IntPowers

TECHNICAL DOCUMENT · CONNECTIVITY

Network connectivity requirements

Widgets, video kiosks, apps and Web ACD agents

Video RTC
WebRTC video calls

Web ACD
Agent desktop

Customer: **[CUSTOMER]**

What each endpoint needs

There are two types of connection: signaling and media. Users only need RTC; agents also need ACD.

RTC

Video call signaling and media through the video gateway.

ICE

STUN/TURN servers to traverse NAT and firewalls.

ACD

Call distribution and voice over IP for the agent desktop.

ENDPOINT	WHERE IT IS USED	RTC	ICE	ACD
Web widgets	Click-to-Call and Click-to-Video on the customer website	Yes	Yes	—
Video kiosks	Touch or QR kiosks in branches, hotels and stores	Yes	Yes	—
Mobile apps	Applications built with the Mobile SDK	Yes	Yes	—
Web ACD agents	Agent desktop in the browser	Yes	Yes	Yes

Checklist

Five steps to get the customer network ready before go-live.

1. **Allow the services**
   Open the RTC and ICE services on the network of each endpoint and, for agents, ACD.
2. **Check the edge, if applicable**
   With the Global Low Latency edge, confirm the applicable destinations with IntPowers.
3. **Ensure bandwidth**
   Meet the minimum bandwidth and the network quality thresholds.
4. **Apply best practices**
   TLS and SRTP encryption, RTP ranges and recommendations for agents.
5. **Validate the connection**
   Test from the same computer and network with Video RTC Tester.

Service details

Customer: **[CUSTOMER]**

Network destinations: see slide 8

Tester: **[TESTER URL]**

Email: support@ivrpowers.com

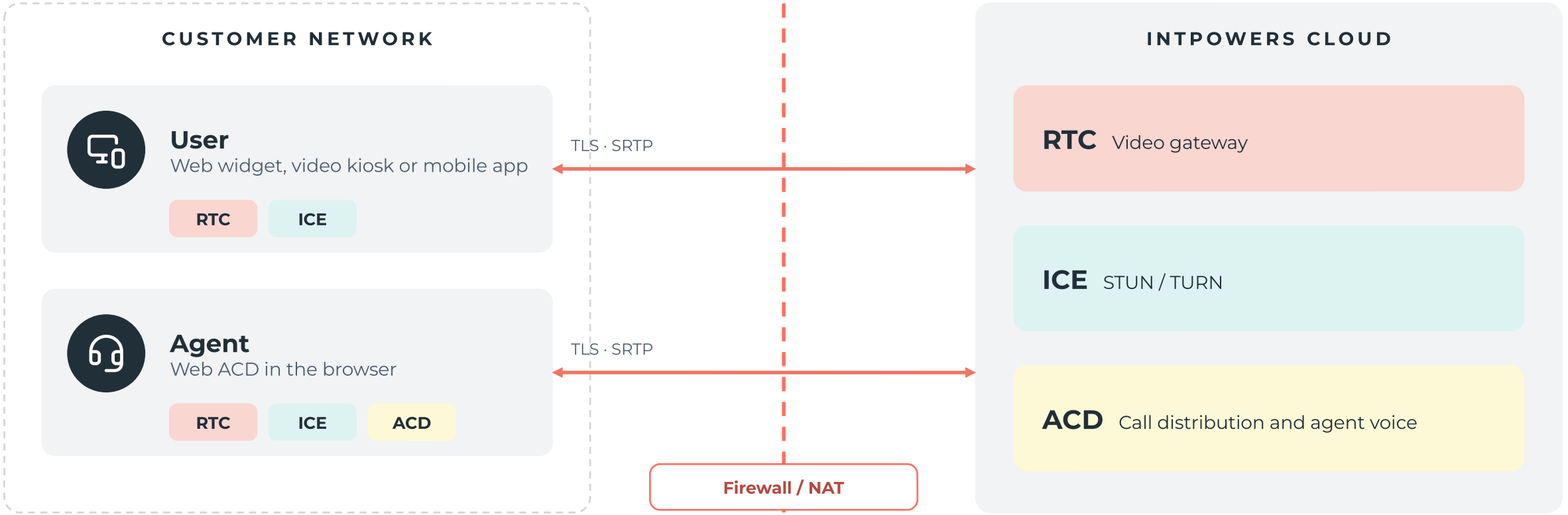
Help Center: support.ivrpowers.com

Phone ES: +34 911 599 846

Phone US: +1 786 329 7177

How each endpoint connects

Signaling is encrypted with TLS and audio and video media with SRTP.



The tags on each endpoint show the services it needs. ICE (STUN/TURN) traverses NAT when a direct media path is not possible.

Web ACD agents: RTC, ICE and ACD

Agents need all three connections, to the destinations listed on slide 8.

DESTINATION	PROTOCOL	PORTS	USE
RTC	TCP	80 · 443	HTTP (redirected to HTTPS) · HTTPS
	TCP	8989	WebSocket to the video gateway (recommended)
	TCP	8089	HTTPS-API to the video gateway (alternative)
	UDP	19099–20099	RTP video media [1]
ICE	TCP · UDP	80 · 443	STUN/TURN (443 over TLS)
	UDP	19099–20099	RTP media [1]
ACD	TCP	80 · 443	HTTP (redirected to HTTPS) · HTTPS
	TCP	8089	WebSocket for voice over IP (required)
	UDP	10000–20000	RTP audio media [1]

[1] The UDP ranges for ACD (10000–20000) and RTC (19099–20099) overlap: a single UDP 10000–20099 rule covers both. Media can be relayed through STUN/TURN to traverse NAT, but this is not recommended for agents.

Widgets, video kiosks and apps: RTC and ICE

Users only need RTC and ICE. On home or mobile networks, no configuration is usually required.

DESTINATION	PROTOCOL	PORTS	USE
RTC	TCP	80 · 443	HTTP (redirected to HTTPS) · HTTPS
	TCP	8989	WebSocket to the video gateway (recommended)
	TCP	8089	HTTPS-API to the video gateway (alternative)
	UDP	19099–20099	RTP audio and video media [1]
ICE	TCP · UDP	80 · 443	STUN/TURN (443 over TLS)
	UDP	19099–20099	RTP media [1]

Video kiosks on corporate, hotel or shopping mall networks: validate these ports with the site network manager before installation.

[1] With a restrictive firewall, the RTP range can be skipped: media is then relayed through STUN/TURN on ports 80 and 443.

Bandwidth and network quality

Values per participant and per direction. The codec adapts to the available network at all times.

Minimum bandwidth

MODE	UPLOAD	DOWNLOAD	CODEC
Audio only	40 kbps	40 kbps	Opus
Audio and video	80 kbps	80 kbps	Opus · VP8

Quality thresholds

PARAMETER	MAXIMUM
Round-trip latency (RTT)	< 300 ms
Delay variation (jitter)	< 50 ms
Packet loss	< 1.5%

Recommended for good video quality

- 512 kbps upload and download per endpoint. Minimum values allow the call, not HD quality.
- Agents: wired connection and no other heavy downloads during the shift.

Destinations to allow and best practices

IntPowers provides the destinations for each service. They are filled in for each customer before this document is sent.

DESTINATION	DOMAIN OR IP ADDRESS	PORTS
RTC	**[RTC DESTINATION]**	Slides 5 and 6
ICE (STUN/TURN)	**[ICE DESTINATION]**	Slides 5 and 6
ACD	**[ACD DESTINATION]**	Slide 5
Global Low Latency edge	**[EDGE DESTINATION · IF APPLICABLE]**	Per service

If the service does not use the Global Low Latency edge, remove that row.

Best practices

- Signaling encrypted with TLS and media encrypted with SRTP.
- Allow the RTP range on agent workstations: relaying their media through STUN/TURN is not recommended.
- With a restrictive firewall, users can work through STUN/TURN on 80 and 443 only.
- Keep TCP 8089 open on agent workstations: Web ACD needs it for voice.

Check before you start

Always test from the same computer and network that will be used in production.

1

Test with Video RTC Tester

Open **[TESTER URL]** in the workstation browser and check that every test completes.

2

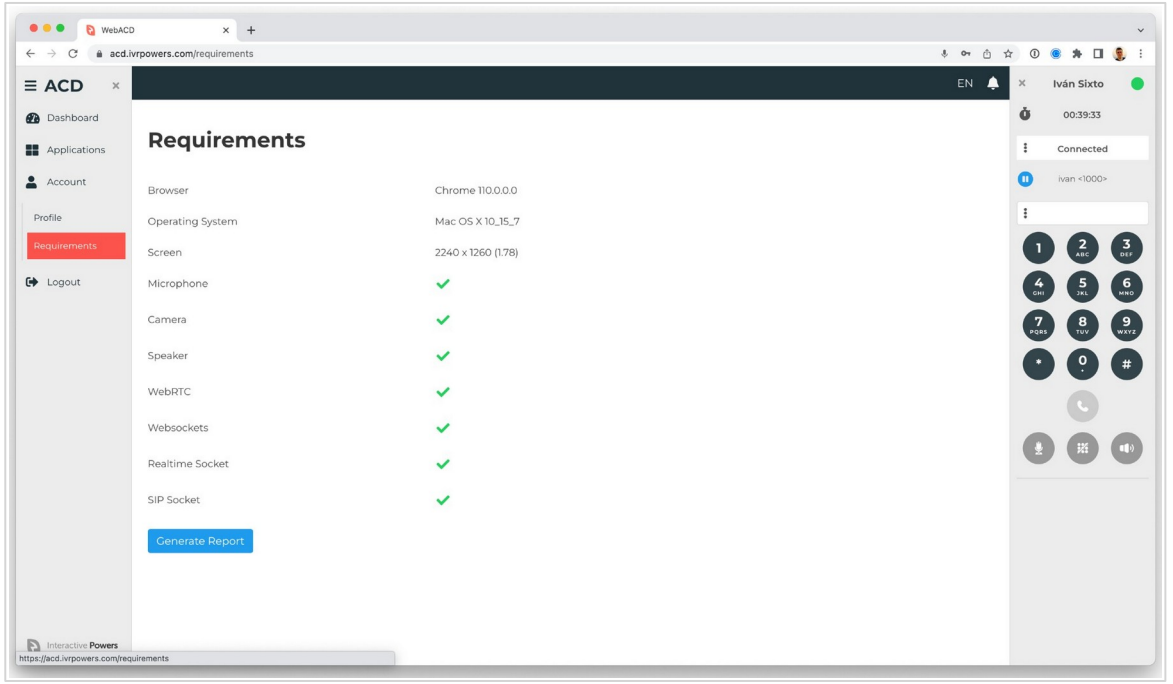
Agents: check Requirements in Web ACD

In Account › Requirements, every item must be green, including the real-time and SIP connections.

3

If anything fails, send the report

Click "Generate Report" and send the file to support with the tester results.



Web ACD · Account › Requirements

SUPPORT AND DOCUMENTATION

Need help?

Technical support

Email: support@ivrpowers.com
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Settings and troubleshooting

Agent guide with troubleshooting by symptom and a network appendix.

Web ACD user guide

Screens and features of the agent desktop.