Management & Developers Tools

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AWS API

What is Application Programming Interface?

→ An API is software that allows two apps/servers to talk to each other. The most common API is via HTTP/s requests.

→ AWS API is an HTTP API and you can interact by sending HTTP requests, using an app interacting with APIs like "Postman."

AWS Management Console

It is a web-based unified console to build, manage & monitor everything in AWS by user.

AWS Tools for Powershell

It is a task automation & configuration management framework. A command line shell & scripting language.

AWS Tools for Powershell lets you interact with AWS API using powershell cmdlets.

Amazon Resource Names

ARN uniquely identifies AWS resources.

It has following formats:

ec2, s3, iam

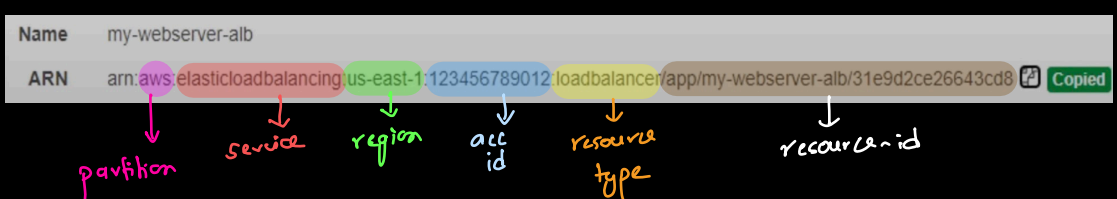
arn : partition : service : region : account-id : resource-id

arn : partition : service : region : account-id : resource-type / resource-id

arn : partition : service : region : account-id : resource-type : resource-id

partition:
- aws
- aws-cn (AWS China)
- aws-us-gov (AWS US gov)

Ex:



AWS CLI

What is a CLI?

→ CLI is a software that processes commands to a computer program in the form of lines of text.

What is Terminal?

→ Is a text only interface

What is a console?

→ A physical computer to physically input into a terminal

What is a shell?

→ A command line program that users interact

Ex: bash, Zsh, powershell etc.

AWS SDK

A software development Kit (SDK) is a collection of software development tools in one installable package.

You can use AWS SDK to programmically create, modify, delete or interact with AWS resources.

AWS SDK is offered in various prog. languages:

Java, Python, node.js, .uby, go etc..

Imagine you're building a photo-sharing app where users can upload their pictures, and these pictures need to be stored securely somewhere in the cloud. You've decided to use Amazon S3 (Simple Storage Service) to store these photos because it's reliable and scalable.Now, as a developer, you need to write code that uploads these photos to Amazon S3 whenever a user adds one. Instead of writing complex code to communicate with S3 directly (like figuring out how to authenticate, create requests, handle responses, etc.), you can use the AWS SDK.

How the AWS SDK Helps:

1 Set Up: First, you would install the AWS SDK in your app, which might be in Python, JavaScript, or another language you're using.

2 Configuration: You configure the SDK with your AWS credentials (like your access key and secret key) so that it knows who you are and what permissions you have.

3 Upload Photo: When a user uploads a photo, your app can call a simple method provided by the AWS SDK, like upload_file, and the SDK handles all the complicated stuff behind the scenes—connecting to S3, authenticating, and securely uploading the file.

```
import boto3

4
5 # Create an S3 client using the AWS SDK for Python (Boto3)
6 s3 = boto3.client('s3')
7
8 # Upload a photo to an S3 bucket
9 s3.upload_file('local_photo.jpg', 'my-photo-bucket', 'uploaded_photo.jpg')
10
```

11 Done!: The photo is now stored in Amazon S3, and you didn't have to worry about the low-level details. The SDK made it easy by providing you with simple methods to call.

In a nutshell:
The AWS SDK is like a friendly helper that takes care of all the hard work when your app needs to talk to AWS services. Instead of figuring out how to do everything from scratch, you just tell the SDK what you want to do, and it handles the rest.

Infrastructure as Code (IaC)

IaC: You can write a configuration script to automate creating, updating or destroying cloud infrastructure.

- IaC is a blueprint
- It allows you to easily share, version or inventory your infrastructure.

AWS has two offerings:

→ AWS CFN (Cloudformation)
CFN is a declarative IaC tool

→ AWS CDK
Is an imperative IaC tool