

Turn Raspberry Pi into an Amazon Echo

Amazon Developer allows you to use Alexa software to turn Raspberry Pi into an Amazon Echo.

Today virtual assistant software is gradually becoming more popular and becoming a useful friend to help us complete jobs in the office and at home easier. It is not difficult to find a virtual assistant speaker, but the interesting thing is that you can completely create your own virtual assistant device with Amazon Developer. Amazon Developer allows you to use Alexa software to turn Raspberry Pi into an Amazon Echo.

Category

1. Materials needed
2. Register for an Amazon Developer account
3. Create your device on Amazon Developer
4. Create your security profile
5. Copy the Alexa sample application
6. Update installation commands using credentials
7. Run the installation commands
8. 3 Terminal
 1. Terminal 1
 2. Terminal 2
 3. Terminal 3
9. Trial

Materials needed

For this task, you will need:

1. Raspberry Pi 3 or Pi 2 Model B and Micro-USB power cable
2. Micro SD card (minimum 8 GB) - If you have not installed the operating system, there is a fairly easy to use new operating system called NOOBS. The easiest way to download NOOBS is to buy NOOBS pre-loaded SD cards.
3. A mini microphone has a USB 2.0 port
4. Speaker and 3.5mm audio cable
5. USB keyboard, mouse and HDMI monitor
6. Internet connection (Ethernet or WiFi)
7. For the Raspberry Pi 2, to connect wireless Internet, you need to prepare additional WiFi Adapter. And the Raspberry Pi 3 has integrated Wi-Fi.

Register for an Amazon Developer account



Sign in

Email (phone for mobile accounts)

Password [Forgot your password?](#)

Sign in

New to Amazon Developer?

Create your Amazon Developer account

If you don't have an Amazon Developer account yet, create a free account on their site.

Full dictionary of personal information needed

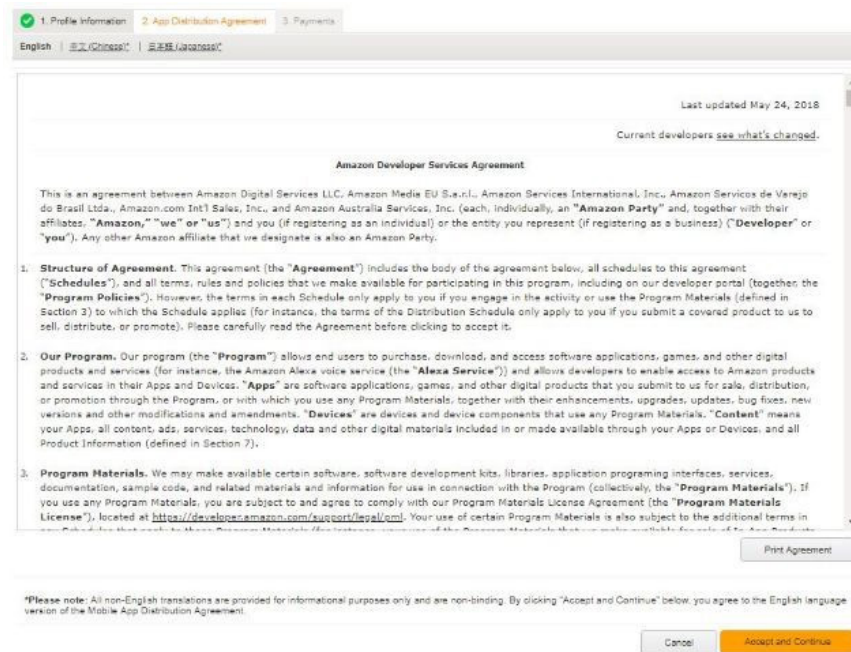
Registration

1. Profile Information 2. App Distribution Agreement 3. Payments

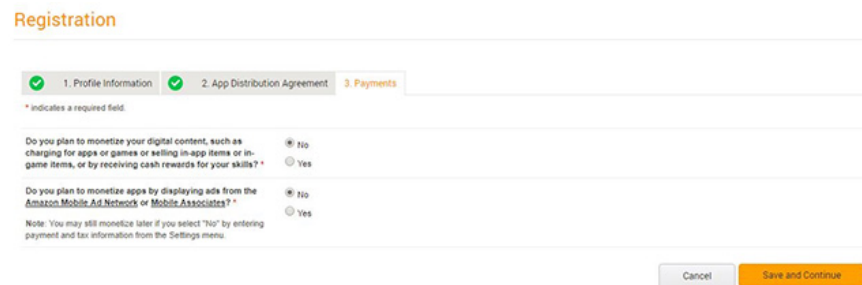
* indicates a required field

Country/Region *	United States
First name *	Tru
Last name *	Fox
Email address *	ge@.m
Phone number * e.g. 212-699-1232, +44 0161 719 3389	71
Fax number	
Developer name or company name * Displayed on your apps at Amazon.com	Ge ps
Developer description Maximum characters 4000, Remaining: 4000	
Address 1 *	341 -1
Address 2	
City *	Du
State *	Po
Zip code/Postal code *	1
Customer support email address	
Customer support phone	
Customer support website	

Read and accept the Application Agreement.



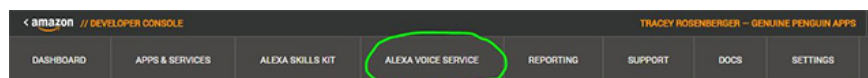
Choose whether you make money from your application or not.



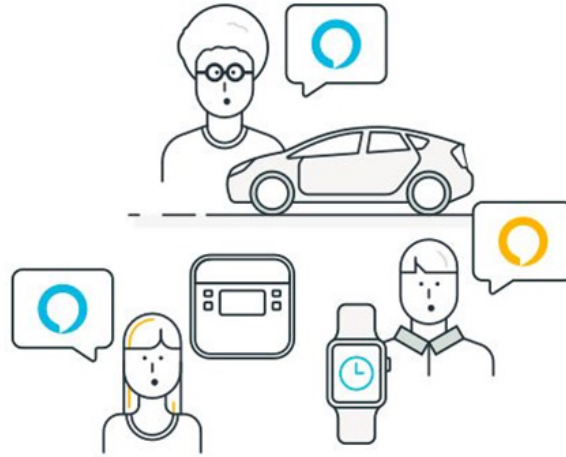
Create your device on Amazon Developer

After registering an Amazon Developer account, create an Alexa device and a security profile. Note, pay attention to this information after you perform the installation: **ProductID**, **ClientID** and **ClientSecret**, because you will need these parameters in the following steps.

At the top of the screen, option menu, select **Alexa Voice Service**.



The "Welcome to Developer" screen will appear.



Welcome, Alexa Developer

Ready to build products with Amazon Alexa? Review the [AVS Program Requirements](#), the [AVS Agreement](#), and get started!

[GET STARTED](#)

The screen first asks you about the product you are developing.

1. First, give your device a name.

Step 1 of 2

Product information

Tell us about what you're building. Providing accurate information will help provide access to right resources. You can edit this information at any time.

Product information
Tell us about your Product

Product name *

The Product Name is shown to end users in the Amazon Alexa App when they register your product with Amazon.

My Alexa

2. Next, enter ProductID (do not have spaces or special characters)(Note you will need this information in the following steps, please note again).

Product ID *

The Product ID is used to identify your product during authorization. It may contain letters, numbers, underscores with no spaces.

MyAlexa1

3. Select **Alexa-Enabled Device** for the product category.

Please select your product type. *

Alexa-Enabled Application
A standalone app. This includes apps on the web, Android, Kindle, iOS, FireTV, AppleTV, etc.

Alexa-Enabled Device
Physical product with the potential to have buttons, knobs, a touch screen, etc. Examples are speakers, televisions, set top boxes, appliances, etc.

4. Alexa will need a companion application. Select **Yes** for this section.

Physical product with the potential to have top boxes, appliances, etc.

Will your device use a companion app? *

Yes

No

An application that is used to authorize a product to access the Alexa Voice Service on behalf of the end user. Mobile companion apps may also include functionality specific to your product. For example, the app may authorize the user, as well as control the dimness of connected light bulbs.

5. Select **Wireless Speakers** in the options menu.

6. Enter '**Raspberry Pi Project on Github**' in the description box. This is information for AVS and other users will not be able to read.

7. Earn both **Touch-pay** and **Hands-free options**.

Product category *

Wireless Speakers

Brief product description *

This helps AVS understand what your product is and what its capabilities are. This description is not shown to customers.

Raspberry Pi Project on [Github](#)

How will end users interact with your product? *

Touch-initiated
A user's primary way to interact with Alexa is by tapping or holding a button.

Hands-free
Hands-free products allow users to interact with Alexa by using their voice at a close distance.

Far-field
Far-field products allow users to interact with Alexa by using their voice from a long distance.

8. You can now upload images to your device.

9. Select **No** for commercial device development and child related questions.

Upload an image

This image is shown to end users on the [Manage your Content and Devices](#) page.

UPLOAD IMAGE

MAX: 142 X 130 PX

Do you intend to distribute this product commercially? *

- Yes
- No

Is this a children's product or is it otherwise directed to children younger than 13 years old? * [Learn More](#)

- Yes
- No

NEXT

10. Click **Next** .

Create your security profile

On this page, you create a new LWA (Login with Amazon) security profile to identify user data and secure login information.

1. Click '**Create new profile**'.

Step 2 of 2

LWA Security Profile

A Login with Amazon security profile is required. It associates Amazon data, including security credentials, with one or more products. [Learn More](#)

Select a Security Profile

A security profile associates user data and security credentials with one or more related products.

Security Profile *

CREATE NEW PROFILE

NEXT

2. Create a name for the profile. Examples are "Alexa Security Profile".

Create a new Security Profile

A security profile associates user data and security credentials with one or more related products.

Security Profile Name *

Choose a name for your Security Profile

The Security Profile name is displayed on the consent screen when users agree to share information with your application. This name applies to Android, iOS, and website versions of your application. AVS recommends using a name that includes your company or product name.

Security Profile Description *

This security profile can be used to define Web, iOS, and Android settings.

NEXT

3. In the description entry for the profile. You can select '**Alexa Security Profile Description**'.

Security Profile Description ? *

The Security Profile description is to help you remember what products are associated with this Security Profile. The description is not shown to end users.

This security profile can be used

NEXT

4. Click **Next** .

5. Amazon creates a Client ID and Client Secret for you. Here are two information you will need later. So please note.

Platform information

Specify the settings for the websites or mobile apps that will use Login with Amazon with the selected Security Profile.

Web Android / Kindle IOS Other devices and platforms

Add all possible origin URLs of your LWA implementation to associate with the web Client ID and secret below. Learn More

Client ID ?

amzn1.app 3f8022c **COPY**

Client secret ?

13e873cbc 9a76f419eeb060 **COPY**

6. Enter the URL of Allowed origins and Allowed return. We are setting http and https addresses for this project, so enter '**http://localhost:3000**.' go to your 'Allowed origins' section.

7. Click **Add** .

8. Continue typing the address '**https://localhost:3000**' as you typed in the box above.

Allowed origins ?

https://localhost:3000 **ADD**

http://localhost:3000 ×

9. Continue Click **Add**.

10. Do the same with the URL of Allowed return, except enter the following two URLs:

http://localhost:3000 / authresponse
https://localhost:3000 / authresponse

11. The website will look like this before you click Finish. Make sure the URLs are displayed in a gray background after you have entered them in the corresponding boxes.

Allowed origins [?](#)

[ADD](#)

[×](#)

[×](#)

Allowed return URLs [?](#)

[ADD](#)

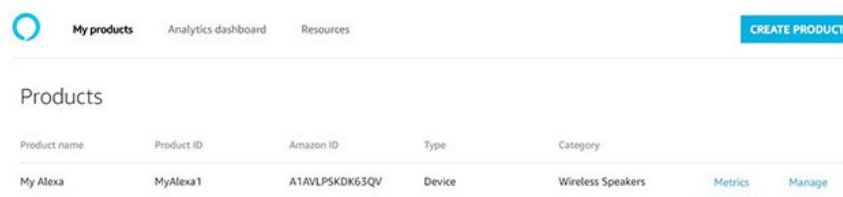
[×](#)

[×](#)

I agree to the [Amazon Developer Services Agreement](#), including the [Alexa Voice Service Program Requirements](#).

[FINISH](#)

12. After you click **Finish**, this screen will appear. At this point, your project has been created and ready to go to the installation.

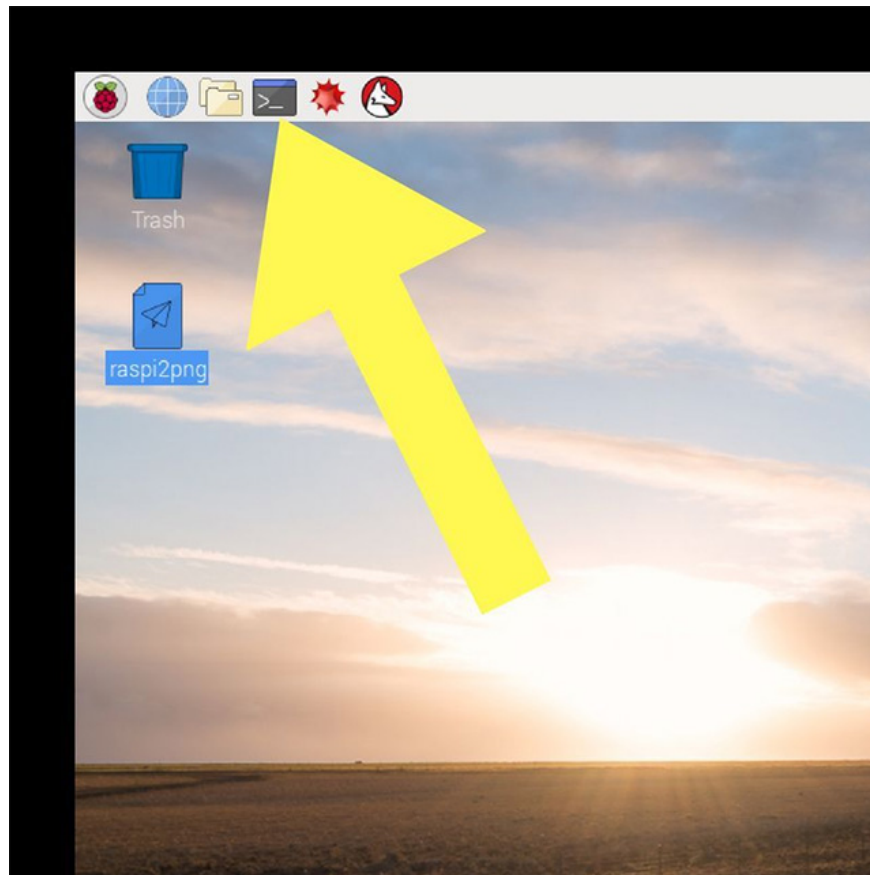


The screenshot shows the Amazon Developer console interface. At the top, there are navigation links: "My products" (active), "Analytics dashboard", and "Resources". A "CREATE PRODUCT" button is visible in the top right corner. Below the navigation, the "Products" section is displayed, containing a table with the following data:

Product name	Product ID	Amazon ID	Type	Category	Metrics	Manage
My Alexa	MyAlexa1	A1AVLPSKDK63QV	Device	Wireless Speakers		

Copy the Alexa sample application

1. Open the command input window (Terminal).



2. Enter the following information:

```
cd Desktop  
git clone https://github.com/alexa/alexa-avs-sample-app.git
```

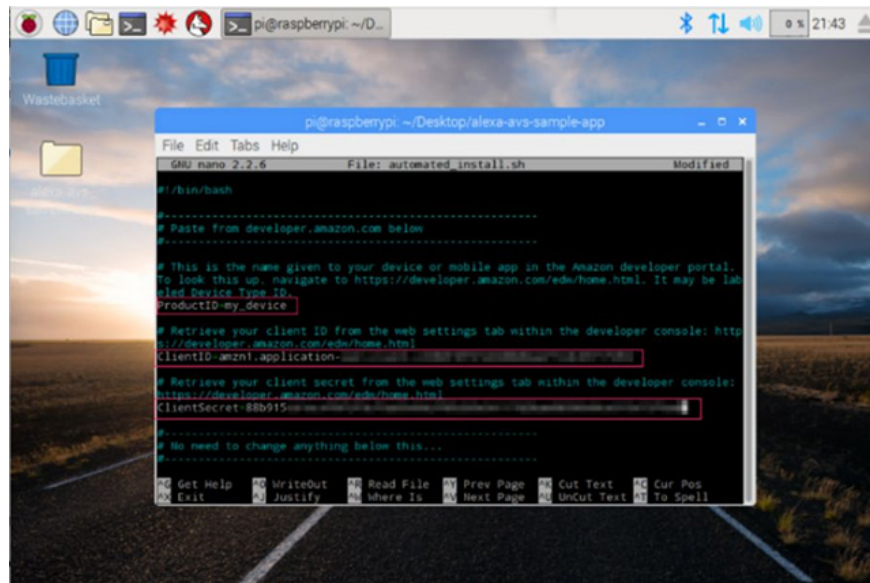
Update installation commands using credentials

Before running the installation commands, update them with the credentials provided by Amazon: ProductID, ClientID, ClientSecret.

1. In Terminal, type the following:

```
cd ~ / Desktop / alexa-avs-sample-app  
nano automated_install.sh
```

2. When the command runs, a screen like this will appear. You use the keyboard to enter the credentials you have received.



The following change command will look like this:

```
ProductID = "Your Device Name"
ClientID = "amzn.xxxxxx.xxxxxxxxxxxx"
ClientSecret = "4e8cb14xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx6b4f9"
```

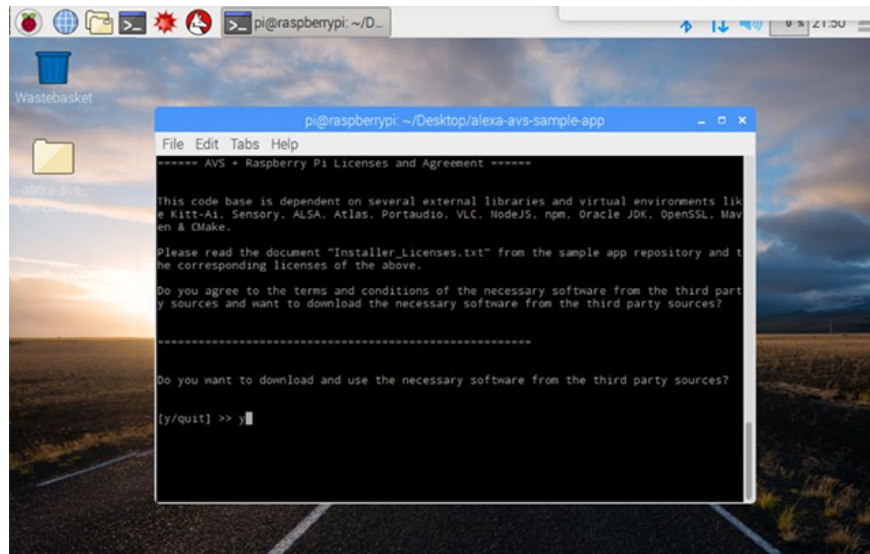
Click **Ctrl + X** to exit the script. Click **Y** and then press **Enter** to save your changes.

Run the installation commands

To run the script, open Terminal and enter the following commands:

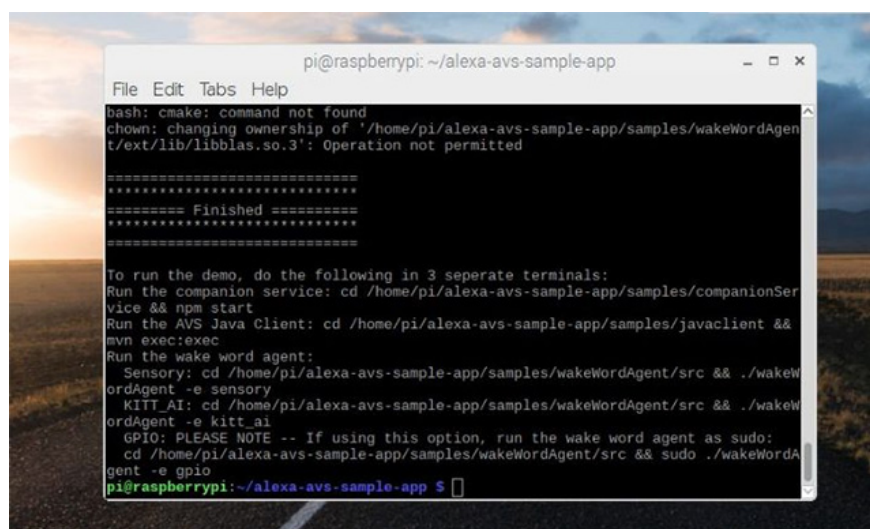
```
cd ~ / Desktop / alexa-avs-sample-app
. automated_install.sh
```

While this script is running, you will be asked to answer some simple questions to make sure that you have completed all the necessary settings on Amazon before installing the program.



The installation process will take about thirty minutes.

After a successful installation, your Terminal window will look like the image below.



3 Terminal

You must complete three steps to run the Alexa application. Each step is run in a separate Terminal window, and you perform the steps in the correct order.

Terminal 1

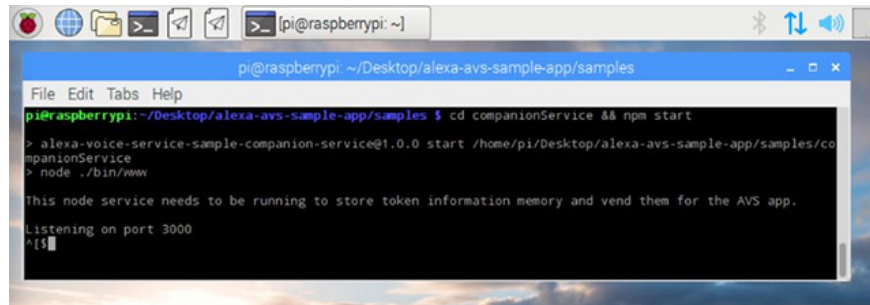
This window will run a web service to authorize your application with the AVS (Alexa Voice Service).

Open Terminal and enter the following commands:

```
cd ~ / Desktop / alexa-avs-sample-app / samples
cd companionService && npm start
```

Note : npm is a management package for JavaScript programming language.If it is not available when you run the command, you can get it here.

When the command process finishes, a window that looks like this will appear.



Do not rush to close, this window needs to remain open while you proceed to the next steps.

Terminal 2

This window helps communicate with AVS.

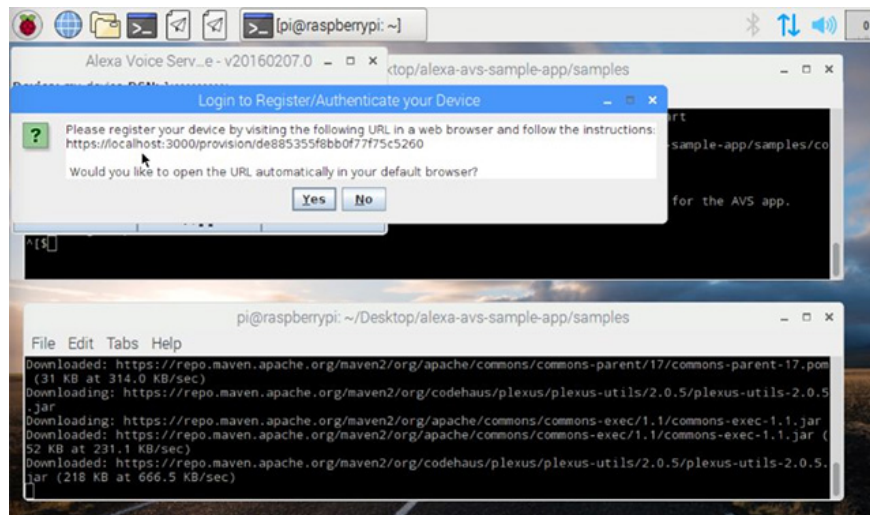
Type the following command into another Terminal window:

```
cd ~ / Desktop / alexa-avs-sample-app / samples  
javaclient cd && mvn exec: exec
```

Note: mvn stands for Apache Maven.If you don't have one, click here.

When you run the client, a dialog box will appear, saying: "**Please register your device by .**"

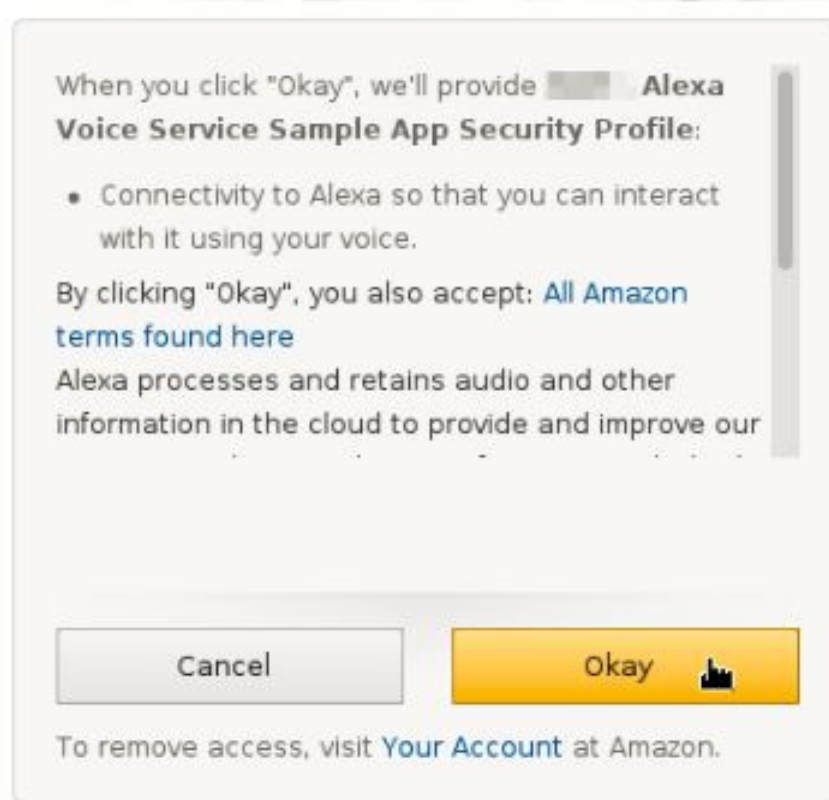
Select **Yes** .



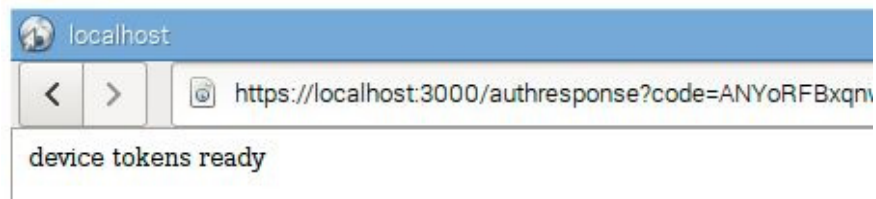
For some browsers, you will receive a warning that this connection is not secure.Turn off this notification by clicking the **Advance** button. Then, on the next screen, click **Proceed to localhost (unsafe)**.

Now, log into Amazon with the developer login you already have.

The next screen will require permission to use the security profile you created earlier for the device you are registering. Click **OK**.

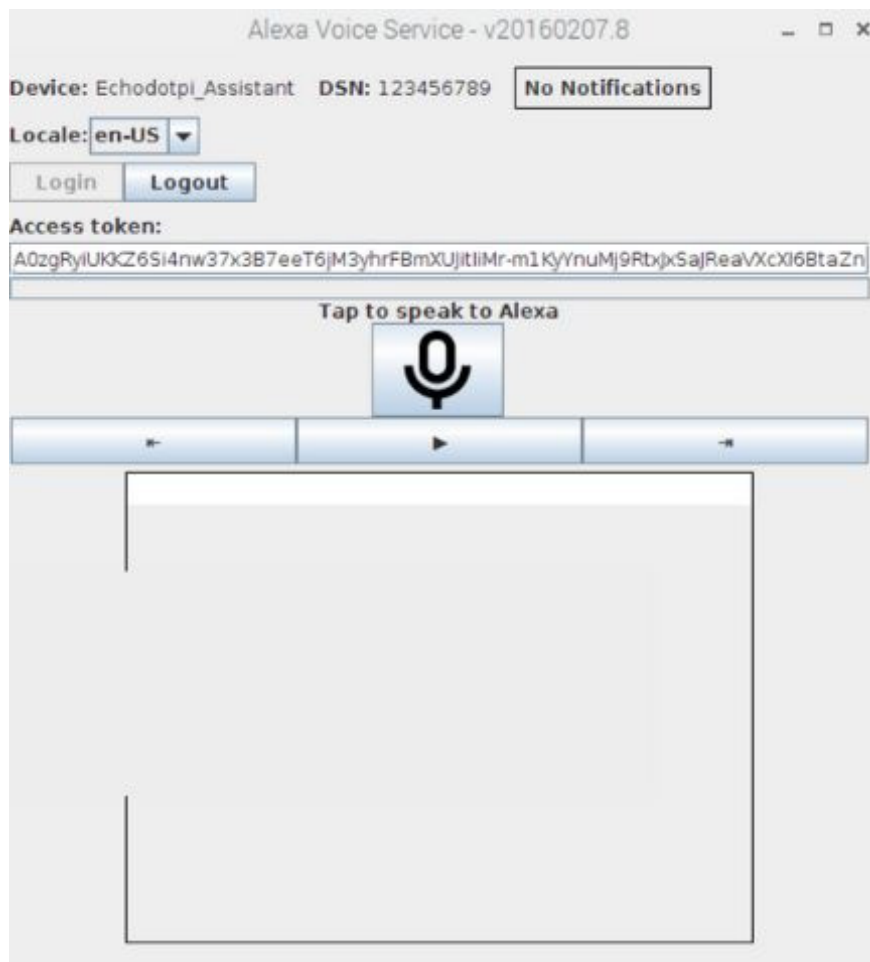


You will then be redirected to a URL starting with '<https://localhost:3000/authresponse>' that looks like the image below.



Go back to the open dialog and click the **OK** button. Now the client can accept requests from your Alexa device.

Do not close the terminal window and the *Voice Service Dialog* dialog box .



Terminal 3

Alexa voice wake up application will be installed in this window. If you do not want to use voice to command Alexa, you can skip this step.

Open a new Terminal window and use one of the following commands to bring up the Alexa wake-up speech system using **Sensory** or **KITT.AI**.

To use the wake up speech system, enter the command:

```
cd ~ / Desktop / alexa-avs-sample-app / samples  
cd wakeWordAgent / src && ./wakeWordAgent -e sensory
```

Trial

Awaken virtual assistant by saying 'Alexa'. After a beep appears you can start the command. For example, try by saying, 'Alexa.' Wait for a beep and ask, 'what time is it?' (What's the time?).

If Alexa answers correctly then your virtual assistant is ready for work.

See more:

1. How to set up Alexa virtual assistant as the default assistant on Android

2. Instructions to turn on Cortana and use this virtual assistant on Windows 10
3. 18 useful commands you should try with Cortana

You finished reading the article "**Turn Raspberry Pi into an Amazon Echo**" edited by the [TipsMake](#) team. We hope this article has provided you with many useful tech tips and tricks. You can search for similar articles on tips and guides. Thank you for reading and for following us regularly.
