How to use Raspberry Pi for online meetings

After the Covid-19 pandemic, working and studying from home has become a daily routine. More and more people are turning to video conferencing as a way to stay in touch and get things done.

Tools like Google Meet, Skype and Zoom make it possible for us to stay in touch with outsiders, regardless of city, time zone and even country, allowing everyone to collaborate remotely and make the world The world becomes more connected. If you are looking for another great Raspberry Pi project, don't miss this one. This tutorial shows you how to turn your Raspberry Pi into a tool for online meetings.

Things to prepare

Here's what you'll need:

1. Raspberry Pi. Raspberry Pi 4 is highly recommended, as its SoC and graphics are much more powerful. Pi 4 should deliver good performance in online meetings. Almost any Raspberry Pi will work at a basic level, but you should at least be using a Pi 3.
2. External monitor (preferably with audio output)
3. Keyboard/mouse
4. Webcam USB. You can use the Raspberry Pi Camera, which is quite simple to set up, but the article specifically recommends an external USB webcam. With USB's plug-and-play nature, you can simply plug in the webcam and it'll be up and running in no time.
5. Headphones (optional). Audio on the Raspberry Pi is usually output to the screen, but you can use a headset through the audio jack, if you want to keep at least half of your conversation private.
6. Micro. This is required for online meetings. The mic can be bundled with a headset or used as a standalone device.

Setting Pi

To get started, you need to first set up your Raspberry Pi with the Raspberry Pi OS using the Raspberry Pi Imager. You can use any other Pi operating system, but Chromium on Raspberry Pi OS uses hardware acceleration, which should make the performance of any online meeting significantly smoother.

Insert the SD card into the Pi, connect the Pi to the display and power it on.

Your Pi can connect to WiFi through the PIXEL GUI, but if you're having trouble, check out this guide on how to set up WiFi on a Raspberry Pi. Obviously, if your WiFi is unstable, it's best to connect the Pi to the network with an Ethernet cable for maximum speed.

Join the online meeting

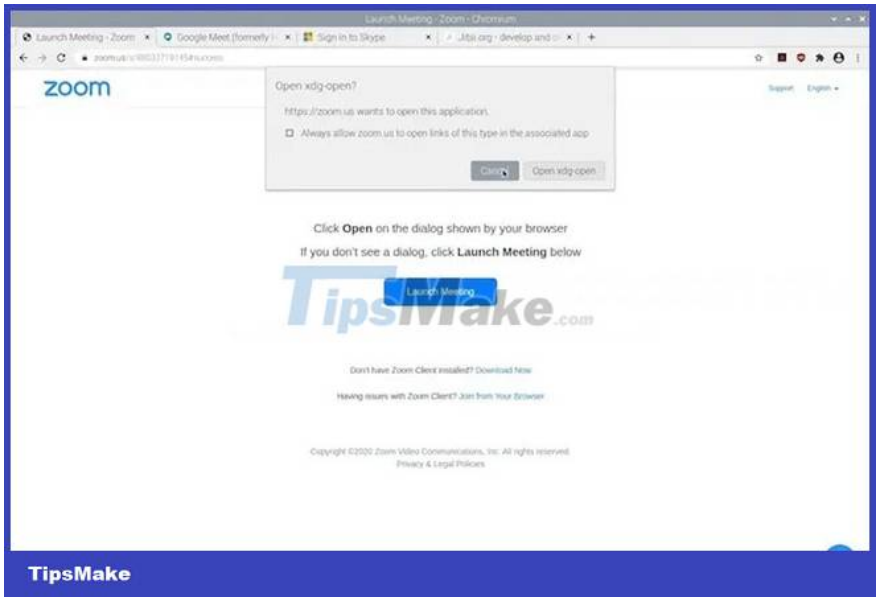
Many of the following tools are run through the Chromium browser, integrated into the Raspberry Pi OS. However, there are some native apps that will run on an ARM SoC on the Pi.

Zoom

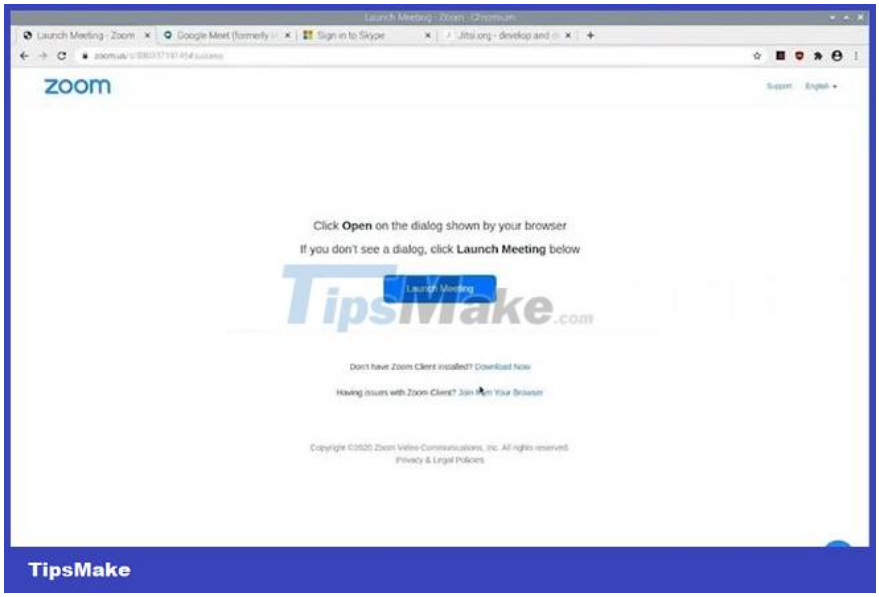
Zoom was one of the first browser-based options. Although Zoom offers native Linux applications, they are not compatible with the ARM architecture and are therefore not suitable for use in the Pi.

To join a Zoom meeting:

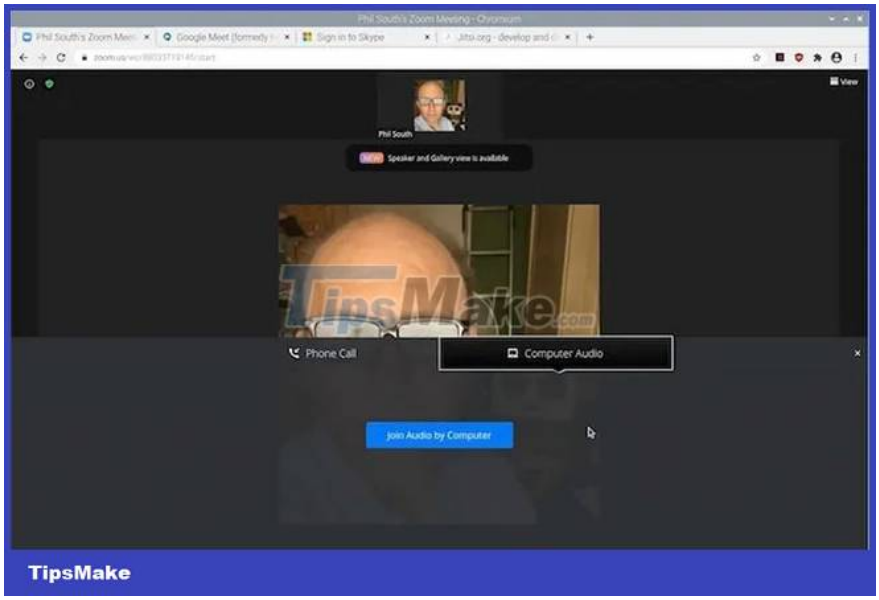
1. Click the link and when you are prompted to open 'xdg-open' for the application, tap 'Cancel'.



2. Click 'Join from your browser'.



3. You can now instantly join your Zoom meeting through Chromium.



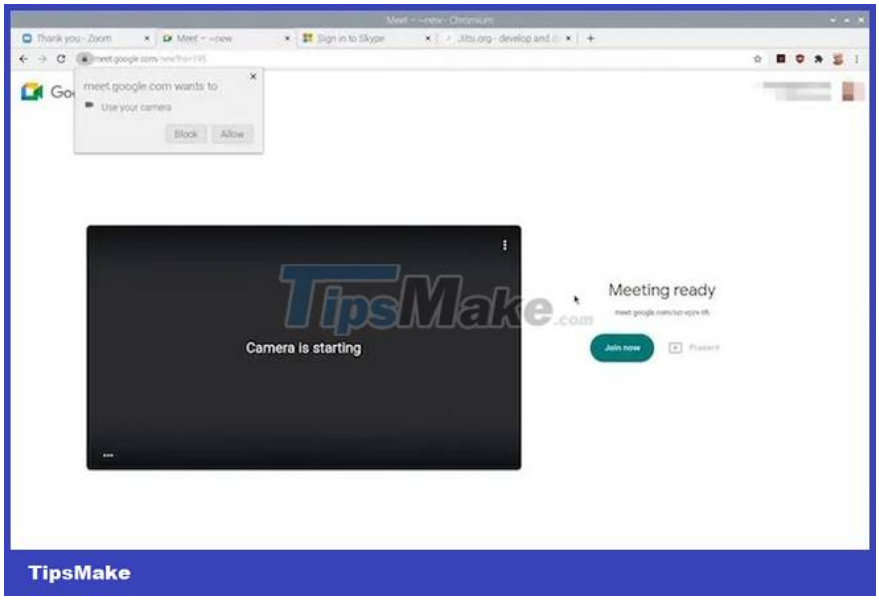
Google Meet

Google Meet also works from your browser, so no installation is required.

1. Open Chromium. Click the Google Meet link you were sent to.

2. At this point, you may have to sign in to your account.

3. Once logged in, you are ready to join the online meeting. Signing in to the app is the same as logging in through the browser.



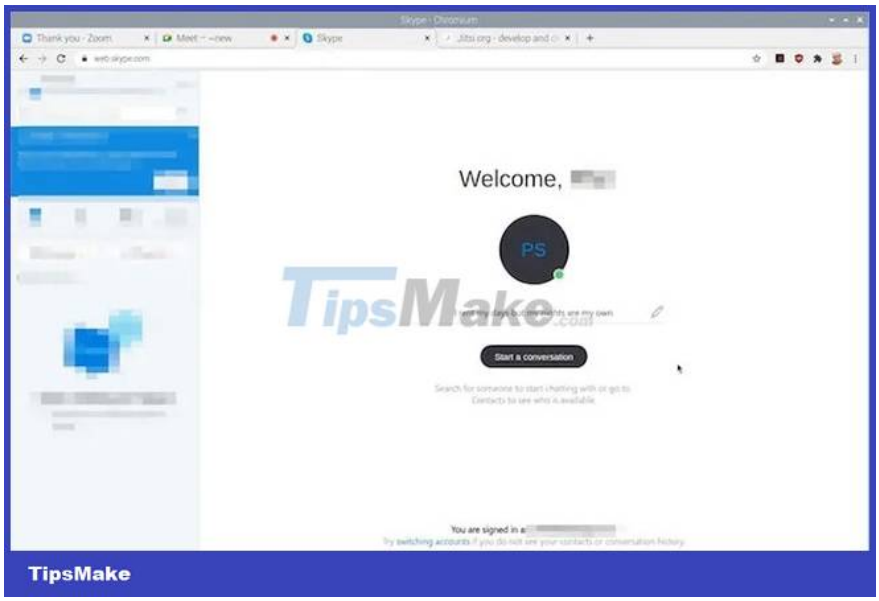
Skype

For Skype users, again there aren't any desktop apps for ARM architecture, but you can join a Skype meeting through your Chromium browser.

1. Navigate to https://web.skype.com. This is the web portal for the Skype network.

2. Sign in to your account. This grants you access.

3. At the prompt, enter your meeting information and join the meeting as usual.



Jitsi

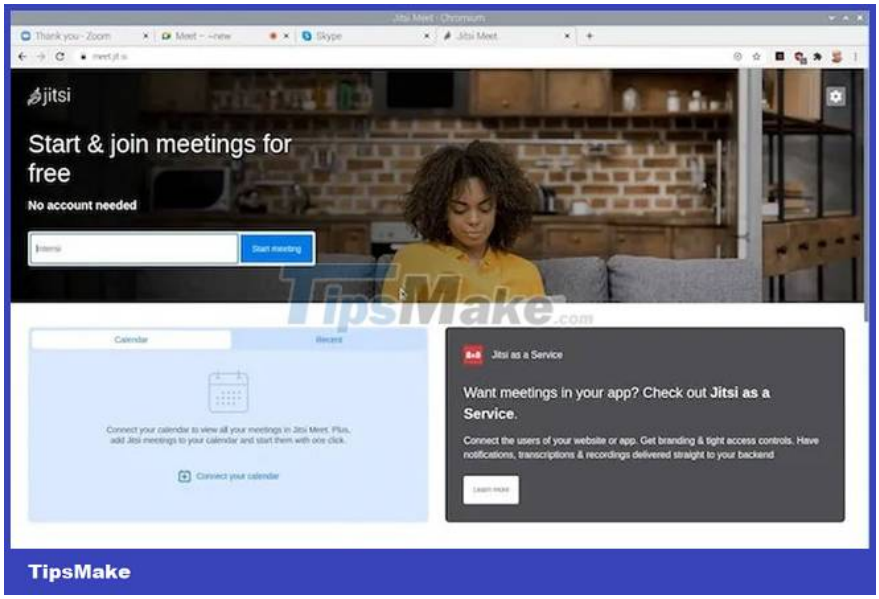
Jitsi is a free and open source browser application for online meetings. If you are just setting up a call with your friends or family, the article really recommends using Jitsi.

The difference with Jitsi is that although it works in the browser, it is in fact an application so you have to install it.

1. Just install the app when prompted and it will add to Chromium.

2. To set up or join a meeting, simply enter the 4-word code. They are randomly generated to give you a measure of security.

3. If you have an invite, click on the meeting, it will look like https://meet.jitsi.si/*. From there, you're ready and ready to join the meeting right away.



Hardware requirements

While the Raspberry Pi comes with the computing power you'll need to conduct online meetings, it doesn't come with a camera. You must equip an additional camera. There are several options, but the main two are: Raspberry Pi Camera or USB camera.

The Raspberry Pi Camera is fully Pi compatible and easily available, but you'll have to do a lot of setup. This isn't ideal unless you're an explorer.

The best option is a USB webcam, which is freely available and requires no setup, except plugging it into an existing USB drive. This camera will be available with your online meeting application, but it may ask you to grant camera access.

Cameras will usually come with a built-in microphone, but overall, the quality is very poor. The article recommends buying a cheap USB headset and microphone instead, as the online meeting software on the Pi may not offer the same level of noise cancellation as the desktop or mobile app. You're better off keeping your audio and the caller's audio separate. It also provides a much better level of security for your chats.

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