

Capstone project 2 (Ankita Mardana)

The screenshot shows the AWS CloudFormation Stacks page. At the top, there is a search bar and a filter button labeled [Alt+S]. The top right corner displays the account ID (6807-6399-5787), region (United States (N. Virginia)), and user (AnkitaDevops). Below the header, the navigation bar shows 'CloudFormation > Stacks'. The main area is titled 'Stacks (0)' and contains a 'Create stack' button. A 'View getting started guide' link is also present.

The screenshot shows the 'Create stack' wizard, Step 1: Prerequisite - Prepare template. On the left, a sidebar lists steps: Step 1 (Create stack, selected), Step 2 (Specify stack details), Step 3 (Configure stack options), and Step 4 (Review and create). The main content area is titled 'Create stack' and contains a 'Prerequisite - Prepare template' section. It includes a note about creating a template by scanning existing resources and a 'Prepare template' section. Two options are shown: 'Choose an existing template' (radio button) and 'Build from Infrastructure Composer' (radio button, selected). A 'Create in Infrastructure Composer' button is located below the composer section. Navigation buttons 'Cancel' and 'Next' are at the bottom right.

This screenshot is identical to the previous one, showing the 'Create stack' wizard Step 1: Prerequisite - Prepare template. The 'Build from Infrastructure Composer' option is now selected, indicated by a blue border around its radio button and text area. The rest of the interface, including the sidebar steps and the 'Create in Infrastructure Composer' button, remains the same.

https://us-east-1.console.aws.amazon.com/composer/canvas?region=us-east-1&srcConsole=cloudformation

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CloudFormation > Infrastructure Composer

Infrastructure Composer

Canvas Template YAML JSON

Valid Create template

Resources

Unsaved changes

CloudFormation console mode Menu

CloudShell Feedback

Search

CloudFormation | Stacks | Create stack

Step 1 Create stack Step 2 Specify stack details Step 3 Configure stack options Step 4 Review and create

Prerequisite - Prepare template

Choose an existing template Build from Infrastructure Composer

Create a template in Infrastructure Composer

Your template was successfully imported from Infrastructure Composer.

Amazon S3 URL

https://s3.us-east-1.amazonaws.com/cf-templates--e8u269gk74y-us-east-1/template-1756454923833.yaml

Edit in Infrastructure Composer Cancel Next

CloudFormation > Stacks > Create stack

Specify stack details

Stack name: project2-stack

Parameters: No parameters

Cancel Previous Next

CloudFormation > Stacks > project2-stack

Stacks (1)

- project2-stack
 - 2025-08-29 13:39:38 UTC+0530
 - CREATE_COMPLETE

Events (1)

Timestamp	Logical ID	Status	Detailed status
2025-08-29 13:39:38 UTC+0530	project2-stack	CREATE_IN_PROGRESS	S

Screenshot of the AWS VPC Console showing the list of VPCs and the details for the HospitalVPC.

Your VPCs (1/2) Info

Name	VPC ID	State	Block Public...	IPv4 CIDR	IPv6 CIDR
-	vpc-02a5a50c89d0bcfb4	Available	Off	172.31.0.0/16	-
HospitalVPC	vpc-001aeb96f93b8a6b3	Available	Off	10.0.0.0/16	-

vpc-001aeb96f93b8a6b3 / HospitalVPC

Details | Resource map | CIDs | Flow logs | Tags | Integrations

Details

VPC ID vpc-001aeb96f93b8a6b3	State Available	Block Public Access Off	DNS hostnames Enabled
DNS resolution Enabled	Tenancy default	DHCP option set dopt-0a489067f0b54dea2	Main route table rtb-042caf8860dcfb726
Main network ACL arn:aws:iam::123456789012:network-acl/HospitalVPC	Default VPC vpc-001aeb96f93b8a6b3	IPv4 CIDR 10.0.0.0/16	IPv6 pool -

Create topic

Topic name
A topic is a message channel. When you publish a message to a topic, it fans out the message to all subscribed endpoints.

Next step

Start with an overview

Benefits and features

- Reliably deliver messages with durability**
Amazon SNS uses cross-availability zones.
- Automatically scale your workload**
Amazon SNS leverages the proven AWS.

Pricing

Amazon SNS has no upfront costs. You pay based on the number of messages you publish, the number of messages you deliver, and any additional API calls for managing topics and subscriptions. Delivery pricing varies by endpoint type.

[Learn more](#)

Screenshot of the AWS VPC console showing the Endpoints page. The left sidebar includes sections for gateways, Security (Network ACLs, Security groups), PrivateLink and Lattice (Endpoints, Endpoint services, Service networks, Lattice services, Resource configurations, Resource gateways, Target groups). The main content area shows a table titled "Endpoints info" with columns: Name, VPC endpoint ID, Endpoint type, Status, and Service name. A search bar at the top allows filtering by attribute or tag. A button for "Create endpoint" is visible.

Screenshot of the AWS EC2 console showing the Instances page. The left sidebar includes sections for Dashboard, EC2 Global View, Instances (Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations), Images (AMIs, AMI Catalog), and Elastic Block Store (Volumes, Snapshots, Lifecycle Manager). The main content area shows a table titled "Instances (1/9) Info" listing nine instances. One instance, "project2", is selected and highlighted with a blue border. The table columns include Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and Public IPv4. Below the table, a detailed view for "i-0b36478f7902a7513 (project2)" is shown with tabs for Details, Status and alarms, Monitoring, Security, Networking, Storage, and Tags. A note indicates "2/2 checks passed".

<https://us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#CreateVpcEndpoint>

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VPC > Endpoints > Create endpoint

Create endpoint Info

Create the type of VPC endpoint that supports the service, service network or resource to which you want to connect.

Endpoint settings

Specify a name and select the type of endpoint.

Name tag - optional
Creates a tag with a key of 'Name' and a value that you specify. Tags help you find and manage your endpoint.

project2-endpoint

Type Info
Select a category

- AWS services Connect to services provided by Amazon with an Interface endpoint, or a Gateway endpoint
- PrivateLink Ready partner services Connect to SaaS services which have AWS Service Ready designation with an Interface endpoint. Uses AWS PrivateLink
- AWS Marketplace services Connect to SaaS services that you have purchased through AWS Marketplace with an Interface Endpoint
- EC2 Instance Connect Endpoint An elastic network interface that allows you to connect to resources in a private subnet
- Resources Connect to resources like Amazon Relational Database Services (RDS) with a Resource endpoint. Uses AWS PrivateLink
- Service networks Connect to VPC Lattice service networks with a Service network endpoint. Uses AWS PrivateLink
- Endpoint services that use NLBs and GWLBs Find services shared with you by service name. Connect to a Network LoadBalancer (NLB) service with an Interface endpoint or to a Gateway LoadBalancer (GWLb) service with a Gateway Load Balancer endpoint

Services (458)

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Services (1/1)

Service Name = com.amazonaws.us-east-1.sns

Service Name	Owner	Type	Service Region
com.amazonaws.us-east-1.sns	amazon	Interface	us-east-1

Network settings
Select the VPC in which to create the endpoint

VPC
Create the VPC endpoint in the VPC in the same AWS Region from which you will access a resource.
vpc-001aeb96f93b8a6b3 (HospitalVPC)

Additional settings

DNS name
 Enable DNS name Info
Associates a private hosted zone with the VPC that contains a record set that enables you to leverage Amazon's private network connectivity to the service while making requests to the service's default public endpoint DNS name. To use this feature, ensure that the attributes 'Enable DNS hostnames' and 'Enable DNS support' are enabled for your VPC.

DNS record IP type
 IPv4
 IPv6

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Screenshot of the AWS VPC console showing the creation of a new VPC endpoint.

IP address type: IPv4

Security groups (2):

Group ID	Group name	VPC ID	Description
sg-0022e719f96af133d	project2-stack-MySecurityGroup-D2djL...	vpc-001aeb96f93b8a6b3	Allow SSH and HTTP
sg-08e0bed0e709458b9	default	vpc-001aeb96f93b8a6b3	default VPC security group

Policy: Full access

Allow access by any user or service within the VPC using credentials from any Amazon Web Services accounts to any resources in this Amazon Web Services service. All policies — IAM user policies, VPC endpoint policies, and Amazon Web Services service-specific policies (e.g. Amazon S3 bucket policies, any S3 ACL policies) — must grant the necessary permissions for access to succeed.

Custom

Use the [policy creation tool](#) to generate a policy, then paste the generated policy below.

Endpoint created: Successfully created VPC endpoint vpc-0ad2a25549e7ee97f

Endpoints (1/1):

Name	VPC endpoint ID	Endpoint type	Status	Service name
project2-endpoint	vpc-0ad2a25549e7ee97f	Interface	Pending	com.amazonaws.us-east-

Endpoint details:

Details:

Endpoint ID: vpc-0ad2a25549e7ee97f	Status: Pending	Creation time: Friday, August 29, 2025 at 13:48:19 GMT+5:30	Endpoint type: Interface
VPC ID: vpc-001aeb96f93b8a6b3	Status message:	Private DNS names enabled	

Screenshot of the AWS IAM Roles page (https://us-east-1.console.aws.amazon.com/iam/home?region=us-east-1#/roles) showing 15 roles.

The page includes a search bar, a table header for Role name, Trusted entities, and Last activity, and a list of roles:

Role name	Trusted entities	Last activity
AmazonRedshift-CommandsAccessRole-20250703T005236	AWS Service: redshift-serverless, arn	57 days ago
aws-elasticbeanstalk-ec2-role	AWS Service: ec2	16 days ago
aws-elasticbeanstalk-service-role	AWS Service: elasticbeanstalk	16 days ago
AWSBackupDefaultServiceRole	AWS Service: backup	57 days ago
AWSServiceRoleForAutoScaling	AWS Service: autoscaling (Service-Linked)	27 minutes ago
AWSServiceRoleForBackup	AWS Service: backup (Service-Linked)	12 days ago
AWSServiceRoleForCloudWatchEvents	AWS Service: events (Service-Linked)	-
AWSServiceRoleForElasticLoadBalancing	AWS Service: elasticloadbalancing (S)	29 minutes ago
AWSServiceRoleForGlobalAccelerator	AWS Service: globalaccelerator (Serv)	75 days ago
AWSServiceRoleForRDS	AWS Service: rds (Service-Linked Rol)	18 minutes ago
AWSServiceRoleForRedshift	AWS Service: redshift (Service-Linked)	54 days ago
AWSServiceRoleForSupport	AWS Service: support (Service-Linked)	90 days ago

Bottom of the page shows copyright information and navigation links.

Screenshot of the AWS IAM Roles page (https://us-east-1.console.aws.amazon.com/iam/home?region=us-east-1#/roles) showing 16 roles.

The page includes a success message: "Role project2-roles created." and a table header for Role name, Trusted entities, and Last activity, and a list of roles:

Role name	Trusted entities	Last activity
AmazonRedshift-CommandsAccessRole-20250703T005236	AWS Service: sagemaker, and 2 more	57 days ago
aws-elasticbeanstalk-ec2-role	AWS Service: ec2	16 days ago
aws-elasticbeanstalk-service-role	AWS Service: elasticbeanstalk	16 days ago
AWSBackupDefaultServiceRole	AWS Service: backup	57 days ago
AWSServiceRoleForAutoScaling	AWS Service: autoscaling (Service-Linked)	29 minutes ago
AWSServiceRoleForBackup	AWS Service: backup (Service-Linked)	12 days ago
AWSServiceRoleForCloudWatchEvents	AWS Service: events (Service-Linked)	-
AWSServiceRoleForElasticLoadBalancing	AWS Service: elasticloadbalancing (S)	31 minutes ago
AWSServiceRoleForGlobalAccelerator	AWS Service: globalaccelerator (Serv)	75 days ago
AWSServiceRoleForRDS	AWS Service: rds (Service-Linked Rol)	20 minutes ago
AWSServiceRoleForRedshift	AWS Service: redshift (Service-Linked)	54 days ago

Bottom of the page shows copyright information and navigation links.

https://us-east-1.console.aws.amazon.com/iam/home#/roles/create?trustedEntityType=AWS_SERVICE&selectedService=EC2&selectedUseCase=EC2

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IAM > Roles > Create role

Step 1
Select trusted entity
Step 2
Add permissions
Step 3
Name, review, and create

Add permissions Info

Permissions policies (1/1075) Info

Choose one or more policies to attach to your new role.

Filter by Type

Policy name	Type	Description
<input checked="" type="checkbox"/> AmazonSNSFullAccess	AWS managed	Provides full access to Amazon SNS via...
<input type="checkbox"/> AmazonNSReadOnlyAccess	AWS managed	Provides read only access to Amazon S...
<input type="checkbox"/> AmazonSNSRole	AWS managed	Default policy for Amazon SNS service...
<input type="checkbox"/> AWSelasticBeanstalkRoleSN	AWS managed	(Elastic Beanstalk operations role) Allo...
<input type="checkbox"/> AWSIoTDeviceDefenderPublishFindingsToSN	AWS managed	Provides messages publish access to S...

▶ Set permissions boundary - optional

Cancel Previous Next

CloudShell Feedback https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#ModifyIAMRoleInstanceId=i-0b36478f7902a7513 Account ID: 6807-6399-3787 AnkitaDevops

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EC2 > Instances > i-0b36478f7902a7513 > Modify IAM role

Modify IAM role Info

Attach an IAM role to your instance.

Instance ID
[i-0b36478f7902a7513 \(project2\)](#)

IAM role
Select an IAM role to attach to your instance or create a new role if you haven't created any. The role you select replaces any roles that are currently attached to your instance.

project2-roles [Create new IAM role](#)

Cancel Update IAM role

https://us-east-1.console.aws.amazon.com/sns/v3/home?region=us-east-1#/create-subscription

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Amazon SNS > Subscriptions > Create subscription

Create subscription

Details

Topic ARN
arn:aws:sns:us-east-1:680763993787:project2

Protocol
The type of endpoint to subscribe
Email

Endpoint
An email address that can receive notifications from Amazon SNS.
mardanabunu@gmail.com

ⓘ After your subscription is created, you must confirm it. [Info](#)

► **Subscription filter policy - optional** [Info](#)
This policy filters the messages that a subscriber receives.

► **Redrive policy (dead-letter queue) - optional** [Info](#)
Send undeliverable messages to a dead-letter queue.

CloudShell Feedback Search Screenshots Webex Create subscription | S... Reboot vs Restart - G... ENG 13:58

Subscription confirmed!
Simple Notification Service
You have successfully subscribed.
Your subscription's id is:
arn:aws:sns:us-east-1:680763993787:project2:c2ddfb13-f441-4993-beef-b4e66037b6c5
If it was not your intention to subscribe, [click here to unsubscribe](#).

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Screenshot of the AWS SNS Publish message interface for topic 'project2'.

Message body:

Message structure:

- Identical payload for all delivery protocols.**
The same payload is sent to endpoints subscribed to the topic, regardless of their delivery protocol.
- Custom payload for each delivery protocol.**
Different payloads are sent to endpoints subscribed to the topic, based on their delivery protocol.

Message body to send to the endpoint:

```
1 "Your medical report is ready"
```

Topic Details:

- Name:** project2
- ARN:** arn:aws:sns:us-east-1:680763993787:project2
- Type:** Standard

Subscriptions:

ID	Endpoint	Status	Protocol
5599cc01-666c-5a93-8c78-ad2a0c8f1322	(Pending confirmation)	Pending confirmation	HTTP/S

hospital reports - mardanabu... X Subscription confirm X +

mail.google.com/mail/u/0/?tab=rm&ogbl#inbox/IMfcgzOcpTMrwHZlwZzFGRbfJXnVlSH

Gmail Search mail

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Inbox 1,083

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