

Hangout on Air Production

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Introduction

Google Hangouts on Air (HoA) has reduced the barrier to entry for live video broadcasting so much so that nearly anyone can broadcast at any time. With this capability also comes the challenge of achieving and maintaining high production quality standards. Presented below are my keys to a production-quality HoA.

Overview

HoA allows anyone with a verified YouTube Account that is in good standing to broadcast a video presentation directly to YouTube for the world, or for only specified viewers, to view. For Google Plus accounts, the broadcast may include up to 10 participants. Google Apps allows up to 15 participants.

HoA Requirements

In order to broadcast live video to the world, some minor requirements must be met.

Account Requirements

The following are required in order to *launch* a HoA:

- Google Account (create a Google account: <https://accounts.google.com/signupwithoutgmail>)
- YouTube Channel (create a YouTube channel: <https://support.google.com/youtube/answer/1646861>)
- Verified YouTube Account (verify your account <https://support.google.com/youtube/answer/6035676?rd=1>)
- YouTube connected to Google Profile (<https://support.google.com/youtube/answer/2657961>), or Page (<https://support.google.com/youtube/answer/2897336>)
- YouTube Account has no Copyright Strikes: <https://support.google.com/youtube/answer/2814000>
- YouTube Account has no ContentID Claims: <https://support.google.com/youtube/answer/2797454>

Hardware/Internet Requirements/Recommendations

You'll also need to meet minimum hardware and connection requirements. Items in *italics* are my preference, but are recommended by Google.

- Device: Host/Participant, Laptop or Desktop (*2Ghz+ dual-CPU*)
- Broadband Internet: 1/1Mbps Download/Upload (at least 2Mbps Upload. *Preferred 5Mbps*)
- Webcam with 720p resolution (*1080p resolution*)
- Microphone
- Speakers (*earbuds/headphones*)

Host/Participant Machine

In order to *host* a HoA, the HoA must be created using a PC/Laptop. Mobile devices can not access Host tools. In order to be displayed in HD (720p resolution), each participant needs to run a machine with a dual core processor. This extra CPU power enables fast/efficient encoding of each participant's video stream.

My View on Mobiles

I discourage the use of mobile phones and tablet devices. The CPU is suited to the task of encoding HD at high speeds, and the webcam is invariably presented in a non-standard aspect ratio. Laptops/desktop machines with decent-quality webcams are displayed as 16:9 video streams, which is the full frame aspect ratio displayed on YouTube. Anything else in the HoA is an inconsistency that reduces the quality of the presentation. Exception can be made for vital guests who have no other option, or for live reportage from an environment that would not allow a laptop/desktop or that requires mobility.

Broadband Internet

While a participant may join a HoA with less than 1Mbps internet connection, quality suffers substantially with upload speeds of less than 2Mbps. In my experience, a Lower Third graphic can be easily read with a 2Mbps or greater upload speed, but 5Mbps unquestionably offers the greatest throughput to support 720p resolution video. Additionally, wired connections are to be preferred over Wireless connections. WiFi has the additional burden of imposing overhead in the form of error correction not required for wired connections.

Webcam

Resolution

At the time of this writing, HoA have a max resolution of 720p. That said, “minimum” specs are an ever-increasing figure. With 4k cameras becoming accessible and 4k screens cheaper, greater resolutions are sure to be offered in the near-term. The lowest resolution webcam I would *purchase* is 1080p.

Field of View

A less-discussed spec of webcams is the Field of View (FOV). This is the pyramid-shaped viewing angle of the webcam. The image of a participant produced by a Logitech c930e with a FOV of 90° will contain much more of the background, with the participant occupying less of the foreground, than one using a Logitech c310 with a 60° FOV.

Video Encoding

Webcams are not the only way to get an image into the HoA.

Switching Hardware

Video capture cards can be combined with HD Camcorders/Cameras, DSLRs, and other imaging devices... even DVD players or detached PC video outputs. Tricasters and other live video encoders or switching devices can also be used to feed your video into a HoA or YouTube Live Event.

Switching Software

Software can impose additional load on the machine, but if powerful enough to run the software along with participating in a HoA, there are many options available. I've used XSplit, vMix, WireCast for YouTube, and WebCamMax with varying degrees of success. Some offer the ability overlay custom Lower Third graphics, scene switching between various video inputs and multiple cameras, or just silly video effects. As long as the software is capable of providing a video output as a Virtual Webcam, it should be accessible in HoA.

Microphone

One can spend as little or as much as one likes on audio equipment. Many participants can “get by” with built-in microphones, others with a more sensitive ear might prefer to spend some money on professional microphones, preamps and mixing boards. I've found that the built-in mics on many Logitech webcams are acceptable for casual HoAs. I normally use a Samson GoMic, Q2U, or Plantronics 648 USB Headset.

Speakers

I am unconcerned about the audio quality of participants' outputs beyond simply allowing them to hear the conversation. I encourage them to use earbuds first, headphones second, and speakers only as a last resort. Earbuds are preferred over headphones as they are least conspicuous. The use of speakers is discouraged as they tend to introduce echos. This is an unwanted distraction in the HoA, and is ruinous to production quality. When speakers are the only option available to a participant, they must minimise the volume of the Hangout audio and ensure that the speakers are not oriented toward the microphone.

Planning Your HoA

Most worth-while endeavors require planning and proper execution. A production-quality HoA is no different. Necessary steps in planning your HoA are:

- Specify your Topic
- Select your Format
- Identify your Moderator/Presenter
- Identify the Participants/Panel
- Create a Scheduled Hangout on Air Event (SHoAE)

Specify your Topic

The topic you intend to discuss will guide the decisions you make on participant/panel selection, as well as where and how it's promoted. You may need to identify a primary speaker, subject matter experts and interested parties, all of whom are selected based on familiarity with, or interest in, a key topic.

Select your Format

The following questions will help to nail down some specifics in your approach to producing a HoA:

- Do you have/need a key presenter to host the event?
- Does the topic lend itself to a panel format with a moderator, or can you "go it alone"?
- Are you addressing individual participants in the HoA, Class Rooms, Conference Halls, Board Rooms, or generic viewers on YouTube?
- Do you have media to share during the presentation or just the conversation?
- Are you seeking outside questions/comments, and someone who can monitor for that feedback?

HoA Participant Roles

Each participant and organizer for the HoA has a role to play. Some small, some large, but all important.

Host

The Host (*Practical* Host) is the "personality" of the HoA. They open the discussion and manage the dialog. A host can spend the entire event in a monologue if that's the choice made, or a conversation can be shared between participants, but *someone* is going to open the discussion or presentation for any broadcast event. Different types of host have different required levels of familiarity with the topic based on the role that they play in the HoA. They are often also referred to as the Presenter or Moderator.

Presenter

A Presenter opens the presentation, leads the presentation and is the key speaker addressing the topic. They require a level of familiarity in the topic area and must be able to discuss it at length for the majority of the HoA. The video focus will primarily be on the Presenter and any supporting media.

Moderator

A moderator opens the discussion, directs the conversation between guests or subject matter experts, and keeps speakers on topic throughout the conversation. They need not be masters of the topic area, but do need to be able to lead a conversation and ask good questions.

Technical Director

The Technical Director (TD, or *Technical* Host) determines what is seen and heard, and is the role to which this document is most relevant. It's their job to Tech Check all participants, set the expectations for how the participants interact, specify the tools they'll use in the HoA, and also to advise them on how to achieve

optimum results in the HoA. It's the TD that actually opens the HoA, invites the other parties, starts and ends the broadcast, and determines which participant thumbnail is sent to the broadcast stream on YouTube. They may have to mute participants due to background noise, kick them out if they become a distraction, increase or reduce volume levels to normalise audio between participants, etc. The viewing audience should almost never see a Technical Director. They may, however, see media in place of the TD as needed to support the discussion. The TD may display required logos/images/videos/websites, play audio clips, or they will be hidden from the filmstrip entirely.

Participant

Like Hosts, Participants can be further broken down into their type or level of participation.

Subject Matter Expert

The Subject Matter Expert (SME) knows the topic backward and forward, and is there to discuss it as an authority on the matter. They don't direct the conversation, but instead respond to specific questions or react in conversation to what has been said by others.

Principal Guest

The Principal Guest can be a celebrity or high-profile participant. They are a focus of the HoA for their personality or professional status. They are similar to the SME, except that their area of expertise is themselves (personality/character) or their career (notoriety).

Fan

They may bring questions of their own for the SME, Principal Guest or Host. They are in the HoA because they are interested in the topic or Guest and their presence helps to demonstrate the value or importance of the topic or guest.

Feedback Aggregator

Many HoAs benefit from soliciting questions and comments from viewers before or during the broadcast. Those can be sent in to the HoA through many channels. The Feedback Aggregator monitors the appropriate sources from outside the HoA, and delivers them to the Host or TD who is inside the HoA. They may monitor a Facebook post, a Twitter search for a given #hashtag, a Google Plus post, Event comments, the Q&A App within the Hangout, or any number of other sources. They often copy the Source, @AccountName and question/comment and either paste it into the Chat panel inside the Hangout, or a Drive Doc available to the Host.

Event Creation

Google Plus offers two types of Event for the purpose of scheduling, organizing and promoting events tied to specific calendar timeslots: Events and Scheduled Hangout on Air Events. Either can be used in the planning and promotion of HoAs, but I tend to use Scheduled Hangout on Air Events. In either case, it's the Event URL that's used in promotional posts on all social networks. This allows viewers to add the Event information to their calendars, and notifies them as the time approaches or as changes are made to the Event.

Timing of Event Creation

I make a point to create the Event at least 7 days prior the broadcast date. This gives me one full week to promote the Event using the Event URL. I take advantage of this time by posting the link the Event on all social networks and asking clients and friends to do the same, while re-posting, re-sharing, re-tweeting, liking, +1'ing and favoriting all the known uses of that link. There should be a campaign to do so one week prior, one day prior, and ideally one hour prior to the broadcast.

Scheduled Hangout on Air Events

SHoAE offer the creator the ability to set a date/time and description of the Event. In a separate step, the creator can add a Trailer video or Cover Image, and edit the “theme” image for the Event to add branding. At launch time, the TD has only to visit the Event URL and click “Start” to launch the HoA. SHoAE offers the added benefit of additional applications/tools being attached to the Watch Page for the resulting video.

- Q&A: Allows viewers to submit their questions before and during the broadcast. Questions appear on the right side of the Watch Page and viewers can “vote-up” or “-down” each to demonstrate interest in the question. The TD selects the current question, which adds a marker so viewers can “jump” to the point at which the question is addressed in the video.
- Showcase: Allows the TD to add hyperlinks that will display on the right side of the Watch Page. An image (or a selection of images) found at the entered URLs, along with a title and description, displays for each. Viewers may click on the provided links to have them open in a new window, allowing them to remain focused on the broadcast.
- Applause: Displays “thumbs-up” and “-down” buttons which viewers click to indicate their interest-level or appreciation for the current “moment” of the broadcast. Other viewers, live and in replays, see where the “interesting moments” occurred. This is useful information for organizers.

Events

Events offer a few additional fields in addition to those offered by SHoAE, with some added complexity. The Creator may add a YouTube URL, which can initially be directed to a YouTube video to serve as the Trailer. At launch time, the TD must then go to <http://hangouts.google.com/onair> to launch the HoA, gather the new YouTube URL from the HoA “Links” tool and update the Event fields to change the YouTube URL. It’s this additional step that drives me away from using Events.

Describe Your Hangout on Air

Define the HoA with copy that can be used in all promotional efforts. Record this in an overview document (“Documents” below) that organizers can access as needed. I create a Google Drive folder for each Hangout or Hangout Theme. The first document created is normally “Action Overview”, in which I record:

- Title - Shorter is better... preferably fewer than 50 characters.
- #Hashtag - Favor uniqueness. #myHangout is likely already in use :)
- Description - A few short paragraphs can be used in the Event description. Be verbose and lay out your vision. Include any related keywords or terms that might enhance search-ability.
- Landing Page URL - You can embed the live event in a landing page and distribute that URL with the Event info. Consider placing a preview video on the page with event info, and include a script that looks for an update to the page so it can refresh when the embed code is entered.
- Design a Cover Image: a 1280x720 image that will be used as the Cover Image in the resulting YouTube video, and will display in the video’s place before the broadcast begins.
- Design an Event Theme Image: a 1200x300 image that will display at the top of the Event in the Event listing page.
- To appear in the Schedule at <http://www.google.com/intl/en/+learnmore/hangouts/schedule.html>, you must invite the official [Google+ Page](#)

Use the Title and Description above to create your SHoAE, and add the Cover Image and Event Theme. Document the Event URL in the “Action Overview” document and document and share the Embed Code and YouTube Link with the team members responsible for posting that information.

Executing the Plan

Vetting/Rounding Up Participants

Put out feelers at least 2 weeks prior to the HoA. Verify that any interested parties have, or can acquire:

- Suitable Desktop or Laptop
- Google Plus Account
- WebCam
- Earbuds or Headphones
- High-speed Internet Access, *wired* if possible, 2+Mbps recommended, 5+Mbps preferred

It's simple to set up a Google Form that populates a spreadsheet of potential participants as they register their interest. Post a link to the form along with promotional text such as "Want to Hangout LIVE with [principal guest name]? Sign up here." Verify the intentions, availability and suitability of the respondents and document the approved candidates in a Participants spreadsheet with contact email, invitation email, mobile phone number, tech check date and any notes the moderator or panel might need. it's a good idea to maintain information from the sign-up sheet to indicate whether or not each has appeared, and how well they "performed" for each event. You can use this information to determine future participation by each respondent.

Tech Check All Participants

Everyone involved in the HoA should participate in a Tech Check HoA, preferably 1 week prior to the event. All participants should be in the location they plan to use for the HoA, at the same time as the HoA, using the equipment they plan to use for the HoA. During the Tech Check:

- Each participant verbally should count to five so you can listen for bad audio, background noise, echo, reverb, digital artifacts, etc. Watch the audio bar under all participants to see echo from other participants.
- Observe lighting and color balance for all participants. Discourage back- or top-lighting, prefer diffused front/side light. Some webcams allow the participant to hold up a sheet of white paper to correct color balance.
- Observe the background of all participants. Dark backgrounds may wash out the participant. Busy or messy backgrounds may distract from the conversation.
- Walk all participants through setting up their Lower Thirds, if used. Select color and distribute logo images if needed, etc. They should save this as a preset so it can be recalled for the HoA.
- Teach participants to use Chat and keep it open for production notes (win: [ctrl]+B or mac: ⌘+B).
- Teach all Participants/Panelists how to mute and unmute themselves (win: [ctrl]+D or mac: ⌘+D).
- Ask for questions... participants should submit questions prior to the HoA if possible so that the moderator or panel can be prepared for, and prioritize questions.
- Instruct all participants to close all applications except the browser, and close all browser windows except the HoA window.
- Ensure that all participants know to not open the YouTube URL of the HoA during the HoA.
- Participants with questionable internet connections can be tested using the following:
 - <http://www.speedtest.net> (*not* .com!!!) to check Download and Upload speed.
 - Use a terminal session or cmd prompt to enter: "ping -n 60 8.8.8.8". This checks ping response. It will run for 60 seconds and report an Average and Maximum "Time" value: a Max of 100ms or more represents a video feed that would have been temporarily frozen.

Pre- and Post-Hangout Promotion

Spreading the word about the HoA is simple to do and ensures that interested parties will be able to find the event when it occurs. The goal is to broadcast the news on all social platforms. Google, Facebook and Twitter are the bare minimum. Create a #hashtag (documented in “Action Overview”) that should be used in all posts on all platforms and use it consistently. “#ThisHangout”, for example, should appear in everything posted on any social network by anyone assisting in the event. All team members who are promoting the event should search all social networks for the given #hashtag and +1, like or favorite each result.

Enlist the help of your own social networks to help get the word out. Ask your friends, coworkers and family members to look out for your posts and favorite, like, share, re-share, retweet and +1 them as they see them. Make a point to seek out posts by other team members and do the same.

Google Plus

The event should be shared to Public when it is created, then re-shared and +1'd by the account owner and anyone else that can be identified to spread the word. More eyes are better. Re-shares should be sent at least on the following milestones: 1 week prior, 1 day prior, and 1 hour prior to the event.

Facebook

Google is not the only social network that needs to be used to broadcast the message. Facebook allows posts to link to GPlus Events or YouTube videos, and those posts can be commented with photos after event creation. These, too, should be re-shared and favorites on the week/day/hour schedule. Include the URL to the Google Event in a post or comment on a calendar event, and be sure to include the #hashtag.

Twitter

Twitter allows far fewer characters so you have to be concise and include the #hashtag, but it is also considered a more reliable tool for wide distribution. The Event URL can be shortened using a service like bit.ly or <http://goo.gl>, which also offer some analytic data that may be useful in tracking viewer sources. Tweets should be favorited and retweeted.

At Launch

Either immediately before or immediately after “Start Broadcast” is clicked, post to all social platforms with the YouTube URL or the desired watch-page link. Remember that copy for all identified social outlets should be documented in the “Email: Embed Code and Social Draft (see “Documents” below). Ensure that you have alerted all of your friends and associates and requested re-shares in advance.

Recap

To maximize the reach and impact of the finished broadcast, it's a good idea to create a Recap of the event with the same social coverage as the original event. Distill the completed broadcast down to 1-2 minutes of highlights and important takeaways, package it with a 1280x720 cover image and 200 characters of overview text using the tags identified in the “Action Overview” document, and share the package as posts on all available social outlets using this information along with a link to the original event. Make sure that you also add annotations linking from the Recap to the full-length video.

Viewers who find the Recap interesting will be inclined to click to view the full broadcast. Those not interested won't waste their time, but they're far more inclined to watch a 2-minute Recap to see what it's about than a 30-minute broadcast with the same level advance knowledge.

Green Room to Broadcast

Many professional production shops like to use a separate 30-90 minute “green room” hangout prior to the live event. My preference is 30 minutes before broadcast, but in the same HoA that will be broadcast. This reduces confusion for the participants who would otherwise have to leave the “green room” and enter the “real” HoA. The time prior to broadcast is important, as it allows the TD to prepare any media and start and configure any additional software needed for the broadcast. It also allows the participants some time to get comfortable with each other and to fix any unexpected errors. Prior to Broadcast:

- TD sets up required software (vMix, WireCast, XSplit, Pro Studio, Hangout Lower Thirds, etc.)
- TD invites all Participants and Moderator/Panel Members... send the “Invitation Link” *by email* (emails are in the Participants spreadsheet) in addition to using the “Invite” tool inside the HoA.
- *If using a standard Event*, update the Event with the YouTube URL
- TD opens YouTube Live Control Panel for the YouTube URL ([https://www.youtube.com/live_event_analytics?v=\[YouTubeID\]](https://www.youtube.com/live_event_analytics?v=[YouTubeID])) to monitor live concurrent views and playbacks
- TD reevaluates Participant Setup
 - Ask that each participant count to five and listen for bad audio, echo, reverb, etc. Watch the audio bars under all participants to catch echo from participants other than the speaker.
 - Observe lighting of all participants.
 - Observe the background of all participants.
 - Instruct all participants to enable their Lower Thirds presets if needed.
 - Instruct all participants to open and monitor Chat (win: [ctrl]+B or mac: ⌘+B).
 - Remind all participants how to mute and unmute themselves (win: [ctrl]+D or mac: ⌘+D).
 - Instruct all participants to close all applications except the browser, and close all browser windows except the HoA window.
 - Ensure that all participants know to not open the YouTube URL of the HoA during the HoA.
- TD establishes a cue to indicate to the Host that they are live and can begin speaking. A change from the Title image to a logo, or Chat count of 3-2-1 works well for me. The host can take a long, comfortable breath after the video goes live, then begin.
- If the HoA is conducted in a language that you do not speak, establish a closing cue that the closing speaker can use to indicate to you that they are wrapping up.
- TD provides a verbal count-down to Broadcast prior to clicking “Start Broadcast”
- TD mutes her/himself.
- TD clicks “Start Broadcast”, await “ding”, switch to Moderator or initial speaker, **CUE**.
- TD sends any needed “Live” posts as the Host opens the conversation.
- TD monitors audio levels of all Participants/Panelists... mute and unmute as needed to remove distractions.

Documents

I create a Google Drive folder for each Hangout or Hangout Theme with folders for related Hangouts. I share the folder with all organizers. The folder contains the following:

- Overview - Document containing:
 - Title - Shorter is better... preferably fewer than 50 characters.
 - Principle and Organizer contact information
 - Important Related URLs or placeholders: Comment/Feedback Sources, Event, Landing Page, YouTube Link
 - #Hashtag
 - Description
 - Tags for YouTube Live Event Description
 - Links for Showcase
 - Check-in and Broadcast date/time and expected Duration
 - Important overall settings for the Hangout: Hide Filmstrip? Hide Technical Director or Display Branding?
 - Tools to be used: Pro Studio, Showcase, Q&A, Applause, Hangout Toolbox
- Participants - Spreadsheet containing:
 - Name, Role, Profile Link, Email, Invitation Email, Mobile (SMS Link), Tech Check Date
 - Name, Link and confirmation for each PR destination
- Questions for Hangout- Spreadsheet containing:
 - Category, Participant, Question, Approved, Priority
- Email: Embed Code and Social Draft
 - Summary and Body copy for the email sent to webmasters and organizers
 - Requires Recipient List (see Overview)
 - Requires Embed Code provided by the Hangout or Event
 - Requires YouTube link provided by the Hangout or Event
 - Optionally includes proposed Facebook, Twitter and Google Plus post copy
- Email: Invitation Link Draft and Email: Tech Check Link Draft
 - Summary and Body copy for the email sent to participants and moderator/panel
 - Requires Recipient Addresses (see Participants spreadsheet)
 - Requires Hangout Invitation Link provided by Hangout Address Bar (or Pro Studio)
 - Optionally includes Browser recommendation (Chrome or IE if using Toolbox)
 - Optionally includes logo image file
- Time Spent - Spreadsheet itemizing Hangout-related activities should contain, where appropriate:
 - Activity, Start (date/time), Stop (date/time), Actual (hours spent performing this activity), Billable (adjusted hours billed for the activity)
- After Action Report
 - Placeholder used to record and report observations
- Images - Folder containing (generally PNG format is preferred):
 - Hangout Title Image (1280x720)
 - Event Cover Image (1200x300)
 - Lower-Third Logo (greater than 250x250, square)
 - Any other supporting media
 - Only dated images *require* updates, but new media may be needed

Checklist

Use this checklist in preparation for a HoA.

- Documents
 - Action Overview
 - After Action Report
 - Discovery Questions (optional)
 - Email: Embed Code and Social Draft
 - Email: Invitation Link Draft
 - Email: Tech Check Link Draft
 - Participants
 - Questions for Hangout (optional)
 - Time Spent
 - Images Folder
 - Analytics Folder
- Pre HoA
 - Title and Event Images Requested
 - Event Created (one week prior, invite official Google+ page for schedule)
 - Send Embed Code Email
 - Scripts for Opening and Closing remarks requested
 - One week posts: Event shared with and by all helpers on all Social Media
 - Tech Check all Participants (one week prior)
 - Questions Gathered from Participants (final week)
 - One day posts: Event shared with and by all helpers on all Social Media
 - One hour posts: Event shared with and by all helpers on all Social Media
 - Collect, categorize, and prioritize questions from all sources
- HoA Prep
 - Open Green Room
 - Set Up Tools (vMix, WireCast, Xsplit, Pro Studio, etc.)
 - Open YouTube Live Control Panel to monitor Live viewers
 - Send Invitation Email
 - Set Up Launch Posts
 - Set Up Participants'/Panelists' Lower Thirds
 - Instruct all participants to open and monitor Chat ([ctrl]+B)
 - Instruct all participants to ensure that no-one has YouTube open
 - Ensure designated party is monitoring all sources for incoming questions/comments
 - BROADCAST
 - Send Launch Posts
- Post HoA
 - Share Recap or Post Production video if applicable
 - Document General Observations
 - Document Specific Issues and Corrective Action Recommendations
 - Review available Live Analytics and 24-hour Analytics
 - Post "After Action Report" to Organizers/Sponsors
 - Invoice