

## **Activity 11 : Troubleshoot CloudFormation**

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IFT 562: Cloud Security & Operations for IT

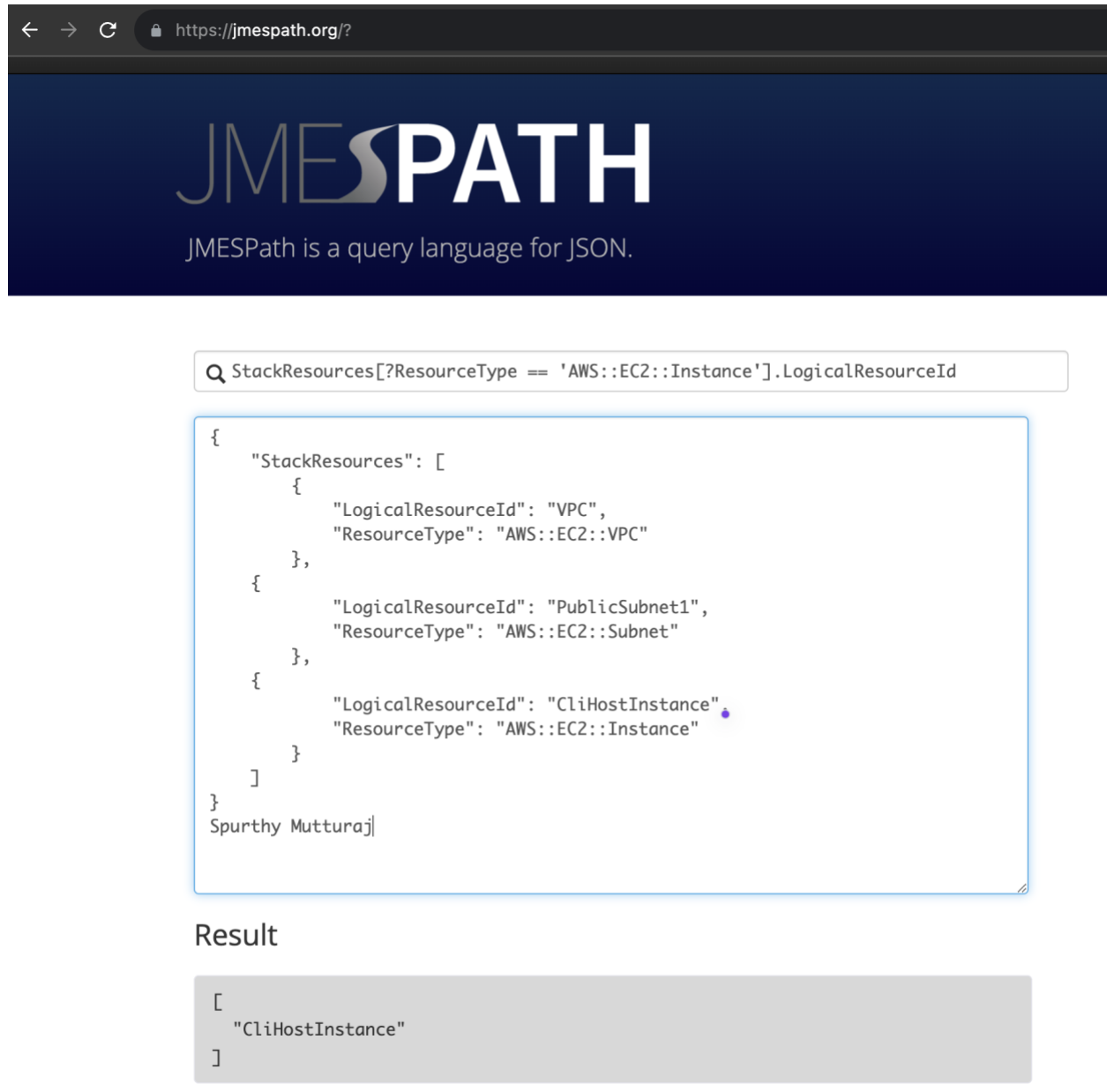
Daniel Wells

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## Activity 11 : Troubleshoot CloudFormation

**Figure 1**

*A screenshot showing Name and Tags.*



The screenshot shows the JMESPath website interface. The browser address bar displays `https://jmespath.org/`. The website header features the JMESPATH logo and the tagline "JMESPath is a query language for JSON." Below the header, a search bar contains the query `StackResources[?ResourceType == 'AWS::EC2::Instance'].LogicalResourceId`. The query results are displayed in a code editor, showing a JSON array of stack resources. The result is a single string, "CliHostInstance".

StackResources[?ResourceType == 'AWS::EC2::Instance'].LogicalResourceId

```
{
  "StackResources": [
    {
      "LogicalResourceId": "VPC",
      "ResourceType": "AWS::EC2::VPC"
    },
    {
      "LogicalResourceId": "PublicSubnet1",
      "ResourceType": "AWS::EC2::Subnet"
    },
    {
      "LogicalResourceId": "CliHostInstance",
      "ResourceType": "AWS::EC2::Instance"
    }
  ]
}
```

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**Result**

```
[
  "CliHostInstance"
]
```

Figure 2

*Screenshot of aws cloudformation describe-stacks command.*

```
Cloud SysOps — ec2-user@cli-host:~ — ssh -i labsuser.pem ec2-user@34.207.226.241 — 159x46
~/Desktop/Cloud SysOps — ec2-user@cli-host:~ — ssh -i labsuser.pem ec2-user@34.207.226.241

> --stack-name myStack \
> --query 'StackResources[*].[ResourceType,ResourceStatus]' \
> --output table
[ec2-user@cli-host ~]$ aws cloudformation describe-stacks \
> --stack-name myStack \
> --output table
```

DescribeStacks		
Stacks		
CreationTime	2023-10-07T19:29:22.894Z	
Description	Lab template	
DisableRollback	False	
EnableTerminationProtection	False	
StackId	arn:aws:cloudformation:us-east-1:755316856011:stack/myStack/10d6a590-6547-11ee-bbd1-0ee9ed0db7f3	
StackName	myStack	
StackStatus	CREATE_COMPLETE	
Capabilities		
CAPABILITY_NAMED_IAM		
DriftInformation		
StackDriftStatus	NOT_CHECKED	
Outputs		
OutputKey	OutputValue	
BucketName	mystack-mybucket-1x0a20xt2rssx	
PublicIP	3.89.185.198	
Parameters		
ParameterKey	ParameterValue	ResolvedValue
KeyName	vockey	
LabVpcCidr	10.0.0.0/20	
PublicSubnetCidr	10.0.0.0/24	
AmazonLinuxAMIID	/aws/service/ami-amazon-linux-latest/amzn2-ami-hvm-x86_64-gp2	ami-0d887a308369b6881

```
[ec2-user@cli-host ~]$ Spurthy Mutturaj
-bash: Spurthy: command not found
[ec2-user@cli-host ~]$
```

Figure 3

*Screenshot of the error.*

```
Cloud SysOps — ec2-user@cli-host:~ — ssh -i labsuser.pem ec2-user@34.207.226.241 — 159x46
~/Desktop/Cloud SysOps — ec2-user@cli-host:~ — ssh -i labsuser.pem ec2-user@34.207.226.241
+
| AWS::EC2::SubnetRouteTableAssociation | CREATE_COMPLETE | NOT_CHECKED |
| AWS::EC2::Subnet                     | CREATE_COMPLETE | IN_SYNC    |
| AWS::EC2::VPCGatewayAttachment       | CREATE_COMPLETE | NOT_CHECKED |
| AWS::CloudFormation::WaitCondition   | CREATE_COMPLETE | NOT_CHECKED |
| AWS::CloudFormation::WaitConditionHandle | CREATE_COMPLETE | NOT_CHECKED |
| AWS::EC2::SecurityGroup               | CREATE_COMPLETE | MODIFIED   |
| AWS::EC2::Instance                   | CREATE_COMPLETE | IN_SYNC    |
+-----+-----+-----+
[ec2-user@cli-host ~]$ aws cloudformation describe-stack-resource-drifts \
> --stack-name myStack \
> --stack-resource-drift-status-filters MODIFIED
{
  "StackResourceDrifts": [
    {
      "StackId": "arn:aws:cloudformation:us-east-1:755316856011:stack/myStack/10d6a590-6547-11ee-bbd1-0ee9ed0db7f3",
      "ActualProperties": "{\"GroupDescription\":\"Enable access to web server\",\"GroupName\":\"WebServerSG\",\"SecurityGroupIngress\":[{\"CidrIp\":\"75.237.42.89/32\",\"FromPort\":22,\"IpProtocol\":\"tcp\",\"ToPort\":22},{\"CidrIp\":\"0.0.0.0/0\",\"FromPort\":80,\"IpProtocol\":\"tcp\",\"ToPort\":80}],\"Tags\":[{\"Key\":\"Name\",\"Value\":\"WebServerSG\"}],\"VpcId\":\"vpc-03079ca87b29d39b1\"}",
      "ExpectedProperties": "{\"GroupDescription\":\"Enable access to web server\",\"GroupName\":\"WebServerSG\",\"SecurityGroupIngress\":[{\"CidrIp\":\"0.0.0.0/0\",\"FromPort\":22,\"IpProtocol\":\"tcp\",\"ToPort\":22},{\"CidrIp\":\"0.0.0.0/0\",\"FromPort\":80,\"IpProtocol\":\"tcp\",\"ToPort\":80}],\"Tags\":[{\"Key\":\"Name\",\"Value\":\"WebServerSG\"}],\"VpcId\":\"vpc-03079ca87b29d39b1\"}",
      "ResourceType": "AWS::EC2::SecurityGroup",
      "Timestamp": "2023-10-07T19:39:49.618Z",
      "PhysicalResourceId": "sg-01adc1d1f88a4b65f",
      "StackResourceDriftStatus": "MODIFIED",
      "PropertyDifferences": [
        {
          "PropertyPath": "/SecurityGroupIngress/0/CidrIp",
          "ActualValue": "75.237.42.89/32",
          "ExpectedValue": "0.0.0.0/0",
          "DifferenceType": "NOT_EQUAL"
        }
      ],
      "LogicalResourceId": "WebSecurityGroup"
    }
  ]
}
[ec2-user@cli-host ~]$ aws cloudformation update-stack \
> --stack-name myStack \
> --template-body file://template1.yaml \
> --parameters ParameterKey=KeyName,ParameterValue=vockey

An error occurred (ValidationError) when calling the UpdateStack operation: No updates are to be performed.
[ec2-user@cli-host ~]$ Spurthy Mutturaj
-bash: Spurthy: command not found
[ec2-user@cli-host ~]$
```

Figure 4.

*Screenshot of the deleting the stack but keeping the files.*

```
Cloud SysOps — ec2-user@cli-host:~ — ssh -i labsuser.pem ec2-user@34.207.226.241 — 163x48
~/Desktop/Cloud SysOps — ec2-user@cli-host:~ — ssh -i labsuser.pem ec2-user@34.207.226.241

[ec2-user@cli-host ~]$ aws cloudformation describe-stack-resources --stack-name myStack --query "StackResources[?PhysicalResourceId='mystack-mybucket-1x0a20xt2rssx'].LogicalResourceId"
{
  "MyBucket"
}

[ec2-user@cli-host ~]$ aws cloudformation delete-stack
Note: AWS CLI version 2, the latest major version of the AWS CLI, is now stable and recommended for general use. For more information, see the AWS CLI version 2 in
stallation instructions at: https://docs.aws.amazon.com/cli/latest/userguide/install-cliv2.html

usage: aws [options] <command> [<subcommand>] [<subcommand> ...] [parameters]
To see help text, you can run:

    aws help
    aws <command> help
    aws <command> <subcommand> help
aws: error: argument --stack-name is required
[ec2-user@cli-host ~]$ aws cloudformation delete-stack
Note: AWS CLI version 2, the latest major version of the AWS CLI, is now stable and recommended for general use. For more information, see the AWS CLI version 2 in
stallation instructions at: https://docs.aws.amazon.com/cli/latest/userguide/install-cliv2.html

usage: aws [options] <command> [<subcommand>] [<subcommand> ...] [parameters]
To see help text, you can run:

    aws help
    aws <command> help
    aws <command> <subcommand> help
aws: error: argument --stack-name is required
[ec2-user@cli-host ~]$ aws cloudformation delete-stack --stack-name myStack --retain-resources "MyBucket"
[ec2-user@cli-host ~]$ watch -n 5 -d \
> aws cloudformation describe-stack-resources \
> --stack-name myStack \
> --query 'StackResources[*].[ResourceType,ResourceStatus]' \
> --output table
[ec2-user@cli-host ~]$ watch -n 5 -d \
> aws cloudformation describe-stacks \
> --stack-name myStack \
> --output table
[ec2-user@cli-host ~]$ $purthy Mutturaj
-bash: $purthy: command not found
[ec2-user@cli-host ~]$ > aws cloudformation describe-stack-resources \
> --stack-name myStack
-bash: cloudformation: command not found
[ec2-user@cli-host ~]$ aws cloudformation describe-stack-resources \
> --stack-name myStack
An error occurred (ValidationError) when calling the DescribeStackResources operation: Stack with id myStack does not exist
[ec2-user@cli-host ~]$
```