

Introducing Amazon Common Software for Devices (Preview): Accelerate Your Adoption of Amazon Device SDKs

Akashvir Mann Feb 25, 2020

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Today, we are excited to announce [Amazon Common Software \(ACS\) for Devices \(Preview\)](#), an optimized software for integrating Amazon Device SDKs on your devices. We use ACS in Amazon devices, including the Echo Dot (3rd generation) and the Amazon Smart Oven. Now you can use it to accelerate integration of Amazon Device SDKs on your devices and bring them to market more quickly and cost-effectively. You can use ACS on Amazon-qualified reference platforms, such as ESP32 and Raspberry Pi 4, or integrate it on the hardware platform of your choice. ACS supports both FreeRTOS and Embedded Linux operating systems. [Apply today to join the ACS preview.](#)

ACS Architecture Diagram

ACS provides a unified API integration layer, pre-validated and memory optimized components for common functions such as connectivity, a device porting kit (DPK), and multi-tier test suites. The ACS preview includes support for [Frustration-Free Setup \(FFS\)](#) and [AWS IoT](#) Device SDKs, with support for the [Alexa Voice Service \(AVS\)](#) Device SDK to come later in 2020.

Benefits of Using ACS

“At Amazon, we understand the complexity and effort needed to develop and ship a high-quality connected device. ACS makes proven software from Amazon devices easier to use for device makers who want to quickly launch a device supporting Amazon Device SDKs, including FFS and AWS IoT SDKs,” says Joshua Danovitz, Director of ACS. “Now, device makers can focus on launching devices ~~with innovative new features while significantly speeding up development time using ACS.”~~

compatibility layer for common functions including Wi-Fi management, HTTP operations, and cryptography. When the SDK needs to execute a task such as Wi-Fi network scanning, it calls your implementation of these functions. Today, API integration layers vary by SDK, and require a separate development and test effort for each SDK.

Now, ACS simplifies these SDKs’ integration. ACS provides a single, unified API integration layer for multiple Amazon Device SDKs. Once you implement an ACS API shared by multiple SDKs, you can re-use it with any SDK supported by ACS, saving you time and resources. Today, you can use ACS on two reference platforms (ESP32 and Raspberry Pi 4), or integrate it on the hardware platform of your choice using the Device Porting Kit (DPK). The DPK abstracts the hardware and operating system, allowing you to choose the hardware best suited for your specific use case and cost/performance needs.

Field Proven

ACS provides pre-validated, memory-optimized components from Amazon devices for common functions such as connectivity, networking, authentication, and key-value store. ACS components are audited for security vulnerabilities in order to reduce security risks. You can use the components from Amazon, or implement your own. ACS software packages only include components needed for your device configuration and use cases. ACS configurations require RAM as little as 16 KB for Echo Flex third-party accessories and as little as 320 KB for smart home devices.

Testing and Updates

ACS includes extensive test suites that allow you to verify and debug your ACS implementation independently. ACS also provides you feature and security updates that are built with backward compatibility in mind. In many cases, you can drop in your updates and run ACS test suites in a few hours. These test suites allow you to ingest, test, and deploy updates easily.

We are working with solution providers to help you start using ACS more quickly and easily. “We were excited by how fast and easy it is to integrate Amazon Device SDKs using Amazon Common Software (ACS) for Devices,” says Gordon Goh, Vice President of Tonly Electronics. "We look forward to using ACS in the future to launch products faster while simultaneously reducing our development costs".

“We are pleased to be part of the ACS program and are excited to release our first Amazon-qualified ACS compatible development kit. This is going to make it even easier for device makers to use our products to build innovative connected devices using best-in-class Amazon Device SDKs,” says Denis Cabrol, GM of IoT Solutions, NXP Semiconductors.

Apply for the Preview Today!

[Apply today to join](#) the Amazon Common Software (ACS) for Devices preview and get updates on new features and services added to ACS. You can also check out our step by step video guides using the [Raspberry Pi 4](#) or using the [ESP32-WROVER Reference Kit](#).

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