

# Amazon Echo Description

**amazon** echo

Always ready, connected, and fast. **Just ask.**



# What is Amazon Echo?

Amazon Echo (known in-development as Doppler or Project D and shortened and referred to as Echo) is a smart speaker developed by Amazon.com. The device consists of a 9.25-inch (23.5 cm) tall cylinder speaker with a seven-piece microphone array. The device responds to the name "Alexa". This "wake word" can be changed by the user to either "Amazon" or "Echo".

The device is capable of voice interaction, music playback, making to-do lists, setting alarms, streaming podcasts, playing audiobooks, and providing weather, traffic and other real time information. It can also control several smart devices using itself as a home automation hub.

Amazon had been developing Echo inside its Lab126 offices in Silicon Valley and Cambridge, Massachusetts since at least 2010 in confirmed reports. The device was part of Amazon's first attempts to expand its device portfolio beyond the Kindle e-reader. The Echo was prominently featured in Amazon's first-ever Super Bowl ad in 2016.

Echo was initially limited to Amazon Prime members or by invitation, but became widely available in the United States on June 23, 2015. Press speculates that it will make its Canadian debut in mid-to-late 2016, after Amazon posted job listings for developers for Alexa and co-hosted a hackathon in Toronto. The Echo became available in the United Kingdom on 28 September 2016. Additionally, the Alexa voice service is available to be added to other devices and other companies' devices and services are encouraged to connect to it.

## Features

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### Overview of operation

In the default mode, the device continuously listens to all speech, monitoring for the wake word to be spoken, which is primarily setup as "Alexa" (derived from Alexa Internet, the Amazon owned Internet indexing company). The device also comes with a manually and voice-activated remote control which can be used in lieu of the 'wake word'. Echo's microphones can be manually disabled by pressing a mute button to turn off the audio processing circuit.

Echo requires a Wi-Fi internet connection to work. Echo's voice recognition capability is based on Amazon Web Services and the Amazon common voice platform it acquired from Yap, Evi, and IVONA (a Polish-based specialist in voice technologies used in the Kindle Fire).

Echo performs well with a 'good' (low latency) Internet connection which minimizes processing time due to minimal communication round trips, streamable responses and geo-distributed service endpoints.

### Available services

Echo offers weather from AccuWeather and news from a variety of sources, including local radio stations, NPR, and ESPN from TuneIn. Echo can play music from owner's Amazon Music accounts and has built-in support for the Pandora and Spotify streaming music services and has support for IFTTT and Nest Thermostats. Echo can also play music from streaming services such as Apple Music, and Google Play Music from a phone or tablet. Echo maintains voice-controlled alarms, timers, shopping and to-do lists and can access Wikipedia articles. Echo will respond to your questions about items in your Google calendar. It also integrates with

Yonomi, Philips Hue, Belkin Wemo, SmartThings, Insteon, and Wink. Additionally, integration with the Echo is in the works for Countertop by Orange Chef, Scout Alarm, Garageio, Toymail, MARA, and Mojio.

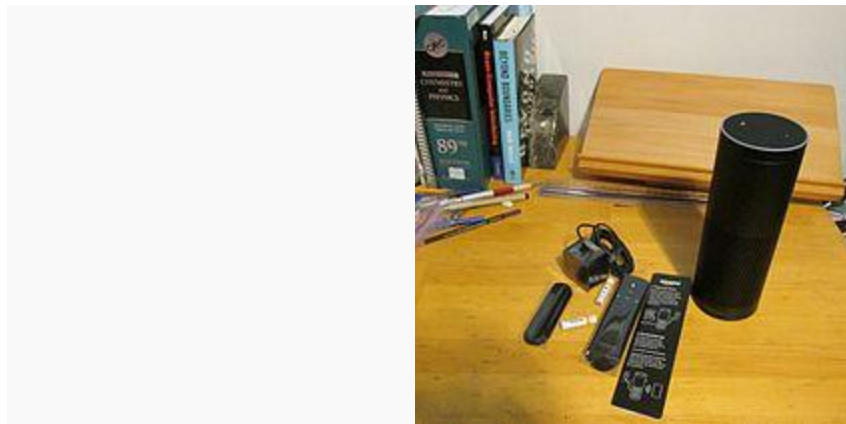
It does not appear to be able to play music streamed from a local UPnP/DLNA media server.

Echo also has access to skills built with the Alexa Skills Kit. These are 3rd-party developed voice experiences that add to the capabilities of any Alexa-enabled device (such as the Echo). Examples of skills include the ability to play music, answer general questions, set an alarm, order a pizza, get an Uber, and more. Skills are continuously being added to increase the capabilities available to the user. The Alexa Skills Kit is a collection of self-service APIs, tools, documentation and code samples that make it fast and easy for any developer to add skills to Alexa. Developers can also use the "Smart Home Skill API", a new addition to the Alexa Skills Kit, to easily teach Alexa how to control cloud-controlled lighting and thermostat devices. All the code runs in the cloud – nothing is on any user device. A developer can follow tutorials to learn how to quickly build voice experiences for their new and existing applications.

## Voice system

Echo's natural lifelike voices result from speech-unit selection technology. High speech accuracy is achieved through sophisticated natural language processing (NLP) algorithms built into the Echo's text-to-speech (TTS) engine.

## Hardware



Amazon Echo unpacked, January 2015

The Echo hardware complement includes a Texas Instruments DM3725 ARM Cortex-A8 processor, 256MB of LPDDR1 RAM and 4GB of storage space.

## Connectivity

Echo provides dual-band Wi-Fi 802.11a/b/g/n and Bluetooth 4.0.

## Input

The Echo is intended to be voice controlled at the unit, however, a mic-enabled remote control like the one bundled with the Fire TV is available for purchase. An action button on top of the unit is provided for user setup in a new location, and the mute button allows the microphones to

be turned off. The top half-inch of the unit rotates to increase or decrease the speaker volume. The Echo must be plugged in to operate since it has no internal battery.

This concludes the presentation about Amazon Echo. The information was provided by [https://en.wikipedia.org/wiki/Amazon\\_Echo](https://en.wikipedia.org/wiki/Amazon_Echo), on the 11/8/2016. Visit the website for even more details or an updated version of that one.