

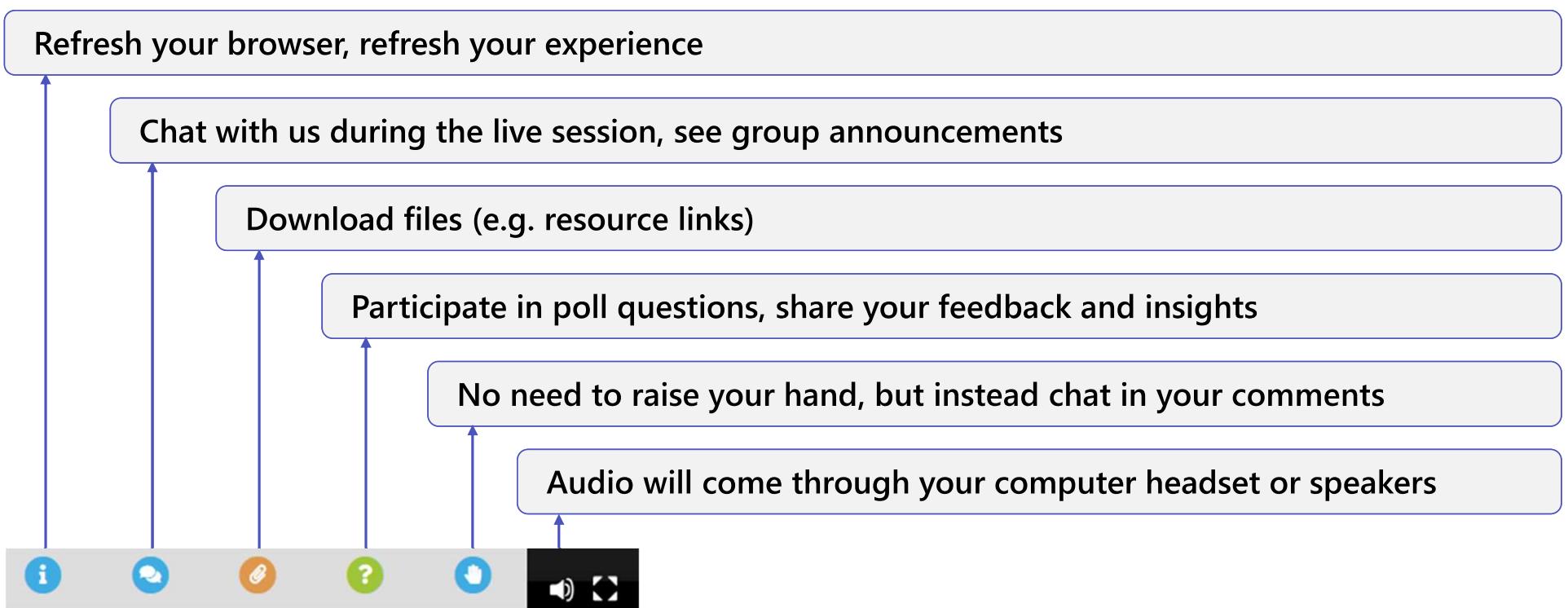


Virtual Events with Microsoft Teams

Kristin M. Lawson
Aaron Steele
Bryan Nyce
Pragathi Raj
Ryan Juvet

**Thank you for joining us!
We will begin shortly...**

Optimize your learning experience for today's live streaming event





Key takeaways

After this session, you will be able to:

- Obtain resources and best practices for planning & conducting your large, online event
- Leave with practical, technical production knowledge for your event scenario
- Ensure your event is engaging
- Understand the Attendee experience
- Be familiar with new Webinar capabilities



Virtual Events 101

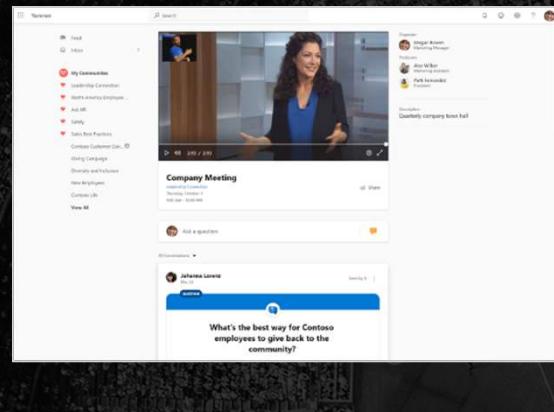
Teams Meetings vs. Teams Live Events

Virtual Events powered by Microsoft Teams

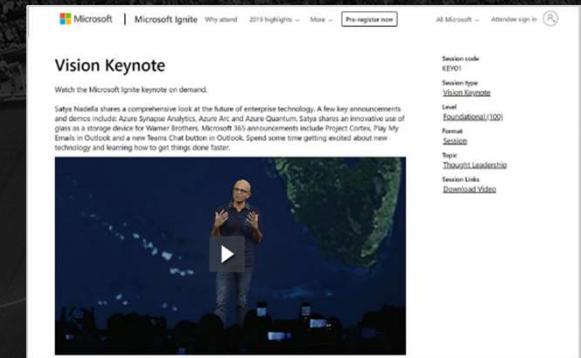
Deliver training to your employees, managers, partners



Update all employees with company meetings



Host conferences online; generate leads



Microsoft Teams Live Events

Broadcast your event with video, Q&A and attendee conversation

Up to 100,000 people can view the live broadcast
Invite people internally or externally
Engage your audience with Q&A and conversation
Production options from simple to customized

Host events in Teams, Yammer or a custom event site

Reach the public through consumer streaming channels
Event recording with automatic transcription & search

[Aka.ms/virtualeventplaybook](https://aka.ms/virtualeventplaybook)

Advanced event scenarios



Virtual conferences

- Single or multi-day experience.
- Multi-track and varying content types.
- Funnel to online communities for ongoing engagement
- Moderated Q&A

Leadership townhall

- 1 to Many with managed Q&A
- Often moderated destination events
- Sometimes crafted in a regular rhythm of business or on-demand

Public broadcasts

- 1 to Many destination broadcast
- Optional custom streaming configurations.
- May stream to additional platforms

Multi-guest panels

- Multiple guests and/or hosts
- Remote interviews
- Professional switching
- May stream to additional platforms

Your next idea

- Use powerful capabilities to reach customers, partners and your employees
- Create interactive content
- Reach influencers and create brand ambassadors
- Improve remote communications and citizen engagement

Tip: Scale and complexity matter

Production events can be self-produced. For advanced scenarios, a broader event team is recommended. Please review our production roles content from our [core event playbook](#).

NFL



SFF x SWITCH



NBA



CES



Prada & Miu Miu



Examples of Teams Live Events

Engage from anywhere Produce with quality

Advanced production scenarios allow you to unleash your creativity

Confidently produce a secure experience

Choose your broadcast platform experience to reach your target audience

Engage beyond your standard communication methods



Microsoft 365 and Teams

Teams Meetings



Many to many collaborations where everyone has equal participation

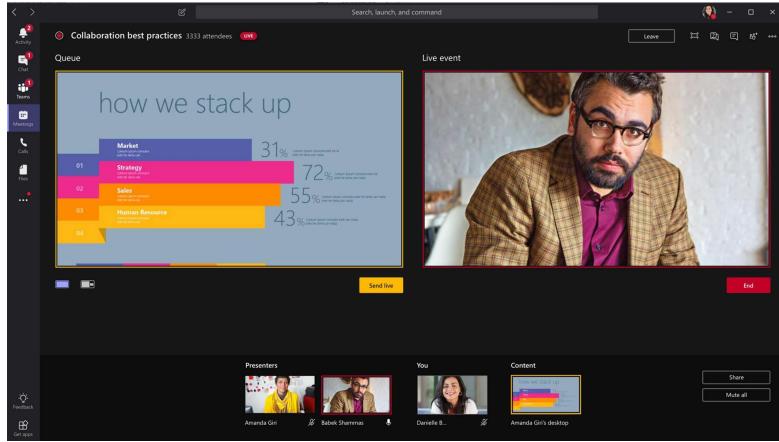


Teams Live Events



[*Aka.ms/virtualeventplaybook*](https://aka.ms/virtualeventplaybook)

Live Event Types



1. Teams Produced

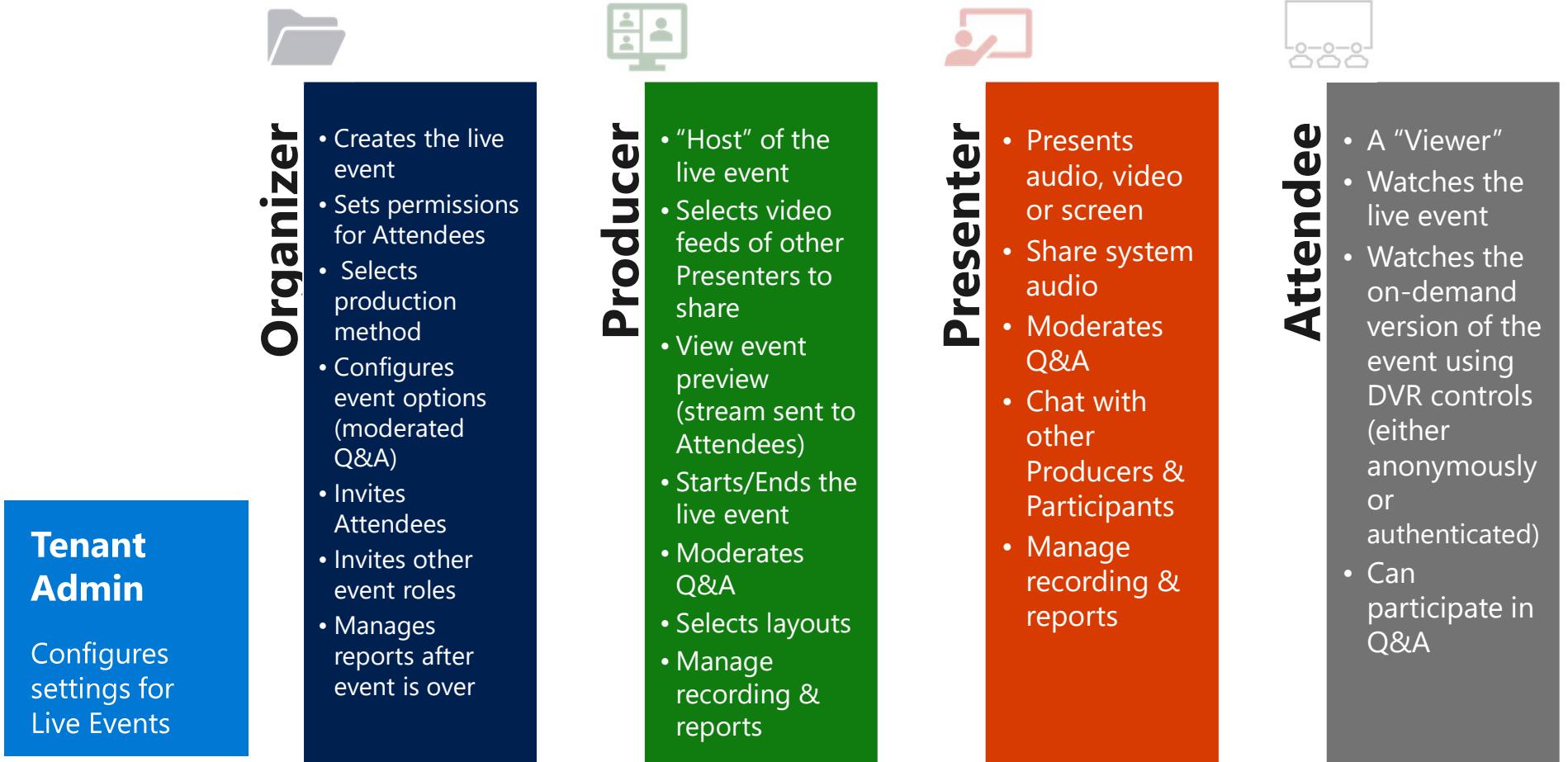
- Plug in your laptop and go
- Produce the event using Microsoft Teams (Meeting or Live Event)

2. External App or Device Produced

- Professional camera and sound set up
- Produce the event using an external hardware or software encoder (example; OBS with NDI)
- Use this option if you already have a production set up such as media mixers that supports streaming to an RTMP service
- This method is used for auditorium-style events broadcast 1-to-many in the audience

[Aka.ms/virtualeventplaybook](https://aka.ms/virtualeventplaybook)

Live Event Roles



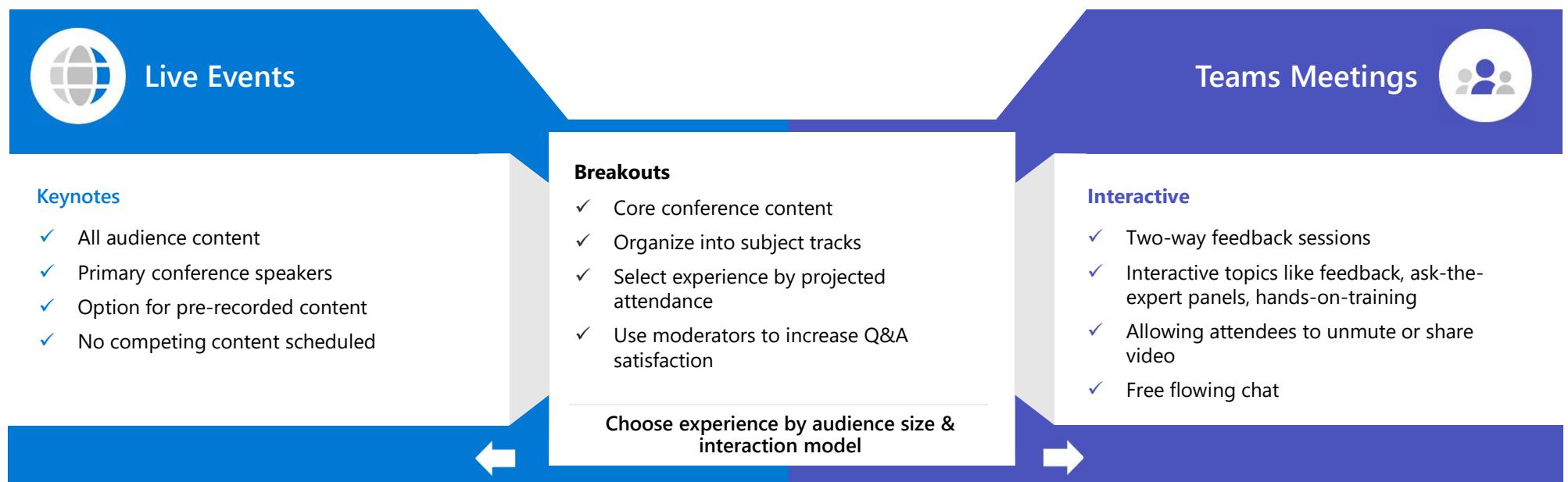


Selecting your Event Experience

Teams Meetings vs. Teams Live Events

Advanced events

Large scale, multi-day events may be a combination of Teams meetings and Live Event experiences. Match the interaction and broadcast method to the audience need.



Tips for a successful event:

- Provide navigation and awareness sign-posts on your primary attendee website or digital brochure.
- Make content available for attendees as soon as possible after event. Use Stream for Microsoft 365, Microsoft Teams, or other popular online video portal technologies to ensure a content lifecycle.

Selecting your event experience



| | | | |
|---------------------------------|--|---|--|
| I What type of event? | II What type of attendee experience? | III How many people will watch the event live?* | IV What level of video production? |
| Single event | Open 2-way discussion | Up to 300 | Simple webcam and screen share |
| Event series | Managed Q&A | Up to 20,000 | Multiple presenters |
| Part of an engagement community | No attendee discussion or Q&A | Up to 100,000 | Custom production |

Event examples:

Single event: Product launch, organizational changes, town hall

Event series: Training, office hours, employee development

Engagement community: Customer community, company partners, product support

*Are your attendees' members or guests of your Microsoft 365 tenant? Microsoft Stream does not support guest access at this time.

Selecting your event experience: Teams meeting



| | | | |
|---------------------------------|--|--|--|
| I What type of event? | II What type of attendee experience? | III How many people will watch the event live? | IV What level of video production? |
| Single event | Open 2-way discussion | Up to 300 | Simple webcam and screen share |
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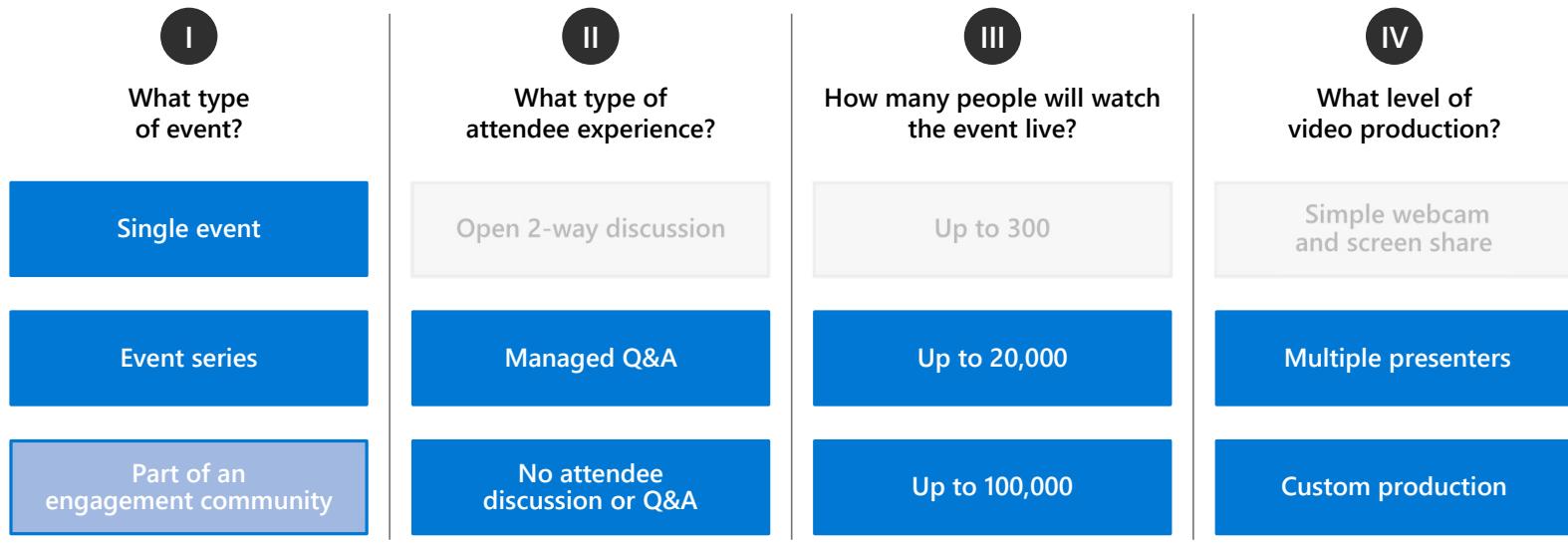


Recommended:
Teams meeting

Build community and authentic connection

- Provides open discussion features via audio and video for attendees
- Provide meetings as a part of a team to provide continuing engagement
- Support interactive chat during & multiple presenters in the meeting
- Familiar content and video sharing controls
- Use Yammer for your Teams-produced meeting as a part of a community experience or series with continuing conversation

Selecting your event experience: Live Events



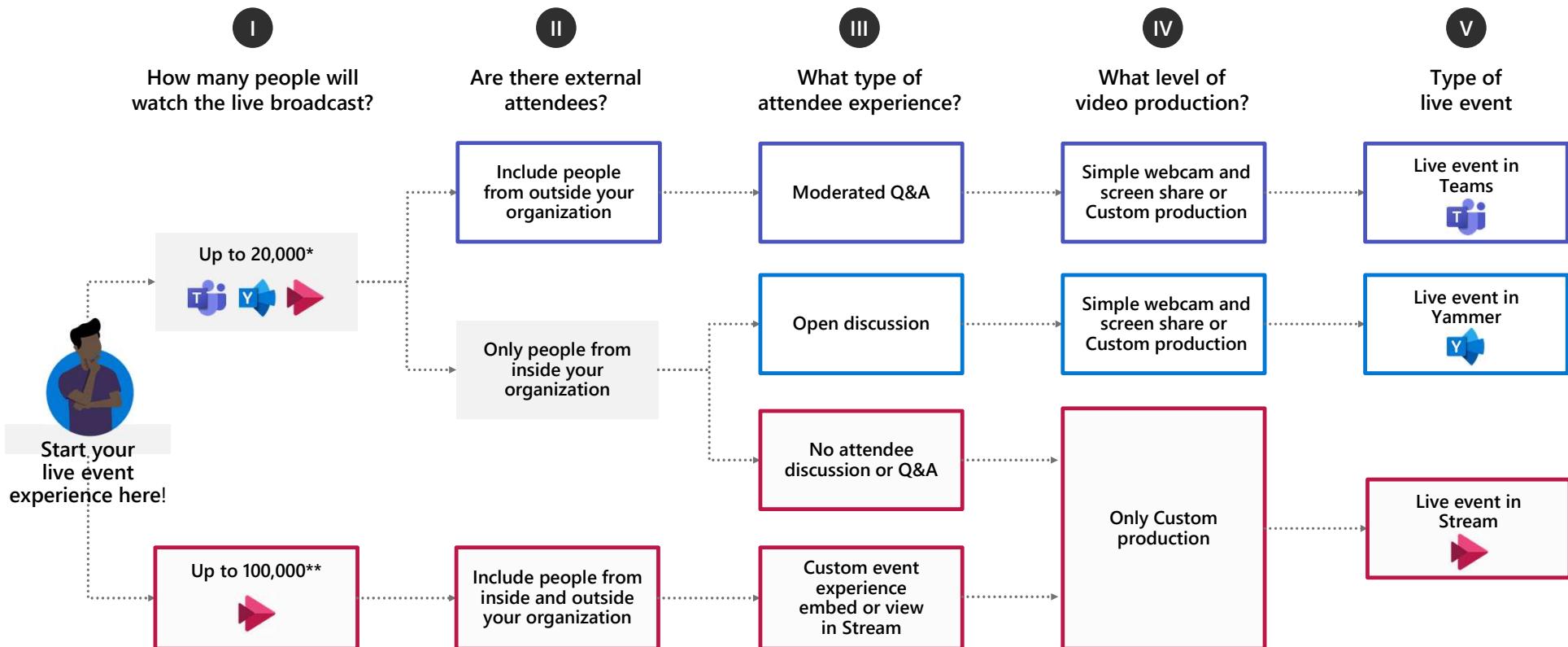
**Recommended:
Live Events**

Manage the attendee experience

- Multiple Live Event options for maximum flexibility
- Broad scale and highly managed content experience
- Supports self-produced to custom production scenarios
- Live Events can be publicized as a part of an engagement community

Next Step: Follow Live Event selection decision tree ➔

Which Live Event experience is right for me?



*Attendee limit increases over 10,000 are temporarily available until July 1, 2020. Events above 20,000 attendees require Live Events Assistance Program (LEAP) Engagement.

**Stream live events can be delivered outside an organization when planned through the LEAP team. It's a case-by-case, temporary service to help customers communicate at scale outside their organization.

Custom production scenarios, including external encoder and multi-camera configurations, will be covered in additional documentation



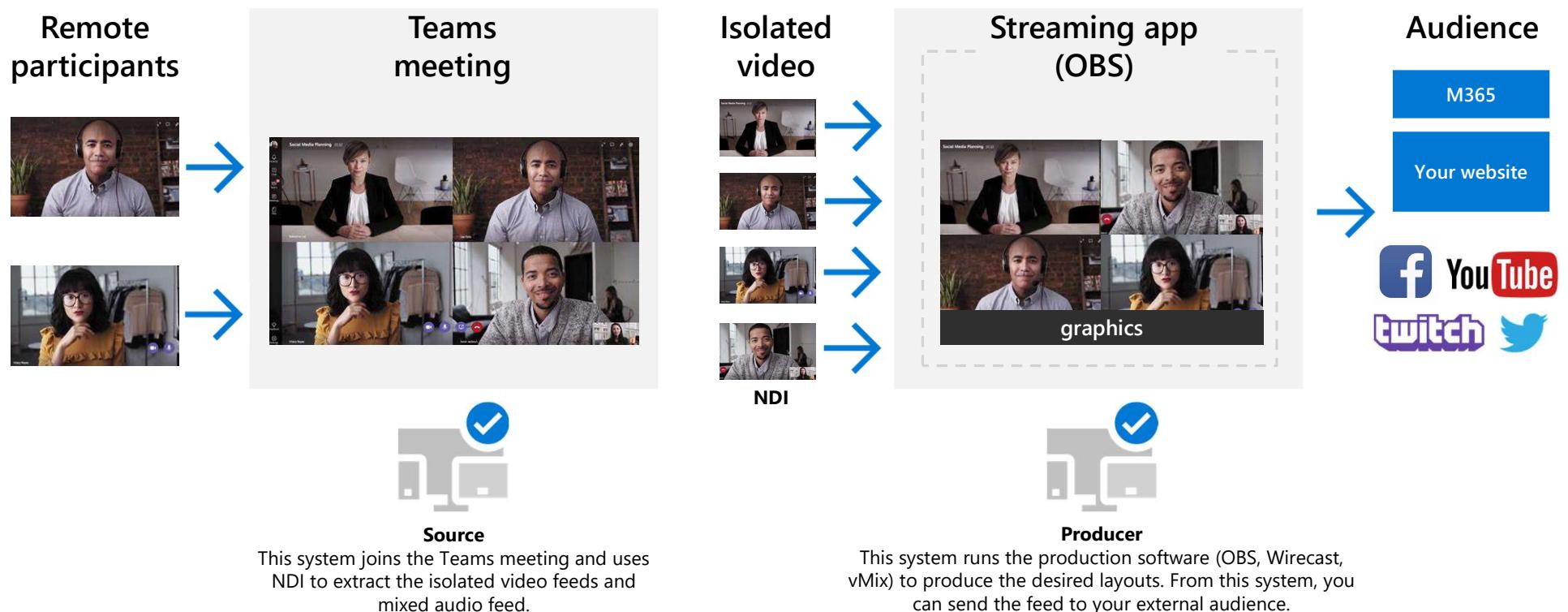
Production Concepts

High level process flow

Producing with an external app or encoder requires multiple components:

- Skilled production staff. Advanced productions often require technical producers along side communications & on-air talent staff.
- The scheduled Live Event for production and attendee experiences.
- The external app/encoder (such as OBS Studio, Streamlabs OBS, Wirecast, vMix).
- An active source of content ingested into the external app/encoder.
- The content being presented can be sourced from a variety of locations; in this playbook, we will show how to use a Teams meeting as the source of content provided to the external app/encoder (OBS Studio).
- This configuration allows you to bring in guests from multiple locations into a single digital experience.

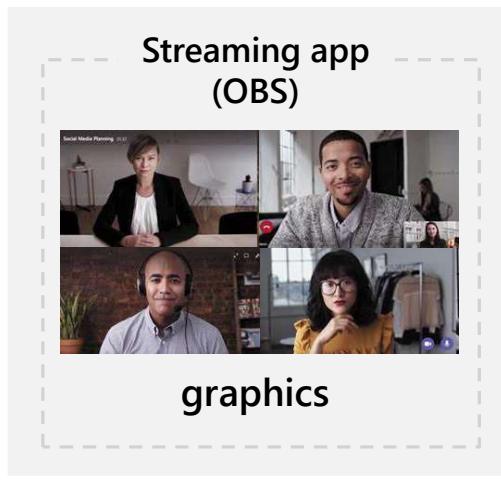
Produce your broadcast from a secure, virtual stage



Microsoft Teams – your secure, virtual stage

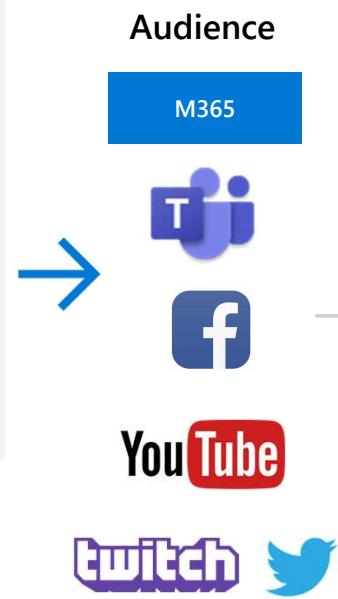
Customized broadcast

Production Machine – Streaming to the Audience



Production Machine

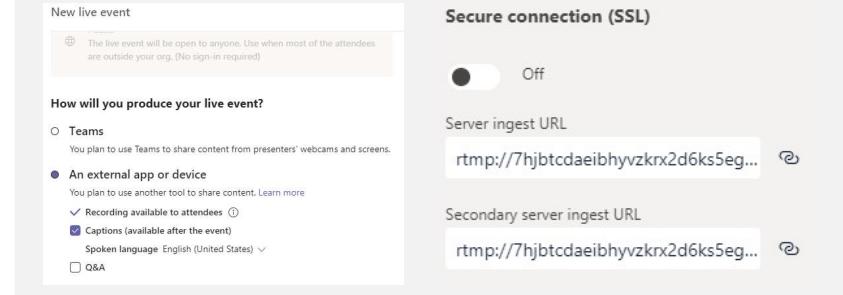
This machine runs the production software (OBS, Wirecast) to produce the desired layouts. From this machine, you can send the feed to your external audience.



Production software can output to various audience locations

Scheduling in Teams

Live Event scheduling -> select an external app or device



Producer obtains the ingest URLs when they join

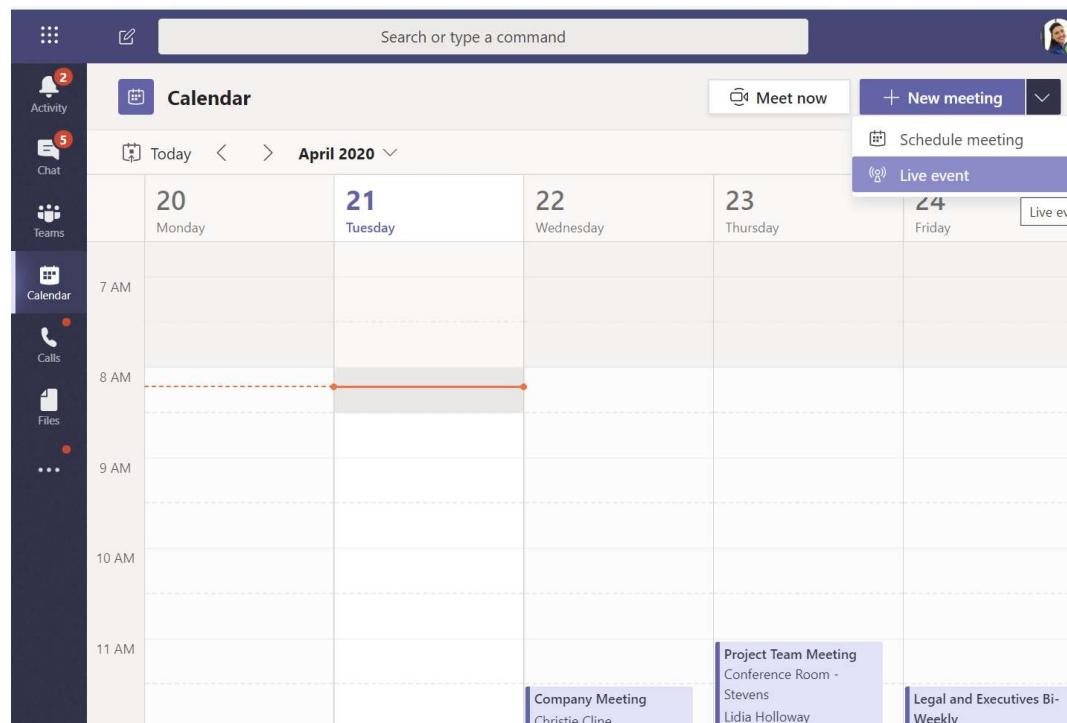
Use [NewTek NDI Tools](#) (NDI Virtual Input -> NDI Virtual Camera/Virtual Audio) to bring the OBS feed (NDI Out) back into the Teams Live Event

Stream to third party platforms (Facebook, YouTube, etc.)
Platform will provide the Server/Stream Key information

Scheduling a Live Event

Schedule a Live Event from Teams

First time scheduling Live Events from Microsoft Teams? With this guide you will learn how to organize a Live Event and determine which roles your team should play in the production and moderation of the event.



Schedule a Live Event
From your **Calendar** in Teams, click the drop down next to **New meeting** and select **Live event**

Setting up a Live Event

The **New live event** screen is where you define the following details about your event:

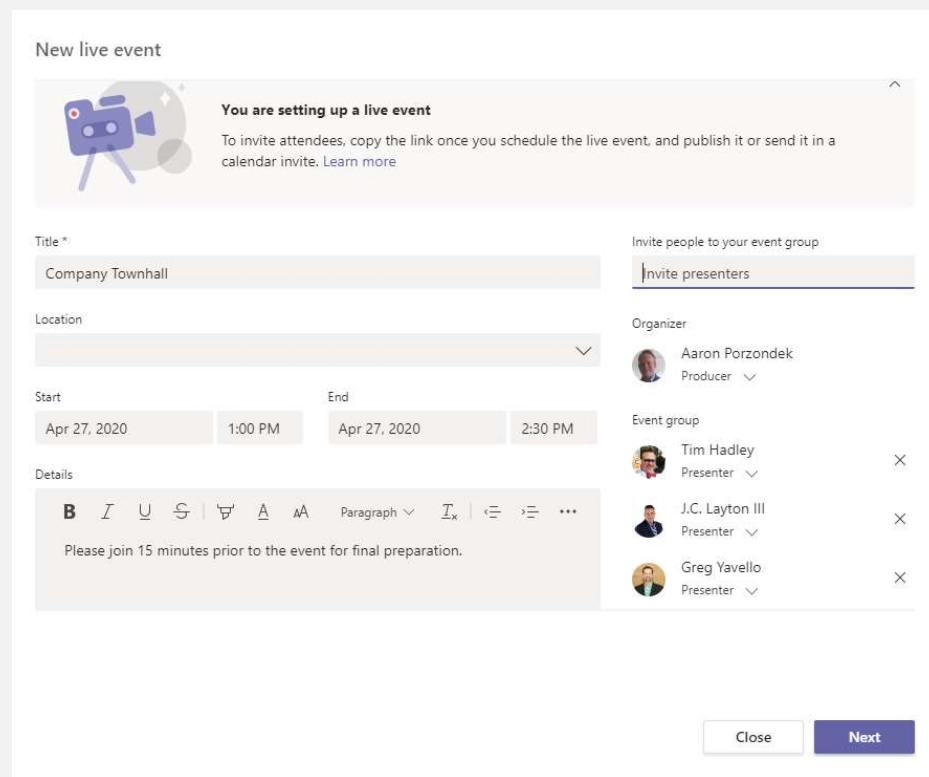
- **Title** of your Live Event
- **Date** and **Start** and **End** times of your event
- Who you will invite as **Producers** and **Presenters** for the event

In the **Invite people to your event group** area is where you define the roles for your event team members. The following roles are available:

- **Producer:** As a host, makes sure attendees have a great viewing experience by controlling the live event stream. There is usually one producer, but you can have multiple for backup of the primary.
 - Configures the encoder connection
 - Starts and stops the live event
 - Moderates Q&A panel
- **Presenter:** Presents audio, video, or a screen to the live event, or moderates Q&A. There are usually multiple presenters, and some may only have the role of moderating the Q&A as an example. **When using the external encoder option, presenters invited here are only used for moderating Q&A (if enabled).**

Once you have completed all the fields, click **Next** to continue.

Important note – We have not defined who will be viewing the Live Event as an attendee; we have simply defined who will be producing and presenting in your Live Event.



Live Event permissions

Next you will choose who can attend your event based on the following permission types:

- **People and groups** – The event can only be watched by people, security groups or Microsoft 365 groups you name.
 - This permission type is ideal for confidential Live Events that should only be viewed by the specific people or groups defined here.
- **Org-wide** – Everyone in your org can watch the Live Event, including guests.
 - This permission type is best for all other Live Events where the content is not confidential.
- **Public** – Anyone can join – both people in your org and those outside of it.
 - This permission type would apply to a scenario where you intend for the general public to attend a Live Event, such as your customers or shareholders.
 - Note – this option is currently unavailable when producing the event using “An external app or device”.

Before clicking **Schedule**, scroll down to reveal options that pertain to **How will you produce your live event**. These will be covered on the next slide.

The screenshot shows the 'New live event' wizard. Under 'Live event permissions', the 'Org-wide' option is selected, indicated by a blue border around its box. The 'Org-wide' box contains the text: 'Everyone in your org can watch the live event. (Sign-in required)'. Below this, the 'Public' option is shown with the note: 'The live event will be open to anyone. Use when most of the attendees are outside your org. (No sign-in required)'. At the bottom of the page, there are three buttons: 'Close', 'Back', and a highlighted 'Schedule' button.

TIP: If your public event is supporting anonymous Attendees, and you select “Recording available to attendees”, the attendees will be able to view (but not download) the recording on-demand using the original join link.

How will you produce your Live Event?

Finally, you will select several available options for how your Live Event will be produced.

- **Teams or An external app or device**

- To produce the event in Teams, keep the default option of **Teams**. The other option **An external app or device** is only if you desire to have your event produced by a formal audio and visual department or outside AV company.

- **Recording available to attendees**

- Attendees can watch the event on demand using DVR options for 180 days.

- **Captions (available after the event)**

- Captions are available to event participants after the event concludes.

- **Q&A**

- Attendees can interact with producers and presenters in a moderated Q&A.

Now that you have selected all of the options you desire, you can click **Schedule** to continue.

New live event
are outside your org. (No sign-in required)

How will you produce your live event?

Teams
You plan to use Teams to share content from presenters' webcams and screens.

An external app or device
You plan to use another tool to share content. Learn more

Recording available to attendees ⓘ
 Captions (available after the event)
Spoken language English (United States) ↗
 Q&A

Some of these options have not been enabled by your IT admin

Schedule

TIP: If using an external device your video stream cannot be viewed by guests of the tenant.

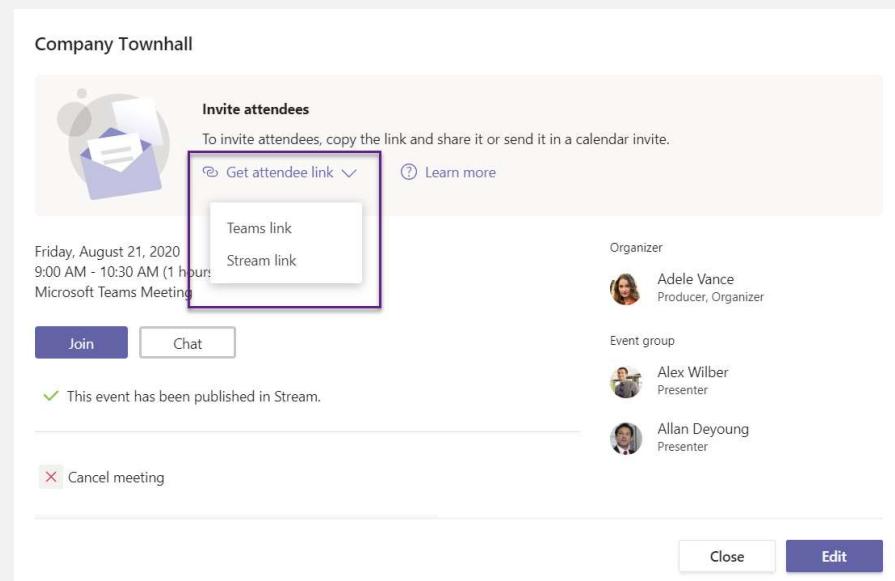
Get the link for Attendees

The next step in finalizing the setup of your Live Event is to copy the attendee link for your event. The attendee link is how your event attendees will attend the event.

Click the **Get attendee link** dropdown and select the desired viewing experience to copy the link to the clipboard. You can now publish that link however you desire. Common ways of publishing it include:

- Sending an Outlook invite to your intended attendees and pasting the attendee link into that Outlook appointment
- Publishing via a company newsletter
- Publishing to an internal Intranet site

Once you have copied the attendee link, you can now click Close to schedule the event. Producers and Presenters will receive an invitation in their emails with a link only valid for the Producers and Presenters of the event.



TIP: Forwarding invitations does not allow someone to become a producer or presenter. You must edit the event and add them through the Teams experience. Once an event has started you cannot add producers or presenters.

Scheduling your Teams meeting (content source)

Teams meeting

The following slides are to provide guidance on how to create a Teams meeting for the purpose of using an external application/encoder (OBS Studio).

Note that some of the features may not be exactly what an end user will experience due to:



Teams policies set at
the admin portal.



How the end user
accesses Teams (e.g.,
web client vs desktop).

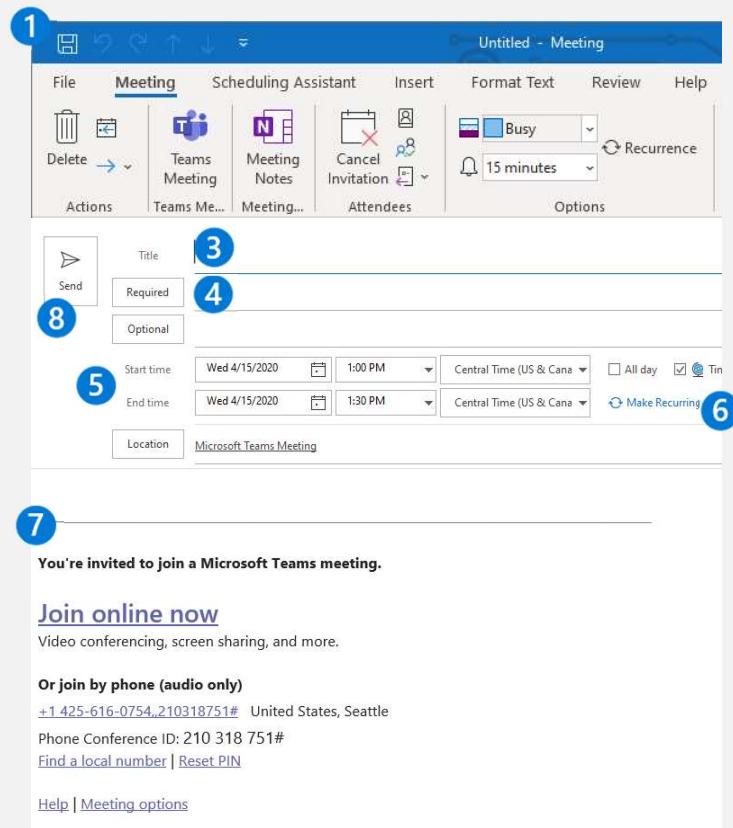


Where the company is at with
new features being rolled out
from the tenant level.

Ahead of scheduling your virtual event, ensure you are coordinating with your IT administrator to be aware of any limitations placed on your meeting by tenant policies.

Creating a meeting invite in Outlook

- 1 Open your **Outlook Calendar***, click the **Home** tab, and then click the **Teams Meeting** icon (screenshot on the right).
- 2 Select the **Teams** icon. When you do so, a **Join a Microsoft Teams Meeting** link is created in the body of the invite. If you have an auto conferencing license, a phone number and conference ID will be included.
- 3 Create a **Title** for your meeting invite.
- 4 In the **Required** box, enter the email addresses for the people you want to invite to the meeting.
- 5 Select a **start and end time** for the meeting.
- 6 If you need the meeting to be recurring, please select the **Make Recurring** icon.
- 7 Add content to the body of the invite to inform participants of the purpose of the meeting.
- 8 Double check your information and then click the **Send** button.



*Your calendar in Teams is connected to your Exchange calendar. In other words, when you schedule a meeting in Outlook, it will show up in your Teams calendar, and vice versa.

Creating a meeting invite in Teams

- 1 Open the Teams client, select the **Calendar** icon located on the left side of the navigational side bar.
- 2 Select the **New Meeting** button located in the top right corner of the screen.
- 3 Create a **Title** for your meeting invite.
- 4 In the **Required Attendees** box, enter the email addresses for the people you want to invite to the meeting.
- 5 Select a **start and end time** for the meeting.
- 6 If you need the meeting to be recurring, select the **Does Not Repeat** drop down box and a recurring selection(s) drop down box will appear.
- 7 For internal attendee(s), select the **Scheduling Assistant** tab (top left) to see if the attendee(s) are available at the time you are proposing.
- 8 Add content to the body of the invite to inform participants on the purpose of the meeting.
- 9 Double check your information and then click the **Save*** button.

*When you select the **Save** icon, the Microsoft Teams meeting link info is automatically created and sent out in the invite. If you have an auto conferencing license, a phone number and conference ID will be included.

The screenshot displays the Microsoft Teams 'New meeting' creation interface. At the top, there's a navigation bar with 'Meet now' and a purple 'New meeting' button. A blue circle with the number '2' is placed over the 'New meeting' button. Below the navigation bar, the 'New meeting' tab is selected, indicated by a blue circle with the number '7'. The main form includes fields for 'Add title' (step 3), 'Add required attendees' (step 4), date and time (step 5), and a 'Does not repeat' dropdown (step 6). To the right of the date/time, there are dropdown menus for 'Add channel' and 'Add location'. At the bottom, there's a rich text editor toolbar (step 8) and a text area for 'Type details for this new meeting' (step 9).

Edit meeting options

- 1 Once your meeting is scheduled you can edit the meeting options.
Return to your Calendar and edit the meeting you just scheduled.
- 2 Your options will appear in a new browser window.
- 3 Select which meeting roles can bypass the lobby.
- 4 Toggle if audio caller can always bypass the lobby.
- 5 Toggle join/leave announcements.
- 6 Select which meeting roles can present in this meeting.
- 7 Select **Save** to save your options. Options can be changed until the meeting begins.

2 Meeting options

Who can bypass the lobby?

4 Always let callers bypass the lobby

5 Announce when callers join or leave

People in my organization

No

Yes

Who can present?

Everyone

7

Save

3

People in my organization

Everyone

People in my organization and trusted organizations

People in my organization

Only me

6

Everyone

Everyone

People in my organization

Specific people

Only me

Producing with an external application

External Applications for Production (Encoders)

Definition

Compresses audio and video from various inputs and sends that output to a streaming service

Hardware, software, mobile apps

Settings

RTMP(s) – single bitrate

OLDER slide

Video:

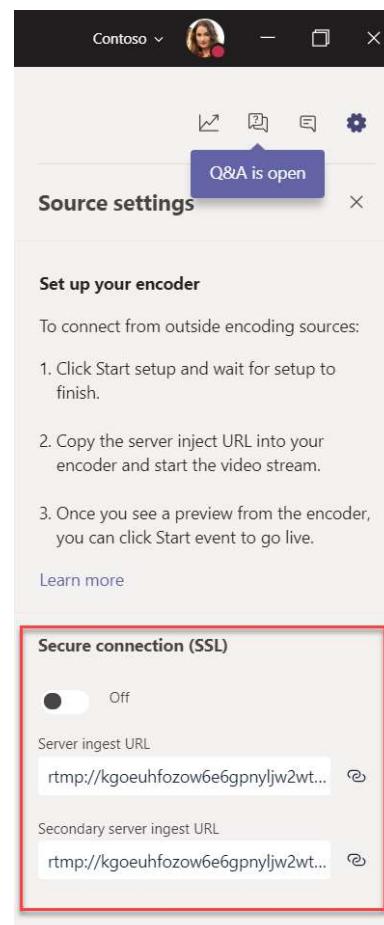
- Codec: H.264, High
- Fragment size: 2 sec
- Bitrate: up to 5 Mbps, CBR, 30 fps

Audio:

- Codec: AAC-LC
- Bitrate: 192 kbps
- Sample rate: 48Khz

Note -- both audio and video must be present

[Aka.ms/teams-encoder](https://aka.ms/teams-encoder)



Compatible encoders

Haivision

telestream



Switcher Studio



XSplit Broadcaster



External applications for production (encoders)

Definition

Compresses audio and video from various inputs and sends that output to a streaming service

Hardware, software, mobile apps

Settings

RTMP(s) – single bitrate

Video:

- Codec: H.264, High
- Fragment size: 2 sec
- Bitrate: up to 5 Mbps, CBR, 30 fps

Audio:

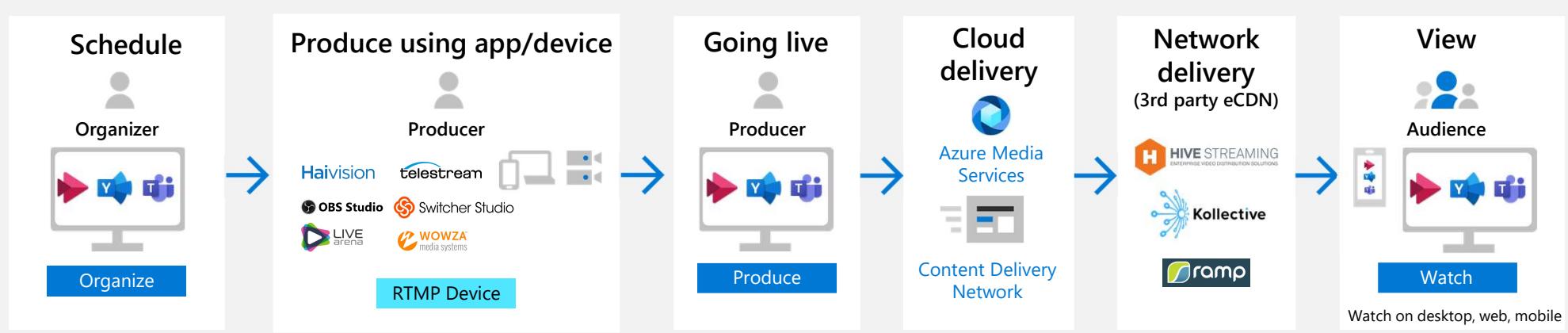
- Codec: AAC-LC
- Bitrate: 192 kbps
- Sample rate: 48Khz

Note: both audio and video must be present

Compatible encoders

The Haivision logo consists of the word "Haivision" in a blue sans-serif font.The Telestream logo features the word "telestream" in a black sans-serif font, with a blue swoosh graphic above the letter "t".The LIVE arena logo includes a stylized play button icon composed of overlapping colored triangles (blue, green, red) next to the text "LIVE arena".The Switcher Studio logo features a red circular icon with three curved lines inside, followed by the text "Switcher Studio".The WOWZA media systems logo consists of a stylized orange "W" icon followed by the text "WOWZA™ media systems".The XSplit Broadcaster logo features a blue speech bubble icon with a white "X" inside, followed by the text "XSplit Broadcaster".The OBS Studio logo includes a black circular icon with three curved lines inside, followed by the text "OBS Studio".

Introduction to advanced production workflow with an external application



These steps represent the production workflow for broadcast streaming. At each step, you are deciding the specific technology to use.

Nothing can replace a dress rehearsal. This allows you to test all configurations and content switching to streamline the audience experience.

Selecting the right type of event

| |  Teams meeting |  M365 live events produced via teams |  External encoder Rtmp stream | |
|---------------|---|---|---|---|
| Audience |    |    |    | |
| | Audience | Internal External | Internal External | Internal External (Preview) |
| | Access | Internal: AAD External: Unsecured URL – self managed attendee list | Internal: AAD External: Gated URL unless anonymous selected | Internal: AAD |
| | Audience size | 300 | 20k* | 20k* |
| | Run yourself (no production involvement) | Yes | Yes | No |
| | Hardware requirements | PC/Camera | PC/Camera | Production (cameras audio, live switching) + Encoder (hardware or software) |
| | Duration | 24 hours | 16 hours | 16 hours |
| | Live mixing of sources/presenters in meeting Distinct roles empower producers, presenters and attendees | No | Yes | Yes |
| | Captions | AI Captions only | AI Captions only (Captions not yet available in Yammer) | 708 only |
| | Caption translations | No | Up to 6 languages | No |
| Interactivity | Moderated Q&A (Chat) | No | Yes | Yes |
| | Unmoderated Q&A (Chat) | Yes | No | Yes |
| | Verbal Q&A within platform | Yes | Yes | No |
| | Recording of session availability | Yes | Yes | Yes |
| Post-event | Reporting | Yes Basic attendance Only during meeting | Unique Viewership GEO Viewing Duration Individual aliases | Unique Viewership GEO Viewing Duration |



Joining as a Producer – from Teams or Outlook

The screenshot shows two calendar interfaces side-by-side. The top interface is the Microsoft Teams Calendar for April 2020, and the bottom interface is the Microsoft Outlook Calendar for the same period. Both calendars list various meetings and events. A blue callout box with a black border is positioned over the Teams calendar, containing the text: "Join the Live Event as a **Producer** or **Presenter** from your Teams calendar or from your Outlook Calendar." Two blue arrows point from the bottom of this callout box to the corresponding meeting entries in both the Teams and Outlook calendars.

Join the Live Event as a **Producer** or **Presenter** from your Teams calendar or from your Outlook Calendar.

17 Friday

10 AM Live Event Training Prep for PPD

11 AM IT Town Hall Microsoft Teams Meeting Aaron Porzondek

12 PM ECIF MW Consumption program - Office Hours Microsoft Teams Meeting Tal Barash

1 PM [EXTERNAL] Teams Live training session

7 9 10 Live Event Training Prep for PPD

8 10 11 IT Town Hall Microsoft Teams Meeting Aaron Porzondek

9 11 12 PM ECIF MW Consumption program - Off Microsoft Teams Meeting Tal Barash

Reid Hinson

Test Teams Meeting with Files Added to Aaron Porzondek

GlobalAES Touch Base (Teams Trainin Microsoft Teams Meeting Tyler Walter

Devices feedback session Alexander Ivanov

MSX Insights Manager/Seller 101 Training (Q4) - US BSO Readiness Microsoft Teams Meeting Eric Ligman

MSX Insights Manager/Seller 201 Training (Q4) - US BSO Readiness Microsoft Teams Meeting National Healthcare

Test Teams Meeting with Attachments; Micro Test Teams Meeting with Attachments; Micro

Test Teams Meeting with Files Added

Devices feedback session TAP100 Validations (under NDA)

MSX Insights Manager/Seller 101 Tra Microsoft Teams Meeting Eric Ligman

US HLS COVID-19 Updates || Provider Microsoft Teams Meeting National Healthcare



Joining as a Producer

The Producer will first need to click Start setup to provision the event.

Select "Start setup"
Once Stream is done setting up, you will be able to connect your encoder.

Encoder preview

Company Townhall

Live event scheduled for today

9:00 AM PDT

OFFLINE

Start setup

Source settings

Q&A is open

Set up your encoder

To connect from outside encoding sources:

1. Click Start setup and wait for setup to finish.
2. Copy the server ingest URL into your encoder and start the video stream.
3. Once you see a preview from the encoder, you can click Start event to go live.

Learn more

Secure connection (SSL)

Off

Server ingest URL
rtmp://kgoeuhfozow6e6gpnyljw2wt... [?](#)

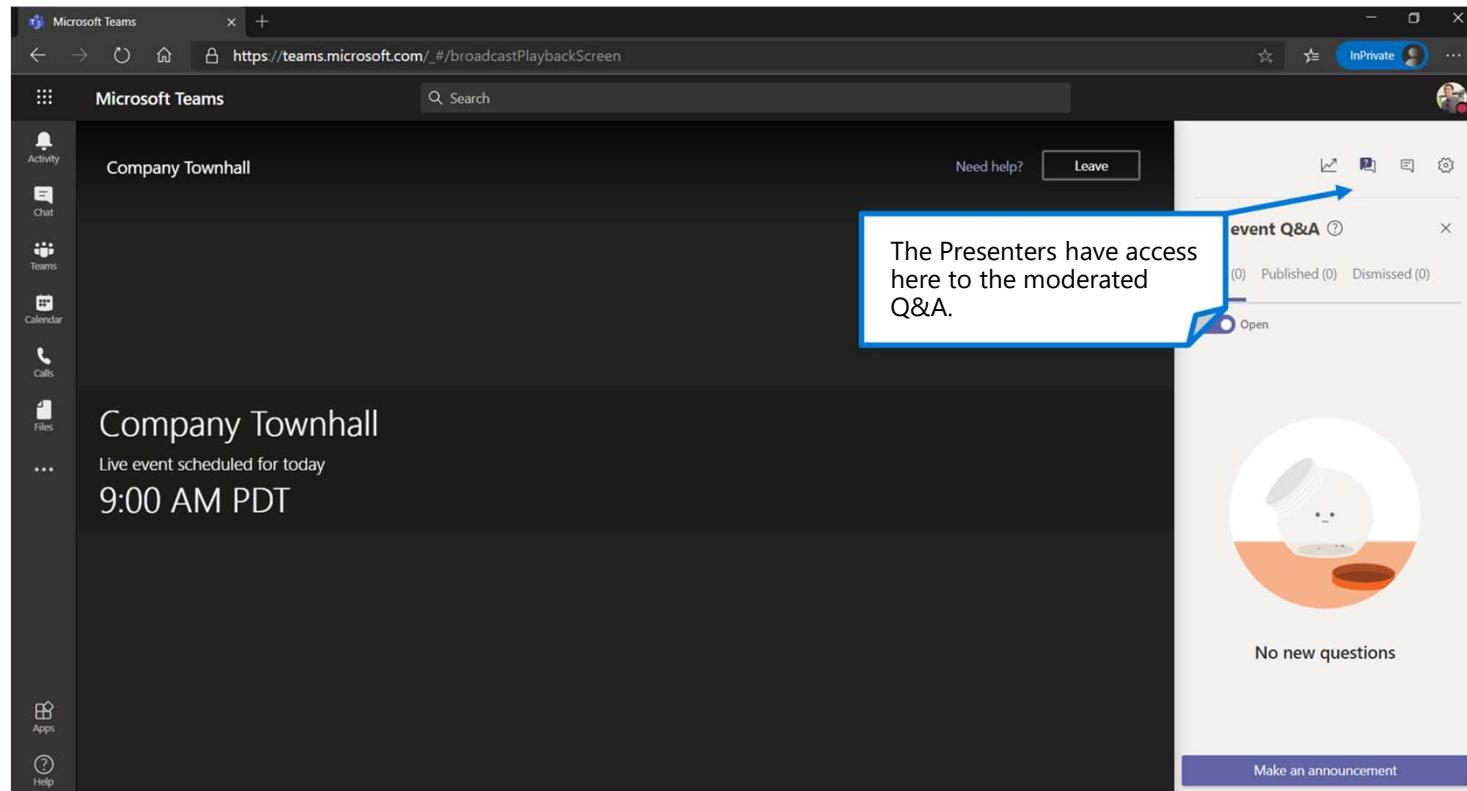
Secondary server ingest URL
rtmp://kgoeuhfozow6e6gpnyljw2wt... [?](#)

Joining as a Producer



The screenshot shows the Microsoft Teams interface for a live event titled "Company Townhall". On the left, the Teams sidebar is visible with options like Activity, Chat, Teams, Calendar, Calls, Files, and Apps. The main area displays an "Encoder preview" window with a dark background. Inside, a white box contains the text: "Ready to connect", "Connect your encoder now to start sending data", and "9:00 AM PDT". At the bottom of this box is a yellow "PRE-LIVE" button. To the right of the preview is a "Source settings" panel with a "Set up your encoder" section containing three steps: 1. Click Start setup and wait for setup to finish. 2. Copy the server ingest URL into your encoder and start the video stream. 3. Once you see a preview from the encoder, you can click Start event to go live. Below this is a "Secure connection (SSL)" section with a radio button set to "Off", a "Server ingest URL" field containing "rtmp://kgoeuhfozow6e6gpnyljw2wt...", and a "Secondary server ingest URL" field containing "rtmp://kgoeuhfozow6e6gpnyljw2wt...". A blue callout box with a white border and a blue arrow points from the text "Once setup is complete, use the URLs listed to connect the encoder." in the preview window to the "Server ingest URL" field in the source settings panel.

Joining as a Presenter (Moderated Q&A)



When a Live Event scheduled in Teams is produced using an external app or encoder, Presenters for this event will not have any type of audio/video capabilities. They will be able to moderate the Q&A panel (if enabled), chat with the producer(s) and view the live stream within the client.



Connecting your encoder (OBS example)

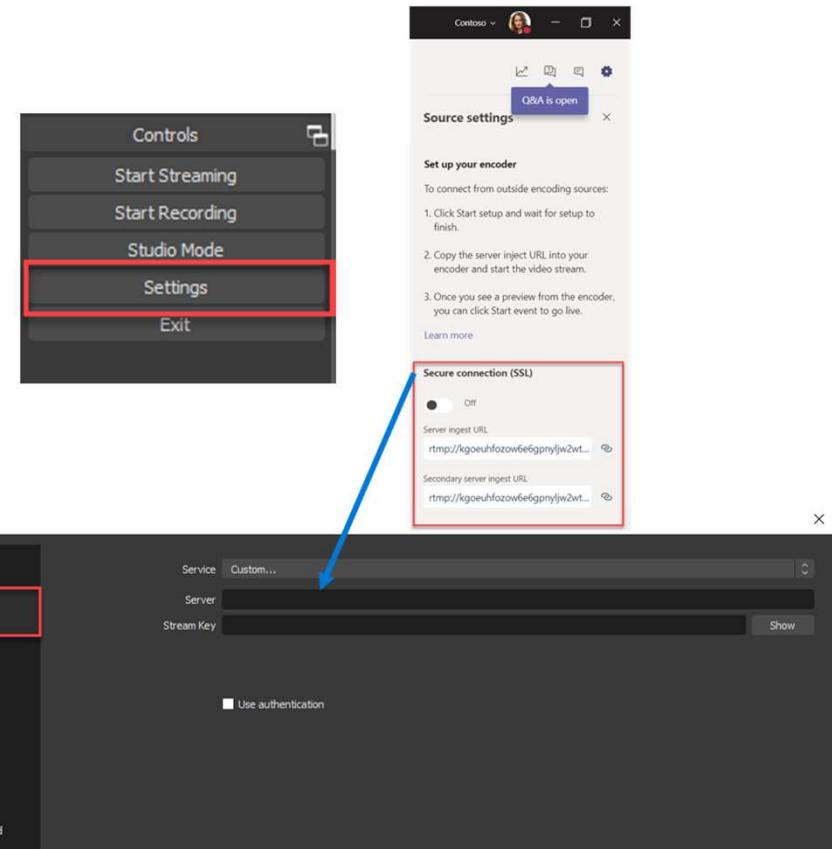
In your encoding software, provide the RTMP ingest URL(s) to connect the output of the encoder to the Live Event.

In OBS Studio, go to the Controls dock, and click **Settings**.

- In the **Service** dropdown, select **Custom...**
- In the **Server** textbox, paste in the value from the **Server Ingest URL**
- In the **Stream Key** box, enter any value (such as **12345**).

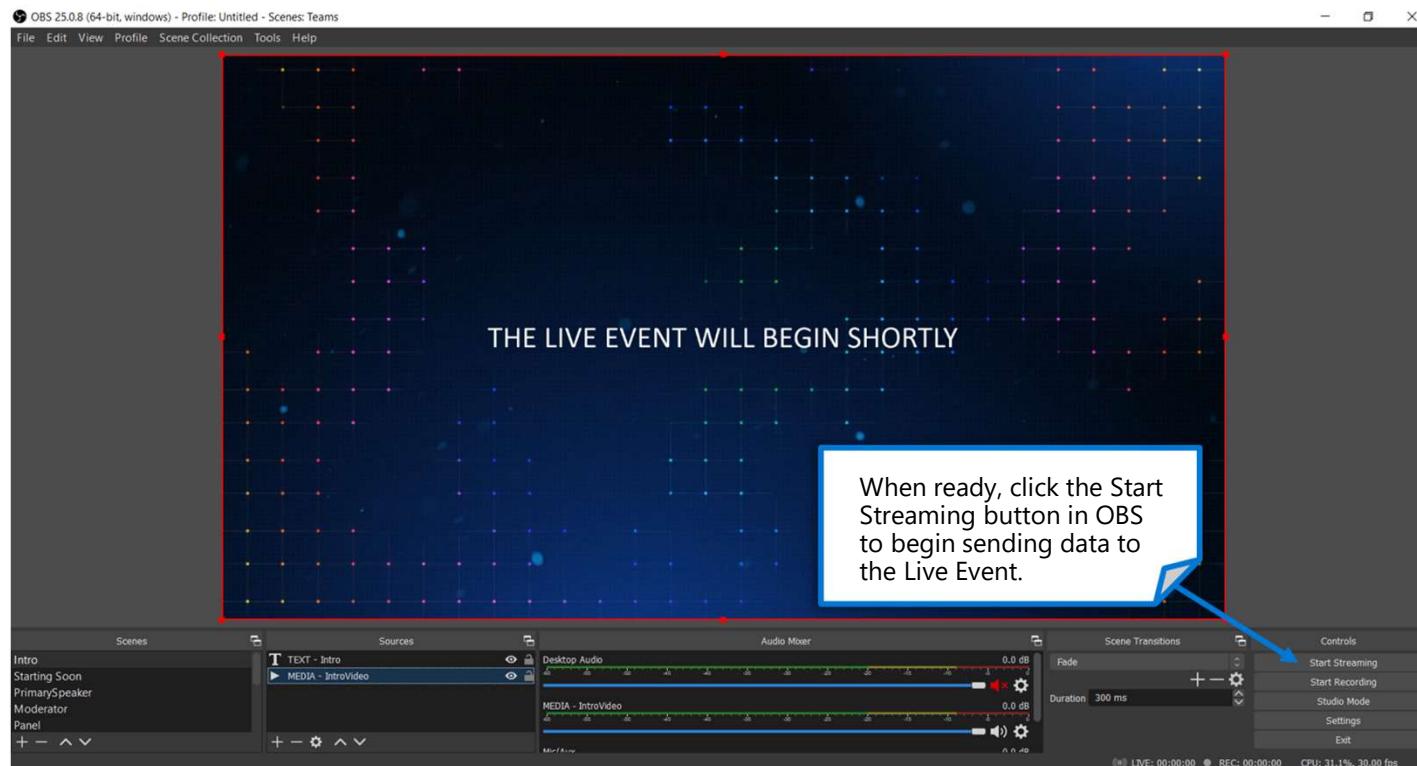
Note: Teams Live Events with Stream do not utilize a Stream Key; however, the OBS Studio software requires that a value be entered into this field.

The Secondary server ingest URL (also called the Redundant server ingest URL) is not intended as a backup. The encoder pushes content to both the primary and redundant ingest URLs with the same timestamp and data, which improves the content's durability and resiliency.





Connecting your encoder



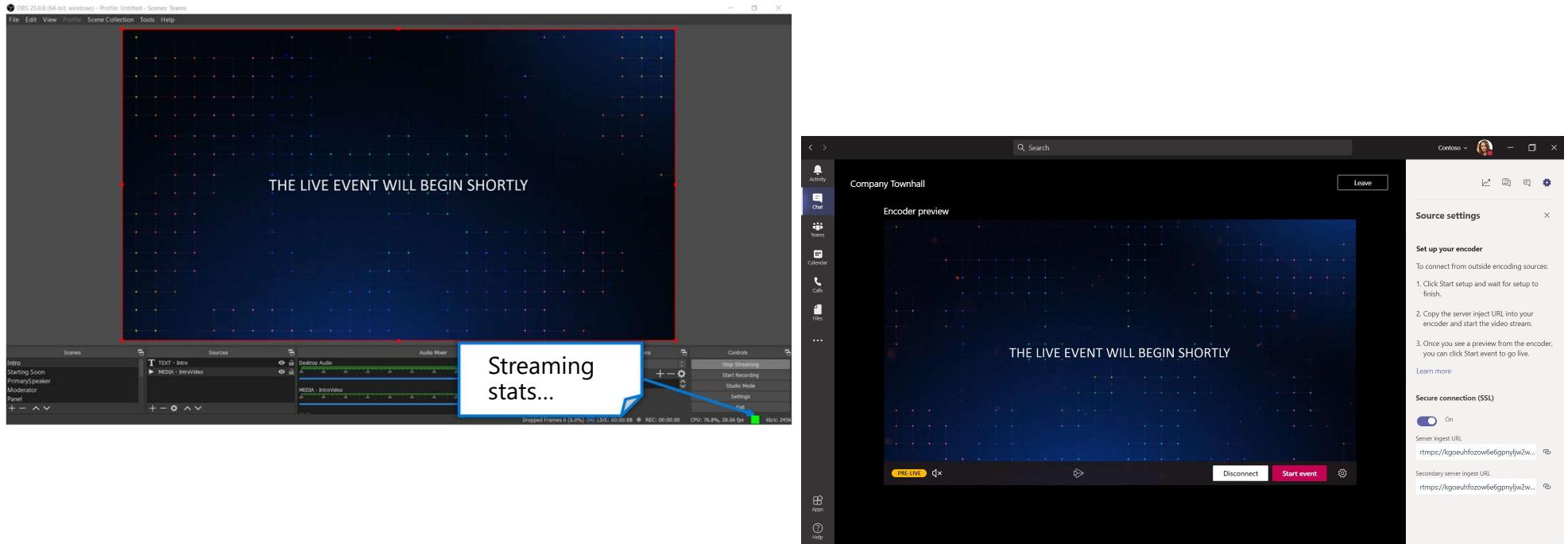
Note that when **Start Streaming** is clicked here, this will begin sending the output from the app/encoder to the Live Event.

This does NOT make the event live for the attendees to view.

That must be done within the Teams Producer experience.



Connecting your encoder



Verify that the streaming process is working.
The producer will see a preview in the Teams client (delayed by roughly 30 seconds).
When ready, click the **Start event** button to **GO LIVE!**

REMINDER: once the event is started, it can only be stopped (not paused or restarted).



Leveraging OBS Studio



OBS settings for Live Events

Launch OBS, go to **File -> Settings**.

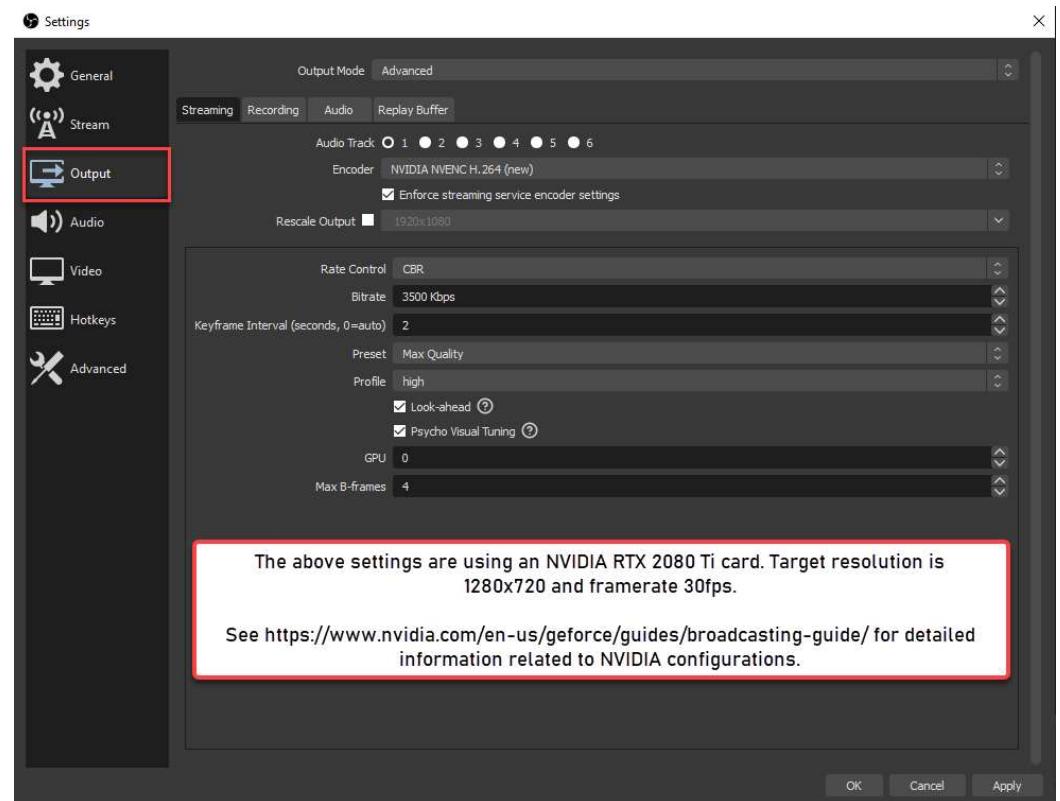
Click **Output**, then choose **Advanced** output mode and configure following settings:

- ✓ **Encoder:** If your PC supports hardware encoding pick the one that's not x264 (ex QuickSync H.264, NVENC, etc.). If hardware encoding isn't an option leave it as x264.
- ✓ **Rate Control:** Make sure CBR is selected.
- ✓ **Bitrate:** Enter a value in kbps, 2000 to 4000 is what is normally used.
- ✓ **Keyframe Interval:** 2.

Click **Audio** -> Configure **Track 1 -> Audio Bitrate:** 128, 160, or 192 for audio encoding.

Click **Video** and Configure the following settings:

- ✓ **Base (Canvas) Resolution:** This is your normal desktop resolution (usually 1920 x 1080).
- ✓ **Output (Scaled) Resolution:** 1280 x 720 (Encoder Profiles are maxed at 720p in Stream for Live Events).
- ✓ **Common FPS Values:** 30 is normally used for frames per second.

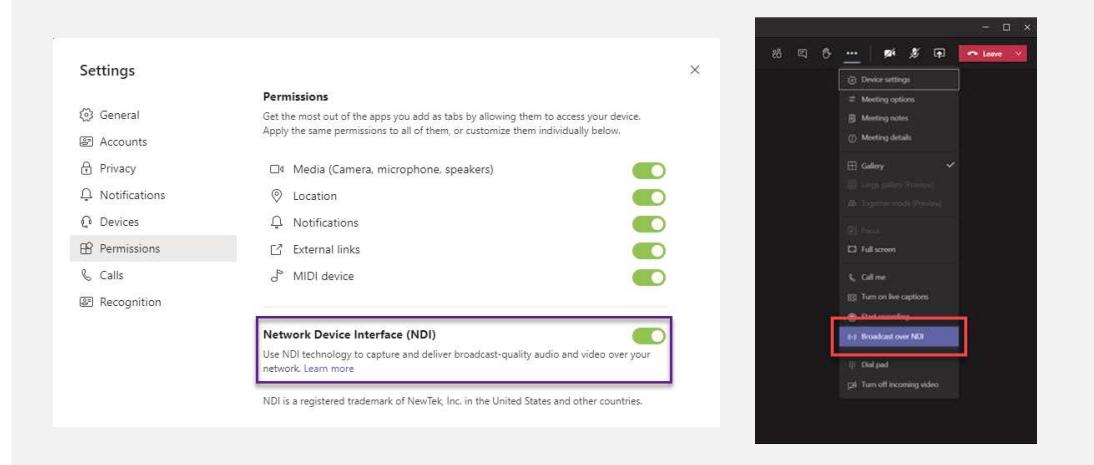


Extracting content from a Teams meeting (source)



Source
This system joins the Teams meeting and uses NDI to extract the isolated video feeds and mixed audio feed.

Enable NDI in the Teams client



Ensure video feeds are active in the Teams client

- Pin select videos as desired (max of 9 video feeds)
- Invoke the Large Gallery (Preview)
- Invoke the Together Mode (Preview)

Enable Broadcast over NDI in the Teams meeting

NDI feeds contain mixed audio of all participants, **except** the user on the Source machine



Producer

Production System – Bringing in sources (OBS example)

Isolated video



Streaming app
(OBS)



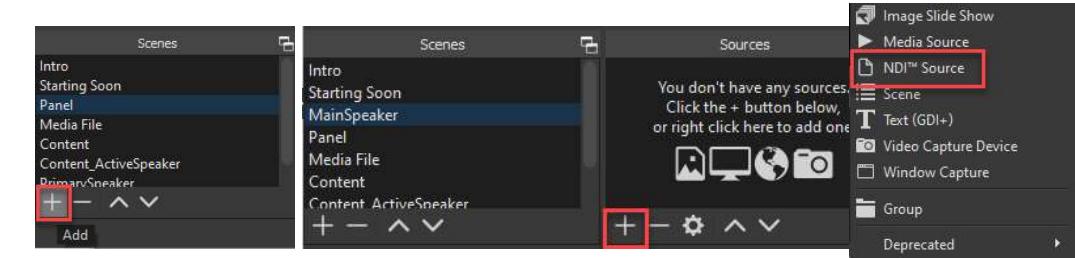
NDI



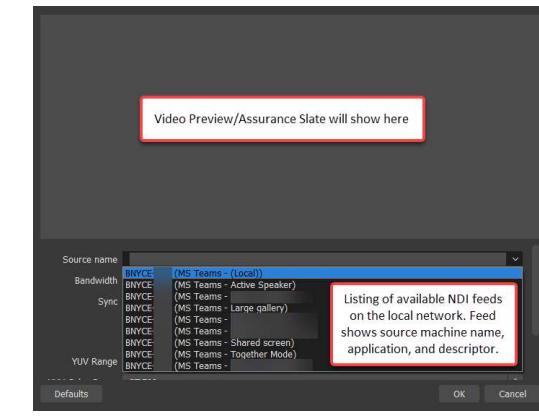
Producer

This system runs the production software (OBS, Wirecast, vMix) to produce the desired layouts. From this machine/application, you can send the feed to your external audience.

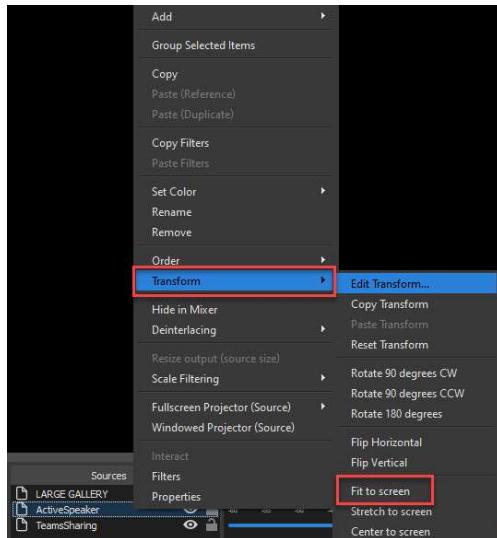
Install [OBS](#) and the [OBS NDI Plugin](#) (requires restart)
In OBS, create a new Scene, and add a new NDI source



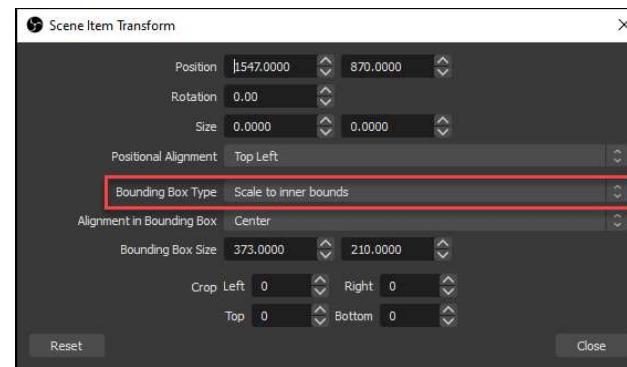
Select the feed desired, and position into the scene



A few additional notes about OBS Production



Use the Transform action to make the feed full-screen.



To ensure your video doesn't automatically resize in your scene, change the Bounding Box Type to "Scale to inner bounds." (found through the Transform -> Edit Transform option).

Excellent video walkthrough: <https://www.youtube.com/watch?v=ngLfEVU46x0>



Add additional items, such as Lower Thirds, to the video streams in your production.

Audio considerations



Ground Loop Isolators: used to eliminate the buzzing sound made by a ground loop, which occurs when multiple pieces of sound equipment are connected to each other.



Audio Mixers: used to bring together multiple audio sources, such as microphones, USB-connected devices, AUX connections, Bluetooth



Quality microphones and audio interfaces.



Using OBS in a Teams-produced Live Event

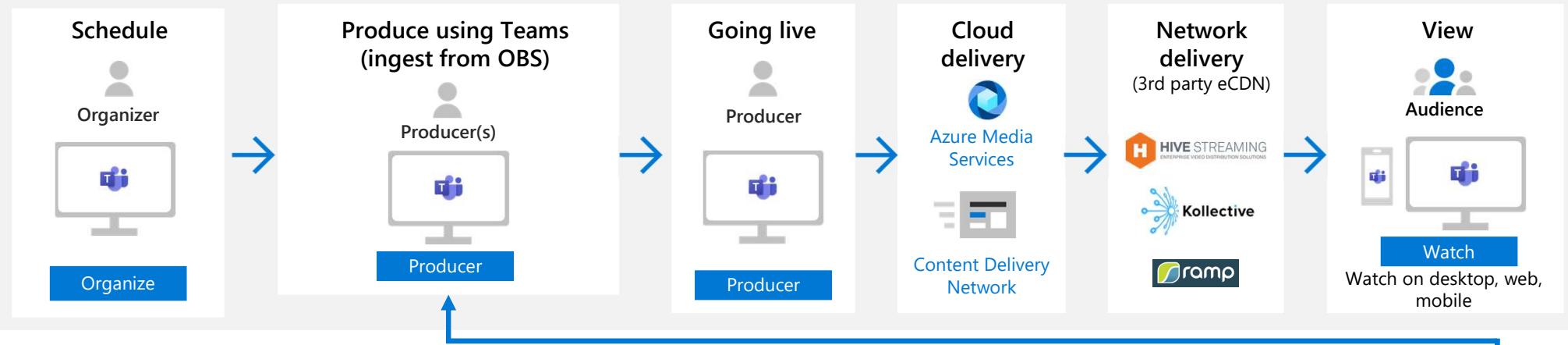
High level process flow

Using an external app/encoder to enhance the production of a Teams-produced Live Event utilizes multiple components.

- The scheduled Live Event for production and attendee experiences. This is a standard Teams-produced Live Event.
- The external app/encoder (such as OBS Studio, Streamlabs OBS, Wirecast).
- An active source of content ingested into the external app/encoder.
- The usage of NDI Tools from NewTek to bring the production stream from the external app/encoder back into the Teams-produced Live Event or capture card devices.
- The content being presented can be sourced from a variety of locations; in this playbook, we will show how to use a Teams meeting as the source of content provided to the external app/encoder (OBS Studio).
- Key advantages to this approach are to be able to leverage the advanced workflows/features found in production software (changing of scenes, adding Lower Thirds, etc.), while also taking advantage of Teams-produced Live Event features such as Public (anonymous) attendee access and translation.

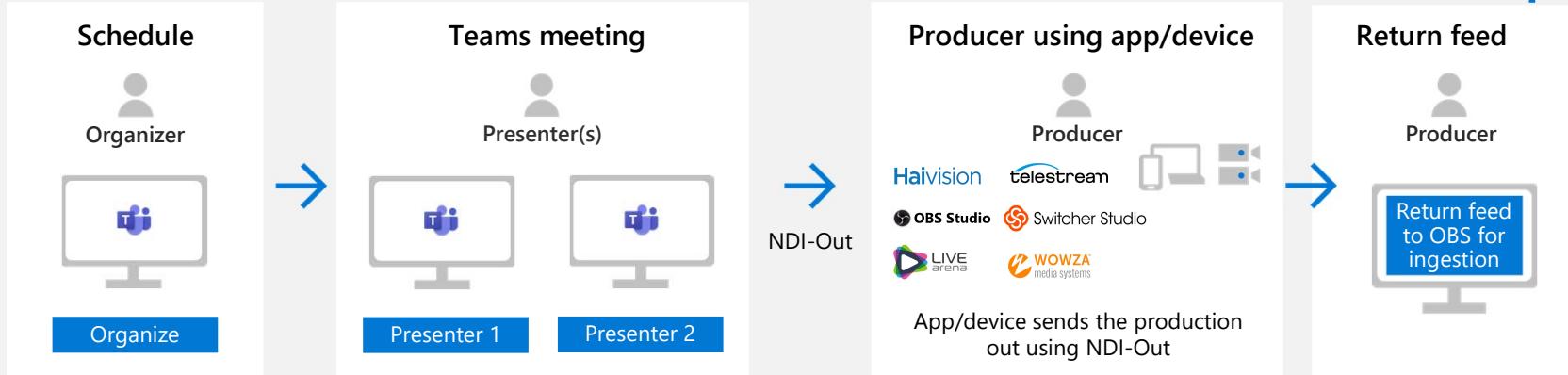
Live events produced using Teams and external app (OBS)

Producer Workflow



Presenters Workflow

This workflow uses a standard Teams meeting for all the presenters, including desktop sharing.





Sending OBS productions to Teams (example)

Configure the streaming software to output the production over NDI.

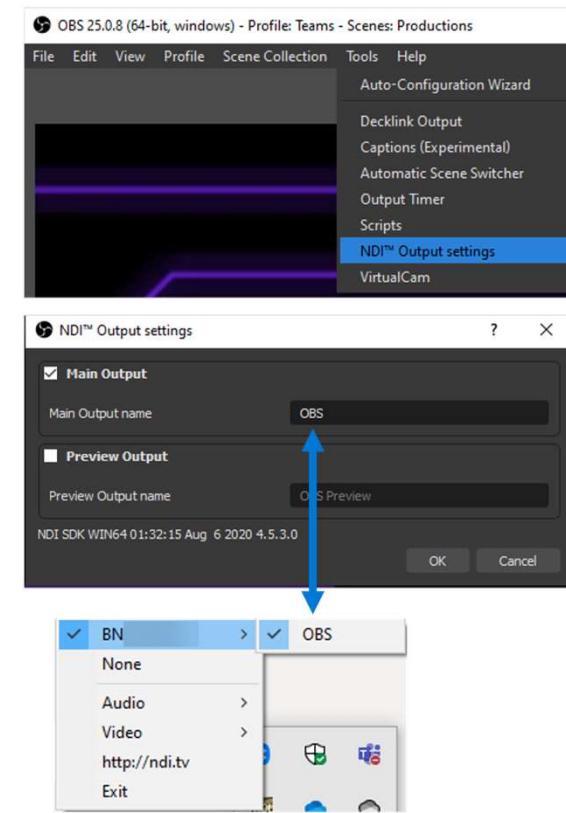
On the **producer machine** (in the Presenters Workflow) running OBS Studio:

- Go to the **Tools** menu and click **NDI Output settings**. There are two options for NDI-Out: Main and Preview.
- Check the box next to, **Main Output** and enter a name for this output. This will activate the NDI stream out from OBS.
- There is no need to "start streaming" from OBS in this case.

On the **producer machine** (in the Producer Workflow) running Teams:

- Install the **NDI Tools** from <https://ndi.tv/tools/>.
- Launch the **NDI Virtual Input** tool.
- In the taskbar (by the notification area) right click **NDI Virtual Input**.
- Select the [computer name] > NDI feed desired. The name should match the name shown in the Main output name field.

You can also customize the audio/video settings for the NDI feed through the NDI Virtual Input tool.



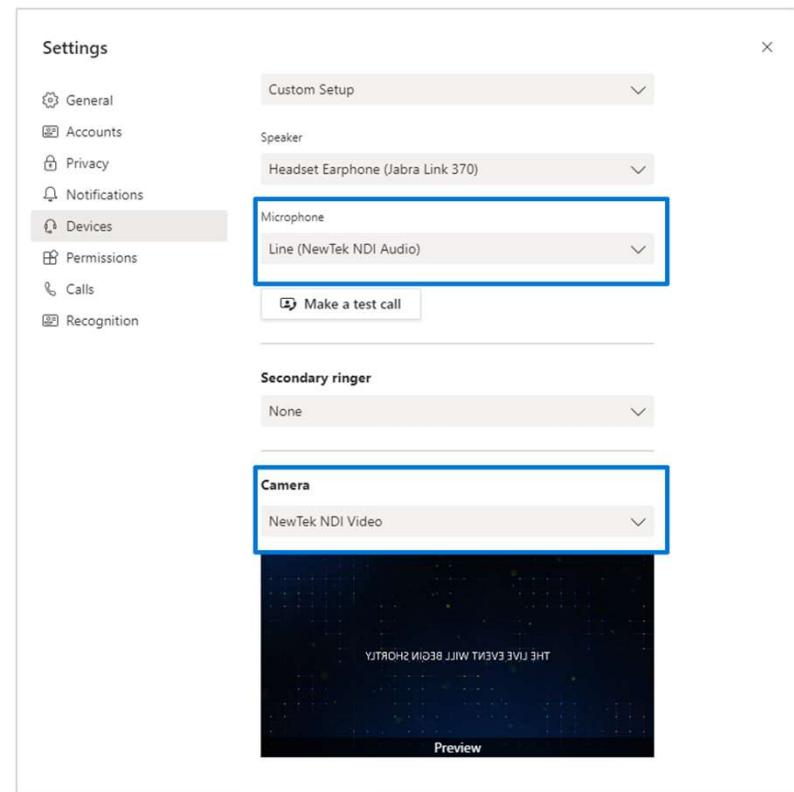
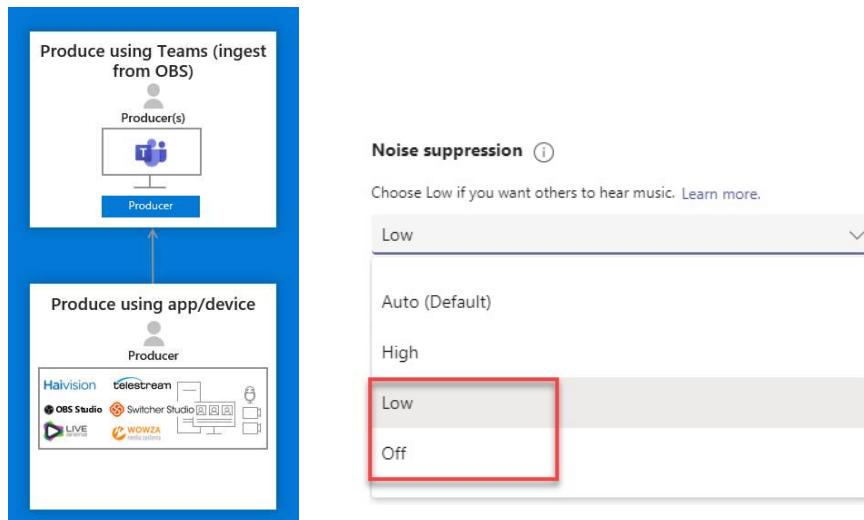


Sending OBS productions to Teams

On the **producer machine** (in the Producer Workflow) running Teams:

- Go to the user's avatar (picture) -> **Settings**.
- Click on **Devices**.
- Change the **Microphone** device to **Line (NewTek NDI Audio)**.
- Change the **Camera** to **NewTek NDI Video**.
- Set **Noise Suppression** to **Low/Off** for the machine bringing the feed in

At this stage you have now connected the output from OBS to the Teams client that is producing the Live Event.





Starting your Teams-produced Live Event

The screenshot shows the Microsoft Teams interface for producing a live event. On the left, the navigation bar includes Activity, Chat, Teams, **Calendar**, Calls, Files, and Help. The main window displays two tabs: "Queue" and "Live event". The "Queue" tab shows a dark blue background with a grid pattern and the text "THE LIVE EVENT WILL BEGIN SHORTLY". The "Live event" tab also shows a similar dark blue background with the same text. In the center, under the "Live event" tab, there is a video preview window showing a person named Adele Vance. Below the video are controls: a "Send live" button, a "Start" button, a "Share" button, and a "Mute all" button. A microphone icon is visible next to the video preview. Three callout boxes with arrows point to specific elements:

- A blue callout box points to the "Send live" button with the text: "Feed from OBS will be shown here. Add it to the Queue and Send live."
- A blue callout box points to the "Start" button with the text: "When ready, click the Start button to go LIVE."
- A blue callout box points to the microphone icon with the text: "Make sure this presenter is unmuted with video on."

REMINDER: once the event is started, it can only be stopped (not paused or restarted).

Post-event actions

Post-event actions



Capture event feedback from attendees, presenters and organizing team directly after your event.

Be open to suggestions and insights for what can improve. Clarify immediate next steps for your team.

Rest! Let the event experience settle in your mind before making follow up decisions.

Processing Feedback

- Provide reminders to complete follow up event surveys.
- Extend event surveys to presenters, organizers and core team.
- Gather data from survey tools.
- Pivot data by type of attendee and session.
- Provide attendee feedback to speakers as soon as possible. Within 72 hours after the close of the event is an industry norm.

Content publishing

- Prepare presentations and/or recordings for publication.
- Release "Thank you for attending" communications.
- Release "Thank you for participating" communication to presenters and core team.
- Publish recap blog post or other communication broadly.

Ongoing Strategy & Next Steps

How will you continue to engage with your audience?

What follow up engagements will you conduct?

How will you improve your next event?

How will you continue to invest in presenter skills and recruiting new presenters?

Schedule an event review to discuss operational improvements.

Pro Tip: Thank your Team

Build morale within your production team. They are essential to your success. Host a "Wrap Party" to thank them for their hard work. Producing live events can be very taxing on the team involved. Make sure you thank them and invest in their health and well being by ensuring appropriate time off for recuperation, especially after producing a large scale or high-profile event. **Do this BEFORE you conduct an event review.**

Content lifecycle



Your attendees will want to review content after your scheduled live event. Plan for the lifecycle of your content by sharing recordings and presentations in a location you manage. Permissions, extended sharing and rebroadcast decisions should be handled during pre-production.

Content on-demand

Will you publish content internally (Microsoft 365 via Stream) or externally (YouTube or other platform)?

Will you publish video only or presentation assets as well?

Ongoing conversation

Do you have a community forum where your attendees can continue to ask questions and engage?

Consider providing access to ongoing resources and experts.

Accessibility

Strive to have an accessible event and content.

Utilize features like closed captions in broadcasts, alt-text for images and the Accessibility Checker for PowerPoint.

Consider releasing content in Sway or PDF format using the Export to PDF function within PowerPoint to ensure consistency and availability.

Learn more at <https://aka.ms/PowerPointAccessibility>.

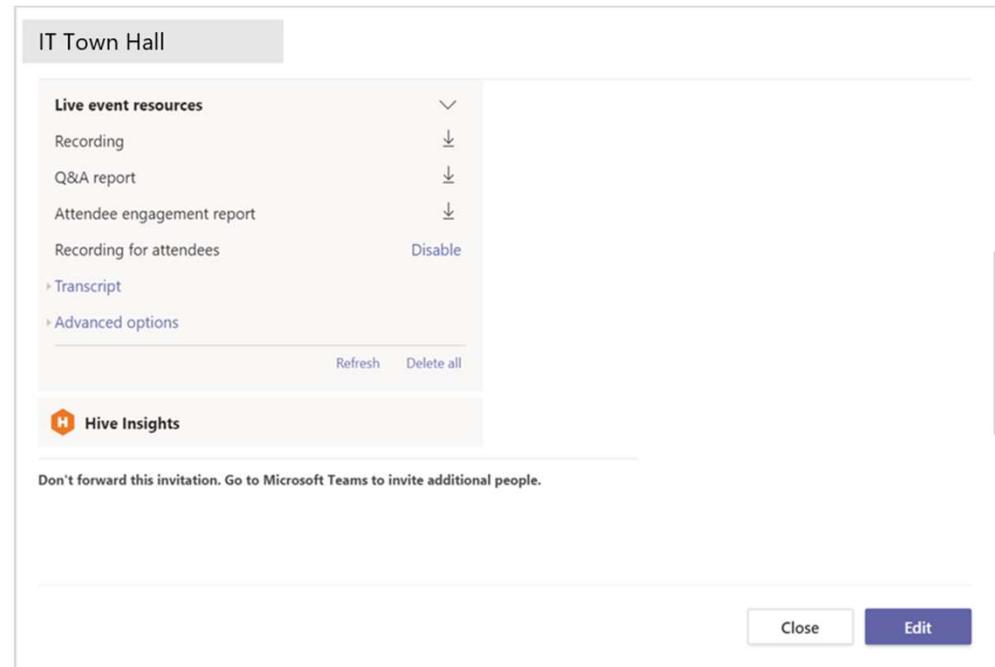
Manage Live Event resources after the event

At the end of the Live Event, a Producer or Presenter can access the following event resources by going back to the event invitation in your Teams Calendar:

- Event recording
- Q&A report
- Attendee engagement report
- Recording for the Attendees (ability to disable)
- Etc.

If you want to access this option later, open the event invitation from Teams and access this window.

This view is not available to guests.





Webinar







Considerations

| ITEM | LICENSE | DEFAULT | POLICY |
|----------------|---------|---------|--------|
| 1,000 meetings | | update | |
| Webinar | | | |
| | | | |
| | | | |
| | | | |



Explore these virtual event resources

-  Adoption Site: <https://Update?.Microsoft.com>
-  Live, online training: <https://Update?/aka.ms/TeamsLiveTraining>
-  Self-guided how-to articles: <https://support.office.com>
-  Overview of apps in Teams: <http://aka.ms/OverviewAppsInTeams>
-  Virtual Event Forum: <https://aka.ms/VirtualEventForum>
-  Tech Community: <https://techcommunity.microsoft.com>
-  Teams Chalk Talk Series: <https://aka.ms/virtualeventplaybook>
-  Teams Organizer checklist: <https://aka.ms/OrganizerChecklist>
-  Virtual Event Community: <https://aka.ms/VirtualHub>



Share your feedback
(Insert email address or link to feedback form)

Thank you for attending!



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