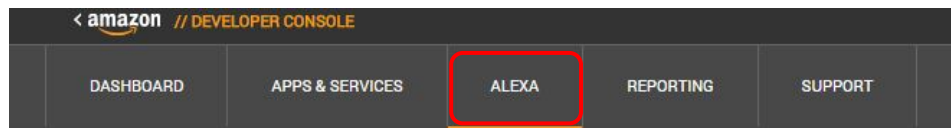


## Creating a custom skill

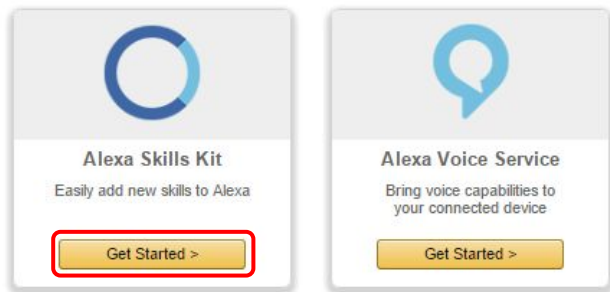
## Amazon accounts you will need

- Amazon Developer Account:
  - To create your skill
  - Use this account to connect the Echo Dot
- Amazon AWS Account:
  - To host your code
  - Requires a credit card (it's free for the purpose of this workshop)
  - Don't have a credit card to create an account? Ask one of us, or ask if your neighbour can host your AWS function.



## Get started with Alexa

Add new voice-enabled capabilities using the Alexa Skills Kit, or add voice-powered experiences to your connected



Click 'Get Started >' under Alexa Skills Kit

## Building Alexa Skills with the Alexa Skills Kit

[Add a New Skill](#)

To learn more about building Alexa skills, see [Getting Started with the Alexa Skills Kit](#). To start building an Alexa skill for free using AWS Lambda, see [Creating an AWS Lambda Function for a Custom Skill](#).

We encourage you to visit the [Alexa Developer Forum](#) to collaborate with Alexa team members and fellow Alexa developers.

Your skills

Skill Metrics

Name

Language

Type

Modified

Status

Actions

Click 'Add a New Skill'

## Create a New Alexa Skill



<b>Skill Information</b> ✓	<b>Skill Type</b> Define a custom interaction model or use one of the predefined skill APIs. <a href="#">Learn more</a>	<input checked="" type="radio"/> Custom Interaction Model <input type="radio"/> Smart Home Skill API <input type="radio"/> Flash Briefing Skill API
Interaction Model ✓		
Configuration ✓	<b>Language</b> Language of your skill	English (U.S.) ▼
SSL Certificate ✓		
Test ✓	<b>Name</b> Name of the skill that is displayed to customers in the Alexa app. Must be between 2-50 characters.	<input type="text" value="My super awesome custom skill"/>
Publishing Information ✓	<b>Invocation Name</b> The name customers use to activate the skill. For example, "Alexa ask Tide Pooler...". <a href="#">Invocation Name Guidelines</a>	<input type="text" value="Super Awesome Skill"/>
Privacy & Compliance ✓		

### Global Fields

These fields apply to all languages supported by the skill.

**Audio Player**  
Does this skill use the audio player directives? [Learn more](#) ☐ Yes ☒ No

### Intent Schema

The schema of user intents in JSON format. For more information, see [Intent Schema](#). Also see [built-in slots](#) and [built-in intents](#).

```
12 {
13   "intent": "MyFollowUpIntent",
14   "slots": [
15     {
16       "name": "Greeting",
17       "type": "LIST_OF_GREETINGS"
18     }
19   ]
20 }
21 ]
22 }
```

### Custom Slot Types (Optional)

Custom slot types to be referenced by the Intent Schema and Sample Utterances. For general information about custom slots, see [Custom Slot Types](#).

Type	Values		
LIST_OF_GREETINGS	Hello   Good day   What's up   WAZZZAAAAAAAAA	Delete	Edit

#### Enter Type

LIST\_OF\_GREETINGS

#### Enter Values

Values must be line-separated

```
1 Hello
2 Good day
3 What's up
4 WAZZZAAAAAAAAA
```

Cancel

Update



```
{
  "intents": [
    {
      "intent": "MyFirstOpeningIntent",
      "slots": [
        {
          "name": "MyName",
          "type": "AMAZON.LITERAL"
        }
      ]
    },
    {
      "intent": "MyFollowUpIntent",
      "slots": [
        {
          "name": "Greeting",
          "type": "LIST_OF_GREETINGS"
        }
      ]
    }
  ]
}
```

### Sample Utterances

These are what people say to interact with your skill. Type or paste in all the ways that people can invoke the intents. [Learn more](#)

Up to 3 of these will be used as Example Phrases, which are hints to users.

```
1 MyFirstOpeningIntent that my name is {default name|MyName}
2 MyFollowUpIntent greet me with {Greeting|}
```

Save

Submit for Certification

Next

ig built...

Each line of a sample utterances file consists of two fields separated by tabs or spaces:

- The name of the intent on the left.
- The phrase a user might speak to signal that intent on the right.

Type AMAZON.LITERAL requires a default slot value.

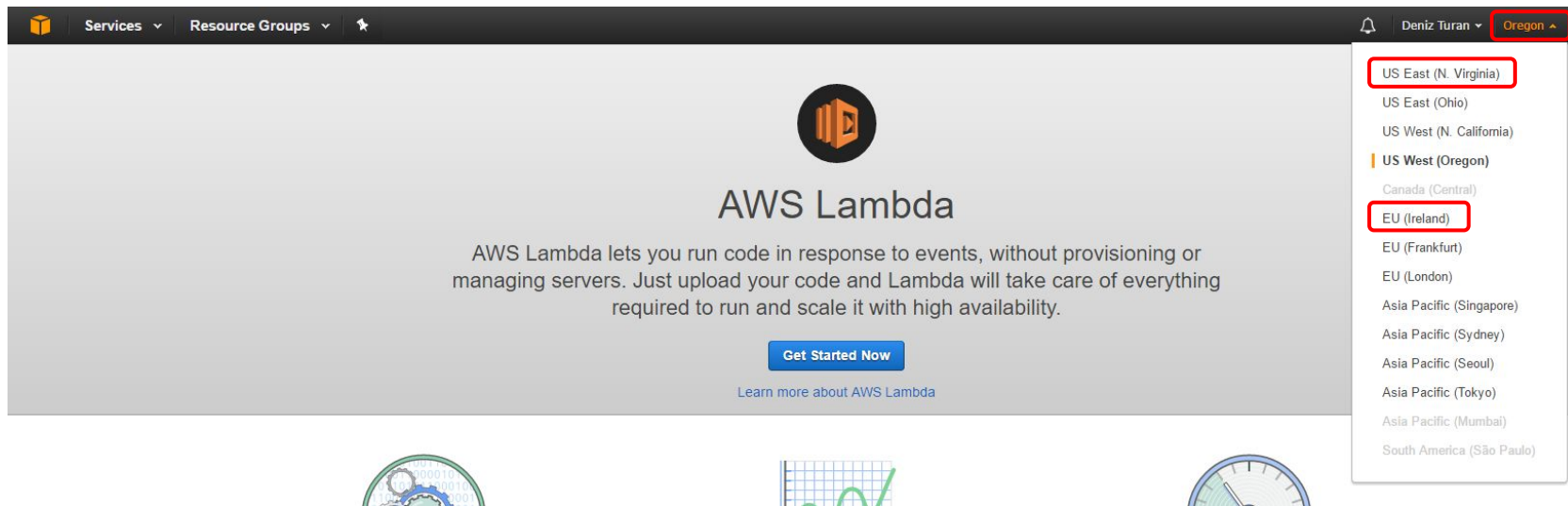
Other available types:

<https://developer.amazon.com/public/solutions/alexa/alexa-skills-kit/docs/built-in-intent-ref/slot-type-reference>

## Now we need a lambda function



Or check out <http://stackoverflow.com/a/40668109/2977399> to create your own server with spring boot



Select **US East (N. Virginia)** or **EU (Ireland)** then click 'Get Started Now'

**Alexa doesn't work with other regions**

<https://console.aws.amazon.com/lambda/home>



## Select blueprint



Blueprints are sample configurations of event sources and Lambda functions. Choose a blueprint that best aligns with your desired scenario and customize as needed, or skip this step if you want to author a Lambda function and configure an event source separately. Except where otherwise noted, blueprints are licensed under [CC0](#).

Select runtime

Filter

<< < Viewing 1-9 of 84 > >>

Blank Function

Configure your function from scratch. Define the trigger and deploy your code by stepping through our wizard.

custom

kinesis-firehose-syslog-to-json

An Amazon Kinesis Firehose stream processor that converts input records from RFC3164 Syslog format to JSON.

nodejs · kinesis-firehose

alexa-skill-kit-sdk-factskill

Demonstrate a basic fact skill built with the ASK NodeJS SDK

nodejs · alexa

batch-get-job-python27

Returns the current status of an AWS Batch Job.

python2.7 · batch

kinesis-firehose-apachelog-to-j...

An Amazon Kinesis Firehose stream processor that converts input records from Apache Common Log format to

python2.7 · kinesis-firehose

cloudfront-modify-response-he...

Blueprint for modifying CloudFront response header implemented in NodeJS.

nodejs · cloudfront · response hea...

s3-get-object-python

An Amazon S3 trigger that retrieves metadata for the object that has been updated.

python2.7 · s3

config-rule-change-triggered

An AWS Config rule that is triggered by configuration changes to EC2 instances. Checks instance types.

nodejs4.3 · config

lex-book-trip-python

Book details of a visit, using Amazon Lex to perform natural language understanding

python2.7 · lex

Cancel

Select 'Blank Function'

## Configure triggers

You can choose to add a trigger that will invoke your function.



Lambda

Remove

Cancel

Previous

Next



## Configure triggers

You can choose to add a trigger that will invoke your function.

Alexa Skills Kit



Lambda

Remove

Choosing **Submit** will create a resource policy that allows the Amazon Alexa service to call your Lambda function. To configure the Alexa service to work with your Lambda function, go to the [Alexa Developer](#) portal. [Learn more](#) about the Lambda permission model.

Cancel

Previous

Next

Select Alexa Skills Kit as a trigger.

## Configure function

A Lambda function consists of the custom code you want to execute. [Learn more](#) about Lambda functions.

Name\*

Description

Runtime\*

### Lambda function code

Provide the code for your function. Use the editor if your code does not require custom libraries (other than the aws-sdk). If you need custom libraries, you can upload your code and libraries as a .ZIP file. [Learn more](#) about deploying Lambda functions.

Code entry type

- Edit code inline
- Upload a .ZIP file
- Upload a file from Amazon S3

```
1 'use strict';
2
3 function buildResponse(sessionAttributes, speechletResponse) {
4   return {
5     version: '1.0',
6     response: speechletResponse,
7     sessionAttributes: sessionAttributes,
8   };
9 }
10
11 // ----- Functions that control the skill's behavior -----
12
13 /**
14  * This is your first Alexa Intent! Typically it greets you, or something alike, and asks you what you want
15  * Because #shouldEndSession is false, it will keep the session open, so you can call the same skill-name with
16  * In other words, you can have a conversation with Alexa within the possibilities of the current skill.
17  * Utterance: "Alexa, tell 'Super Awesome Skill' my name is Deniz." (Session will stay open)
18  * Follow up with: "greet me with WAZAAAAA" (call skill below)
19  */
20 function callMyFirstOpeningIntent(intentRequest, callback) {
21   const sessionAttributes = {};
22   const cardTitle = 'welcome';
23   const name = intentRequest.intent.slots.MyName.value;
24   const speechOutput = `Hi ${name}, I am so relieved I've got someone to talk to! What can I do for you,
25   const repromptText = "I've got no clue to what you want from me... Tell me again, please?";
26   const shouldEndSession = false;
27
28   callback(sessionAttributes,
29     buildResponse(sessionAttributes, speechletResponse));
30 }
```



You can also choose a different runtime here if you want to use a different language

Choose 'Upload a .ZIP file' if you want to include node dependencies.

The ZIP file should look like this:

- /node\_modules
- /index.js

You can copy the example code 'example-index.js' in the workshop repository, or write your own code. There is also an example in Java in the repository.

## Lambda function handler and role

**Handler\***  ⓘ

**Role\***  ⓘ

Lambda will automatically create a role with permissions from the selected policy templates. Note that basic Lambda permissions (logging to CloudWatch) will automatically be added. If your function accesses a VPC, the required permissions will also be added.

**Role name\***  ⓘ

**Policy templates**  ⓘ

**Handler:** The module-name.export value in your function. For example, "index.handler" would call exports.handler in index.js.

**Role:** The role for your function. Just create a new one, it's used for permissions that a function has, which you can re-use in other functions.

[Lambda](#) > [Functions](#) > SuperAwesomeLambdaFunction

ARN - `arn:aws:lambda:eu-west-2:199676879974:function:SuperAwesomeLambdaFunction`

Qualifiers ▾

Test

Actions ▾

Congratulations! Your Lambda function "SuperAwesomeLambdaFunction" has been successfully created. You can now click on the "Test" button to input a test event and test your function.

Code

Configuration

Triggers

Monitoring

Code entry type

Edit code inline ▾

```
1 'use strict';
2
3 function buildResponse(sessionAttributes, speechletResponse) {
4   return {
5     version: '1.0',
6     response: speechletResponse,
```

After you have created the function, copy the ARN, and go back to the developer console

English (U.S.) ✓

Add a New Language

## Global Fields

These fields apply to all languages supported by the skill.

### Endpoint

Service Endpoint Type:

☒ AWS Lambda ARN (Amazon Resource Name) ⓘ ☐ HTTPS

*Recommended*

AWS Lambda is a server-less compute service that runs your code in response to events and automatically manages the underlying compute resources for you.

[More info about AWS Lambda](#)

[How to integrate AWS Lambda with Alexa](#)

Pick a geographical region that is closest to your target customers: ⓘ

☐ North America ☒ Europe

Europe

arn:aws:lambda:eu-west-1:199676879974:function:

### Account Linking

Do you allow users to create an account or link to an existing account with you?

☐ Yes ☒ No

[Learn more](#)

Select either Europe or North America, depending on where you created the lambda function, then paste the ARN.

## Service Simulator

Use Service Simulator to test your HTTPS endpoint:

arn:aws:lambda:eu-west-1:199676879974:function:SuperAwesomeLambdaFunction ▼

Note: Service Simulator does not currently support testing audio player directives and customer account linking.

Text

JSON

Enter Utterance

greet me with WAZZZAAAAAAAAAAAA

Ask My super awesome custom skill

Reset

Service Request

```

1 {
2   "session": {
3     "sessionId": "SessionId.c481ebbb-ec33-4ae2-97
4     "application": {
5       "applicationId": "amzn1.ask.skill.e0f4e0ee-
6     },
7     "attributes": {},
8     "user": {
9       "userId": "amzn1.ask.account.AHT4D3EUY4VDTD
10    },
11    "new": true
12  },
13  "request": {
14    "type": "IntentRequest",
15    "requestId": "EdwRequestId.91a689c3-2b4e-46b7
16  }

```

Service Response

```

1 {
2   "version": "1.0",
3   "response": {
4     "outputSpeech": {
5       "type": "PlainText",
6       "text": "WAZZZAAAAAAAAAAAA, you're the bes
7     },
8     "card": {
9       "content": "SessionSpeechlet - WAZZZAAAA
10      "title": "SessionSpeechlet - greeting",
11      "type": "Simple"
12    },
13    "reprompt": {
14

```

Listen

Test your skill.

You can skip the steps 'Publishing Information' and 'Privacy & Compliance'. Those are only needed if you wish to publish your skill. When skipped, your skill will have the status 'in development'.

Your Amazon Echo will automatically use all the skills on your account. Including the ones that are in development.

Stay awhile and listen.

## Test your skill with the Echo Dot

- Take an available Echo Dot
- Press and hold the Microphone off and Volume down buttons at the same time until the light ring turns orange (about 20 seconds).
  - Then light ring turns blue.
  - Wait for the light ring to turn off and on again.
  - The light ring then turns orange again, and your Echo Dot enters setup mode.
- Browse to <https://alexa.amazon.com> -> Settings -> Set up a new Device to connect your device to the Wi-Fi network (network name is on the post-it) and register it to your Amazon account.
- Call Alexa

“Alexa, tell *Super Awesome Skill* that my name is *Chiel*.” <sup>1</sup>

<sup>1</sup> Hopefully your name is John, because Alexa thinks I'm a very **chill** person.