



Evaluation

## Zoom Rooms Kit for Small Meeting Rooms & Huddle Spaces

*A hands-on look at an entry-level "service-attached" video conferencing solution*

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## Introduction

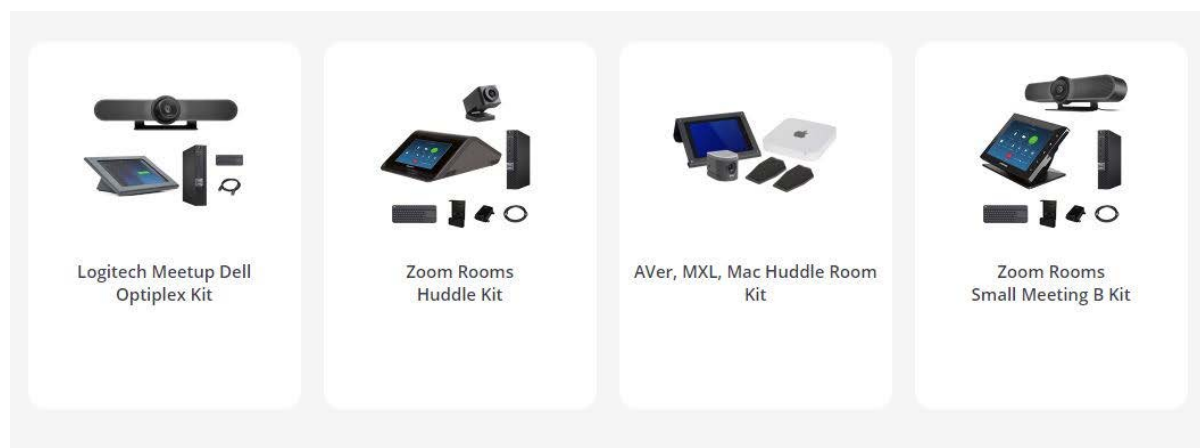
The demand to video-enable small meeting spaces and huddle rooms continues to grow – driven in part by a new class of “service-attached” room systems. Designed to work with a specific meeting service, these systems hold the promise of easy installation, administration, a robust always-improving feature set, and ease-of-use – at a price point that is justifiable for volume rollouts.

Zoom Room Kits are a prime example of a service-attached system designed to quickly extend the Zoom meeting experience into the huddle room. Consisting of pre-packaged components from multiple vendors, these kits vary in features and pricing to specifically match their intended application - such as a small to medium size conference room. Everything needed is included in the box except for a display - though some kits also include a large touch display to add interactive whiteboard capabilities.

Zoom Room Kits can be purchased through Amazon, VideoConferenceGear.com, CDW and other 3<sup>rd</sup> party sellers. The kit used for this evaluation, the “[Zoom Rooms Huddle Kit \(Logitech Meetup Dell Optiplex\)](#)”, is bundled by VideoConferenceGear.com and shipped from Amazon. The purchase price is \$2,599.

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### Zoom Room Kits



Notes: A sample of Zoom Room kits available. The first kit is the one used for this evaluation

Source: Zoom.us 12/18

## Unboxing Experience

The components of the kit arrived in a single 12"x12"x24" box containing each item packed securely and individually. Having a single box to ship/receive makes it harder to lose components, especially for those organizations deploying multiple kits.

### Zoom Room Kit – Unboxing



Source: Wainhouse Research 01/19

The following components were included in the Zoom Room Kit:

### Zoom Rooms Huddle Kit – Component Details

Element	Kit Component
Integrated Camera, Mic, Speakers	Logitech MeetUp
Compute Platform	Dell OptiPlex 7050 Micro PC – i7 Quad Core, 16GB RAM, 128GB SSD, RJ45 ethernet/WiFi
OS / Software	Windows 10 LTSC, Zoom Room client software, controller app
Input / Control	Apple iPad Mini 4 Logitech wireless touch keyboard
Mounting Hardware	Display mount – MeetUp VESA mount – PC Heckler console mount – iPad Mini
Cabling	Extended power cable for the iPad 6' HDMI cable 7' Cat6 Ethernet patch cable
Documentation	One-page setup guide
Price – Zoom Rooms Huddle Kit	\$2,599 USD – as listed on <a href="#">Amazon</a>
Price – Components Purchased Individually	\$2,699 USD – estimate

Source: Wainhouse Research

If purchased individually, these components would cost about \$100 more than the kit – although specific pricing of the Dell PC with Windows 10 LTSC installed could not be located. As included with this kit, the PC arrives with Windows 10 and the Zoom Room client preinstalled. All things considered, the kit should save time and money versus sourcing the individual components. The kit also includes a card from VCGear with their telephone and email contact information for support. Our experience unboxing and installing each major component is summarized in the following sections.

## Video Appliance: Dell OptiPlex 7050 Micro PC

The Dell PC measures approximately 7" x 7" x 1.5" – small enough to be hidden out of sight in most conference rooms. The OptiPlex sports an Intel Core i7-7700T processor, 16GB RAM, a 128Gb SSD, and both ethernet (RJ45) and WiFi network connections. The PC supports dual displays – one via HDMI and the other via Display Port. Note that the kit does not include a Display Port cable or adapter (which would be required for a dual display installation). For our evaluation, we tested the kit as part of a single display installation.

The Dell PC in our kit arrived with Windows 10 IoT Enterprise and the Zoom Room client software pre-installed. The Windows 10 IoT release option is designed as "LTSC" – or "Long Term Service Channel" – which is intended for purpose-built appliances and embedded systems. LTSC supports all the features and services as Windows 10 Enterprise, but can be deployed in a minimal, application-specific configuration. The OEM vendor manages the update process and can minimize the update frequency – with major updates occurring only every two to three years (per Microsoft).

Applied to Zoom Rooms, Windows 10 LTSC seems a logical choice of OS – the experience is locked down to the Zoom application, and users cannot install or access any other application on the device. This affords a host of benefits as compared to the common "open PC" DIY Kit approach:

- Authentication and Workflow – Zoom handles user and meeting authentication responsibilities – no need for each user to log into the PC and load an application before each meeting
- Security and Performance – locked-down means no BYOA bloatware, viruses, trojans, or other apps wreaking havoc and slowing things down
- Purpose-Built Conference Rooms – open PCs tend to invite squatters, filling with users who prefer to get some work done on the larger display; LTSC ensures that the PC appliance will only be used for the intended Zoom application
- Uptime and IT Support - fewer updates means less IT admin overhead and update-related downtime.

The tradeoff is that you are somewhat locked into Zoom's ecosystem with this Windows IoT solution – what if you decide to try another meeting solution in the future? In this case, you would most likely need to purchase and cleanly re-install Windows 10 on the Dell PC.

Note – Zoom's Windows-related reference design requires Windows 7 or later but does not require a specific / locked-down configuration. Each Zoom Room Kit vendor therefore has leeway to deploy their kits in multiple configurations – make sure to validate the Kit's OS configuration meets your requirements before purchasing.

### Micro Dell OptiPlex 7050 Micro – Specs (as tested)

Component	OptiPlex 7050 Specs
Form Factor	Micro - 7" x 7" x 1.5"
CPU	Intel Core i7-7700T – Quad-Core @2.9GHz
Graphics	Intel Iris Pro (integrated), 1x HDMI, 1x Displayport, UHD 4K capable
Memory	16GB (2x8GB) – 2400MHz DDR4
Storage	128GB m.2 SSD
Operating System	Windows 10 IoT 2016
Zoom Room – Quality	Video – 720p/30fps Content Sharing - 720p/60, 1080p/30, 4k/10

Source: Wainhouse Research

## Integrated Camera / Mic / Speaker: Logitech MeetUp

Core to this system, the Logitech Meetup is an all-in-one USB-connected video conference peripheral designed to be mounted either over or under the display(s) in a huddle space or small conference room. Its key features include a 4K Ultra HD resolution camera (with motorized pan/tilt and 5x digital zoom), a 120-degree horizontal field-of-view fixed lens, an integrated “three-element beam forming microphone array”, and an integrated speaker (a wired table top expansion mic is offered as an option; it is not covered in this evaluation).

The MeetUp seems smaller in hand than it appears in pictures. The build quality is acceptable with the bulk of the product being plastic, yet it doesn’t feel cheap as the unit has some “heft” to it. The connectors (power, USB, and microphone pod extension) are on the back of the unit near the integrated mount. This mount, which is hinged, can accommodate a variety of installations (wall mount, on a shelf, on a credenza).

The MeetUp ships with eight different AC power plug adapters in the box - so it’s ready to work in most countries. The MeetUp requires its own power connection – it cannot operate strictly on USB power. The included USB and power cables are quite long at 16’ and 10’ in length respectively which should accommodate most installations. The MeetUp also includes a battery-powered remote control – though, in our application, its use is superseded by the Zoom Room touch controller.

### Logitech MeetUp – Integrated Component Specs (as tested)

Component	MeetUp Specs
Image Sensor / Resolution	Supports 4K, 1080p, and 720p resolutions
Field of View	120 degrees
Zoom	5x (digital)
Pan / Tilt	Motorized
Microphones	3 beamforming / omnidirectional with noise and echo cancellation
Connectivity	Bluetooth (audio); USB 2.0 / 3.0
Control	RF remote; Zoom Room controller

Source: Wainhouse Research

## Controller: Apple iPad Mini

Our Zoom Rooms Huddle kit includes a new, shrink-wrapped-from-Apple iPad Mini with the standard “consumer” iPad software preinstalled. An additional 8’ lightning cable is included for power – long enough to accommodate installation in most small conference rooms. The iPad is intended to be ‘always on’, and the lightning cable cannot be unplugged once installed in the Heckler mount. The cable connects to the standard iPad power adapter.

The “Heckler Design Zoom Room Console H529 iPad mount” is made of heavy-duty powder-coated bent sheet metal. While not the most luxurious piece of equipment, it’s solid and serviceable – though a little more attention to detail, like rounding off the sharp edges, would go a long way in making the mount look nicer. The mount is held together with screws and an Allen wrench is provided for assembly. There’s no method to secure the mount to a conference table to prevent theft of the iPad.

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### What’s included in the Zoom Rooms kit, ready for install



Source: Wainhouse Research 01/19

## Installation and Setup

A one-page instruction sheet is included with the kit which we followed step-by-step to complete the initial system setup.

### Zoom Rooms Huddle kit – Setup Instructions

**Step 1: Configure Equipment**

- 1 Connect the Logitech Meetup to the power supply and Dell PC
- 2 Connect the Dell PC to a monitor  
Connect the monitor to the Dell PC using the HDMI cable  
For multiple monitors, connect using the DisplayPort on the PC
- 3 Connect the network cable to the Dell PC
- 4 Plug in the Logitech Wireless Keyboard adapter to the Dell PC
- 5 Plug in the Dell PC and power it on
- 6 After the PC boots, Zoom Rooms app will automatically launch. A pairing code is displayed, this code is used later in the setup process.

**Step 2: Set up the Apple iPad**

1. Charge the iPad
2. Power on the iPad and complete initial set up
3. Connect the iPad to the same network as the Dell PC
4. Install the Zoom Rooms application from the App Store
5. Open the Zoom Rooms application
6. Enter the pairing code shown on the Zoom Rooms monitor

**Step 3: Complete Room Setup**

1. Sign in with your Zoom administrator account
2. Select an existing room or create a new room

**Zoom Tips**

- Sign in at [zoom.us](https://zoom.us) and navigate to the Zoom Rooms administrator panel to set up your room's account.
- We recommend configuring your Dell PC and iPad for kiosk mode.

**Need help?**  
Visit [support.zoom.us](https://support.zoom.us) and click Zoom Rooms or watch the video at [youtu.be/UzBWsYlpiqY](https://youtu.be/UzBWsYlpiqY)

Source: *Videoconferencegear.com 12/18*

Although the instructions consisted of one-side of one-page, they were sufficient to get the Zoom Room set up and running. Our experience setting up the system is detailed in the following sections.

### Step 1 – Equipment Installation

The first step instructed us to connect the MeetUp device to the PC, but provided no guidance on where or how to mount the unit. Of course, the MeetUp supports a range in installation options – it can be mounted above or below the display, on a wall, or simply placed on a table. Based on our lab's layout, we mounted it above the display.

The MeetUp includes a standard small wall mount, while the Zoom Rooms Huddle kit provides an additional bracket for mounting the device to the top of a display. We attached the mount to the back of our display in about two minutes using the included bolts and a screwdriver - though it took some trial and error to adjust the camera to the appropriate height. The instructions on how to attach the mount to the display are not very clear, and there are no instructions on how to attach the MeetUp to the mount. Note the MeetUp stays in place on the mount via friction – it is not bolted or screwed on. Be sure to push the MeetUp onto the mount completely to seat it or it could fall off quite easily.



## Logitech MeetUp – Cable Strain



Source: Wainhouse Research 01/19

Mounting the MeetUp above the display and pointing it down to capture participants seated close to the display results in what we think is an uncomfortable amount of upward strain on the power and USB connectors. While the connections work, this could have been engineered better.

Next, we installed the Dell OptiPlex 7050. The unit's micro form factor allows for installation in a variety of locations, and, since there is no need to physically access the PC once it's up and running, it can be mounted behind the display (using the included VESA mount) or tucked away in a credenza. While the Dell does have a fan, it's extremely quiet and the PC does not generate much heat. For our evaluation, we placed the PC in the credenza supporting the display (note the cabinet should be vented to provide air flow) and had no issues with cabling to the MeetUp.

After connecting the network and HDMI cables, and plugging the keyboard's wireless USB adapter into to the PC, we powered the system on for the first time. In less than a minute, we were greeted by the Zoom Room's controller pairing screen.

Note the included Logitech wireless keyboard is required only for the initial setup – specifically, it's used to pair the PC to the iPad controller. Once the controller is paired, the keyboard will only be needed for any in-room administrative tasks – thus it can be stored out of sight, or a shared keyboard could be used across multiple Zoom Rooms.

## Step 2 – iPad Configuration

Next step: pair the PC with the iPad, which functions as the Zoom controller. This step brought our installation to a sudden halt. While the Dell OptiPlex arrived preloaded and ready to go straight out of the box, the iPad had to set up from “ground zero”. Here were the steps we had to complete in order to connect the iPad as a functioning Zoom Controller:

- Create an Apple ID – for use by the room (a shared device)
- Verify the new identity via text message and email
- Update iPad / iOS
- Download and install the Zoom Rooms app from iTunes

**Total iPad configuration time:** 45 minutes

The iPad Mini setup – and updating iOS in particular – was the most time-consuming step in our installation process. After the plug-and-play Dell PC experience, we were surprised that the iPad required us to create an Apple ID, load the Zoom Controller application, and update the iPad’s iOS.

This being said, if an organization has a number of iOS devices under management and is leveraging an Apple MDM solution with established administrative processes, this step may be a minor issue.

But the point should be noted: your Zoom Room installation process should account for a potential iOS update / Zoom app installation if your kit includes an iPad. It may be beneficial to configure the iPads centrally before distributing them depending on your device management solutions and the number of rooms you are deploying.

When everything was finally installed, booted, and connected to the same network, the main display provided a 6-letter pairing code. The iPad controller automatically switched to a pairing screen with a text box asking for the pairing code. After entering the code into the controller, pairing was completed in about a second.

### Step 3 – Create (or Select) a Zoom Room

Next, it’s time to create our first Zoom Room in our Zoom meeting service account. The setup instructions assume you have already created a Zoom administrator account – while it’s unlikely you’ll be installing a Zoom Room as your initial user, you’ll want to pause to get your administrator account configured if this is the case.

Once logged in to the Zoom web portal as an administrator, you’ll have the ability to create a new Zoom Room or select an existing one. Since this was our first Zoom Room, we walked through the creation process top to bottom - giving the room a name and selecting a calendar (which we had setup previously, between Zoom and Office 365 Exchange). Since our evaluation lab is a shared space, we assigned an optional administrative passcode that keeps users from closing the Zoom Room client software. And that was it. While the setup instructions were a little vague, they weren’t really needed as the setup process on the Zoom admin portal turned out to be very straightforward.

Installation is now complete. Our overall installation experience took approximately 75 minutes from unboxing to first call. We expect that an enterprise with established iOS management services and procedures should be able to bring this timeframe considerably: if we remove the iPad account setup, update, and configuration, we were able to install the system hardware, pair the PC to the controller, create a Zoom Room in our Zoom account, and start a call in under 30 minutes.

Total Installation Time:

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**Benchmark: Unboxing to First Call – Zoom Rooms Hangout Kit**

Benchmark Category	Time – Min
Total Time – First Attempt	75 Minutes
Unexpected Error Time (iPad setup)	45 Minutes
Target Time – Experienced Installer, No Errors	20-30 Minutes

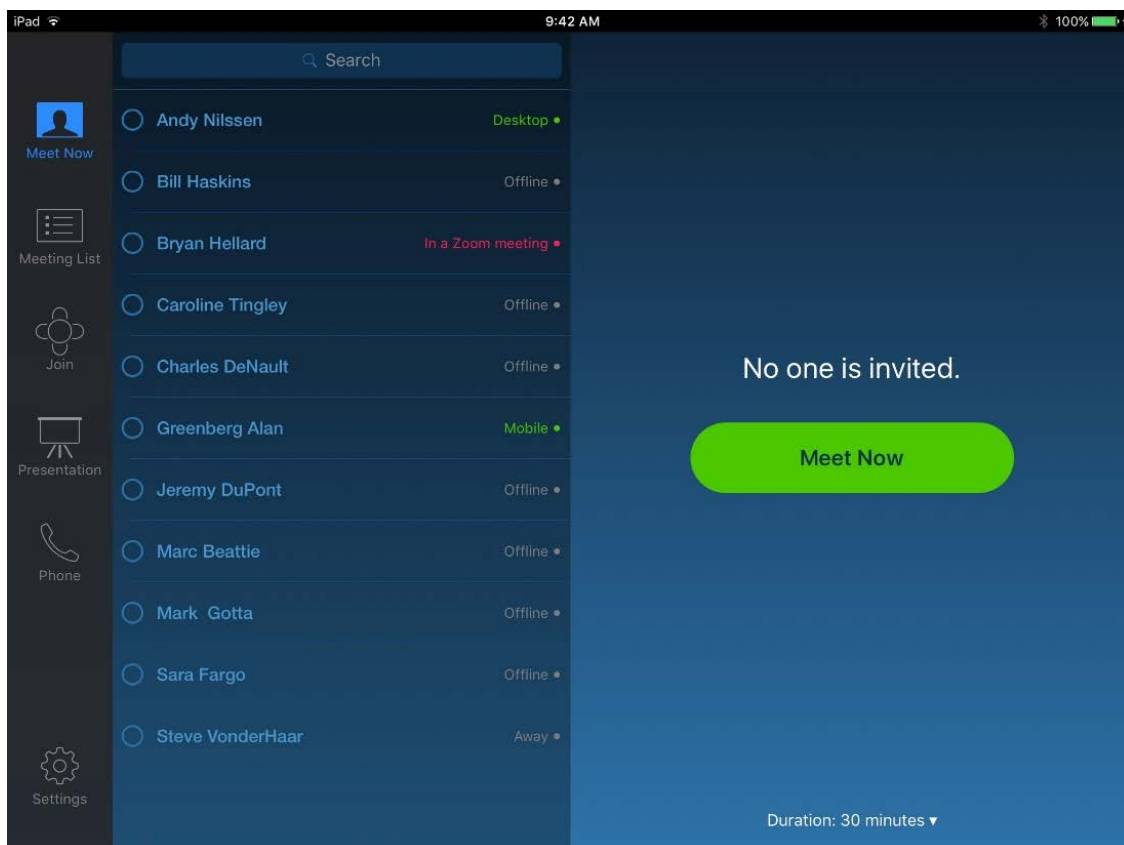
*Source: Wainhouse Research*

## Evaluation: The Zoom Room User Experience

Zoom’s stated objective is to “make Room meetings as simple as possible”. With this in mind, we began our testing procedure – walking through our test script, scheduling and conducting calls, and putting the service through its paces.

### Ad hoc Meeting Workflow

#### Zoom Room Controller



Notes: The controller’s main screen showing the green “Meet Now” button.

Source: *Wainhouse Research Eval Labs, Q1/19*

An ad hoc meeting can be started by simply tapping the green “Meet Now” button on the iPad controller. Once tapped, a 10-digit Zoom meeting ID is displayed which the host can provide to meeting participants. There’s no difference between the room and desktop from the participant’s chair – this is the existing ad-hoc meeting experience that an experienced Zoom user is already familiar with. Participants simply open the Zoom app (on a PC, mobile device, or another Zoom Room) and enter the meeting ID to join the call.

A Zoom Room user can enter a Zoom meeting ID by tapping the “Join” button on the left side of the controller. This brings up a keypad to enter the Zoom ID and subsequently joining the meeting.

An ad hoc meeting can also be started by locating a contact in the Zoom directory – on the controller, tap “directory”, and a list of everyone with a Zoom account in the organization is shown. Select the target participant and tap “Meet Now” – the invited participant will receive a request to join the meeting in their Zoom client.

## Scheduled Meeting Workflow

Our next test focused on the standard meeting workflow: schedule, start, and join a Zoom meeting from a Zoom Room. Overall, Zoom has mapped the Room workflow to the personal workflow very closely. An example using Outlook (assumes the optional Zoom Outlook add-in is installed): In Outlook, click on “Schedule a Meeting” (in the Zoom icon group), click “continue” to accept your Zoom meeting defaults, click “Rooms ...”, double-click on the room name in the pop-up – then “OK”, add the meeting attendees to “To”, and send the invitation. The only deviation from the familiar personal scheduling workflow is to add the Zoom Room as a “Room” – though users may be familiar with adding a room if rooms are already scheduled as a resource in Outlook.

Assuming your organization’s enterprise calendar system is connected to the Zoom account properly, each Zoom Room will show the day’s scheduled meetings on its screen – both Zoom and non-Zoom meetings. Tapping the “Meeting List” icon on the controller displays any scheduled meetings for the Zoom Room. 15 minutes before a meeting is scheduled to start, the iPad controller switches to a bright orange “Start” screen – providing the meeting title, start time, and a “dismiss” button. One tap of the “Start” button on the iPad controller, and voila! – the Zoom Room connected to the scheduled meeting. If the meeting is scheduled with the Zoom Room as the location, the room will be considered the ‘Host’ and will need to join the meeting in order for it to start and admit attendees (if the Zoom Lobby has been configured).

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### Zoom Room – Starting Scheduled Meetings



Source: Wainhouse Research Evaluation Lab, Q1 2019

We were able to schedule, start, and join Zoom Room calls following this workflow without the need for training or digging through YouTube videos – our first attempt was friction-free. Zoom has carried their familiar (and intuitive) meeting workflow over to Zoom Rooms. Users will probably require a notification that a few Zoom Rooms have been installed, but that is likely all they will need. If they know how to use Zoom for personal meetings, the experience carries over to Zoom Rooms.

## Content Sharing Workflow

Sharing a screen or content in a Zoom Room is flexible and straight forward. There are several options to directly share content from a personal device in a Zoom Room. Screen sharing can be accomplished while in a Zoom Room meeting or, if the system is not in a meeting, a device's screen can be shared locally to the room's larger display. Without prior experience or training, we were able to navigate the controller and share a PC screen with no difficulty.

### Proximity Detection

The simplest way to share content is through Zoom Room's proximity detection – which uses ultrasonic pairing to detect if a device running the Zoom Meetings app is within close proximity of the Zoom Room. To use this feature, the Zoom Room system needs to have it enabled, the sharing PC/Mac needs to have the Zoom Meeting app installed (and on the same network as the Zoom Room). With this in place, the user clicks the Share Screen button in their Zoom Meeting client and, in less than two seconds, their PC screen is shared in the Zoom Room.

This feature can be turned on or off in Zoom's web portal by an administrator under Account Settings.

### Sharing Code / Meeting ID

If Proximity Share is not enabled or the sharing PC is not on the same network (for example, on guest wifi where the Zoom Room is on a secured corporate network), a sharing code can be used. As with Proximity Sharing, the user clicks Share Screen in the Zoom Meeting app on their PC/Mac to be shared; the user is then prompted for either a sharing key or meeting ID. The sharing key is displayed on the top right corner of the Zoom Room display – enter the code and, within a few seconds, the screen is shared. If the Zoom Room is in a call, the user can alternatively enter the meeting ID displayed on the controller screen. This method will allow PC users to not only share their screen, but also offers the options to share a Zoom whiteboard or an individual application.

### Airplay

A Mac user can share their screen via Apple AirPlay by navigating to the top right of the Apple menu, selecting AirPlay, and clicking on the appropriate Zoom Room. AirPlay lists all available Zoom Rooms by name, which can be found on the main room display and under the Settings tab of the controller. The Mac user will be prompted to enter the sharing code (shown on the Zoom Room display). Once entered, the Mac screen appears within a couple of seconds on the Zoom Room's display. Turning off AirPlay on the Mac ends the screen share, and AirPlay works the same whether the user is in a Zoom meeting or not.

AirPlay works on iOS devices as well - although AirPlay is called Screen Mirroring and can be found in the Control Center of an iOS device.

### Using the in-room Controller

During a local meeting, an in-room user can share a screen of either a PC or Mac/iOS device by selecting the Presentation button on the Zoom Room controller. Similar to the methods described previously, a PC user then selects Desktop from the Zoom Room's Presentation screen. The Zoom Meetings app on the PC / Mac can then be used by clicking Share Screen and entering the sharing key shown on both the controller and main display. Alternatively, the user can browse to [share.zoom.us](https://share.zoom.us) and enter the displayed meeting ID – which will open the Zoom Meeting client and

share their screen (The user will be prompted install the Zoom Meeting client if it is not installed). The method of sharing from a Mac/iOS device is similar to the PC but uses an AirPlay connection. All sharing methods work efficiently; we found AirPlay to be the most user-friendly option for Mac or iOS devices.

## Quality Impressions

### Video Quality

Overall, we found the Zoom Room’s video quality was consistently excellent when participating in Zoom meetings. In our testing with PC-based participants, we experienced a consistent resolution of 720p in each direction and a frame rate between 24 and 29fps. We did notice some limited video lagging, but only when the image included a large amount of fast motion – which is rare in a typical meeting.

The Zoom admin web portal provides a Dashboard readout that displays (almost) real-time quality metrics. Below is a sample of related quality metrics captured during one of our test calls. Note these metrics should be expected to vary widely based on each participant’s equipment, network connectivity, and ongoing / competing traffic.

#### Zoom’s Web Portal

Video (08:15)	Receiving	Sending
Bitrate	3721 kbps	3167 kbps
Latency	18 ms	24 ms
Jitter	17 ms	25 ms
Packet Loss-Avg(Max)	0%(0%)	1.4%(20.8%)
Resolution	1280x720	1280x720
Frame Rate	29 fps	29 fps



Notes: Information can be viewed during a meeting or after.  
Source: Wainhouse Research 01/19

We compared some of the metrics from Zoom’s web portal to those captured via our independent monitoring system and found the data rates comparable. Specifically, we compared throughput results when generating spikes in video traffic – by swapping cameras, sharing content, and disrupting the video stream with intense motion. The resulting metrics provided by the Zoom

dashboard vs. our own measurements were within a few percentage points of each other and acceptable for our testing. That said, although quality data is captured in “real time”, the Zoom dashboard displayed the related analytics about a minute after any action – we found it best to review results after each test had concluded.

The Zoom Room’s overall image quality is the result of two links in a chain: the MeetUp camera and the Zoom Room software / cloud service. A close look at the output of the MeetUp camera reveals noticeable fisheye distortion when it was zoomed out to its widest frame. The camera has automatic gain control that adjusts the image based on the lighting. While it worked very well most of the time and adjusted the image level very quickly, it sometimes introduced a blue tint to the image, depending on lighting and zoom level.

The camera has a motorized pan and tilt and a 5x digital zoom, all managed via the Zoom Room controller (or, if used as a stand-alone device, with the MeetUp remote). The motorized pan and tilt functions are virtually silent and were not noticeable by the far-end participants.

The included data sheet indicates the MeetUp has a 120-degree horizontal field-of-view (FOV). However, our measurements put it at 110 degrees horizontal FOV at the widest zoom. While the lens may be 120 degrees, there’s probably some image manipulation internal to the camera that loses some of the field of view as a result. That said, this is still a very wide FOV, and the number of participants that the camera can include at one time is impressive – at just 5’ away, the camera can capture five participants sitting comfortably besides each other.

At full zoom, the MeetUp captures a tight 30-degree horizontal FOV. This is quite an impressive zoom range; however, the image becomes somewhat pixelated when zoomed in too closely. The MeetUp is also rated to mechanically pan an additional 25 degrees to the left or right. In our testing, we measured the pan to be 22 degrees.

## Audio Quality

The MeetUp’s integrated microphone array, coupled with the audio processing in the Zoom Room client, performed much better than our expectations for a front-of-room device. We captured consistent audio levels from participants speaking in a normal tone while walking around the room, moving between 4’ and 15’ from the microphone array. Even when facing away from the MeetUp, the participant’s audio was clear with only a slight decrease in volume.

Audio received from far-end participants was acceptable for voice - though the speaker quality was perhaps a little thin and tinny to our ears.\*

The audio-to-video lip sync was generally very good. Interaction was natural during our test calls – an indication that round-trip latency – is acceptable. We did not encounter any noise artifacts when participants were talking at the same time. During the occasional video lag noted earlier audio remained consistent.

## Analysis

### Logitech MeetUp

The first dilemma we faced while setting up the Zoom Room Kit is where to mount the camera – and the set-up sheet provided no guidance on where to place the system components. Installation location isn't just a problem with the MeetUp - it's a problem with video conferencing cameras in general.

Below are images taken with the MeetUp installed in two typical locations. The left shows the result of installing it above a single 55" display. The right shows the camera placed below the display. In each case I was sitting about 5' away from the display / camera – typical for a small meeting space. We decided to keep the MeetUp mounted above the display as there was slightly better eye contact and it avoided the "up the nose" camera angle. In a dual display setup (which Zoom Rooms supports) a camera could be placed between them to get better eye contact - however the MeetUp's "horizontal" form factor does not make this possible unless it's acceptable to have a 16" gap between displays. This is an issue with the all-in-one products like the MeetUp. In a dual display meeting room where it's not appropriate to separate the displays, the camera should be placed above the display where the far end participants are on-screen – though this can lead to a visual imbalance in the room.

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#### MeetUp Installation



Notes: Images cropped

Source: Wainhouse Research 01/19

As a side note, Logitech offers a camera control software app that can be used with a MeetUp connected to a PC or Mac. The app provides the ability to change some camera settings and enable a beta implementation of Logitech's "Right Sight" – the capability for the camera to automatically frame participants. In order to try the beta software, a firmware update to the latest revision was required – and took about 15 minutes to download and install. While the original firmware works fine with the Zoom Room, it does raise the issue of having to take some cumbersome steps if a firmware upgrade is ever required or desirable to gain new features (such as Right Sight).

Another observation: The MeetUp ships with a USB 2 cable. A "customer supplied" USB 3 cable would be required to take advantage of the MeetUp's full 4k resolution. This is not an issue for Zoom Rooms however, as Zoom is currently rolling out software to increase resolution from 720p up to 1080p.



#### Pros

- Easy to set up
- Well integrated with the Zoom controller
- All-in-one microphone, speaker, and camera
- Microphone pick-up quality
- Lens/image quality; wide FOV and ample zoom range
- Long power and USB cables

#### Cons

- Strain of cables when mounted on top of the display
- Form factor (when mounting between dual displays)
- Digital zoom produces a pixelated image when zoomed in tight
- Noticeable image “barrel” distortion on wide zoom
- Speaker quality is a little “tinny” \*
- No facility to easily upgrade the firmware while connected to the Zoom Room

## Zoom Room Kit

Overall, our installation experience with this Zoom Room kit was positive. The one-page setup guide was just enough to get the system up and running and helped keep the install on track.

However, we found a few things to consider or could be improved:

- Factors to consider when placing the various system components
- Treating the iPad set-up as the first step in the process – with a suggestion to complete the step in a central location prior to shipping the system to the room
- Pre-determining the information needed (ex: email address) to create an iPad Apple account
- Locking down the iPad using “Guided Access” (see below)
- Pre-configuring the Zoom Room in the Zoom web portal prior to installation
- Understanding the longer-term implications of administering three devices - the Windows 10 LTSB PC, an iPad, and the MeetUp

To avoid Apple deployment issues, kits are available that do not use an iOS device for the controller – for example a Logitech Tap, a Crestron Mercury, or a Crestron Zoom Rooms Touch Console. Another possibility is to use a main display with touch capabilities (“Zoom Room Touch”), in which case the main screen is used as the system controller.

While not covered on the installation sheet, we recommend that, for a Zoom Room deployment, the iPad be locked down using Guided Access. Once implemented, the Zoom Room controller app can’t be closed, and users won’t be able to access anything else on the iPad. [Zoom explains how to setup Guided Access for the iPad here.](#)

## Bottom Line

### What we liked

- The unboxing experience
- Quality of components / system completeness
- General flow of the set-up instructions
- Ease of account configuration
- Ease of administration for the Zoom Room software
- First power-on experience
- Camera HFOV and zoom range
- Microphone quality
- UX (and similarity to other Zoom workflows)
- Value for the price

### Potential improvements and other considerations

- The instructions could ...
  - Suggest pre-configuring the iPad prior to deployment
  - Suggest pre-configuring the Zoom Room on the Zoom admin portal prior to deployment
  - Give tips on component location in the room
- The MeetUp ...
  - Camera has noticeable fisheye on a wide zoom and pixelization in a tight zoom
  - Speaker can sound “tinny” \*
- Provide best practices on how to administer and maintain the Windows PC, iPad, and MeetUp

This Zoom Room Kit proves to be a simple, effective, and affordable way to video conferencing-enable a small meeting room or huddle space. The kit, which brings together devices from unrelated suppliers, is complete and the components work well together. The set-up sheet proved to be a useful guide to aid the installation process – though we would like to see some guidance on device placement. The kit also offers a single point of contact if anything is missing, needs replacement, or to answer a question. Combined with the Zoom Room client software, the kit elevates the whole experience – from purchasing to installation to usage during a meeting.

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\* Post publication of this evaluation, Logitech provided WR with a firmware update for the MeetUp (version 1.10.44) that noticeably reduced the “tinny” aspect of the MeetUp’s speaker system.

## About Us

**Andy Nilssen** is a Senior Analyst at Wainhouse Research where he manages the firm's video conferencing and web collaboration coverage. Andy has been analyzing the rich media communications market for almost two decades. He previously held management positions in marketing for PictureTel, Sun Microsystems, and two start-ups. Andy earned his BSEE and MBA degrees at the University of New Hampshire and holds two ease-of-use related patents.

**Bryan Hellard** is a Researcher at Wainhouse Research where his primary focus is product evaluation and testing. He has 20 years' experience in the industry across several roles including product engineering and management, R&D, and end user consulting. Prior to Wainhouse Research, he was President of True View Video where he developed video conferencing related products and consulted with end users on best practices for collaboration. Bryan has also been a consultant to video collaboration vendors providing product design services. He lives in the Cincinnati, Ohio area.

**Wainhouse Research** is an independent analyst firm that focuses on critical issues in the unified communications and collaboration market. The company provides end-to-end coverage of the UC&C industry, with areas of focus covering unified communications, enterprise video, meeting room collaboration, personal & web-based collaboration, and audio conferencing market segments. The company acts as a trusted advisor providing strategic advice and direction for both the UC&C industry and its enterprise users. For further details contact [sales@wainhouse.com](mailto:sales@wainhouse.com) or visit [www.wainhouse.com](http://www.wainhouse.com).

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