



Change Set

1. Now in this lab you are going to learn about change set in CloudFormation.
2. One of the most important things I feel for life or production systems. When you have a stack life up and running and you want to make change, you really need to see what this change is going to or how this change is going to affect your existing resources.
3. Now navigate to CloudFormation, where you will create a stack using the template available on GitHub.
4. In this code below you will notice that is same as the previous YAML code which you used in the previous lab.
5. So, using the same code or template you are going to create your stack.

```
1 Resources:
2   MyInstance:
3     Type: AWS::EC2::Instance
4     Properties:
5       InstanceType: t2.small
6       ImageId: ami-06e54d05255faf8f6
7       Tags:
8         - Key: "Name"
9           Value: !Join ["-", [demo, instance, from, cloudformation]]
```

6. Here you can see that I've uploaded my template and created a stack.

Prerequisite - Prepare template

Prepare template
Every stack is based on a template. A template is a JSON or YAML file that contains configuration information about the AWS resources you want to include in the stack.

Template is ready Use a sample template Create template in Designer

Specify template
A template is a JSON or YAML file that describes your stack's resources and properties.

Template source
Selecting a template generates an Amazon S3 URL where it will be stored.

Amazon S3 URL
Provide an Amazon S3 URL to your template. Upload a template file
Upload your template directly to the console. Sync from Git - new
Sync a template from your Git repository.

Upload a template file

changeset.yaml
JSON or YAML formatted file

S3 URL: <https://s3.ap-south-1.amazonaws.com/cf-templates-kmi81w4ukk76-ap-south-1/2024-02-21T074111.264Zdtu-changeset.yaml>

7. But I got an error which says that the AMI ID that I am using here does not exist.
8. So, always remember to change the AMI ID while you are uploading the code.
9. Now, I will change the AMI ID and reupload my code.

The screenshot shows two side-by-side CloudFormation interfaces. On the left, the 'Stacks' page displays a single stack named 'changeset' with a status of 'ROLLBACK_COMPLETE'. On the right, the 'Events' page lists six events corresponding to the stack's creation and rollback process. The events include:

- 2024-02-21 13:11:45 UTC+0530: changeset, Status: ROLLBACK_COMPLETE
- 2024-02-21 13:11:45 UTC+0530: MyInstance, Status: DELETE_COMPLETE
- 2024-02-21 13:11:43 UTC+0530: changeset, Status: ROLLBACK_IN_PROGRESS
- 2024-02-21 13:11:42 UTC+0530: MyInstance, Status: CREATE_FAILED
- 2024-02-21 13:11:42 UTC+0530: MyInstance, Status: CREATE_FAILED (details: The image id '[ami-06e54d05255faf8f6]' does not exist (Service: AmazonEC2; Status Code: 400; Error Code: InvalidAMIID.NotFound; Request ID: 455107be-7d6a-4473-9b28-1de2065cf61a; Proxy: null))
- 2024-02-21 13:11:42 UTC+0530: MyInstance, Status: CREATE_FAILED (details: The following resource(s) failed to create: [MyInstance]. Rollback requested by user.)

10. I've changed the AMI ID and re-uploaded the template and you can see that the stack has been created successfully.

The screenshot shows the same two pages as before. Now, the 'Stacks' page shows the 'changeset' stack in 'CREATE_COMPLETE' status. The 'Events' page shows five events for the stack's creation process:

- 2024-02-21 13:16:08 UTC+0530: changeset, Status: CREATE_COMPLETE
- 2024-02-21 13:16:08 UTC+0530: MyInstance, Status: CREATE_COMPLETE
- 2024-02-21 13:15:36 UTC+0530: MyInstance, Status: CREATE_IN_PROGRESS, Status reason: Resource creation Initiated
- 2024-02-21 13:15:35 UTC+0530: MyInstance, Status: CREATE_IN_PROGRESS
- 2024-02-21 13:15:33 UTC+0530: changeset, Status: CREATE_IN_PROGRESS, Status reason: User Initiated

11. Now if I pay a visit to EC2 you will that an instance has been created.

The screenshot shows the 'Instances' page. It displays a single instance named 'demo-instance-from-cloudformation' in the 'running' state. The instance details include:

- Details:** Name: demo-instance-from-cloudformation, Instance ID: i-0022c392e3162fdb3, Instance state: Running, Instance type: t2.small, Status check: Initializing, Alarm status: View alarms, Availability Z: ap-south-1a.
- Public IP Address:** 13.127.159.82
- Private IP Address:** 172.31.47.245
- Public DNS:** ec2-13-127-159-82.ap-south-1.compute.amazonaws.com

12. Now I am going to make some changes in the code majorly in the Value part of the code.

13. So, basically I've change the value which will change the name of the instance.

```
1 Resources:
2   MyInstance:
3     Type: AWS::EC2::Instance
4     Properties:
5       InstanceType: t2.small
6       ImageId: ami-06b72b3b2a773be2b
7       Tags:
8         - Key: "Name"
9           Value: "demo-change-1"
```

14. Now on the cloud formation from the given options I will choose to update my stack.
Click on it.



15. Here I choose to replace my current template. And then I will upload my new template.
Then just create my stack.

Prerequisite - Prepare template

Prepare template
Every stack is based on a template. A template is a JSON or YAML file that contains configuration information about the AWS resources you want to include in the stack.

Use current template Replace current template Edit template in designer

Specify template
A template is a JSON or YAML file that describes your stack's resources and properties.

Template source
Selecting a template generates an Amazon S3 URL where it will be stored.

Amazon S3 URL Upload a template file

Upload a template file

changeset.yaml

JSON or YAML formatted file

S3 URL: <https://s3.ap-south-1.amazonaws.com/cf-templates-kmi81w4ukk76-ap-south-1/2024-02-21T075101.423Zdpw-changeset.yaml>

16. And on the review page before submitting at the bottom I can see that there is only one change that has been made. It also shows that the template has been modified.

17. Then just click on submit.

Change set preview

Changes (1)					
<input type="text"/> Search changes					
Action	Logical ID	Physical ID	Resource type	Replacement	Module
Modify	MyInstance	i-0022c392e3162fdb3	AWS::EC2::Instance	False	-

[View change set](#) [Cancel](#) [Previous](#) [Submit](#)

18. Now you will see that it is updating my template. Once the update is complete it means that the changes has been made successfully.

The screenshot shows two side-by-side CloudFormation interfaces. On the left, the 'Stacks' section displays a single stack named 'changeset' with one active resource: 'MyInstance' (Logical ID: 'MyInstance', Physical ID: 'i-0022c392e3162fdb3'). On the right, the 'changeset' section shows the 'Events' tab with a list of 10 events. The events are as follows:

Timestamp	Logical ID	Status	Status reason
2024-02-21 13:23:42 UTC+0530	changeset	UPDATE_COMPLETE	-
2024-02-21 13:23:42 UTC+0530	changeset	UPDATE_COMPLETE_CLEANUP_IN_PROGRESS	-
2024-02-21 13:23:41 UTC+0530	MyInstance	UPDATE_COMPLETE	-
2024-02-21 13:23:25 UTC+0530	MyInstance	UPDATE_IN_PROGRESS	-
2024-02-21 13:23:22 UTC+0530	changeset	UPDATE_IN_PROGRESS	User Initiated
2024-02-21 13:23:00 UTC+0530	changeset	UPDATE_IN_PROGRESS	-
2024-02-21 13:22:58 UTC+0530	changeset	UPDATE_IN_PROGRESS	-
2024-02-21 13:22:55 UTC+0530	changeset	UPDATE_IN_PROGRESS	-
2024-02-21 13:22:52 UTC+0530	changeset	UPDATE_IN_PROGRESS	-

19. Now if I go back to EC2 there also I will see the changes that has been made.

The screenshot shows the AWS EC2 Instances page. It lists a single instance named 'demo-change-1' with the following details:

- Instance ID: i-0022c392e3162fdb3
- Instance state: Running
- Instance type: t2.small
- Status check: 2/2 checks passed
- Alarm status: View alarms
- Availability Zone: ap-south-1a

The instance summary details are as follows:

Instance ID	Public IPv4 address	Private IPv4 addresses
i-0022c392e3162fdb3 (demo-change-1)	13.127.159.82	172.31.47.245
IPv6 address	Running	ec2-13-127-159-82.ap-south-1.compute.amazonaws.com

20. You can also try and change the instance type and AMI IDs but this will just incur charges on your account.

21. Once you are done just delete your stack and move to next lab.