Module 3: Automating Infrastructure Using CloudFormation

Demo Document 3

edureka!

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Creating and configuring EC2 instance with the help of helper-scripts and sending signal back to CFN

Step 1: Write a CloudFormation Template as described below

Create EC2 resource with Metadata. We are installing httpd, creating an Html file and starting the httpd service

Mention UserData: Here, we are running the *cfn-init* and the *cfn-signal* script, after installing them

```
"UserData": {
    "Fn::Base64": {
        "Fn::Join": [
           mm,
                "#!/bin/bash -ex\n",
                "yum install -y aws-cfn-bootstrap\n",
                "# Install the files and packages from the metadata\n",
                "/opt/aws/bin/cfn-init -v ",
                          --stack ", { "Ref" : "AWS::StackName" },
                          --resource myInstance ",
                          --region ", { "Ref" : "AWS::Region" }, "\n",
                "# Signal the status from cfn-init\n",
                "/opt/aws/bin/cfn-signal -e $? ",
                          --stack ", { "Ref" : "AWS::StackName" },
                          -- resource myInstance",
                          --region ", { "Ref" : "AWS::Region" }, "\n"
   }
```

Mention Creation policy with timeout

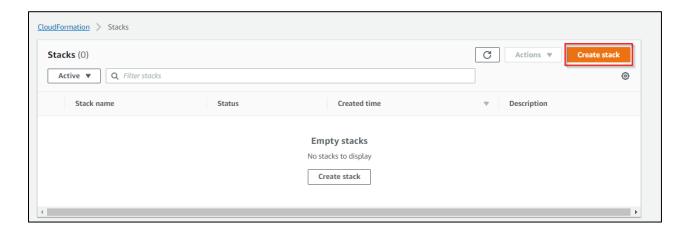
```
"CreationPolicy" : {
    "ResourceSignal" : {
        "Timeout" : "PT5M"
    }
}
```

Create a stack with this template. Make sure you provide correct values for keyname, AMI Id and Security group.

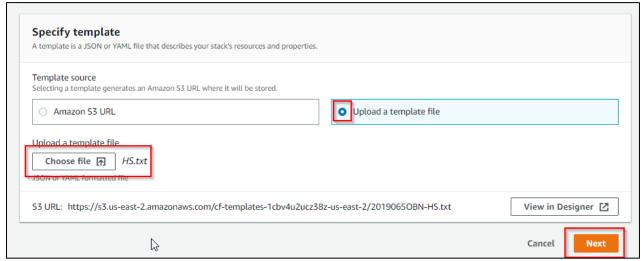
```
"Properties": {
    "KeyName": "<KeyName>",
    "ImageId": "<AMI ID>",
    "SecurityGroupIds" : ["<SecurityGroup>"],
```

```
{
  "AWSTemplateFormatVersion": "2010-09-09",
  "Resources": {
   "myInstance": {
     "Type": "AWS::EC2::Instance",
     "Metadata" : {
      "AWS::CloudFormation::Init": {
        "config": {
         "packages": {
          "yum": {
           "httpd":[]
          }},
         "files": {
          "/var/www/html/index.html": {
           "content" : {"Fn::Join" : ["",[ "This is created by cfn-init" ] ]},
           "mode": "000644",
           "owner": "root",
           "group": "root"
          }},
         "commands": {
          "StratApache":{
           "command": "service httpd start"
          }}}}},
     "Properties": {
        "KeyName": "Edureka 1",
        "ImageId": "ami-0cd3dfa4e37921605",
        "SecurityGroupIds": ["sg-097a44e119c4029a9"],
        "InstanceType": "t2.micro",
        "UserData": {
          "Fn::Base64": {
            "Fn::Join": [
              1111
               "#!/bin/bash -ex\n",
               "yum install -y aws-cfn-bootstrap\n",
               "# Install the files and packages from the metadata\n",
               "/opt/aws/bin/cfn-init -v ",
                     --stack ", { "Ref" : "AWS::StackName" },
                     --resource myInstance ",
                     --region ", { "Ref" : "AWS::Region" }, "\n",
               "# Signal the status from cfn-init\n",
               "/opt/aws/bin/cfn-signal -e $? ",
                     --stack ", { "Ref" : "AWS::StackName" },
                     --resource myInstance",
                     --region ", { "Ref" : "AWS::Region" }, "\n"
              ]] } },
   "CreationPolicy": {
    "ResourceSignal" : {
     "Timeout": "PT5M"
    } }}}
```

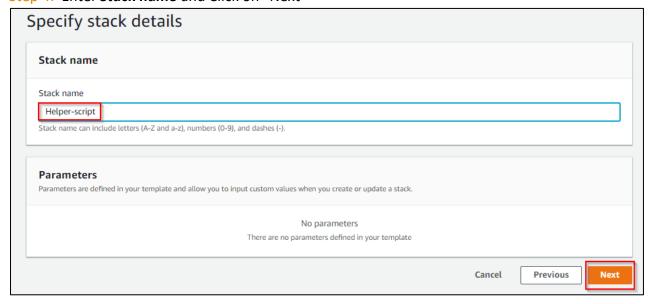
Step2: Go to AWS Management Console, Select CloudFormation and click on "Create stack"



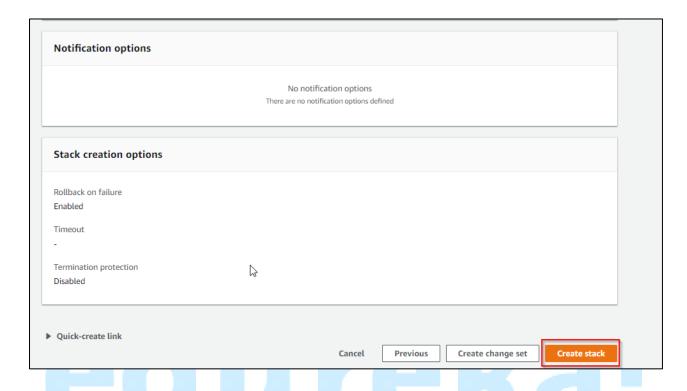
Step 3: Upload the created template on CloudFormation



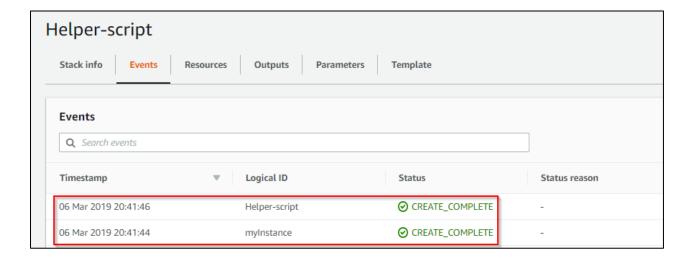
Step 4: Enter Stack name and Click on "Next"



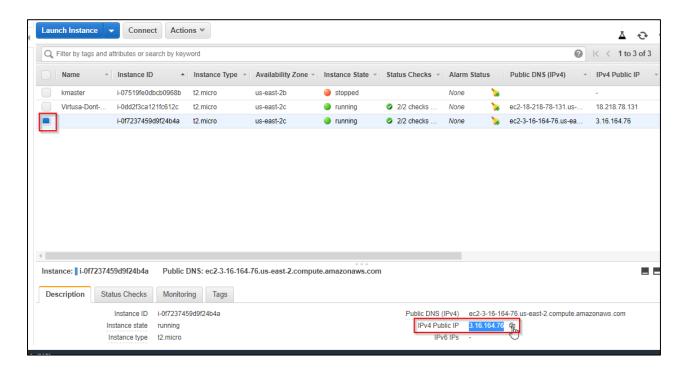
Step 5: Review the created template and click on "Create stack"



Step 6: Refresh the console page to check the status of stack creation



Step 6: Go to EC2 console and check the creation of Instance and later copy the IP Address



Step 7: SSH into the instance

Step 8: Check if httpd is installed and running using command

sudo service httpd status

```
Run "sudo yum update" to apply all updates.

[ec2-user@ip-172-31-44-7 ~]$ sudo service httpd status
httpd (pid 3002) is running...

[ecz-user@ip-1/2-31-44-/ ~]$
```

Step 9: Also check the created file

cat /var/www/html/index.html

Conclusion

We have successfully created and configured EC2 instance using helper script