Cloud Formation Template (CFT)

Introduction

- It gives developers and systems administrators an easy way to create and manage a collection of related AWS resources, provisioning and updating them in an orderly and predictable fashion.
- Called as "**Infrastructure as Code**"

Objectives

- Create a standalone stack using the existing template.

Pre-Requisites

- AWS Account (Signup User) / IAM User Account
- Practical knowledge on AWS CLI / AWS Console
- Basic knowledge on AWS Resources and Cloud Formation Template
- Basic Understand on JSON
- Key Pair to access to login your instance (Assumed this document, you have already have the .pem key)

Template Components

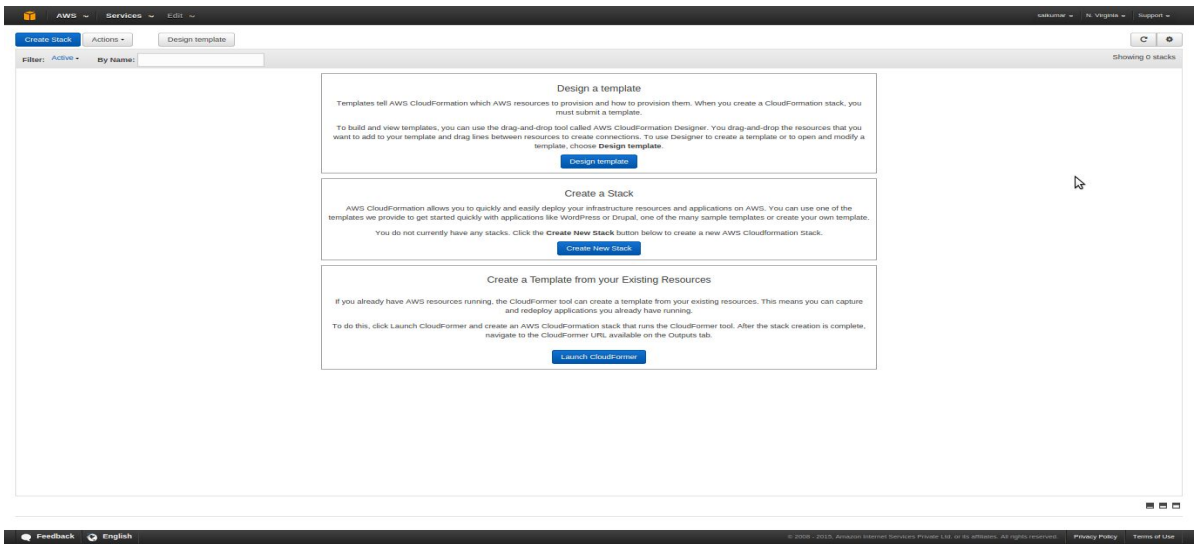
Key	Description
AWSTemplateFormatVersion	Specifies the AWS CloudFormation template version that the template conforms to. The template format version is not the same as the API or WSDL version.
Description	A text string that describes the template. This section must always follow the template format version section.
Parameters (optional)	Specifies values that you can pass in to your template at runtime (when you create or update a stack). You can refer to parameters in the Resources and Outputs sections of the template.
Mappings (optional)	A mapping of keys and associated values that you can use to specify conditional parameter values, similar to a lookup table. You can match a key to a corresponding value by using the Fn::FindInMap intrinsic function in the Resources and Outputs section.
Conditions	Defines conditions that control whether certain resources are created or whether certain resource properties are assigned a value during stack creation or update. For example, you could conditionally create a resource that depends on whether the stack is for a production or test environment.

Resources	Specifies the stack resources and their properties, such as an Amazon Elastic Compute Cloud instance or an Amazon Simple Storage Service bucket. You can refer to resources in the Resources and Outputs sections of the template.
Outputs (optional)	Describes the values that are returned whenever you view your stack's properties. For example, you can declare an output for an Amazon S3 bucket name and then call the aws cloudformation describe-stacks AWS CLI command to view the name.

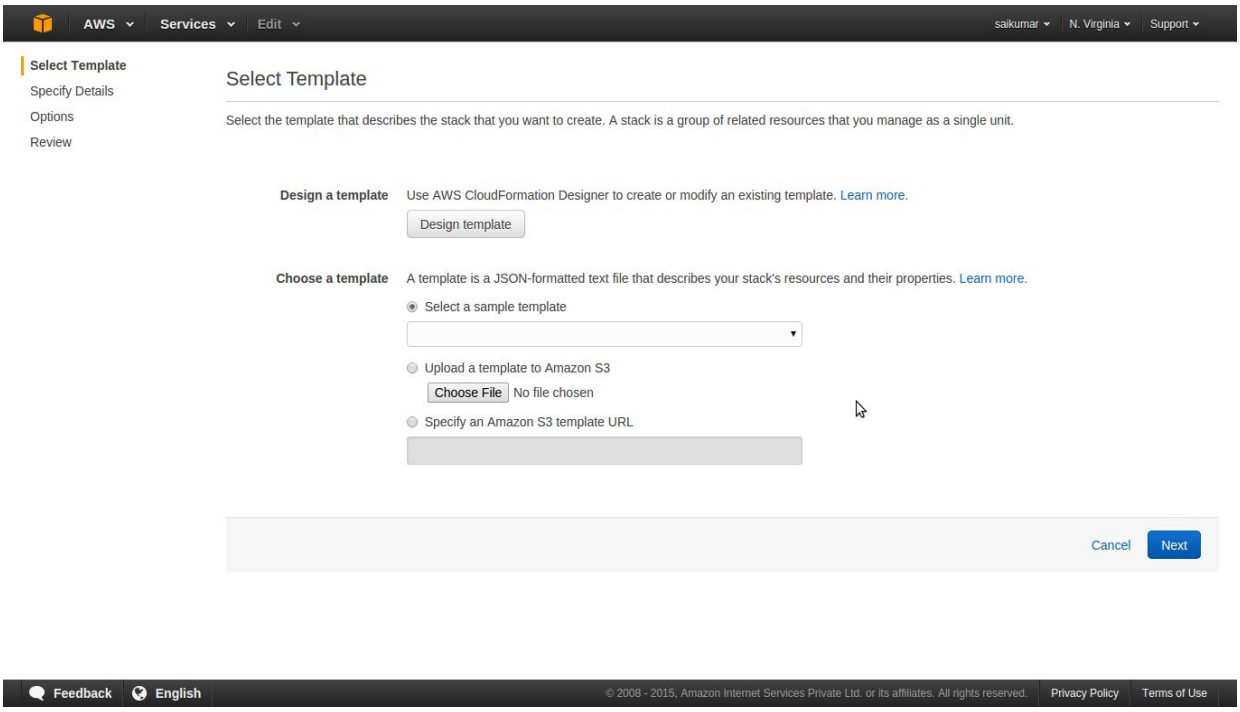
Instructions

Creating Stack Using CloudFormation Template

1. Login as Admin User/IAM User with the below URL
   https://aws.amazon.com/console/ [Admin User]
   https://My_AWS_Account_ID.signin.aws.amazon.com/console/ [IAM User]
2. Select the Region which you want run the cloud Formation Template (eg: ap-northeast-1 / us-east-1)
3. Check the AMI in template exists in the selected region or not (Note: If not, copy the AMI from one region to another region)
4. Select Services -> **CloudFormation** from Management Tools
5. Click on **Create Stack** on top of Header

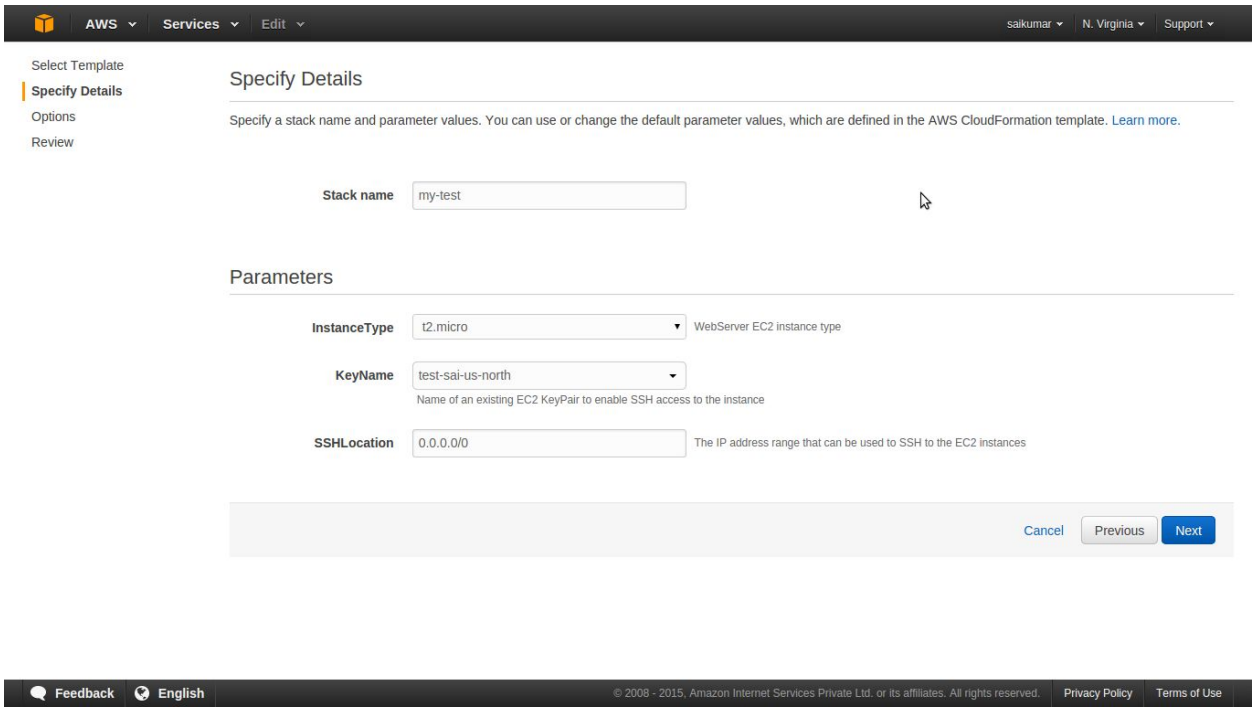


6. Pick a template (**<name>.template**) from the Local PC / Amazon S3 template URL

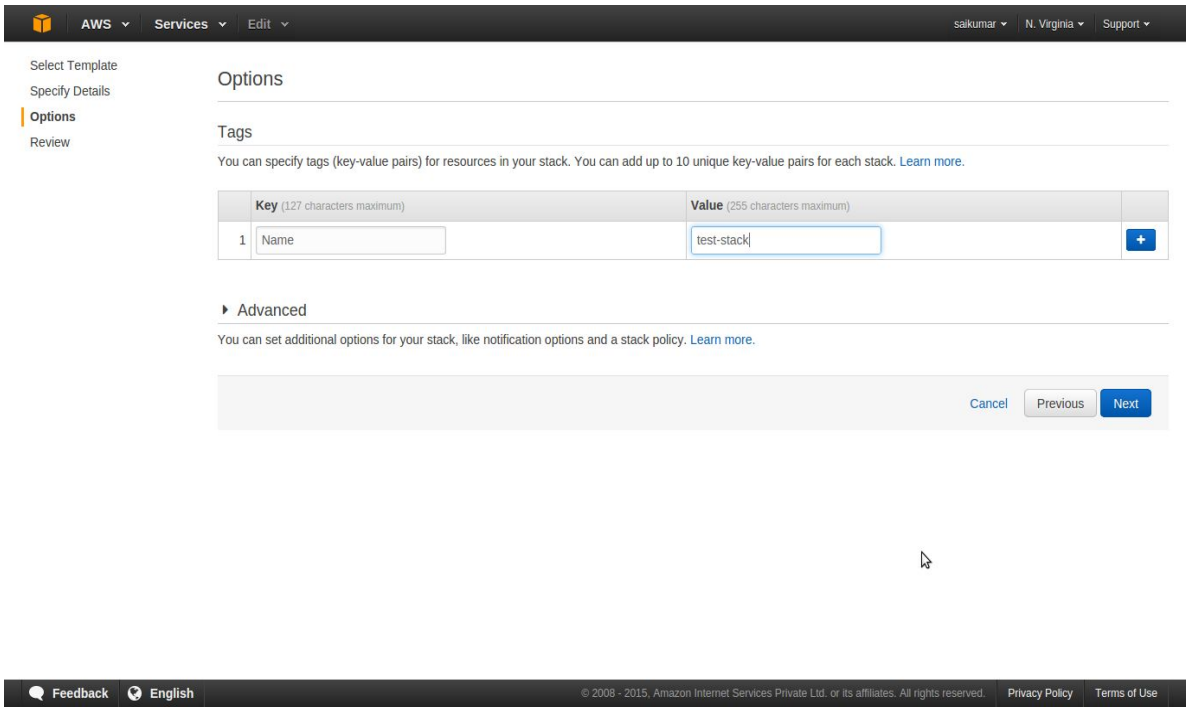


7. Click on Next

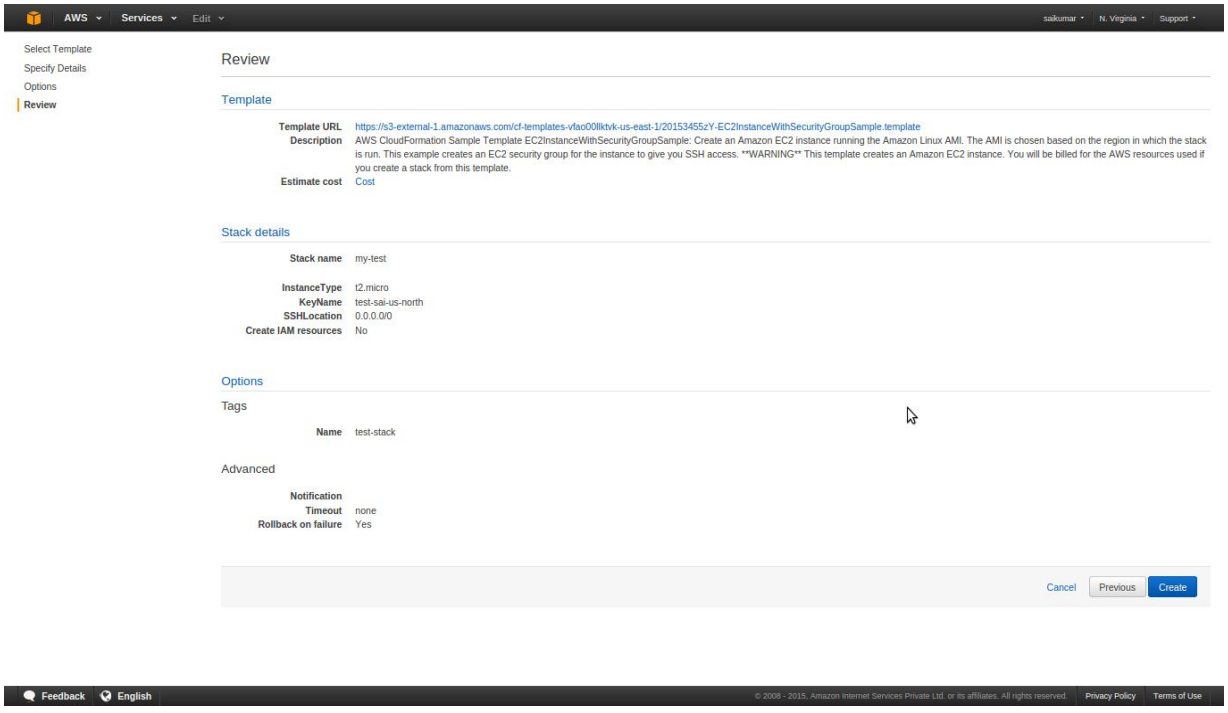
8. Give the Stack Name and Choose the appropriate Parameters



9. Click on Next
10. Create Tags, if you want (Help you identify and categorize those resources.)

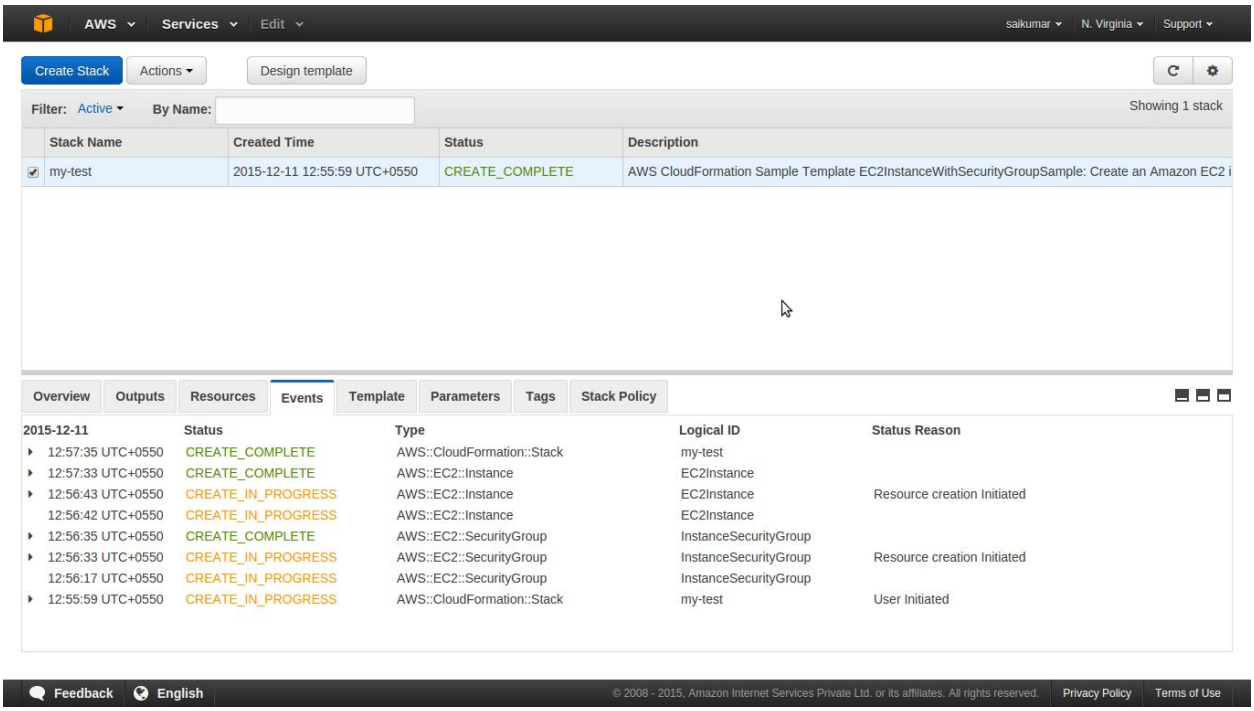


11. Click on Next
12. Review Created template, stack details before starting / Create the Stack

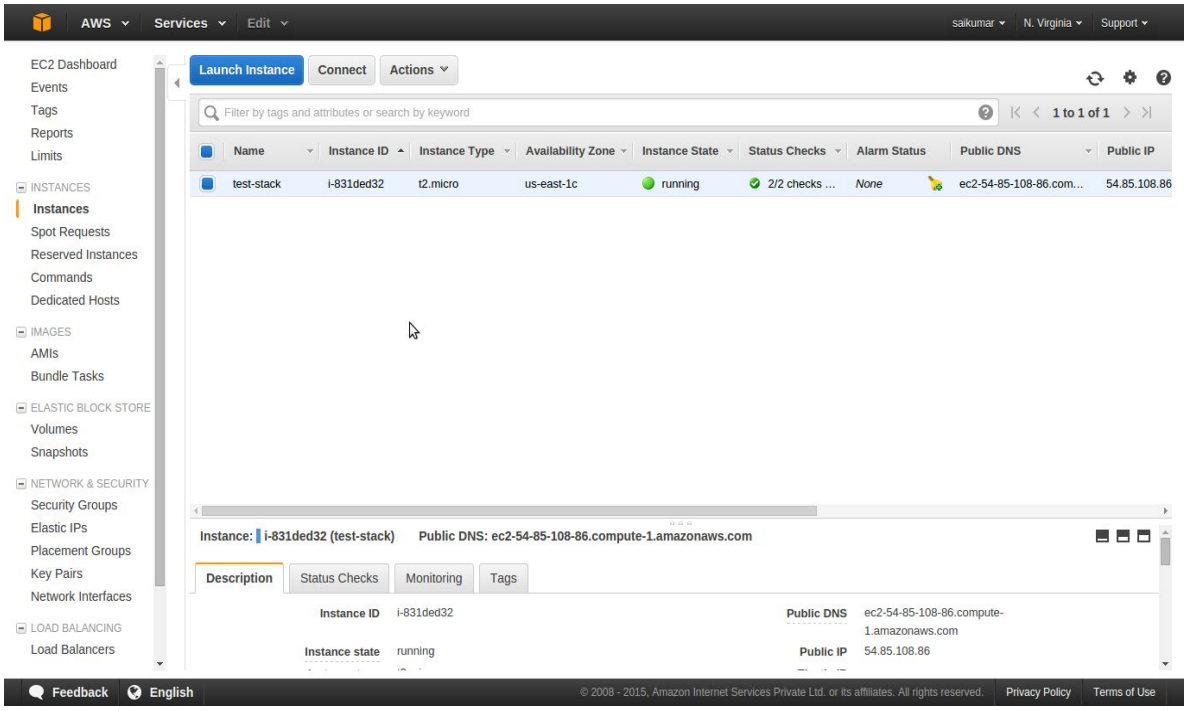


13. Click On Create and wait until completion

14. Check the Resources, OutPuts, Parameters, Tags … from the bottom section once after CREATE_COMPLETE

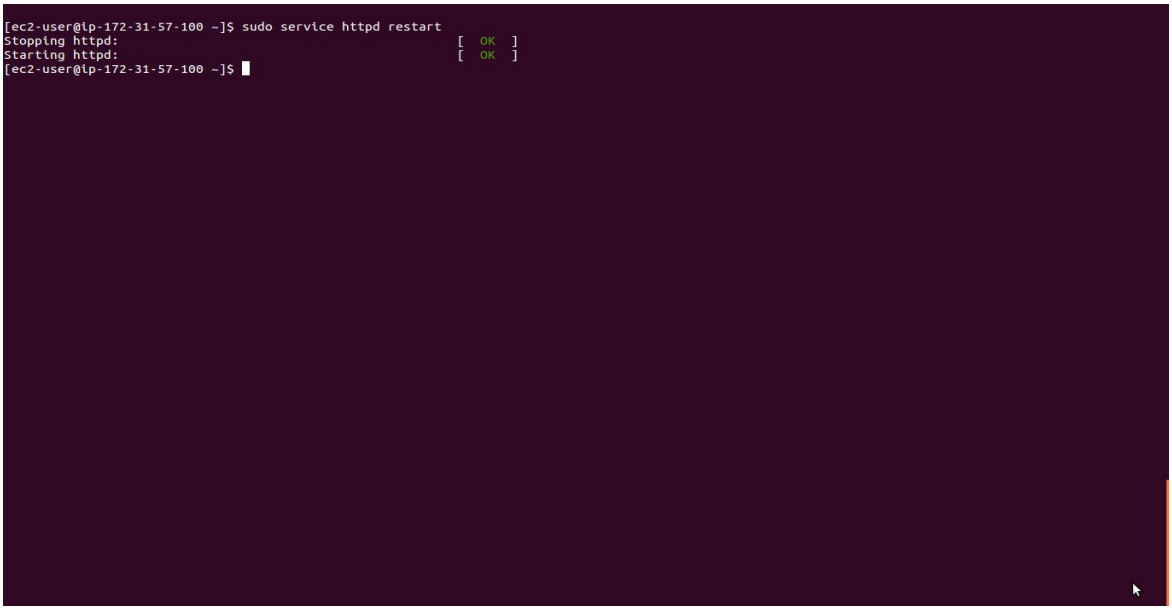


15. Check the Resources and go to relevant services and verify as per template, resources are created or not



Connecting to EC2 (Webserver) instance using SSH

- Open the Terminal
- Locating to Path and give the permission to the .pem key
  chmod 400 /path/my-key-pair.pem
- Login to ec2 using the below command
  ssh -i /path/my-key-pair.pem <user_name>@<instance_url>
- Verify that the fingerprint in the security alert matches the fingerprint
  ssh -i /path/my-key-pair.pem <user_name>@<instance_url>
- Install apache2 / httpd and test the server



Note : We can download the sample cloudformation templates by below URL:
http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/sample-templates-services-us-west-2.html

Copying Files

scp -ri <keyname.pem> <file path> <username>@<server-name/server-ip address>:<path>

To Download

scp -i </path/my-key-pair.pem> <user_name>@<instance_url>

***** Thank You *****

Sivaram