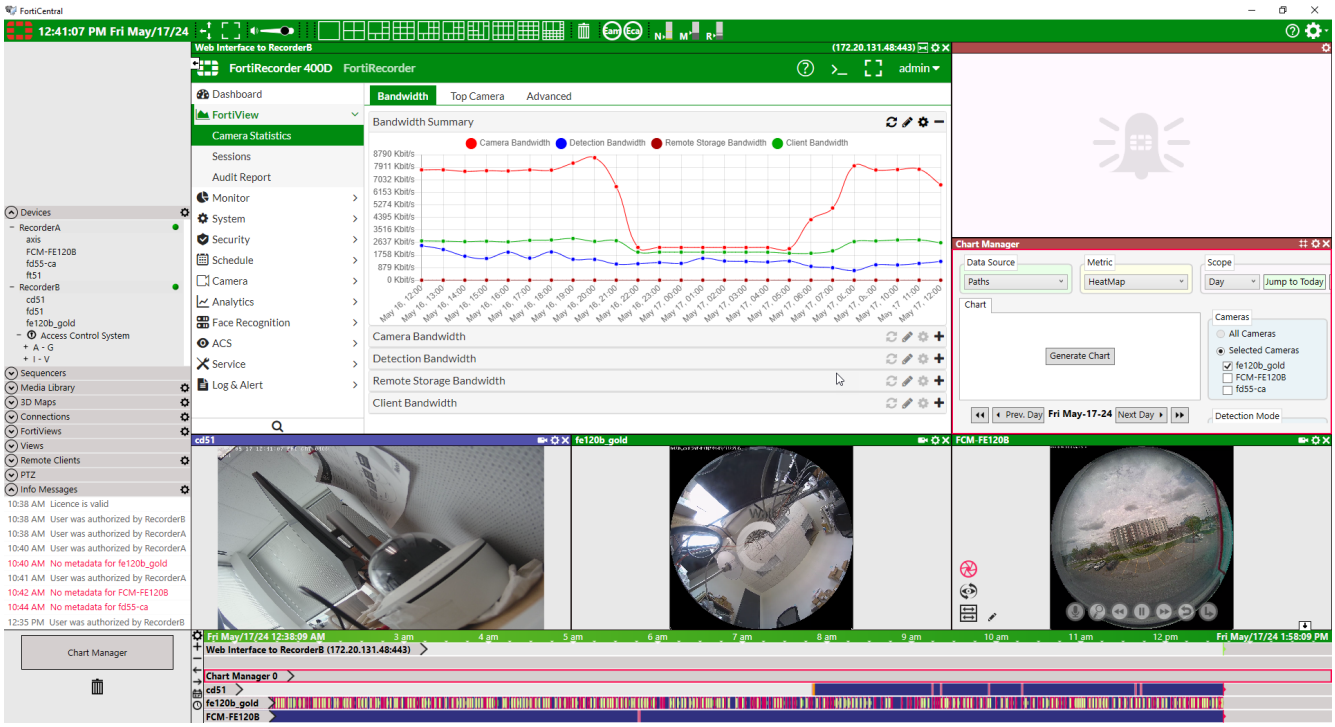
View pane area

The view pane area has a grid layout that can display one or more items at the same time: video streams from cameras, 3D maps, FortiRecorder devices and more. You can drag panes into different locations in the grid to organize your the views.

Each pane is independent, so multiple panes can show different views from the same camera: a live stream in one view pane, and a playback of a previous recording in another video pane. The maximum number of videos that your view panes can display at the same time depends on your computer's hardware and the resolution and bitrate of the cameras.

To display an item in a view pane, drag it from the resources column onto a view pane. An item can be a camera, FortiRecorder, 3D map, or most of the other items in the resources column. Alternatively, you can click a view pane to select it, and then double-click the item in the resources column.

For example, you could drag a FortiRecorder connection onto a view panel in order to log into its GUI and adjust its settings.



To duplicate an item into another view pane, press and hold the Ctrl key while you drag the item from one pane to another.

To use the entire area to display the contents of a view pane, double-click it. To return to the grid, double-click it again.

To empty the view pane, click the *Close* (X) button on the view pane.

View panes have different behavior, depending on the:

- Item you drag into the view pane, and
- Type that you select when you either:
  - Click the *Settings* (gear) button on the view pane
  - Right-click the view pane
  - Configure your view settings

For details on the types and sets of view panes, see Configuring views on page 24.

Opening a new window

If multiple monitors are connected to your computer, you can add more windows with even more view panes to increase your monitoring space.

Each window can use a different layout and different set of view panes. For details, see see Configuring views on page 24.

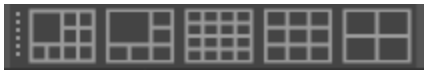
1. Click the *Settings* button in the top right corner.
   
2. Go to *Settings* > *Add Window*.
   Windows opened after the first (main) window do not have the resources column nor the timeline. Return to the original window if you need to use these features.

Customizing FortiCentral

There are many methods to customize your monitoring experience in FortiCentral.

Arranging the layout

You can organize the view pane layout to fit your needs. The easiest method to organize your view panes is to go to the toolbar area at the top of the window, and click a predefined grid layout.



Alternatively, you can create custom grid layouts.

To add a custom grid layout

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *Layouts*.
3. Configure the following settings:

Name	Description
Description	Enter a unique name or descriptive text that will be used as a tooltip when hovering the mouse over the button in the toolbar area.
Owner	Select who has permissions to use this item: • *Global*: All usernames, on all FortiCentral installations that have joined the domain. This option is only available if this FortiCentral is acting as the domain controller, and your *User Type* is *Admin*. In the list of layouts at the top of the dialog, global layouts have a red letter "G" on their icon. • *Public*: All usernames, but only on this FortiCentral installation. This option is available only if your *User Type* is *Admin*. • A username: Only this specific person, and only on this FortiCentral installation. If your *User Type* is *Admin*, instead of your own username, there is a list of usernames. Select whom to assign this item. Other usernames will not be able to select this item unless they are an administrator. In the list of layouts at the top of the dialog, layouts that are owned by a specific username have a red letter on their icon, either "O" (if you are logged in as an administrator) or "M" (if you are logged in as the owner).

Name	Description
Grid Width	Enter the maximum number of view pane spaces in each dimension of the grid. By default, each view pane occupies one space in the grid. However in the next step, you can assign multiple spaces to one view pane to make it bigger on your screen. Grid width can be a range of 2-100 spaces. Grid height can be a range of 2-100. The total area of the layout can be up to 64 spaces.
Grid Height	

4. If you want to adjust the size of a view pane to occupy more than one space in the grid, then drag your mouse cursor over the area in the grid that you want each view pane to occupy.

   If the area does not match one of the common aspect ratios (for example, 2:3 height to width), and therefore the video might not fill the view pane unless you stretch it, then the area will display *N.S.* (non-standard).

   If the size of a view pane is smaller than the maximum resolution of your cameras, FortiCentral can automatically select a better-matching resolution. This can improve CPU and network performance. For details, see Configuring general settings on page 30.

5. Click *Apply* and then click *OK*.
   Your custom grid layout will appear in the toolbar, next to the predefined grid layouts. You can also use the layout when you define your favorite sets of view panes.

Full screen modes

During regular use, you might not need to see all of the panels and controls. To focus on the view panes and give them more space on your screen, you can hide the other parts of the window. Go to the toolbar area at the top of the window, and click the focus mode buttons—either one, or both.

Name	Description
Full Screen / Windowed Mode (rectangle icon)	Maximize the window to use the full screen, and hide its title bar. To revert to a regular window, click *Windowed Mode*.
Monitor Wall View (three arrows icon)	Hide the *Devices* and *Info Messages* panels and (depending on your preference settings) the toolbar area at the top of the window. To show the panels and toolbar area again, either press the Esc key, or hover your mouse at the top edge of the window to reveal the toolbar, and then click *Cancel Monitor Wall View*.

Configuring views

Views are saved arrangements of the view panes in your window layout. For each view pane, it remembers which camera or other item (if any) is displayed, and the type of view pane. You can use views to keep your favorite monitoring setups and to quickly apply them by either clicking their name the *Views* panel in the left column, or by selecting it as your preferred starting view when you log in.

To create a view

1. In the toolbar area at the top of the window, click a grid layout.
2. Right-click each view pane and select the type, such as *Scratch Pad*.
3. Optionally, drag cameras or other items from the resources column into the view panes. Click the *Close* (X) button to empty a view pane if you do not want to include that item.

   The view will be a snapshot of where the specific items and types of view panes are located.
4. Click the *Settings* button in the top right corner.

   
5. Go to *Settings* > *Views*.
6. Configure the following settings:

Setting	Description
Name	Enter a unique name for the view.
Description	Optional. Enter descriptive text that will be used as a tooltip when hovering the mouse over the name in the *Views* panel.
Owner	Select who has permissions to use this item: • *Global*: All usernames, on all FortiCentral installations that have joined the domain. This option is only available if this FortiCentral is acting as the domain controller. • *Public*: All usernames, but only on this FortiCentral installation. • A username: Only this specific person, and only on this FortiCentral installation. Permissions can be overridden by an administrator if they assign this view to another user in *Startup View*. Administrators can also use any view, regardless of *Owner*. This option is available only if your *User Type* is *Admin*.
Main Window	Enable if this view applies to the first (main) FortiCentral window. By making two views—one for the first window, and one for the second window—you can define different sets of view panes for multiple open windows. This saves time, for example, if your computer has multiple screens or also runs a monitor wall.

7. If you want to preview the result, or adjust the type of the view panes, click the *Paint Panes* button.

A star (★) on a view pane indicates that it contains a specific item such as a camera inside of it, and is not initially empty when you apply the view.

Color codes of the view panes indicates the type of the view pane. To change the type, click the color checkbox on the right side, and then click each view pane to "paint" it.

Color codes vary by your selected theme. The table below has colors used by the default theme. See also Changing the theme on page 26.

View Pane Type	Color	Description
None	Grey (Green when you exit the *Paint Panes* dialog)	Display an item from the resource column, such as a 3D map, or the live video stream from a camera. Can also be used to display the: • chat • concierge • event manager • chart manager • occupancy manager • FortiRecorder configuration manager This is the default, when no other types are selected.
Synchronized	Light green	When you use the: • video player controls • timeline controls on any of the synchronized view panes, this type applies the same action (pause, etc.) to all of them, keeping their video players in sync. For details, see Synchronizing video on page 38. Unlike other types, *Synchronized* view panes can also be another type at the same time (for example, both *Synchronized* and *Scratch Pad*). This is indicated by stripes of both colors. If you don't want this, then deselect the other type.
Scratch Pad	Light blue-green	Automatically display related items when you either: • Use a script that puts items in scratch pads. See also Scripts on page 90. • Right-click on a view pane and select *Show nearby cameras*. See also Grouping nearby cameras on page 44.

View Pane Type	Color	Description
		Unlike the default type, you don't manually drag an item into a scratch pad. Items are displayed on demand when triggered by, for example, a script or request for nearby cameras. Empty scratch pad view panes are filled in order, from left to right, and top to bottom.
Receive Alarms	Red	Automatically display the live video stream when an alarm occurs. Requires that you also enable the settings to show: • alarms from cameras • alarms from object detection or face recognition (detection by FortiCentral, not the method that uses detection by FortiRecorder) and on FortiRecorder, you configure the camera profile to record motion detection. For details, see the *FortiRecorder Administration Guide*.
Hotspot	Blue	Display the live video stream from a camera when you hover your mouse cursor over its: • item in the *Devices* panel • icon in a 3D map About 10 seconds after your mouse cursor leaves the item, this type of view pane will automatically empty itself again. Unlike other types, only one view pane can be the hotspot at a time.

8. Click the *New* button, and then click *OK*
   The new view now appears in the *Views* panel, organized by their *Owner*.

To edit a view

1. Arrange the layout, as you would when creating a new view.
2. Click the *Settings* button in the top right corner.
   
3. Go to *Settings* > *Views*.
4. Select the name of an existing view.
5. Click the *From Current View* button.

Changing the theme

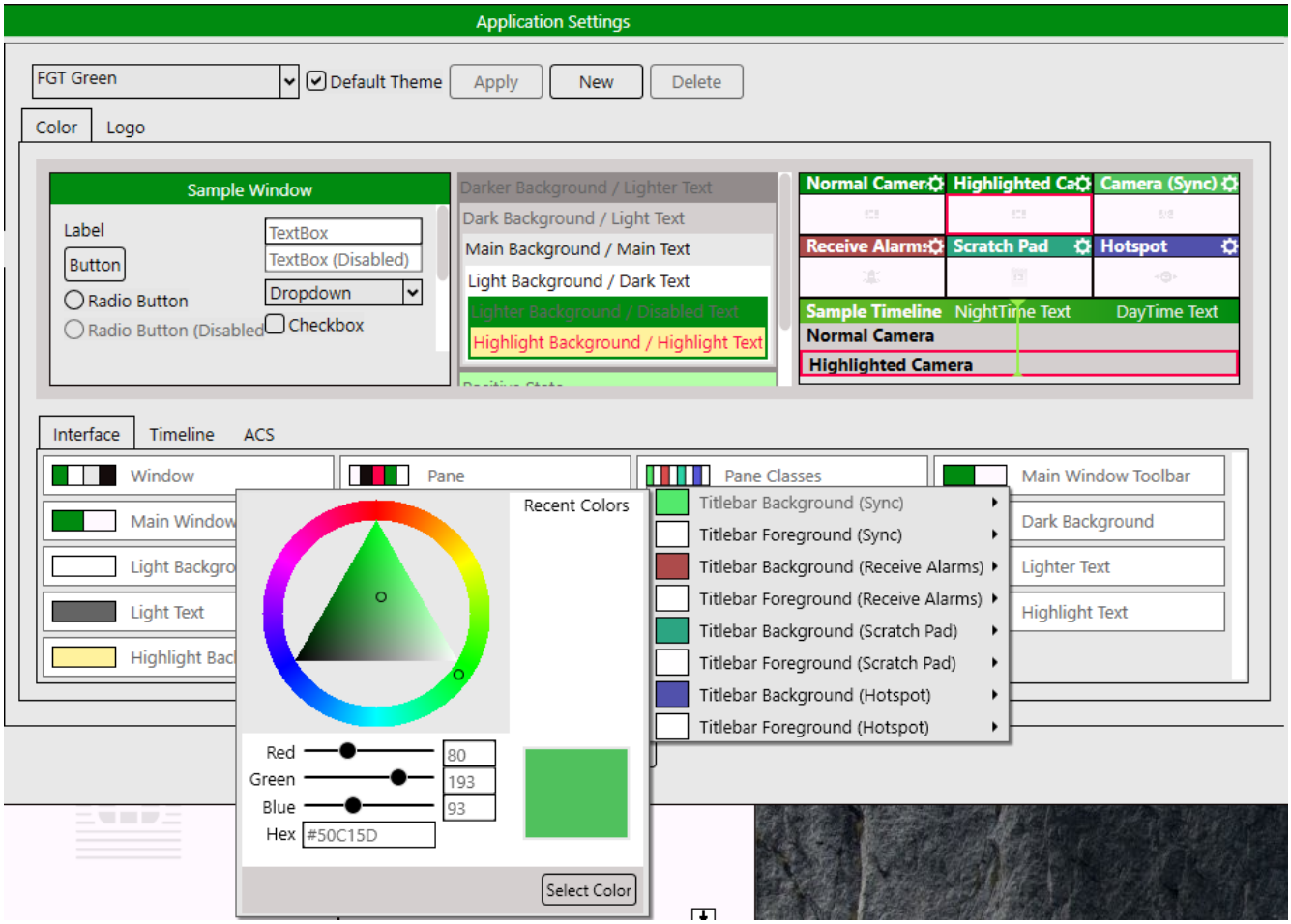
Colors and the logo used in FortiCentral windows is customizable to meet your preferences and needs. For example, you can select colors for better accessibility if employees experience some color blindness, or to match your company brand.

1. Click the *Settings* button in the top right corner.
   
2. Go to *Themes*.

3. From the dropdown list at the top of the window, select the name of a predefined theme, and then click the *Apply* button.

   Alternatively, click *New* and use the settings for each display element to create your own custom theme. For example, if you want to change the color used by each type of view pane, click the color swatches to the left of *Pane Classes*; a dropdown menu opens where you can select each color.

   If you want your new theme to be used as the default for all new users, then select the *Default Theme* checkbox.
4. Click the *OK* button.



Adding media

FortiCentral can display images, video clips, and web pages in the view panes. This is useful to enrich the information available to the operator or visitors.

For example, operators might need quick access to:

- Location map
- Telephone directory
- Instructions
- Emergency procedure

In a concierge screen in the lobby, you can also use a FortiCentral screen as an information bulletin board or for digital signage solution to display:

- Newsletters
- Today's activity
- Weather alerts
- What's on sale
- Small presentations

To show media in a view pane

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *Media*.
3. In the *Name* field, enter a unique name for the item.
4. In the *Source* field, either enter the URL (to add a web page), or click the button next to it and select an image or video file on your computer.

   For web pages, every time the sequencer displays it, it refreshes the web page. This ensures that it will show up-to-date content.
5. Click the *New* button, and then click the *OK* button.
6. To display the media item, from the *Media Library* panel, drag the item onto a view pane.

   Alternatively, put the media item into a sequencer. See Viewing cameras sequentially on page 43.

Organizing the devices panel

When you connect to a FortiRecorder, the cameras and other devices that are connected to it automatically appear in the *Devices* panel. To organize your cameras, ACS devices, and other items by criteria, on the *Devices* panel, click the *Settings* icon and go to:

- *Group by Recorder*
- *Group By Device Type*
- *Group By Tag*
- *Unified*

or you can filter the list to show only specific matching items:

- *Search Names*
- *Search Tags*

For example, you might group cameras by the sector or floor of the building that they monitor.

To add tags to a camera

1. Log into FortiRecorder.
2. Go to *Camera* > *Configuration* > *Camera*.
3. In the *Location* field, enter a description of where the device is located, such as:

   `1st floor`
4. After the location, in the same text field, enter tags. Separate each tag with a comma.

Example:

```
1st floor, Vancouver, parking, PTZ, secondary, 4000
```

5. To view a camera's tag, hover your mouse cursor over a camera.

Configuring joystick controls

FortiCentral supports pant-tilt-zoom (PTZ) camera joystick control. While FortiCentral supports most joysticks, professional surveillance-grade joysticks are recommended for more precise control.

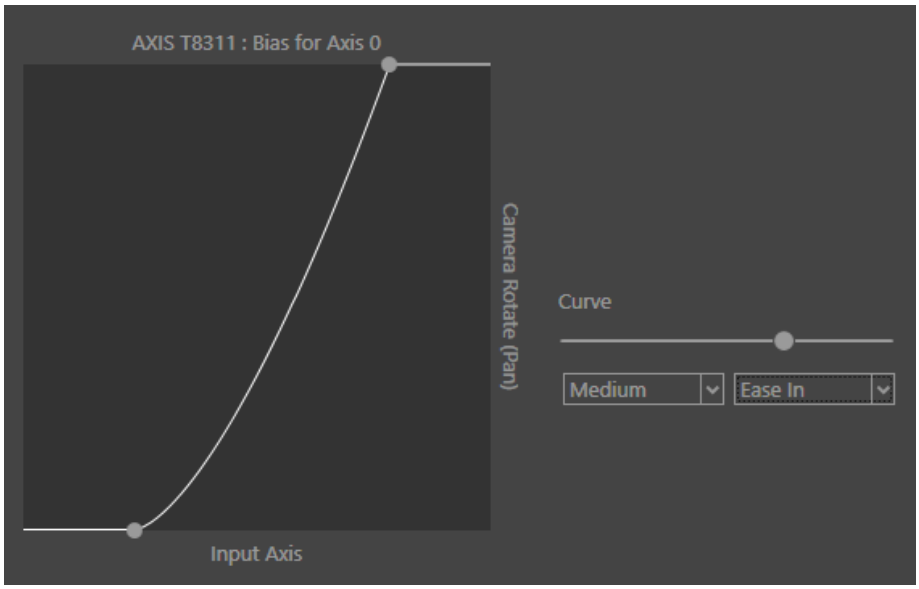
1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *Joysticks*.
3. Plug in the joystick.

   The supported joystick should automatically appear in the list of joysticks and calibrate itself.
4. If not already assigned, in the *Mapping* column, use the dropdown list in each row to map each axis number to a different control action: pan, tilt, or zoom.
5. If you prefer, select the *Invert* checkbox to make movements in the opposite direction.

   For example, by default, when you push the joystick forward, the camera tilts up; if direction is inverted, the camera will tilt down.
6. If you want to adjust the movement sensitivity along a specific axis, click the *Bias* button.

   If you use the linear setting, the camera's movement speed matches how hard you push the joystick lever. If you want the camera's movement speed to accelerate or decelerate instead, then select either *Ease in* or *Ease out*.



7. Map each button on the joystick to an action on the camera, such as *Camera Zoom In*.

Configuring general settings

You can customize various preferences for how you view video streams, how your FortiCentral installation communicates with other FortiCentral installations, and to organize the FortiCentral window panels.

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *General*.

3. Configure the following settings:

Setting	Description
Auto Stretch	Automatically resize content to fill the view pane where you put it, regardless of the original aspect ratio of the image or video.
Auto Select Resolution	Automatically display the video at the resolution that best matches the size of the view pane where you put it, or your screen (if you double-clicked the view pane to display the video stream at full size). If you digitally zoom in or zoom out, FortiCentral automatically adjusts its selected resolution. Alternatively, you can select the automatic resolution option on a view pane. Available resolutions are defined in the camera profile when you configure FortiRecorder. For details, see the *FortiRecorder Administration Guide*.
Show Camera Alarms	Display alarms triggered on the camera, such as motion detection, digital input, audio detection, or passive infrared (PIR) device detection. This type of event appears in a view pane for alarms. For more information on configuring alarms on cameras, see the *FortiRecorder Administration Guide*. This setting is not required for scripting to display alarms. It is an alternative.
Desired Latency	The amount of delay in milliseconds that you want to allow in live video streams. FortiCentral tries to optimize the video viewing experience by balancing smoothness with delay. Too little latency causes motion to be less smooth. Too much latency causes camera PTZ and video player controls to be less responsive. However you can manually adjust this setting if needed.
Client ID	Numerical identifier of this FortiCentral installation. Required if this installation will communicate with others in the FortiCentral domain. Must be unique. Valid range is from 1 to 65000. Ideally, this number is planned by the administrator, but a user can assign their own ID number. If *Join Domain* is enabled and your ID is in conflict with another FortiCentral in the domain, then a warning message appears in the *Info Messages* pane.
Client Name	Name of this FortiCentral installation. Required if this FortiCentral installation will communicate with others in the FortiCentral domain. Must be unique. If *Join Domain* is enabled and other FortiCentral installations are connected, this name will appear in their *Remote Clients* panel. **Note:** The computer's *Client Name* in a FortiCentral domain is **not** the same as the computer's hostname or full-qualified domain name (FQDN) used in DNS or an Microsoft Active Directory domain controller. This name only appears in FortiCentral.
Accept Remote Commands	Allow other FortiCentral installations in the FortiCentral domain to see and change your layout or the items in it, such as cameras or a monitor wall.
Join Domain	Allow this FortiCentral to receive configuration items such as 3D maps or layouts that are shared by the FortiCentral domain controller.

Setting	Description
	FortiRecorder devices act as a relay for domain communications. FortiCentral installations do not connect directly to each other. As a result, only FortiCentral installations that connect to the same FortiRecorder will be part of the domain. For example, if FortiCentral installations in building A connect to FortiRecorder A, and FortiCentral in building B connects to FortiRecorder B, then they make two separate domains. To join them into one domain, connect your FortiCentral installations to **both** FortiRecorder devices.
Control Domain	Enable this option for your FortiCentral installation to act as the primary FortiCentral installation in the FortiCentral domain, able to share (*Owner* set to *Global*) configuration items. A FortiCentral domain must have only one domain controller. If another FortiCentral is already the domain controller, then a warning message appears in the *Info Messages* panel.
DC Broadcast Delay	Enter the number of seconds that this FortiCentral waits for more changes before sending shared items to the others. This setting applies only if this installation is the FortiCentral domain controller.
Preferred Date/Time Format	The format for timestamps in video and reports.
Hide Title in Monitor Wall View	Whether or not to automatically show and hide the title bar of the window when using the Monitor Wall View display mode.
Auto-hide Empty Resource Tabs	Whether or not to automatically hide panels that are currently empty in the resources column on the left side of the window.
Display Resource Tabs	Whether or not to show the panels in the resource column. Alternatively, you can individually select the checkboxes of specific panels to show or hide them. **Tip:** If this FortiCentral installation is used as a concierge, hide all panels in the resource column. This prevents visitors from seeing, for example, the *Info Messages* panel, even if a visitor leaves the monitor wall view.

4. Click *OK*.

Playing videos and live video streams

When you drag a camera into a view pane, FortiCentral immediately shows the live video feed from the camera. Live video streams are optimized for smooth movement and minimum delay.

If the camera is far, and its Internet connection is sometimes slow, this can affect the video quality of a live video stream. You can try a greater latency setting. Regardless, the quality of video stored on FortiRecorder is not affected.

Alarms can also automatically show video clips in your view panes, if you have a layout with the alarm type of view pane, and you have configured a feature that triggers alarms.

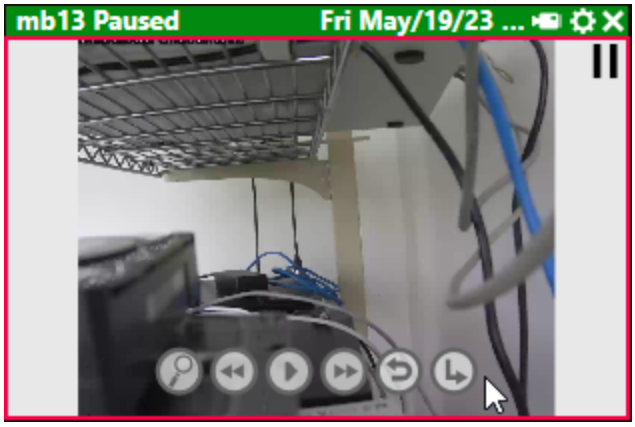
The timeline and video player buttons can also be used to play previously recorded video, and to monitor for events.

Users monitor videos in the view panes. If you installed the video analytics packages with the FortiCentral installer, however, users can also be helped by AI-driven computer vision. For details, see Facial recognition and object detection on page 60.

Using the video player controls

In addition to the timeline, you can control the video player with buttons. These buttons are on:

- View panes that contain a video, when you hover your mouse there
- Bottom of the resource column, to the left side of the timeline, after you click a view pane that contains a video
- Top of the window, in the toolbar area, after you click a view pane that contains a video

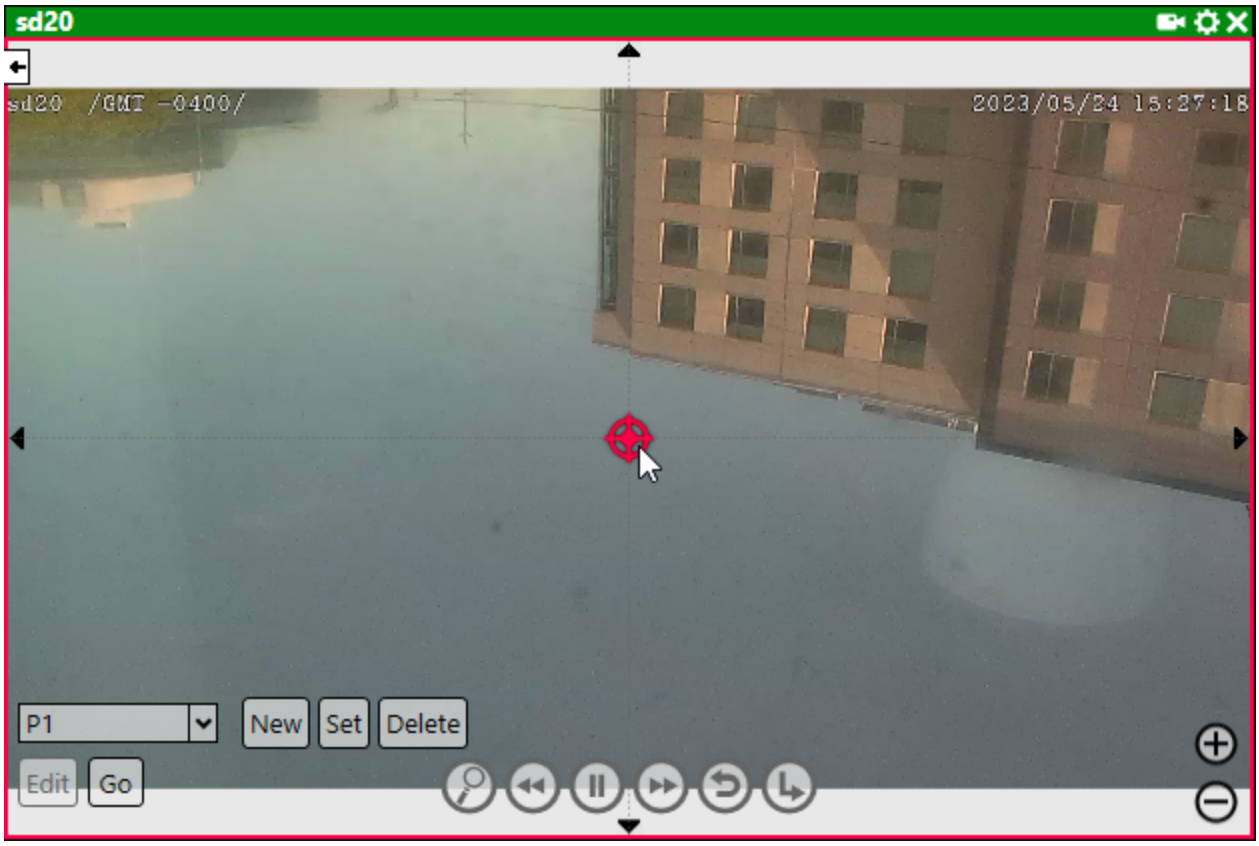


Button	Description
Advanced Review Mode	Only appears on a view pane, when you hover your mouse over its video.

Button	Description
	Click this button to show a *Speed Selector* slider, and *Jump to Previous Event* and *Jump to Next Event* buttons. 
Rewind	Play the video backwards. Click the *Rewind* button multiple times to rewind faster.
Jump to Previous Event	Jump to the previous detected event.
Pause	Stop the video.
Jump to Next Event	Jump to the next detected event.
Enable Motion Only Playback	Filter to include only motion detection events when you click the *Jump to Next Event* or *Jump to Previous Event* buttons. Appears only if motion detection is enabled on the camera. For details, see the *FortiRecorder Administration Guide*.
Fast-Forward	Play the video forwards. Click the *Fast Forward* button multiple times to play the video faster.
Back 5 Seconds	Jump to play the video at 5 seconds before.
Back to Live	Return to playing the live video stream of the camera.

Using PTZ controls

If you have a speed dome camera model, pan-tilt-zoom (PTZ) controls appear when you hover your mouse cursor over the view pane. To move the camera (pan or tilt), drag the red icon in the center of the view pane. To zoom in or zoom out, click the plus (+) or minus (-) buttons.



Zooming in

Most cameras have a 4 megapixel resolution or more. If you display multiple cameras at the same time, and if the total is more than the resolution of your screen, FortiCentral scales down the image. Small details are not visible then. However you can still show those details if you zoom in to use the full resolution of the camera.

To use a digital zoom in or zoom out, either use the scroll wheel on your mouse, or left-and-right click on the right side of the view pane. For a PTZ optical zoom, press the Ctrl key while you zoom in or zoom out.

Smart bandwidth reduction

By default, if a camera has multiple resolutions available for its video streams, FortiCentral will select the resolution that best matches the size of the view pane . This avoids the waste of network bandwidth. If you zoom in, FortiCentral automatically starts to use a better quality video stream with more resolution.

Alternatively, you can select the resolution manually.

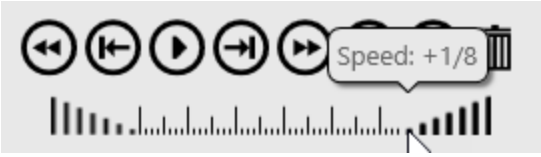
Using the timeline locator control

When you select a camera's view pane or a video stream in the timeline, a locator control appears in the lower left side. You can drag the locator control to fine position the point where you want to start to play the video.

Drag to the left to rewind. Drag to the right to fast-forward.

The wedge-shaped ends of the locator control indicate proportional speed. If you hold down the mouse button in these areas, the video will rewind or fast-forward quickly or slowly. Speed varies by how close you clicked to the left side or right side of the locator control (1/8 speed to 64x speed).

For example, to play the video frame-by-frame, in slow motion, you click the near the center of the locator control (1/8 speed).



Setting the video stream resolution

Multiple people can watch a video stream from the same camera. If your network has limited bandwidth, this can make it busy and cause delays in the video. However, if users watch the video streams on smaller screens or view panes, then the video must shrink to fit, and therefore some of the bandwidth is being wasted. To save bandwidth, users can stream at less resolution. The recording on FortiRecorder will still keep full resolution.

You can either configure the preference to automatically select the best matching resolution for everyone, or each user can manually select their resolution with the following instructions.

Currently, all FortiCamera models support dual streaming, but ONVIF cameras do not.

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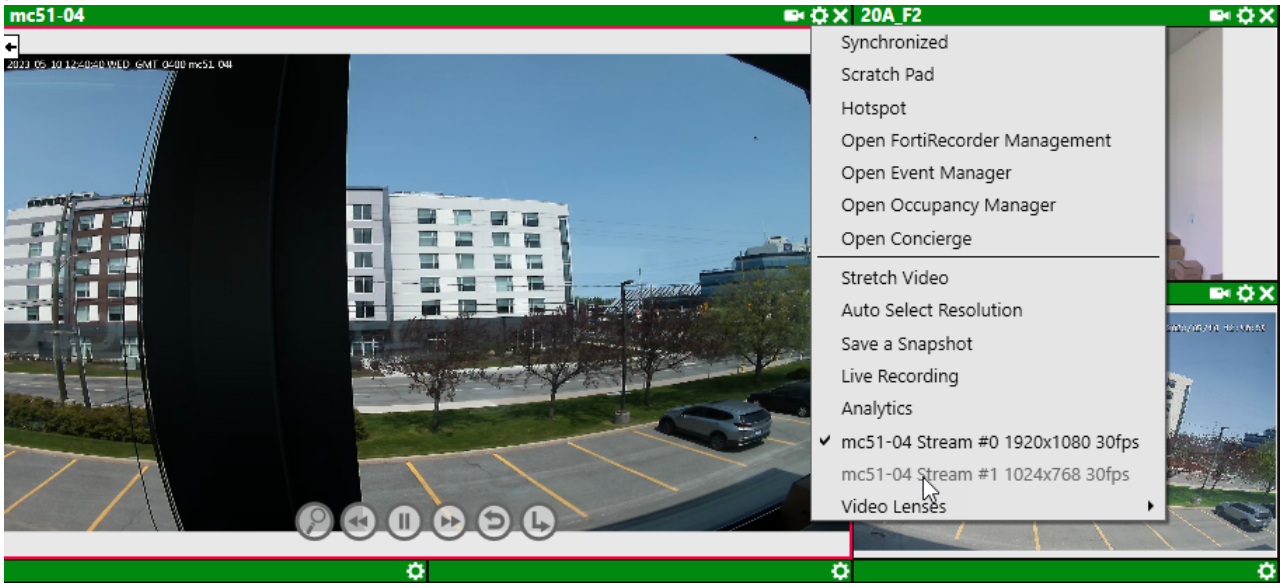
1. On FortiRecorder, adjust the *Camera Profile Settings* in FortiRecorder. For details, see the FortiRecorder Administration Guide.
2. On FortiCentral, on the view pane where the video is streaming, click its *Settings* button.

   In the dropdown menu, select a video stream with less resolution.

   Alternatively, select *Auto Select Resolution* to automatically select a video resolution that best matches the view

pane.



Using fisheye lenses

FortiCentral supports multiple lens options for cameras, such as third-party fisheye cameras. Fisheye lenses are very curved to get a wide field of view (FOV), so video from them is more distorted than a normal lens. To undo the distortion, adjust the lens settings.

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *Video Lenses*.
3. Select the camera.
4. In the *PTZ* and *Panorama* sections, adjust the sliders:
   - *Center*: Stretches the middle of the image in PTZ mode.
   - *Edge*: Stretches the outer area of the field of view in PTZ mode.
   - *Angle*: Allows leveling the horizon if a camera is wall-mounted in panoramic mode.
   - *Cut off*: Removes the top and bottom from a panoramic view.

To use an ONVIF camera as a fisheye camera in FortiCentral, go to FortiRecorder and for that camera, set the *Video Display* for the camera to fisheye or panoramic.

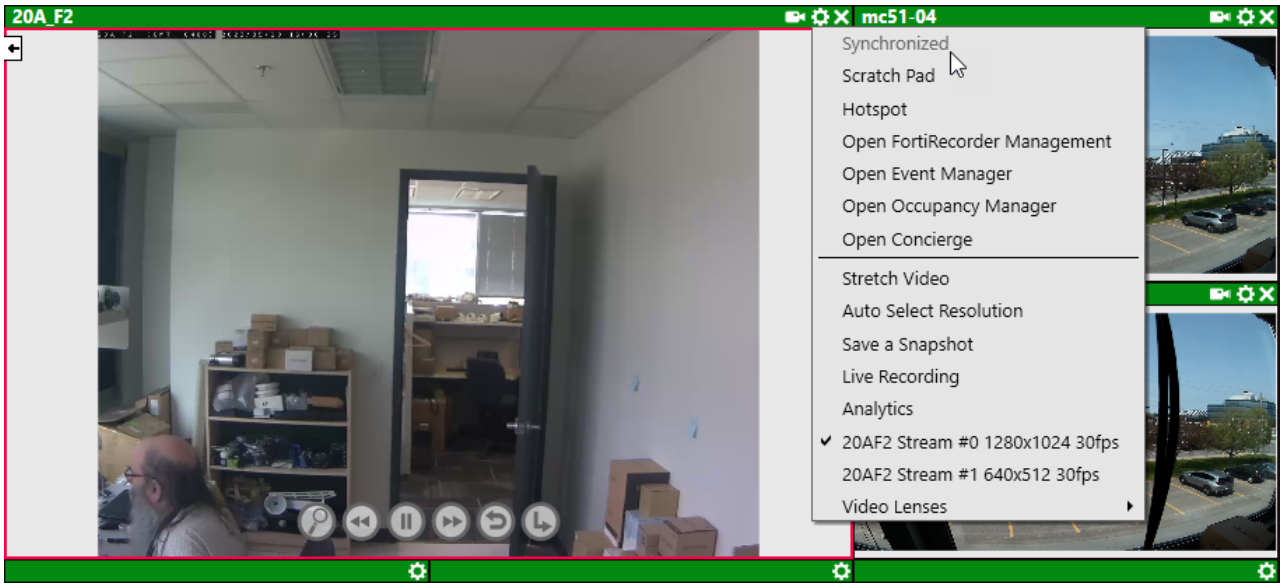
Alternatively, you can adjust video lens settings on a view pane.

1. Click to select the view pane of a fisheye camera.
2. Hover your mouse cursor over the view pane, and then click the pencil icon that appears.
3. Adjust the settings.
4. Click the *Save* icon.

Synchronizing video

You can play pause, fast forward, or rewind multiple cameras at once. This keeps their timelines in sync so that you can understand correlated activities.

1. On the view pane, click the *Settings* button.
2. Go to *Synchronized*.

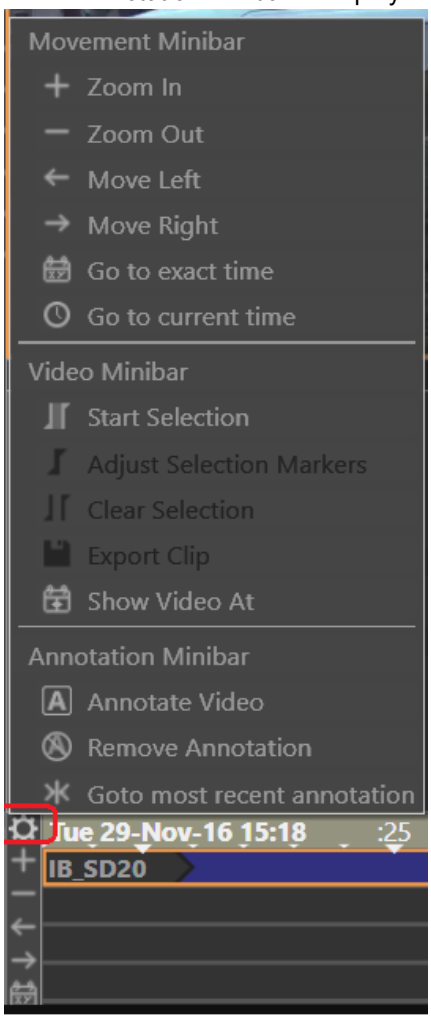


3. Repeat the previous steps for each camera that you want to be synchronized.
4. Click one of the view panes to select it.
5. Use the video player controls or timeline to control the synchronized videos.

Adding annotations

On the video timeline, you can add annotations to make notes within a video for review in the future.

1. On the video timeline, click the *Settings* button.
2. Select *Annotation Minibar* to display the quick selection buttons in the timeline.



3. Select the time in the video timeline where you want to put an annotation.
4. Click the *Annotate Video*  button.
5. Enter your annotation and then click the *OK* button.

   A light blue bar appears in the timeline where you put the annotation. When you move the cursor over the blue bar, the annotation appears.

   If you want to delete the annotation, click the *Remove Annotation*  button.

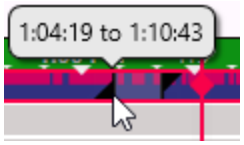
   To go to the next most recent annotation, select the *Next Annotation*  button.

Locking an event

You can select important time periods on the timeline and lock them so that they cannot be overwritten or erased.

1. On the timeline, click the video stream that you want to lock.
2. On the left side of the timeline, click the *Start Selection* button.

   On the timeline, drag the selection marker brackets (triangles) to indicate the time range that you want to lock.



3. On the left side of the timeline, click the *Lock* button.

   The time range is now shaded to indicate that it is locked.

   The shaded section might be longer than the time range that you initially selected if it overlapped two video files that were stored on FortiRecorder. In this case, both files are locked.

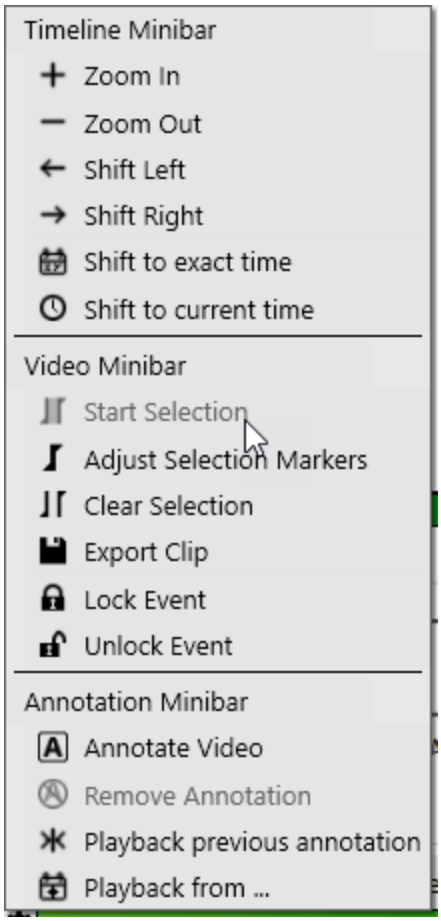
Downloading video clips

You can download part of a video or even multiple video files to your computer so that you can play it later or on another device. Exported videos are in a standard MP4 file format. Video clips can be a maximum of 5 minutes.

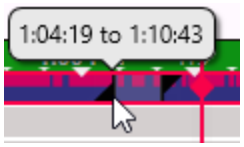
To download part of a video

1. Select the view pane that shows the camera or video that you want to download.
2. In the timeline, go to the frame that you want to start the video.
3. On the left side of the timeline, click the *Start Selection* button.

   Alternatively, on the left side of the timeline, click the *Settings* button. In the *Video Minibar* section, go to *Start Selection*.



4. On the timeline, drag the selection marker brackets (triangles) to indicate the time range for the video clip.



5. On the left side of the timeline, click the *Export Clip* button.

   First, FortiCentral exports the video clip to a separate file. Progress is displayed in the *Downloading* panel. Then your browser will start to download the file. If your browser prompts you, select where to save the file.

To download videos from multiple cameras

1. Click the *Settings* button in the top right corner.

2. Go to *Import/Export* > *Bulk Download*.
3. Specify the cameras, time range, video types (for example, *Alarms* and *Continuous*), and download folder.
4. Click the *Download* button.

Merging video clips

There are multiple methods that you can use to merge video clips together. The second method gives more options.

Either:

1. Click the *Settings* button in the top right corner.

2. Select *Import/Export* > *Bulk Download*.
3. Select the *Merge on Success* checkbox.
4. Click *Download*.

or:

1. Click the *Settings* button in the top right corner.

2. Select *Import/Export* > *Merge Downloaded Video*.
3. For each video that you want to merge, click *Import Files* to add them to the list.
4. Files from different cameras will not be merged. files from the same camera but with gaps between them will be merged unless split on gaps is checked.
5. Click the ellipsis button (...) to browse to the folder where you want to save the downloaded video, or type the path in *Export Location*.
6. If you want to delete the video clips after the merge, then select the *Delete Fragments* checkbox.
7. If you want to log the merge on FortiRecorder for evidence or security purposes (including a hash), select the *Log merge with recorders* checkbox.
8. Click *Merge*.

Viewing cameras sequentially

Instead of viewing only one item in one view pane, you can use the same view pane to rotate between multiple items: cameras, images, or video files.

Sequential viewing shows a series of items in one view pane, changing between them at specified intervals. For example, one view pane can rotate between six cameras every ten seconds. In this way, users can monitor dozens or even hundreds of cameras in only a few view panes.

If you use sequential viewing on multiple panes, then you can perform a virtual tour by changing the next camera on the next pane in a round robin method. The advantage is that a longer time to display each video can give a better situational awareness. There are advanced modes to simultaneously switch sequencers in multiple view panes and to make sure content is displayed on the same position in every round.

Multiple sequencers can be defined and played at the same time. They are synchronized from a common clock.

To configure sequential viewing

1. Click the *Settings* button in the top right corner.

2. If you want to include images or video files in the sequential rotation, upload them. For details, see Adding media on page 27.
3. Go to *Settings* > *Sequencers*.
4. In the *Name* field, enter a unique name for the sequential viewer.
5. In the *Switch Every* field, enter the interval in seconds between changing items in the view pane.
6. In the area at the bottom of the window, click the arrow to expand the *Devices* section.
7. Drag the cameras that you want to view into the *Camera and Media List* section.
8. If you want to include images or video clips in the sequential rotation, repeat the previous two steps with the *Media Library* section.
9. If you want to change the order in which the items will be displayed, then click the item's name in the *Camera and Media List* area, and then click the up or down button.
10. Click the *Apply* button and then click the *OK* button.
11. From the *Sequencer* panel, and drag the sequencer into one of the view panes.

    If you put your mouse cursor over a view pane that contains a sequence of videos, these buttons appear at the bottom of the view pane:

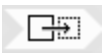
Button	Description
	Start or pause the video sequence.
	Stop and close the video sequence.
	Go back to the previous camera in the sequence.
	Go to the next camera in the sequence.
	Drag and drop the current video from the sequencer to another pane. If during the sequential playback you see a video of interest, use the drag and drop cursor to bring it to a new video pane. The original sequential video will continue playing while the new pane will play only the selected video.

Grouping nearby cameras

You can group cameras that are physically near to each other so that you can quickly switch between locations, such as when you need to follow someone who goes from one room to another.

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *Cameras*.

3. Drag the selection icon  next to each camera to the *Nearby Camera List* column.
4. If you want to change the order of cameras in the list, select its name and then click the up or down arrow button.
5. In the field under the *Name* column, enter a unique name for the group of cameras.
6. In the dropdown list under the *Parent Recorder* column, select the FortiRecorder that these cameras are connected to.
7. Click the *OK* button.

   The group of nearby cameras appears in the *Devices* panel, under the FortiRecorder associated with those cameras.

To switch between displays of nearby cameras

1. In the view pane area, right-click some view panes and select *Scratch Pad*.

   This indicates where to display video from nearby cameras. Otherwise, nearby cameras will be displayed in empty view panes (if any). If there are not enough scratch pad or empty view panes when you use a group of nearby cameras, an error message will appear in the *Info Messages* panel.

   If you often use nearby cameras, you can save time by adding this set of view panes to your layout and saving it as the default view when you log in.

2. Drag a camera (either a live stream or a previously recorded video) to an empty view pane.

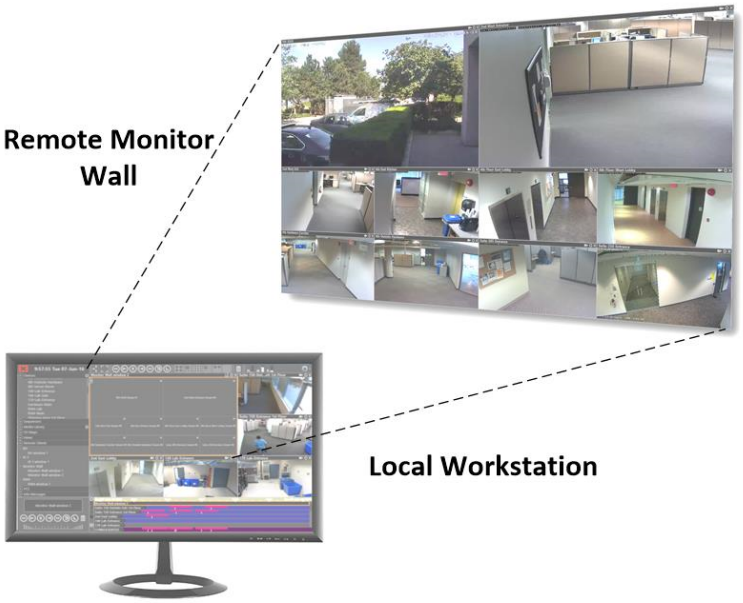
   Alternatively, you can display nearby cameras by using 3D map sectors.
3. Right-click on the view pane and go to *Show nearby cameras*.

   The image below illustrates a group of nearby cameras in the bottom row.

Using remote control

With remote control, you can control the cameras of a shared FortiRecorder in FortiCentral on a remote computer.

For example, security operators could use remote control to collaborate on surveillance, with everyone using the same camera.



You can share items such as cameras among multiple FortiCentral installations by creating a domain controller. In a domain, FortiCentral installations communicate with each other through shared FortiRecorder devices.

To configure your FortiCentral to accept remote control commands

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *General*.
3. Configure the *Client ID* and *Client Name* fields, and then enable *Accept Remote Commands*.
4. Click the *OK* button.

To configure your FortiCentral to control another

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *Users*.
3. Select a username that you want to allow to use remote control.
4. Enable *May Control Other Clients*.
5. Optionally, for all usernames, configure *User Type*.
   This grants permissions, limiting which remote control commands each person can use.

6. Click the *OK* button.
   In the *Devices* panel, the other FortiCentral installations that are configured to allow remote control now appear.

To set up a FortiCentral domain

1. Click the *Settings* button in the top right corner.
   
2. Go to *Settings* > *Recorders*.Add at least one FortiRecorder that is also used by the other FortiCentral installations.
3. Go to *Settings* > *General*.Select the *Join Domain* checkbox.
4. Repeat the previous steps on all of the FortiCentral installations that you want to belong to the domain.
5. On the FortiCentral installation that will act as the domain controller, also select the *Control Domain* checkbox.

To display cameras from a remote monitor

1. Drag the remote FortiCentral from the *Remote Client* section of the *Devices* panel to a view pane.
2. Drag the camera from the *Devices* panel to a view pane.

Organizing the views of a remote FortiCentral

You can save the view pane layout of a remote FortiCentral. On the view pane, click the *Settings* button and go to *Save Remote View*. Make sure to include “Remote” in your view description to help distinguish between local and remote views.

To change the view pane layout on the remote client, drag a layout icon from the toolbar area at the top of the remote window into the view pane.

You can also open a new window on the remote client. On a view pane, click the *Settings* button and go to *Open Remote Window*.

Using monitor walls

In smaller deployments, you might only have a few cameras. You can simply group those cameras into one or more views, such as one view for the storage room cameras and another for the front of the store, and then switch between those views. However if you have more cameras or multiple security staff, it can be useful to create a monitor wall.

Monitor walls are where one computer operates multiple monitors, which are often mounted together on a wall in your security operations center (SOC) so that everyone in the team can see those monitors.

One FortiCentral installation can operate the multiple monitors that form a monitor wall.Then you can share the monitor wall with other FortiCentral installations where users are working so that they can remote control the monitor wall from any of their computers to switch camera views or change the layout.

This feature requires at least two FortiCentral installations to communicate with each other. To successfully communicate, they must be connected to at least one shared FortiRecorder.

To use a monitor wall

1. Follow the instructions in Using remote control on page 46.
2. On the FortiCentral installation that is connected to the monitor wall, enable *Accept Remote Commands* and *Join Domain*.

If *May Control Other Clients* is enabled for your username, then the monitor wall now appears in your *Remote Clients* panel.

3. Drag the monitor wall from the *Remote Clients* panel to a view pane.
   You can now use the monitor wall with controls similar to your other view panes.

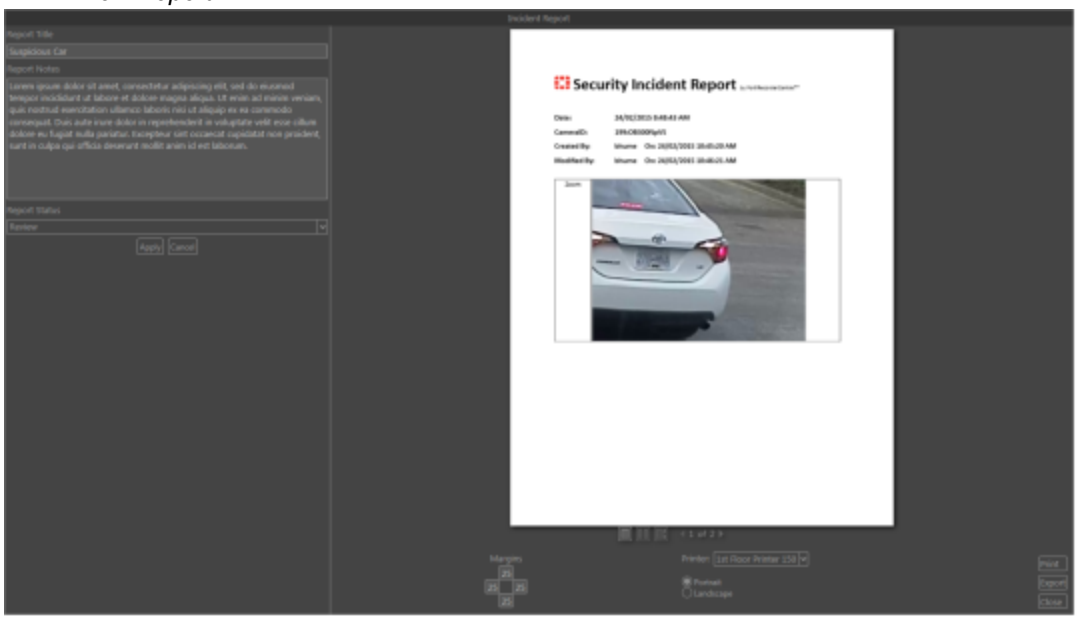
Creating an incident report

You can save and print specific sections within your videos by creating an incident report.

To create an incident report

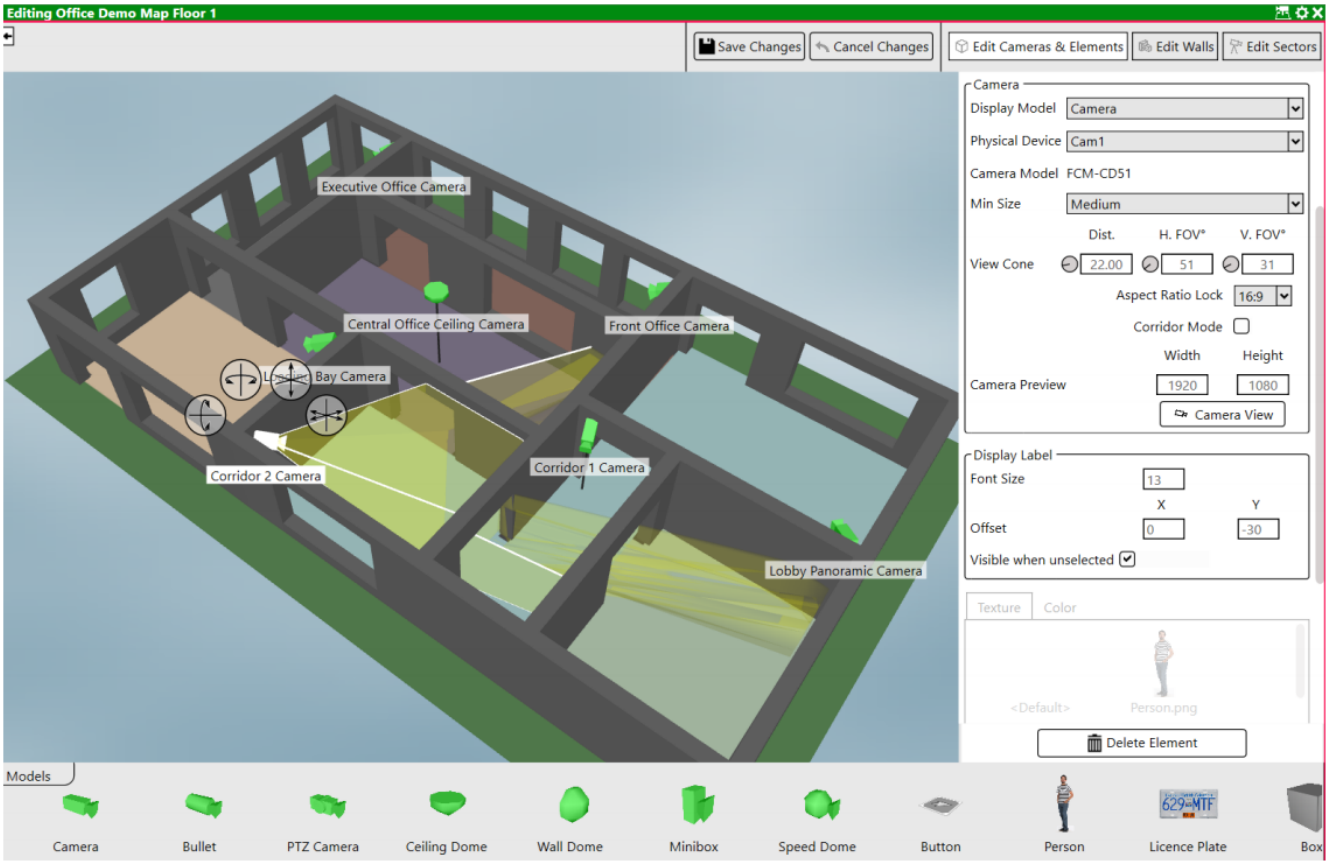
1. Select the video frame that you want to display in the report.
2. Click the *Settings* button in the top right corner.

3. Go to *Incident Reports*.
4. Select *New Report*.



Monitoring with 3D maps

You can use three-dimensional models of the buildings that you monitor to show camera locations. You can also quickly identify and open video feeds of nearby cameras in any part of the building. These 3D maps display the horizontal and vertical viewing angles and depth of field of every camera so that you can verify camera coverage.



Creating 3D maps

To use a 3D map of your buildings, complete the following steps:

1. Importing a 2D floor plan on page 49
2. Converting a 2D floor plan into a 3D map on page 51
3. Adding cameras and more to 3D maps on page 54

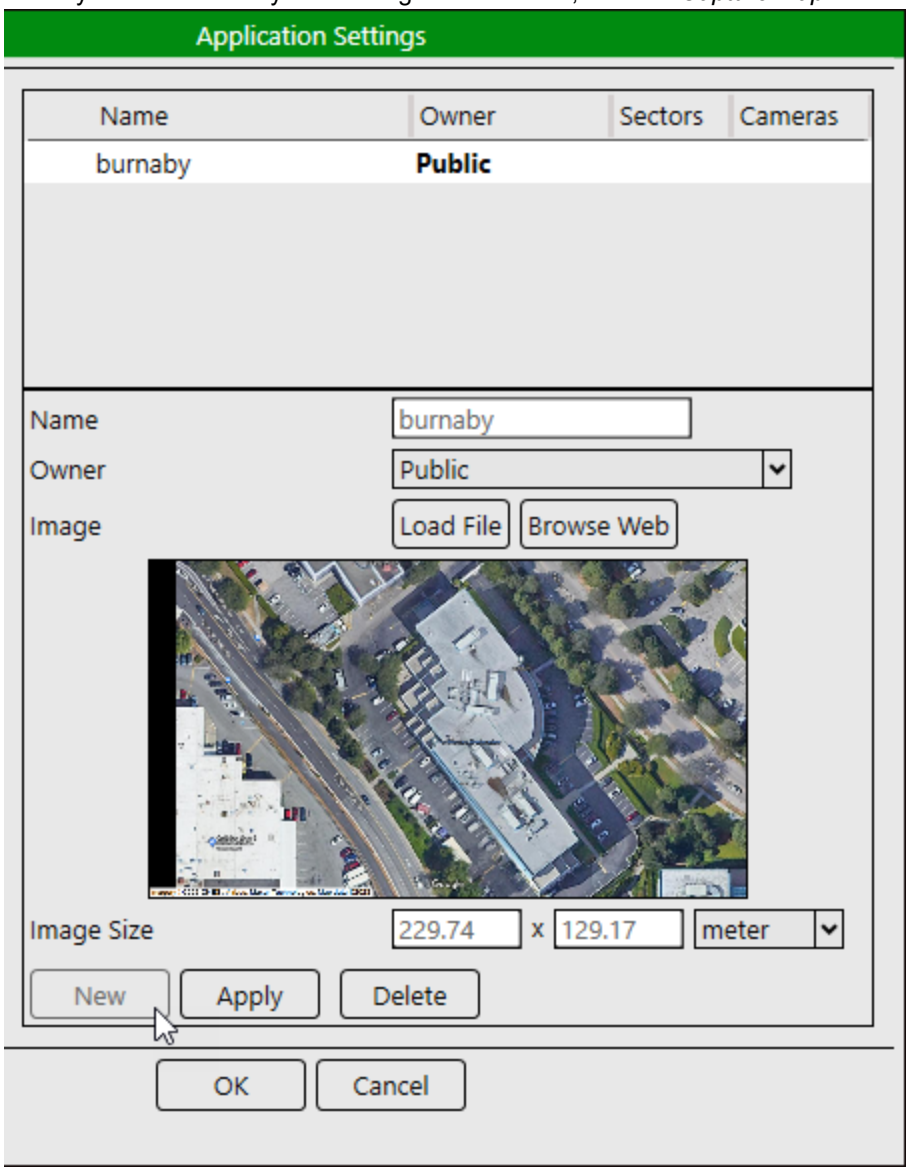
Importing a 2D floor plan

To upload a 2D floor plan, you can either import your own image, or import one from Google Maps.

Importing a floor plan from Google Maps

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *3D Maps*.
3. In the *Name* field, enter a unique name for the map.
4. From the *Owner* dropdown list, select either:
   - *Global:* Distribute the 3D Map to all FortiCentral installations on this domain.
   - *Public:*Make the 3D Map viewable to all users on this FortiCentral installation.
5. Click *Browse Web*.
6. Locate your building by searching or manually navigating the map.
7. If you want to switch between the map view and the satellite view, click the *Layers* button.
8. When you have located your building and isolated it, click the *Capture Map* button at the bottom of the window.



9. Optionally, click the rotation button to rotate the map area, and then adjust the length and width.
10. Click *OK*.
11. Click *New* and then *OK*.
    The new map appears in the *3D Maps* panel.

Importing your own floor plan

1. Click the *Settings* button in the top right corner.
   
2. Go to *Settings* > *3D Maps*.
3. In the *Name* field, enter a unique name for the map.
4. In the *Owner* dropdown list, select who has permissions to use this item:
   - *Global*: All usernames, on all FortiCentral installations that have joined the domain.
     This option is only available if this FortiCentral is acting as the domain controller.
   - *Public*: All usernames, but only on this FortiCentral installation.
   - A username: Only this specific person, and only on this FortiCentral installation.
     Administrators can use any 3D map, regardless of *Owner*.

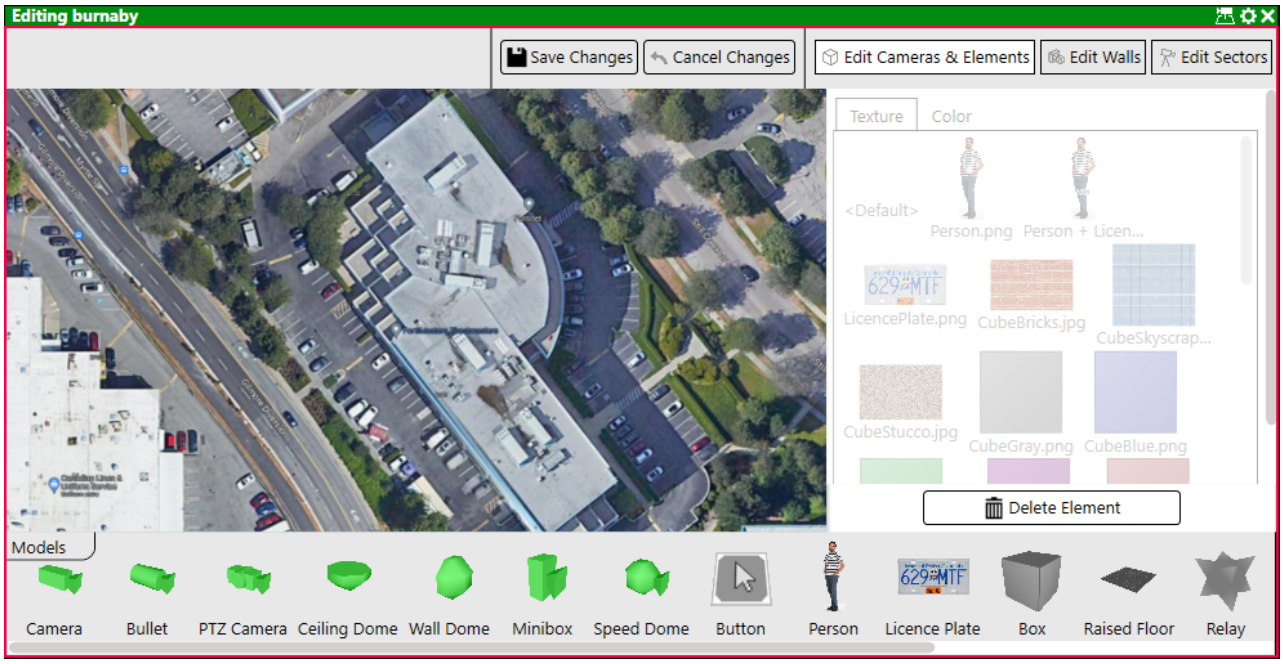
   This option is available only if your *User Type* is *Admin*.
5. Click *Load File* and select a floor plan image. Supported image file types are PNG, JPEG, BMP, and TIFF.
6. In the *Image Size* fields, enter the image's width and height in meters, kilometers, feet, yards, or miles.
   This indicates the scale of the map and ensure the correct visualization cones for cameras.
   From the dropdown list, select if the measurement units are meters, kilometers, feet, yards, or miles.
7. Click *New*, and then click *OK*.
   The new map appears in the *3D Maps* panel.

Converting a 2D floor plan into a 3D map

While 2D floor plans show where doors, windows, and walls are located, they do not show the last dimension: height. The height of a camera, for example, often determines how much of the room is in its field of view. As a result, you need to convert your 2D floor plan into a 3D map so that they will be useful in FortiCentral. FortiCentral has simple 3D tools to help you quickly complete the model of your building.

1. From the *3D Maps* panel, drag your 2D floor plan onto a view pane.
   For best results, use the largest view pane, and then enter full-screen mode so that you have enough space for the he 3D editing buttons inside of the view pane.
2. On the view pane, click the *Settings* button.

3. Go to *Enable Edit Mode*.



While in edit mode, the following special controls are available.

Control	Description
Left mouse button	Click to select a wall or create new points on it. Double-click to exit editing of walls.
Right mouse button	Drag left or right to rotate the view. Drag up or down to tilt the view.
Scroll wheel or middle mouse button	Drag to pan the view up, down, left, or right. Scroll up or down to zoom in or zoom out.
Esc key	Press this key to exit editing of walls.

4. Trace the floor plan by:
   a. Adding walls on page 52
   b. Adding doors and windows on page 53
5. Click the *Save Changes* button.
6. Continue with Adding cameras and more to 3D maps on page 54.

Adding walls

1. While in the edit mode of a 3D map, click the *Edit Walls* button.
   A yellow dot and line appear at the tip of the cursor.
2. Click on the first corner of a wall in the floor plan. Click the next corner, and continue doing this until you reach the end. Double-click on the last point of the wall to complete it.

3. If you need to adjust the position, shape, color, thickness, or height of the wall, then click to select it and then:
   a. *Move a corner*: Drag the point.
   b. *Add or delete a corner*: Press and hold the Ctrl key while clicking a point on the wall.

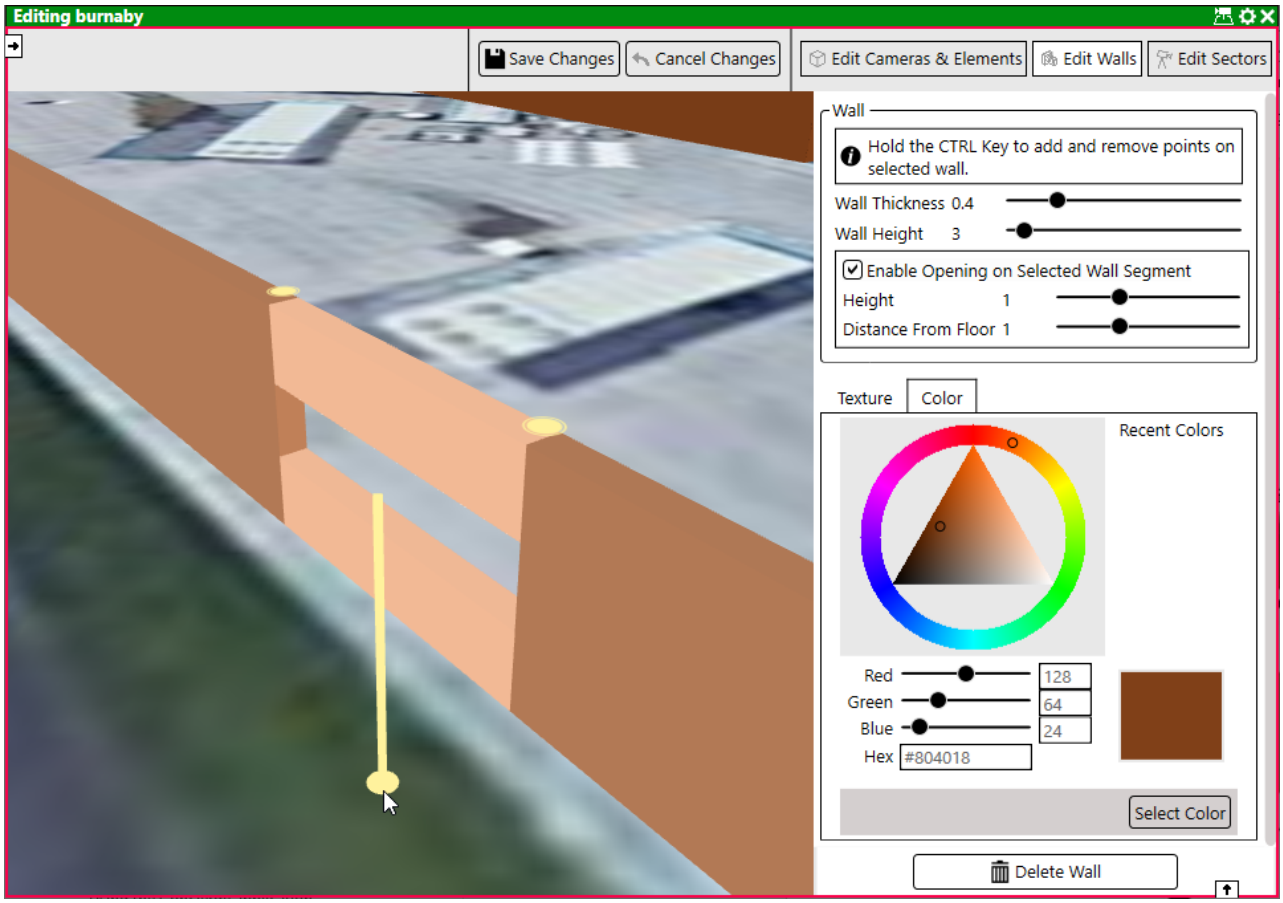
      A red dot and line will appear at the tip of the cursor while holding down the Ctrl key to indicate that you are changing an existing wall.
   c. *Delete a wall*: Click the *Delete Wall* button at the lower right corner.
   d. *Adjust appearance*: Drag the *Wall Height*, *Wall Thickness*, or *Color* sliders on the right side. Optionally, click the *Texture* tab and upload an image file to use as a pattern on walls.
      Recent colors are remembered to help if you need to make many walls with the exact same color.
4. Repeat the previous steps until you have drawn all of the walls on the map.

Adding doors and windows

1. While in the edit mode of a 3D map, click the *Edit Walls* button.

   A yellow dot and line appear at the tip of the cursor.
2. Click a wall to select it.
3. Press and hold the Ctrl key while clicking two points on the wall where you want the window or door.
4. Click the wall between the two points to select that part of it.
5. Drag while holding the right mouse button —not the left—to tilt and rotate the wall so that you can see where you are making the opening for the door or window.
6. Select the checkbox *Enable Opening on Selected Wall Segment*.
7. On the sliders that appear, drag the *Height* and *Distance From Floor*.

   Door openings must have *Distance From Floor* set to 0. If the opening in the wall does not touch the floor, then when you drag an ACS door, it will not snap into the opening.



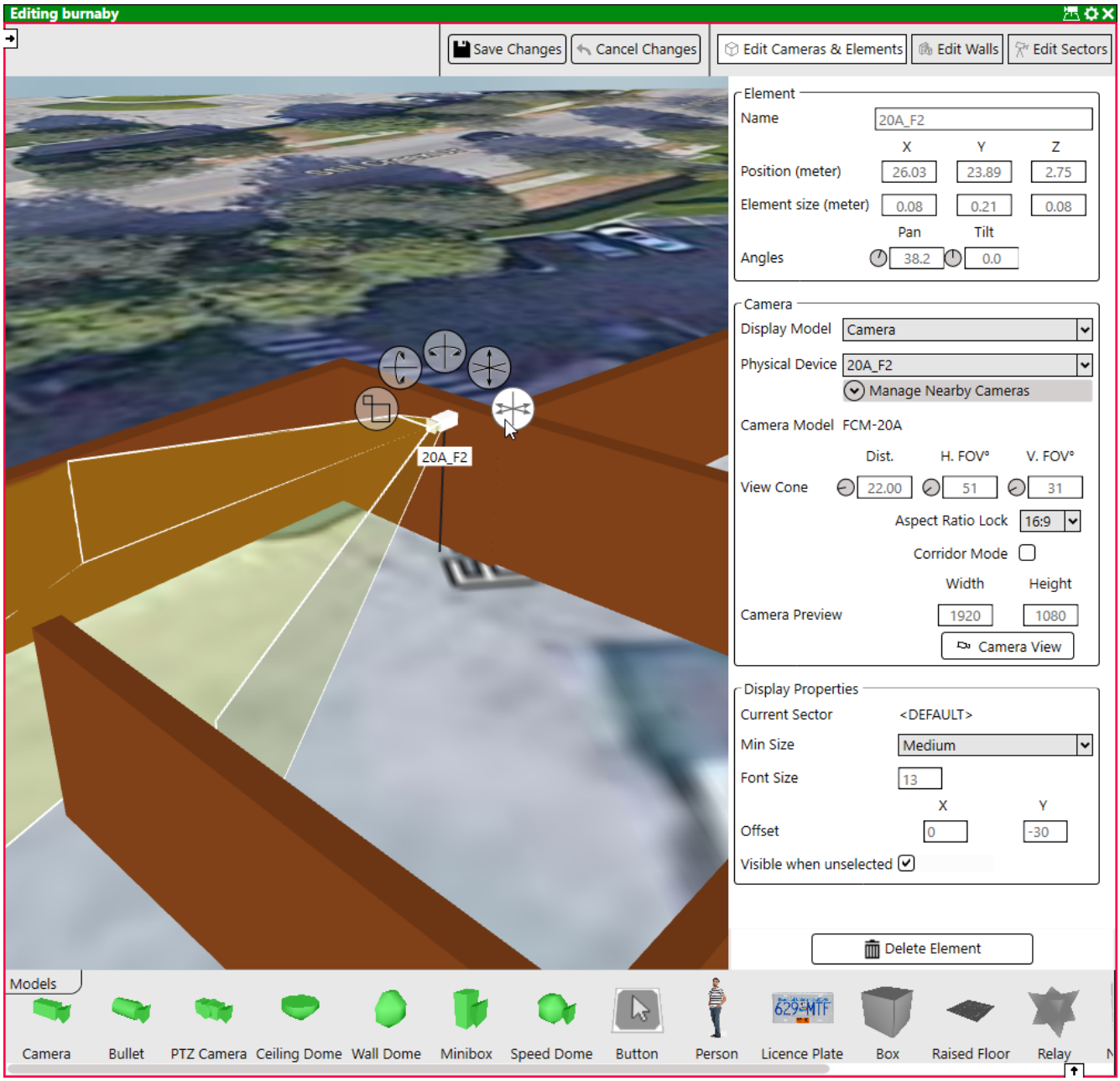
8. Repeat the previous steps until you have drawn all of the window and door openings.

Adding cameras and more to 3D maps

Once you have a 3D map with walls, doors, and windows, you can add cameras and ACS items such as keypads and doors, and then organize them into sectors. The 3D map then becomes a convenient, organized way to show security devices in specific rooms or sectors, and to verify continuous camera coverage.

Adding cameras and ACS elements

When you add cameras to your 3D map, each camera's field of view is displayed as a yellow cone to show camera coverage in the space.



To add devices in the 3D map

1. On the view pane where your 3D map is displayed, click the *Settings* button.
2. Go to *Enable Edit Mode*.
3. Click the *Edit Cameras & Elements* button.
4. Drag each camera or ACS device from the *Devices* panel to its location in the 3D map.

   Alternatively, if you have not purchased a camera or device yet, but want to plan its location for a well-monitored site, you can drag a model of it from the *Models* toolbar area at the bottom of the view pane.

   Initially, when you drop a camera onto the map, it will be 2.50 m above the ground or solid object that it is put on, or 25 cm above a camera that it is dropped on. If dragged onto a wall, a camera will be put 25 cm below the top of the

wall, facing away from it.ACS devices will be located where you put them, with the exception of doors. Doors try to snap into a wall opening, as long as the opening touches the floor (*Distance From Floor* is 0).

5. For each camera, you can adjust settings for it on the right side of the view pane:

Setting	Description
Name	Enter a unique name for the device, such as "Front Door Exterior".
Position	Enter the X-, Y-, and Z-axis position of the device on the 3D map. This puts the device at an exact location if using your mouse is not precise enough.
Element size	Enter the device's size as it appears on the 3D map.
Display Model	Select which 3D model to use as an icon for the device on the 3D map.
Physical Device	Select which physical device the 3D model represents. The dropdown list options are all devices that are connected to your FortiRecorder, and any predefined devices in *Settings* > *Cameras*. If you select a supported camera model, then its name is automatically displayed in the *Camera Model*field below this setting.
Min Size	Select the size of the *Display Model* that is used on the 3D map.
View Cone	*Distance:* Enter the view distance of the camera. *H.FOV:* Enter the horizontal field of view (FOV), which is essentially the width of the view cone. *V.FOV:* Enter the vertical field of view, which is essentially the height of the view cone.If you selected a supported camera in *Physical Device*, then the vertical and horizontal field of view of the camera might be predefined. *Aspect Ratio Lock:* Select the aspect ratio of the camera from the drop-down menu. If this setting is configured, then the *H.FOV* and *V.FOV* are based on the aspect ratio. *Corridor Mode:* Enable to rotate the camera view cone by 90 degrees. Use this setting when recording a corridor or hallway.
Camera Preview	Click the *Camera View* button to display a simulated image that represents the area that is within the camera's field of view. Hovering the mouse over objects in the simulated view provides a precise measurement of the distance the object is from the camera both within the physical space (Distance) and the virtual space (PPF/PPM). *Enable Grid Overlay* displays a grid over the camera image. Select *Save Camera View Image* to export the image as a PNG or JPEG.
Display Properties	The display properties of an ACS element can be different for each sector. *Min Size*: Select the display camera model's minimum size on the 3D map to ensure its visible in this sector. *Font Size*: Enter the size of the label displayed on the 3D map for the camera. *Offset*: Enter the offset of the label from its source using the X and Y entry fields. *Visible when unselected*: Enable to display the label even when the camera is not selected.
Font Size	Enter the size of the label for the device on the 3D map.

Setting	Description
Offset	In the *X* and *Y* fields, enter the location of the label for the device on the 3D map.
Visible when unselected	Enable to display the label for the device on the 3D map, regardless of whether the device is currently selected.

ACS devices also have settings:

Setting	Description
Position	Enter the X-, Y-, and Z-axis position of the device on the 3D map. This puts the device at an exact location if using your mouse is not precise enough.
Element Size	Enter the device's size as it appears on the 3D map.
Script	Select which script to use with the device. This setting is only available if *Device Type* is a button.
Device Type	Displays the type of an ACS device, such as "Door." Button items can invoke manual type scripts. See also the scripting chapter.
Physical Device	Select which physical device the 3D model represents. The dropdown list options are all devices that are connected to your FortiRecorder, and any predefined devices in *Settings* > *Cameras*.
Font Size	Enter the size of the label for the device on the 3D map.
Offset	In the *X* and *Y* fields, enter the location of the label for the device on the 3D map.
Visible when unselected	Enable to display the label for the device on the 3D map, regardless of whether the device is currently selected or deselected.
Texture	Select the texture for the device or click the *Add* button to upload your own JPEG, PNG, BMP, or TIFF image file.
Color	Select the color overlay of the device by selecting the color in the color wheel or by entering the exact value of the color in the *Hex* field.

6. Once you have put all of the items on the 3D map, you can display the view cones of all cameras simultaneously. In the view pane where your 3D map is displayed, click the *Settings* button and go to *Highlight All Cameras*.

To move an item or change a camera view angle

1. Click to select a device on the 3D map.
   Movement controls appear around the selected device.
2. Drag the following icons to change the device:

Setting Icon	Function
 Tilt	Controls the up and down movement (tilt) of the camera or element.
 Pan	Controls the left and right movement (pan) of the camera or element.
 Height	Controls the distance the camera or element is from the ground along the Z-axis.
 Position	Controls the location of the camera or element on the 3D map along the X- and Y-axis.
 Scale	Controls how large or small the 3D model of an element is.

Adding sectors

Sectors are saved views of a 3D map from different perspective angles. You can click a sector to quickly jump to that location and perspective.

For example, you could add a sector to your building's lobby that shows that room from a perspective that focuses on the ACS key card swipe, door, and camera by the main entrance.

1. On the view pane where a 3D map is being displayed, select the *Settings* button.
2. Go to *Enable Edit Mode*.
3. Click the *Edit Sectors* button.

ACS elements with display properties can have different settings in each sector. For example, to make some devices more prominent in a sector, you can increase their font size while decreasing the front sizes of other elements.

4. Using the mouse controls for 3D maps, find the perspective that you want the sector to show.
5. In the *Name* field, enter a unique name.
6. If you want the sector to show a top-down view (like the building's floor plan), select the *Orthographic* checkbox.
7. If you want users to be able to change the perspective or scale of a sector while viewing it, select the *Allow Moving* or *Allow Zooming* checkboxes.
8. Click the *Add* button and then the *Save Changes* button.

   The new sector appears in the *3D Maps* panel, under the map that the sector is located in.

Generating reports about 3D maps

Using 3D maps of your buildings, you can make a report with information such as camera coverage, location, and inventory.

1. On the view pane of a 3D map, click the *Settings* button.
2. Go to *Export Reports*.
3. Configure the following settings:

Setting	Description
Camera Coverage Report	Select this checkbox to include an aerial view of the 3D map with the locations of each camera and their viewing cones.
Camera Placement Detail Report	Select this checkbox to include details about each camera, such as: • zoomed-in aerial view showing its location • view from it • angle of the view cone • aspect ratio
Camera Inventory Report	Select this checkbox to include a list of all cameras grouped by model for the 3D map.
Project Name	Enter a unique name for the report.
Notes	Optionally, enter notes about the report.
Includes Multiple 3D Maps on the Report	Select this checkbox if you want to include multiple 3D maps in one report, and then select which maps to include by moving them to the *Selected 3D Maps for Report* column. To change the order that a map appears in the report, select its name and then click either the *Move Up* or *Move Down* button.

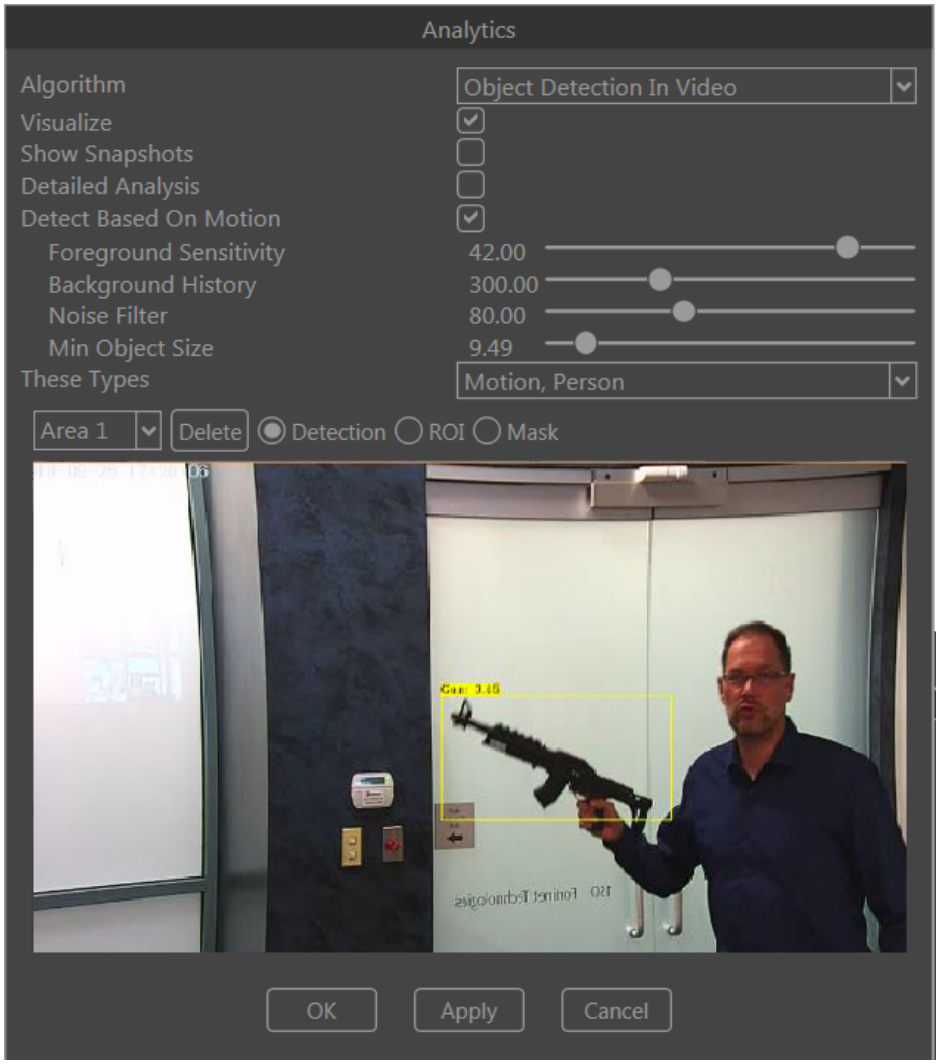
4. Click the *Generate Report* button.
5. Once the report is complete, click either the *Export PDF*, *Export Word Document*, or *Export Excel Spreadsheet* button to download the report in that format.

Facial recognition and object detection

The context of who the person is, when they often appear, and where they normally go can be important clues. For example, you might want to automatically show an alarm if an unknown person is detected in a high-security area, or if they have a weapon.

FortiCentral supports both face recognition and object detection.

Object detection scans video streams from cameras for important objects, such as a gun or a car. Many types of objects are built-in, so no AI training is required.



Face recognition occurs in a few steps:

1. FortiCentral analyzes the video in a view pane to determine if a face is detected. If it is, FortiCentral tracks the person's face until it can create a digital model. In this way, the AI trains itself to accurately identify the person.
2. FortiCentral stores that model in a database on FortiRecorder. If a person is a known employee or visitor, you can add the person's name, category, and other information, too.

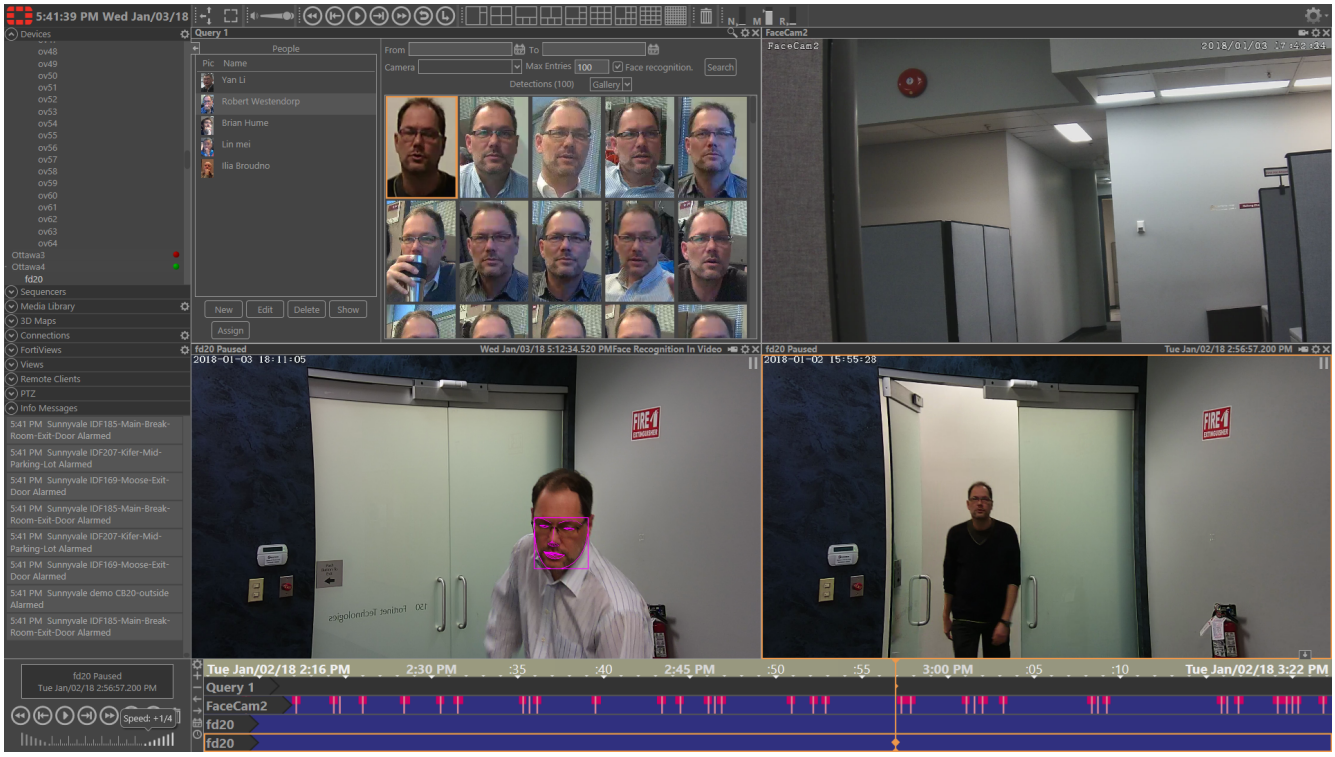
3. When any FortiCentral connected to the same FortiRecorder detects a person again, it can query the database to determine if it recognizes the face. FortiRecorder can also query the same face recognition database to trigger events based upon whether the person is prohibited, a VIP, etc.

Every FortiCentral that runs face detection can contribute to your FortiCentral face recognition database. This distributed processing scales well as your organization grows.

Alternatively, you can perform face modeling and face recognition at a centralized location, on FortiRecorder.

Both methods store their analysis results on FortiRecorder. However, the results are stored in separate databases. On FortiRecorder:

- *Analytics* > *Computer Vision*: Face modeling by FortiCentral. Both FortiCentral and FortiRecorder can query this database for face recognition.
- *Face Recognition* > *User Asset*, etc.: Face modeling by FortiRecorder. Currently, only FortiRecorder can query this database for face recognition. FortiCentral cannot use it. For details, see the *FortiRecorder Administration Guide*.



Using face recognition

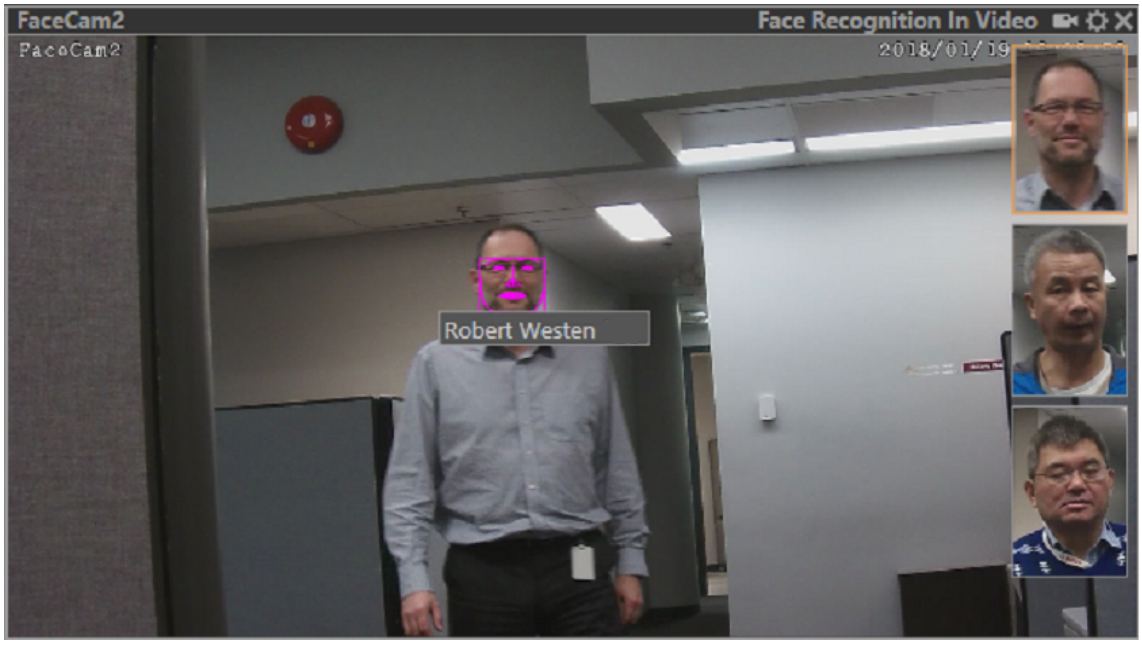
1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *Analytics*.
3. From the *Face Recognition Database* dropdown list, select which FortiRecorder receives the results of face analytics.
4. If you want to send images of people to FortiRecorder for later identification, then enable *Face Recognition in a snapshot*.

   This setting requires that you join a FortiCentral domain.
5. If you to electronically welcome guests based on recognition, then enable *Display EBC/GPC Demos*.
6. If you want to play video in a scratch pad or alarms view pane when someone triggers an alarm via face recognition, then enable *Show Analytics Alarms*.
7. Click the *OK* button.
8. Drag a camera from the *Devices* panel to an empty view pane.
9. Click the *Settings* button on the view pane.
10. Go to *Analytics*.
11. From the *Algorithm* dropdown list, select *Face Recognition*.

    Options vary by which packages you installed.

    The other available settings vary by this selection.
12. Enable *Visualize* to show outlines of detected features of the face such as the eyes and mouth in live video streams. Colors of the outlines indicate the following:
    - *White*: A face was detected, but the quality is not good enough to generate a representation of the person's face.
    - *Yellow*: The first frame taken as a snapshot and was used to generate a representation of the person's face.
    - *Magenta*: The person is being tracked after the initial detection.
    - *Cyan/Green*: The person track continued from face matching.



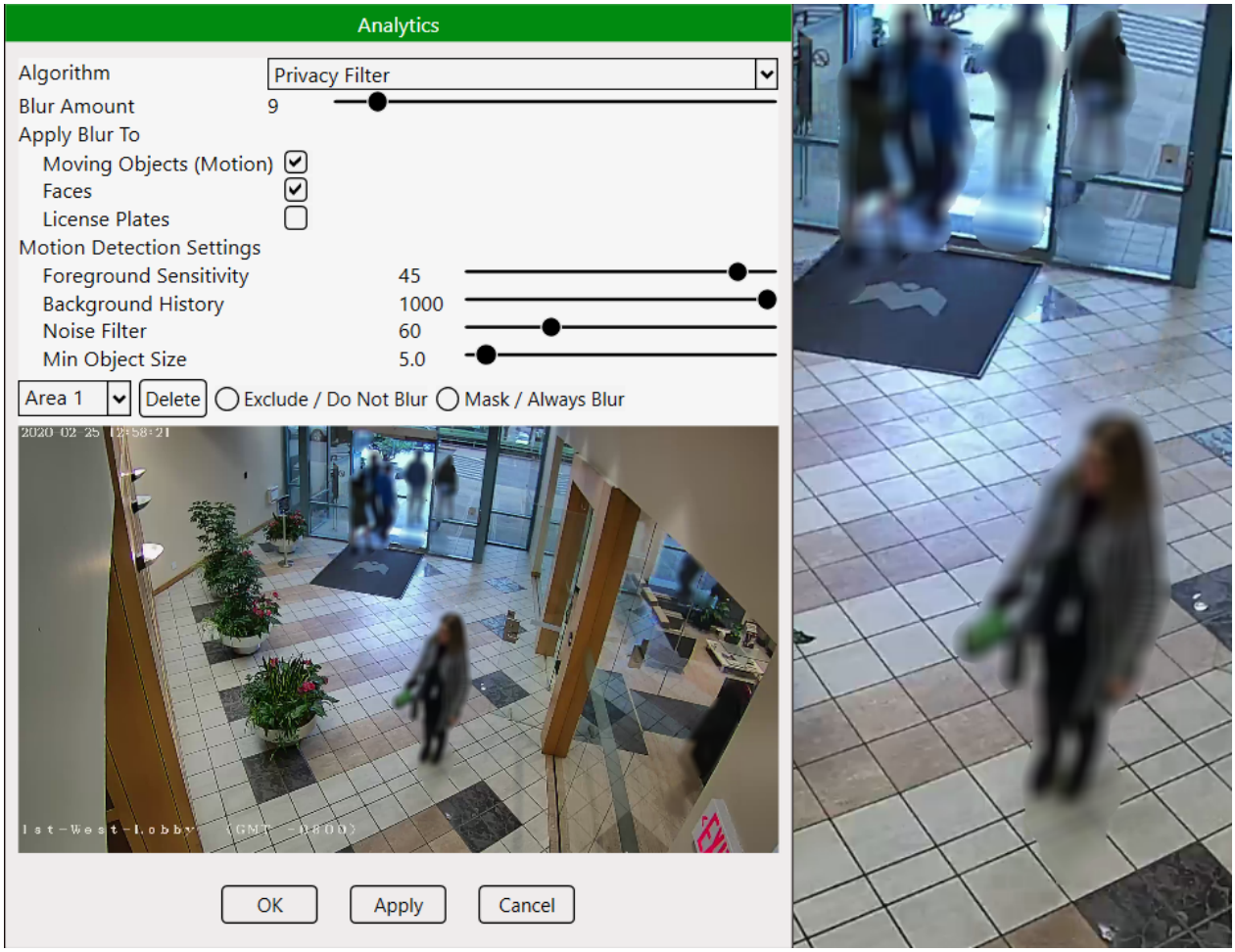
13. To display the best snapshots associated with each track in a gallery, enable *Show Snapshots*.

    The gallery is a short history of people that have been seen.
14. To search for a detected face in the facial recognition database, enable *Look for Names*. If someone in the database looks like the currently detected person, then their name is shown below the facial outlines.
15. Click the *OK* button.

Configuring a privacy filter for AI

You might need to conceal an individual's identity when displaying their activity in a recorded view. The privacy filter detects faces and licenses and blurs them.

1. On the view pane for a camera, click the *Settings* button.
2. Go to *Analytics*.
3. From the *Algorithm* dropdown list, select *Privacy Filter*.



4. Adjust the *Blur Amount* slider. The further the bar is to the right, the stronger the applied blur.
5. In *Apply Blur To*, select which objects you wish the filter to be applied to.

   If you blur license plates, you will still see the car. If you select faces, you will still see the person's movements. Moving objects are everything moving on camera.
6. Adjust the *Motion Detection Settings* sliders:
   - *Foreground Sensitivity* adjusts how easily a change in parts of the image is detected.
   - *Background History* adjusts how long it takes for an object that was once moving to be considered part of the background once it stops moving.
   - *Noise Filter* adjusts how strong scattered and temporary detections are filtered out.
   - *Min Object Size* allows excluding small noise sources.

7. Select the *Area* from the dropdown menu. Areas are polygons that define parts of the image as either permanently blurred or permanently clear.
8. Click *OK*.

   Privacy processing applies to both live video streams and playback.

To force privacy masking on all video panes

1. Click the *Settings* button in the top right corner.

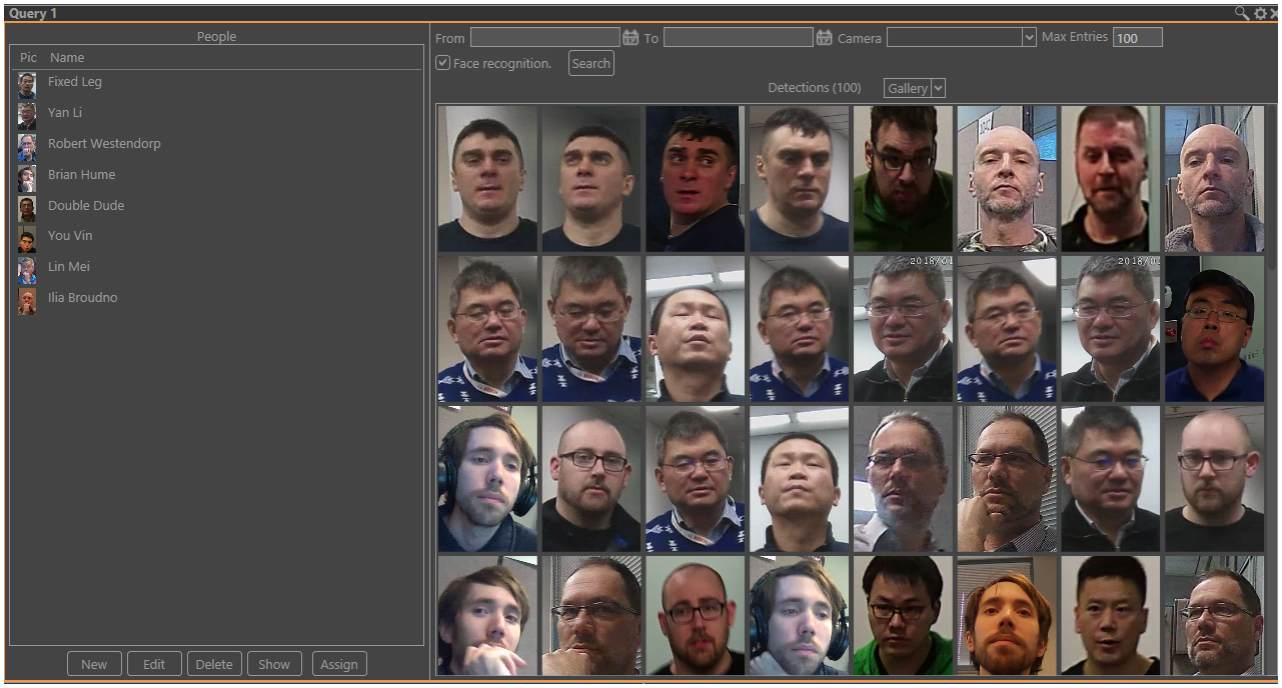
2. Go to *Settings* > *Analytics*.
3. Enable *Force privacy on all Videos*.
4. Click *OK*.

Searching for a face

You can use facial recognition to search for someone via a vision query.

The interface is divided into two sides:

- Left side: Known individuals.
- Right side: Search and its results.



To determine if someone has been seen before

1. On the view pane for a camera, click the *Settings* button.
2. Go to *Open Computer Vision Query*.

3. In the *From* and *To* fields, enter the range of time when you saw the person. Optionally, you can also specify which camera recorded them. Then click the *Search* button.

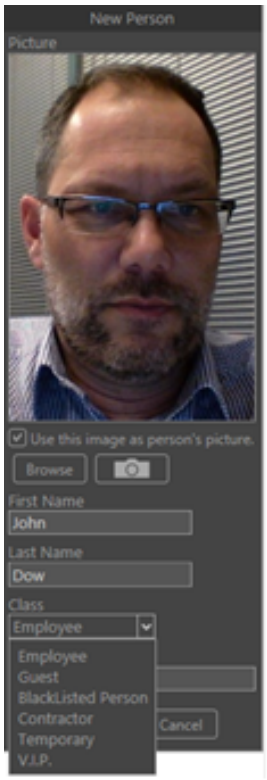
   A list of faces that were detected during that time range appears.
4. Click the person's face to select them, select the *Face recognition* checkbox, and then click the *Search* button again.

   The results are sorted according to similarity with the person that you selected in the previous step.
5. Drag a specific facial capture from the query pane to the video pane to play the video that shows when they were detected.

To add someone to the facial recognition database

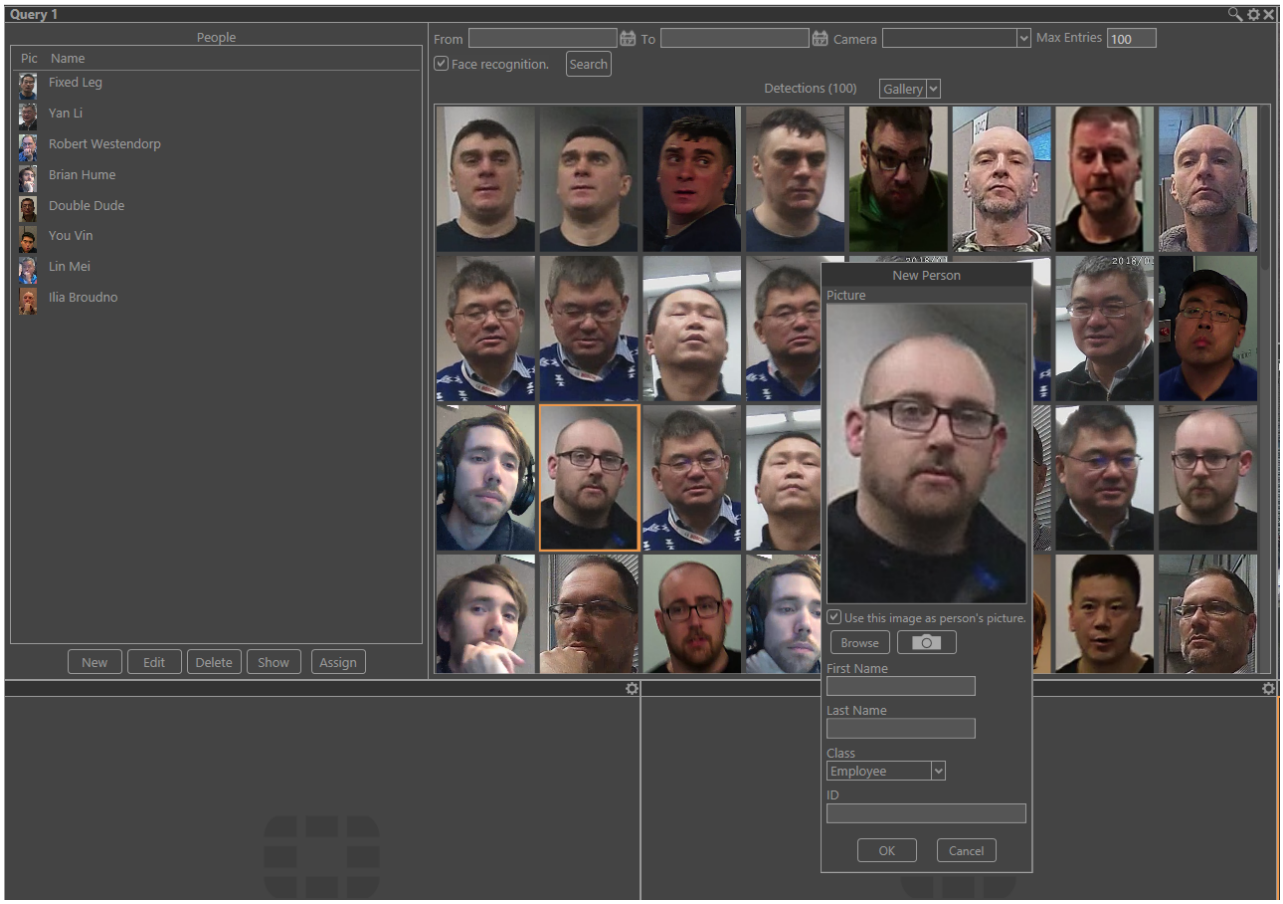
1. On the view pane for a camera, click the *Settings* button.
2. Go to *Open Computer Vision Query*.
3. In the *People* panel, click the *New*button.

   Alternatively, after searching for someone, you can enter them into the facial database by selecting them.
4. Either click the *Browse* button to select an image on your computer, or click the camera icon to select an image from a video device, and then select the checkbox *Use this image as person's picture*.



5. From the *Class* dropdown menu, select the person's relationship to the building, such as *Guest*. Also enter any known identification information, such as *Last Name*.
6. Click the *OK* button.
7. Optionally, you can also select the individual and each track they appear in and then click the *Assign* button to

provide the facial recognition database with more images to improve the identification process.



Using mask detection

Mask detection can assist in compliance with public health measures. When the AI detects someone, an event is generated and stored on FortiRecorder that classifies the person as a "Masked Person" or an "Unmasked Person".

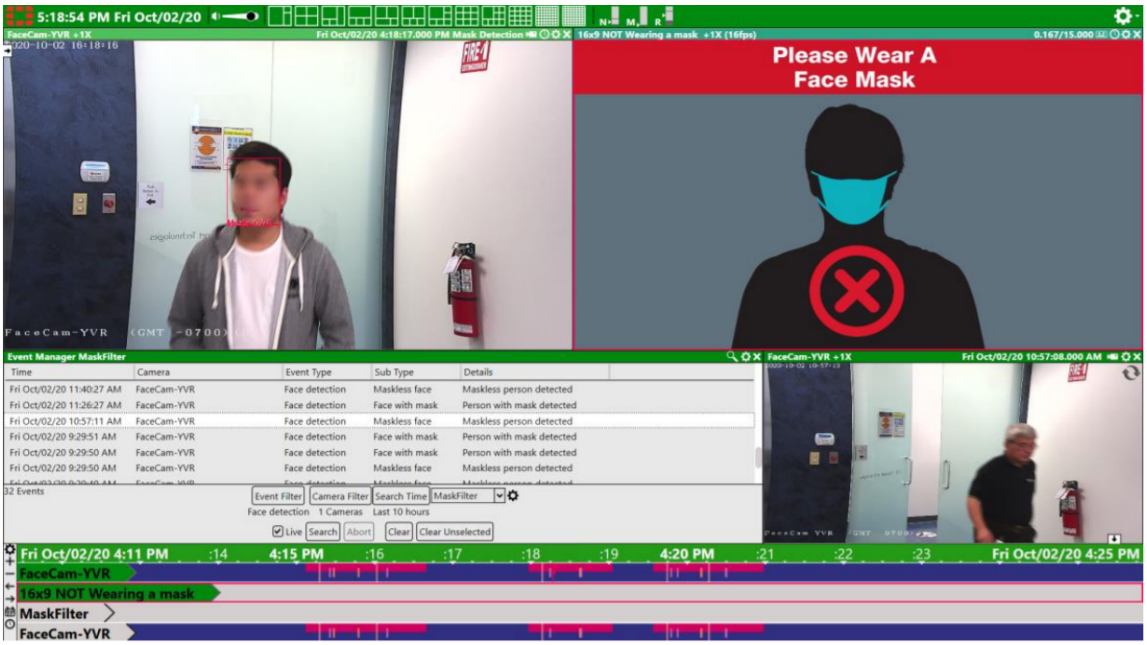
Configuring mask detection

1. On the view pane for a camera, click the *Settings* button.
2. Go to *Analytics*.
3. Select *Mask Detection* from the *Algorithm* dropdown menu
4. Enable *Visualize* to show a frame around detected faces, which are labeled mask or no mask with an indicator of the confidence level of detection.
5. Enable *Show Snapshot* to display a screen shot of the last detection of the individual's face on the right side of the pane.
6. Slide the *Mask Threshold* slider to the desired point. The threshold determines how strict masks are enforced. A higher value assures that only certain mask detections are registered.

Mask detection notifications are displayed on the timeline as detection events. To show details, hover your mouse over the red bar.

Enabling live message announcements for mask detection

For live installations, you can put a screen that displays FortiCentral next to a building entrance that has a camera. The screen can show feedback depending on whether or not the person is wearing a mask. These messages are fully customizable and can even include audio and video animations.



To enable live messages for mask detection

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *Media*.
3. Upload the media that you want to display when a person is or is not wearing a mask.
4. Go to *Settings* > *Analytics*.
5. From the *Media for Mask Detection* and *Media for No Mask Detected* dropdown menus, select the audio or video that you want to play.
6. Click the *OK* button.

Using object detection

In addition to face recognition, you can detect some types of objects. Important detected objects, such as people, guns, or cars, are stored on FortiRecorder, where they trigger notifications and are forwarded to all FortiCentral installations.

1. On the view pane for a camera, click the *Settings* button.
2. Go to *Analytics*.

3. From the *Algorithm* dropdown list, select the *Object Detection* checkbox.
   Options vary by which packages you installed.
   The remaining settings vary by this selection.
4. Configure the following settings:

Setting	Description
Visualize	Display a bounding box around the detected object in the camera preview.
Detailed Analysis	Select this checkbox if a more detailed analytics network is required. **Note:** This feature will increase CPU load.
These Types	Click to select each type of object that you want to detect, such as *Motion* and *Person*.
Area	Select where you want to look for recognized objects, either: • *Detection* • *ROI*: A user-defined zone of your region of interest (ROI). • *Mask*: At the bottom of a face, there is a zone where object detection does not search for facial features.

5. Click the *Apply* button and then click the *OK* button.
   To blur privacy-sensitive objects such as a license plate, see Configuring a privacy filter for AI on page 63.

Let's chat

Small security teams at one building can work together with one monitor wall. But what if you have a bigger team that works in plenty of places, at different doors, or on a few floors?

You can chat together with other people that use FortiCentral, unrestricted by your location. Your usernames appear in each other's *Contacts* list if you:

- connect to the same FortiRecorder devices, and
- join the FortiCentral domain

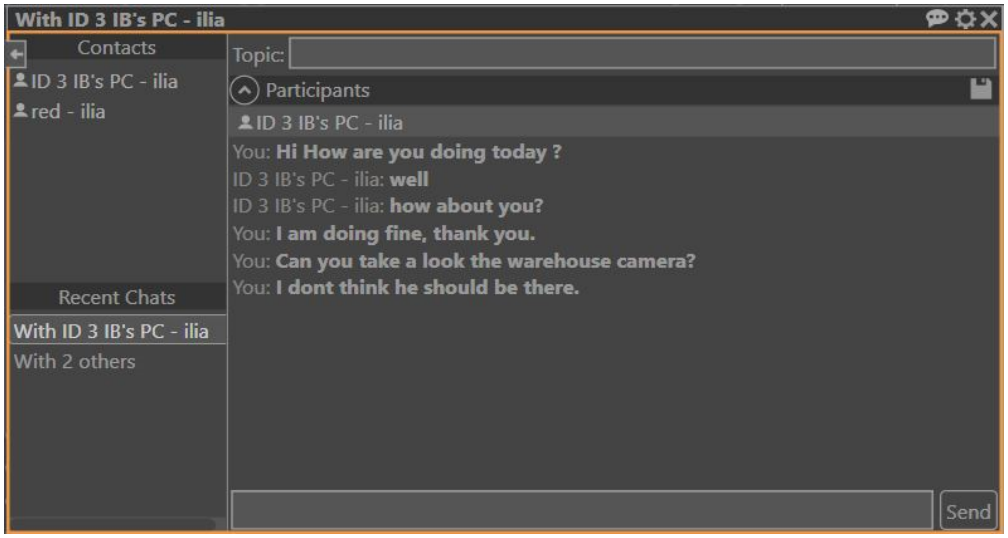
Data sovereignty is built-in. Unlike other chat software and social media apps that require the Internet, your FortiCentral chats can remain on your organization's private network. Sensitive details such as security coordination, VIP visitors, and suspected crime can be kept private.

For example, large buildings have many entrances. If you don't coordinate, a prohibited person that you escort out of the building at one door can simply return at another door. With FortiCentral chat, you can contact your team and give them the exact timestamp of a video recording of the prohibited person. Teammates at the SOC can add the prohibited person's face to the face recognition database while others work together to prevent that person from returning at all entrances—and even at multiple buildings.

To start a chat

1. On an empty view pane, click the *Settings* button.
2. Go to *Open Chat*.

   The *Contacts* list on the left side of the view pane shows usernames that are currently logged into the same FortiCentral domain.



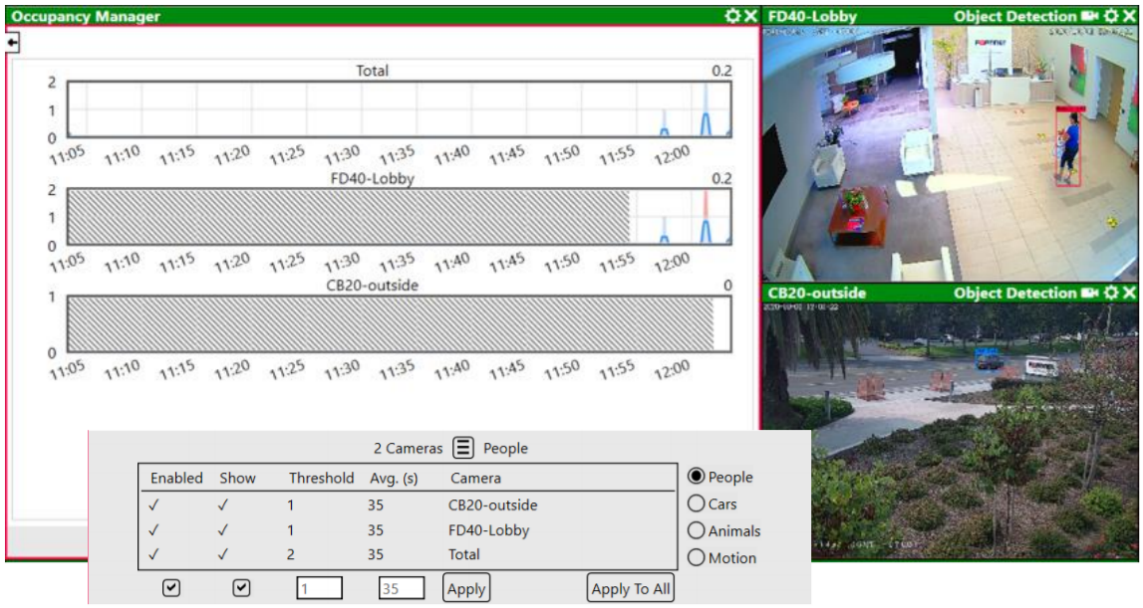
3. Double-click a username or drag them into the *Participants* area on the right side of the view pane to start a chat, or to add usernames to an existing chat.
4. To save the list of participants in a current conversation as a new chat group, click the disk button on the right side.

   The group appears in the *Contacts* list.

Limiting building occupancy

You can use FortiCentral to monitor the number of people inside your buildings so that you can comply with guidelines such as social distancing or fire safety.

Using deep learning algorithms and object recognition, multiple cameras work together to detect each person. The count from each camera is displayed on a historical line graph. Red lines indicate when occupancy exceeds the limit.The total number of people detected in the whole building is displayed on a summary chart.



Occupancy estimates can also be monitored using charts. Charts can also estimate how long people remain in the building so that you can plan.

Monitoring building occupancy

1. On a view pane, click the *Settings* button.
2. Go to *Open Occupancy Manager*.
3. At the bottom of the view pane, click the menu button (it has three horizontal lines).
4. Configure the following settings:

Setting	Description
Threshold	Enter the maximum number of people that are allowed to occupy the building.

Setting	Description
Avg. (s)	Enter the amount of time in seconds over which the number of people is averaged. The occupancy limit is enforced against this average number. For strict enforcement, enter a smaller number. FortiCentral will then immediately react when the limit is exceeded, even if the number of people quickly returns below the limit.

5. For each camera that you want to use with the occupancy manager, select the checkbox for that camera's row in the *Enabled* column, and then click the *Apply* button.

   All cameras that perform object detection analytics on the FortiCentral installation can be used by the occupancy manager. For a small location, you can select only one camera. For busy locations with many people such as a cashier, however, you should have multiple cameras to ensure an accurate count.
6. If you want to display the occupancy chart for a camera, select its *Show* checkbox, and then click the *Apply* button.

Using the FortiCentral concierge

Using a FortiCentral concierge, you can ensure that your building does not exceed a maximum allowed capacity of people. The concierge works together with the occupancy manager to display messages to people that are waiting to enter the building, such as a "Stop", "Wait", or "Proceed" message, to avoid exceeding the occupancy limit.

Optionally, you can add images or movie clips next to the occupancy manager to show your company's branding and advertisements while people wait.

1. On one of the FortiCentral installations in your SOC, start occupancy control. For details, see Monitoring building occupancy on page 70.

   This occupancy manager must remain open. If you close it, the concierges that depend on it will display *Stop - Capacity control offline*.
2. Install FortiCentral on a computer near the door. Log in as an administrator.

   The screen of this computer will be used as the concierge display.
3. Create a layout that has only one view pane. In *Owner*, select *Public*. Other layouts must not be visible to any users except the administrator. For details, see Arranging the layout on page 22.

Alternatively, you can use a layout with more view panes, where the other view panes can be used to show advertisements, welcome messages, etc. See Adding media on page 27.

4. On the toolbar, click the new layout to apply it.
5. On the view pane, click the *Settings* button and go to *Open Concierge*.

   The concierge application is enabled. It displays different messages in order, and depending on input from the occupancy manager:

   a. If neither the total occupancy limit nor that of each camera is exceeded, then the concierge application shows the green *Enter* message.
   b. After someone enters the building, the concierge application shows the yellow *Wait* message to control the physical distance between each person.
   c. When the occupancy limit is exceeded, the red *Stop* message is displayed with a countdown timer.
   d. At the end of the timer, the concierge application either displays the *Stop* message again (until the number of people is below the limit), or it displays the *Enter* message.

   A blue *Stop - Capacity control offline* error message appears if the occupancy manager is disabled.
6. At the bottom of the concierge view pane, click the menu button (it has three horizontal lines). If there are multiple installations in your FortiCentral domain, and more than one of them runs occupancy control, select which installation gives the building occupancy status to the concierge.
7. Disable the resource column. Optionally, also hide the window title bar when in monitor wall mode. For details, see Configuring general settings on page 30.
8. Optionally, click the *Settings* button in the top right corner and go to *Toolbars* to disable the toolbar items that concierge users do not use.
9. In the toolbar area, click *Full Screen* and then click *Monitor Wall View* to hide the window title bar and resource column.
10. Create a view by clicking the *From Current View* button. Other views should not be visible to any users except the administrator. For details, see Configuring views on page 24.
11. Create a user account that has:
    - *User Type* set to *Viewer* (visitors must not have administrator permissions)
    - *Autologin* enabled
    - *Startup View* set to the new view

    For details, see Configuring a user account on page 10.
12. Log out. Close FortiCentral.
13. Start FortiCentral again.

    The concierge username automatically logs in, and FortiCentral starts the concierge in full screen, monitor wall mode.

    If you need to exit the concierge (for example, to log in as an administrator), put your mouse cursor in the upper right corner to show the *Settings* button. Click *Settings* and go to *Log Out*. Then you can log in as another username.

Managing events

The event manager is a view of recorded events. You can create customized views that consolidate various event types, such as motion detection and face recognition alarms, and system actions such as reboots and network interruptions.

Incoming events are added to the list in real-time when you right-click a view pane and go to *Live Recording*.

Over time, many events might be recorded by your cameras and FortiRecorder. You can search the events to quickly find the specific ones that you're interested in.

1. On the view pane for a camera, click the *Settings* button.
2. Go to *Open Event Manager*.
3. Click the *Event Filter* button.
4. In the list of checkboxes that appears, select which types of events you want to show, such as *Tamper* or *Face detection*, and then click the *Set* button.
5. Click the *Device Filter* button. In the list of devices that appears, select the devices whose events you want to show, and then click the *OK* button.
6. Click the *Time Period to Search* button. Select the range of time for the events, and then click the *Set* button.
7. Click the *Search Events* button.

   The search results display events which are linked to their associated video recordings. To play a video, drag and drop the event from the event manager to another view pane.

Charts

The chart manager shows statistics about motion detection events where people and vehicles were recognized by cameras and related information, such as building occupancy estimates and where people often go.

Charts require camera models that support recognition of vehicles and people by built-in AI, such as FortiCam-FD55-CA and FortiCam-FE120B.

Sensitivity of the camera's person and vehicle recognition is configurable. For details, see the FortiRecorder Administration Guide.

Configuring charts

Motion detection triggers recordings of vehicles and people, and camera models that support this feature will automatically process the video stream so that they can try to recognize attributes such as vehicles or a person's gender and age. Charts can be made from this video metadata.

Before you use charts, however, you must configure some settings. This gives required context for some charts. Optionally you can also define defaults.

General steps to use charts are:

1. Enabling the cameras' built-in AI to collect metadata for charts (see the FortiRecorder Administration Guide)
2. Defining inside and outside areas in the camera view on page 74
3. Defining defaults and chart time intervals on page 75
4. Generating charts on page 75

Defining inside and outside areas in the camera view

Inside and outside areas of the surveillance site shown in video streams must be defined so that charts can show frequent directions of movement.

For example, if a camera is installed near a building's door, then you could define the area around the door as "inside" and the sidewalk or parking lot nearby as "outside." Then when you filter charts to show people going inside, it will only show events when people entered the door, but not when they left or only walked by the building.

Configure areas immediately after the camera is installed. Do not change areas unless the camera is moved.

If the in/out area has been reconfigured, chart trends generated that includes the time period before the in/out area reconfiguration may no longer be relevant. Users may misunderstand this trend on the chart. Therefore you may want to notify them if you adjust the area.

1. On the view pane for a camera, click the *Settings* button and then select *Configure In Out Area*.
   A polygon appears over the view, initially labeled *Outside*.
2. If you want to draw the inside area instead, then click *Toggle Out Area*.

The polygon label changes to *Inside*.

For example, if you have an exterior camera that is aimed towards the building's front door, and so most of the view area is outside, then you probably only want to consider the small entrance area "inside". Around the door, you would put an *Inside* polygon.

The remaining area around a polygon is defined as the opposite: in this example, "outside".

3. Drag the corners of the polygon until it covers the inside or outside area.
4. Click *Save In Out Area*.
5. Repeat the previous steps for all cameras that you will use with charts.

Defining defaults and chart time intervals

Some common settings are used by many charts, such as starting each week on Sunday. Optionally you can change these default settings.

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *Chart Manager*.
3. Configure the following settings:

Setting	Description
Business Hours	Mark the checkbox and then select a time range to define when the building is open. In charts where *Data Source* is *Traffic*, the time range when the building is closed is indicated with lighter gray text. This visually indicates when occupancy should be low, and motion detection might be suspicious.
Capacity Reset Hour	For charts where Metric is *Occupancy Est.* or *Stay Est.*, select the time of day when the occupancy counter will reset to zero. This effectively acts as the start of the day. **Tip:** For accurate occupancy charts, select a counter reset time when the building is empty (it really has zero people, matching the chart counter), or at least has the fewest people.
Start of Week	Select the day of the week that is the start of the time range in charts.
Default Detection Mode	Select the default option for Detection Mode

4. Click *OK*.

Generating charts

Charts can be generated on demand, using the settings that you select.

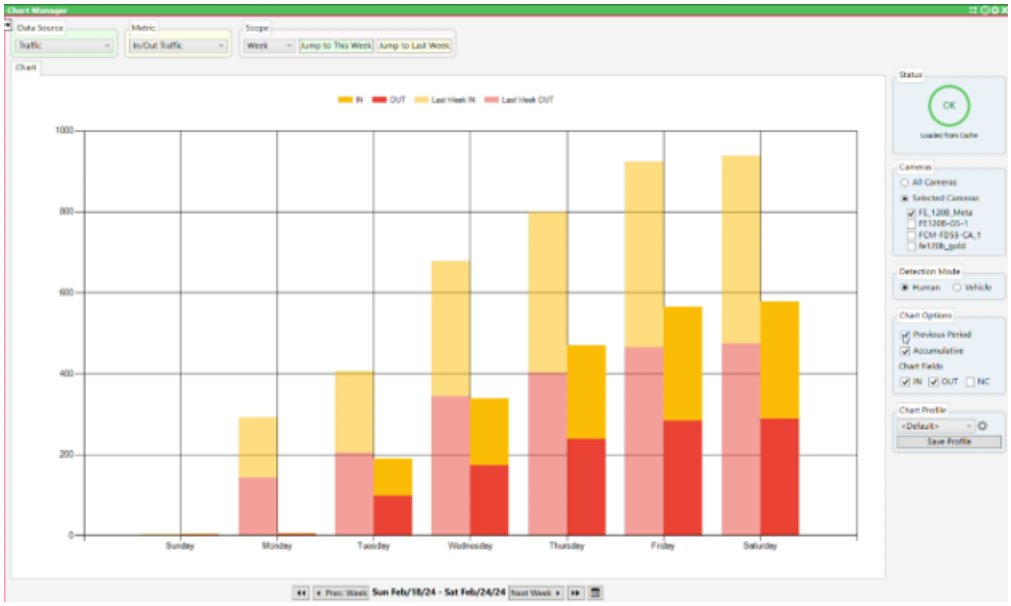
1. On a view pane, click the *Settings* button.
2. Go to *Open Chart Manager*.

   Initially, no chart is shown. You can either:

- Reuse existing chart settings by selecting a name from *Chart Profile* and then clicking *Generate Chart*.
- Continue this procedure to manually configure chart settings.

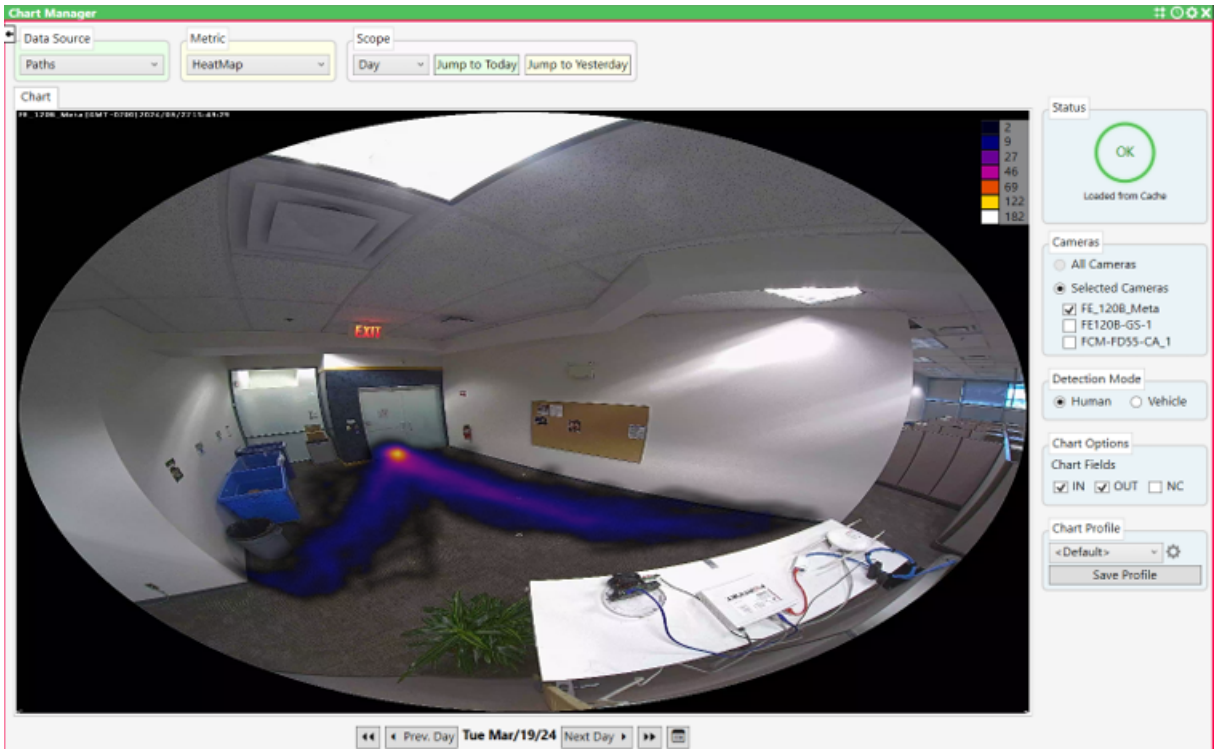
3. From the *Data Source* dropdown list, select either:
   - *Traffic* — Bar charts about statistics such as direction of movement, occupancy, and people's gender and age.

     Traffic Accumulation Chart with Previous Time Period Comparison

   - *Paths* — Overlay on a camera view with a heatmap that visualizes common paths of movement.

     Path Chart with Movement Heatmap

Available options in other settings vary by this selection.

4. Configure the following settings:

Setting	Description
Metric	Select either: • *In/Out Traffic* — Counts of how many people or vehicles went inside, outside, or neither, as observed by the cameras selected in Cameras, during the time interval selected in Scope. • *Occupancy Est.* — Counts of how many people or vehicles were estimated to be in the building site, based on entries and exits observed. See also Capacity Reset Hour and Limiting building occupancy on page 70. • *Stay Est.* — Estimate of how long people or vehicles remained in the building site, based on entries and exits observed. See also Capacity Reset Hour. • *Gender/Age* — Counts of males, females, adults, and children. • *Heat Map* — Overlay the camera view with color to indicate commonly used paths: areas with fewer motion detections (dark blue and purple) to more (yellow and white). • *Path Overlay* — Overlay the camera view with lines indicating direction and path of movement. Specify which directions in Chart Fields. Available options vary by your selection in Data Source.
Scope	Select the time range of the chart. If you want to show a previous time, then either: • Click the button next to *Scope*, such as *Jump to Previous Week*. • At the bottom of the pane, click the time range. In the calendar dialog, click to select the start of the time range, and then click *OK*. To fine tune, click the buttons next to the date, such as *Prev. Hour* or *Next Hour*. See also Start of Week and Business Hours.
Cameras	Select either *All Cameras*, or *Selected Cameras* and then choose which camera(s) to use. Available options vary by your selection in Data Source. For paths, the chart information is an overlay on a still image from a camera, so you can only select one camera at a time.
Detection Mode	Select which type of movement, such as *Human* or *Vehicle*.
Chart Options	Select which data to show, and how to display it in the chart: • *Previous Period* — Counts are for both the current and previous time interval, with the previous time interval shown in lighter colors. This option is available only if Data Source is *Traffic*. • *Accumulative* — Counts are a total that increases over time, instead of restarting the count from zero during each unit of time on the chart. This option is available only if Metric is *In/OutTraffic*.

Setting	Description

	• *Chart Fields* — Select which movement directions to show:
	  • *IN*
	  • *OUT*
	  • *NC* — Neither in nor out. "Not counted" can occur if the person or vehicle remained in the inside or outside area, and never moved between them, and therefore the in/out direction is not defined.
	This option is available only if Metric is *In/OutTraffic*, *Heat Maps*, and *Path Overlay*.

5. If you want to save the chart settings for reuse later, click *Save Profile*, enter a name for the profile, and click *OK*.
   The profile name appears in the *Chart Profile* dropdown list. Next time you use charts, you can select the profile to quickly load the same settings.
   Optionally, you can also click the *Settings* icon next to *Chart Profile* to configure permissions and some preferences that affect all charts. See Renaming chart profiles and changing permissions on page 78.
6. Click *Generate Chart*.
   Time required varies by the amount of metadata that FortiCentral must download from the camera and process. If you selected a large time range with many cameras (for example, if *Scope* is *Year* and *Cameras* is *All Cameras* and you have many cameras), then the time required could be several minutes. The *Status* area indicates chart progress.
   If you want to generate other charts, then change the selected options. The chart automatically refreshes.

Renaming chart profiles and changing permissions

When you generate a chart, you can save

1. Click the *Settings* button in the top right corner.
   
2. Go to *Settings* > *Chart Manager*.
3. On the right side of the window, click the name of a chart profile.

4. Configure the following settings:

Setting	Description
Name	Enter a unique name for the view.
Owner	Select who has permissions to use this item: • *Global*: All usernames, on all FortiCentral installations that have joined the domain. This option is only available if this FortiCentral is acting as the domain controller. • *Public*: All usernames, but only on this FortiCentral installation. • A username: Only this specific person, and only on this FortiCentral installation. Administrators can use any chart, regardless of *Owner*. This option is available only if your *User Type* is *Admin*.

5. Click *OK*.

Reducing disk space usage

Metadata cache and other files for charts are stored by FortiCentral on your computer's hard disk. If you have many cameras and generate charts often, then they use more disk space. Old metadata may no longer be needed. If that happens, you can delete files used by charts where *Data Source* is *Paths* to reclaim some disk space.

If the computer has a small hard disk, then you may need to do this regularly.

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *Chart Manager*.
3. Click *Clear Old Paths*.
Only path data that is older than one month is deleted.
4. Click *OK*.

FortiView

FortiView is ideal for a monitor wall or dashboard in your network operation center (NOC), security operations center (SOC), and even simple security offices.

With FortiView, operators can help security officers monitor cameras—both live video feeds and playback—and the network status together, for a truly unified, single-pane-of-glass approach.

Licensing FortiView

FortiView is a paid feature that requires a valid license. Settings for it are unavailable until you have imported your license.

1. Click the *Settings* button in the top right corner.

2. Go to *About*.
3. Click the *License* link and then *Import License*.
4. Select the license file (LIC file type) in the file import dialog and then click *Open*.
5. Click*OK*.

Configuring FortiView connection settings

Before you can use FortiView, you must define each FortiGate, FortiMail, FortiVoice, or FortiAnalyzer that it will connect to.

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *Connections*.
3. Configure the following settings:

Setting	Description
Name	Enter a unique name for the FortiGate, FortiMail, FortiVoice, or FortiAnalyzer.
Host	Enter the IP address or domain name (FQDN) of the device.
Port	Enter the listening port number for the REST API or GUI on the device. The default is 443.
ID	Enter a unique ID number.

Setting	Description
	If you have multiple connections to the same device, a different name and ID allow you to distinguish between the connections. Connections on the local and remote machine have to match to the same device. All machines in an installation should use the same connection ID for the same device (FortiGate/ FortiMail / FortiVoice or FortiAnalyzer).
Username	Enter the username of the account on the device. FortiCentral will log in as this username.
Password	Enter the password for the account on the device.

For better security, blank passwords are not supported. Don't use the `admin` administrator account. Use a view-only or other limited privilege account. Anyone who has access to FortiCentral will be able to log into the device with these permissions.

4. If you are connecting to a FortiAnalyzer, and if it uses administrative domains (ADOM), then select which ADOM you want FortiCentral to connect with.

   Defining the ADOM in the settings allows FortiView skip the ADOM selection screen, and directly display to the screen.
5. Click *OK*.

   The new device connection appears in the *Connections* panel.

Using FortiView

Once you have defined the devices that you want to connect, then you can configure FortiView.

1. Click the *Settings* button in the top right corner.

   
2. Go to *Settings* > *FortiViews*.
3. Configure the following settings:

Setting	Description
Owner	Select who has permissions to use this FortiView: • *Global*: All usernames, on all FortiCentral installations that have joined the domain. This setting is available only if you are logged in as a user whose *User Type* is *Admin*, and your FortiCentral is acting as the domain controller. • *Public*: All usernames, but only on this FortiCentral installation. • A username: Only this specific username, and only on this

Setting	Description
	FortiCentral installation.
Name	Enter a unique name for the FortiView.
Connection	Select one of your FortiGate, FortiMail, FortiVoice, or FortiAnalyzer connections.
View	Select the type of information to display: • Application • Source • Destination • Countries • Transparent URL • FortiGate Dashboard • Dashboard Widget Some are only compatible with specific device types such as FortiGate. For details, see the next sections.
Chart Type	Select how the information will be shown, such as *Table View* or *Bubble Chart*. Available types vary by the selected *View*.
Refresh Time	Enter the time in seconds between refreshes of the FortiView.

4. Other settings vary by the *View* and *Chart Type*, such as *Relative URL* or *Zoom Percent*. If needed, configure them also.
5. Click the *New* button, and then click *OK*.
   The new FortiView appears in the *FortiViews* panel.

Application, destination, source, or country type of FortiView

With an application, source, destination, or country type of FortiView, you can show the network traffic of a connected FortiGate, FortiMail, FortiVoice, or FortiAnalyzer inside of FortiCentral.

Network traffic can be shown in multiple ways. Select one of them from the *Chart Type* dropdown list to focus on what network application is used most often (for example, UDP port number 514 for log messages or TCP port number 443 for secure connections to a Fortinet device's GUI), which countries are involved, which device is the source, and which device is the destination—or to show all of the above.

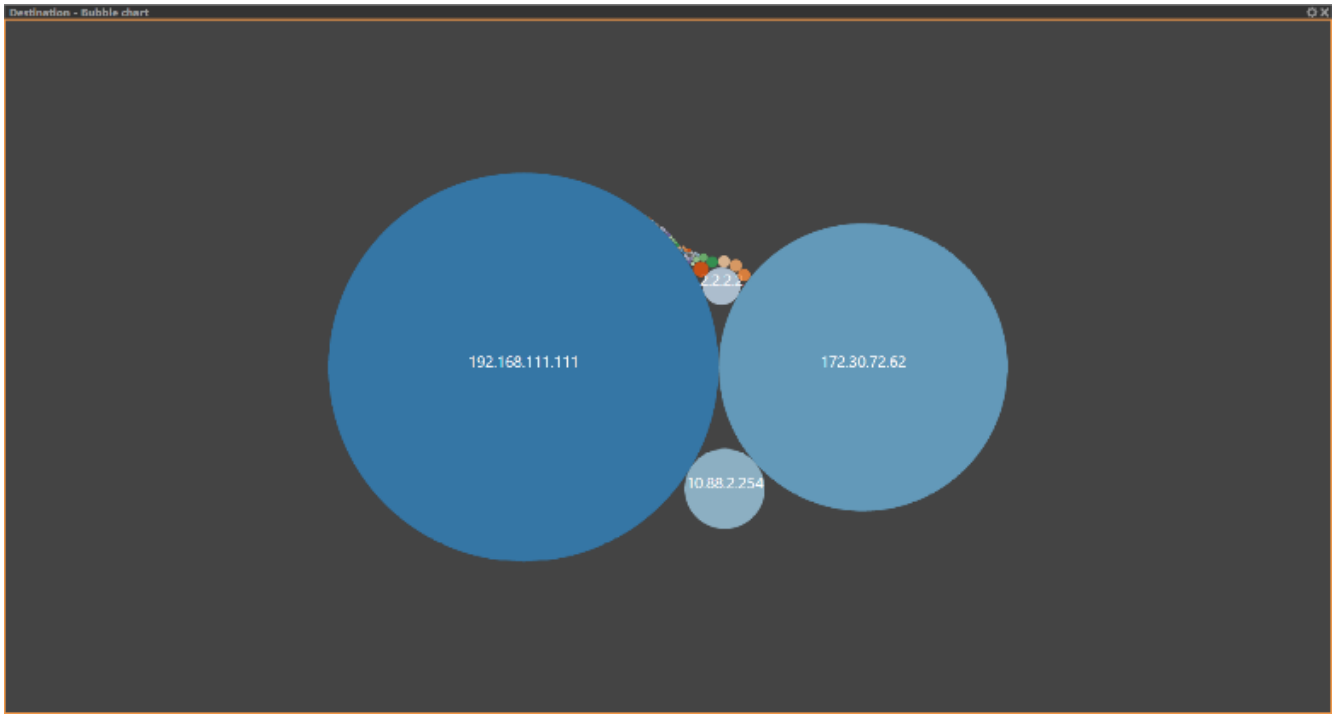
Table chart type

Destination - Table

Destinations	Destination Interface	Sessions	Bytes	Bandwidth	Application
192.168.111.111	port17	6	25.12 GB	116.10 kB	UDP/514
172.30.72.62	port17	19	13.83 GB	63.39 kB	TCP/514,UDP/514,
10.88.2.254	root	162	1.07 GB	5.43 kB	UDP/161,TCP/8013
2.2.2.2	port17	1	264.21 MB	3.51 kB	UDP/514
1.1.1.1	port17	1	103.95 MB	3.03 kB	UDP/514
10.10.10.124	port17	1	27.73 MB	3.27 kB	UDP/514
169.254.1.2	FSW-AGG	1	24.72 MB	0.00 B	UDP/5246

Globe chart type

Bubble chart type

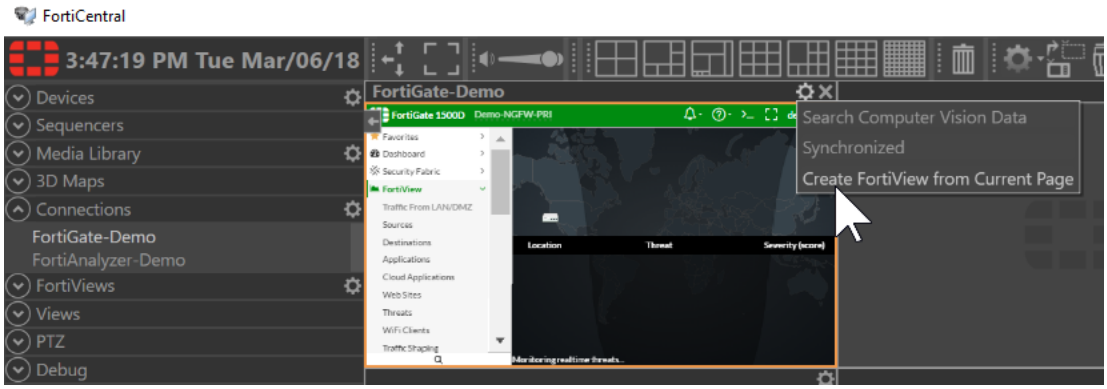


Transparent URL type of FortiView

With a transparent URL type of FortiView, you can show the GUI of a connected FortiGate, FortiMail, FortiVoice, or FortiAnalyzer inside of FortiCentral.

You can configure a transparent URL type of FortiView by either of these methods:

- On the main window, click the *Settings* button in the top right corner and then go to *Settings* > *FortiViews*.
- On the main window, drag a device from the *Connections* panel onto a view pane. Inside the view pane, use the device's navigation menu to find the location that you want to display. Then click the *Settings* button on the view pane and select *Create FortiView from Current Page*.



Then configure the following settings that are specific to this type of FortiView:

Setting	Description

Relative URL	Enter the path of the URL that appears after its IP address or domain name (FQDN).
	For example, if you connect to a FortiGate and your web browser's location bar is:
	`https://fortigate.example.com/ng/threatmap/all`
	then in this setting, you would enter:
	`/ng/threatmap/all`

Fullscreen Mode	See Hiding the navigation menu inside a FortiView on page 85.
Refresh Time	Enter the amount of time in seconds between each refresh of the view. To disable automatic refreshes, or for dynamic URLs that automatically refresh themselves (for example, a threat map), enter `0`. For static URLs such as a list of reports that rarely changes, the refresh ensures that this FortiView is kept up-to-date.
Zoom Percent	Enter how much you want the view to zoom in or zoom out. This is equivalent to zoom in a web browser.

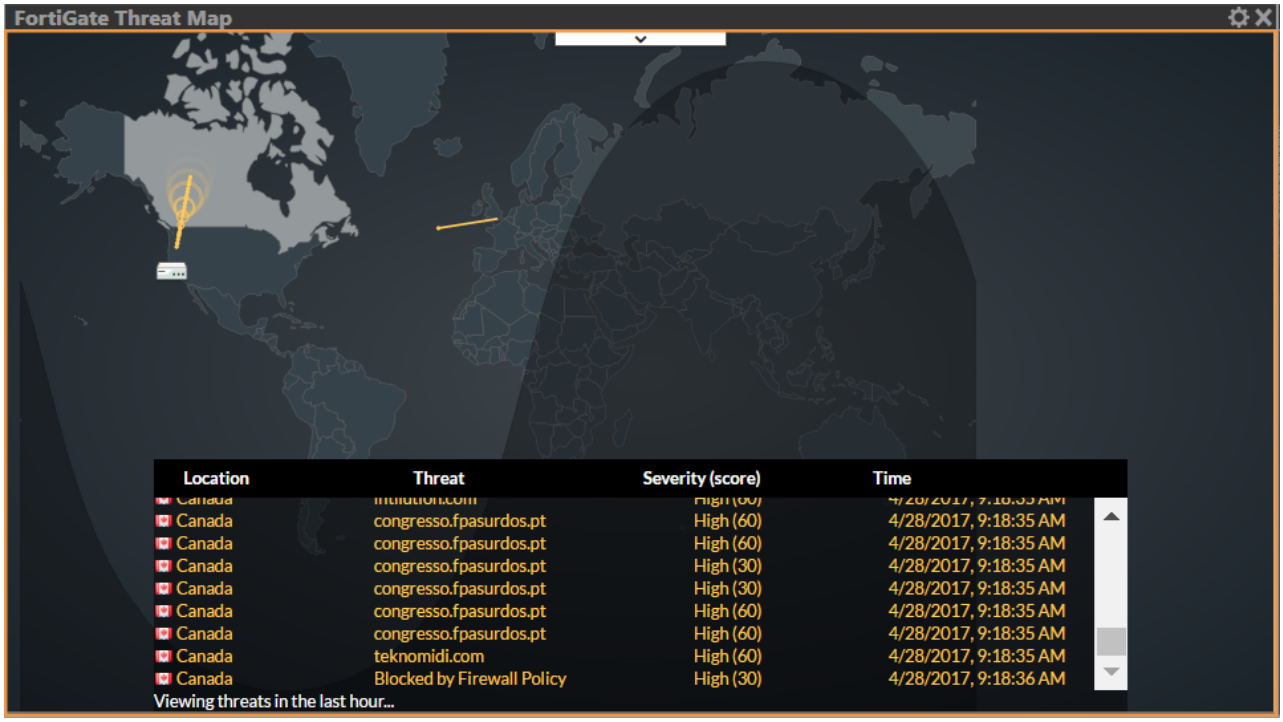
Hiding the navigation menu inside a FortiView

By default, both a transparent URL or FortiGate dashboard type of FortiView will embed the complete GUI of the connected device, including the navigation menu bar on the left side, and the login banner at the top.

However if those menus are not useful to you (for example, maybe FortiCentral users need to view the dashboard statuses, but they never configure the network), then you can hide the menus.This gives more space to the remaining information.

1. Click the *Settings* button in the top right corner.
   
2. Go to *Settings* > *FortiViews*.
3. Click to select the FortiView where you want to hide the menus.
4. Select the *Fullscreen Mode* checkbox.
   Currently only FortiGate devices support this option. Alternatively for other device types, in the *Relative URL* field, put this at the end:
   `?viewOnly`
5. Click the *Apply* button.

In view panes where this FortiView is shown, the device's menus are hidden.



FortiGate dashboard type of FortiView

With a FortiGate dashboard type of FortiView, you can show statuses of a connected FortiGate inside of FortiCentral.

For example, you could use this type of FortiView as part of a larger set of security operations center (SOC) or network operations center (NOC) view panes that combine different data sources onto one monitor wall.

Dashboards in FortiCentral are similar to how they appear in FortiGate. However, on FortiCentral, they are read-only, not interactive. If you need more detail, then you should instead log into that device.

You can configure the following settings that are specific to this type of FortiView:

Setting	Description
Select Dashboard	Select the name of a dashboard that exists on the device. When you select *FortiGate Dashboard* from the *View* dropdown list, FortiCentral connects to the device and gets the name of existing dashboards to use as options for this dropdown. If you want to add new dashboards, then you must log into the device and configure them on that device. For details, see the FortiGate Administration Guide. The icon to the left of the name indicates either: • *Responsive*: Adjusts to window size.

Setting	Description
	•  *NOC*: Fixed width.
Fullscreen Mode	See Hiding the navigation menu inside a FortiView on page 85.

Dashboard widget type of FortiView

With a dashboard widget type of FortiView, you can show various current statistics from a connected FortiGate inside of FortiCentral.

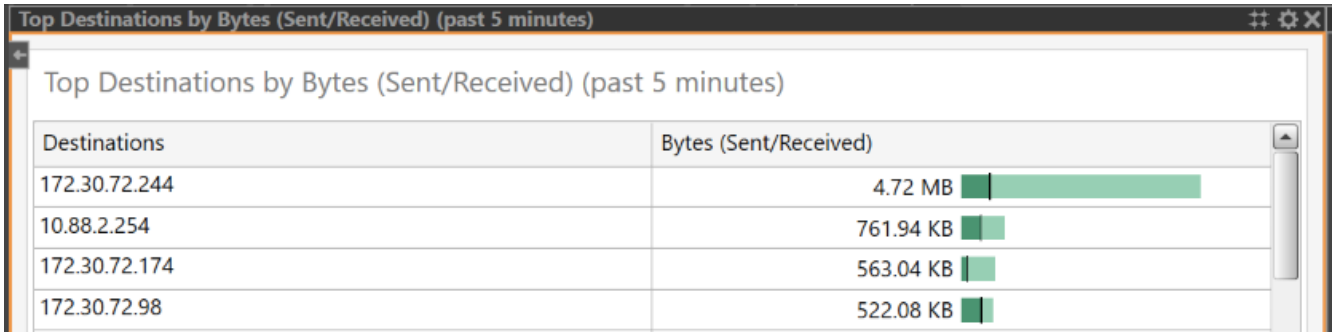
While the FortiGate dashboard type displays a whole dashboard, this type focuses the view pane on a specific widget.

Dashboard widgets in FortiCentral are similar to how they appear in FortiGate. However, on FortiCentral, they are read-only, not interactive. If you need more detail, then you should instead log into that device.

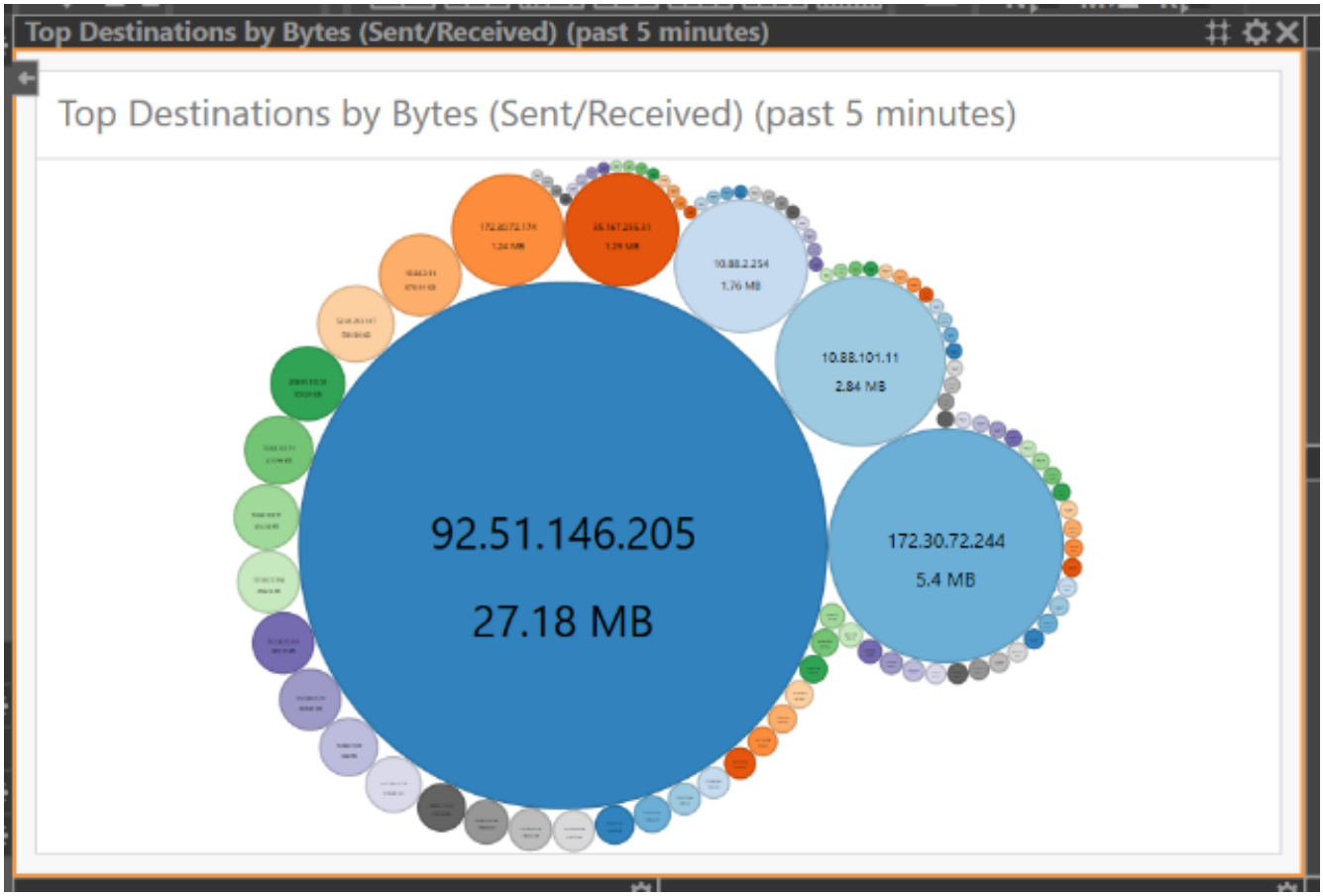
You can configure the following settings that are specific to this type of FortiView:

Setting	Description
Widget	Select the name of a FortiView widget that exists on the device. When you select *Dashboard Widget* from the *View* dropdown list, FortiCentral connects to the device and gets the name of existing widgets to use as options for this dropdown. If you want to add new widgets, then you must log into the device and configure them on that device. For details, see the FortiGate Administration Guide.
Sort By	Select which criteria determines the sort order of the entries. If *Visualization Type* is *Table View*, then the options correspond to the names of the table columns. For example, if you select *Configuration Changes*, the entries would be sorted from most to least recent timestamp.
Visualization Type	Select how the information will be shown, such as *Table View* or *Bubble Chart*. Available types vary by the selected widget.
Time Period	Enter the range of time to include data from. For example, you could enter 5 minutes for a *Destinations* widget to show destination URLs or IP addresses used during the last 5 minutes.

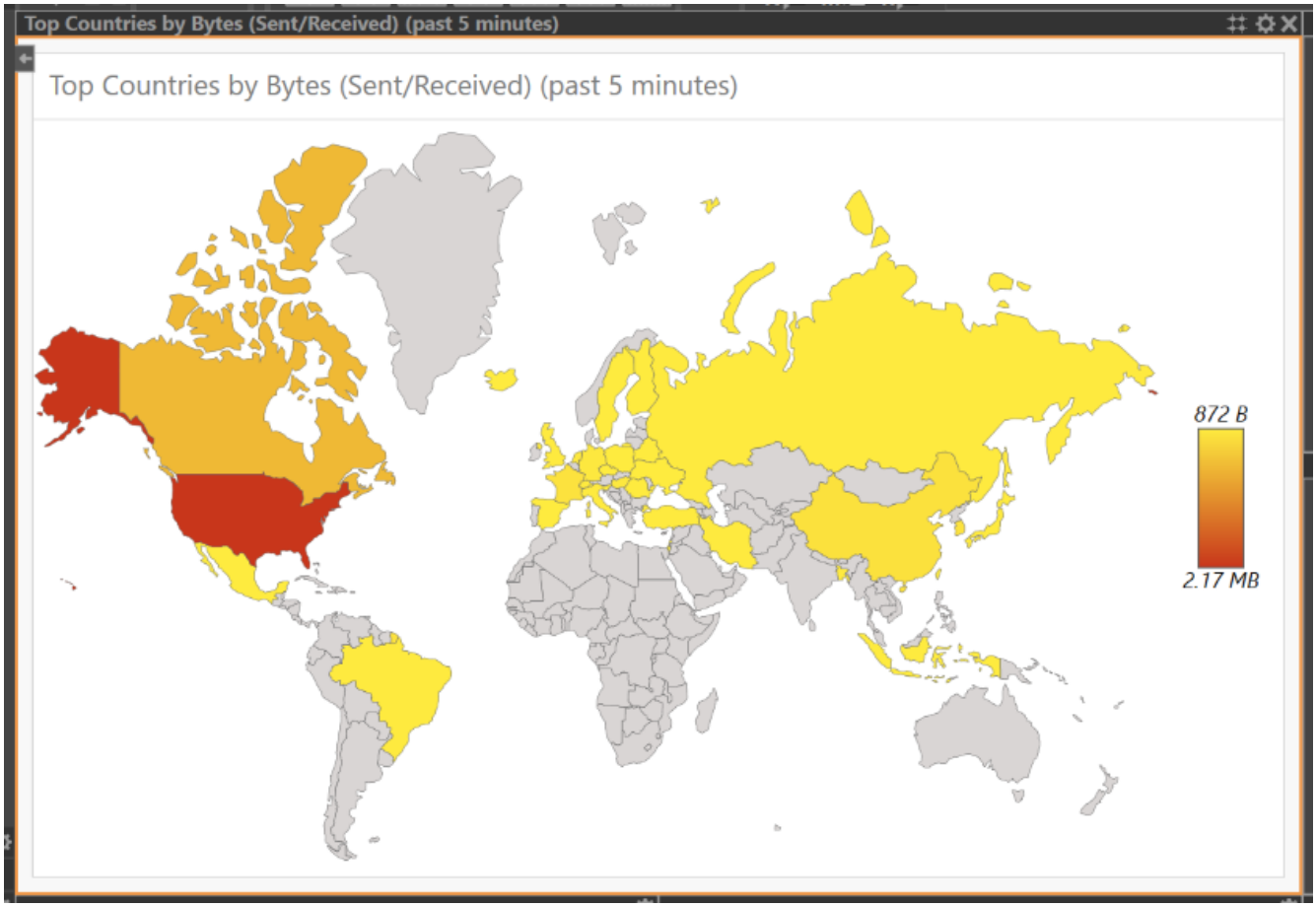
Table View of a dashboard widget



Bubble Chart of a dashboard widget



Country Map of a dashboard widget



Scripts

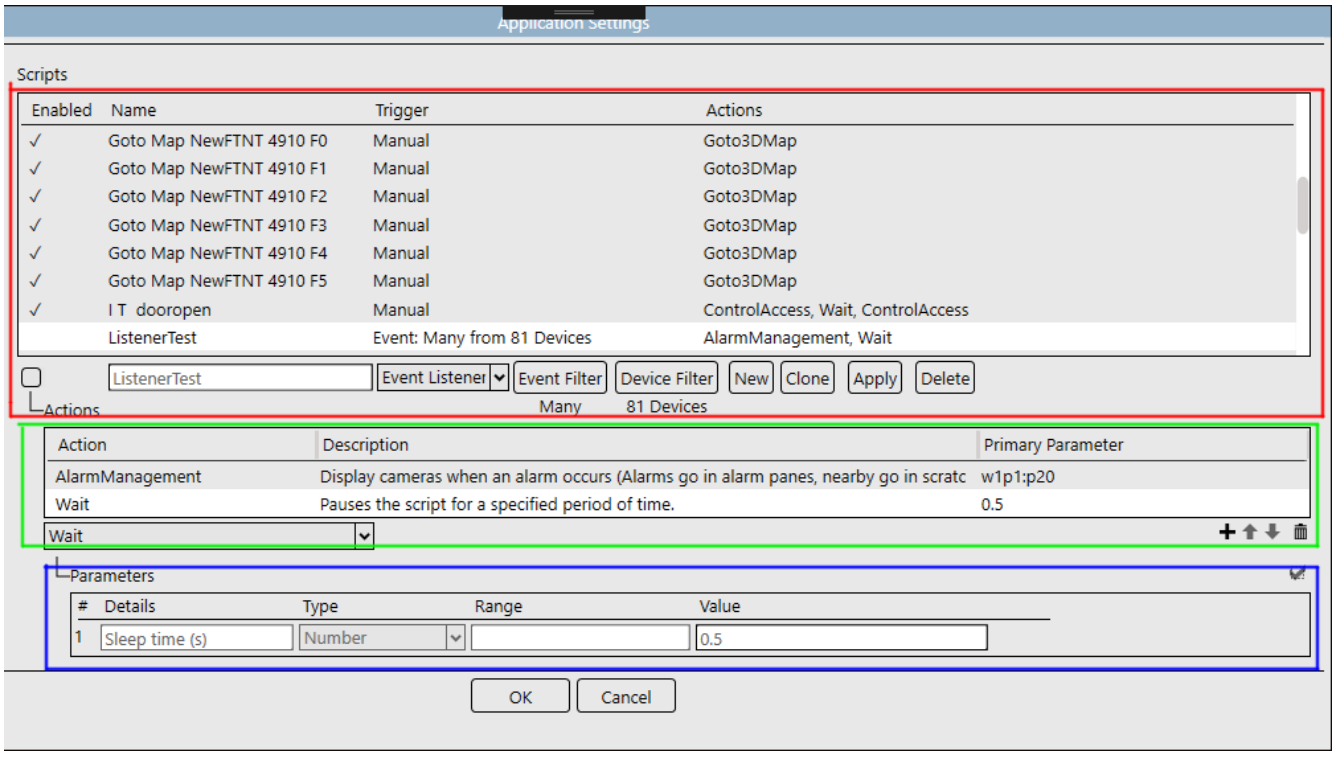
Scripting is a powerful tool that you can use for automation and faster workflows. Actions can be triggered automatically by receiving events, time spans, or manually by a button or map.

For example, you can use alarm management scripts to automate the assignment of video views into a pane grid when FortiCentral receives alarm events.

Script interface overview

The dialog for scripts is split into these parts:

- **Top area**: List of scripts.
- **Middle area**: Actions performed by the script that you selected in the area above it. It appears after you either click the *New* button to create a new script, or select the name of an existing script in the top area. This list is ordered sequentially, in the order that you indicate to do the actions.
- **Bottom area**: Parameters, such as a number range or option, for the action that you selected in the area above it. It appears after you select an *Action* that the parameters will apply to, and then click the plus (+) button in the middle area.



Script examples

Below are instructions and examples how to create scripts with different methods to trigger an action:

Event listener

Event listeners are scripts that trigger when an event such as an alarm or a VIP detection occurs. Event listeners use the same set of events as the event manager.

This example script displays the camera and all nearby cameras whenever it detects movement. It displays them in a second window.

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *Scripts*.
3. In the *Name* field, enter a unique name for your script, such as “Example alarm management”.
4. In the *Trigger* dropdown list, select *Event Listener*.
5. Click the *Event Filter* button and then select *Camera Detection*. Deselect all other events.
6. Click the *Device Filter* button and then select the cameras which can trigger the event.
7. Click the *New* button.
8. In the actions area, from the *Action* dropdown list, select *AlarmManagement*.
9. Click the plus (+) button on the right side of the row to add parameters.
10. In the parameters area:
    a. In the *Target Area*row:
        i. From *Type*, select *Panes*.
        ii. In *Value*, enter *W2* (this means all view panes in window number 2).
    b. In the *Include Nearby Cameras*row:
        i. In *Value*, enter *True*.
    c. In the *Ordering* and *Cycling* rows, keep the default values.
11. At the top right corner of the parameters area, select the checkbox.
    In the actions area, in the *Primary Parameter* column, it should now display *W2*.
12. Click *Apply*.
13. Click *OK*.
14. Click the *Settings* button in the top right corner.

15. Go to *Add Window*.
    A second window appears.
16. In the second window, on the top two view panes, click the *Settings* button and select *Receive Alarms*. For all view panes below them, select *Scratch Pad*.

When an alarm occurs, it appears in the view pane at the top left. Older alarms will be shifted right, the live video stream from the camera will appear in the view pane below it, and any scratch panes below will contain any cameras nearby to the one that triggered the alarm.

Periodic

Periodic scripts activate repeatedly at specific times. For example, an hourly periodic script will trigger at the start of every hour. It does not consider the time interval since the script was created, so hourly scripts created at 6:00 and 6:15 will both run at 7:00, 8:00, etc.

This example script creates a reminder to do a building perimeter check.

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *Scripts*.
3. In the *Name* field, enter a unique name for your script, such as “Example periodic perimeter check”.
4. In the *Trigger* dropdown list, select *Periodic*.
5. In the next dropdown, select *1 hour(s)*.
6. Click the *New* button.
7. In the actions area, from the *Action* dropdown list, select *PlayAudio*.
8. Click the plus (+) button on the right side of the row to add parameters.
   Keep the defaults.
9. At the top right corner of the parameters area, click the checkmark (✓) button to apply the parameters to the action.
10. Click the *Apply* button.
    Every hour, an alarm sound will remind the security guard to walk around the building.

Manual

Unlike other scripts, manual scripts are not triggered automatically. They are used to quickly perform many actions on demand.

This example script clears all alarms and scratch pad view panes in a second FortiCentral window.

1. Click the *Settings* button in the top right corner.

2. Go to *Settings* > *Scripts*.
3. In the *Name* field, enter a unique name for your script, such as “Example clear alarms”.
4. In the *Trigger* dropdown list, select *Manual*.
5. Select the *Show in Main Window* checkbox.
6. Click the *New* button.
7. In the actions area, from the *Action* dropdown list, select *ClearPaneSet*.
8. Click the plus (+) button on the right side of the row to add parameters.
9. In the parameters area, in the *Pane/Panes*row, in *Value*, enter *W2* (this means all view panes in window number 2).

10. At the top right corner of the parameters area, click the checkmark (✓) button to apply the parameters to the action.

    In the actions area, in the *Primary Parameter* column, it should now display *W2*.
11. Click *Apply*.
12. Click *OK*.

    A new button with an abbreviation of the script's name now appears in the toolbar at the top of the first ("main") window, between the layouts and the gauges for network (N), memory (M), and rendering (R).

    In this example, the button has the label "Eca" ("**E**xample **c**lear **a**larms").
13. Click the *Settings* button in the top right corner.

    
14. Go to *Add Window*.

    A second window appears.
15. On the first window, click the new "Eca" button.

    All view panes in the second window are emptied.

Using manual scripts with 3D maps

Similar to using a button on FortiCentral to manually trigger your script, you can also use a 3D map of your building.

1. Click the *Settings* button in the top right corner.

    
2. Go to *Settings* >*Scripts*.
3. In the *Name* field, enter a unique name for your script, such as “Example door buzz”.
4. In the *Trigger* dropdown list, select *Manual*.
5. Click the *New* button.
6. In the actions area, from the *Action* dropdown list, select *ControlAccess*.
7. Click the plus (+) button on the right side of the row to add parameters.
8. In the parameters area:
    a. In the *ACS Device*row, from *Value*, select *Front Door* (or whatever name the door has).
    b. In the *State* row, from *Value*, select *Buzz*.
    c. In the *Buzz* row. In *Value*, enter `30`(that is, 30 seconds).
9. At the top right corner of the parameters area, click the checkmark (✓) button to apply the parameters to the action.

    In the actions area, in the *Primary Parameter* column, it should now display *ControlAccess*.
10. Click *Apply*.
11. Click *OK*.
12. From the *3D Maps* panel, drag the floor plan that you want to use with the script into a view pane.
13. In the view pane where your 3D map is displayed, click the *Settings* button.
14. Go to *Enable Edit Mode*.
15. Click the *Edit Cameras & Elements* button.
16. If you already have a button on the 3D map, click to select it.

    Otherwise drag a button from the *Models* toolbar area at the bottom of the view pane onto the 3D map near the door. In the Name field, enter "Front Door Button".

17. In the *Scripts* dropdown list on the right side, select the script that you created, "Example door buzz".
18. Click the *Save Changes* button.
19. Click the *Settings* button on the view pane, and then deselect *Enable Edit Mode*.
20. On the 3D map, click *Front Door Button*.
    The front door should unlock for 30 seconds before it locks again.

Script actions

The following is a list of scripting actions that FortiCentral supports, in alphabetical order.

AlarmManagement

Displays the camera and optionally nearby cameras in specified view panes when an alarm is triggered.

This is useful to combine with the *Event Manager* trigger type, and an action that creates a prompt to dismiss the alarms. See DisplayClearAlarmInfoMessage on page 96. For a tutorial, see Script examples on page 91.

Alternatively, if you want to put a specific camera in a view pane—not only cameras that trigger alarms—then see PlaceCameraInPane on page 98.

AlarmManagement tries to place alarms intelligently. In small offices or simple window layouts, the placement is simple:

- Alarm video clips are put into an alarm type of view pane. If *Cycling* is *Shift Alarms*, then new alarms push older alarms over to the next alarm view pane.
- Nearby cameras (if any) are put into a scratch pad type of view pane.

However if your view panes occupy more than one space in the layout grid, then placement is more complex. For example, if you have a large view pane on the left side, and six smaller view panes on the right side, and you set:

- *Orientation* to *Rows*
- *Ordering* to *Top Left — Bottom Right*

then all of the view panes are used to display the alarm (in the large view pane) and five nearby cameras (in the smaller view panes). However if you set *Ordering* to *Bottom Right — Top Left*, then *AlarmManagement* assumes that you want the large pane to be shared with two different alarms.

Parameter	Description
Orientation	Select the direction when placing the alarm and nearby cameras into view panes, either: • *Columns*: Placement is across the columns. • *Rows*: Placement is across the rows. Together, *Orientation* and *Ordering* specify how to arrange items in the *Target Area* view panes.

Parameter	Description
	For example, you might have a 4-by-4 layout of view panes— alarms on the top (row 1), and scratch pads on the bottom (row 4). If you set *Orientation* to *Columns* and *Ordering* to *Top Left – Bottom Right*, then the script puts playback at the top and the live video below it and 2 nearby cameras (if they exist) below them. If you change *Ordering* to *Bottom Right – Top Left*, then the script puts the live video feed on top and the playback below it, and the alarms will start displaying from the right side instead of the left. **Note:** Alarms do not appear in scratch pad view panes (only alarm view panes), and nearby cameras do not appear in alarm view panes (only scratch pads). Therefore if you change the *Orientation* to *Rows*, the layout will not work well because row 3 and 4 do not have alarm view panes, and row 1 and 2 don't have scratch pads.
Target Area	Either click the grid icon to select the window and view pane(s) that will display the item, or enter their identifiers in the text field. By default, the whole primary window (identifier `W1` in the text field) is selected. This is indicated by all view panes in the window selection area being colored red. To deselect the window and select only specific panes, click the *Clear* button and then either click each pane (`w1p1` for example). Alternatively, drag your mouse over an area of the view panes (`w1p1:p4` for example) or click the icon for a type of view pane (`Hotspot` for example). Multiple windows can be selected (`w1p1,W2` for example). This can be useful if your computer is connected to both a desktop monitor (where the primary window is) and a monitor wall (where the secondary window is). If multiple actions of this type use the exact same view pane, then they try to share them.
Playback Offset	Optional. Enter the amount of time in seconds before the alarm event. Video from the camera starts to play at this timestamp, instead of the timestamp when the event was detected. **Note:** Some camera models cannot display video if *Playback Offset* is more than 15 seconds previous. However loops still start at that timestamp when it plays, and simply includes the video when it becomes available.
Playback Length	Enter the amount of time in seconds. Video from the camera plays for this duration before looping.
Include Nearby Cameras	Select either: • *True*: In the remaining view panes (if any), put cameras (if any) that are near the specified camera. • *False*: Don't include nearby cameras.
Ordering	Select the order when placing the alarm and then nearby cameras into view panes, either: • *Top Left — Bottom Right* • *Bottom Right — Top Left* (reverse order)

ClearPaneSet

Empties the specified view panes.

Parameter	Description
Panes	Select which view panes in which window to empty.
Types	Select which type(s) of view pane to empty.

ControlAccess

Controls an ACS element.

This is often useful for doors, with either periodic or manual scripts that lock doors or require a card swipe after business hours.

Parameter	Description
ACS Device	
State	Select the status to set for the ACS device. Currently, ACS doors are supported, with these options: • *Open* (not locked) • *Controlled* (locked, except when temporarily unlocked by another ACS device such as a keypad or card swipe) • *Locked* • *Buzz* (temporarily unlocked)
Buzz Open Time	Enter the amount of time in seconds for the door to be unlocked. If you set *State* to *Buzz*, then the door unlocks for a short time and then returns to *Controlled*. *Buzz Open Time* determines how long the door remains in the *Buzz* state.

DisplayClearAlarmInfoMessage

Clears the alarm view panes that triggered the script. Also displays specified text in the *Info Messages* panel with a checkbox so that users can mark the message as confirmed. Confirmed messages are highlighted in green, and `[CONFIRM]` is added to the end of the message. Unconfirmed messages are highlighted in orange, and after 3 minutes, a clock timed-out icon appears next to the message.

This action is often put after an *AlarmManagement* action.

A maximum of one *AlarmManagement* action can be used in the same script with this action, and *AlarmManagement* must not have the parameter *Cycling* set to *Shift Alarms*.

Parameter	Description
Message	Enter the text of the message.

DisplayInfoMessage

Displays specified text in the *Info Messages* panel.

Parameter	Description
Message	Enter the text of the message.
Level	Select the severity level of the message. If *Confirmation* is *None*, then the severity level determines the color of the text: • *Information*: Text of the message is black. • *Alert*: Text of the message is red. • *Error*: Text of the message is red and bold font. For more information on log severity levels, see the *FortiRecorder Administration Guide*.
Confirmation	Select either: • *None* : Users cannot confirm the message. • *Checkbox*: Include a checkbox next to the message so that users can mark the message as confirmed. Confirmed messages are highlighted in green, and `[CONFIRM]` is added to the end of the message. Unconfirmed messages are highlighted in orange, and after 3 minutes, `[EXPIRED]` is added to the end of the message and a clock timed-out icon appears.

Goto3dMap

Displays a specified 3D map or a sector of it in the currently selected view pane.

Alternatively, see Place3dMapInPane on page 98.

Parameter	Description
Item	Select the name of a 3D map, or a sector in the map.

PlayAudio

Plays a sound.

Parameter	Description
Audio Name	Select the name of a sound to play.
Wait for Audio	Select either: • *True*: Wait for the sound to finish before performing the next action in the

Parameter	Description
	script (if any). • *False*: Don't wait.

Place3dMapInPane

Displays a specified 3D map or a sector of it in the specified view pane.

Alternatively, see Goto3dMap on page 97.

Parameter	Description
Item	Select the name of a 3D map, or a sector in the map.
Panes	Either click the grid icon to select the window and view pane(s) that will display the item, or enter their identifiers in the text field. By default, the whole primary window (identifier `W1` in the text field) is selected. This is indicated by all view panes in the window selection area being colored red. To deselect the window and select only specific panes, click the *Clear* button and then either click each pane (`w1p1` for example). Alternatively, drag your mouse over an area of the view panes (`w1p1:p4` for example) or click the icon for a type of view pane (`Hotspot` for example). Multiple windows can be selected (`w1p1,W2` for example). This can be useful if your computer is connected to both a desktop monitor (where the primary window is) and a monitor wall (where the secondary window is). If multiple actions of this type use the exact same view pane, then they try to share them.

PlaceCameraInPane

Displays a specified camera and optionally nearby cameras in the specified view pane(s).

Alternatively, if you want to use the camera that has triggered an alarm, see AlarmManagement on page 94.

Parameter	Description
Item	Select the name of a camera.
Panes	Either click the grid icon to select the window and view pane(s) that will display the item, or enter their identifiers in the text field. By default, the whole primary window (identifier `W1` in the text field) is selected. This is indicated by all view panes in the window selection area being colored red. To deselect the window and select only specific panes, click the *Clear* button and then either click each pane (`w1p1` for example). Alternatively, drag your mouse over an area of the view panes (`w1p1:p4` for example) or click the icon for a type of view pane (`Hotspot` for example).

Parameter	Description
	Multiple windows can be selected (`w1p1,W2` for example). This can be useful if your computer is connected to both a desktop monitor (where the primary window is) and a monitor wall (where the secondary window is). If multiple actions of this type use the exact same view pane, then they try to share them.
Include Nearby Cameras	Select either: • *True*: In the remaining view panes (if any), put cameras (if any) that are near the specified camera. • *False*: Don't include nearby cameras.

PlaceMediaInPane

Displays a specified image or movie in a specified view pane.

Parameter	Description
Item	Select the name of the image or movie.
Panes	Either click the grid icon to select the window and view pane(s) that will display the item, or enter their identifiers in the text field. By default, the whole primary window (identifier `W1` in the text field) is selected. This is indicated by all view panes in the window selection area being colored red. To deselect the window and select only specific panes, click the *Clear* button and then either click each pane (`w1p1` for example). Alternatively, drag your mouse over an area of the view panes (`w1p1:p4` for example) or click the icon for a type of view pane (`Hotspot` for example). Multiple windows can be selected (`w1p1,W2` for example). This can be useful if your computer is connected to both a desktop monitor (where the primary window is) and a monitor wall (where the secondary window is). If multiple actions of this type use the exact same view pane, then they try to share them.

PlaceSequencerInPanes

Puts a specified sequencer in the specified view pane(s).

Parameter	Description
Item	Select the name of the sequencer.
Panes	Either click the grid icon to select the window and view pane(s) that will display the item, or enter their identifiers in the text field.

Parameter	Description
	By default, the whole primary window (identifier `W1` in the text field) is selected. This is indicated by all view panes in the window selection area being colored red. To deselect the window and select only specific panes, click the *Clear* button and then either click each pane (`w1p1` for example). Alternatively, drag your mouse over an area of the view panes (`w1p1:p4` for example) or click the icon for a type of view pane (`Hotspot` for example). Multiple windows can be selected (`w1p1,W2` for example). This can be useful if your computer is connected to both a desktop monitor (where the primary window is) and a monitor wall (where the secondary window is). If multiple actions of this type use the exact same view pane, then they try to share them.
Fill All Panes	Select either: • *True*: In the remaining view panes (if any), fill in all panes instead of just one view pane. • *False*: Don't use all view panes.

PTZ_To_Preset

Tells a specific camera to go to a predefined PTZ setting.

Parameter	Description
PTZ Camera	Select the name of the camera.
Preset	Enter either the name or index number of a PTZ preset.

Wait

Wait for a specified amount of time before continuing with the next action in the script (if any).

This is often useful in making scripts for a PTZ tour with a *Periodic* trigger type.

Don't use a long wait time if the script type is *Event Listener* or *Manual*.Alarms can be triggered at short intervals, and users can quickly click the script's button repeatedly, too.Scripts cannot start while waiting, however. This causes error messages to appear in the in the *Info Messages* panel: `Unable to start script <script-name> it is currently running.`

Parameter	Description
Sleep time	Enter the number of seconds to wait.

Access control system integration

FortiRecorder can connect to a Kantec EntraPass access control system (ACS) to generate events, edit the device name, and display the devices managed by EntraPass. If your ACS devices do not appear in *ACS* > *Configuration* > *Source Map* on FortiRecorder, then you might need to check if they have been disabled on FortiRecorder.

Manual control of ACS doors

You can manually change the status of ACS door devices to locked, controlled, unlocked, or buzzed. To do this, right-click on the device in the device list and then, for example, select *Actions* >*Set to Unlocked*.

You can also use a script to control ACS doors.

ACS events and alarms

When an ACS event is sent to FortiCentral,the event appears in any event managers that are listening. Most ACS events do not have any extra data, but door unlocking events will contain the name of the person who unlocked the door.

Appendix: Timeline indicators

In the timeline, the color of a time range and a line or square that marks an event indicates the status of the video recording or type, such as a motion detection alarm. For some items such as annotations, if you hover your mouse cursor over it, a tooltip shows more details.

Many types of events can occur at the same time. To be able to show all of them at the same timestamp on the timeline, many indicators cover only part of the row. They are stacked vertically. The table below describes the color, shape, and vertical alignment.

Recording events

Event Name & Color	Indicator Shape	Vertical Position in Row	Description
RecordingScheduled	time range	full	Scheduled continuous recording by a camera. Annotations and most types of events do not interrupt recording.
RecordingHighQuality	time range	full	Temporary recording made by FortiRecorder.
RecordingScheduledEdge	time range	middle	Scheduled recording that has not yet been downloaded from the camera ("edge") to FortiRecorder.
AlarmMotionDetection	time range	top	Recording triggered by motion detection alarm on the camera.
AlarmMotionDetectionZP	time range	full	Recording triggered by motion detection alarm on the camera. Unlike AlarmMotionDetection, this event type does not make an additional, separate video clip file for the motion. This reduces FortiRecorder disk space and CPU usage ("zero penalty").
RecordingAlarmEdge	time range	middle	Recording triggered by an alarm that has not yet been downloaded from the camera ("edge") to FortiRecorder.
AlarmExactMarker	line	full	Time when the event started in a video clip, as determined by the camera.
RecordingLocal	time range	middle	Recording triggered while the camera is in manual recording mode.
TimeLineInformation	line	middle	Annotation of the video.

System events

Event Name & Color	Indicator Shape	Vertical Alignment in Row	Description
SystemAction	line	full	FortiRecorder system event occurred that might interrupt video recording, such as a reboot.
CameraAction	line	full	Camera event occurred that might interrupt video recording, such as a reboot.
AbortFailure	time range	middle	FortiCentral could not get events from FortiRecorder after multiple tries.

Face recognition and object detection events

Event Name & Color	Indicator Shape	Vertical Alignment in Row	Description
ObjectDetection	square	bottom	Object was detected.
ObjectDetectionBad	square	bottom	Object of weapon type was detected.
FaceQueryNeutral	square	top	Unknown person was detected.
FaceDetection	square	top	Known person was detected.
FaceDetectionBad	square	top	Known prohibited person or someone with expired access was detected.
MaskDetection	square	middle	Masked person was detected.
MaskDetectionBad	square	middle	Unmasked person was detected.

Uncommon events

Event Name & Color	Indicator Shape	Vertical Alignment in Row	Description
RecordingLowQuality	time range	full	Reserved. Not used yet.
RecordingUnknown	time range	full	Error when reading a scheduled video recording. If this persists, please contact Fortinet Support.

Event Name & Color	Indicator Shape	Vertical Alignment in Row	Description
AlarmUnknown	time range	top	Error when reading an alarm. If this persists, please contact Fortinet Support.
AlarmAudio	time range	top	Alarm recording triggered by a camera's microphone sensor. Only occurs on camera models that support it.
AlarmDigital_IO	time range	top	Alarm recording triggered by the camera's digital IO connection. Only occurs on camera models that support it.
AlarmMotionJpeg	time range	full	Alarm recoding triggered by the camera's motion detection. Only occurs on camera models that support it. Unlike AlarmMotionDetection, this event does not result in an MP4 video clip of the motion. Instead the camera takes a quick series of JPG snapshot images.
AlarmTampered	square	bottom	Camera was tampered with in a method that does not match any other alarm type. Only occurs on camera models that support tamper detection. Cause varies by the camera model.
AlarmPOV_Changed	square	bottom	Camera orientation (point of view) was unexpectedly changed. This can indicate tampering such as aiming the camera away from the region of interest. Only occurs on camera models that support tamper detection.
AlarmContrast_Changed	square	bottom	Colors in the video suddenly went black or white, making any objects or people hard to see. This can indicate tampering such as covering the camera or shining a light directly into it. Only occurs on camera models that support tamper detection.
AlarmNo_Video	square	bottom	Video stream from camera unexpectedly stopped. This can indicate tampering with camera hardware. Only occurs on camera models that support tamper detection.
AlarmLost_Network	square	bottom	Network connection with camera unexpectedly failed. This can indicate tampering with the network connection of the camera.

Event Name & Color	Indicator Shape	Vertical Alignment in Row	Description
Transaction	square	middle	FortiRecorder received a point-of-sale (POS) cashier transaction event that was linked to a camera recording.
PostUnknown	square	middle	Error when reading unknown events. If this persists, please contact Fortinet Support.
QueryResult	square	middle	Some types of client-side events.

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