What is WebRTC end-to-end video streaming?

WebRTC is one type of technology that Alarm.com uses to establish a connection between a camera and a customer device. It is supported by all major browsers and is widely used in real-time communication applications, including Google Meet and Microsoft Teams.

Compatibility requirements

Camera model	Firmware version requirement
ADC-V516	-
ADC-V523/523X	Using the Alarm.com customer website: • 0.6.7.852+ Using the Alarm.com app: • 0.6.6.770+
ADC-V530	-
ADC-V716	-
ADC-V723/723X	Using the Alarm.com customer website: • 0.6.7.852+ Using the Alarm.com app: • 0.6.6.770+

Camera model	Firmware version requirement
ADC-V724/724X	Using the Alarm.com customer website: • 0.6.7.852+ Using the Alarm.com app: • 0.6.6.770+
ADC-V729/V729AC/VC729P	Using the Alarm.com customer website: • 0.6.7.852+ Using the Alarm.com app: • 0.6.6.770+
ADC-V730/VC730P	-
ADC-V731B*	-
ADC-VC727P	Using the Alarm.com customer website: • 0.6.7.852+ Using the Alarm.com app: • 0.6.6.770+
ADC-VC728PF	Using the Alarm.com customer website: • 0.6.7.852+ Using the Alarm.com app: • 0.6.6.770+
ADC-VC7398PA	-
ADC-VC827P	-

Camera model	Firmware version requirement
ADC-VC8295P	-
ADC-VC838PF	Using the Alarm.com customer website: • 0.6.7.852+ Using the Alarm.com app: • 0.6.6.770+
ADC-VC847PF	Using the Alarm.com customer website: • 0.6.7.852+ Using the Alarm.com app: • 0.6.6.770+
ADC-VC8498PA	-
ADC-VC8498P	-
ADC-VDB775	-
ADC-VDB781B**	-

***Note**: To conserve battery, the ADC-V731B uses a Relayed connection that times out after 15 minutes regardless of the settings used.

****Note**: To conserve battery, the ADC-VDB781B uses a Direct connection that times out after 15 minutes regardless of the settings used.

WebRTC connection types

There are three different types of WebRTC connections used with Alarm.com devices, depending on the network conditions between the camera and the customer's device. The types of connection are as follows (in the order in which they are attempted):

1. WebRTC Direct connection
2. WebRTC Relayed connection
3. WebRTC Proxy connection

Each type of WebRTC connection provides a slightly different customer experience which is described in the following sections. Understanding how each connection type affects the customer experience is important.

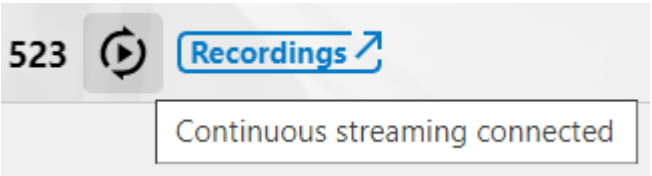
Note: There are different icons for each streaming method in the Alarm.com customer website, and it may take a few minutes to configure the WebRTC live stream and for the icon to appear. The WebRTC streaming method icon does not appear when using *Log In with Access* without video access.

WebRTC Direct connection

WebRTC Direct connection is a peer-to-peer connection in which a direct connection has been established between a camera and a customer's viewing device (e.g., mobile phone or laptop).

Because the streams don't have to go through an intermediary server, this type of connection allows users to stream for an unlimited amount of time. In other words, the streams won't time out unless an adverse network condition occurs and the connection is interrupted. This type of connection is attempted first and is successful roughly 60-70% of the time. A Direct connection is most likely to succeed in simple network environments, such as residential homes.

When WebRTC Direct streaming is active, will appear on the camera live stream. Mouse over the icon to display the message: *Continuous streaming connected*.



Topology limitations

Connecting Alarm.com cameras downstream from a Stream Video Recorder (i.e., connected through the PoE ports or *Camera* port) may impact the ability to achieve a WebRTC Direct connection in certain configurations. If the cameras are connected upstream from the SVR (i.e., on the same network), they should be capable of maintaining a WebRTC Direct connection. To attempt to force a WebRTC Direct connection, proceed to To force a WebRTC Direct connection stream.

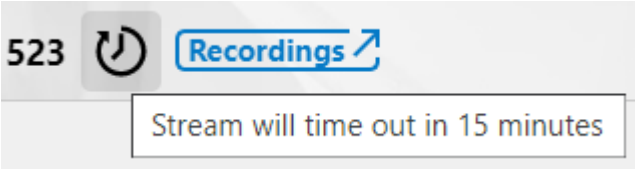
Compatible third-party cameras should be able to achieve WebRTC Direct streaming whether they are installed downstream or upstream from the Stream Video Recorder.

WebRTC Relayed connection

A WebRTC Relayed connection is used when a Direct connection between the camera and the customer's viewing device (e.g., mobile phone or laptop) cannot be established. This typically occurs due to network conditions such as firewalls, certain Network Address Translation (NAT) configurations, or other connectivity restrictions. To resolve this, WebRTC will relay the video and audio stream through an intermediary server on a public network. With this method, a time out period of 15 minutes is enforced for live view. This type of streaming is attempted second and makes up

roughly 30% of total streams.

When WebRTC Relayed connection streaming is active, will appear on the camera live stream. Mouse over the icon to display the message, *Stream will time out in 15 minutes*.

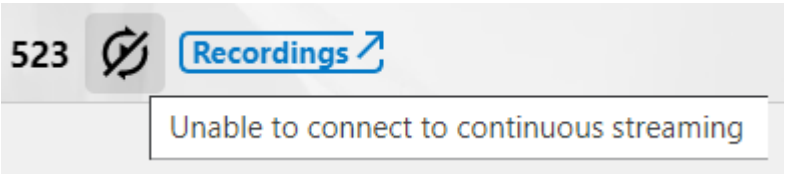


WebRTC Proxy connection

WebRTC Proxy connection means that attempts to establish a Direct or Relayed connection have failed. Like a Relayed connection, a Proxy connection relays media through an intermediary server and has a time out period of 3 minutes. This type of connection accounts for roughly 5% of total streams.

Currently, customers do not have audio access to their camera while on a Proxy connection. However, Remote Video Monitoring (RVM) operators have audio access and can have Two-Way Audio conversations.

For cameras that support WebRTC Direct or Relayed connections but are streaming over WebRTC Proxy, will appear in the feed. Mouse over the icon to display the message, *Unable to connect to continuous streaming*.



For cameras that do not support WebRTC Direct or Relayed connections, and can only stream over proxy, no icon will appear on the stream.



Extend streaming for Relayed and Proxy connections using the Alarm.com customer website

Users will be prompted to keep watching streams 30 seconds before Relayed and Proxy connections reach their time out period when using the Alarm.com customer website. If they click **Keep Watching**, the stream will continue uninterrupted, and the time out period will be reset based on the connection type (i.e., Proxy connections will reset for 3 minutes and Relayed connections will reset for 15 minutes).

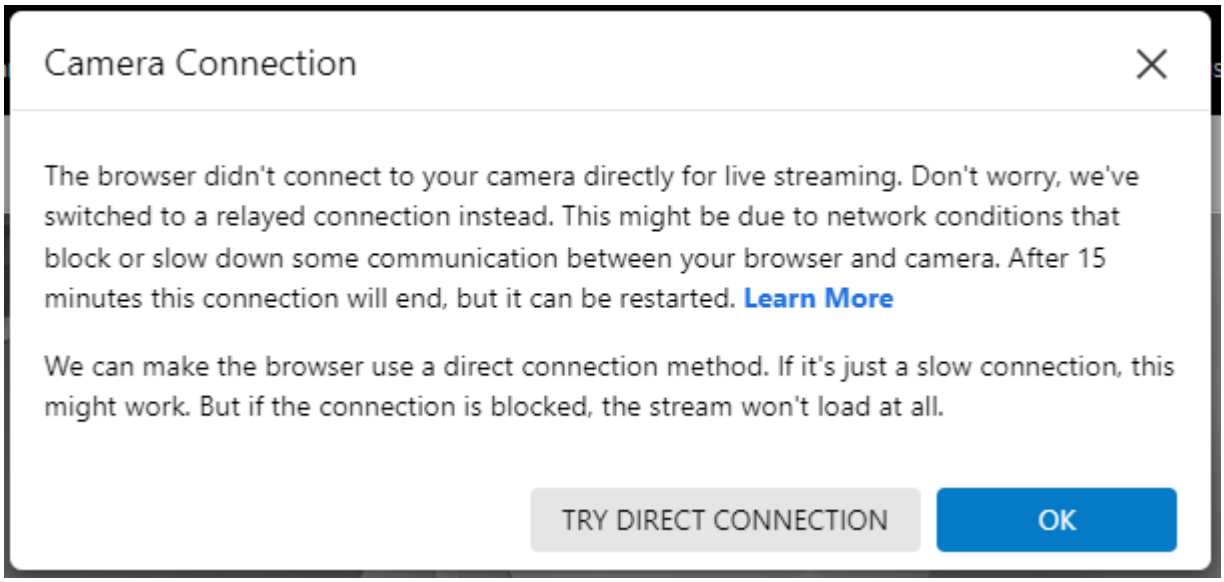
Note: The ADC-VDB781B will time out after 15 minutes even when **Keep Watching** is clicked for other devices in the live view.

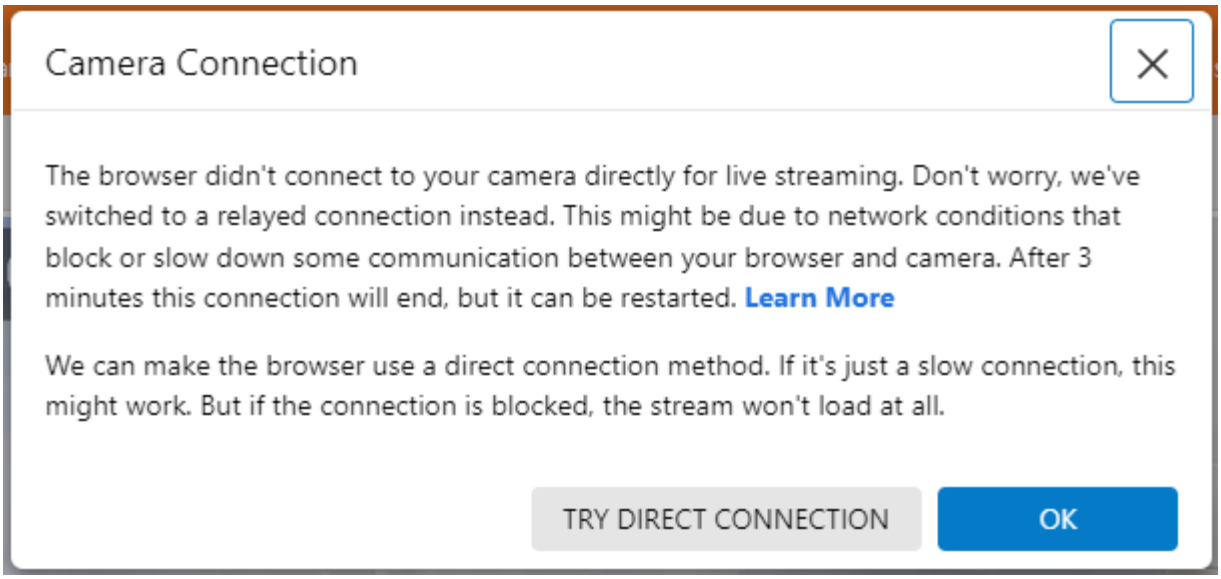
Change connection types

In instances where a Direct connection is desired and was not initially successful, customers can attempt to force a Direct connection.

To force a WebRTC Direct connection stream:

1. Log in to the Alarm.com customer website.
2. Click **Video**.
3. On the *Live Video* or *SVR Timeline* pages, mouse over a camera live stream.
4. Click on the stream-type indicator icon or .
5. In *Camera Connection*, click **Try Direct Connection**.




Camera Connection
The browser didn't connect to your camera directly for live streaming. Don't worry, we've switched to a relayed connection instead. This might be due to network conditions that block or slow down some communication between your browser and camera. After 3 minutes this connection will end, but it can be restarted. Learn More
We can make the browser use a direct connection method. If it's just a slow connection, this might work. But if the connection is blocked, the stream won't load at all.
TRY DIRECT CONNECTION
OK