

Hybrid Zoom Meeting Setup

Step-by-Step Checklist with Schematic

Use these instructions to organize the team's efforts to set up the meeting room for a Zoom and in-person meeting. The necessary equipment has been assembled as a kit with a printed “load list” to ensure that the team has everything needed when they need it. Each location has certain unique aspects, so not all the items on the list may be necessary.

The host meeting needs electrical power and a wi-fi connection, though a cell phone can be used in “hotspot” mode if necessary.

Preparations

The kit is kept in the closet in the southwest corner of the NMM meeting worship space. Before you leave for your remote location, verify that you have everything on the load list in the kit. Locate or replace missing items. The kit is packed in plastic tubs and bags.

Scope Out the Site

Locate the electrical outlets. Consider sight lines from the audience to the place(s) where presenters may stand. Consider the lighting with attention to windows. Plan to cover windows behind the presenters because bright backlight blinds the camera and causes the foreground to be seen as a silhouette. Decide where to place the screen, the projector, and the microphone stands. Locate the table for the Zoom computer so that the power cables and digital cables reach it. Locate places for the public address (PA) speakers at the back or sides of the room as far as possible from the microphones to avoid squeal (feedback).

Setup

This section is divided into tasks, each of which may be done by a different team member for efficiency.

Table and Computer

1. Set up the table for the computer
2. Deploy the power strip and plug it into a wall outlet using an extension if needed. Cover it with a rubber mat to prevent tripping if it crosses a walkway.
3. Unpack the following items and arrange them on the table around the computer. Connect the power adapters for each unit as you place it to avoid confusion about which adapter connects to which piece.
 - a. Laptop Computer

- b. Audio Mixer
 - c. Two microphone receivers
4. Turn on the computer and log into the WiFi Network. Use a cellphone hotspot if necessary. (Allow any pending updates to install while you complete the other connections below)
 5. Attach the USB cable between the Computer and the Mixer.
 6. Locate the four XLR patch cables and connect them from the microphone receivers to the mixer. Note: It will be easier to remember which channel on the mixer controls each microphone if you start with channel 1 and connect it to the left most receptacle on the left receiver and then work from left to right connecting the remaining patch cables.
 7. Locate the Dayton 2.5 Ghz transmitter. Connect a 6 foot USB extension between the transmitter and its power adapter. Plug the adapter into the power strip.
 8. Connect a 1/8 inch patch cord from the transmitter to the headphone jack of the mixer using a 1/8" to 1/4" adapter.
 9. Connect one end of the long HDMI cable to the HDMI display port of the laptop.
 10. Connect the long active USB cable (booster/repeater on female end) to the high speed USB port on the left edge of the laptop. Note: it looks wider than the other USB ports, but the plug fits the center of the opening.
 11. Install batteries in each of the four microphones. Verify that the batteries are full strength by turning each microphone on and observing the battery indicator. Replace weak batteries.
 12. Launch Google Chrome and open <https://zoom.us/test>. (This will verify that your internet connection is good. When your team has completed their tasks below, you can proceed with testing.

This competes with the connections for the tabletop equipment.

Screen, Zoom Speakers and Projector

The portable screen should be positioned on one side of the presenters so that attendees can see it from their seats. It should not have a window or bright light behind it. The projector lens should be approximately level with the screen's bottom edge and about ten feet away. If the projector is set on a chair or stool, secure it with a bungee cord. There are rubber wedges in the projector bag to help in leveling the projector or the table legs as necessary. Black plastic garbage bags work well to cover bright window openings. Note that the kit includes anti-skid mats to keep gear in place on slick surfaces.

1. Position the screen and projector.
2. Place a set of powered speakers near the screen.
3. Deploy an extension cord and connect the speakers' power adapter.

4. Locate the long 1/8" extension audio cable from the mixer's headphone jack. Plug the speaker 1/8" male plug into the 1/8" female connector on the extension.
5. Locate the long HDMI cable connected to the laptop and plug it into the projector. Cover both the HDMI and the audio cable with a rubber mat to prevent tripping.
6. Turn the Projector on and adjust focus, zoom, and keystone to fill the screen and square up the image.

This completes the projector setup.

PA Speakers and Wireless Audio Receivers

These powered loudspeakers amplify the microphone audio coming from the mixer so that everyone attending can hear clearly. Note that the voices of those on the Zoom call will be heard from the screen, not the PA speakers. Deploy one or two pairs of speakers as desired, placing them at the sides or back of the room as far as practical from the microphones.

1. Place the pair of speakers on a bookshelf or windowsill. The higher the better. Connect the cables and the power adapter.
2. Locate one of the Dayton 2.5Ghz receivers and its power adapter. Plug the USB directly into the power adapter. Connect the 1/8" plug attached to the speakers into the receiver. (Note: A steady pilot light indicates it is getting signal and is paired with the transmitter. Flashing means it isn't.)
3. Repeat this setup for the second set of PA speakers if desired.

This completes the speaker setup.

Testing

The procedure that follows will verify that everything is working correctly, and allow you to set the levels (loudness) of the PA speakers and the Zoom call audio.

Zoom and Internet Connection

Zoom Meetings provides an online mock meeting for test purposes. You will select the correct microphone for the zoom call and set the loudspeaker volume using the test.

1. On the mixer, advance the headphone volume to half-way up. Pick up microphone 1, turn it on, and speak into it. You should see the meter on the receiver register your voice. On the mixer you should see the green LED light flashing. You may need to adjust the controls. You should hear your voice from the PA speakers. Have someone go to each of them and adjust the volume as high as possible without distortion. You may need to reduce the "headphone volume" setting if the speakers are too loud. By maximizing the setting at the speakers, you will achieve the greatest *range* of control at the mixer—important if some people are softspoken.

2. Test each of the four microphones, making adjustments to the receiver volume and mixer controls as needed. Note that the tone controls on the speakers and the tone controls on the mixer may be used to improve clarity.
3. On the computer, use Google Chrome to launch the test meeting at <https://zoom.us/test/>
4. Once connected, click “test speaker and microphone.” Zoom sends the sound of a chime to the computer, and the window asks if you can hear it. If the sound comes from the laptop and not the projector screen, try selecting another speaker on the Zoom settings. It should be labeled “video codec” and not system speaker. It will NOT be one of the USB options.
5. Once the speaker is tested, Zoom will test the microphone by recording your voice and playing it back when you stop speaking. Don’t be fooled—the internal laptop microphone will work and may sound okay, but the feed from the mixer will be far superior. Turn the mic off and test to be sure it is the wireless microphone playing back.
6. Select the camera. If Zoom displays the laptop camera image, unplug the USB cable to the camera (left side of the laptop), wait a second, and plug it in again. Zoom should switch to the USB camera. You can also select using the popup window on Zoom by selecting the carat “^” next to the camera icon at the bottom of the zoom screen.

This completes the pre-meeting testing. All your gear is ready to go live. Make a final tour of your installation to ensure there are no trip hazards and that all electrical plugs are securely inserted. Then, stow the bags, boxes, and surplus gear out of the way and, if possible, out of view.

Showtime – Going Live

Everything you see on the laptop is projected on the screen. For this reason, it is best if someone else hosts the meeting and deals with spotlighting speakers, initiating screen sharing, showing slides, etc. You will, however, sometimes want to “pin” a view for those in the room with you.

Log Zoom into the live meeting well in advance of the start of the meeting. Mute the audio and the video, check the name your computer is displaying on Zoom, and rename it if necessary (e.g., BQM at Newtown). At showtime, unmute, turn on all the mics, turn down the fader knobs on the mixer for mics that are not in use.

After the Event

Don’t sabotage the next event. Take your time and carefully recoil your cables. Put the gear in its boxes along with the proper cables. Make sure you have everything. Remove all the batteries. That way you know they won’t leak and ruin something. Tag anything that needs repair and follow through to see that it’s ready for next time.