Command line tool for Text-to-Speech using Amazon Polly (T2S)

Requirements

- Command line tool that implements Text-to-Speech service provided by Amazon Polly.

Non functional requirements

- AWS Polly
  - AWS SDK for Node.js
- Inquirer.js

Amazon Polly

It converts input text into life-like speech. Provide parameters and Amazon Polly then synthesizes the provided text into a high-quality speech audio stream.
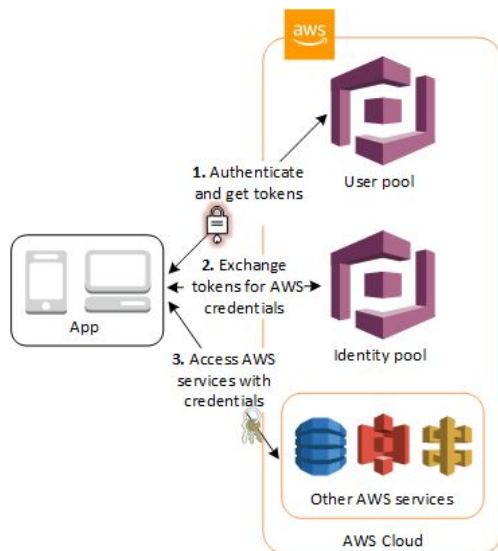
- The main flow can be described as follows

- More details about *SynthesizeSpeech method*
  - https://docs.aws.amazon.com/polly/latest/dg/API_SynthesizeSpeech.html

Authentication with Amazon Cognito

- Use Amazon Cognito to deliver temporary, limited-privilege credentials to your application, so that your users can access AWS resources.
- Amazon identity pool

Shared Folder Structure

Some of the configuration has to be present in the shared folder for the application to be able to perform properly. This shared folder will be provided by the Professor. The folder includes:

- sharedConfig.json
- Folder that includes the text files
- Folder that audio files will be saved to.

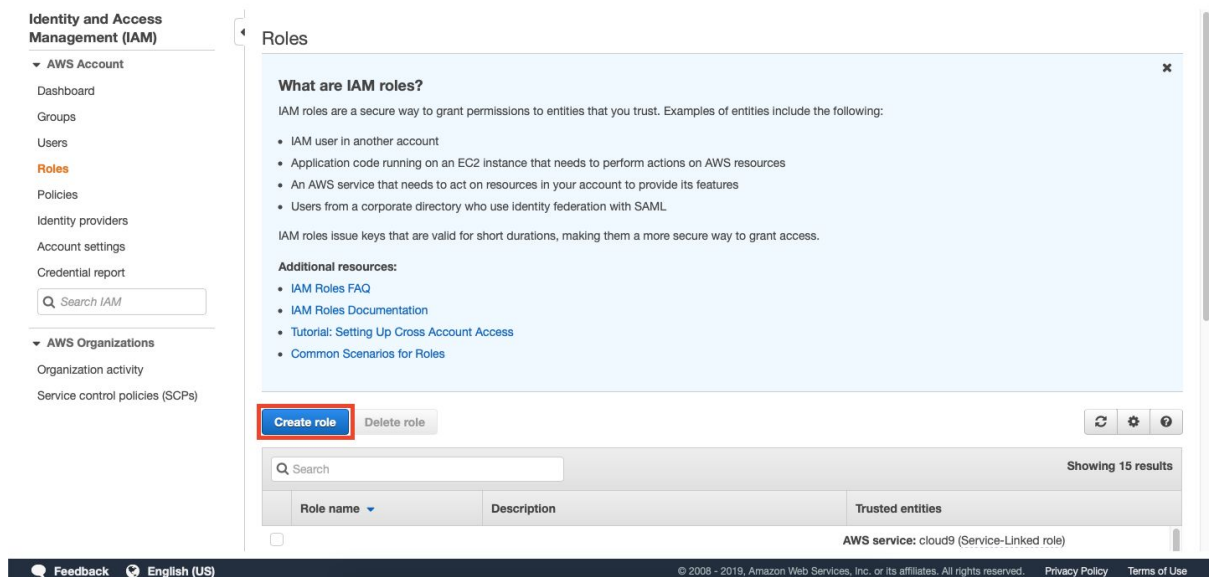sharedConfig.js file will include several configuration parameters:

- aws_pool_id: Identity pool id for the AWS Cognito Service
- text_folder: Name of the text folder
- audio_folder: Name of the audio folder
- default_voice: Default name of the voice id for the speech
- extra_voice_character: Character to be used to identify if there is an extra voice parameter within the text file.

Main Assumptions

- Shared folder exists.
- Contents of the shared folder and the sharedConfig.js file are coherent.
- All text files should have at least one SSML tag to be able to converted to audio
- Identity pool id for AWS Cognito service is valid

Prerequisites to Run The Application

1. Create a Role from AWS IAM service and assign AWS Polly full access for that specific role.
2. Create an Identity Pool from AWS Cognito Service.
3. Copy the application to a desired folder.
4. Open terminal/cmd in the same folder as the application
5. Write npm install, wait for it to finish.
6. Write node app.js, application will guide you.

Creating a Role in IAM Service
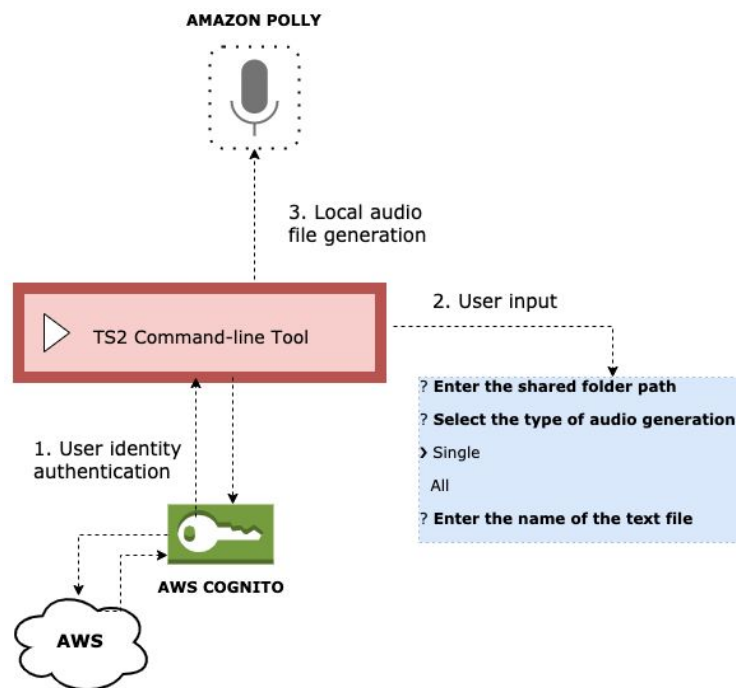
Creating an Identity Pool from Cognito Service

Identity Pool Id Location

Inquirer.js for Command Line Prompts

Collection of common interactive command line user interfaces.

More info: https://github.com/SBoudrias/Inquirer.js

Synthesize Speech Mindmap

AMAZON POLLY

3. Local audio
file generation

TS2 Command-line Tool

2. User input

? **Enter the shared folder path**

? **Select the type of audio generation**

❯ Single

All

? **Enter the name of the text file**

1. User identity
authentication

AWS COGNITO

AWS

Bibliography

Tutorials

- https://medium.com/@anaptfox/getting-started-with-amazon-polly-using-node-js-345e84dbd23d
- https://medium.com/@smcelhinney/building-a-greeting-app-using-amazon-polly-and-nodejs-a605f29c20f5
- https://trevorsullivan.net/2016/12/01/amazon-aws-cloud-polly-nodejs/

Amazon Cognito:

- https://docs.aws.amazon.com/cognito/latest/developerguide/getting-credentials.html