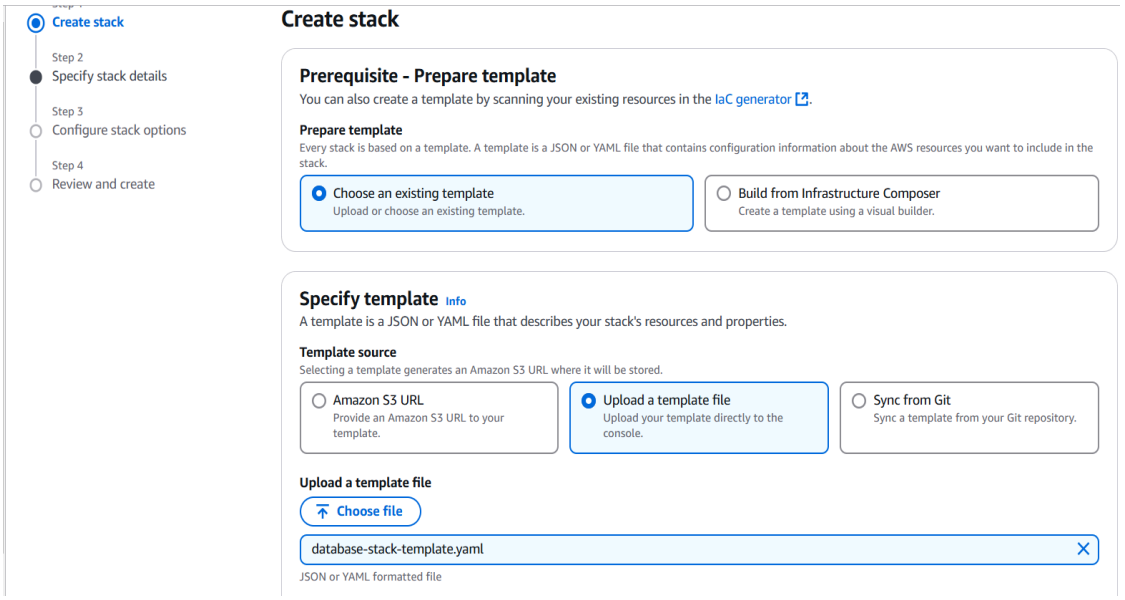
Creating a Change Set using the Current Template

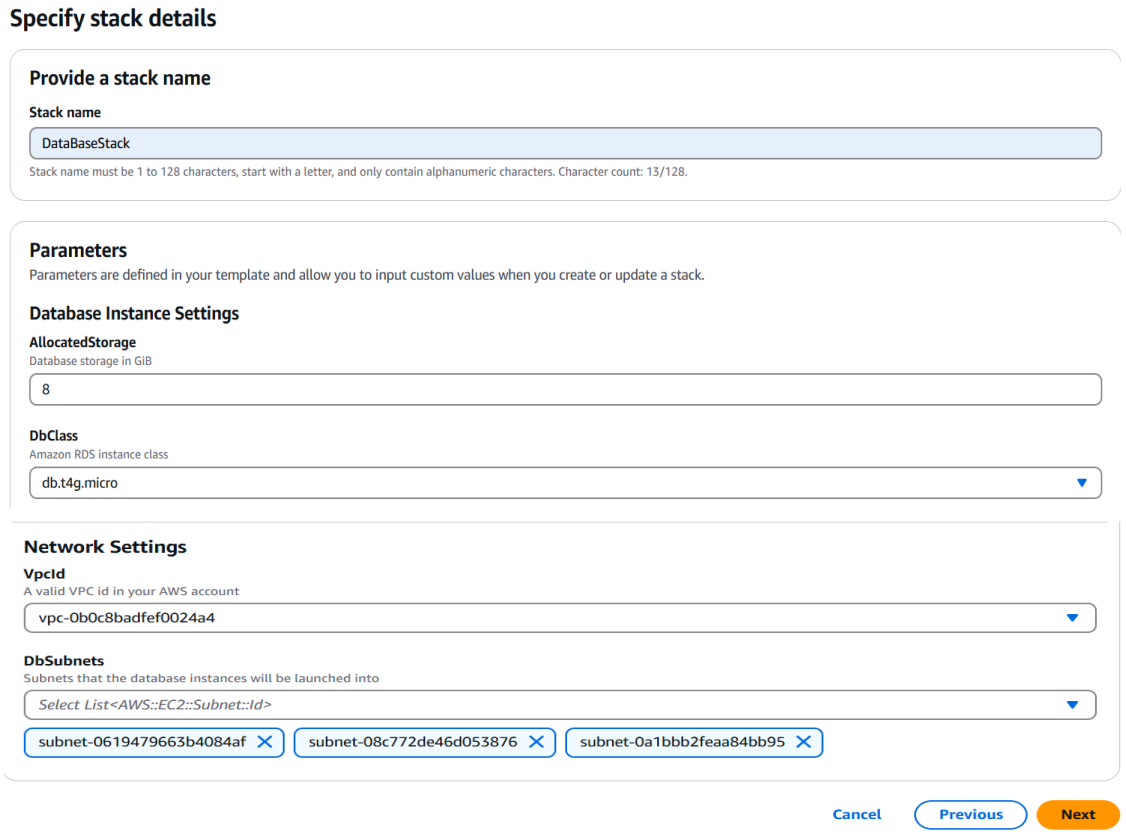
In AWS CloudFormation, creating a change set involves modifying a stack's configuration safely before applying changes. First, upload the template, name the stack (e.g., "DatabaseStack"), and set default parameters. After creation, initiate a change set via "Actions," using the current template or uploading a modified one (e.g., changing DB engine or storage size). Provide a description, review settings, and confirm creation. Review the change set details and verify no changes occur until executed. Validate changes, including template and parameters, or handle errors (e.g., exceeding constraints). End by confirming the stack's updated status on the "Events" tab after execution.

Activity

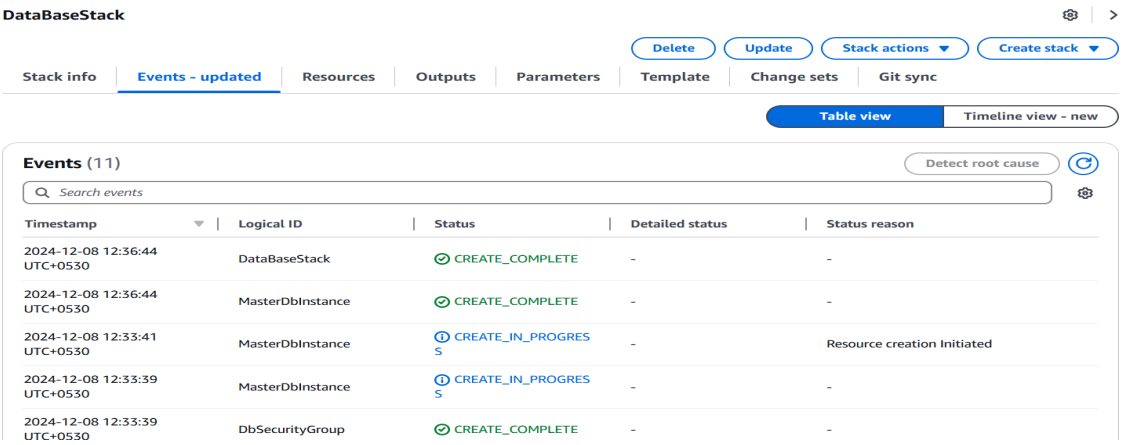
1. Find the template files in our GitHub repository under the same name as the heading for easy access and edits. Find and Save the attached template locally, open it in VS Code for edits.
2. Open AWS CloudFormation Console.
3. Click "Create stack" and upload the provided database stack template.



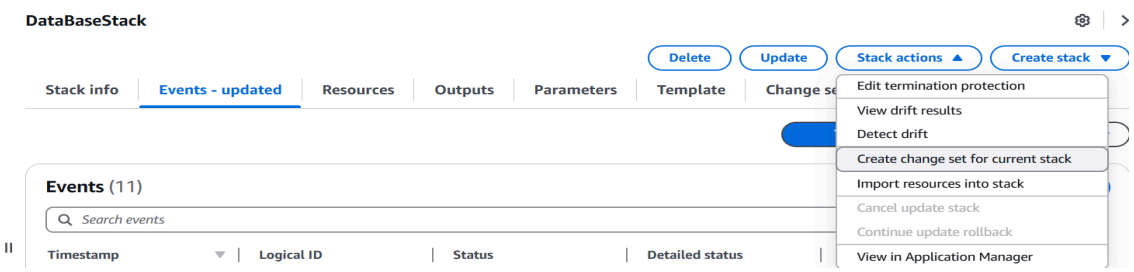
4. Name the stack "DatabaseStack" and keep default parameters for AllocatedStorage and DbClass. Select an existing VPC and subnets for the database instances.



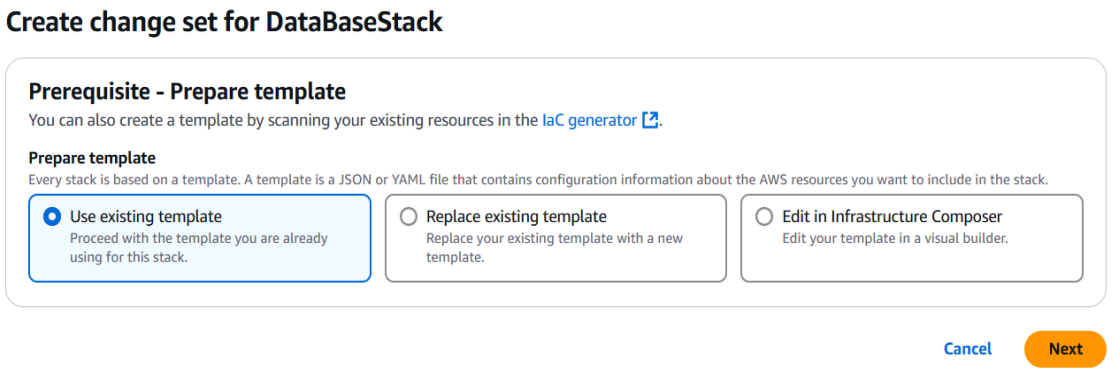
5. Proceed through the steps, click "Create stack," and wait for completion.



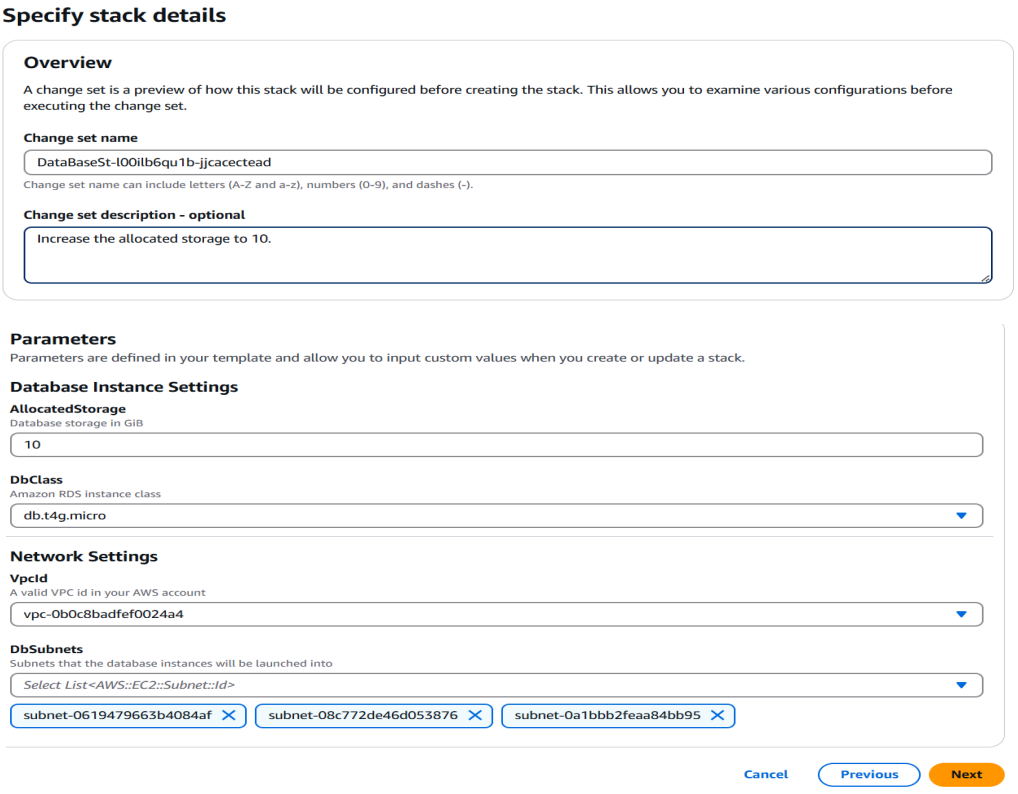
6. On stack completion, navigate to the stack details page. Open the "Actions" menu and select "Create change set."



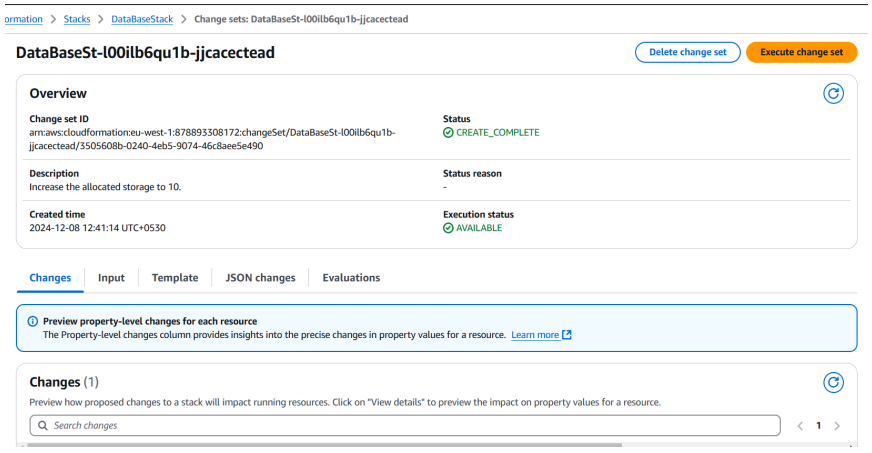
7. Choose "Use current template”, click "Next,".



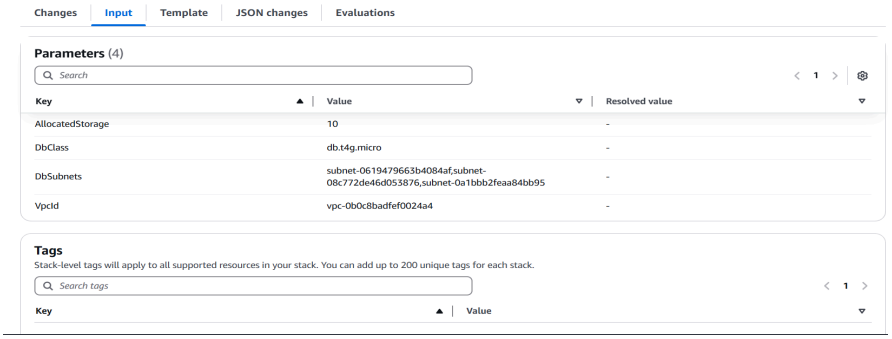
8. Add a description for the change set, e.g., "Increase allocated storage to 10 and modify AllocatedStorage to 10. Leave other parameters unchanged and proceed by clicking "Next" through optional settings.

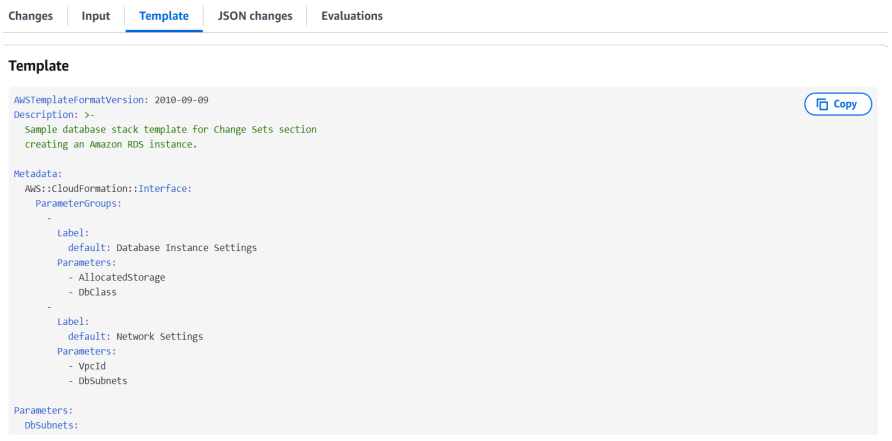


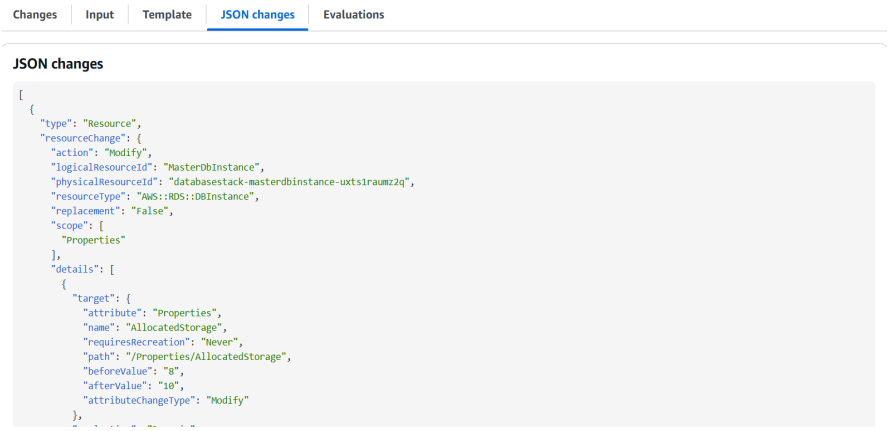
9. On the Review page, confirm details and click "Create change set”.



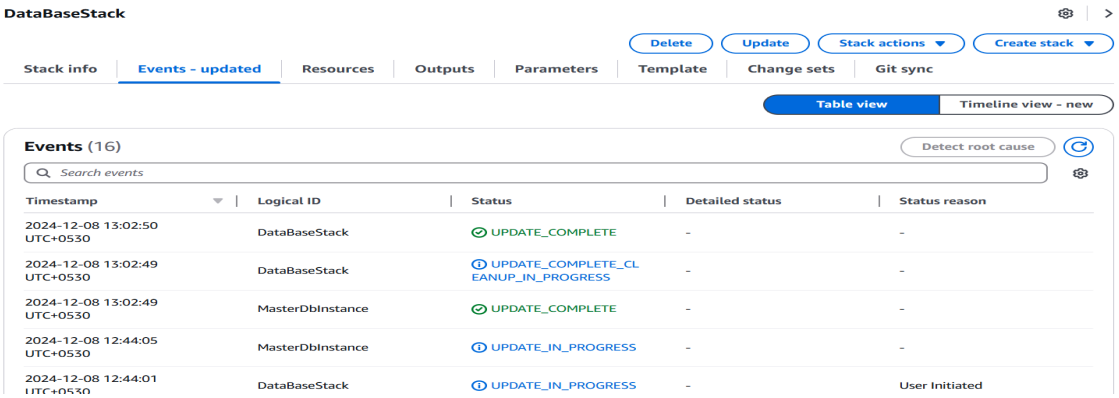
10. Wait for the change set status to update to CREATE_COMPLETE.
11. View the change set details, including template, JSON changes, and inputs. Verify no changes are made to the stack until the change set is executed.







12. Access the "Change sets" list to review all change sets for the stack.
13. End with the stack status verification on the Events tab.

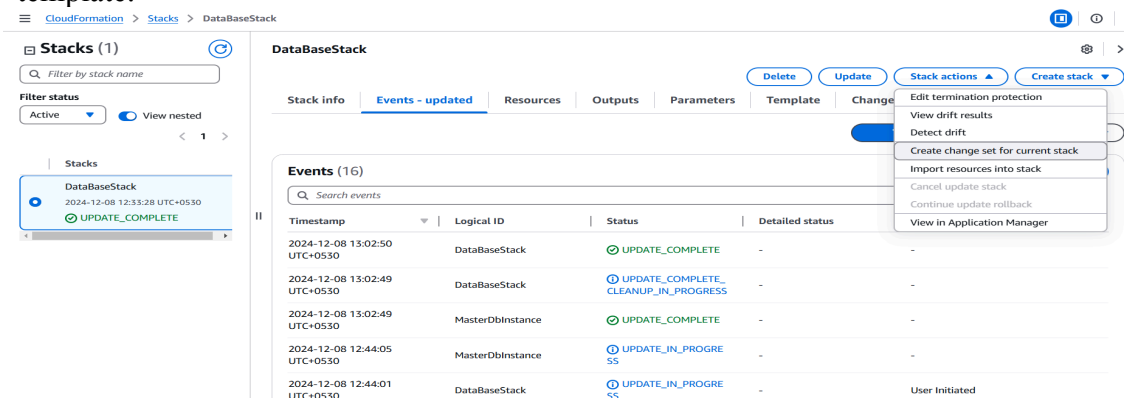


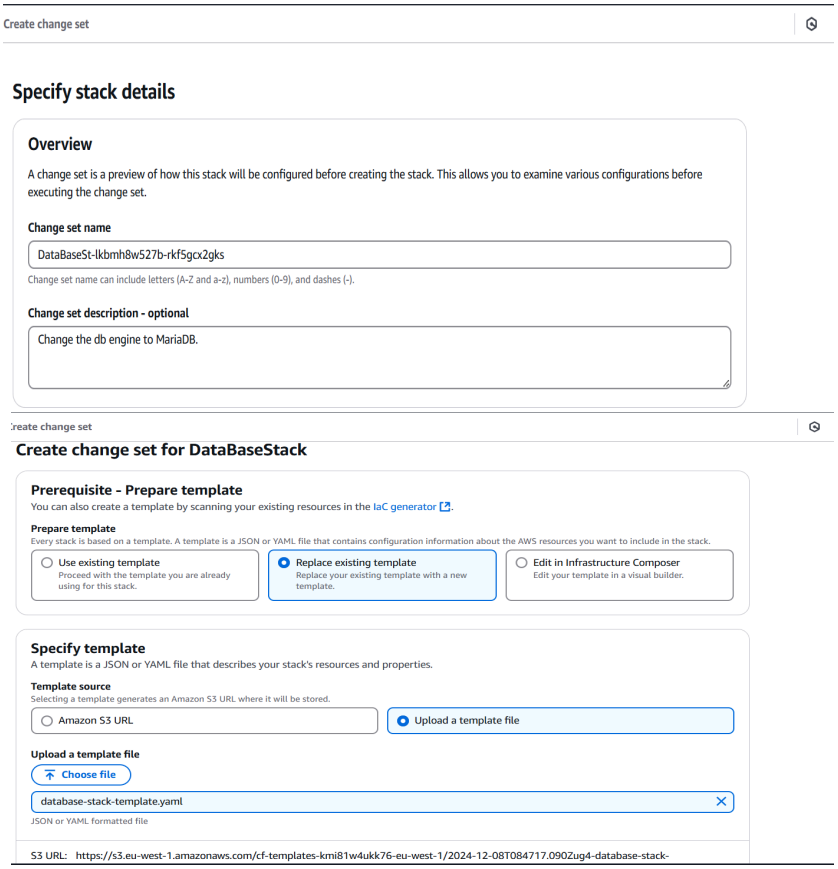
Creating a Change Set by Replacing the Template

1. Find the template files in our GitHub repository under the same name as the heading for easy access and edits. Find and Save the attached template locally, open it in VS Code for edits.
2. Open the database stack template and change the DB engine from MySQL to MariaDB.

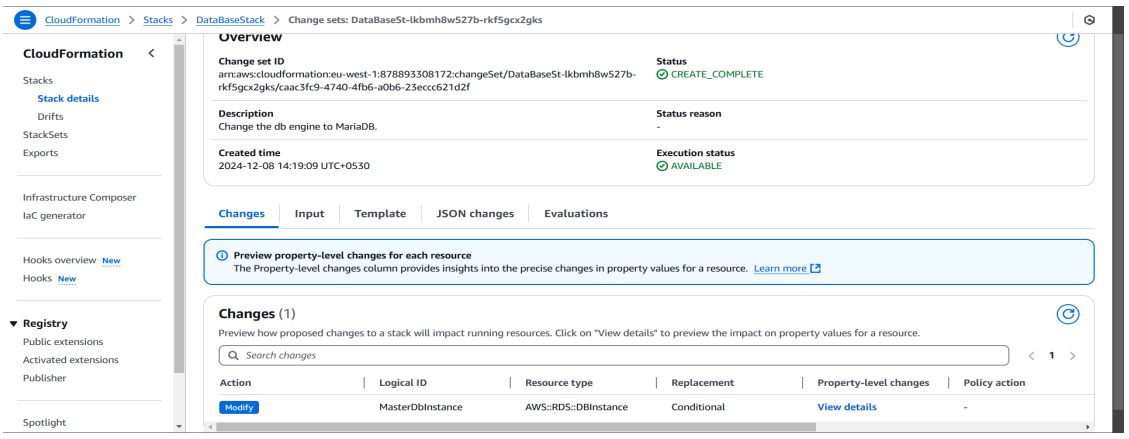
```
60    MasterDbInstance:
61      Type: AWS::RDS::DBInstance
62      DeletionPolicy: Delete
63      Properties:
64        BackupRetentionPeriod: 0
65        DBInstanceClass: !Ref DbClass
66        Engine: mariadb
67        MultiAZ: false
```

3. Save the modified template locally.
4. Go to AWS CloudFormation Console and navigate to the Change sets list. Click "Create change set,". Add a description like "Change the DB engine to MariaDB" and click "Create change set."select "Replace current template," and upload the modified template.

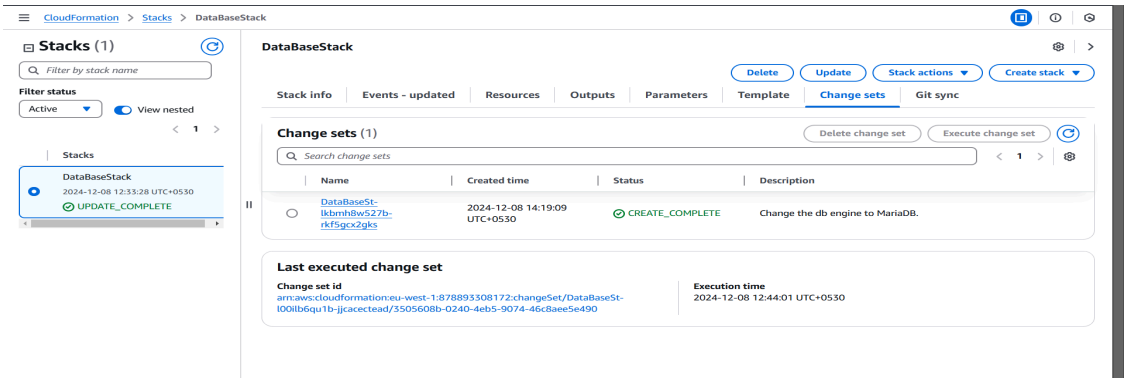




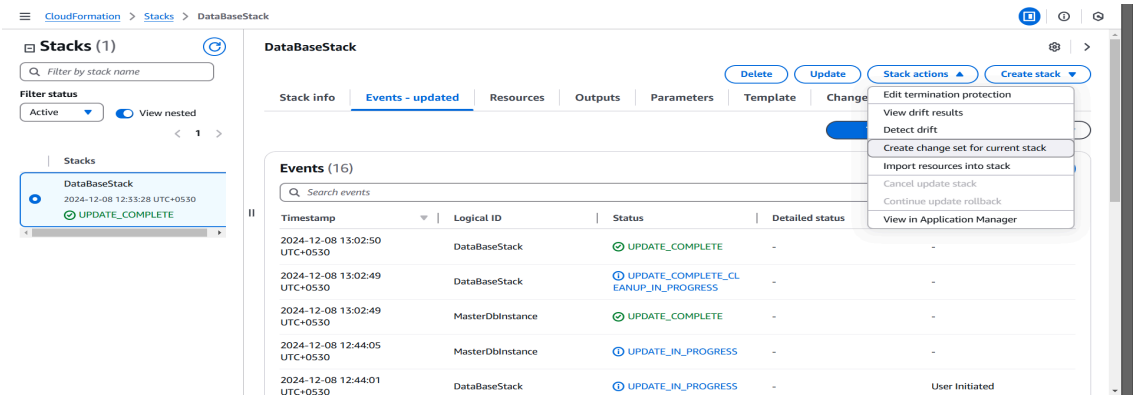
5. Click "Next" without changing parameter values, then proceed to the Review page.
6. Wait for the change set to move from CREATE_PENDING to CREATE_COMPLETE status.

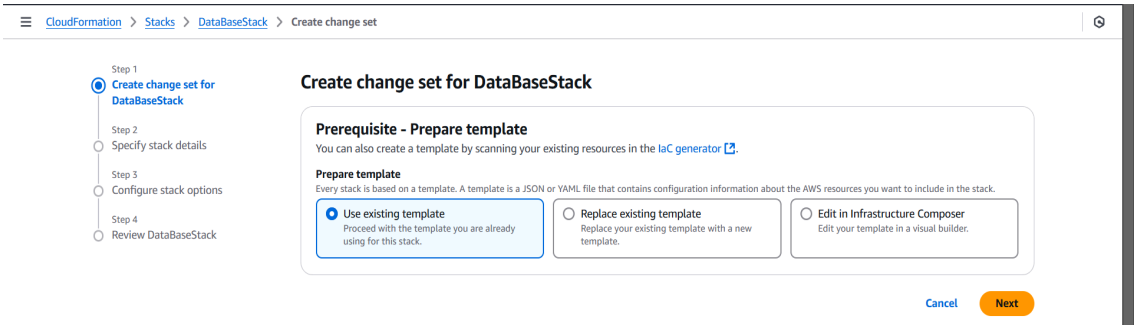


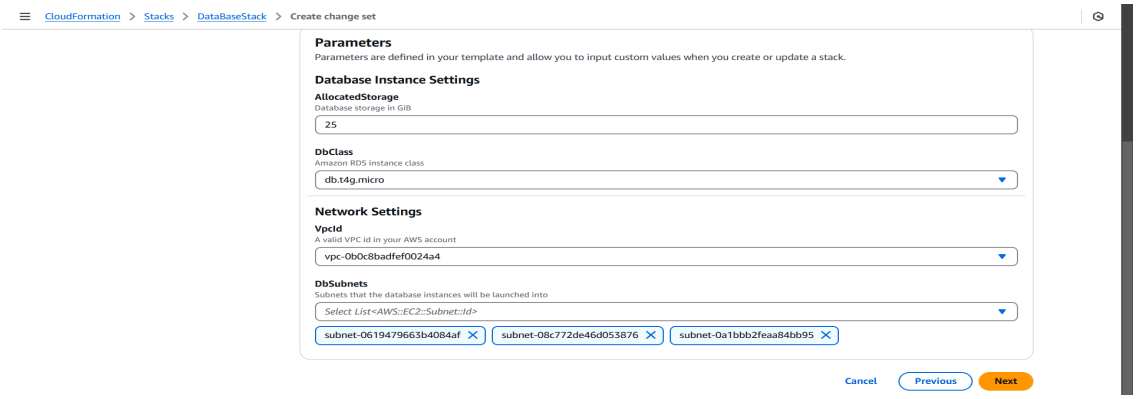
7. Verify the Changes tab to confirm the RDS instance will be replaced due to the DB engine change. Return to the Change sets list and review all created change sets.



8. Attempt to create another change set by increasing AllocatedStorage to 25, exceeding the max constraint.







9. Observe the error indicating AllocatedStorage exceeds the allowed maximum value. Cancel the invalid change set creation and return to the stacks list.

10. Confirm two valid change sets exist and note that only one can be executed at a time.