

# Frigate NVR

The goal with a Network Video Recorder (NVR) is to free yourself from cloud subscriptions for security cameras. You can (and probably should) run a standalone NVR, but in this guide we'll setup Frigate NVR as a Home Assistant Add-On.

## Equipment

To run an NVR alongside Home Assistant you will likely need more CPU power than a Raspberry Pi provides, but most mini PCs should have enough. You can always try it out and find out.

If you plan to use any detection features at all (object tracking, notifications for specific objects) then you will need some sort of hardware acceleration. The [Google Coral USB Accelerator](#) device is recommended and is what we'll cover in this guide.

The [Frigate recommended hardware guide](#) has more details on both hardware acceleration and CPU recommendations.

## Cameras

See list of cameras I've tested at the bottom

You will need cameras that support RTSP and optionally ONVIF. ONVIF is needed for PTC cameras if you want Frigate to be able to control their movement. You also ideally want cameras that can output 2 streams, 1 high and 1 low resolution. High resolution will be used for viewing and the lower resolution for detection tasks.

In this guide I will be using a [Tapo C210](#) camera which can sometimes be found on sale under \$20 and supports Pan & Tilt as well as 2K resolution. Tapo cameras support RTSP and ONVIF as well as 2 different quality streams. Unfortunately they also require the Tapo app to perform the initial setup. I will be searching for other cameras that can be used entirely offline in the future and update this guide.

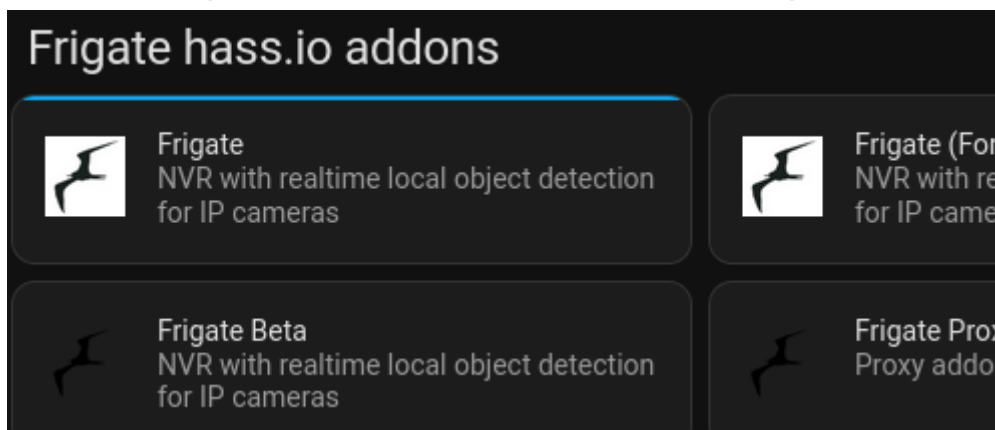
## Setup Cameras

The first step is to setup your cameras and enable RTSP. This will vary based on the brand.

- Be sure to set a secure random username and password for your cameras when enabling RTSP
- In your router, reserve the camera's IP address so that it won't change on you. **Do not** expose the camera to the internet.
- Test your camera's RTSP stream in something like VLC. The exact string will differ based on the brand, but common examples are:
  - Tapo: `rtsp://username:password192.168.0.101:554/stream1`
  - Using `stream2` will load the low quality 720p stream.
- Make sure your RTSP stream is working before moving forward

## Install Frigate

- In HA go to Settings > Add-Ons > Add-On Store
- In the upper right click the 3 dots, select Repositories.
  - Enter `https://github.com/blakeblackshear/frigate-hass-addons` and click **Add**
- Now under the **Frigate haas.io addons** section, select **Frigate** and click **Install**

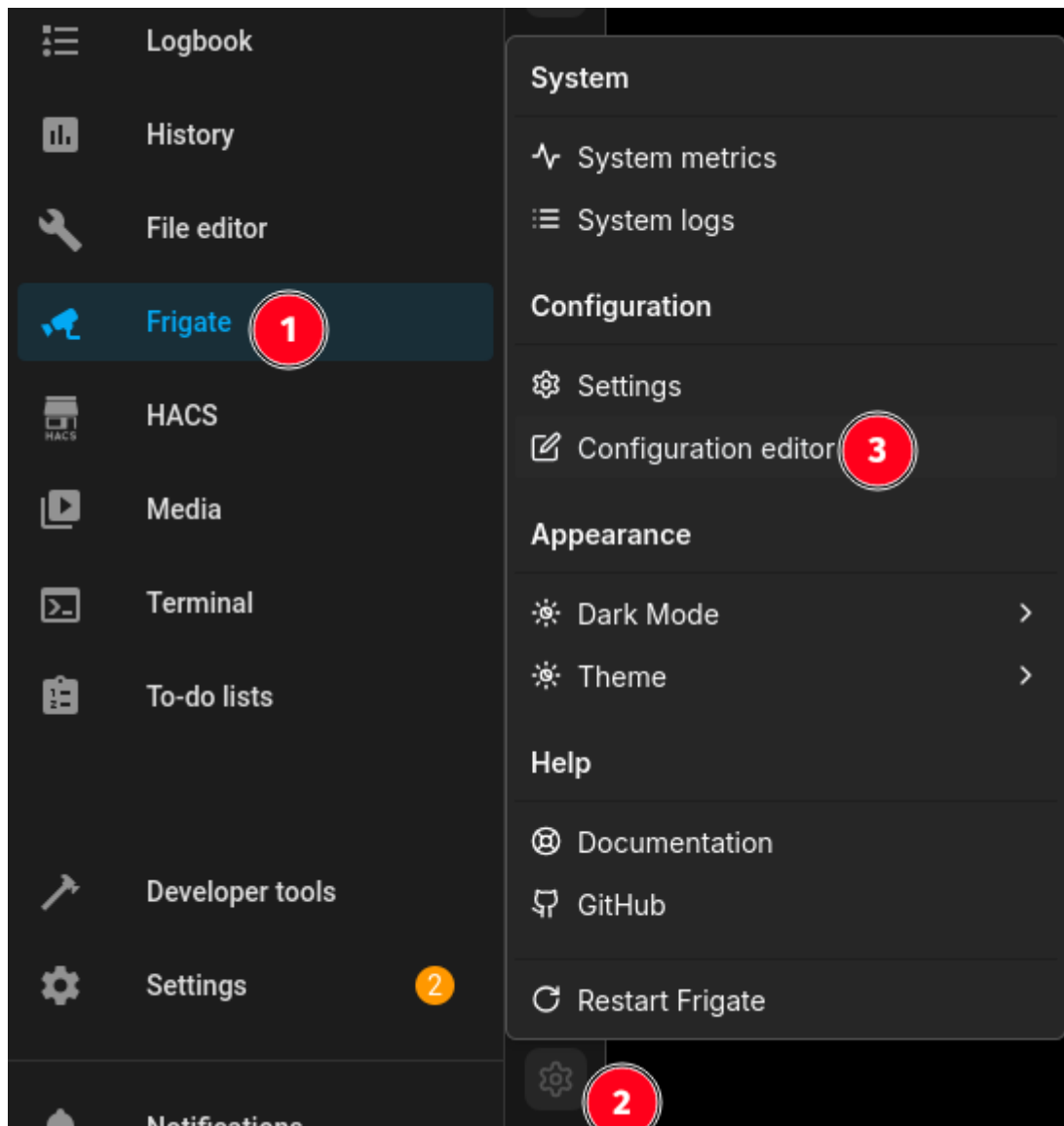


- Frigate (Full Access) is another option that can be used if the regular Frigate is not able to properly connect to your devices. It is not recommended unless absolutely needed since it has unrestricted access to your computer. Install the regular Frigate for now and you can always install Full Access later without requiring any additional configuration. Unfortunately they are not clear about exactly what reasons the Full Access version may be needed for.
- Enable the **Start on boot**, **Watchdog**, and **Show in sidebar** options.
- Click Start to start Frigate

## Add-On Configuration

We now need to update the configuration file for Frigate to tell it about any cameras. To do that you need a way to upload or edit files in Home Assistant. If you have a favorite way, use that. For this demo I will use the File Editor built into Frigate itself.

- From the Frigate menu option, click the gear icon at the bottom of the page and then select **Configuration editor**



- The default Frigate config file will be displayed in YAML format. We need to add our first camera to it.
- Under the **cameras:** section lets add our camera:

### Expand to see frigate.yaml

Keep any code above and below the cameras section that is already in the config file

```
cameras:
  C210: # <----- Name your camera
    enabled: true
    ffmpeg:
      inputs:
        - path: rtsp://username:password@192.168.0.101:554/stream1 # The High Quality stream you want to
          use for recording
      roles:
```

- record

- path: rtsp://username:password@192.168.0.101:554/stream2 # The Lower Quality stream you want to use for detection

roles:

- detect

detect:

enabled: false # Disable until you have a working camera feed and hardware acceleration

width: 1280 # The resolution of the detection camera feed.

height: 720

fps: 5 # This can be raised later if we have the processing power

record:

enabled: false

retain:

days: 0 # The number of days a recording will be kept for after a motion is detected

mode: motion

events:

retain:

default: 30 # The event data will be kept for 1 day. After this period, the event data will be automatically deleted.

mode: motion

# Leave out this section if camera is not PTZ or does not support ONVIF

onvif:

host: 192.168.0.101

port: 2020 # Port may differ for your camera brand!

user: username

password: password

autotracking:

enabled: false # Disable until you have hardware acceleration

calibrate\_on\_startup: true

zooming: disabled # Can enable if camera supports Zoom

track:

- person

objects:

track:

- person

- car

- Click the **Save & Restart** button



- If Frigate fails to restart due to an error in your configuration file, in HA go to: **Settings > Add-Ons > Frigate > Log** to see the error message. Be very careful about your file formatting and spacing. Indentation and whitespaces matter in YML files.
- Going back to **Frigate** from the HA side menu, you should now see your camera feed. Clicking the camera feed opens it in full view and if you enabled ONVIF will also show your PTZ controls



Additional Setup and usage instructions are coming soon. In the meantime go ahead and setup more cameras and play around with Frigate. You can try enabling detection in your Frigate config file, but without Hardware acceleration it may bring everything to a grinding halt.

## Notifications & MQTT Integration

**Coming Soon**, detailed instructions on setting up Notifications for object detection and integrating with the rest of Home Assistant

## Motion Tracking

**Coming Soon**, detailed instructions on setting up motion tracking and other features

# Cameras Tested

Camera Model	Features	Works?	Notes
<a href="#">Tapo C210</a>	2k, Pan & Tilt	✓	Internet Required for Setup
Tapo C110	2k, Cheap	X	Internet Required for Setup RTSP not stable
Wyze	Cheap	X	No RTSP Support. <a href="#">Hacky workaround available</a>

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