Alexa Skills for the Amazon Echo

A brief overview
Written at night
With beer

What is Amazon Echo?

Wireless Internet-connected speaker

Always-on microphone array with Amazon cloud-based voice recognition software.

‘Alexa’ voice interface.

Out of the box services:

Music, podcasts, news, Audible books, calendar, alarms and timers, IFTTT triggers, home automation, and answers to some general queries.

Echo Apps

Echo apps are called Alexa Skills.

Alexa Skills are AWS Lambda functions.

Amazon provides Alexa Skills Kit SDK, end-to-end tutorials, live webinars.

Skills may be published for others to use.

Alexa Voice Service (AVS) allows sound-enabled devices to access Skills, you don’t have to have an Echo to use voice interaction.

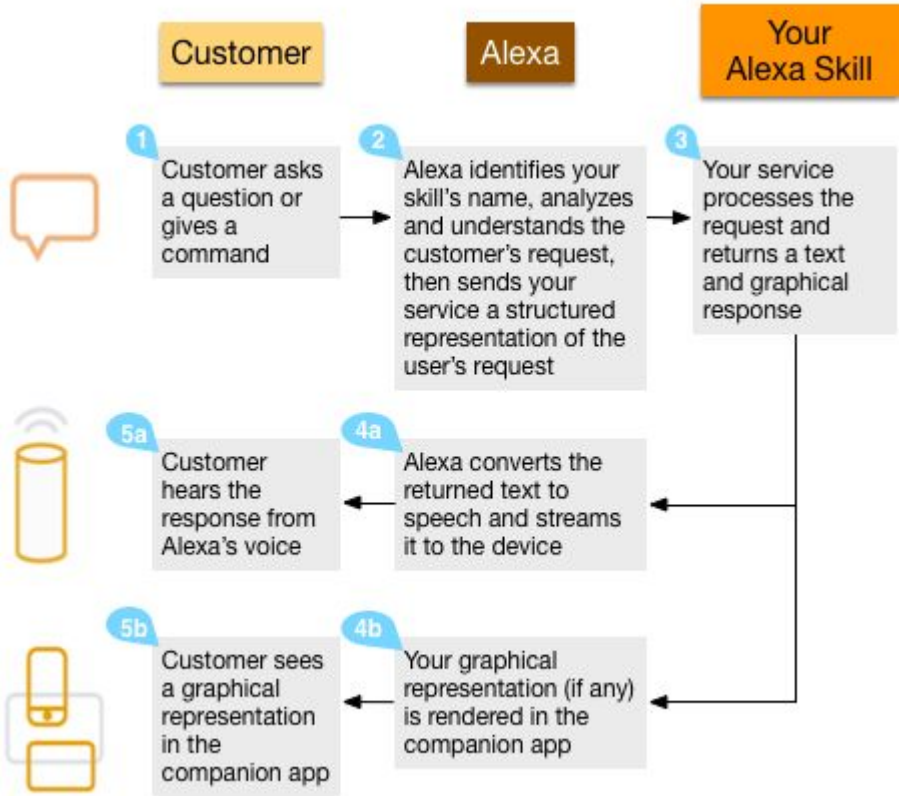
Interactions start with a phrase:

Tell <name> **to/that** <command>
Tell <name>

Ask <name> **to/about/for/if** <command>

Also **Play, Talk to, Open, Launch, Start, Use, Resume, Run, Load, Begin.**

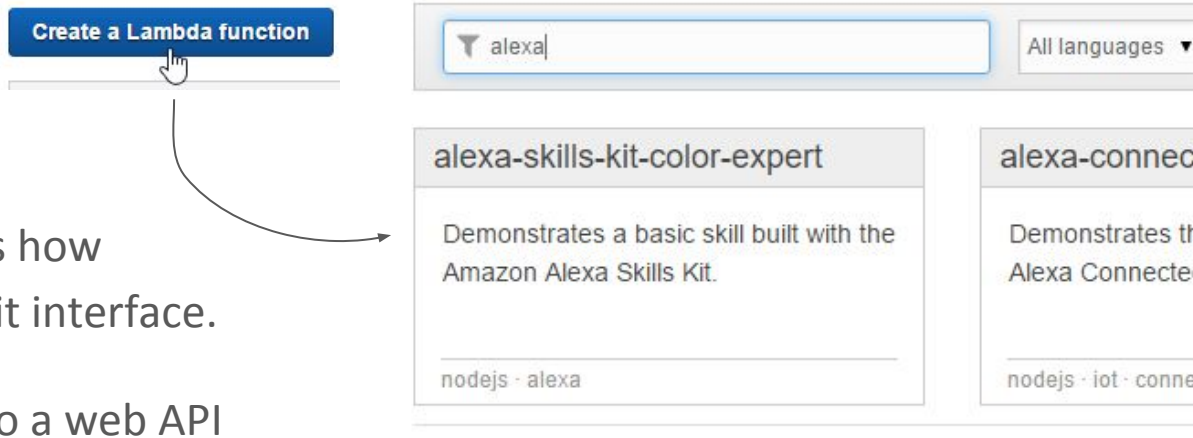
Skill may return text-to-speech to the voice interface, or graphical content to the companion app.



Also wik

The core, Amazon Lambda

In the AWS Console create a new Lambda function and pick an Alexa blueprint.



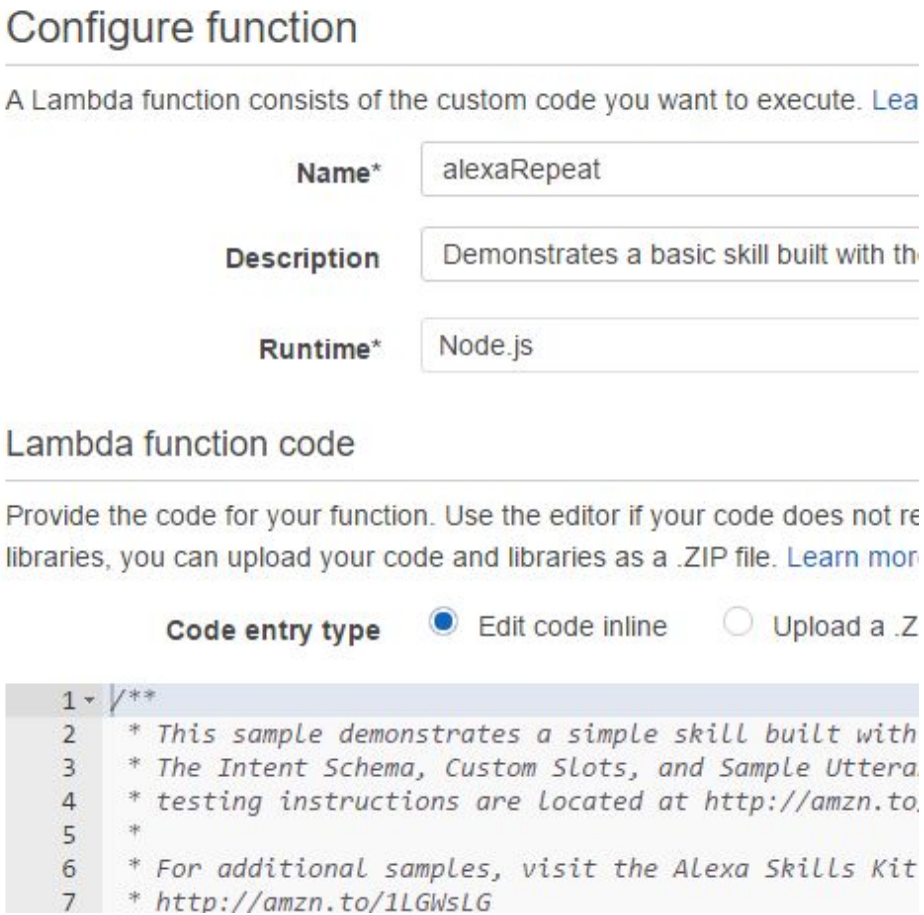
The blueprint code demonstrates how to interact with the Alexa Skills Kit interface.

Alexa Skills Kit can also connect to a web API instead of a Lambda function.

Also also wik

Configure the basic settings and create the function.

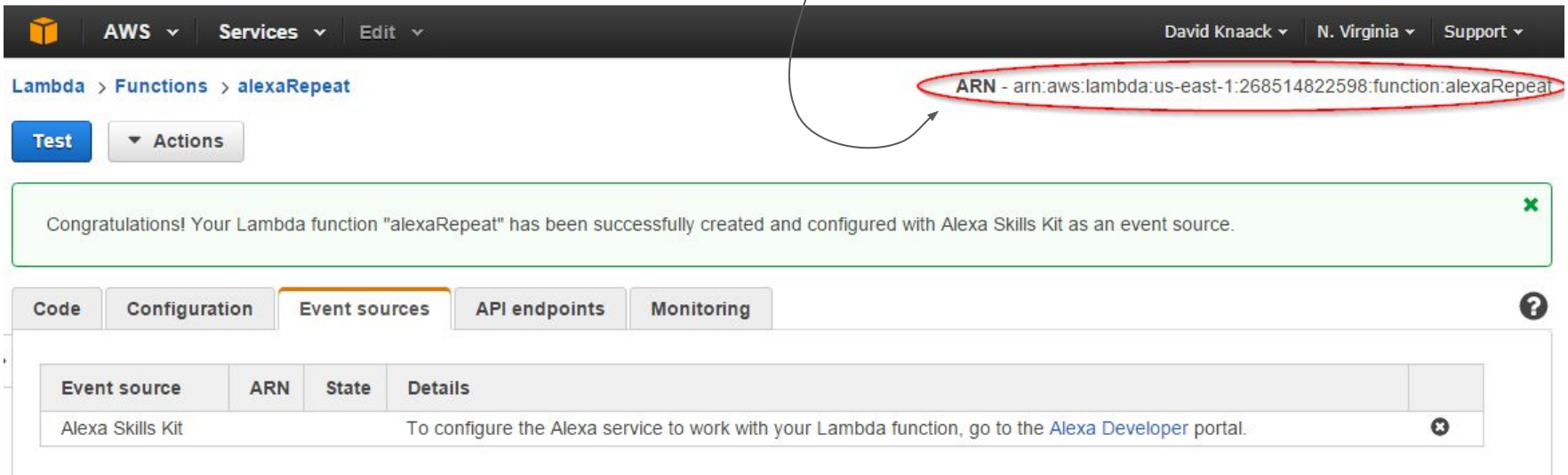
Editing of skill code is done here, configuration of skill activation phrases is done elsewhere, in the Alexa Skills Kit.



Wi not trei a holiday in Sweeden this yer ?

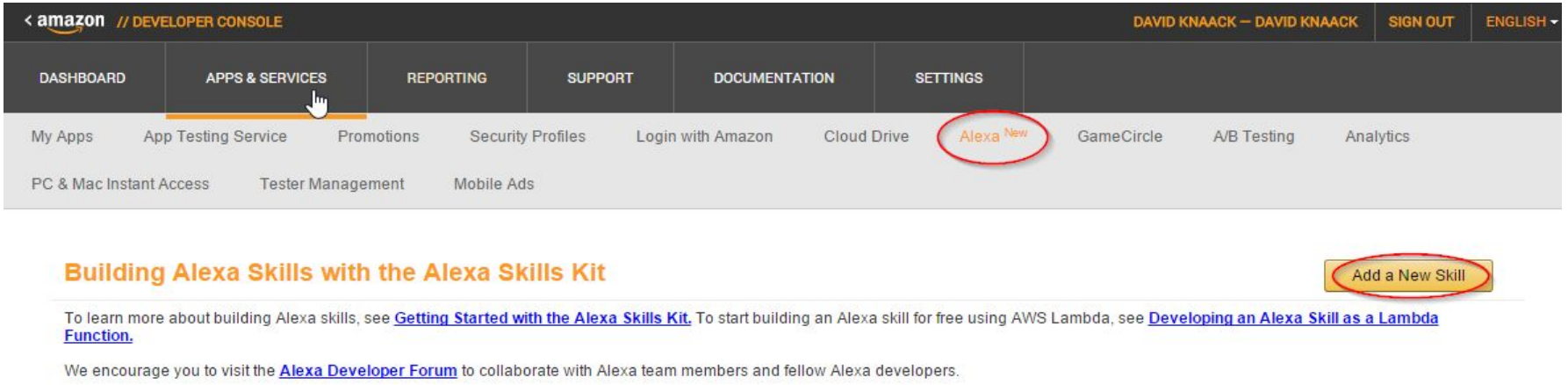
Get the **ARN**

The ARN links the skill definition in the Alexa Skills Kit to the Lambda function.



Create the Skill that will use the Lambda function

In the **Amazon Developer Console**, add a new skill



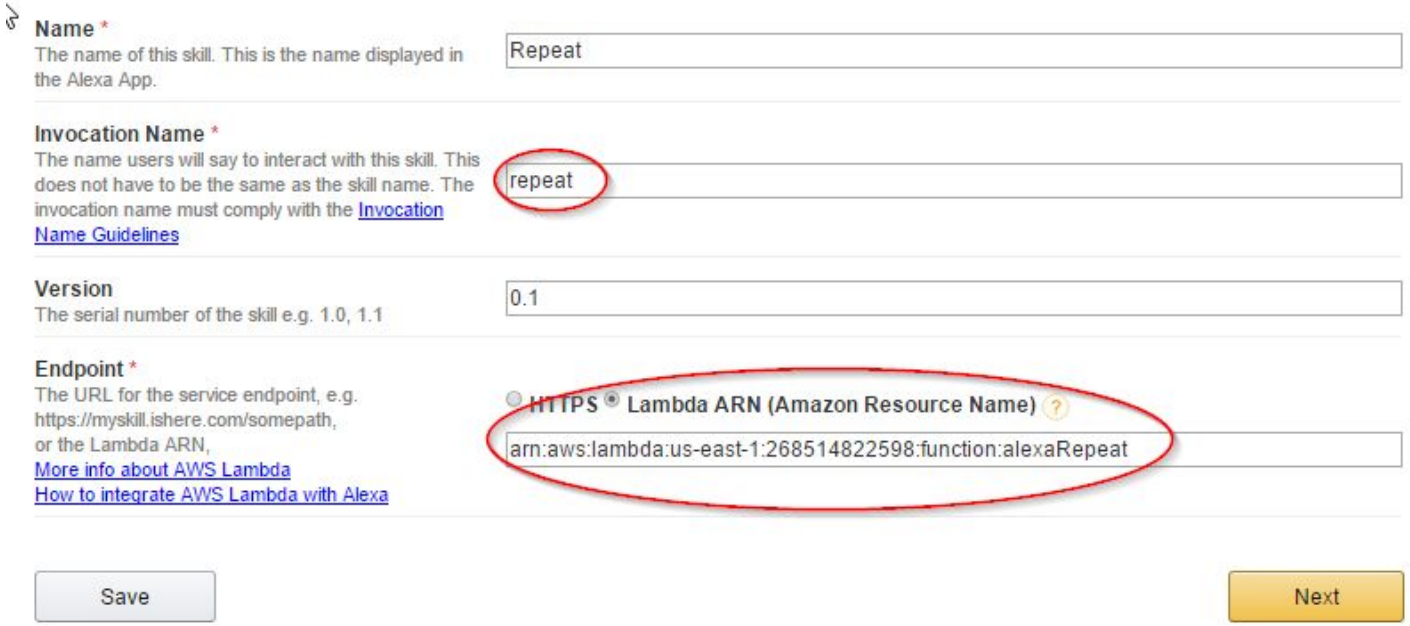
This can be hard to find, it's not in the AWS Console

https://developer.amazon.com/edw/home.html#/skills/list

Follow the instructions.

Set the name of the skill and the Invocation Name.

Enter the Lambda ARN to connect the skill to the Lambda function



Intents, Slots, and Sample Utterances

An Intent is one of the functions of your Skill

A Slot is an argument for an Intent

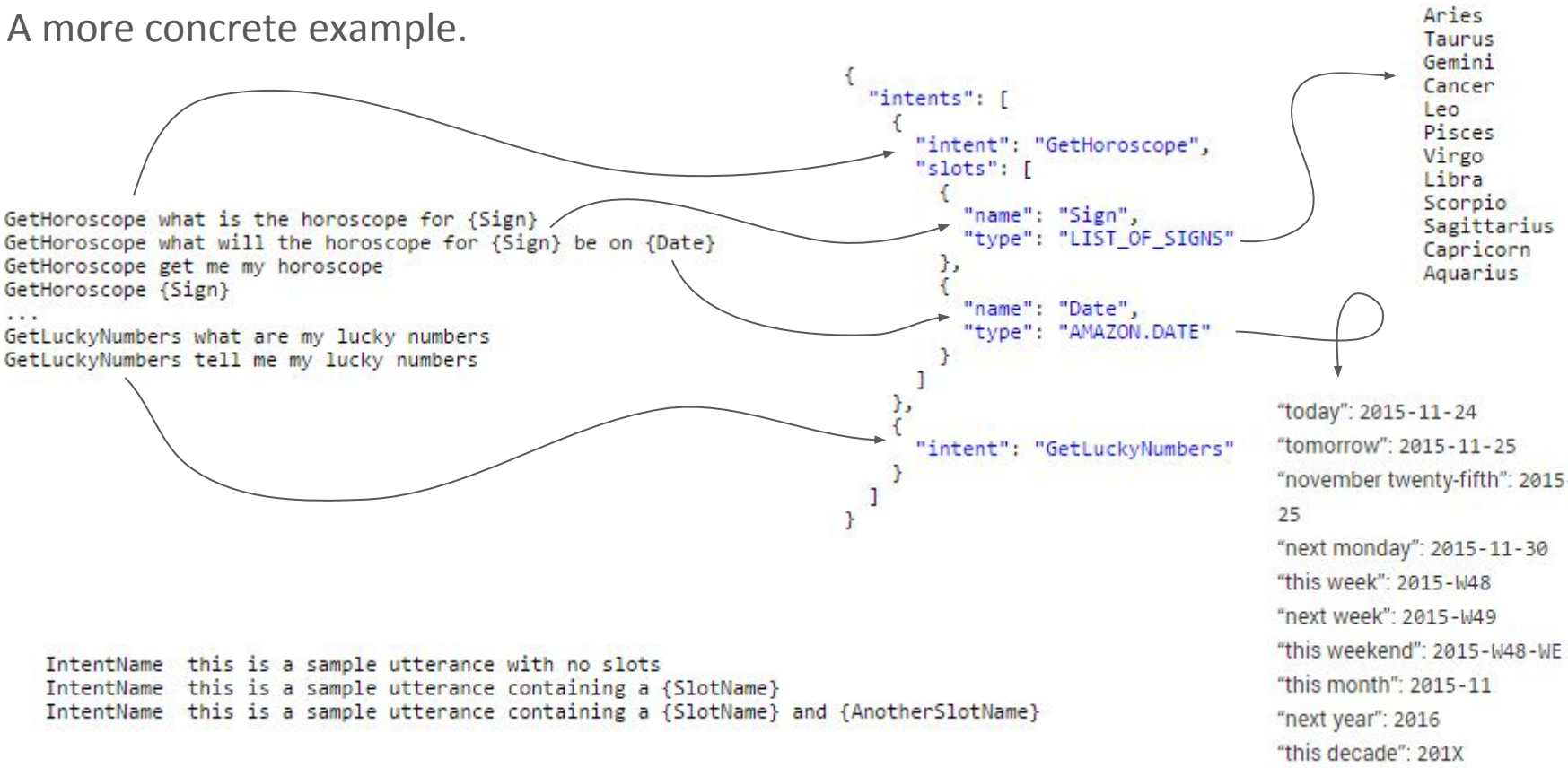
- Slots have names and types
- Types may be predefined or custom

Sample Utterances define patterns and mappings that let the skills kit match an utterance to an intent and populate slots.

AMAZON.LITERAL is special and uses sample slot values with the slot name

Including the majestic moose

A more concrete example.




```
IntentName  this is a sample utterance with no slots
IntentName  this is a sample utterance containing a {SlotName}
IntentName  this is a sample utterance containing a {SlotName} and {AnotherSlotName}
```

Custom slot values are converted to a standard form by the spoken language understanding system, not to the form you specify in the custom slot definition.

For example:

Slot Value	Spoken	Standard Form
four inch	four inch	4"
4 inch	four inch	4"
four star	four star	4 star
4-star	four star	4 star

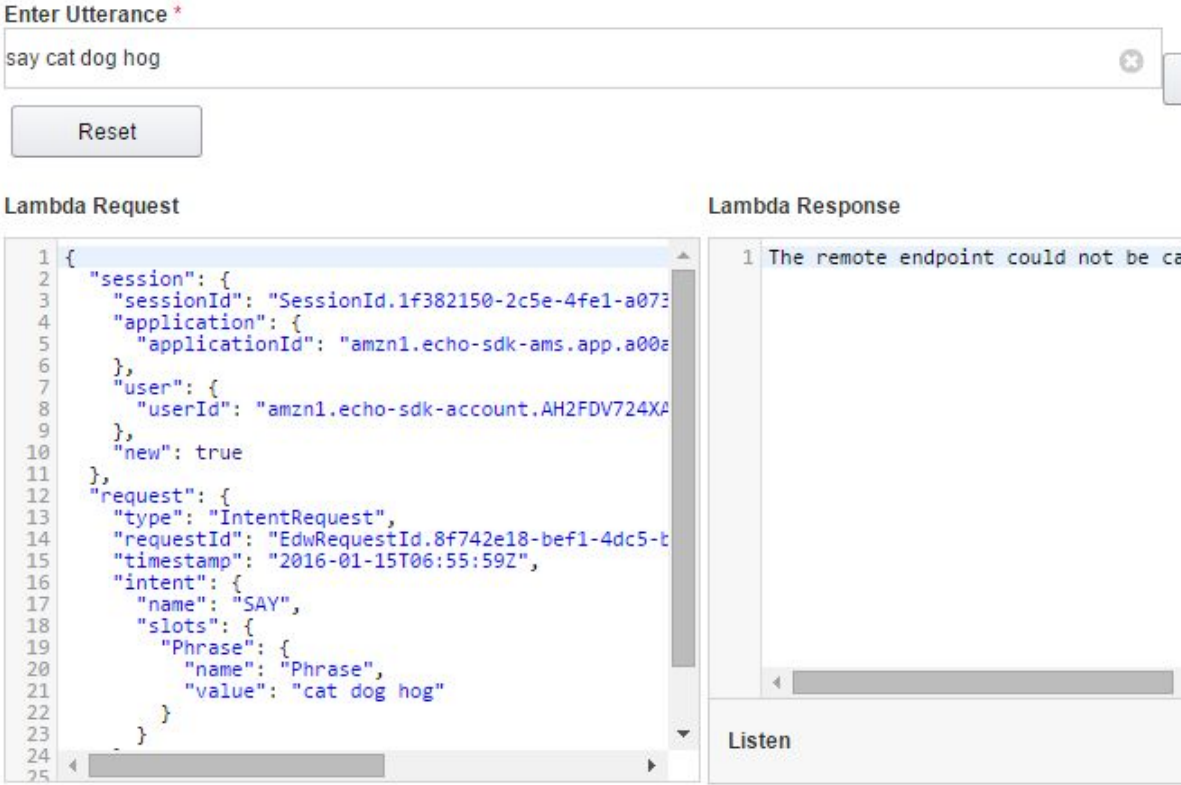
Input to a custom slot type is weighted towards the values in the list, but it is **not** constrained to just the items on the list.

No realli! She was Karving her initials on the moose with the sharpened end of an interspace toothbrush given her by Svenge - her brother-in-law - an Oslo dentist and star of many Norwegian movies: "The Hot Hands of an Oslo Dentist", "Fillings of Passion", "The Huge Molars of Horst Nordfink"...

Testing

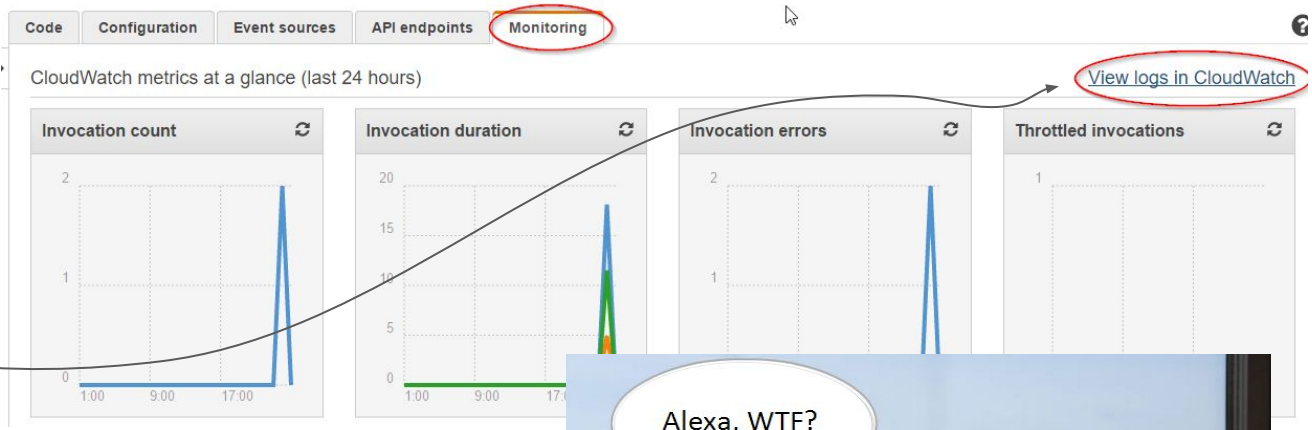
The Alexa Skills Kit includes a test interface for submitting test utterances.

This one is failing.



Troubleshooting

AWS Console, Monitoring, CloudWatch.




```
2016-01-15T06:55:59.343Z 086cf200-bb55-11e5-ac46-f9f8c609b1a1
{
    "errorMessage": "Exception: Invalid intent"
}
END RequestId: 086cf200-bb55-11e5-ac46-f9f8c609b1a1
REPORT RequestId: 086cf200-bb55-11e5-ac46-f9f8c609b1a1 Duration:
27 MB
```

Update the example code

The intent defined in the ASK does not match what the sample Lambda function is expecting.

```
{
  "intents": [
    {
      "intent": "SAY",
      "slots": [
        {
          "name" : "Phrase",
        }
      ]
    }
  ]
}
```

```
/**
 * Called when the user specifies an intent for this skill.
 */
function onIntent(intentRequest, session, callback) {
    console.log("onIntent requestId=" + intentRequest.requestId +
        ", sessionId=" + session.sessionId);

    var intent = intentRequest.intent,
        intentName = intentRequest.intent.name;

    // Dispatch to your skill's intent handlers
    if ("MyColorIsIntent" === intentName) {
        setColorInSession(intent, session, callback);
    } else if ("WhatsMyColorIntent" === intentName) {
        getColorFromSession(intent, session, callback);
    } else if ("AMAZON.HelpIntent" === intentName) {
        getWelcomeResponse(callback);
    } else {
        throw "Invalid intent";
    }
}
```

Mynd you, moose bites Kan be pretti nasti...

So rewrite the sample code.

```
/**
 * Called when the user specifies an intent for this skill.
 */
function onIntent(intentRequest, session, callback) {
    console.log("onIntent requestId=" + intentRequest.requestId
                + ", sessionId=" + session.sessionId);

    var intent = intentRequest.intent,
        intentName = intentRequest.intent.name;

    // Dispatch to your skill's intent handlers
    if ("SAY" === intentName) {
        getSay(intent, session, callback);
    } else if ("HelpIntent" === intentName) {
        getWelcomeResponse(callback);
    } else {
        throw "Invalid intent";
    }
}
```

Enter Utterance *

say cat dog hog

Ask Pete

Reset

Lambda Request


```
{
  "session": {
    "sessionId": "SessionId.9b2a79d1-73d6-4ec9-a64b
    "application": {
      "applicationId": "amzn1.echo-sdk-ams.app.d1a9
    },
    "user": {
      "userId": "amzn1.account.AFL247WMSLMQHW3P6IAH
    },
    "new": true
  },
  "request": {
    "type": "IntentRequest",
    "requestId": "EdwRequestId.a369ded9-c536-4787-b
    "timestamp": "2016-01-15T06:56:30Z",
    "intent": {
      "name": "SAY",
      "slots": {
        "Phrase": {
          "name": "Phrase",
          "value": "cat dog hog"
        }
      }
```


Lambda Response


```
  "version": "1.0",
  "response": {
    "outputSpeech": {
      "type": "PlainText",
      "text": "cat dog hog"
    },
    "card": {
      "type": "Simple",
      "content": "SessionSpeechlet - cat dog hog",
      "title": "SessionSpeechlet - SAY"
    },
    "reprompt": {
      "outputSpeech": {
        "type": "PlainText",
        "text": null
      }
    },
    "shouldEndSession": true
  },
  "sessionAttributes": {}
}
```


Listen

https://github.com/davidknaack/AlexaRepeatII

Moose Trained by Yutte Hermsgervordenbroti

Special Moose Effects Olaf Prot

Moose Costumes Siggi Churchill