

# Lab Assignment-7

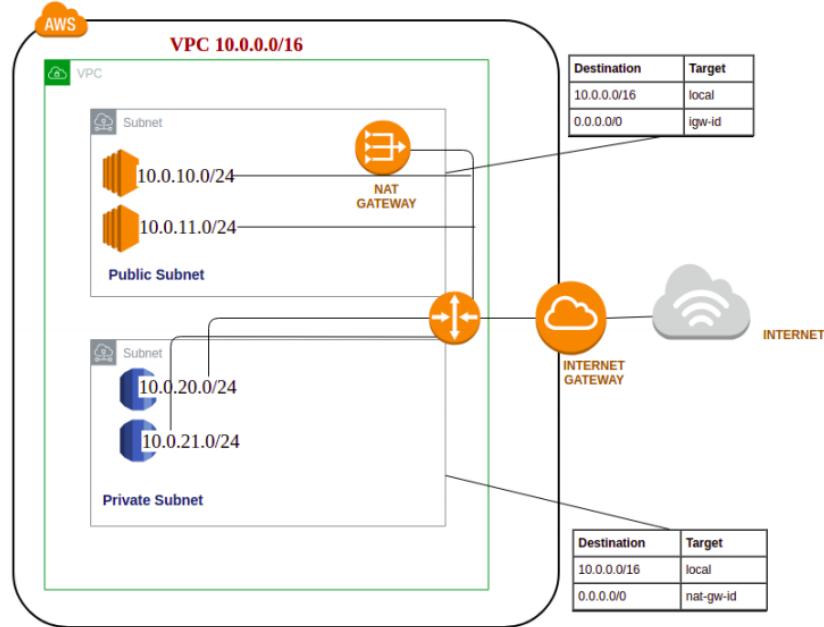
## ECSE373L: Cloud Infrastructure and Services

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**Enroll no:** E18CSE187

**Batch:** EB02

**Lab Objective:** Set up the given scenario using AWS CloudFormation:



### Step-by-Step Procedure:

The screenshot shows the 'Create role' wizard in the AWS IAM Management Console. The current step is 'Review'. The role name is 'CloudFormationLabE18CSE187'. The role description is 'Allows CloudFormation to create and manage AWS stacks and resources on your behalf.' The trusted entities section lists 'AWS service: cloudformation.amazonaws.com'. The policies assigned are 'AdministratorAccess'. There are no tags added. The 'Create role' button is visible at the bottom right.

IAM Management Console

console.aws.amazon.com/iam/home?region=ap-south-1#roles/CloudFormationLabE18CSE187

Services ▾

Identity and Access Management (IAM)

Summary

Role ARN: arn:aws:iam::634102821134:role/CloudFormationLabE18CSE187

Role description: Allows CloudFormation to create and manage AWS stacks and resources on your behalf. | Edit

Instance Profile ARNs: [Edit](#)

Path: /

Creation time: 2021-04-01 18:05 UTC+0530

Last activity: Not accessed in the tracking period

Maximum session duration: 1 hour | Edit

Permissions Trust relationships Tags Access Advisor Revoke sessions

Permissions policies (1 policy applied)

Attach policies Add inline policy

Policy name: AdministratorAccess Policy type: AWS managed policy

Permissions boundary (not set)

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CloudFormation - Stack

ap-south-1.console.aws.amazon.com/cloudformation/home?region=ap-south-1#stacks/create/template

Services ▾

Step 1 Specify template

Step 2 Specify stack details

Step 3 Configure stack options

Step 4 Review

Create 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  Upload a template file

Upload a template file: Choose file [VPC.yaml](#) JSON or YAML formatted file

S3 URL: <https://s3.ap-south-1.amazonaws.com/cf-templates-155kva7m26j5t-ap-south-1/2021091pH-VPC.yaml> View in Designer

Cancel Next

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Screenshot of the AWS CloudFormation 'Create stack' wizard Step 2: Specify stack details.

The page shows the 'Specify stack details' step. A sidebar on the left lists steps: Step 1 (Specify template), Step 2 (Specify stack details), Step 3 (Configure stack options), and Step 4 (Review).

**Stack name:** Cloud-VPC

**Parameters:**

- EnvironmentName:** Stage-VPC
- PrivateSubnet1CIDR:** 10.0.20.0/24
- PrivateSubnet2CIDR:** 10.0.21.0/24

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Screenshot of the AWS CloudFormation 'Create stack' wizard Step 3: Configure stack options.

The page shows the 'Configure stack options' step. It displays the parameters defined in the template.

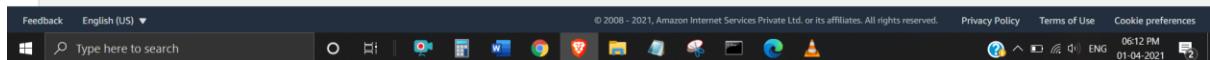
**Parameters:**

- EnvironmentName:** Stage-VPC
- PrivateSubnet1CIDR:** 10.0.20.0/24
- PrivateSubnet2CIDR:** 10.0.21.0/24
- PublicSubnet1CIDR:** 10.0.10.0/24
- PublicSubnet2CIDR:** 10.0.11.0/24
- VpcCIDR:** 10.0.0.0/16

Cancel      Previous      Next

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The screenshot shows the AWS CloudFormation console with the URL [ap-south-1.console.aws.amazon.com/cloudformation/home?region=ap-south-1#/stacks/events?stackId=arn%3Aaws%3Acloudforma...](https://ap-south-1.console.aws.amazon.com/cloudformation/home?region=ap-south-1#/stacks/events?stackId=arn%3Aaws%3Acloudforma...). The page displays the Cloud-VPC stack, which has 1 event listed under the Events tab. The event, titled "Cloud-VPC", occurred on 2021-04-01 at 18:11:56 UTC+0530 and is in progress. The status reason is "User Initiated". Other tabs like Stack Info, Resources, Outputs, Parameters, Template, and Change sets are also visible.



The screenshot shows the AWS CloudFormation console with the following details:

- Stacks (1)**: The Cloud-VPC stack is listed, showing it was created on 2021-04-01 at 18:11:56 UTC+0530 and is in a **CREATE\_COMPLETE** state.
- Cloud-VPC**: The main stack page for Cloud-VPC.
- Resources (22)**: A detailed list of resources, including:
  - DefaultPrivateRoute1 (Logical ID), Cloud-Defau-19IEFCLKUVY4I (Physical ID), AWS::EC2::Route (Type)
  - DefaultPrivateRoute2 (Logical ID), Cloud-Defau-5GZLYPTOR2RI (Physical ID), AWS::EC2::Route (Type)
  - DefaultPublicRoute (Logical ID), Cloud-Defau-9VXSHB0VLG4 (Physical ID), AWS::EC2::Route (Type)
  - InternetGateway (Logical ID), igw-02c7ad36f13e89632 (Physical ID), AWS::EC2::InternetGateway (Type)

CloudFormation - Stack Cloud-VPC

Provision Highly Available VPC Architecture

ap-south-1.console.aws.amazon.com/cloudformation/home?region=ap-south-1#stacks/events?stackId=arn%3Aaws%3Acloudforma...

Services ▾

CloudFormation > Stacks > Cloud-VPC

Stacks (1)

Cloud-VPC

2021-04-01 18:11:56 UTC+0530

CREATE\_COMPLETE

Events (68)

Timestamp	Logical ID	Status	Status reason
2021-04-01 18:15:18 UTC+0530	Cloud-VPC	CREATE_COMPLETE	-
2021-04-01 18:15:16 UTC+0530	DefaultPrivateRoute2	CREATE_COMPLETE	-
2021-04-01 18:15:15 UTC+0530	DefaultPrivateRoute1	CREATE_COMPLETE	-
2021-04-01 18:15:00 UTC+0530	DefaultPrivateRoute2	CREATE_IN_PROGRESS	Resource creation Initiated
2021-04-01 18:15:00 UTC+0530	DefaultPrivateRoute2	CREATE_IN_PROGRESS	-
2021-04-01 18:15:00 UTC+0530	DefaultPrivateRoute1	CREATE_IN_PROGRESS	Resource creation Initiated
2021-04-01 18:14:59 UTC+0530	DefaultPrivateRoute1	CREATE_IN_PROGRESS	-
2021-04-01 18:14:58 UTC+0530	NatGateway2	CREATE_COMPLETE	-

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This screenshot shows the AWS CloudFormation console. It displays a single stack named 'Cloud-VPC' with one resource, 'Cloud-VPC', in a 'CREATE\_COMPLETE' state. The event history table shows the creation of various resources like private routes and a Nat Gateway, all marked as 'CREATE\_COMPLETE'. The interface includes standard AWS navigation and search features.

Your VPCs | VPC Management Console

Provision Highly Available VPC Architecture

ap-south-1.console.aws.amazon.com/vpc/home?region=ap-south-1#vpcs:

AWS Services ▾

New VPC Experience Tell us what you think

VPC Dashboard New

Filter by VPC: Select a VPC

**VIRTUAL PRIVATE CLOUD**

Your VPCs New

Subnets New

Route Tables

Internet Gateways New

Egress Only Internet Gateways New

DHCP Options Sets New

Elastic IPs New

Managed Prefix Lists New

Endpoints

Endpoint Services

NAT Gateways New

Peering Connections

**SECURITY**

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This screenshot shows the AWS VPC Management Console. It lists two VPCs: 'Stage-VPC' and another unnamed VPC. Both are in an 'Available' state with their respective IPv4 and IPv6 CIDR ranges. The left sidebar provides links to various VPC-related services like Subnets, Route Tables, and Internet Gateways.

Subnets | VPC Management Console Provision Highly Available VPC Architectures

ap-south-1.console.aws.amazon.com/vpc/home?region=ap-south-1#subnets:

New VPC Experience Tell us what you think

VPC Dashboard New

Filter by VPC: Select a VPC

**VIRTUAL PRIVATE CLOUD**

Your VPCs New

**Subnets New**

Route Tables

Internet Gateways New

Egress Only Internet Gateways New

DHCP Options Sets New

Elastic IPs New

Managed Prefix Lists New

Endpoints

Endpoint Services

NAT Gateways New

Peering Connections

**SECURITY**

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Subnets (7) Info Actions Create subnet

Filter subnets

Name	Subnet ID	State	VPC	IPv4 CIDR
Stage-VPC Public Subnet (AZ2)	subnet-0e63f4ff99aa1e948	Available	vpc-05a833ac9951f98aa   Stage-VPC	10.0.11.0/24
Stage-VPC Public Subnet (AZ1)	subnet-0baba925b02e8758c	Available	vpc-05a833ac9951f98aa   Stage-VPC	10.0.10.0/24
Stage-VPC Private Subnet (AZ1)	subnet-00c3e5dc24fca299d	Available	vpc-05a833ac9951f98aa   Stage-VPC	10.0.20.0/24
-	subnet-b0f579cb	Available	vpc-f586699e	172.31.16.0/20
-	subnet-c6b1a4ae	Available	vpc-f586699e	172.31.32.0/20
Stage-VPC Private Subnet (AZ2)	subnet-0f2cf0e783a56fc7e	Available	vpc-05a833ac9951f98aa   Stage-VPC	10.0.21.0/24
-	subnet-c152288d	Available	vpc-f586699e	172.31.0.0/20

Select a subnet

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Route Tables | VPC Management Console Provision Highly Available VPC Architectures

ap-south-1.console.aws.amazon.com/vpc/home?region=ap-south-1#RouteTables:sort=tag:Name

New VPC Experience Tell us what you think

VPC Dashboard New

Filter by VPC: Select a VPC

**VIRTUAL PRIVATE CLOUD**

Your VPCs New

**Subnets New**

Route Tables

Internet Gateways New

Egress Only Internet Gateways New

DHCP Options Sets New

Elastic IPs New

Managed Prefix Lists New

Endpoints

Endpoint Services

NAT Gateways New

Peering Connections

**SECURITY**

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Create route table Actions

Filter by tags and attributes or search by keyword

Name	Route Table ID	Explicit subnet association	Edge associations	Main	VPC ID	Owner
rtb-b88528d3	-	-	-	Yes	vpc-f586699e	63410282
rtb-0db04016942bd4d1	-	-	-	Yes	vpc-05a833ac9951f98aa   ...	63410282
Stage-VPC Private Routes (AZ1)	rtb-067b435998abbebb7	subnet-00c3e5dc24fca299d	-	No	vpc-05a833ac9951f98aa   ...	63410282
Stage-VPC Private Routes (AZ2)	rtb-09e878e1a8260aa48	subnet-0f2cf0e783a56fc7e	-	No	vpc-05a833ac9951f98aa   ...	63410282
Stage-VPC Public Routes	rtb-023d5725c95c5cae0	2 subnets	-	No	vpc-05a833ac9951f98aa   ...	63410282

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Route Tables | VPC Management

Provision Highly Available VPC Architectures

ap-south-1.console.aws.amazon.com/vpc/home?region=ap-south-1#RouteTables:sort=tag:Name

New VPC Experience Tell us what you think

VPC Dashboard New

Filter by VPC: Select a VPC

**VIRTUAL PRIVATE CLOUD**

Your VPCs New

Subnets New

**Route Tables**

Internet Gateways New

Egress Only Internet Gateways New

DHCP Options Sets New

Elastic IPs New

Managed Prefix Lists New

Endpoints

Endpoint Services

NAT Gateways New

Peering Connections

**SECURITY**

Feedback English (US) ▾

Type here to search

Search for services, features, marketplace products, and docs [Alt+S]

Create route table Actions ▾

Filter by tags and attributes or search by keyword

Name	Route Table ID	Explicit subnet association	Edge associations	Main	VPC ID	Owner
rtb-b88528d3	-	-	-	Yes	vpc-f586699e	63410282
rtb-0db904016942bd4d1	-	-	-	Yes	vpc-05a833ac9951f98aa	63410282
Stage-VPC Private Routes (AZ1)	rtb-067b435998abbebb7	subnet-00c3e5dc24fc299d	-	No	vpc-05a833ac9951f98aa	63410282
Stage-VPC Private Routes (AZ2)	rtb-09e878e1a8260aa48	subnet-0f2c0e783a56fc7e	-	No	vpc-05a833ac9951f98aa	63410282
<b>Stage-VPC Public Routes</b>	<b>rtb-023d5725c95c5cae0</b>	<b>2 subnets</b>	-	No	vpc-05a833ac9951f98aa	63410282

Route Table: rtb-023d5725c95c5cae0

Summary Routes Subnet Associations Edge Associations Route Propagation Tags

Edit subnet associations

Subnet ID	IPv4 CIDR	IPv6 CIDR
subnet-0e63f4ff99aa1e94...	10.0.11.0/24	-
subnet-0bab925b02e875...	10.0.10.0/24	-

The following subnets have not been explicitly associated with any route tables and are therefore associated with the main route table:

None found

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Route Tables | VPC Management

Provision Highly Available VPC Architectures

ap-south-1.console.aws.amazon.com/vpc/home?region=ap-south-1#RouteTables:sort=tag:Name

New VPC Experience Tell us what you think

VPC Dashboard New

Filter by VPC: Select a VPC

**VIRTUAL PRIVATE CLOUD**

Your VPCs New

Subnets New

**Route Tables**

Internet Gateways New

Egress Only Internet Gateways New

DHCP Options Sets New

Elastic IPs New

Managed Prefix Lists New

Endpoints

Endpoint Services

NAT Gateways New

Peering Connections

**SECURITY**

Feedback English (US) ▾

Type here to search

Search for services, features, marketplace products, and docs [Alt+S]

Create route table Actions ▾

Filter by tags and attributes or search by keyword

Name	Route Table ID	Explicit subnet association	Edge associations	Main	VPC ID	Owner
rtb-b88528d3	-	-	-	Yes	vpc-f586699e	63410282
rtb-0db904016942bd4d1	-	-	-	Yes	vpc-05a833ac9951f98aa	63410282
Stage-VPC Private Routes (AZ1)	rtb-067b435998abbebb7	subnet-00c3e5dc24fc299d	-	No	vpc-05a833ac9951f98aa	63410282
Stage-VPC Private Routes (AZ2)	rtb-09e878e1a8260aa48	subnet-0f2c0e783a56fc7e	-	No	vpc-05a833ac9951f98aa	63410282
<b>Stage-VPC Public Routes</b>	<b>rtb-023d5725c95c5cae0</b>	<b>2 subnets</b>	-	No	vpc-05a833ac9951f98aa	63410282

Route Table: rtb-023d5725c95c5cae0

Summary Routes Subnet Associations Edge Associations Route Propagation Tags

Edit routes

Destination	Target	Status	Propagated
10.0.0.0/16	local	active	No
0.0.0.0/0	igw-02c7ad36f13e89632	active	No

View All routes

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Route Tables | VPC Management

Provision Highly Available VPC Architectures

ap-south-1.console.aws.amazon.com/vpc/home?region=ap-south-1#RouteTables:sort=tag:Name

New VPC Experience

VPC Dashboard New

Filter by VPC:

Select a VPC

**VIRTUAL PRIVATE CLOUD**

Your VPCs New

Subnets New

**Route Tables**

Internet Gateways New

Egress Only Internet Gateways New

DHCP Options Sets New

Elastic IPs New

Managed Prefix Lists New

Endpoints

Endpoint Services

NAT Gateways New

Peering Connections

**SECURITY**

Create route table Actions

Search for services, features, marketplace products, and docs [Alt+S]

Route Table: rtb-09e878e1a8260aa48

Summary Routes Subnet Associations Edge Associations Route Propagation Tags

Edit routes

View All routes

Destination	Target	Status	Propagated
10.0.0.0/16	local	active	No
0.0.0.0/0	nat-07cd7080b9a68ca84	active	No

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Internet gateways | VPC Management

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ap-south-1.console.aws.amazon.com/vpc/home?region=ap-south-1#igws:

New VPC Experience

VPC Dashboard New

Filter by VPC:

Select a VPC

**VIRTUAL PRIVATE CLOUD**

Your VPCs New

Subnets New

Route Tables

**Internet Gateways** New

Egress Only Internet Gateways New

DHCP Options Sets New

Elastic IPs New

Managed Prefix Lists New

Endpoints

Endpoint Services

NAT Gateways New

Peering Connections

Create internet gateway Actions

Internet gateways (1/2) Info

Filter internet gateways

Name	Internet gateway ID	State	VPC ID	Owner
Stage-VPC	igw-02c7ad36f13e89632	Attached	vpc-05a833ac9951f98aa   Stage-VPC	634102821134
-	igw-4a912822	Attached	vpc-f586699e	634102821134

igw-02c7ad36f13e89632 / Stage-VPC

Details Tags

Details

Internet gateway ID igw-02c7ad36f13e89632	State Attached	VPC ID vpc-05a833ac9951f98aa   Stage-VPC	Owner 634102821134
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NAT gateways | VPC Management

Provision Highly Available VPC Architectures

ap-south-1.console.aws.amazon.com/vpc/home?region=ap-south-1#NatGateways:

New VPC Experience

VPC Dashboard New

Filter by VPC:

Select a VPC

**VIRTUAL PRIVATE CLOUD**

Your VPCs New

Subnets New

Route Tables

Internet Gateways New

Egress Only Internet Gateways New

DHCP Options Sets New

Elastic IPs New

Managed Prefix Lists New

Endpoints

Endpoint Services

**NAT Gateways New**

Peering Connections

**SECURITY**

Feedback English (US) Type here to search

Actions Create NAT gateway

NAT gateways (2) Info

Filter NAT gateways

Name	NAT gateway ID	State	State message	Elastic IP address	Private IP address
-	nat-07cd7080b9a68ca84	Available	-	65.1.211.147	10.0.11.36
-	nat-0c4f3bb56bfc9e93c	Available	-	65.1.234.82	10.0.10.165

Select a NAT gateway

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NAT gateways | VPC Management

Provision Highly Available VPC Architectures

ap-south-1.console.aws.amazon.com/vpc/home?region=ap-south-1#NatGateways:

New VPC Experience

VPC Dashboard New

Filter by VPC:

Select a VPC

**VIRTUAL PRIVATE CLOUD**

Your VPCs New

Subnets New

Route Tables

Internet Gateways New

Egress Only Internet Gateways New

DHCP Options Sets New

Elastic IPs New

Managed Prefix Lists New

Endpoints

Endpoint Services

**NAT Gateways New**

Peering Connections

**SECURITY**

Feedback English (US) Type here to search

Actions Create NAT gateway

NAT - Notepad

File Edit Format View Help

Default: 10.0.10.0/24

PublicSubnet2CIDR:  
Description: Enter CIDR notation for Public subnet in the Second Availability Zone  
Type: String  
Default: 10.0.11.0/24

PrivateSubnet1CIDR:  
Description: Enter CIDR notation for Private subnet in the First Availability Zone  
Type: String  
Default: 10.0.20.0/24

PrivateSubnet2CIDR:  
Description: Enter CIDR notation for Private subnet in the Second Availability Zone  
Type: String  
Default: 10.0.21.0/24

PublicSubnet3CIDR:  
Description: Enter CIDR notation for Public subnet in the Second Availability Zone  
Type: String  
Default: 10.0.12.0/24

Resources:

VCPC:  
Type: AWS::EC2::VPC  
Properties:

State message	Elastic IP address	Private IP address
-	65.1.211.147	10.0.11.36
-	65.1.234.82	10.0.10.165

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NAT gateways | VPC Management

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ap-south-1.console.aws.amazon.com/vpc/home?region=ap-south-1#NatGateways:

New VPC Experience Tell us what you think

VPC Dashboard New

Filter by VPC: Select a VPC

VIRTUAL PRIVATE CLOUD Your VPCs New

Subnets New

Route Tables

Internet Gateways New

Egress Only Internet Gateways New

DHCP Options Sets New

Elastic IPs New

Managed Prefix Lists New

Endpoints

Endpoint Services

**NAT Gateways New**

Peering Connections

SECURITY

Create NAT gateway

PrivateRouteTable2: Type: AWS::EC2::RouteTable Properties: VpcId: !Ref VPC Tags: - Key: Name Value: !Sub \${EnvironmentName} Private Routes (AZ2)

DefaultPrivateRoute2: Type: AWS::EC2::Route Properties: RouteTableId: !Ref PrivateRouteTable2 DestinationCidrBlock: 0.0.0.0/0 NatGatewayId: !Ref NatGateway2

PrivateSubnet2RouteTableAssociation: Type: AWS::EC2::SubnetRouteTableAssociation Properties: RouteTableId: !Ref PrivateRouteTable2 SubnetId: !Ref PrivateSubnet2

NoIngressSecurityGroup: Type: AWS::EC2::SecurityGroup Properties: GroupName: "no-ingress-sg" GroupDescription: "Security group with no ingress rule" VpcId: !Ref VPC

PublicSubnet3:

State message Elastic IP address Private IP address

65.1.211.147 10.0.11.36

65.1.234.82 10.0.10.165

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CloudFormation - Stack Cloud-VPC

Provision Highly Available VPC Architecture (140) S & M - YouTube

ap-south-1.console.aws.amazon.com/cloudformation/home?region=ap-south-1#stacks/changesets/create/template?stackId=a...

New VPC Experience Tell us what you think

Step 1 Specify template

Step 2 Specify stack details

Step 3 Configure stack options

Step 4 Review

Create change set for Cloud-VPC

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 Choose file VPC.yaml JSON or YAML formatted file

S3 URL: https://s3.ap-south-1.amazonaws.com/cf-templates-155kva7m26j5t-ap-south-1/20210911CU-VPC.yaml View in Designer

Cancel Next

Feedback English (US) Type here to search Privacy Policy Terms of Use Cookie preferences 06:35 PM 01-04-2021

Screenshot of the AWS CloudFormation 'Specify stack details' step.

The page shows the 'Specify template' step completed and the 'Specify stack details' step selected. The 'Parameters' section contains the following fields:

- EnvironmentName**: Stage-VPC
- PrivateSubnet1CIDR**: 10.0.20.0/24
- PrivateSubnet2CIDR**: 10.0.21.0/24
- PublicSubnet1CIDR**: 10.0.10.0/24
- PublicSubnet2CIDR**: 10.0.11.0/24

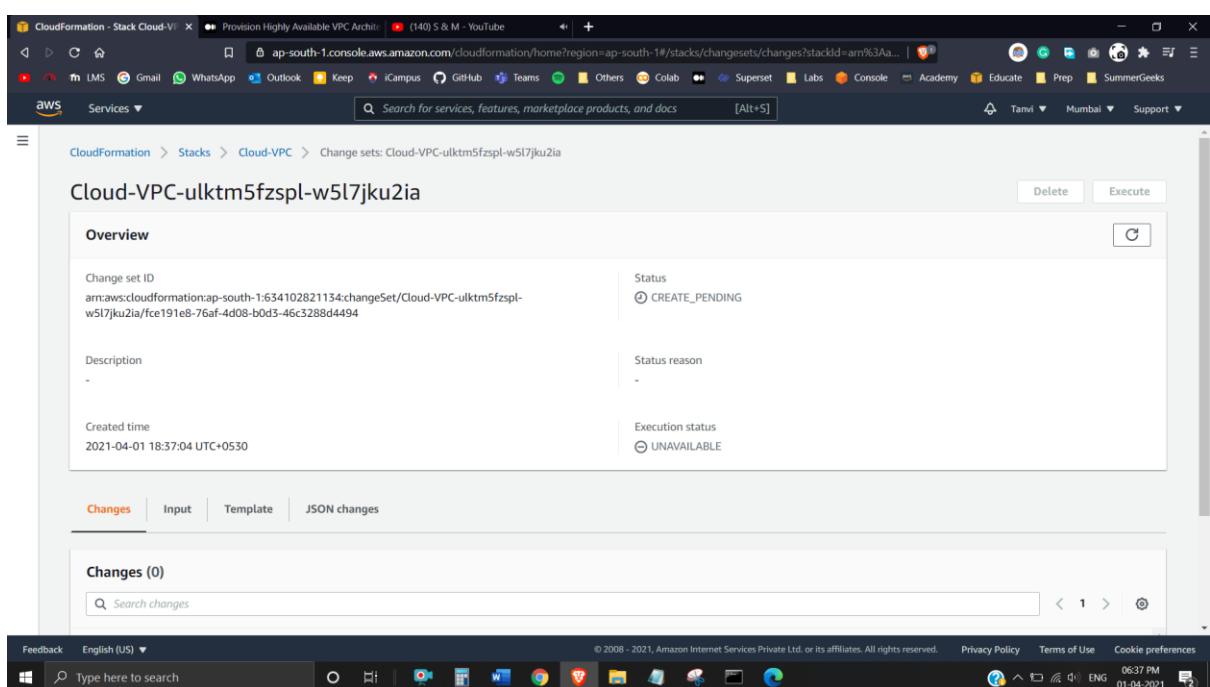
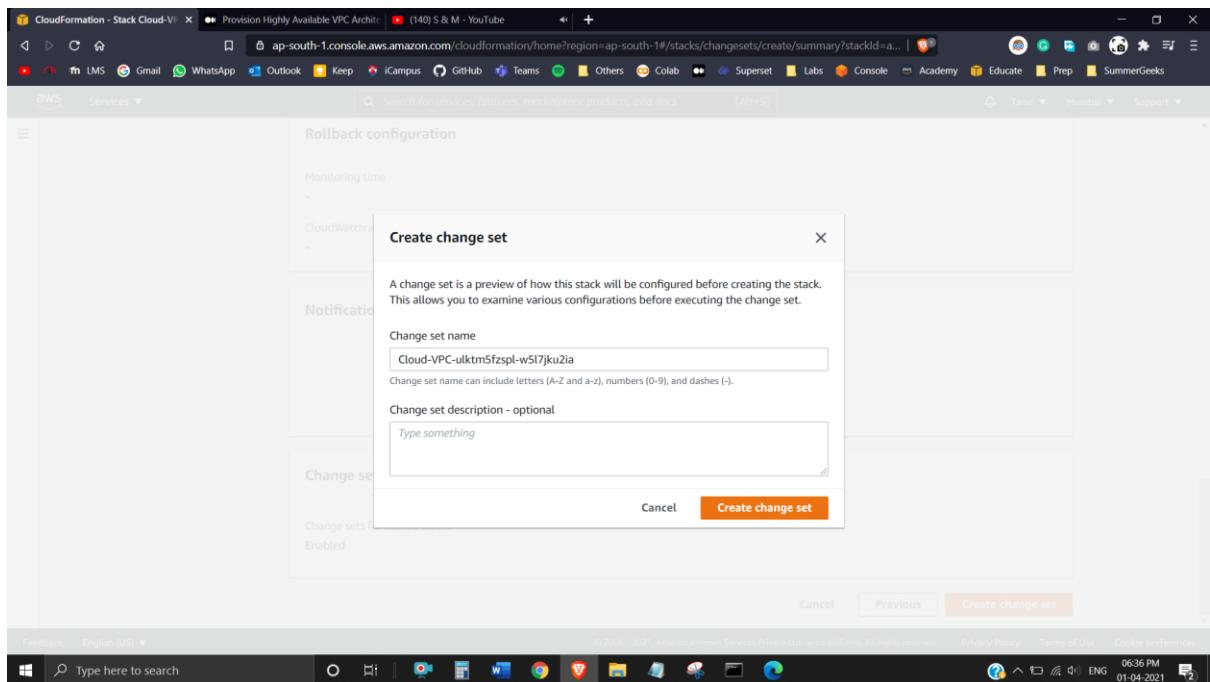
At the bottom, there are 'Feedback', 'English (US)', and 'Type here to search' buttons, along with a taskbar at the bottom.

Screenshot of the AWS CloudFormation 'Specify stack details' step.

The page shows the 'Review' step selected. The 'Parameters' section contains the following fields:

- PrivateSubnet1CIDR**: 10.0.20.0/24
- PrivateSubnet2CIDR**: 10.0.21.0/24
- PublicSubnet1CIDR**: 10.0.10.0/24
- PublicSubnet2CIDR**: 10.0.11.0/24
- PublicSubnet3CIDR**: 10.0.12.0/24
- VpcCIDR**: 10.0.0.0/16

At the bottom, there are 'Cancel', 'Previous', and 'Next' buttons, along with a taskbar at the bottom.



Screenshot of the AWS CloudFormation console showing the details of a completed change set named "Cloud-VPC-ulktm5fzspl-w5l7jku2ia".

**Overview**

Change set ID	Status
arn:aws:cloudformation:ap-south-1:634102821134:changeSet/Cloud-VPC-ulktm5fzspl-w5l7jku2ia/fce191e8-76af-4d08-b0d3-46c3288d4494	CREATE_COMPLETE

**Description**: -

**Created time**: 2021-04-01 18:37:04 UTC+0530

**Execution status**: AVAILABLE

**Changes (1)**

Search changes

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Screenshot of the AWS CloudFormation console showing the events for the "Cloud-VPC" stack.

**Cloud-VPC**

**Events (69)**

Timestamp	Logical ID	Status	Status reason
2021-04-01 18:37:42 UTC+0530	Cloud-VPC	UPDATE_IN_PROGRESS	User Initiated
2021-04-01 18:15:18 UTC+0530	Cloud-VPC	CREATE_COMPLETE	-
2021-04-01 18:15:16 UTC+0530	DefaultPrivateRoute2	CREATE_COMPLETE	-
2021-04-01 18:15:15 UTC+0530	DefaultPrivateRoute1	CREATE_COMPLETE	-
2021-04-01 18:15:00 UTC+0530	DefaultPrivateRoute2	CREATE_IN_PROGRESS	Resource creation initiated
2021-04-01 18:15:00 UTC+0530	DefaultPrivateRoute2	CREATE_IN_PROGRESS	-

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Screenshot of the AWS CloudFormation console showing the Cloud-VPC stack details.

**Stacks (1)**

- Cloud-VPC**  
2021-04-01 18:11:56 UTC+0530  
UPDATE\_COMPLETE

**Cloud-VPC**

**Events (74)**

Timestamp	Logical ID	Status	Status reason
2021-04-01 18:38:05 UTC+0530	Cloud-VPC	UPDATE_COMPLETE	-
2021-04-01 18:38:04 UTC+0530	Cloud-VPC	UPDATE_COMPLETE_CLEANUP_IN_PROGRESS	-
2021-04-01 18:38:02 UTC+0530	PublicSubnet3	CREATE_COMPLETE	-
2021-04-01 18:37:46 UTC+0530	PublicSubnet3	CREATE_IN_PROGRESS	Resource creation Initiated
2021-04-01 18:37:46 UTC+0530	PublicSubnet3	CREATE_IN_PROGRESS	-
2021-04-01 18:37:42 UTC+0530	Cloud-VPC	UPDATE_IN_PROGRESS	User Initiated

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**CloudFormation - Stack Cloud-VPC**

**Cloud-VPC**

**Template**

```
Template creates VPC with Public & Private Subnets across AvailabilityZone. Also creates Internet Gateway, with a default route on the public subnets and deploys a pair of NAT gateways (one in each AZ), and default routes for them in the private subnets.
```

**Parameters:**

- EnvironmentName:**  
Description: Each Resource name will be prefixed with Environment Name  
Type: String
- VpcCIDR:**  
Description: Enter CIDR notation VPC  
Type: String  
Default: 10.0.0.0/16
- PublicSubnet1CIDR:**  
Description: Enter CIDR notation for Public subnet in the First Availability Zone  
Type: String  
Default: 10.0.10.0/24
- PublicSubnet2CIDR:**  
Description: Enter CIDR notation for Public subnet in the Second Availability Zone  
Type: String  
Default: 10.0.11.0/24
- PrivateSubnet1CIDR:**  
Description: Enter CIDR notation for Private subnet in the First Availability Zone

Screenshot of the AWS CloudFormation console showing the Cloud-VPC stack details.

**Stacks (1)**

- Cloud-VPC**  
2021-04-01 18:11:56 UTC+0530  
UPDATE\_COMPLETE

**Cloud-VPC**

**Template**

```
Template creates VPC with Public & Private Subnets across AvailabilityZone. Also creates Internet Gateway, with a default route on the public subnets and deploys a pair of NAT gateways (one in each AZ), and default routes for them in the private subnets.
```

**Parameters:**

- EnvironmentName:**  
Description: Each Resource name will be prefixed with Environment Name  
Type: String
- VpcCIDR:**  
Description: Enter CIDR notation VPC  
Type: String  
Default: 10.0.0.0/16
- PublicSubnet1CIDR:**  
Description: Enter CIDR notation for Public subnet in the First Availability Zone  
Type: String  
Default: 10.0.10.0/24
- PublicSubnet2CIDR:**  
Description: Enter CIDR notation for Public subnet in the Second Availability Zone  
Type: String  
Default: 10.0.11.0/24
- PrivateSubnet1CIDR:**  
Description: Enter CIDR notation for Private subnet in the First Availability Zone

CloudFormation - Stack Cloud-VPC

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ap-south-1.console.aws.amazon.com/cloudformation/home?region=ap-south-1#stacks/template?filteringStatus=active&filterId=

Services ▾

CloudFormation > Stacks > Cloud-VPC

Stacks (1)

Cloud-VPC

2021-04-01 18:11:56 UTC+0530

UPDATE\_COMPLETE

PublicSubnet3CIDR:

Description: Enter CIDR notation for Public subnet in the Second Availability Zone

Type: String

Default: 10.0.12.0/24

Resources:

VPC:

Type: AWS::EC2::VPC

Properties:

CidrBlock: !Ref VpcCIDR

EnableDnsSupport: true

EnableDnsHostnames: true

Tags:

- Key: Name

Value: !Ref EnvironmentName

InternetGateway:

Type: AWS::EC2::InternetGateway

Properties:

Tags:

- Key: Name

Value: !Ref EnvironmentName

InternetGatewayAttachment:

Type: AWS::EC2::VPCGatewayAttachment

Properties:

InternetGatewayId: !Ref InternetGateway

VpcId: !Ref VPC

PublicSubnet1:

Type: AWS::EC2::Subnet

Properties:

VpcId: !Ref VPC

AvailabilityZone: !Select [ 0, !GetAZs '' ]

CidrBlock: !Ref PublicSubnet1CIDR

MapPublicIpOnLaunch: true

Tags:

- Key: Name

Value: !Sub \${EnvironmentName} Public Subnet (AZ1)

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CloudFormation - Stack Cloud-VPC

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Services ▾

CloudFormation > Stacks > Cloud-VPC

Stacks (1)

Cloud-VPC

2021-04-01 18:11:56 UTC+0530

UPDATE\_COMPLETE

Outputs:

VPC:

Description: A reference to the created VPC

Value: !Ref VPC

PublicSubnets:

Description: A list of the public subnets

Value: !Join [ ",", [ !Ref PublicSubnet1, !Ref PublicSubnet2 ] ]

PrivateSubnets:

Description: A list of the private subnets

Value: !Join [ ",", [ !Ref PrivateSubnet1, !Ref PrivateSubnet2 ] ]

PublicSubnet1:

Description: A reference to the public subnet in the 1st Availability Zone

Value: !Ref PublicSubnet1

PublicSubnet2:

Description: A reference to the public subnet in the 2nd Availability Zone

Value: !Ref PublicSubnet2

PrivateSubnet1:

Description: A reference to the private subnet in the 1st Availability Zone

Value: !Ref PrivateSubnet1

PrivateSubnet2:

Description: A reference to the private subnet in the 2nd Availability Zone

Value: !Ref PrivateSubnet2

NoIngressSecurityGroup:

Description: Security group with no ingress rule

Value: !Ref NoIngressSecurityGroup

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Subnets | VPC Management Console Provision Highly Available VPC Architecture (140) S & M - YouTube

ap-south-1.console.aws.amazon.com/vpc/home?region=ap-south-1#subnets:

New VPC Experience Tell us what you think

VPC Dashboard New

Filter by VPC: Select a VPC

**VIRTUAL PRIVATE CLOUD**

Your VPCs New

**Subnets New**

Route Tables

Internet Gateways New

Egress Only Internet Gateways New

DHCP Options Sets New

Elastic IPs New

Managed Prefix Lists New

Endpoints

Endpoint Services

NAT Gateways New

Peering Connections

**SECURITY**

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Subnets (8) Info Actions Create subnet

Filter subnets

Name	Subnet ID	State	VPC	IPv4 CIDR
Stage-VPC Public Subnet (AZ2)	subnet-0e63f4ff99aa1e948	Available	vpc-05a833ac9951f98aa   Sta...	10.0.11.0/24
Stage-VPC Public Subnet (AZ3)	subnet-0571fd29d1975103a	Available	vpc-05a833ac9951f98aa   Sta...	10.0.12.0/24
Stage-VPC Public Subnet (AZ1)	subnet-0babaf925b02e8758c	Available	vpc-05a833ac9951f98aa   Sta...	10.0.10.0/24
Stage-VPC Private Subnet (AZ1)	subnet-00c3e5dc24fca299d	Available	vpc-05a833ac9951f98aa   Sta...	10.0.20.0/24
-	subnet-b0f579cb	Available	vpc-f586699e	172.31.16.0/20
-	subnet-c6b1a4ae	Available	vpc-f586699e	172.31.32.0/20
Stage-VPC Private Subnet (AZ2)	subnet-0f2cf0e783a56fc7e	Available	vpc-05a833ac9951f98aa   Sta...	10.0.21.0/24
-	subnet-c152288d	Available	vpc-f586699e	172.31.0.0/20

Select a subnet

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