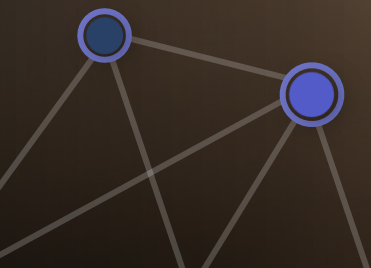




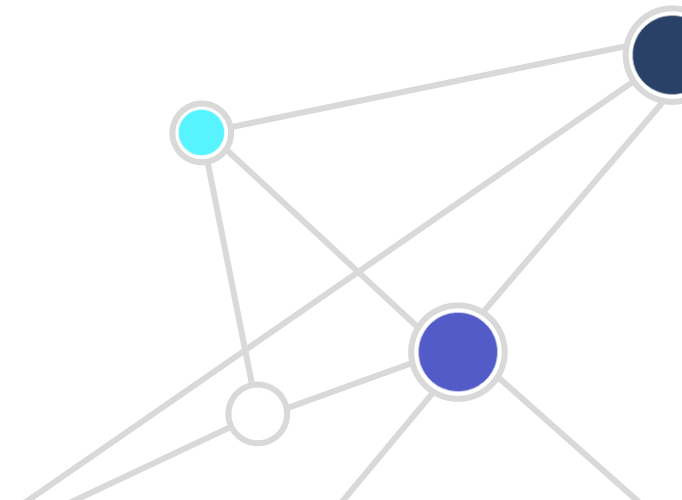
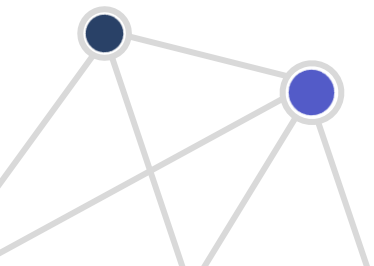
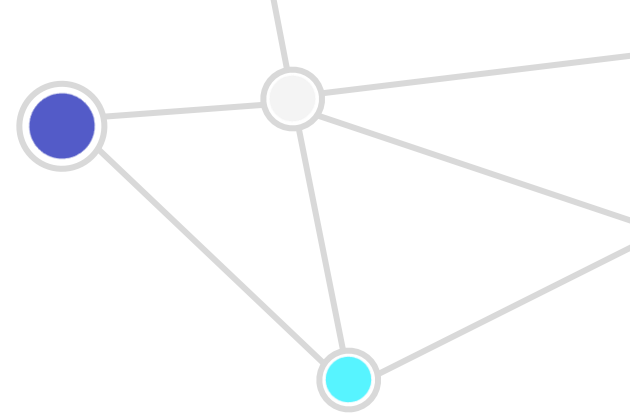
# Understanding Call Quality Dashboard

Matt Sims and Duane Friedlander  
Modern Communications CSMs  
Microsoft Health and Life Sciences  
Creator – Matt Wade

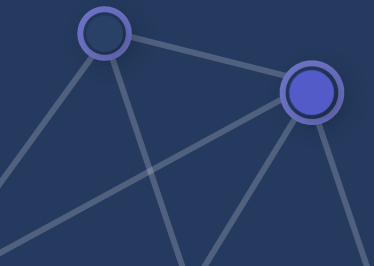


## Agenda

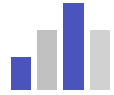
**Defining quality**  
**Tools of the trade**  
**Demo**  
**QER**  
**QER: Step-by-step**  
**Q & A**



What is quality?



# How does Microsoft define quality?



**Quality**

=

**Service metrics**

+

**User experience**

## Telemetry

- Jitter, packet loss, and round-trip time
- Classifiers for audio, video, and sharing

## Reliability

- Did the call drop unexpectedly?
- Does it take more than one try to join a call?

## Endpoint

- Who's not using a headset?
- Was the right transport used?

## Client

- Are clients updating regularly?
- Is VPN split-tunneling is working?

Was I able to join the call or meeting?

Am I able to maintain a call?

How did the audio sound?

Was the video clear?

Were you able to see the screen share?

Did I have any problems with the call or meeting?

# Audio quality classifier

An audio stream is classified as poor if one of the following service metric averages exceeds its defined threshold.

Metric	Threshold	Description
Jitter	>30 ms	This is the average change in delay between successive packets.
Packet loss rate	> 10% or 0.1	This is often defined as a percentage of packets that are lost.
Round-trip time	>500 ms	This is the time it takes to get an IP packet from point A to point B and back to point A.
Network Mean Opinion Score (NMOS) degradation average*	> 1.0	Represents how much the network loss and jitter has affected the quality of received audio.
Average ratio of concealed samples*	>7% or 0.07	Average ratio of the number of audio frames with concealed samples generated by packet loss healing to the total number of audio frames.

# Optimize for quality

For an optimal user experience, the following network performance metrics must be met.

Metric	Client to Microsoft edge	Customer edge to Microsoft edge
Latency (one way)	<50 ms	<30 ms
Latency (RTT, or round-trip time)	<100 ms	<60 ms
Burst packet loss	<10% during any 200-ms interval	<1% during any 200-ms interval
Packet loss	<1% during any 15-sec interval	<0.1% during any 15-sec interval
Packet inter-arrival jitter	<30 ms during any 15-sec interval	<15 ms during any 15-sec interval
Packet reorder	<0.05% out-of-order packets	<0.01% out-of-order packets

<https://docs.microsoft.com/en-us/microsoftteams/upgrade-prepare-environment-prepare-network>

<https://www.microsoft.com/en-us/download/details.aspx?id=53885>

<https://connectivity.office.com/>

# Microsoft target metrics

Target metrics define the core service metrics that are used to assess the user experience, along with their defined thresholds.

Metric name		Quality targets	Reliability targets	
		Audio Poor Stream Rate	Setup Failure Rate	Drop Failure Rate
All	Internal	2.0%	0.5%	2.0%
	Overall	3.0%	1.0%	3.0%
Meetings	Internal	2.0%	0.5%	2.0%
	Wired internal	1.0%	0.5%	1.0%
	Wi-Fi 5 GHz internal	1.0%	0.5%	1.0%
	Wi-Fi 2.4 GHz internal	3.0%	0.5%	2.0%
	Overall	3.0%	0.5%	3.0%
Call	Internal	2.0%	0.5%	2.0%
	Wired/Wi-Fi 5 GHz internal	1.0%	0.5%	1.0%
	Wired/Wi-Fi 5 GHz overall	2.0%	1.0%	1.0%
	Overall	3.0%	1.0%	3.0%



# Quality/Reliability Checklist

There are 7 key configuration areas to validate – start here

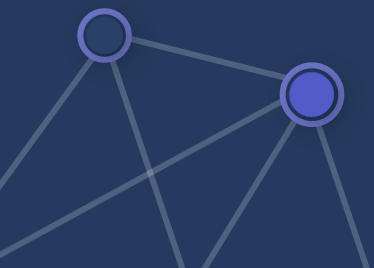


**NOTE:** Some of these changes can have perceived security risks, please see the [Teams Security Guide](#) to understand how we ensure the security of our traffic.

- 1. Ensure the right ports and protocols are open**  
Subnets, 13.107.64.0/18, 52.112.0.0/14, 52.120.0.0/14 and Ports: UDP 3478-3481 & TCP 443 are needed for Teams signalling and media traffic.
- 2. Bypass proxy and deep packet inspection**  
Bypass on-premises and cloud-based proxy and inspection services commonly used for Internet browsing.
- 3. Implement split tunnelling for VPN solutions**  
Facilitate direct connectivity to these cloud endpoints for VPN users by implementing split tunneling.
- 4. Local DNS resolution**  
Microsoft services are deployed globally and use geo-based DNS and Anycast IP to load balance and allocate services closest to the endpoint.
- 5. Take the shortest path to the Internet**  
Route traffic to the Internet as close as possible to the endpoint. This ensure traffic enters the Microsoft managed network faster with fewer hops and points of failure in between.
- 6. Deploy Quality of Service (QoS) where needed**  
In congested networks, media workloads should be prioritized into proper queues to protect packets on managed networks.
- 7. Exclude important processes from anti virus/DLP scanning**  
Excluding teams.exe, for example, from scanning keeps then from interrupting the operation of team which can lead to slow system performance.



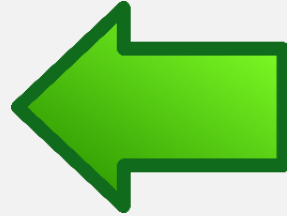
# Tools of the trade



# Call Analytics

## Start here

<https://docs.microsoft.com/en-us/microsoftteams/set-up-call-analytics>



Microsoft | Docs | Documentation | Learn | Q&A | Code Samples | Search | Sign in

Microsoft 365 | Solutions and architecture | Apps and services | Training | Resources | Free Account

Microsoft Teams / Monitor, maintain, and troubleshoot / Monitor and manage call quality / Monitor and improve call quality

## Monitor and improve call quality for Microsoft Teams

08/06/2020 • 2 minutes to read • 3 • Applies to: Microsoft Teams

This article introduces three key tools you can use to monitor, troubleshoot, manage, and improve call quality in Microsoft Teams.

- **Call Quality Dashboard (CQD):** To analyze org-wide trends or problems, drive improvements to performance
- **Call analytics:** To analyze call and meeting quality for individual users
- **Quality of Service (QoS):** To prioritize important network traffic

### Monitor and troubleshoot call quality

You'll use per-user **Call analytics** and **Call Quality Dashboard** to find and troubleshoot call-quality problems that come up during ongoing operation. This lets you drive performance improvements across your network. Both of these tools are in the Teams admin center.

- **Call analytics** shows detailed information about the devices, networks, and connectivity related to **specific calls and meetings** for each user in Teams. Teams admin and helpdesk agents will use this information to troubleshoot call quality and connection problems in a specific call. To learn more, read [Set up call analytics](#) and [Use Call Analytics to troubleshoot poor call quality](#).
- **Call Quality Dashboard (CQD)** gives you a **network-wide view** of call quality across your organization. Use CQD information to help you identify and fix

Provides detailed information about the devices, networks, and connectivity related to specific calls and meetings for each user in Teams.

Located in the Teams Admin Center

30-day history of calls and meetings

Limited role-based access control (RBAC) support

# Call Quality Dashboard (CQD)

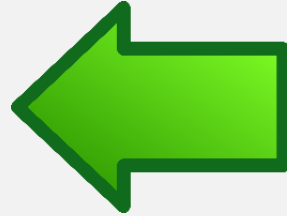
Start here

<https://aka.ms/whatiscqcd>

Originally web based

<https://cqcd.teams.microsoft.com/>

Moving into Power BI



Analyze org-wide trends or problems to drive improvements to the meeting and calling experience.

EUII data available for 28 days

12-month history of call and meeting data

Web UI

<https://cqcd.teams.microsoft.com>

CQD PowerShell

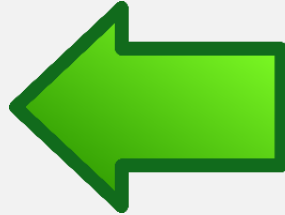
<https://aka.ms/cqcdpowershell>

The screenshot shows a Microsoft Docs page for 'Dimensions and measurements available in Call Quality Dashboard (CQD)'. The page header includes the Microsoft logo, navigation links for 'Docs', 'Documentation', 'Learn', 'Q&A', and 'Code Samples', a search bar, and a 'Sign in' button. Below the header, there are links for 'Microsoft 365', 'Solutions and architecture', 'Apps and services', 'Training', and 'Resources', along with a 'Free Account' button. The main content area features a search filter, the article title, a date and read time, and a table of contents with links to 'Stream Classification in CQD', 'Create a building map', 'Use Power BI to analyze CQD data', 'Call Analytics', 'Quality of Service (QoS)', 'Teams Troubleshooting', and 'Troubleshoot installation and update issues'. The article text begins with 'The Call Quality Dashboard (CQD) for Microsoft Teams and Skype for Business Online allows you to better understand call quality of calls made with these services. This topic provides detailed information about the dimensions and measurements visible through CQD. To learn more about CQD, see Use CQD to manage call and meeting quality in Microsoft Teams.'

# Power BI

## Start here

<https://aka.ms/PowerBICQDTemplates>



Microsoft 365 | Docs | Documentation | Learn | Q&A | Code Samples | Search | Sign in

Microsoft 365 | Solutions and architecture | Apps and services | Training | Resources | Free Account

Microsoft Teams / Monitor, maintain, and troubleshoot / Monitor and manage call quality / Call Quality Dashboard (CQD) / Use Power BI to analyze CQD data

### Use Power BI to analyze CQD data for Microsoft Teams

11/16/2020 • 3 minutes to read • 1 • Applies to: Microsoft Teams

New in January 2020: Download Power BI query templates for CQD. Customizable Power BI templates you can use to analyze and report your CQD data.

For Call Quality Dashboard (CQD) reports in Teams, if you'd rather use Power BI to query and report your data, download our CQD Power BI templates. When you open the templates in Power BI, you'll be prompted to sign in with your CQD admin credentials. You can customize these query templates and distribute them to anyone in your organization who has a Power BI license and CQD admin permissions.

Before you can use these PBIT files, you'll need to [Install the Power BI Connector for Microsoft CQD](#) using the *MicrosoftCallQuality.pqx* file included in the [download](#).

Make sure you have the right [CQD access role](#) to access the Power BI reports.

(New!) CQD Teams Auto Attendant & Call Queue Historical Report.pbit	This template provides the following three reports:
	<ul style="list-style-type: none"><li>Auto Attendant – showing analytics for calls coming into your Auto Attendants.</li><li>Call Queue – showing analytics for calls coming into your Call Queues.</li><li>Agent Timeline – showing a timeline view of agents being active in Call Queue calls.</li></ul>

To learn more, read [Use CQD Power BI report to view Auto Attendant & Call Queue Historical Report](#).

CQD Helpdesk | Integrating building and EUII data, this report is designed to let you

## Power BI Desktop

<https://powerbi.microsoft.com/downloads>

## Power BI Connector

<https://aka.ms/cqdpbiconnector>

## Additional Power BI Templates

<https://aka.ms/qerpbi>

## Licensing

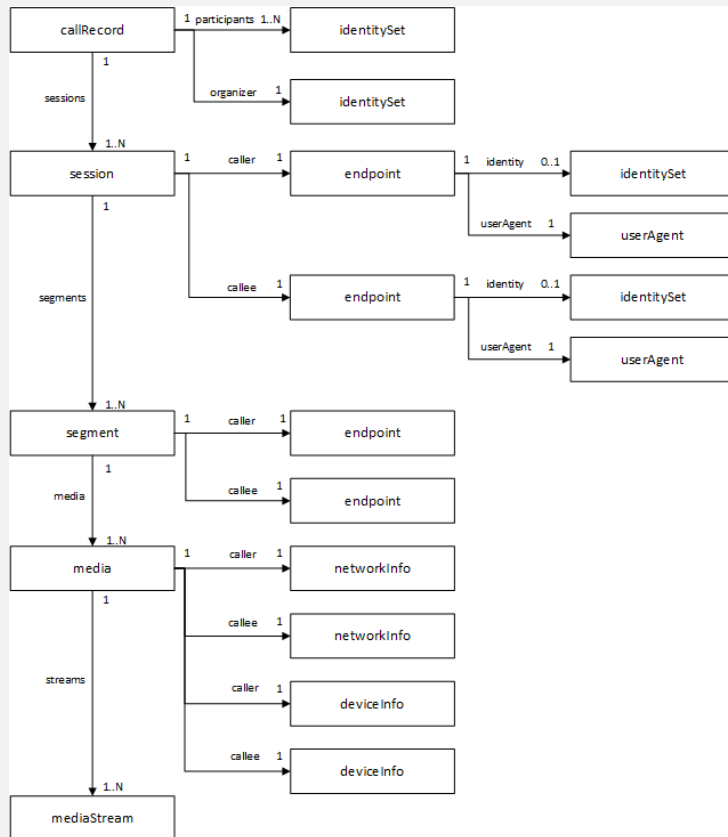
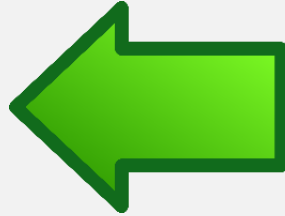
Publishing a Power BI report requires a valid Power BI Pro or Power BI Premium license.

No license required to use Power BI Desktop.

# Graph – Call Records API

Start here

<https://aka.ms/cqdcdrapi>



Call records provide usage and diagnostic information about the calls and online meetings.

You can use the call records APIs to subscribe to call records and look up call records by IDs.

Customers and partners can build solutions based on this API.

Partner solutions

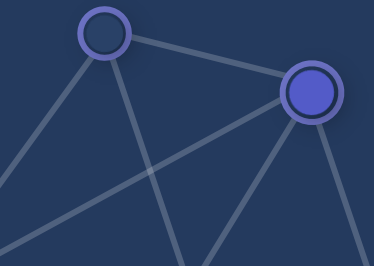
[Splunk](#)

[Codesoftware.net](#)

[Coreview.com](#)

# Power BI demo

QER Power BI Template v4.0



# Power BI



## Templates to get you started

Seven templates included with connector download

CQD templates: <https://aka.ms/PowerBICQDTemplates>

QER template: <https://aka.ms/qerpbi> (DEMO)

Fully customizable

[Row-Level Security \(RLS\)](#) has been implemented

## Limitations

PBI connector uses [Direct Query](#) storage model

Top N and advanced filtering support is limited

No support for calculated columns or custom measures

Cannot publish in PBI Online in Gov clouds (coming soon)

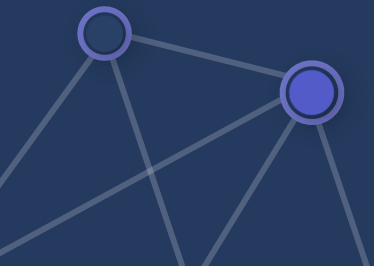
Not available in DOD/GCCH

CQD is restricted to 10k results per query

Need tenant admin credentials for CQD access



QER





## Just what is a QER?

QER stands for **Q**uality of **E**xperience **R**eport.

Primarily used as network analytics tool to help IT determine where to focus effort and resources to improve the meeting and calling experience in Microsoft Teams.

By leveraging the data presented in the QER one can quickly identify areas of interest that are impacting the meeting experience.

Yes, it does have some reactive functionality as well.

The QER can be used to help determine what circumstances may have led to a poor meeting experience as well as analyze an individual user's overall meeting and calling experience.

# What's in the QER template

## 24 Reports in Total

Common CQD Definitions (landing page)

Search report

Overall Audio, Video, and Sharing Health reports

Detailed Audio, Video, and Sharing reports

Detailed User and Meeting reports

Overall Media Health, Setup, and Reliability reports

TCP report

Estimated and Mapped VPN reports

User Feedback report

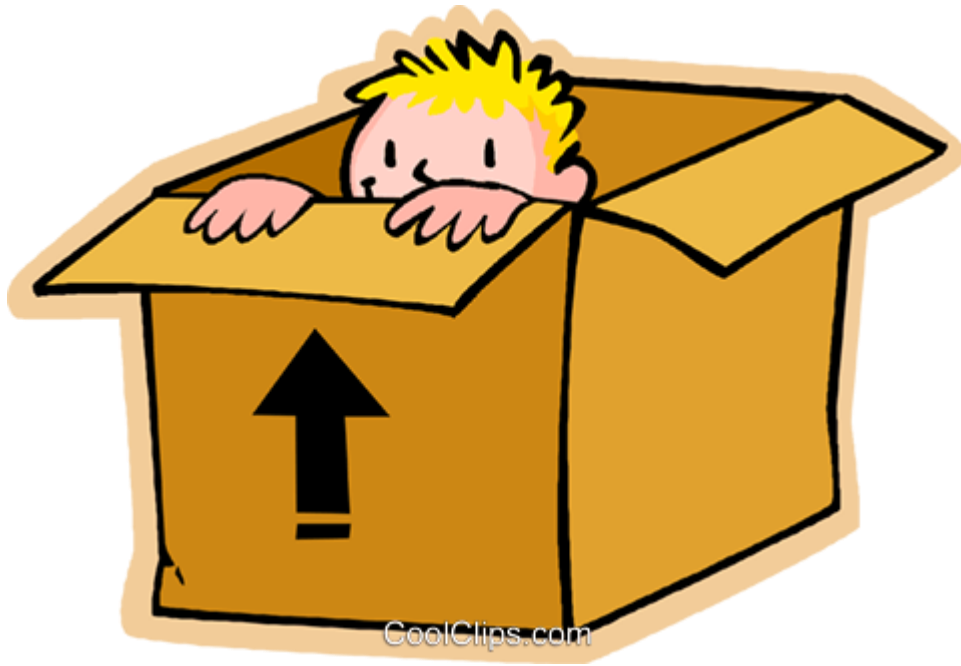
Dailies report

Top 10 Network, Managed, and ASN reports

Usage report

Building Data report

<https://aka.ms/qerpbi>



# QER is not the only template

Helpdesk report

Location Enhanced report

Mobile Device report

PSTN Direct Routing report

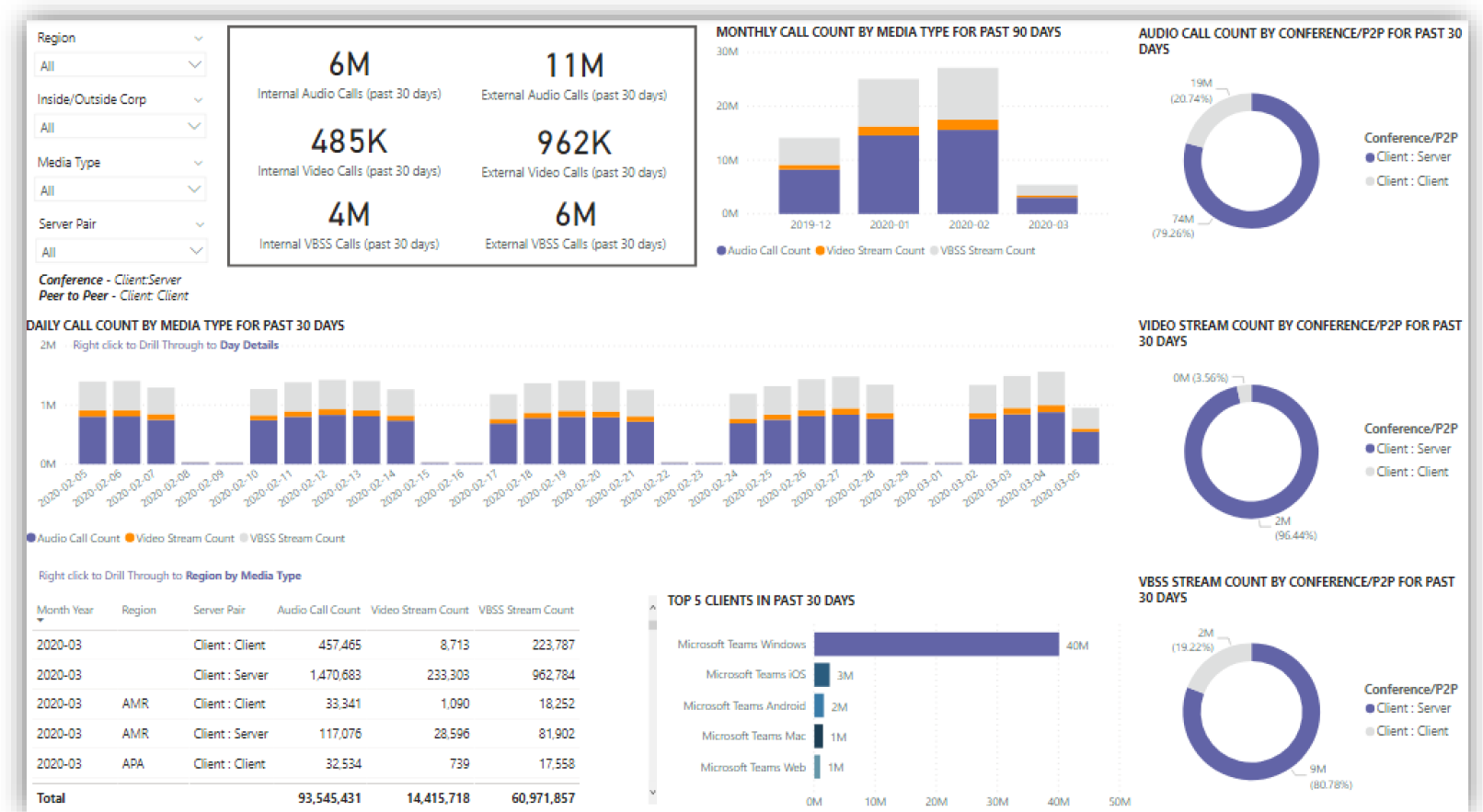
PSTN report

Summary report

Teams Usage report

User Feedback report

→ [GO HERE](#) ←



## Common CQD Definitions

### Meeting

Known by the *Meeting ID* dimension, this is created by Teams when a meeting is scheduled or started through Meet-Now and can be found as part of the meeting join URL. A 1:1 call (also known as peer to peer or P2P call) does not have a meeting ID.

### Conference

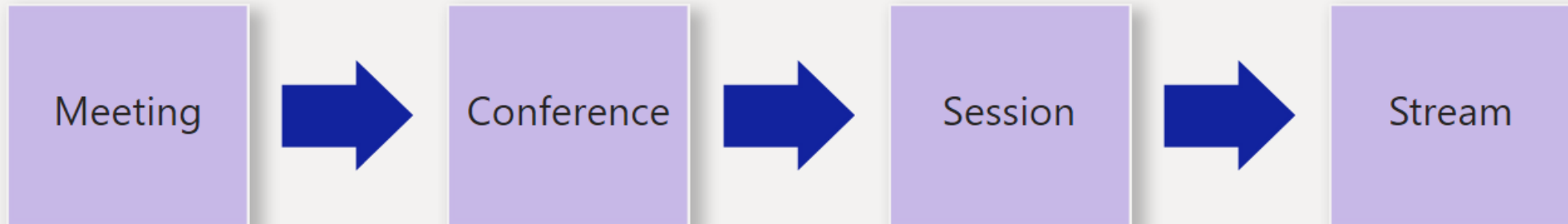
Known by the *Conference ID* dimension, this is a unique ID given to every meeting or call. More than one conference ID may be associated with a given meeting ID. For example, a reoccurring meeting will have a common meeting ID while each individual meeting instance will have a unique conference ID.

### Call or Session

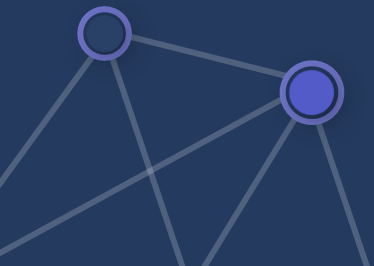
A call or session is a call-leg and is a single meeting endpoint against a single conference ID. It is expected to see multiple call-legs as part of a single conference ID as each unique endpoint "calls" or joins into the meeting. Example: Total Call Count

### Stream or Segment

A stream or segment is an individual media connection between two endpoints in any given call. Streams are associated with a direction and media type. It is expected to see multiple streams per call. Example: Total Stream Count



# QER: Step-by-step

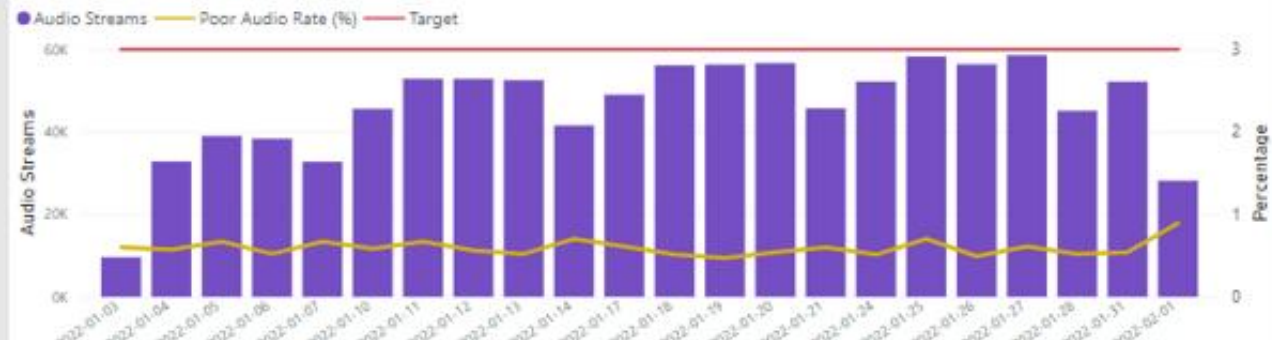


Is Teams? (1 = Yes)  0  1
 Inside/Outside Corp  Inside  Outside
 Session Type  Conf  P2P
 Connection  Wifi  Wired
 Building Name 
 City 
 Client

Daily Feedback Overview (30 days)



Daily Audio Quality (30 days)



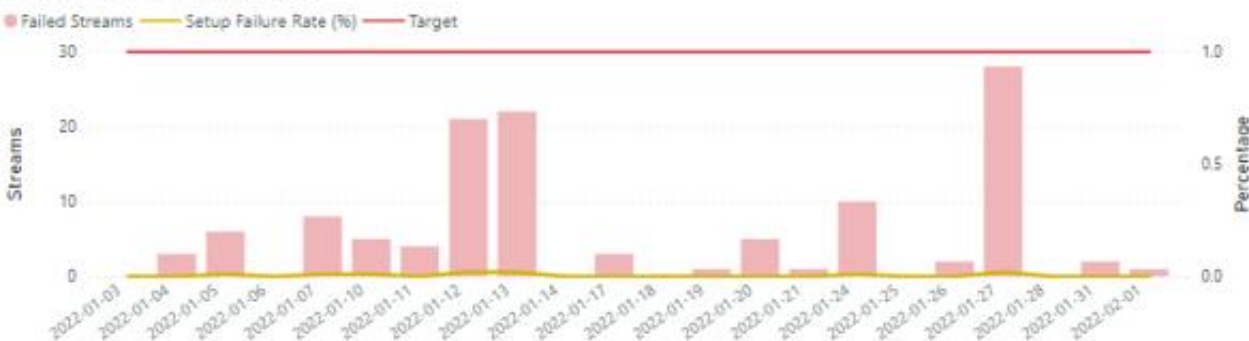
Daily Video Quality (30 days)



Daily Sharing Quality (30 days)



Setup Failures by Day (30 days)



Dropped Streams by Day (30 days)





Is Teams? (1 = Yes)  0  1

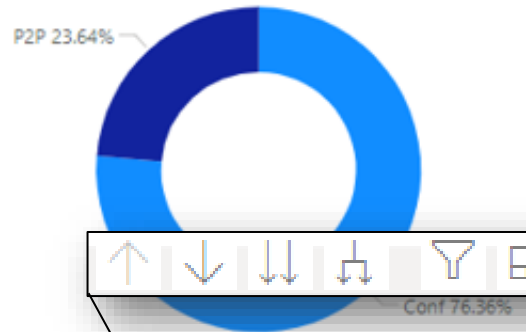
Inside/Outside Corp  Inside  Outside

Country   
 All

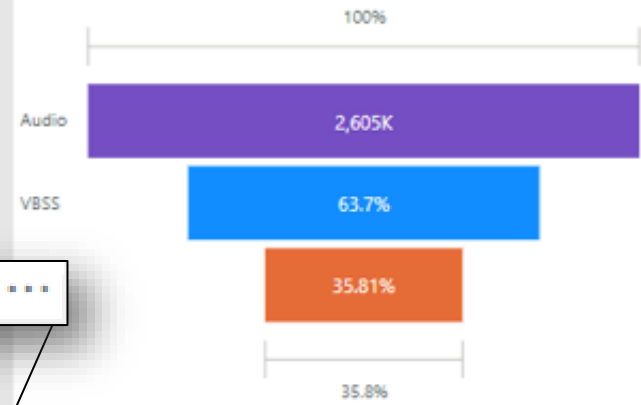
Sessions (28 days)	Sessions with Audio (28 days)	Sessions with Video (28 days)	Sessions with Sharing (28 days)
2,578,733	2,494,728	932,460	1,658,873

Total Audio Minutes (28 days)	Total Meeting Minutes (28 days)	Total Calling Minutes (28 days)
79,633,503	73,300,000	

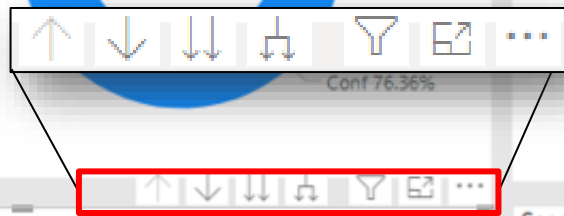
Sessions by Type (28 days)



Sessions by Media (28 days)

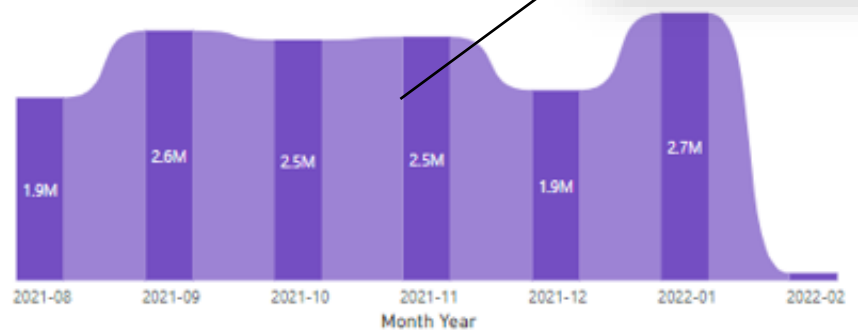


2020-08 1 Total Call Count 18,554,425  
 2020-09 1 Total Call Count 22,244,552  
 Total Call Count Change 3,690,127 (19.89%)  
 2020-08 1 Rank 1  
 2020-09 1 Rank 1

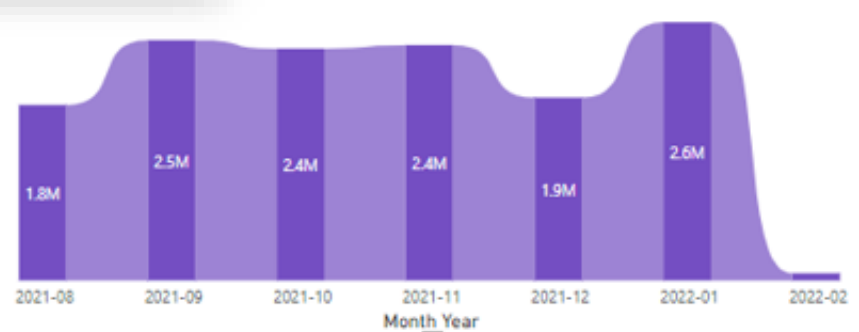


Total Sessions (180 days)

Teams = 1 | SFB = 0



Total Sessions with Audio (180 days)

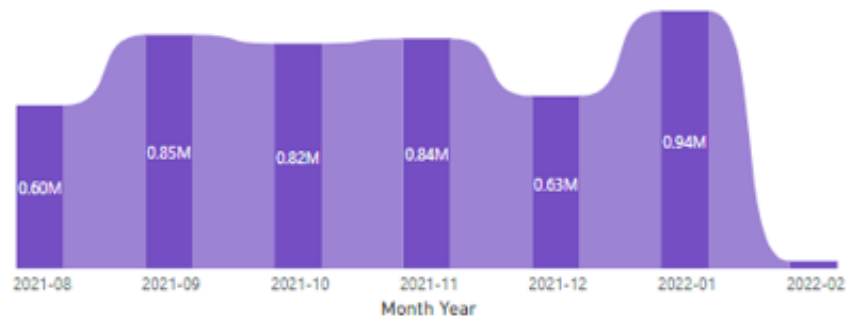


Sessions Map (28 days)



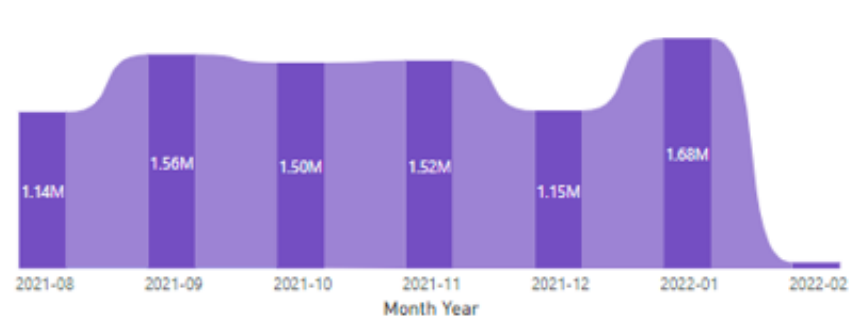
Total Sessions with Video (180 days)

Teams = 1 | SFB = 0

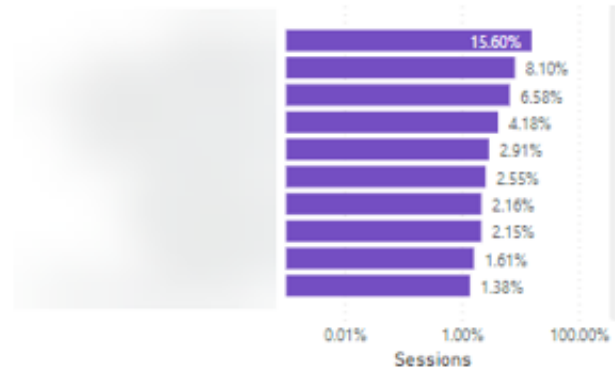


Total Sessions with Sharing (180 days)

Teams = 1 | SFB = 0



Top 10 ASN (28 days)



Review the list below for any managed subnets that may be marked outside and add the appropriate information to the building file to have CQD tag the subnet as internal. It is not necessary to add every subnet in your infrastructure to the building file, only client and user subnets need to be uploaded into CQD.

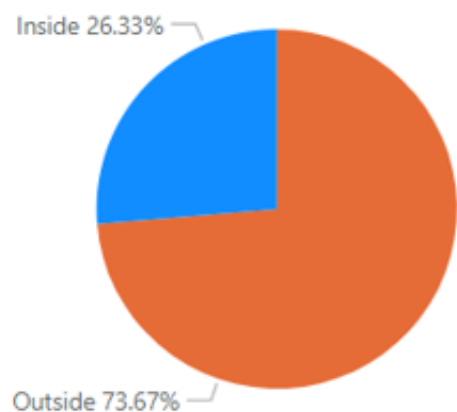
More information on the building file can be found here: <https://aka.ms/cqdbldgdata>

Inside/Outside Corp

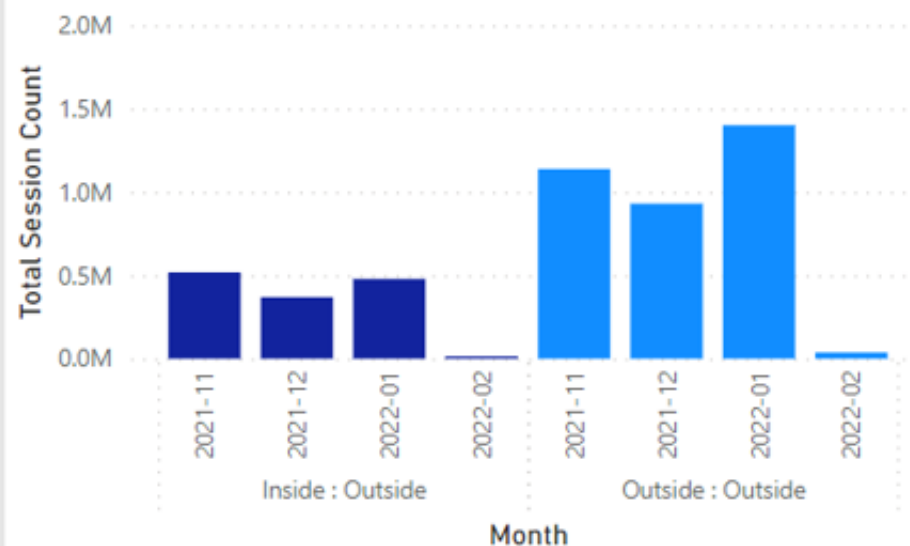
## CQD Building Map (7 days)

Subnet	Inside/Outside	Total Session Count	Network Name	Building Name	Ownership Type	Building Type	Building Office Type	City
	Outside	91,145						
	Outside	59,636						
	Outside	19,891						
	Outside	12,192						
	Outside	11,405						
	Inside	9,067					Mixed Use	
	Outside	7,459						
	Outside	5,437						
	Outside	5,180						
	Inside	4,616					Office	
	Outside	3,878						

## Inside/Outside Ratio (7 days)



## Inside/Outside Pair Ratio (3 months)



## Public Network Building Map (7 days)

Public Network	Inside/Outside	Total Sessions	Network Name
	Inside	9,029	
	Inside	4,534	
	Outside	4,081	
	Inside	3,480	
	Inside	2,944	
	Inside	2,811	
	Inside	2,705	
	Inside	2,682	
	Outside	2,647	
	Inside	2,326	
	Outside	2,288	
	Outside	2,185	
	Inside	2,076	

Is Teams? (1 = Yes)  0  1

Session Type  Conf  P2P

Inside/Outside Corp  Inside  Outside

Connection  Wifi  Wired

**Feedback**, also known as Rate My Call, is the survey that is displayed at the end of any call or meeting that involves media. This survey is enabled by default and configured to prompt a participant 10% of the time (or 1 in every 10 calls).

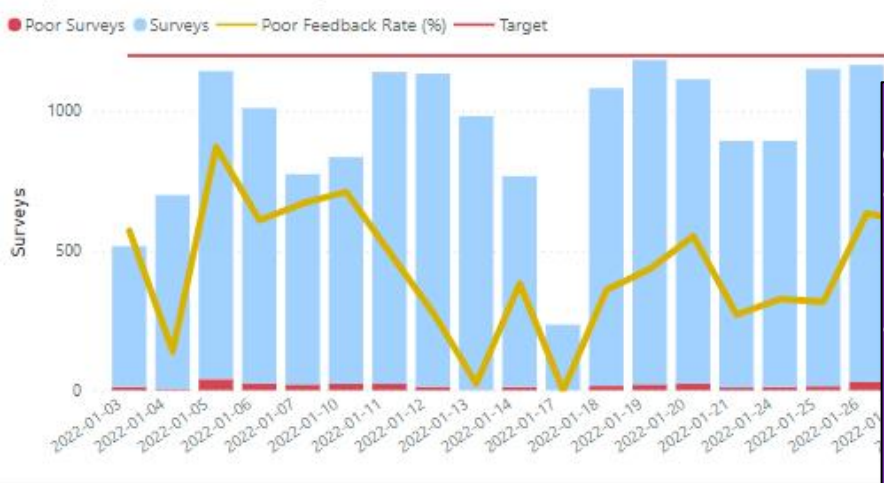
Feedback score is based on a 1-5 star rating.  
 Feedback that is rated as 1 or 2 stars is considered poor.  
 Feedback rate is the percentage of respondents that submitted a poor rating.

Overall User Experience (7 days)

Poor Feedback Rate (%) **1.98**

Avg Rating **4.86**

Daily Feedback Overview (30 days)



Poor Feedback Map (28 days)



Matrix visual allows grouping of multiple dimensions.

- Selecting the plus symbol will expand the individual row.
- Select the double down arrow will expand all dimension groups at once.

Poor Feedback by Client (28 days)

Client	Total Surveys	Poor Surveys	Poor Feedback Rate (%)	Avg Rating
	12281	243	1.98	4.86
	3987	41	1.03	4.94
	811	23	2.84	4.82
	706	21	2.97	4.79
	195	8	4.10	4.79
	501	7	1.40	4.90

Poor Feedback by User (28 days)

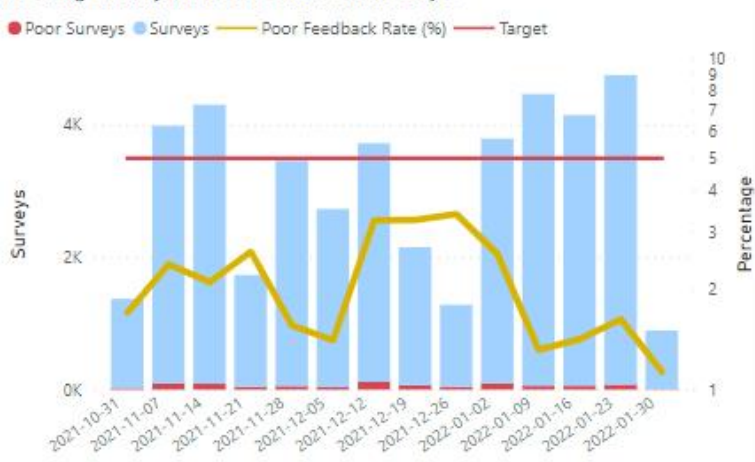
UPN	Total Surveys	Poor Surveys	Poor Feedback Rate (%)	Avg Rating
*	17777	340	1.91	4.87
	704	3	0.43	4.82

Matrix navigation icons: expand row (+), expand all (double down), collapse all (double up), collapse row (-), filter (funnel), refresh (circular arrow), and more options (three dots).

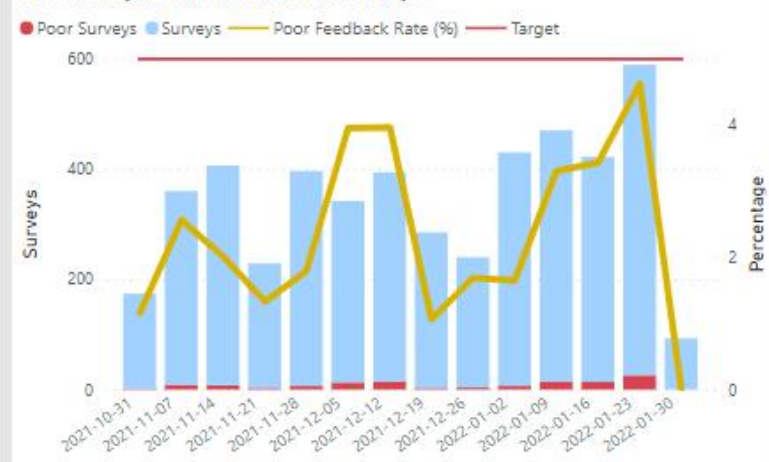
Poor Feedback by Country/Subnet (28 days)

Country	Total Surveys	Poor Surveys	Poor Feedback Rate (%)
	15472	289	1.87
	2726	51	1.87
	3	3	100.00
	2	0	0.00
	13	0	0.00
	4	0	0.00
	18	0	0.00
	188	0	0.00

Meeting Weekly Feedback Overview (90 days)



Call Weekly Feedback Overview (90 days)



Poor Feedback by ASN/Public Network (28 days)

ISP	Total Surveys	Poor Surveys	Poor Feedback Rate (%)
	2691	68	5.76
	2726	51	1.87
	4059	42	1.03
	1263	23	23.16
	577	22	56.83
	759	21	2.77
	248	17	6.85
	648	14	2.16
	1000	14	1.37

Search

Visuals are  
interactive

Search for a audio device or select a device from the list below.

## Most common microphones in use (7 days)

Microphone	Total Sessions (%)	Poor Feedback (%)	Failure Rate (%)
Realtek(R) Audio	31.15%	1.09	0.35
Realtek Audio	21.54%	2.80	0.44
	4.47%	0.00	1.65
	3.28%	0.00	0.25
	1.50%	0.00	0.27
	1.28%	0.00	0.45
	1.18%	0.00	0.74
	1.12%	5.56	0.56
	0.91%	0.00	1.35
	0.85%	0.00	0.13
	0.73%	0.00	0.09
	0.70%	0.00	1.36
	0.64%	0.00	0.31
	0.62%	0.00	0.21

## Device users (7 days)

UPN	Total Sessions	Poor Feedback (%)
*	498,614	2.33
	3,550	0.00

The client detected issues and operated the acoustic echo canceler (AEC) in half-duplex mode. This impacts the ability to have real-time two-way communication. This is the Walkie-Talkie effect which can be caused when audio devices don't support full duplex operation or AEC is triggered due to feedback from an open microphone too close to a speaker or speaker volume is too high.

## Microphones operating in half-duplex (28 days)

UPN	Total Sessions
*	102,930
	3,692

The client detected issues with the rendering device. Look to the media type field to understand if it's the audio device, video adapter or camera. Look to either replace the device, update firmware/driver or move USB ports (if applicable).

## Render device not functioning (28 days)

UPN	Media Type	Total Sessions
*	Audio	7,067
	Audio	66

The client detected issues with the capture device. Look to the media type field to understand if it's the audio device, video adapter or camera. Look to either replace the device, update firmware/driver or move USB ports (if applicable).

## Capture device not functioning (28 days)

UPN	Media Type	Total Sessions
*	Audio	13,445
	Audio	129



# Clients (Last 7 days)

Client Version

Client

Microsoft Teams Windows

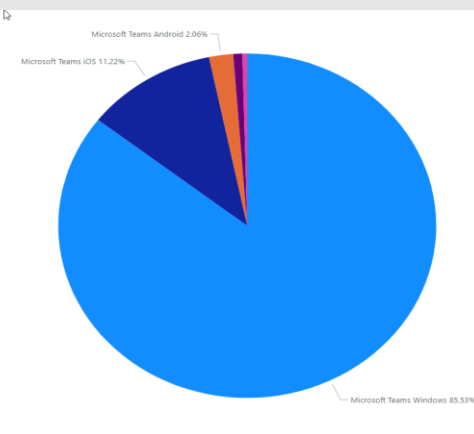
Select a client from the list above or search for a specific version using the text box to display the results

## Client usage by version

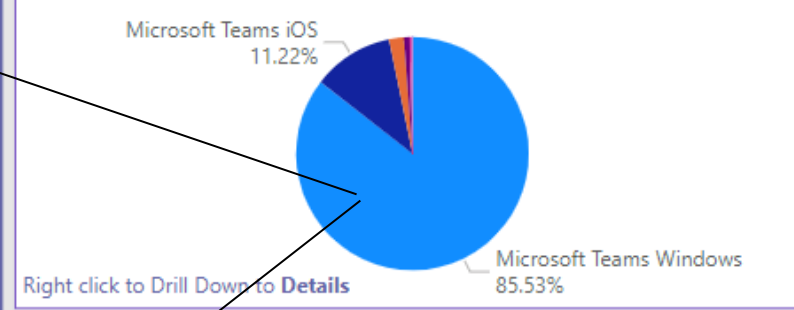
Client Category	Client Version	Users	Total Sessions	Total Sessions (%)	Poc
		38,070	200,844	51.75%	Green
		32,123	175,034	45.10%	Green
		786	3,727	0.96%	Green
		478	1,642	0.42%	Red
		448	1,414	0.36%	Green
		489	1,270	0.33%	Red
		125	759	0.20%	Red
		316	720	0.19%	Red
		142	700	0.18%	Green
		86	293	0.08%	Red
		114	248	0.06%	Red
		84	201	0.05%	Red
		109	199	0.05%	Red
		128	199	0.05%	Red
		86	143	0.04%	Green

## Users by client

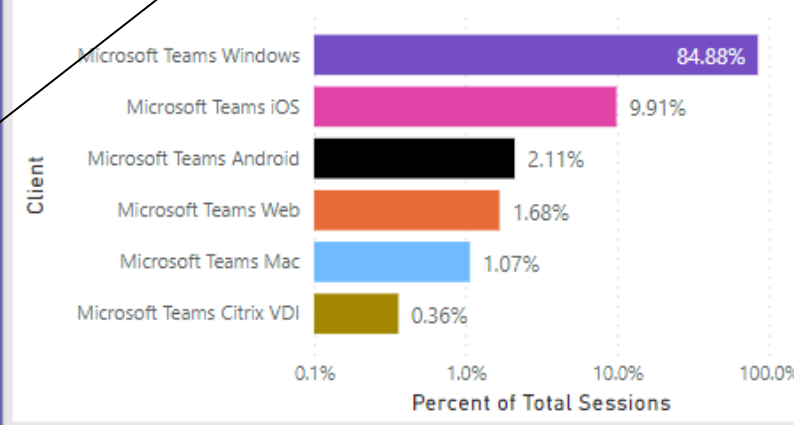
UPN
*



## Client Version Saturation (24 hours)



## Usage by Client



## Additional metrics to help identify issues detected by the client (Last 28 days)

### Endpoint detected insufficient CPU impacting audio

UPN	Total Sessions	Poor Audio Rate (%)	Poor Video Rate (%)
*	96,023	3.20	NaN
	19,820	3.65	NaN

### Endpoint detected a network delay

UPN	Total Sessions	Poor Audio Rate (%)	Poor Video Rate (%)
*	1,591,487	3.61	3.87
	52,069	3.76	8.18

### Endpoint detected > 5 roaming disconnects

UPN	Total Sessions	Poor Audio Rate (%)	Poor Video Rate (%)
*	1,805,042	1.20	3.45
	53,877	3.35	6.13

Session Type: Conf P2P | Client: Microsoft Teams Windows

**What is Estimated VPN?**  
 CQD will check to see if the endpoint's local IP address matches the VPN endpoint. To reliably tag all VPN streams, you must create a building file and...

Same report exists for Mapped VPN data using the Building File

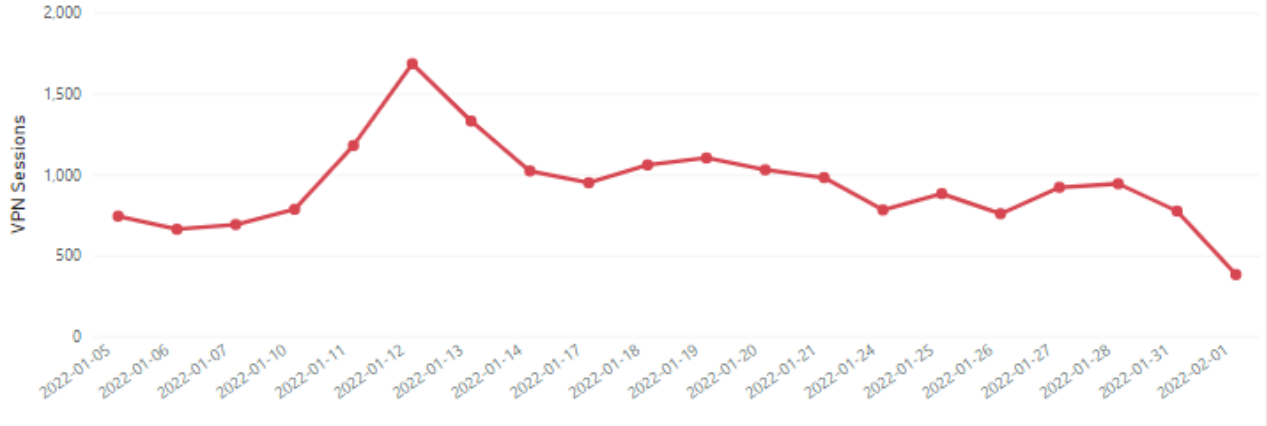
NOTE: Estimated VPN only works if your VPN solution assigns a 32-bit subnet mask to a VPN endpoint.

**Building File Guidance:** <https://aka.ms/cqdbldgdata>  
**VPN Split-Tunnel Guidance:** <https://aka.ms/teamsvpn>  
**Teams Subnets/Ports:** <https://aka.ms/teamsips>  
**Understanding Teams Media Flows:** <https://aka.ms/teams-media-flows>

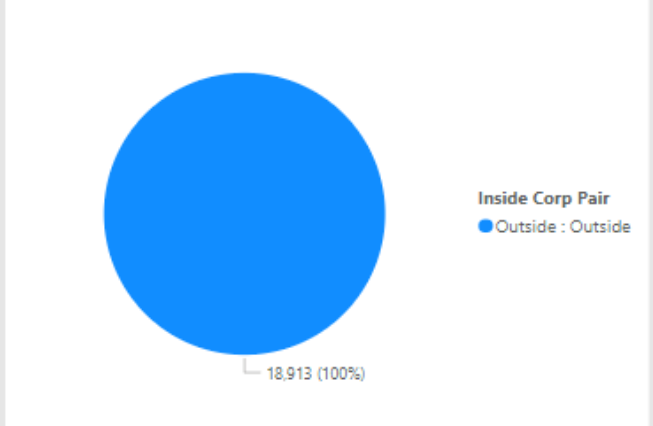
Estimated VPN Comparison (28 days)

Estimated VPN	Total Streams	Poor Feedback Rate (%)	Poor Audio Rate (%)	Poor Video Rate (%)	Poor Freeze Rate (%)	Poor Sharing Rate (%)	Drop Failure Rate (%)	Setup Failure Rate (%)	Avg Network Jitter	Avg Network Jitter Max	Avg Jitter	Median Jitter	Avg Jitter Max	Avg Packet Loss Rate	Median Packet Loss Rate	Avg Packet Loss Rate Max	Avg Round Trip	Median Round Trip	Avg Round Trip Max
0	6,688,239	2.13	0.83	0.77	3.26	1.10	0.91	0.01	14.53	289.19	1.64	0	13.17	0%	0%	5%	82	55	336
1	12,858	0.00	3.04	1.34	11.11	1.64	1.21	2.44	36.25	788.32	3.70	2	27.19	1%	0%	8%	148	119	730

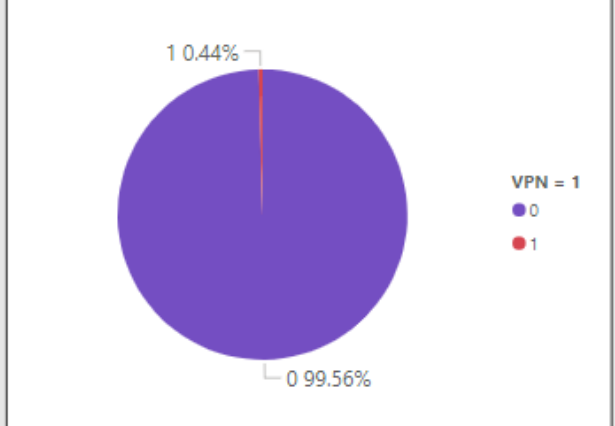
Daily VPN Usage (28 days)



VPN Inside to Outside Ratio (28 days)



VPN Usage Ratio (7 days)



VPN Usage by UPN (28 days)

UPN	Total Streams	Poor Feedback Rate (%)	Audio Streams	Poor Audio Rate (%)	Video Streams
*	12,330	0.00	3,016	3.04	834
	528	NaN	291	3.02	139

VPN Usage Map (7 days)

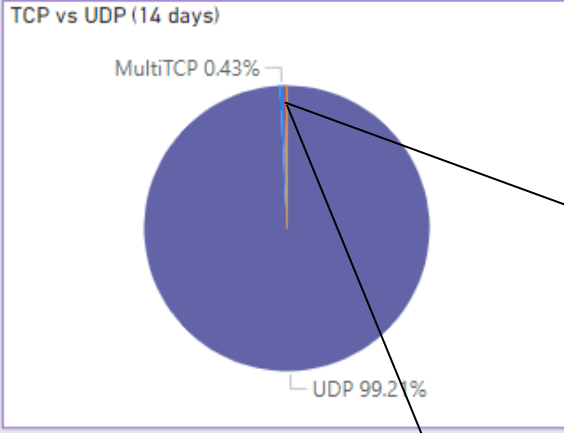


VPN Usage by Public Network/Subnet (7 days)

Public Network	Total Streams	Poor Feedback Rate (%)	Audio Streams	Poor Audio Rate (%)	Video Streams
	129	NaN	64	0.00	22
	54	NaN	26	0.00	16
	38	NaN	14	0.00	19
	35	NaN	8	0.00	23
	21	NaN	14	0.00	0
	15	NaN	8	0.00	3
	15	NaN	8	0.00	2
	14	NaN	5	0.00	6
	14	NaN	5	0.00	6
	14	NaN	4	0.00	8
	12	NaN	6	0.00	4

Inside/Outside Corp  
  
  
 Session Type  
  
  
 Client

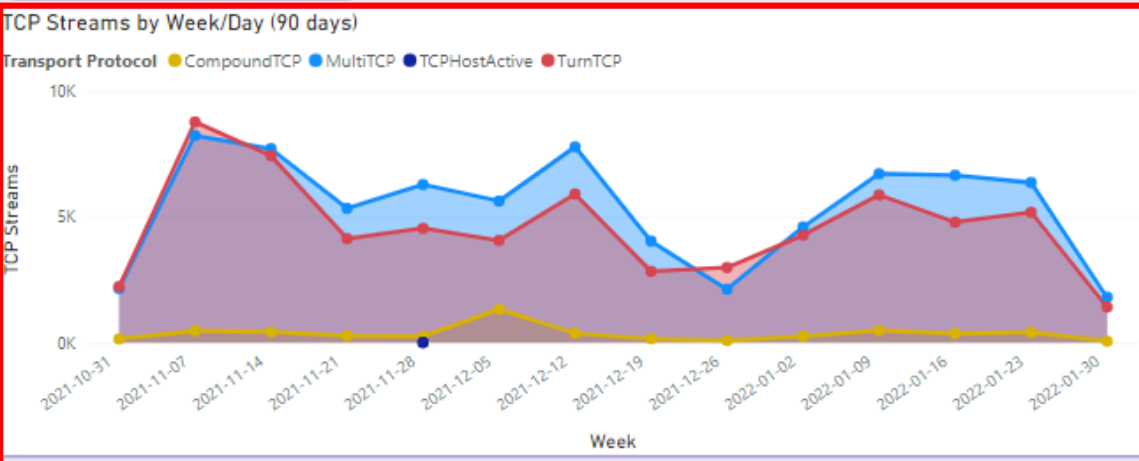
**Teams IP Address List:**  
<https://aka.ms/teamsips>  
<https://aka.ms/teamsclientips>  
**Teams Service Media Subnets:**  
 13.107.64.0/18, 52.112.0.0/14,  
 52.120.0.0/14  
**Teams Service Media Ports:**  
 3478-3481 UDP (preferred)  
**Teams Client Media Ports:**  
 50000-50019 TCP/UDP - Audio  
 50020-50039 TCP/UDP - Video  
 50040-50059 TCP/UDP - Sharing



**CompoundTCP** = Media is flowing over HTTPS/Proxy  
**TurnTCP/TCPHostActive** = Media is flowing over TCP  
**MultiTCP** - Uses multiple TCP connections and distributes packets using round robin.

### Transport Comparison (28 days)

Transport	Total Streams	Poor Feedback Rate (%)	Poor Audio Rate (%)	Poor Video Rate (%)	Poor Freeze Rate (%)	Poor Sharing Rate (%)	Drop Failure Rate (%)	Setup Failure Rate (%)
UDP	5,301,734	1.97	0.81	0.74	3.33	1.10	0.38	0.00
TurnTCP	20,393	10.34	2.49	1.03	4.64	0.76	1.36	0.12
MultiTCP	24,388	13.59	2.16	NaN	NaN	NaN	1.01	0.01
CompoundTCP	1,480	28.57	7.35	0.58	13.58	0.29	2.25	0.74



### TCP Usage Map (7 days)

MultiTCP 0.43%  
TurnTCP 0.34%  
UDP 99.21%

Transport: TurnTCP  
Total Stream Count: 9,477 (0.34%)

Video Streams	Poor Video Rate (%)	Poor Freeze Rate (%)	Sharing Streams	Poor Sharing Rate (%)
8,993	1.06	4.94	10,923	0.76
659	0.46	5.45	217	0.00

### TCP Usage by ASN/Public IP/Subnet (7 days)

ASN	Total Streams	Audio Streams	Video Streams	Sharing Streams
	2,182	1,336	244	602
	1,757	918	457	382
	1,443	860	205	378
	665	352	169	144
	568	326	119	123
	548	278	129	141

### TCP Usage by Endpoint (28 days)

Endpoint Name	Total Streams	Poor Feedback Rate (%)	Audio Streams	Poor Audio Rate (%)	Video Streams	Poor Video Rate (%)	Poor Freeze Rate (%)	Sharing Streams	Poor Sharing Rate (%)
*	46,206	12.69	25,447	2.32	9,628	1.02	4.98	11,131	0.75
	55	NaN	22	0.00	24	0.00	0.00	9	0.00

Visuals are interactive



# Media Health

Is Teams? (1 = Yes)

Call Type

Inside/Outside Corp

Target

Building Name

City

Country

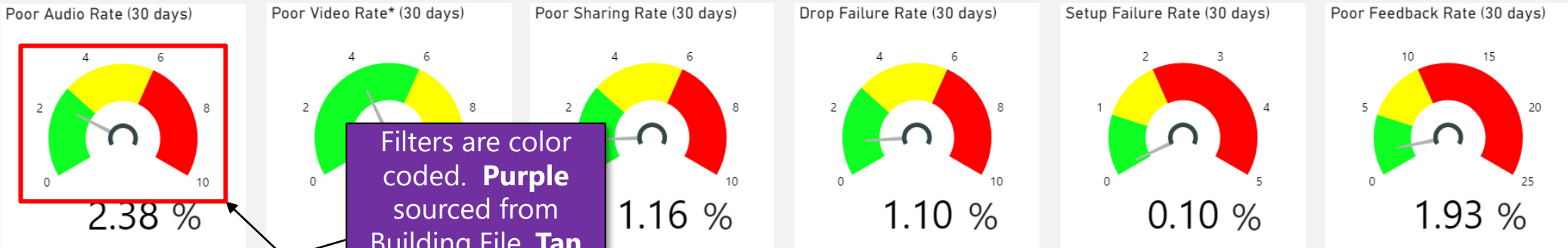
Client

**Key Health Indicators**

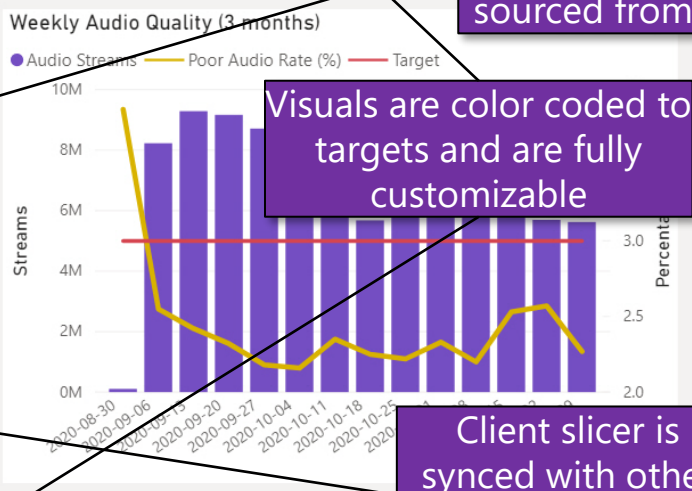
**Quality**  
Poor Audio Rate < 3%  
Poor Video Rate < 6%  
Poor Sharing Rate < 3%

**Reliability**  
Setup Failure Rate < 1%  
Drop Failure Rate < 3%

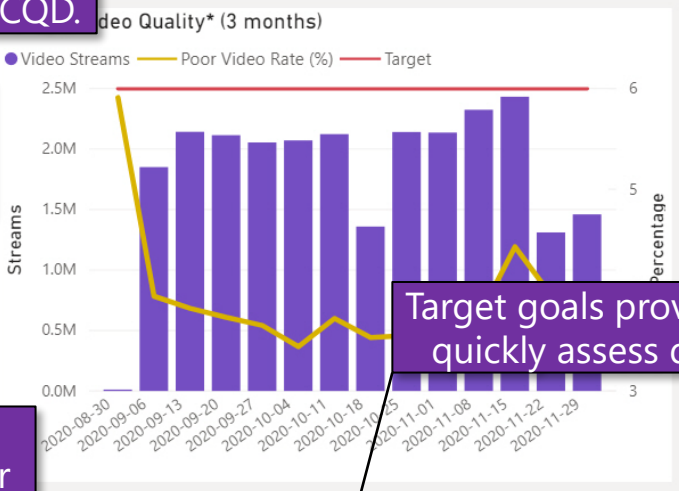
**Feedback**  
Poor Feedback Rate < 5%



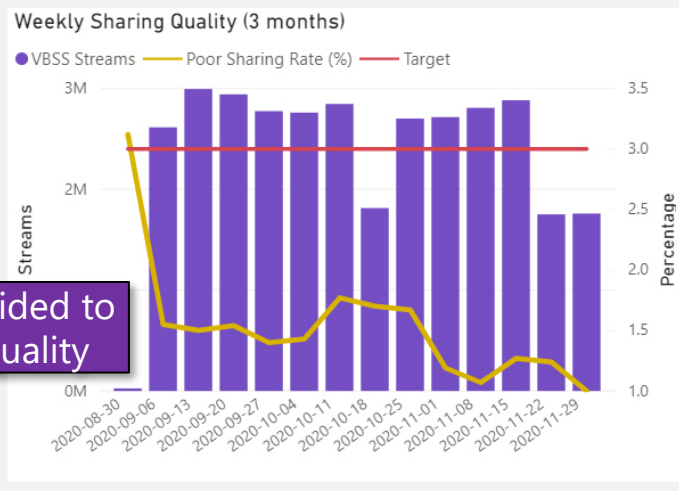
Filters are color coded. **Purple** sourced from Building File, **Tan** sourced from CQD.



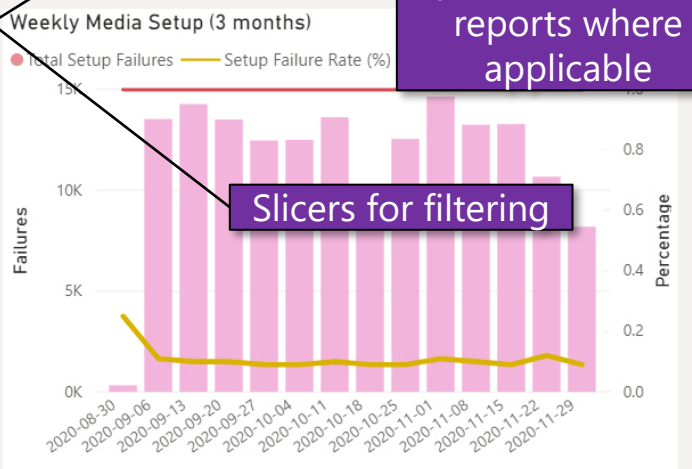
Visuals are color coded to targets and are fully customizable



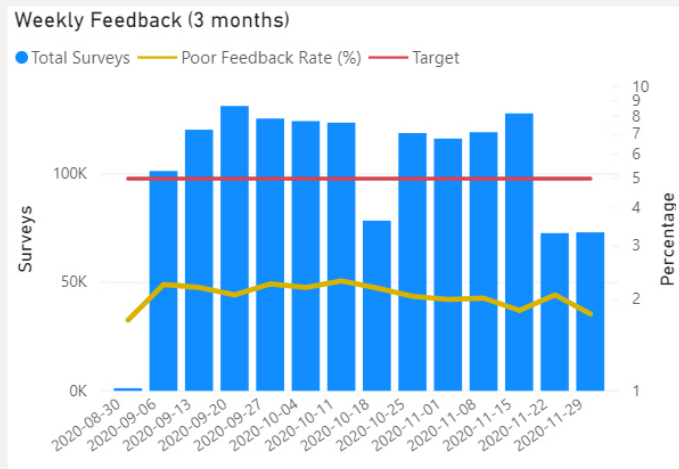
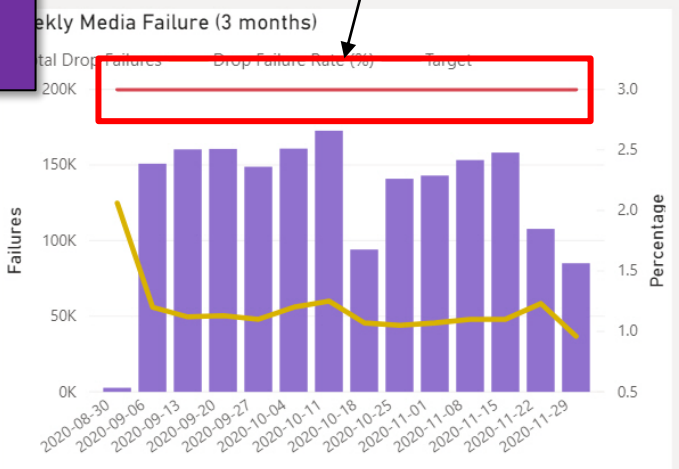
Target goals provided to quickly assess quality



Client slicer is synced with other reports where applicable



Slicers for filtering



\*Video quality is applicable to Microsoft Teams only.



Is Teams? (1 = Yes)

0

1

Building Name

All

City

All

Client

All

Call Type

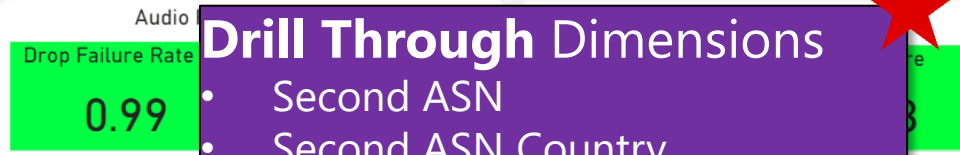
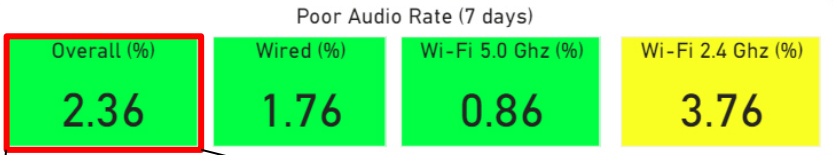
Client : Client

Client : Server

Inside/Outside Corp

Inside

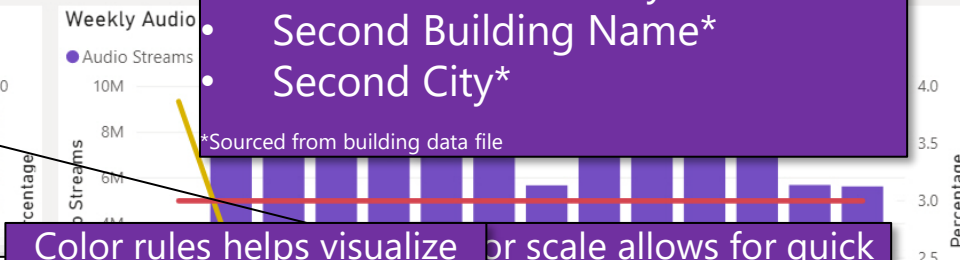
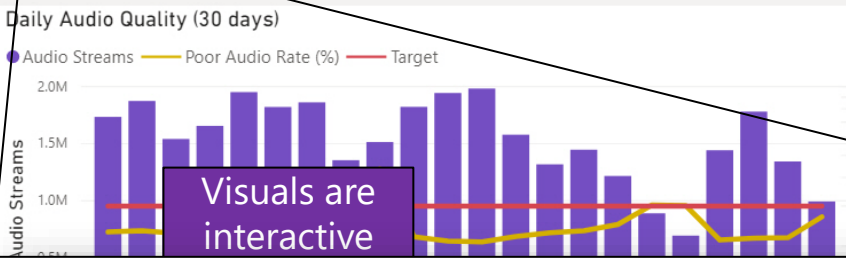
Outside



### Drill Through Dimensions

- Second ASN
- Second ASN Country
- Second Building Name\*
- Second City\*

\*Sourced from building data file



Visuals are interactive

Color rules helps visualize areas of further interest.

Scale allows for quick identification of potential hot spots that are impacting quality.

Right click to drill through to Audio Health Details

Audio Quality by City/Subnet (7 days)

City	Good Streams	Poor Streams	Poor Audio Rate (%)
	756464	15,224	2.06
	215470	2,329	1.11
	50960	1,646	3.20
	30908	1,393	4.40
	18486	1,084	5.68
	73550	832	1.15
	5784	822	12.26
	66840	611	0.94
	9442	553	5.61
	18734	493	2.60
	3000	444	12.73
	888	423	33.28
	2354	393	14.23

Color Rules Configuration

Format by: Rules

Based on field: Sum of Audio Poor Percentage

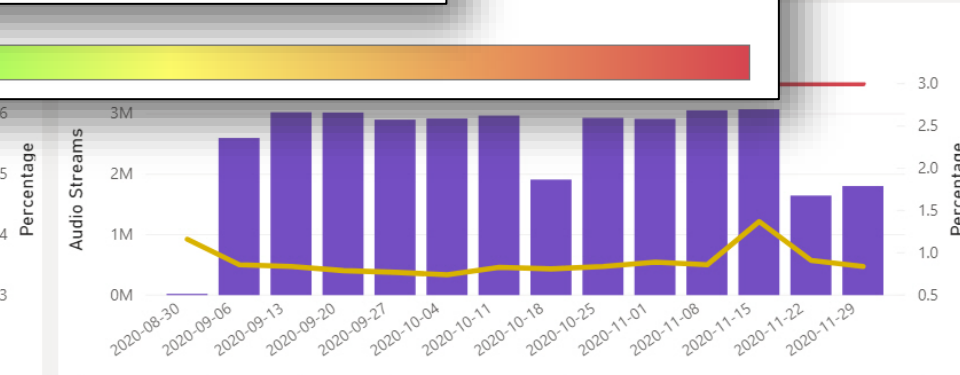
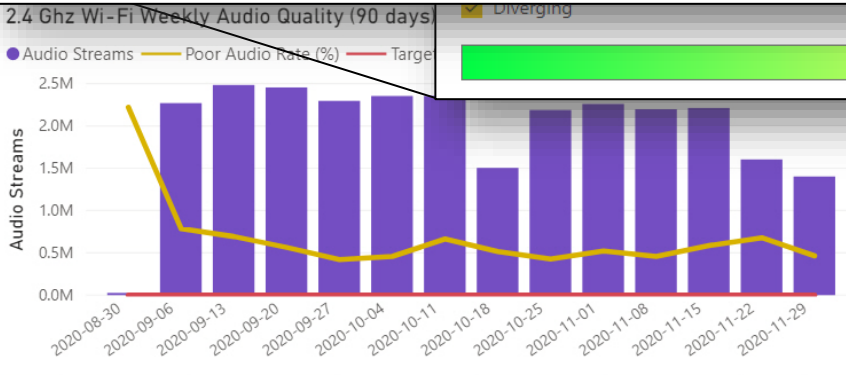
Summarization: Sum

Rules:

- If value is greater than or equal to Minimum Number and is less than 3 Number then Green
- If value is greater than or equal to 3 Number and is less than 6 Number then Yellow
- If value is greater than or equal to 6 Number and is less than or equal to Maximum Number then Red

Audio Quality by ASN/Public Network (7 days)

ASN	Good Streams	Poor Streams	Poor Audio Rate (%)
	969172	24,094	2.56
	168928	13,854	7.64
	1016864	11,624	1.17
	83728	8,521	9.19
	142154	3,813	2.67
	226600	2,967	1.39
	33932	2,850	7.99
	34890	2,240	6.05
	86100	2,074	2.40
	57910	1,641	2.80
	65034	1,470	2.26
	125224	1,366	1.11
	40814	1,278	3.09



Is Teams? (1 = Yes)  0  1

Inside/Outside Corp  Inside  Outside

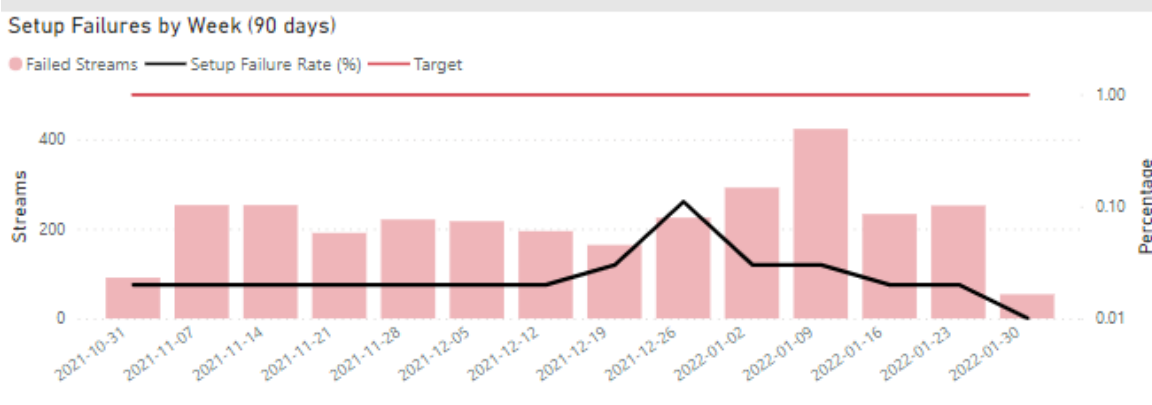
Session Type  Conf  P2P  Audio  VBSS  Video

Media Type  Audio  VBSS  Video

Building Name: All

City: All

Client: Microsoft Teams Windows

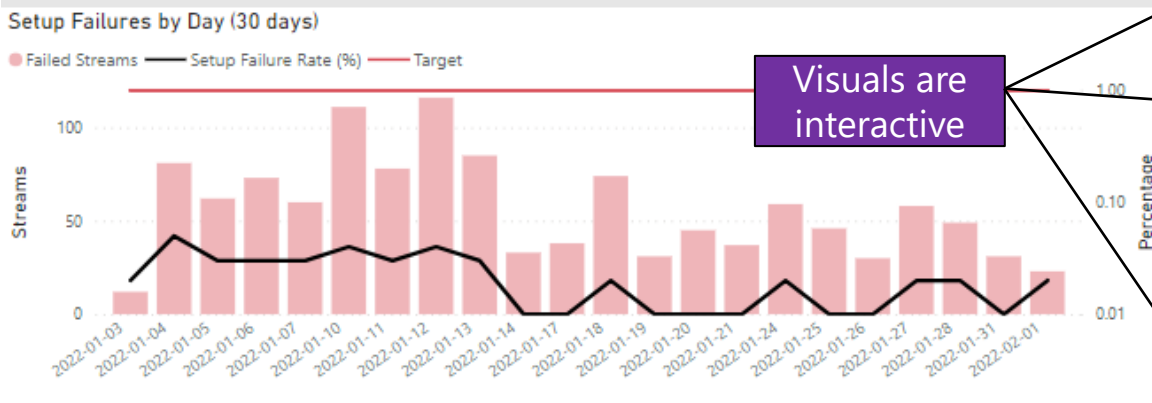


### Setup Failures by Client (7 days)

Client	Total Streams	Setup Failures	Setup Failure Rate (%)
	139,417	194	0.14
	1,303,687	175	0.01
	26,195	83	0.32
	5	0	0.00
	2,744	0	0.00
	17,185	0	0.00
	24,364	0	0.00
	231	0	0.00

### Setup Failures by ASN/Public Network (7 days)

ASN	Total Streams	Setup Failures	Setup Failure Rate (%)
	121,584	60	0.05
	124,784	16	0.01
	34,033	11	0.03
	168,742	10	0.01
	12	5	41.67



Visuals are interactive

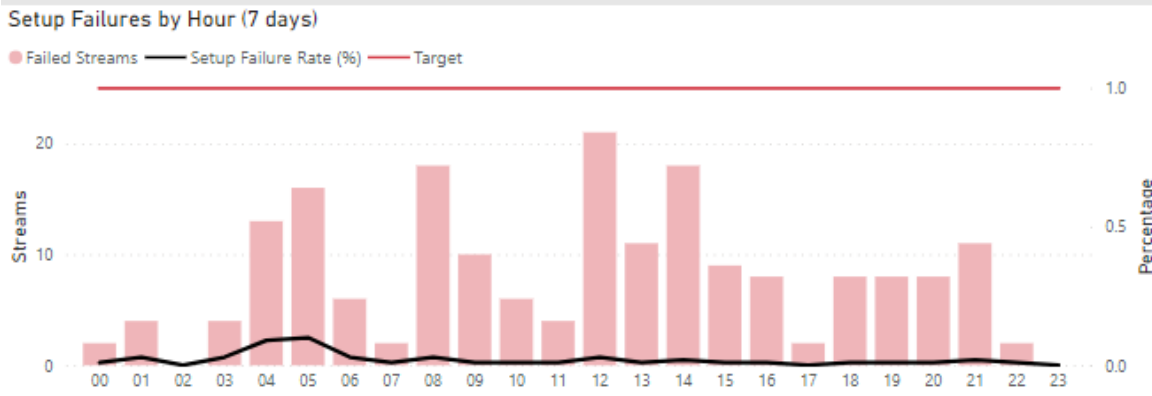
### Setup Failures by Transport (7 days)

Transport	Total Streams	Setup Failures	Setup Failure Rate (%)
	154,701	157	0.10
UDP	1,140,090	11	0.00
TurnTCP	3,217	4	0.12
CompoundTCP	279	3	1.08
MultiTCP	5,400	0	0.00

CompoundTCP = Media is flowing over HTTPS/Proxy  
 TurnTCP/TCPHostActive = Media is flowing over TCP  
 MultiTCP - Uses multiple TCP connections and distributes packets using round robin.

### Setup Failures by Country/Subnet (7 days)

Country	Total Streams	Setup Failures	Setup Failure Rate (%)
	121,524	60	0.05
	412,218	15	0.00
	126,940	12	0.01
	45,618	11	0.02
	89,894	10	0.01
	29,631	7	0.02
	35,962	6	0.02
	5,907	6	0.10
	10,007	6	0.06
	15,463	5	0.03
	32,528	5	0.02



### Setup Failures by Endpoint (7 days)

Endpoint	Total Streams	Setup Failures	Setup Failure Rate (%)
*	1,288,691	175	0.01
	14,996	0	0.00

### Setup Failures by User (7 days)

UPN	Total Streams	Setup Failures	Setup Failure Rate (%)
*	1,294,901	175	0.01
	8,786	0	0.00

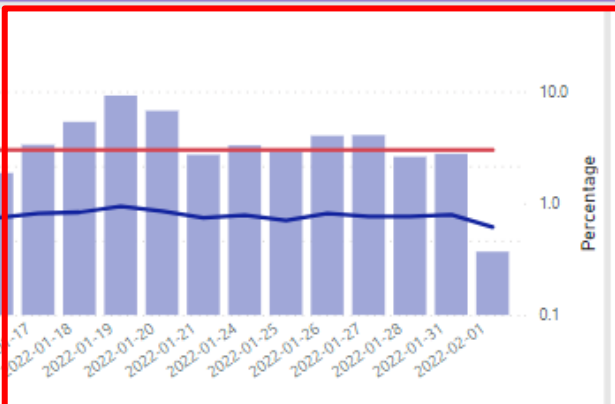
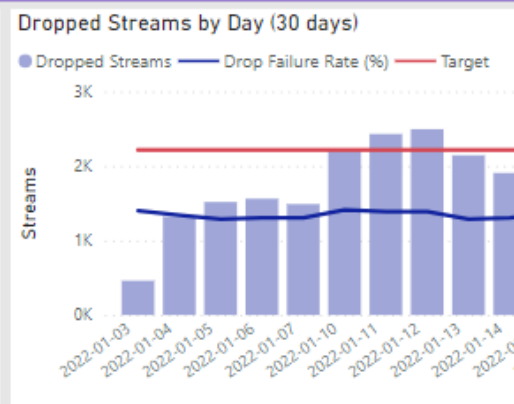
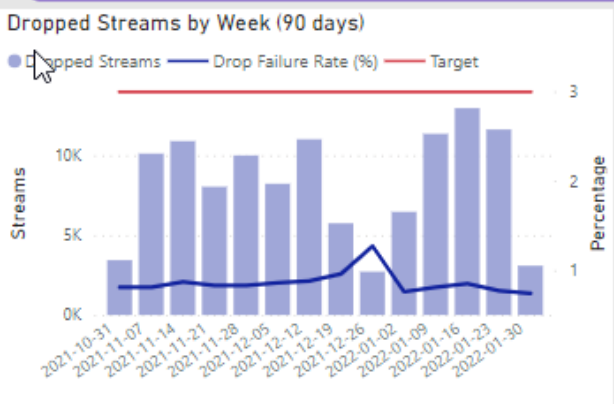
Is Teams? (1 = Yes)  0  1
 Inside/Outside Corp  Inside  Outside
 Session Type  Conf  P2P
 Media Type  Audio  VBSS  Video

Building Name  All
 City 
 Client

### Drill Through Dimensions

- Second ASN
- Second ASN Country
- Second Building Name\*
- Second City\*
- Second Reflexive Local IP Network (Public Subnet)
- Second Subnet

\*Sourced from building data file

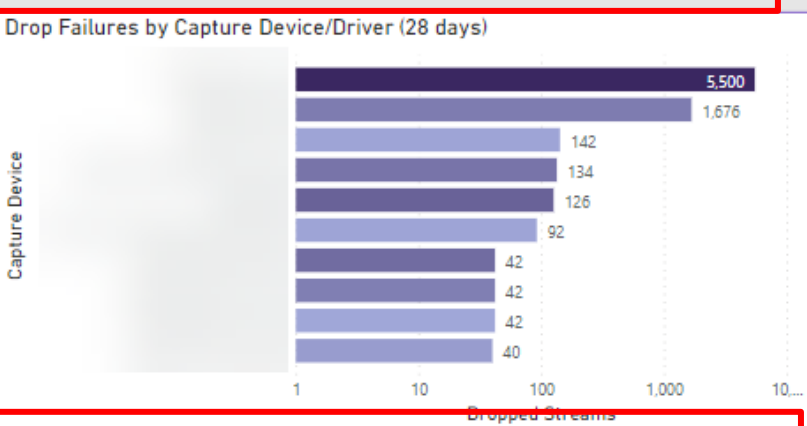
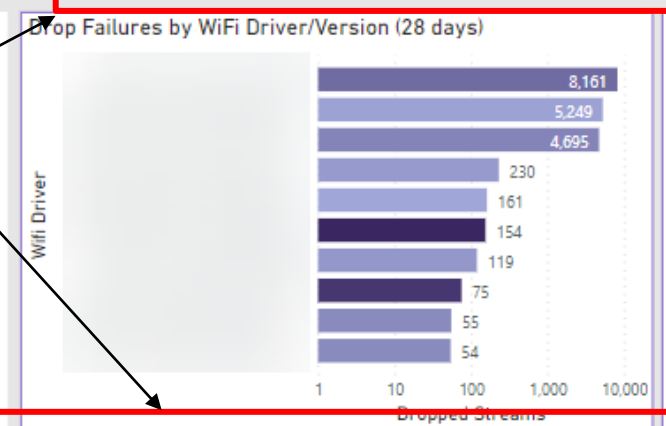


#### Drop Failure Rate by Transport (7 days)

Transport	Total Streams	Dropped Streams	Drop Failure Rate (%)
UDP	154,857	5,912	3.82
MultiTCP	1,141,583	3,943	0.35
TurnTCP	5,408	52	0.96
CompoundTCP	3,215	39	1.21
CompoundTCP	276	4	1.45

#### Drop Failure Rate by Client (7 days)

Client	Total	Dropped	Drop Failure Rate (%)
	26,244	2,656	10.12
	24,390	1,190	4.88
	17,215	195	1.13
	2,748	53	1.93
	5	0	0.00
	231	0	0.00



Visuals are interactive

#### Drop Failures by ASN/Public IP (7 days)

ASN	Total Streams	Dropped Streams	Drop Failure Rate (%)
	121,696	5,656	4.65
	169,037	543	0.32
	124,978	396	0.32
	48,544	240	0.49
	34,025	178	0.52

#### Drop Failures by Country/Subnet (7 days)

Country	Total Streams	Dropped Streams	Drop Failure Rate (%)
	121,748	5,656	4.65
	412,856	1,230	0.30
	127,061	338	0.27
	45,627	315	0.69
	90,089	192	0.21
	36,020	185	0.51
	29,647	155	0.52
	5,907	149	2.52
	32,531	113	0.35
	2,171	112	5.16
	12,437	106	0.85
	20,400	90	0.44

#### Drop Failure Rate by User (28 days)

UPN	Total Streams	Dropped Streams	Drop Failure Rate (%)
*	5,398,529	40,702	0.75
	41,545	1,878	4.52

#### Drop Failure Rate by Endpoint (28 days)

Endpoint Name	Total Streams	Dropped Streams	Drop Failure Rate (%)
*	5,379,898	21,337	0.40
	60,509	21,244	35.11



Total Good Audio Streams  
**3,076,126**

Total Poor Audio Streams  
**32,274**

Poor Audio Rate

Wired (%)	Wi-Fi 5.0 Ghz (%)	Wi-Fi 2.4 Ghz (%)
0.61	0.43	1.95

Audio Reliability  
**Drop Failure Rate (%)**  
1.10

User Audio Experience  
**7**

**Drill Through Dimensions**

- Second ASN City
- Second Reflexive Local IP Network (Public Subnet)
- Second Subnet

User Audio Quality

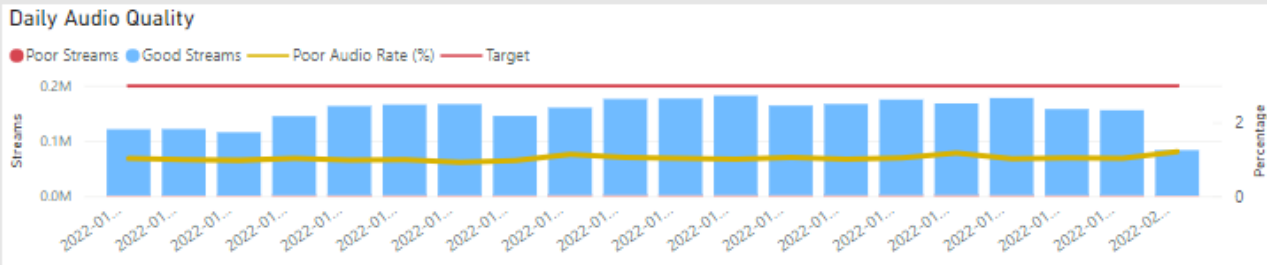
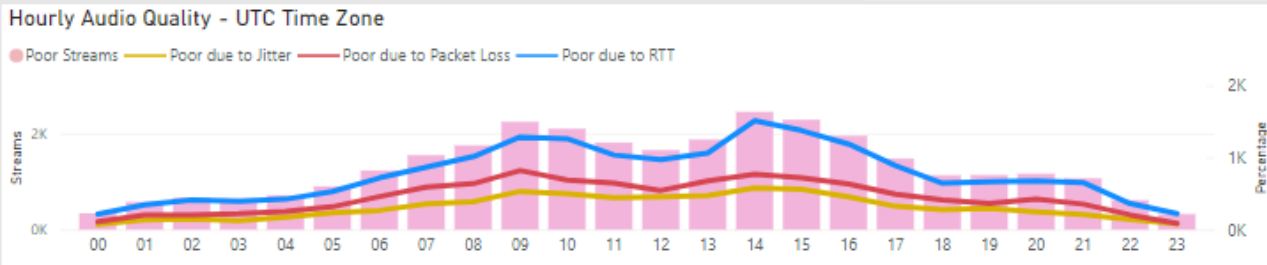
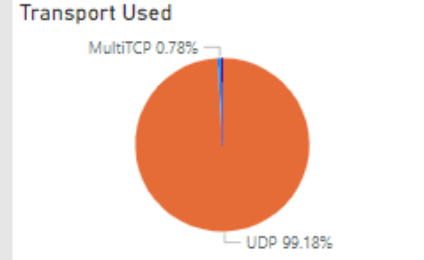
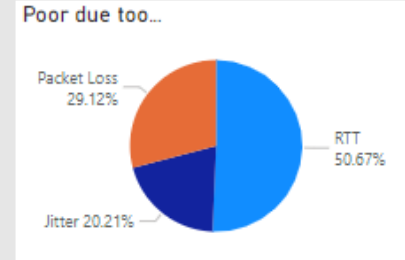
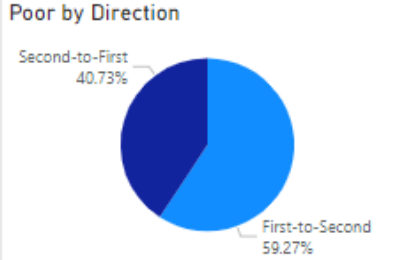
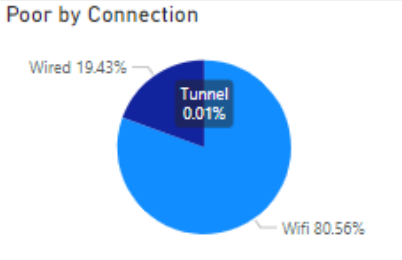
UPN	Good Streams	Poor Streams	Poor Audio Rate (%)	Drop Failure Rate (%)
*	2,997,391	29,679	0.98	1.00
	78,735	2,595	3.19	5.16

Audio Stream Heat Map by Subnet/Public IP

Subnet	Good Streams	Poor Streams	Poor Audio Rate (%)	Poor Feedback Rate (%)	Drop Failure Rate (%)	Avg Network Jitter	Avg Packet Loss Rate (%)
	683,486	6,550	0.95	1.46	0.36	15.62	5%
	426,165	4,778	1.11	1.34	0.44	18.03	6%
	27,112	1,308	4.60	1.94	1.89	48.57	13%
	14,096	1,008	6.67	1.59	2.51	58.49	15%
	23,576	805	3.30	0.00	0.97	39.29	7%
	156,052	783	0.50	1.35	0.23	12.88	3%
	62,461	772	1.22	0.88	0.30	18.05	7%
	10,367	681	6.16	0.00	1.31	24.23	11%

Meeting Audio Quality

Conference Id	Good Streams	Poor Streams	Poor Audio Rate (%)	Poor Feedback Rate (%)
	177	89	33.46	NaN
	66	49	42.61	NaN
	418	29	6.49	NaN
	193	12	5.85	0.00
	10	11	52.38	NaN
	29	8	21.62	NaN



Client Audio Quality

Client	Good Streams	Poor Streams	Poor Audio Rate (%)
	2,769,905	23,378	0.84
	175,025	5,548	3.07
	29,649	1,552	4.97
	56,963	1,285	2.21
	36,933	307	0.82
	7,076	200	2.75
	556	3	0.54
	14	1	6.67

Country Audio Quality

Country	Good Streams	Poor Streams	Poor Audio Rate (%)
	354,755	6,370	1.76
	1,022,214	5,320	0.52
	120,729	2,742	2.22
	263,874	1,893	0.71
	117,374	1,419	1.19
	84,857	1,174	1.36
	70,880	944	1.31
	182,860	851	0.46

ASN/Public Network Audio Quality

ASN	Good Streams	Poor Streams	Poor Audio Rate (%)
	354,755	6,370	1.76
	109,666	1,820	1.63
	364,736	999	0.27
	238,899	990	0.41

Wi-Fi Band/BSSID Audio Quality

BSSID	Good Streams	Poor Streams	Poor Audio Rate (%)
	21,933	959	4.19
	0	176	100.00
	77	36	31.86
	46	34	42.50
	166	30	15.31
	27	23	46.00
	101	22	17.89
	0	22	100.00
	268	20	6.94



Call Type Quality Overview

Call Type	Good Streams	Poor Streams	Poor Audio Rate (%)	Poor Feedback (%)	Poor Video Rate (%)	Poor Sharing Rate (%)
Client : Server	26,308,864	549,899	2.05	1.55	3.89	1.19
Client : Client	5,631,744	229,081	3.91	3.71	4.44	1.16

Poor Audio Rate

Wired (%)	1.68
Wi-Fi 5.0 Ghz (%)	1.01
Wi-Fi 2.4 Ghz (%)	3.71

Drop Failure Rate

1.17
------

**Drill Through Dimension**  
Second UPN



Audio Stream Heat Map

Subnet	ASN	Transport	Connection	Direction	Poor Streams	Avg Jitter	Media Jitter	Avg Jitter Max	Avg Packet Loss Rate	Median Packet Loss Rate
		TurnTCP		First-to-Second	37	9.62	8	70.13	0%	0%
		UDP		First-to-Second	36	5.28	4	41.30	1%	0%
	45669	UDP		First-to-Second	34	28.94	19	178.27	2%	0%
	9159	TurnTCP		First-to-Second	24	31.08	29	71.54	0%	0%
	18004	UDP		First-to-Second	22	28.68	28	267.42	8%	4%
	37130	TurnTCP		First-to-Second	21	8.68	9	55.68	0%	0%
	45609	UDP		First-to-Second	21	6.63	5	56.27	0%	0%

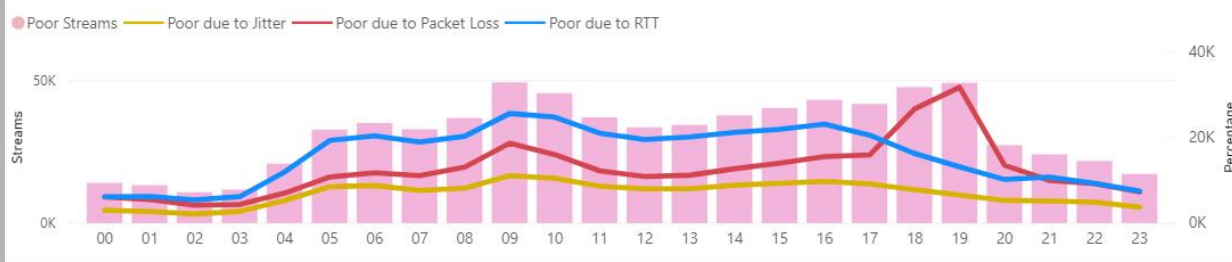
Client Audio Quality

Client	Good Streams	Poor Streams	Poor Audio Rate (%)
	26,601,323	567,020	2.09
	1,854,579	83,947	4.33
	888,271	57,743	6.10
	1,277,243	30,912	2.36
	444,520	19,783	4.26
	173,296	9,797	5.35
	141,001	1,459	1.02
	84,544	1,129	1.32
	6,822	222	3.15
	29,895	170	0.57
	1,315	98	6.94

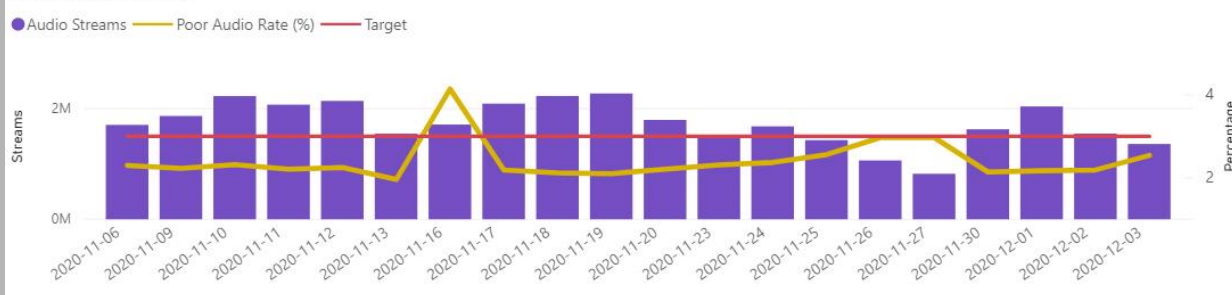
Audio Quality Map (7 days)



Hourly Audio Quality - UTC Time Zone



Daily Audio Quality



Capture Device

Microphone	Failure Rate	Total Sessions
	6.39	9,058,449
	0.15	3,308,693
	NaN	2,617,928
	2.45	1,621,826

User Feedback

Rating	Feedback
4.91	
2.79	
3.32	
2.70	
4.00	

Meeting Audio Quality Right click to Drill Through to Meeting Health Details

Conference Id	Date	Good Streams	Poor Streams	Poor Audio Rate (%)
	2020-11-06	83	13	13.54
	2020-11-06	37	11	22.92
	2020-11-06	94	10	9.62
	2020-11-06	12	8	40.00
	2020-11-06	4	8	66.67
	2020-11-06	17	7	29.17
	2020-11-06	30	7	18.92
	2020-11-06	67	7	9.46
	2020-11-06	32	6	15.79
	2020-11-06	71	6	7.79
	2020-11-06	8	6	42.86
	2020-11-06	84	6	6.67
	2020-11-06	87	5	5.43
	2020-11-06	7	5	41.67

Endpoint Audio Quality

Endpoint Name	Good Streams	Poor Streams	Poor Audio Rate (%)
*	30,864,261	733,116	2.32
	1,075,116	45,851	4.09

Wi-Fi BSSID Audio Quality

BSSID	Band	Good Streams	Poor Streams	Poor Audio Rate (%)
	2.4 Ghz	650,406	22,245	3.31
	2.4 Ghz	320,301	15,766	4.69
		68,172	8,524	11.11
	5.0 Ghz	806,940	7,777	0.95
		109,662	5,504	4.78
	5.0 Ghz	316,955	3,646	1.14
		52,208	1,817	3.36

## Search (Last 28 days)

### Search for a User

Use the search box to search for a given user by entering all or part of their User Principal Name (UPN).

### Search for a Subnet

Use the search box to filter the results for a given subnet.

### Search for a Conference ID

Use the search box to filter the results for a given conference ID.

### Search for a Meeting ID

Use the search box to filter the results by a single meeting ID and display the associated conference IDs.

### User Results Right click to Drill Through to User Health Details

UPN

Show as a table

Include

Exclude

Drill through

Group

Copy

Enter search parameter in any field to filter results

Poor Audio Rate (%)	Poor Video Rate (%)	Poor Sharing Rate (%)	Drop Failure Rate (%)	Setup Failure Rate (%)
1.44	5.07	5.08	1.66	0.14
			1.15	0.10

User Health Details

Right click any value to Drill Through for more details

### Subnet Results Right click to Drill Through to Subnet Health Details

Subnet

Show as a table

Include

Exclude

Drill through

Group

Copy

Total Streams	Poor Audio Rate (%)	Poor Video Rate (%)	Poor Sharing Rate (%)	Drop Failure Rate (%)	Setup Failure Rate (%)
	1.45	3.64	0.69	0.33	0.02
	0.88	0.00	1.23	0.70	0.20
	0.91	NaN	0.00	0.72	0.19
				0.39	0.03
				0.33	0.03
				0.88	0.22
				0.82	0.25
				0.29	0.02

Audio Health Details

Media Reliability

Video Health Details

Sharing Health Details

### Meeting Results Right click to Drill Through to Meeting Health Details

Conference Id

Show as a table

Include

Exclude

Drill through

Group

Copy

Date	Participants	Poor Feedback	Poor Audio Rate (%)	Poor Video Rate (%)	Poor Sharing Rate (%)	Drop Failure Rate (%)	Setup Failure Rate (%)
2022			0.31	100.00	NaN	0.00	0.00
2022			1.18	0.98	1.02	3.53	0.00
2022			1.90	2.11	NaN	0.00	0.00
2022			0.74	NaN	5.38	1.74	0.00
2022						0.00	0.00
2022						0.00	0.00
2022			2.48	1.45	0.00	4.64	0.00
2022			5.43	4.76	1.41	4.51	0.00

Meeting Health Details

The **Conference ID** can be located by using Call Analytics. From the Teams Admin Center, search for and select a user to display the user's general information. Select the Call History tab to display a list of the user's call history. Identify the call you would like to analyze by selecting it from the call history list. Once identified and selected the conference ID is shown in the URL and can be found as a GUID after the "/meeting/" text.

**Example:** <https://admin.teams.microsoft.com/users/xxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxxx/meeting/b0abbca4-8be9-4968-b80e-0a44db357c8c>

The **Meeting ID** can be found as part of the Teams meeting join URL.

**Example:** [https://teams.microsoft.com/l/meetup-join/19:meeting\\_Mzl2YTRkZmltMTNmZS00NTUxLTk4NjEtMzcyYWI5ZDY0MTFh@thread.v2/0?context=\(\\*\)](https://teams.microsoft.com/l/meetup-join/19:meeting_Mzl2YTRkZmltMTNmZS00NTUxLTk4NjEtMzcyYWI5ZDY0MTFh@thread.v2/0?context=(*))



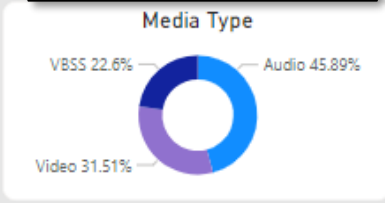
# Conference ID

Time Started (UTC):  
[Blank]

Time Ended (UTC):  
[Blank]

Authenticated Participants  
**72**

Poor Audio Rate (%)  
**12.89**



Host Tenant  
[Blank]

Host Region  
[Blank]

Search for a User

**Drill Through Dimension**

- Second Conference ID

★

Audio | VBSS | Video

Meeting Quality

Participant	UserType	Federated	PSTN Call Type	Phone Number	Start Time (UTC)	End Time (UTC)	Media Type	Call Setup Failure	Mid Call Failure	Poor	Poor Reason	CDR Response	Avg Jitter Buffer Size (Audio Only)	Avg Jitter Buffer Size Max (Audio Only)	Avg Network Jitter (Audio Only)	Avg Jitter (Audio Only)
*	User	False			1/5/2022 2:09:59 AM	1/5/2022 3:43:31 AM	Video	0	0	0		OK	NaN	NaN	NaN	
*	User	False			1/5/2022 2:09:59 AM	1/5/2022 3:43:31 AM	Video	0	0	0		OK	NaN	NaN	NaN	
*	User	False			1/5/2022 2:09:59 AM	1/5/2022 3:43:31 AM	Audio	0	0	0		OK	176.00	916.00	35.78	
*	User	False			1/5/2022 2:09:59 AM	1/5/2022 3:43:31 AM	Audio	0	0	0		OK	123.00	691.00	54.50	
*	User	False			1/5/2022 2:09:59 AM	1/5/2022 3:43:31 AM	VBSS	0	0	0		OK	NaN	NaN	NaN	
*	User	False			1/5/2022 2:09:59 AM	1/5/2022 3:43:31 AM	VBSS	0	0	0		OK	NaN	NaN	NaN	
*	User	False			1/5/2022 2:10:09 AM	1/5/2022 4:26:23 AM	Audio	0	1	1	RoundTrip	MediaConnectivityError	886.00	2,000.00	1,119.30	8
*	User	False			1/5/2022 2:10:09 AM	1/5/2022 4:26:23 AM	Audio	0	1	0		MediaConnectivityError	NaN	NaN	NaN	
*	User	False			1/5/2022 2:10:09 AM	1/5/2022 7:33:47 AM	Audio	0	0	0		OK	98.00	912.00	30.26	
*	User	False			1/5/2022 2:10:09 AM	1/5/2022 7:33:47 AM	Audio	0	0	0		OK	NaN	NaN	NaN	
*	User	False			1/5/2022 2:10:09 AM	1/5/2022 4:26:23 AM	Video	0	1	0		MediaConnectivityError	NaN	NaN	NaN	
*	User	False			1/5/2022 2:10:09 AM	1/5/2022 4:26:23 AM	Video	0	1	0		MediaConnectivityError	NaN	NaN	NaN	
*	User	False			1/5/2022 2:10:09 AM	1/5/2022 4:26:23 AM	VBSS	0	1	0		MediaConnectivityError	NaN	NaN	NaN	
*	User	False			1/5/2022 2:10:09 AM	1/5/2022 7:33:47 AM	VBSS	0	0	0		OK	NaN	NaN	NaN	
*	User	False			1/5/2022 2:10:09 AM	1/5/2022 7:33:47 AM	Video	0	0	0		OK	NaN	NaN	NaN	
*	User	False			1/5/2022 2:10:10 AM	1/5/2022 7:34:26 AM	Audio	0	0	0		OK	NaN	NaN	NaN	
*	User	False			1/5/2022 2:10:10 AM	1/5/2022 7:34:26 AM	VBSS	0	0	0		OK	NaN	NaN	NaN	
*	User	False			1/5/2022 2:10:10 AM	1/5/2022 7:34:26 AM	Video	0	0	0		OK	NaN	NaN	NaN	
*	User	False			1/5/2022 2:10:10 AM	1/5/2022 7:34:26 AM	Audio	0	0	0		OK	72.00	390.00	136.93	
*	User	False			1/5/2022 2:10:17 AM	1/5/2022 4:55:16 AM	Audio	0	0	0		MediaConnectivityError	893.00	2,000.00	229.17	
*	User	False			1/5/2022 2:10:17 AM	1/5/2022 4:55:16 AM	Audio	0	0	0		MediaConnectivityError	183.00	539.00	77.33	
*	User	False			1/5/2022 2:10:17 AM	1/5/2022 4:55:16 AM	Video	0	1	0		MediaConnectivityError	NaN	NaN	NaN	
*	User	False			1/5/2022 2:10:17 AM	1/5/2022 4:55:16 AM	Video	0	1	0		MediaConnectivityError	NaN	NaN	NaN	
*	User	False			1/5/2022 2:10:17 AM	1/5/2022 4:21:00 AM	Audio	0	1	0		MediaConnectivityError	NaN	NaN	NaN	
*	User	False			1/5/2022 2:10:17 AM	1/5/2022 4:21:00 AM	VBSS	0	1	0		MediaConnectivityError	NaN	NaN	NaN	

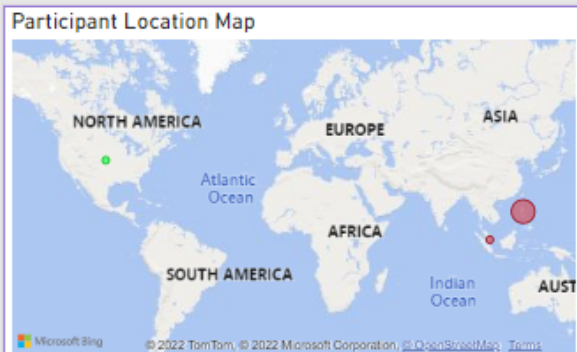
User Feedback

Rating: NaN

Feedback: [Blank]

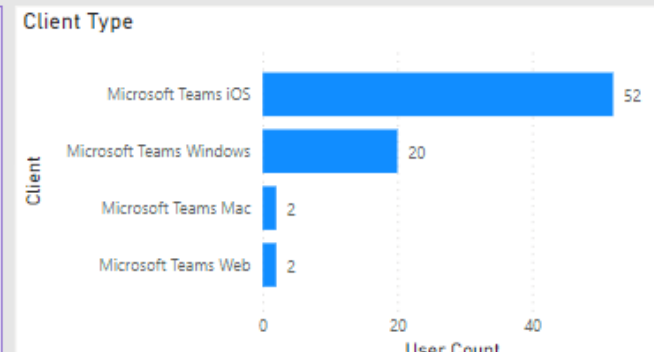
Text: [Blank]

Click on Conference ID for more details



Quality by ASN/Public Network

ASN	User Count	Total Streams	Poor Audio Streams	Poor Audio Rate (%)
[Blank]	20	134	10	23.26
[Blank]	10	84	10	35.71
[Blank]	11	67	2	9.09
[Blank]	2	14	2	50.00
[Blank]	1	13	2	100.00



Top 10 Poor Networks (Last 28 days)

\*Video reports utilize a new video classifier and is applicable to Microsoft Teams only

Is Teams? (1 = Yes)  0  1

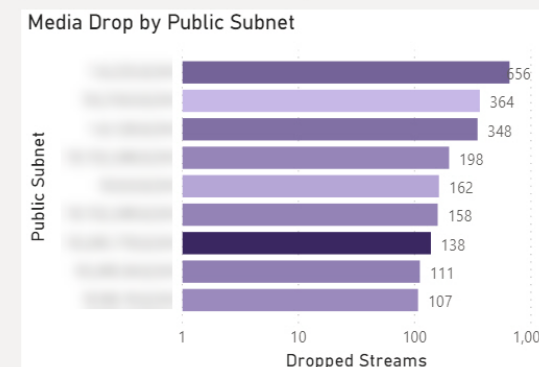
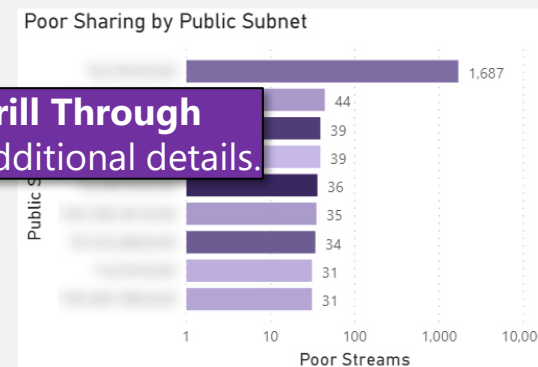
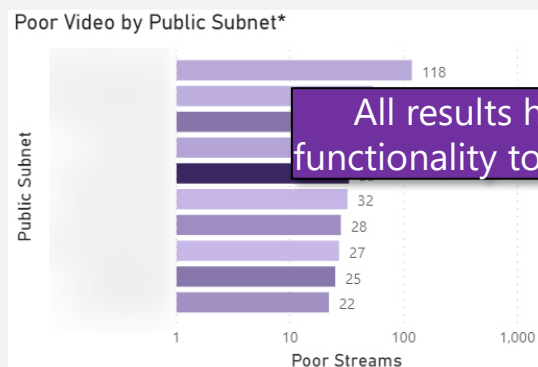
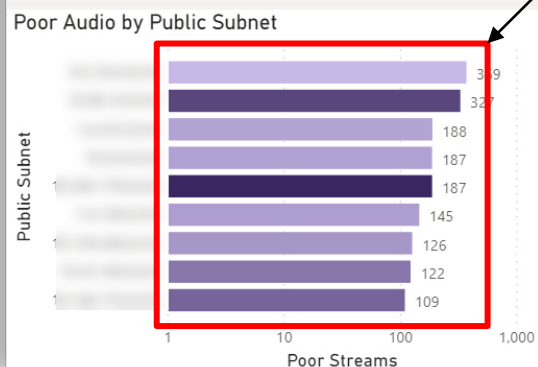
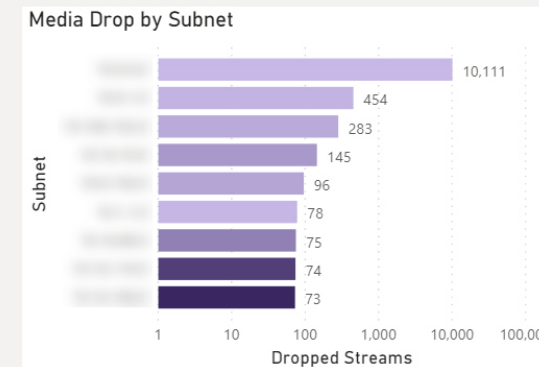
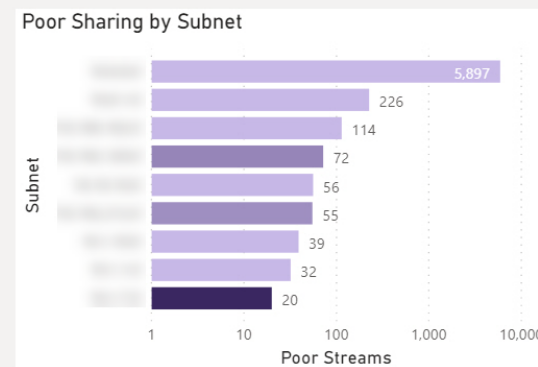
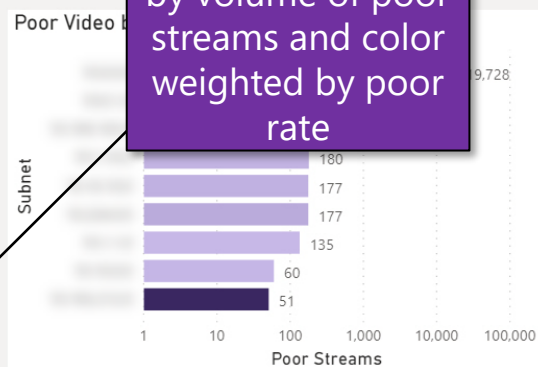
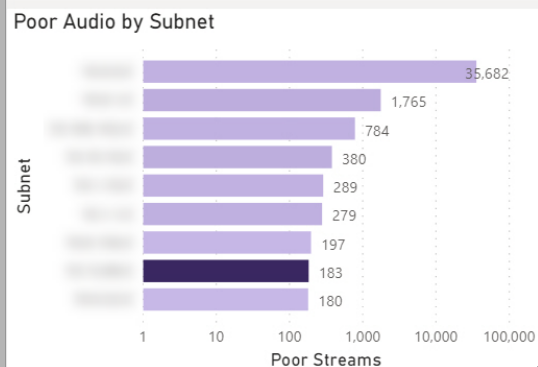
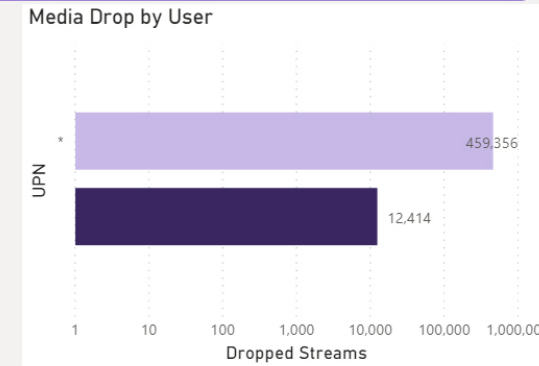
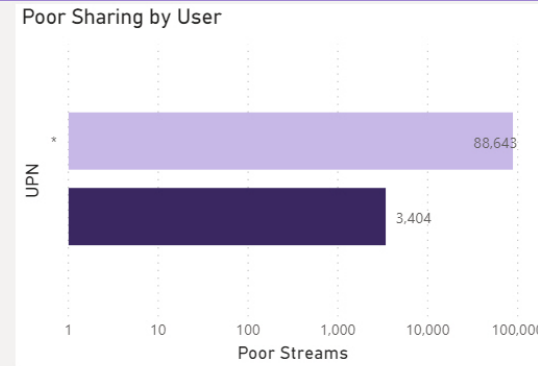
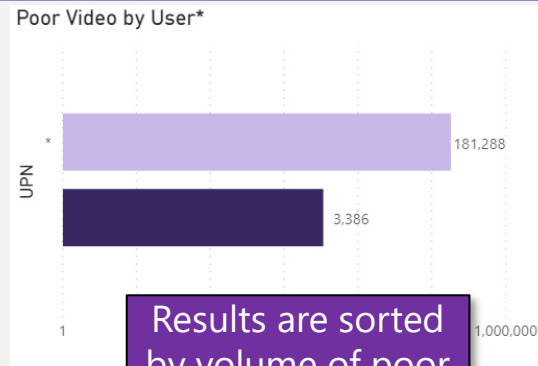
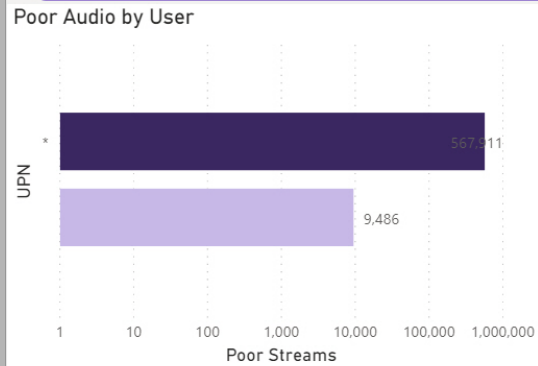
Call Type  Client : Client  Client : Server

Inside/Outside Corp  Inside  Outside

Connection  Wifi  Wired

Estimated VPN (1 = Yes)  0  1

Client



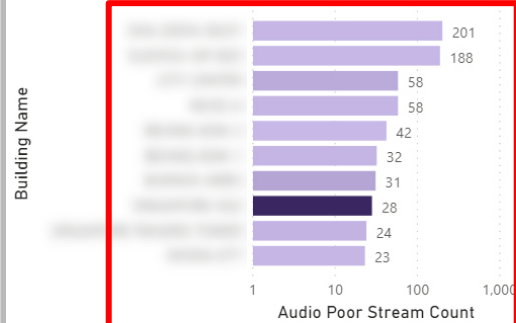
Results are sorted by volume of poor streams and color weighted by poor rate

All results have Drill Through functionality to get additional details.

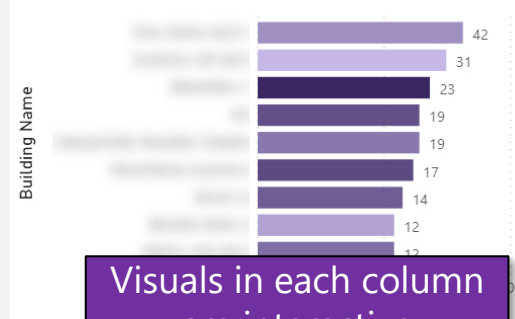
Is Teams? (1 = Yes)  
  Call Type  
  Connection  
  Mapped VPN (1= Yes)  
  Estimated VPN (1 = Yes)

Client: All

Poor Audio Rate by Building



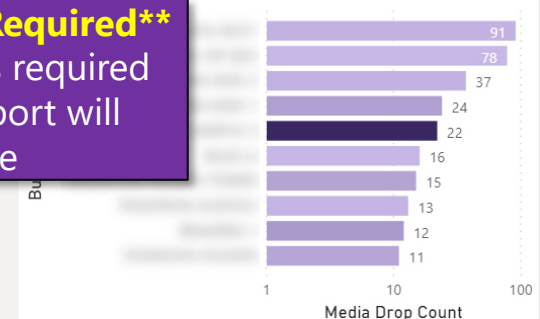
Poor Video Rate by Building\*



Poor Sharing Rate by Building

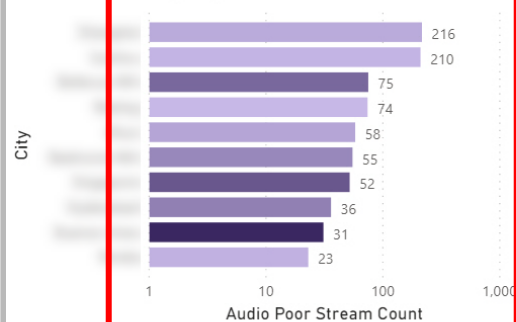


Media Drop Rate by Building

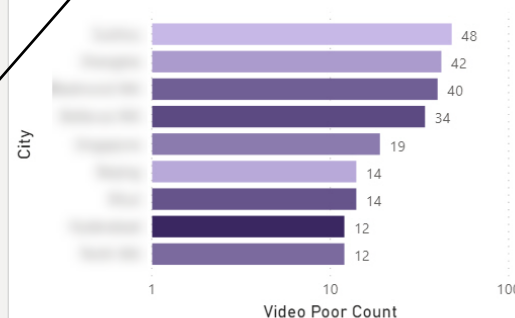


**\*\*Building File Required\*\***  
A building file is required before this report will populate

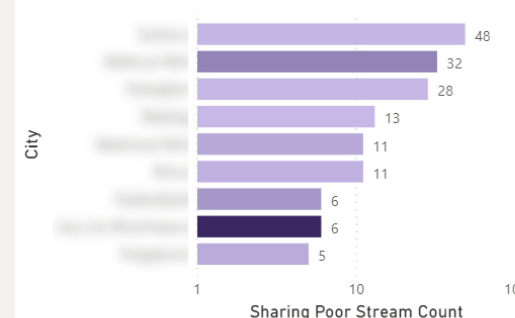
Poor Audio Rate by City



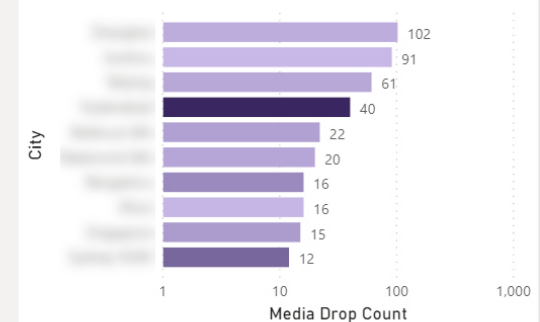
Poor Video Rate by City



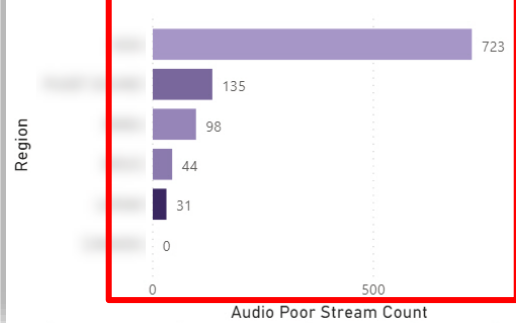
Poor Sharing Rate by City



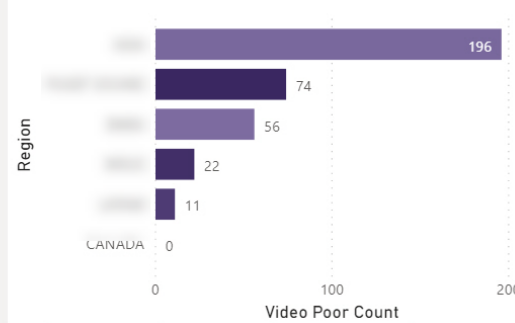
Media Drop Rate by City



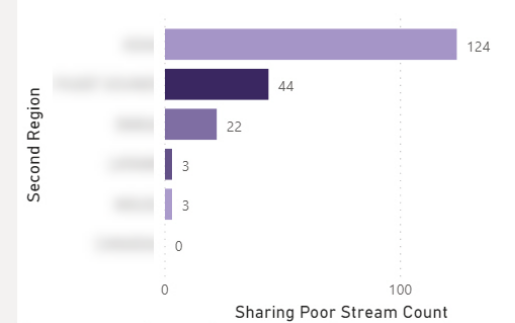
Poor Audio Rate by Region



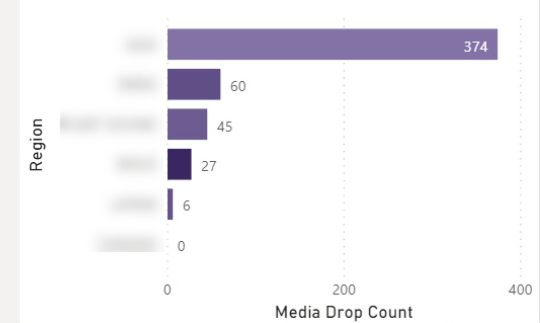
Poor Video Rate by Region\*



Poor Sharing Rate by Region



Media Drop Rate by Region



Visuals in each column are interactive

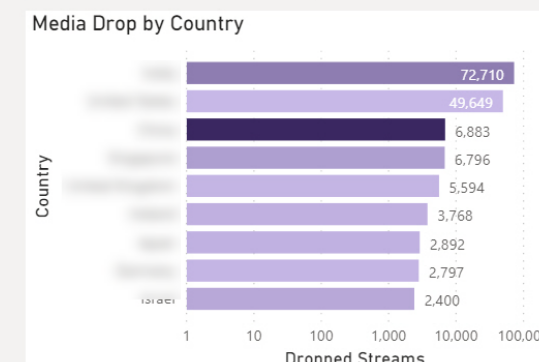
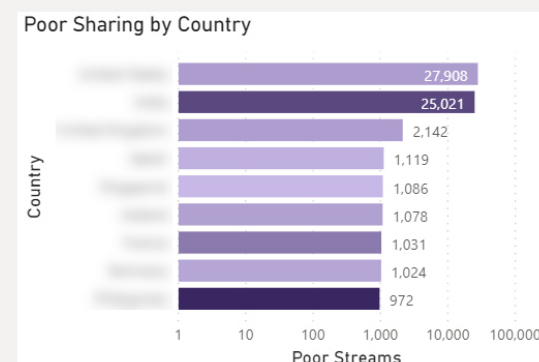
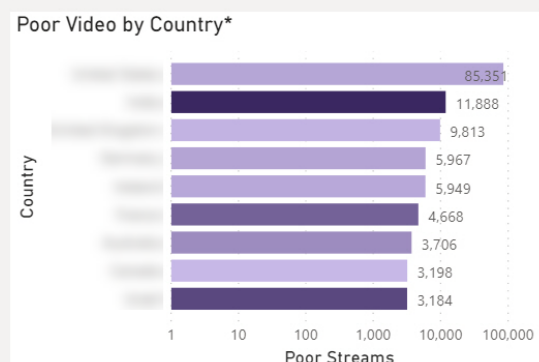
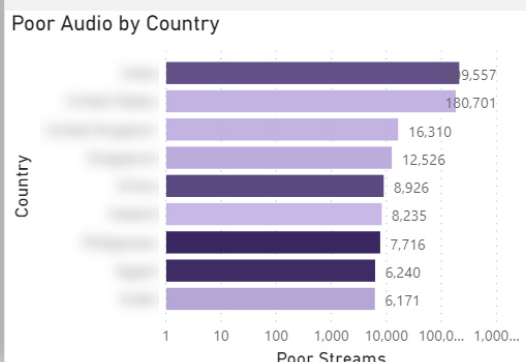
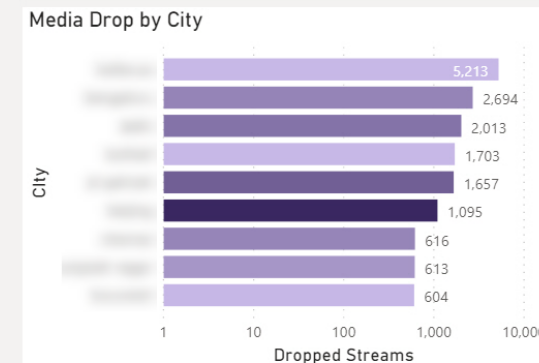
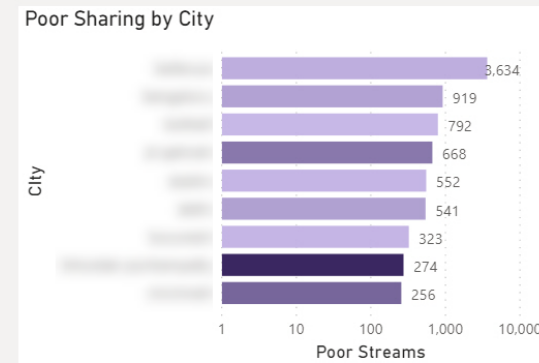
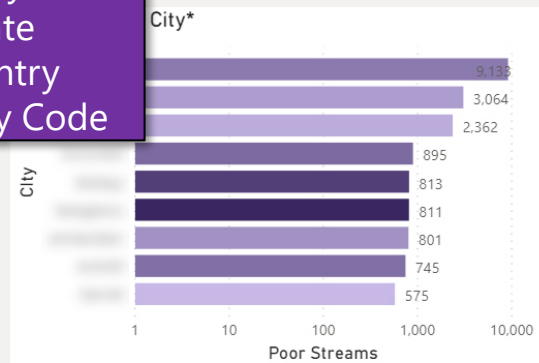
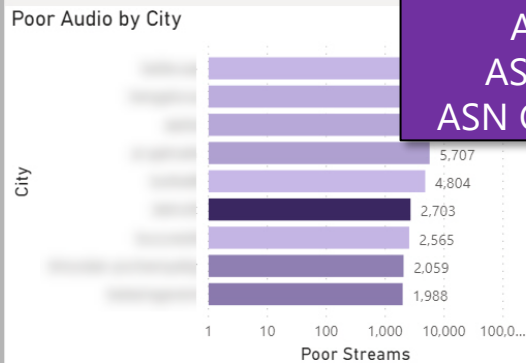
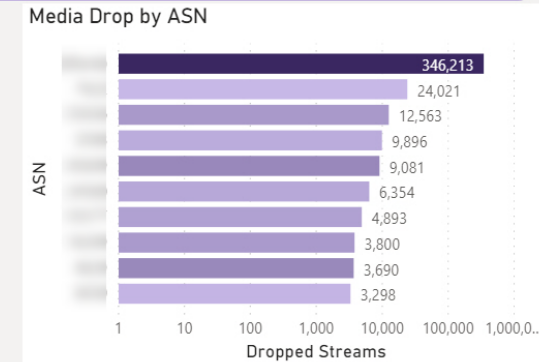
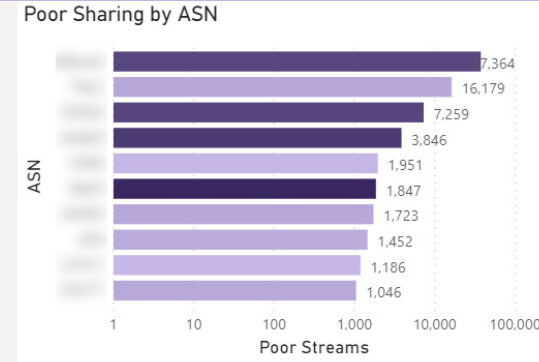
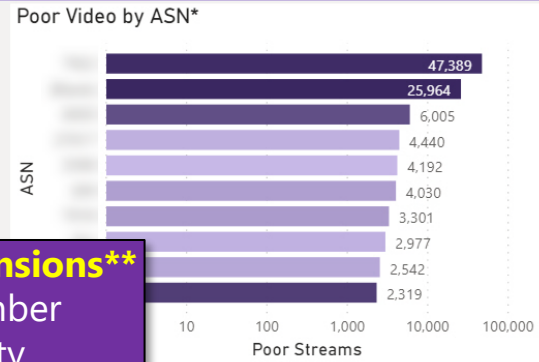
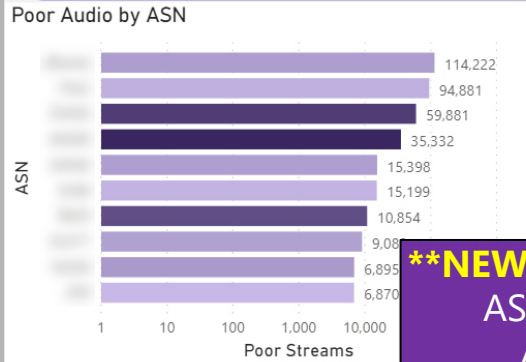
Top 10 ASN (Last 28 days)

\*Video reports utilize a new video classifier and is applicable to Microsoft Teams only

Is Teams? (1 = Yes)   
  Inside/Outside Corp   
  Call Type   
  Connection   
  Mapped VPN (1= Yes)

0     1   
  Inside     Outside   
  Client : Client     Client : Server   
  Wifi     Wired   
  (Blank)     0

Region:    
 Client:



**\*\*NEW Dimensions\*\***

- ASN Number
- ASN City
- ASN State
- ASN Country
- ASN Country Code



Thank you!

