Get Your Alexa-Connected Devices to Market Even Faster with Expanded Self-Service Prototyping Using Alexa Connect Kit

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Connected Devices Smart Home ACK News

In September, we launched the general availability of Alexa Connect Kit (ACK) to enable device makers to connect devices to the Internet and Alexa using an Amazon-managed hardware module. With ACK, you don't need to manage cloud services, create an Alexa skill, or write complex connectivity and security firmware. Today, we are excited to announce expanded self-service prototyping functionality with ACK. Now you can get your connected product to market even faster, reducing the time needed to prototype your product's Alexa voice and mobile app experience to just hours. Using ACK self-service prototyping tools you can easily create a virtual product, define its Alexa capabilities, and test your device's customer experience with Alexa.

When you add the Amazon-managed ACK module to your device, your customers get Alexa control in the Alexa app, and Wi-Fi simple setup. You can also choose to add the ability to support automatic reordering (Dash Replenishment Service) of consumables your product needs to keep running at its best, such as air-filters or coffee pods. The ACK module also stays up to date with silent, over-the-air firmware updates, and ACK's managed cloud service meets the cloud reliability requirements of the Works with Alexa (WWA) certification program. After your device is certified, you can feature the WWA badge in the Amazon Smart Home Store and on product packaging, increasing customer confidence that your devices integrate seamlessly with Alexa.

To get started, purchase a development kit and visit our documentation guide on steps to prototype a product with ACK.

Create High-Quality Products Easily, Quickly, and Economically

With ACK, you can make nearly any device a smart device while reducing development time and costs. Building with ACK gives you the advantages of:

integrate into your device using the ACK module and device SDK, and move to volume manufacturing when you're ready.

- **Implementation Ease.** You don't need to create or manage a cloud service, write an Alexa skill, or develop complex networking and security firmware. Simply add an Amazon-managed ACK module to your device, which uses Wi-Fi to securely connect your device to Amazon-managed cloud services that provide Alexa control, Wi-Fi simple setup, Dash Replenishment Service, and all the device metrics and logs you need to manage devices in the field. With an ACK module on your device, you can focus on building great hardware.
- **Cost Certainty.** ACK enables more certain business planning with a low per-device total cost - less than $6 per device on average - that covers both the hardware module and ongoing use of the ACK cloud service. As a result, you don't need to worry about unpredictable cloud infrastructure and usage costs.

Tutorial: How to Prototype a Product with ACK

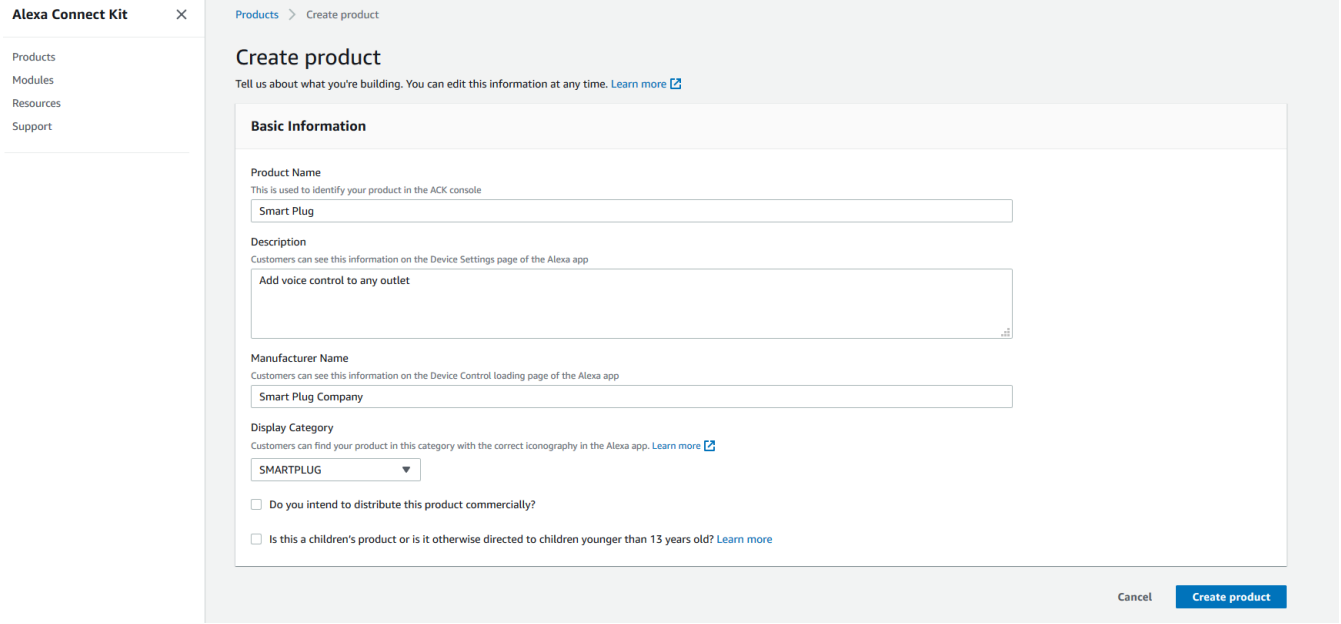
This tutorial outlines the steps to create an Alexa Connect Kit (ACK) product prototype, using the example of a Smart Plug. First, the tutorial will provide an overview of what you need before you start prototyping a connected device. Then you will learn how to create and provision your ACK module as a virtual product in the ACK console and define the Alexa capabilities that your product will support. Finally, you will learn how to edit your virtual product in order to customize your prototype. Once completed, you will be able to test your prototype on your hardware and control it with the Alexa app.

Step 1: Purchase a Development Kit & Complete the Get Started Guide

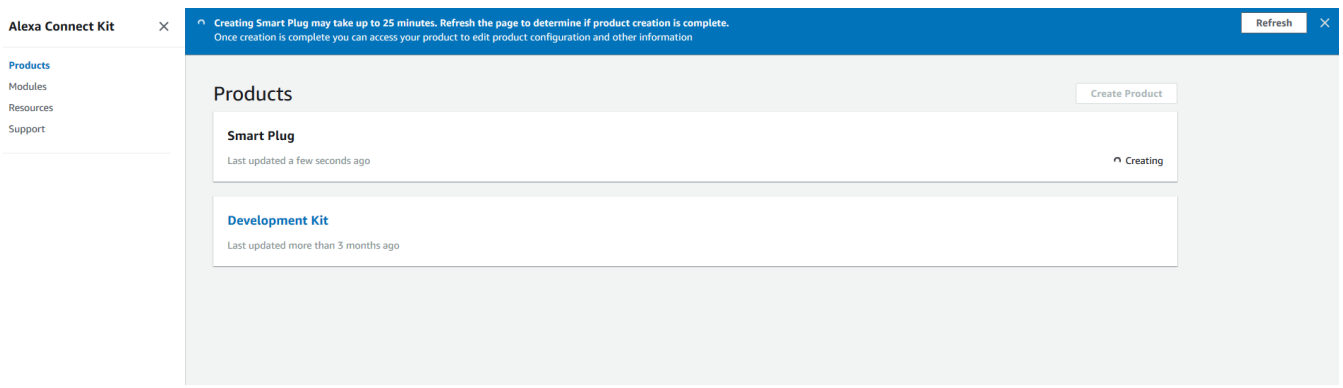
To start building with Alexa Connect Kit, you will need a Development Kit or a printed circuit board assembly with an integrated ACK module**.** You can purchase a USI Development Kit for ACK on Amazon.com. The USI Development Kit for Alexa Connect Kit comes with a custom development board and integrated ACK module, an Arduino Zero development board, which represents a host microcontroller unit (HMCU), and a few other items. Once you have the Development Kit, you will need to complete the Get Started Guide: USI Development Kit**.**

Step 2: Create a Virtual Product

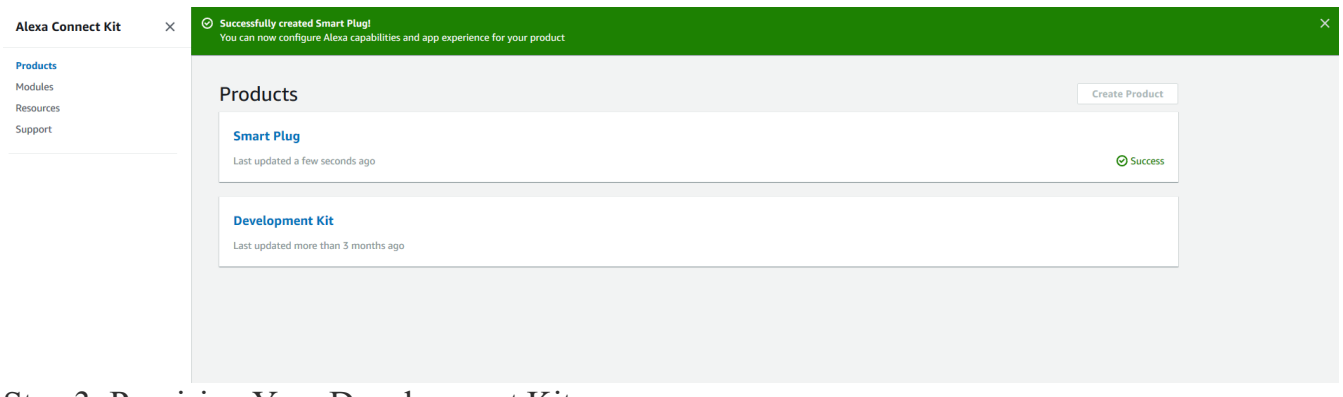
Navigate to the ACK console Products page and click **Create Product,** then fill out the fields with your product's information. Note you can edit this information at any time.



Product creation takes 20-25 minutes to complete. You'll see a banner in the products page while product creation is in progress.



Refresh the page to determine if product creation is complete. Once the virtual product is created, you will see a **Success** confirmation.



Step 3: Provision Your Development Kit

Next you'll need to provision your ACK module as a virtual product via ACK managed services. ACK managed services provide partner and device-specific functionalities, such as Alexa capability management, and logging and metrics for your devices. Use the Module Utility command line interface (CLI) to provision your ACK module as your virtual product. To provision the module, you will use the **provision** command which moves the module state from module provisioned to product provisioned (see our documentation with Steps to Provision a Module). There are 4 steps to provisioning your ACK module:

Download your product's configuration file:

1. Go to the ACK console products page.
2. Click on the product that you would like to provision the module as and download your provisioning file located in the top right of the console.

Use the Module Utility CLI to provision the ACK module:
To provision the module, you will use the provision command which moves the module state from *module provisioned* to *product provisioned*.

1. In the Module Utility command line interface (CLI),run the provision command, and specify the port that corresponds to the module and the location of the provisioning configuration file that you downloaded from the ACK console product page. Enter the following code into the terminal:

Copy code

```
$ java -jar <path-to>/ackmoduleutility.jar provision -p <serial-port> --provisionconfi
```

Generate a barcode for product registration:
ACK supports Amazon's Wi-Fi Simple Setup to make it easy for your users to register their devices with Amazon and Alexa services. In this step you'll generate a barcode for your ACK module that enables registration through Wi-Fi Simple Setup.

1. Run the Module Utility CLI barcode command: barcode -p <port> --upc 12345678
2. You'll use file **DVC_XXXXXXXXXXXXXXXX.png** when you register the module with Alexa in step 5.

Step 4: Customize Your Product's Alexa Functionality

Now that you've provisioned your device, it's time to define your product's capabilities. Alexa capabilities define the utterances your customers use with your product, as well as the Alexa app control page they interact with.

Here are some example products and associated Alexa smart home capabilities and utterances. To see more examples, review the Smart Home Skill Device Templates.

Product Name	Example Utterances	Smart Home Capabilities
Tea Kettle	"Alexa, turn on the tea kettle."	PowerController
Light Switch	Turn on the bedroom light."	PowerController, BrightnessController
Fan	"Turn on the fan."</br>"Set the fan speed to high."	PowerController, RangeController
Microwave	"Two minutes on the microwave." </br>"Cook the pizza."	Cooking, Cooking.PresetController, Cooking.TimeController

Use the JSON editor on your virtual product page to declare the Alexa capabilities that your product supports. By default, a virtual product comes with the PowerController capability. Each type of product has a number of recommended capabilities, but you can add whichever supported Alexa capabilities that you want.

To update your product's Alexa capabilities:

1. Log in to your developer.amazon.com account, if you aren't already logged in.
2. Open the ACK console Products page.
3. Select the product that you'd like to customize.
4. Navigate to the **Alexa smart home capabilities** section in the **Alexa capabilities** tab.
5. Select **Edit**.
6. Choose and add capabilities as you'd like from the drop-down menu, or edit the JSON for existing capabilities.
7. Select **Save**

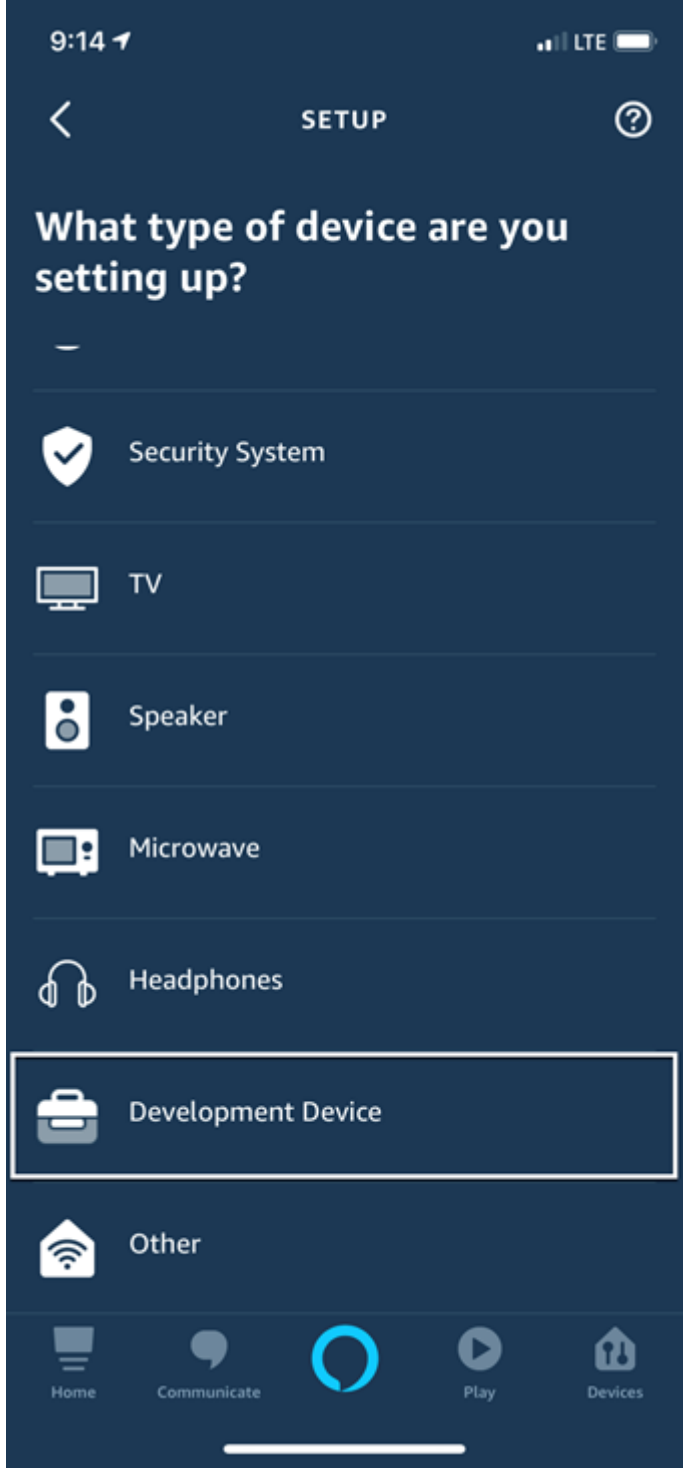
Update your smart home capabilities:

Step 5: Register Your Development Kit with Alexa and Try it Out!

After customizing your product capabilities you can register your development kit with Alexa and try it out using voice and the Alexa mobile app. To register you'll scan the barcode you generated earlier in the tutorial.

How to register your device:

- On your mobile device, open the Alexa app.
- Select the **Devices**, and then select the plus sign **(+)**.
- Select **Add Device**.
- From the list, select **Development Device**.



- Under *"What brand is your development device?"* select **ACK Module**, and then click **next**.
- If prompted, enable access to your mobile devices' Bluetooth, camera, and location services on your mobile device and then select **next**.
- To register the development device with Alexa, use the Alexa app to scan the barcode you generated in step 3 (the **DVC_XXXXXXXXXXXXXXXX.png** file) in order to register the development device with Alexa. The default ACK test device is called *Development Device*. If you don't have a barcode, or aren't able to successfully register your device using the barcode, refer to user guided setup to complete device registration.
- Select the Wi-Fi network to connect to, and if necessary enter the Wi-Fi password.
- After the ACK setup utility connects your module, you should see a notification that tells you that **development device is set up and ready to use**.

Get Started Today

To get started, purchase a development kit today on Amazon.com and visit our documentation guide to start prototyping your product.

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