Amazon Alexa Integration with SAP Cloud Platform

Public

Alexa Ecosystem

Alexa & Alexa Skill

Who is Alexa ?

- Alexa is Amazon's voice service and the brain behind millions of devices like the Amazon Echo, Echo Dot, and Echo Show

What is an Alexa Skill ?

- Alexa provides capabilities, or skills, that enable customers to create a more personalized experience
- More than 15,000 skills from companies like Starbucks, Uber, and Capital One as well as innovative designers and developers

Echo = Device (Endpoint of Alexa Ecosystem)

Alexa = Operating System (Brain in the cloud)

Alexa Skill = Application

Alexa Ecosystem

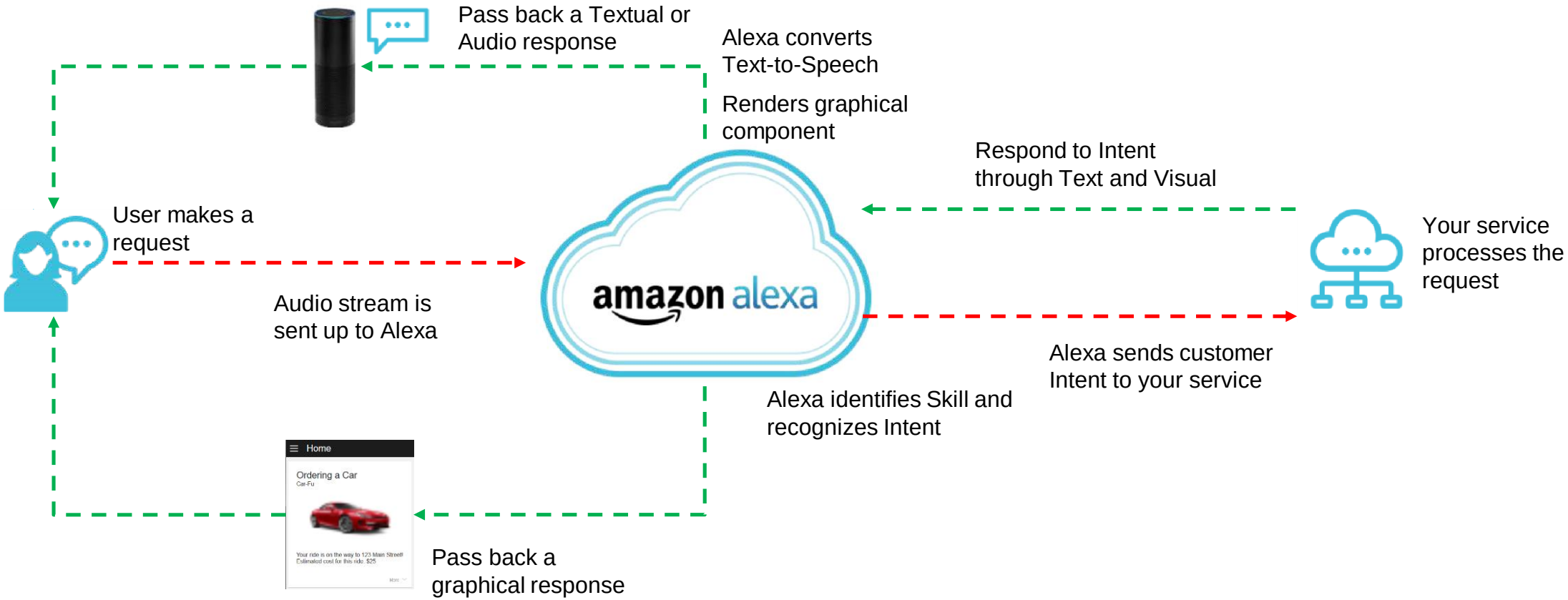
Alexa Skills Kit

What is an Alexa Skills Kit ?

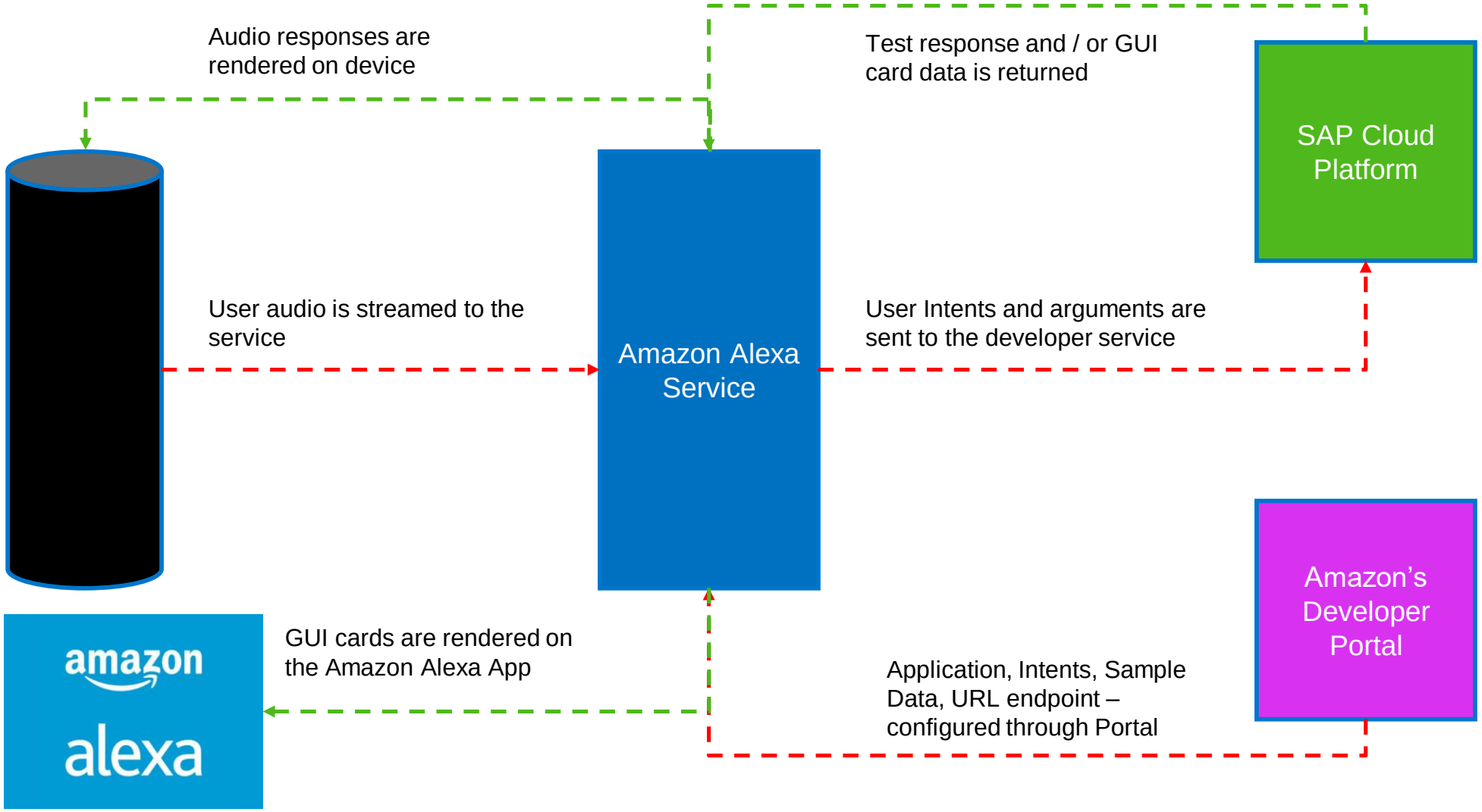
- With the Alexa Skills Kit (ASK), designers, developers, and brands can build engaging skills and reach millions of customers
- ASK is a collection of self-service APIs, tools, documentation, and code samples that makes it fast and easy for you to add skills to Alexa
- With ASK, you can leverage Amazon's knowledge and pioneering work in the field of voice design.

Under the hood of ASK

How Alexa Skills Kit works ?

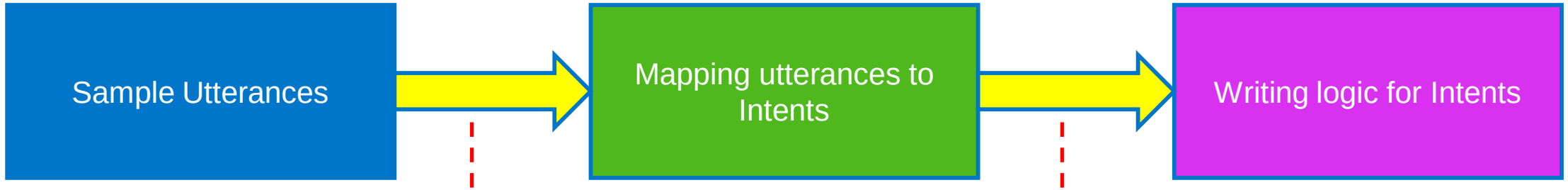


Alexa Skills Kit Architecture



Alexa Skill

Parts to Alexa Skill



- What we say to Echo…
- To start our Skill
- Get information from Skill
- For example, What is the weather ?

- Mapping utterances to Intents
- You could map multiple utterances to the same intent
- For example, What is the weather, Weather today, Weather can all be mapped to WeatherTodayIntent
- Intents may have arguments
- For example, What is the weather in {CITY_NAME}

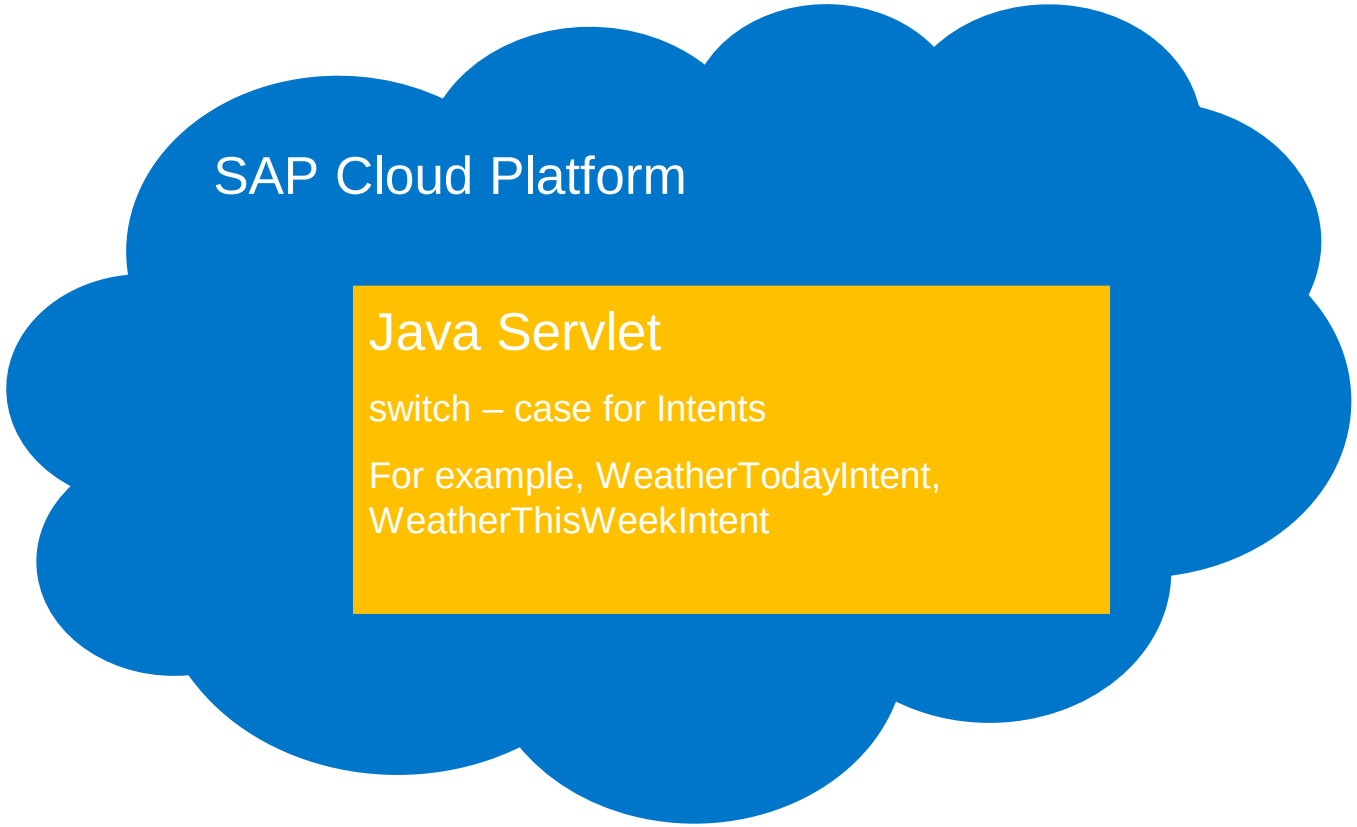
- Writing logic for our Intents
- For example, WeatherTodayIntent needs to figure out how to get the weather

SAP Cloud Platform
Application Service

Hosting your Skill

Skills live in the cloud are hosted in

1. AWS Lambda
2. An internet accessible HTTPS endpoint with a trusted certificate



Building a Skill
Intents and Slots

```
{
    "intents": [
        {
            "intent": "ReindeerIntent",
            "slots": [
                {
                    "name": "Reindeer",
                    "type": "LIST_OF_REINDEER"
                }
            ]
        },
        {
            "intent": "AMAZON.YesIntent"
        },
        {
            "intent": "AMAZON.NoIntent"
        },
        {
            "intent": "AMAZON.HelpIntent"
        },
        {
            "intent": "AMAZON.StopIntent"
        },
        {
            "intent": "AMAZON.CancelIntent"
        }
    ]
}
```

- Intent schemas are uploaded to your skill in the Amazon Developer Portal
- Each Intent consists of 2 fields. The intent field gives the name of the Intent. The slot field lists the slots associated with the Intent
- Custom slots increase the accuracy of Alexa when identifying an argument within an Intent

Building a Skill
Sample Utterances

```
ReindeerIntent {Reindeer}
ReindeerIntent tell me about {Reindeer}
ReindeerIntent talk about {Reindeer}
ReindeerIntent tell me some facts about {Reindeer}
AMAZON.HelpIntent tell me those reindeer names again
AMAZON.HelpIntent tell me the reindeer names
AMAZON.HelpIntent what are the reindeer names again
AMAZON.HelpIntent what are the reindeer names
```

- Each possible phrase is assigned to one of the defined Intents
- For example,

  ReindeerIntent -> tell me about {Reindeer}

Building a Skill
Request Types

LaunchRequest

Maps to OnLaunch() and occurs when the user launches the app without specifying what they want

IntentRequest

Maps to OnIntent() and occurs when the user specifies an Intent

SessionEndedRequest

Maps to OnSessionEnded() and occurs when the user ends the sesion

Building a Skill
Example Request

```
{
  "request": {
    "type": "IntentRequest",
    "requestId": "string",
    "locale": "en-US",
    "timestamp": "2017-08-02T04:07:22Z",
    "intent": {
      "name": "ReindeerIntent",
      "slots": {
        "Reindeer": {
          "name": "Reindeer",
          "value": "Rudolph"
        }
      }
    }
  }
}
```

- If hosting your own service, you will need to handle POST requests to your service over port 443 and parse the JSON
- If it is an IntentRequest, it will include the Intent and its slots
- type maps directly to LaunchRequest, IntentRequest and SessionEndedRequest

Building a Skill
Example Response

```
{
  "version": "1.0",
  "response": {
    "outputSpeech": {
      "type": "PlainText",
      "text": "Nose glows."
      },
      "shouldEndSession": false
  },
  "sessionAttributes": {
    "reindeerName": "Rudolph"
  }
}
```

- App needs to build a response object that includes the relevant keys and values
- Amazon Developer Portal has plenty of examples
- You can also store session data in Alexa Voice Service. These are in the sessionAttributes object

Demo