

Amazon will make Alexa good to go with little appliances

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Amazon had something big to say about Alexa on Monday. Hardware manufacturers would be especially gratified to know that they can directly have Alexa built-in to their little products with low-powered chips and 1MB of RAM.

"With this reduction in production cost, customers can now cost-effectively build new categories of differentiated voice-enabled products such as light switches, thermostats, and small appliances. This allows consumers to talk directly to [Alexa](#) in new parts of their home, office, or hotel rooms for a truly ambient experience," said the company.

"Today, we are pleased to [introduce](#) the AVS Integration for AWS IoT Core, a new cost-effective way to bring Alexa voice capabilities to all types of connected devices," said the announcement. AVS stands for Alexa Voice Service. AWS stands for Amazon Web Services. "The AVS Integration for AWS IoT Core makes it easier and more cost-effective to add Alexa Built-in capabilities to products where embedding voice wasn't previously viable, such as light switches, thermostats, and small appliances."

Tech watchers like Frederic Lardinois in [TechCrunch](#) and Tyler Lee in *Ubergizmo* [spread](#) the word that Amazon has lowered requirements for devices to be able to power Alexa Voice Services.

How low? A device generally requires at least 100MB of RAM and an ARM Cortex A-class processor, said Lee, but Amazon's new move would mean a device needing as little as 1MB of RAM, versus 100MB, and a Cortex M-class processor.

(The Arm [Cortex-M4](#) processor is promoted by the company as an efficient processor with [low-power](#), low-cost benefits.)

Amazon had [more](#) to say about the M class advantage:

"Currently, smart home IoT devices are built with low-cost microcontrollers (MCU) that have limited memory to run real-time operating systems. Previously, AVS solutions for Alexa built-in products required expensive application processor-based devices with more than 50 MB memory running on Linux or Android. These expensive hardware requirements made it cost-prohibitive to integrate Alexa Voice on resource constrained IoT devices. AVS for AWS IoT enables Alexa built-in functionality on MCUs, such as the ARM Cortex M class...To do so, AVS offloads memory and compute tasks to a virtual Alexa Built-in device in the cloud. This reduces eBoM cost by up to 50 percent."

Hardware makers who would want to beef up their various devices with Alexa would be happy over the news, said Lee, and those devices could run the gamut from light switches to toys to thermometers.

Wait, don't smaller devices already work with Amazon's Echo speakers and other Alexa-enabled hardware? Yes, but this time the Alexa capabilities will be built-in. That is, the hardware makers get to build an Alexa voice assistant feature directly into smaller devices. In an exchange with Lardinois, Vice President of Internet of Things for Amazon Web Services, Dirk Didascalou, said that "now you don't need to identify where's my hub—you just speak to your environment and your environment can interact with you. I think that's a massive step towards this ambient intelligence via Alexa."

Lardinois pointed out that "all of the media retrieval, audio decoding, etc. is done in the cloud. All it needs to be able to do is detect the wake word to start the Alexa functionality." Didascalou said, "We now offload

the vast majority of all of this to the cloud," and the device "can be ultra dumb. " Didascalou said wake word detection would be the only thing that the device would still need to do. "That still needs to be covered on the device."

All in all, Amazon's hold on the IoT market may now be stronger. "That means you will be able to hopefully in the future see many more form factors and devices now being able to be voice-controlled and directly spoken to," said Dirk Didascalou, in an interview with [GeekWire](#).

Good news for hardware makers, but is this bad news for privacy critics who think there is just too much connected gadgetry in homes to rest easy over a microphone-happy environment?

"If you think Amazon's Alexa personal assistant is ubiquitous already, you ain't seen nothing yet," wrote Chris Smith in [Trusted Reviews](#).

Smith picked up on what the discomfort may feel like among those who may be uncomfortable. "The prospect of Alexa lurking in a hotel or office light switch will fill some privacy-minded people with dread. Seeing an Echo Dot speaker on the bedside table is one thing, but having a listening [device](#) sitting inconspicuously within a light switch is a different matter altogether."

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