



Broadridge®

Q4



VSM System Requirements and Compatibility Overview

Version 2.1

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Browser and Device Compatibility

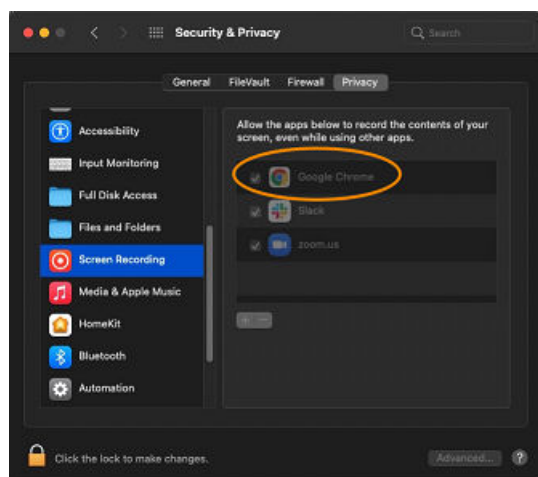
It is required that Admin Participants use only [Chrome](#) or [Edge](#). The following browsers relate to the Attendee experience.

Table 1. Browser Compatibility

Browser	Platform Support
Chrome ^{ab}	Latest Version
Edge	Latest Version
Safari ^c	Latest Version
Firefox	Latest Version
Internet Explorer	Not Supported

^aFor Chrome users, if using an Incognito window then the option to "Block third-party cookies" must be toggled off to ensure features, such as Voting, function appropriately.

^bFor Chrome users on Mac, go to System Preferences > Security & Privacy > Privacy > Screen Recording, and make sure it is checked and added in Chrome. Restart the browser.



^cFor Safari users, navigate to Preferences > Privacy and ensure "Prevent cross-site tracking" is unchecked to ensure features, such as Voting, function appropriately.

Table 2. Device Compatibility

Device	Admin Console	Attendee Console
Windows Desktop/Laptop	Supported	Supported
Mac Desktop/Laptop	Supported	Supported
Surface Desktop/Laptop	Not Supported	Supported
Tablet (Windows or Android)	Not Supported	Supported
iPad (iOS)	Not Supported	Supported
Mobile (Android)	Not Supported	Supported
Mobile (iOS)	Not Supported	Supported

Network and Hardware Requirements

Below is a list of minimum network and hardware requirements based on user type.

Table 3. Network Requirements

Network Requirements	Host/Participant (Q4 and Company Staff)	Attendee (Shareholder and Guest)
Browser	Chrome or Edge	Chrome, Edge, Safari, or Firefox
Internet Speed	Minimum 50 Mbps/down and 20 Mbps/up	Minimum 10 Mbps/down
Internet Network	Do not use a VPN ^a as the quality cannot be guaranteed (Strongly Recommended)	-
Network Usage	<p>Prioritize bandwidth</p> <p>No streaming or downloading other data on the whole network</p> <p>Shut down other apps/extensions using audio/video</p>	No streaming or downloading other data

^aUsing a VPN could prevent participant video streams from appearing in the Admin Console. If this happens, reboot your computer, and turn off the VPN.

Table 4. Hardware Requirements

Hardware Requirements	Host/Participant (Q4 and Company Staff)	Attendee (Shareholder and Guest)
Processor	Minimum Quad-core 2GHz or higher (Intel i5/i7 or AMD equivalent)	-
RAM	Minimum 16GB	-
Wi-Fi or Wired ^a Connection	<p>Wired (Strongly Recommended)</p> <p>Quality cannot be guaranteed on Wi-Fi</p>	Either
Screen Size	Minimum 1280 x 720 px	
Wired or Wireless Headset	Wired (Recommended)	Not Needed

^aSome computers might require the Ethernet connection to be selected manually, otherwise, the Wi-Fi will remain on, which could decrease the bandwidth.

Whitelist/Firewall Requirements

The following list of requirements must be met to ensure the best event viewing and management experience:

- Open TCP port 443 (Recommended for Twilio, Callstats, Pendo, LaunchDarkly, Sentry, and Q4 Inc domains).
- Open UDP port 3478 (Recommended).
- Open UDP ports 1025 to 65535 (Recommended for Tokbox and OpenTok).
- If your internal network environment requires you to add each connecting IP to an allow list, we suggest hosting a server outside your network (e.g., in a network DMZ) to proxy requests from our third-party vendors into your internal network.

The following domains should be whitelisted to avoid disruptions during a live event:

- *.tokbox.com
- *.opentok.com
- *.events.q4inc.com
- *.twilio.com
- *.callstats.io
- *.pendo.io
- *.launchdarkly.com
- *.sentry.io
- *.q4inc.com (email address)



CAUTION

Features on the Events Platform, Admin Console, and Attendee Console may not function if some of the above domains are not whitelisted. Therefore, it is crucial that **ALL** domains are whitelisted. Moreover, a number of the whitelisted domains have wildcards and, therefore, the domain can be dynamic. Also, note that IP address whitelisting is not supported by Q4 Inc.

If email invites are not coming through, it could be because the Company is blocking Sendgrid requests. To ensure the delivery of invite emails, whitelist our email host "mail-relay.events.q4inc.com" on your email relay/filter.

Whitelisting/Firewall FAQ

1. **Is it necessary to have all UDP ports (as mentioned above) open and why are they recommended for the best viewing experience?**

The VSM application relies on WebRTC to transmit audio/video, and UDP ports are utilized to efficiently perform all the necessary handshakes with the servers. The minimum recommendation is UDP 3478, but if more ports are open, then the application

can more efficiently resolve all the necessary connections. If allowing UDP ports, including UDP 3478, is restricted, it is possible to fully rely on the TCP protocol.

2. **What is each service used for that is required to be Whitelisted?**

- Tokbox.com and Opentok.com
 - Service that enables the streaming of audio and video.
- Events.q4inc.com
 - The domain for the Q4 VSM product.
- Twilio.com
 - Service that enables the usage of chat and PSTN connections.
- Callstats.io
 - Service that enables the monitoring of call quality (packet loss, latency, and connection quality).
- Pendo.io
 - Analytics and usage tracking.
- Launchdarkly.com
 - Service that enables the toggling of flags to allow new features to be used outside of a release cycle.
- Sentry.io
 - Service that enables the logging of events and errors. Used to investigate any potential issues that may occur.

3. **What are other subdomains used with the Q4 VSM platform?**

- events.q4inc.com
- auth0.q4inc.com
- serverless-api.events.q4inc.com
- api.events.q4inc.com
- recording.events.q4inc.com
- docs.events.q4inc.com
- static.events.q4inc.com

4. **What direction should the whitelisted items be, inbound/ingress or outbound/egress?**

All ports should be open outbound.