

Assignment 11 :: Create CICD Pipeline to deploy sample application on EC2 Instance from source code which is stored in GitHub, It should automatically get triggered once source change committed

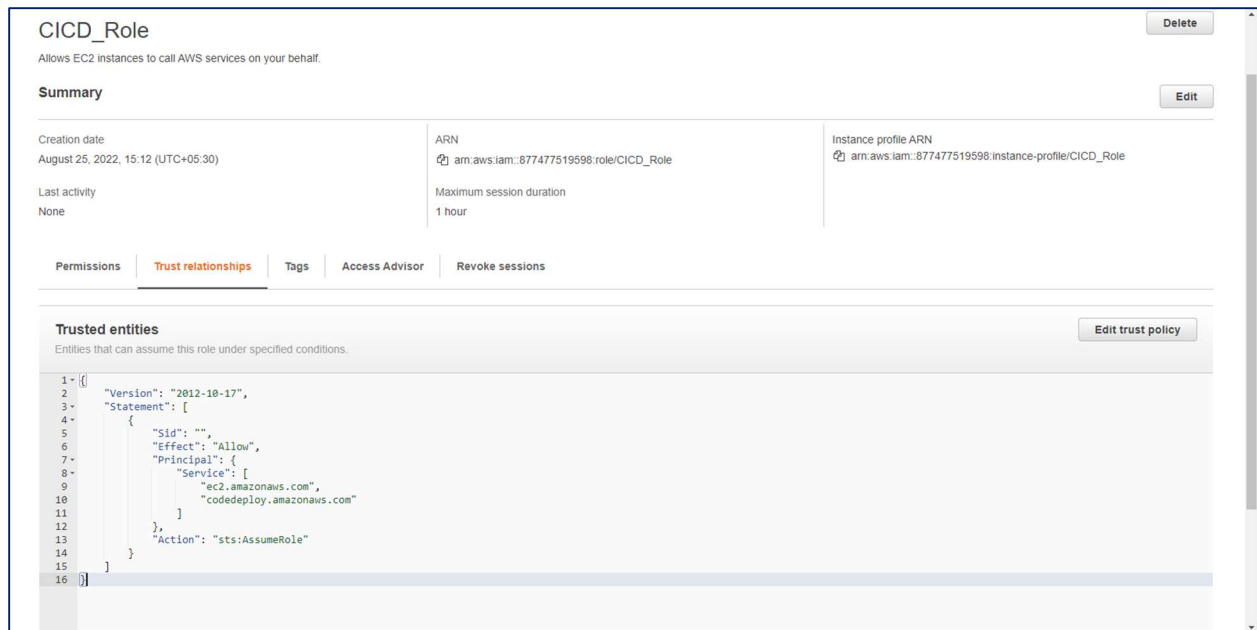
Step 1 :: Create an IAM role as below

The screenshot shows the AWS IAM console page for a role named 'CICD_Role'. The role's description is 'Allows EC2 instances to call AWS services on your behalf.' The 'Summary' tab is active, displaying the role's ARN (arn:aws:iam:877477519598:role/CICD_Role), which is highlighted with a red box. Other details include the creation date (August 25, 2022, 15:12 UTC+05:30), last activity (None), and maximum session duration (1 hour). The 'Permissions' tab is also visible, showing three attached policies: 'AmazonEC2RoleforAWSCodeDeploy', 'AWSCodeDeployFullAccess', and 'AWSCodeDeployRole'. The 'Permissions boundary' is currently not set.

Note :: Make a note of ARN which needs to be given during creation of “Deployment Group”

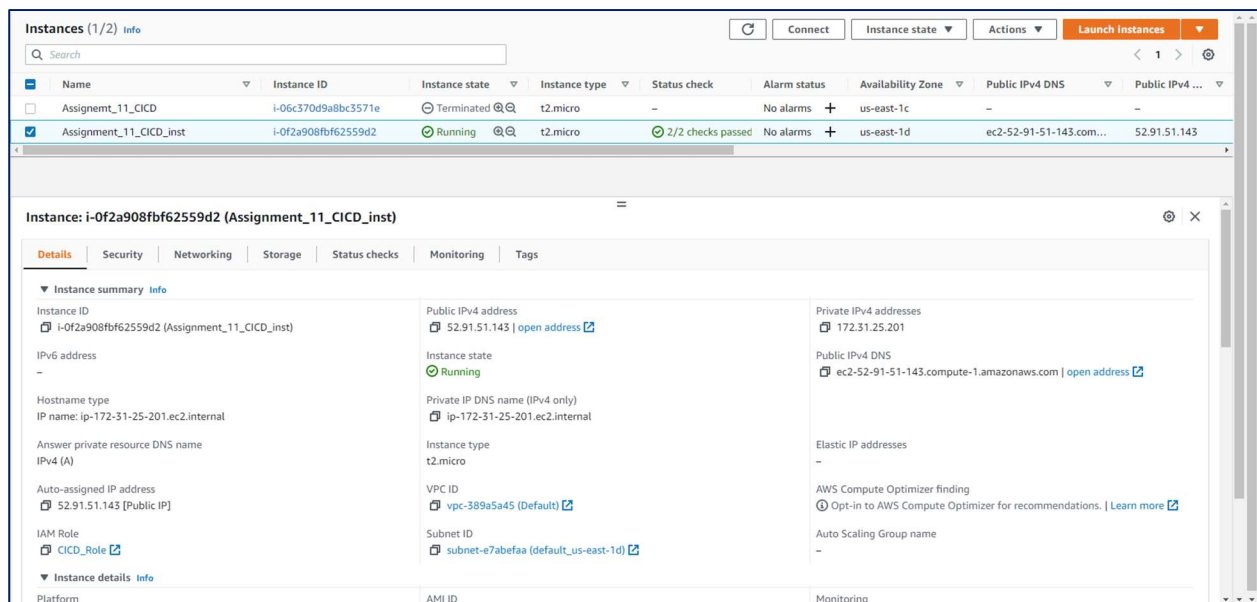
Step 1.1 :: Click on “Trust relationship” tab and edit the trust policy as below

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "",
      "Effect": "Allow",
      "Principal": {
        "Service": [
          "ec2.amazonaws.com",
          "codedeploy.amazonaws.com"
        ]
      },
      "Action": "sts:AssumeRole"
    }
  ]
}
```



Step 2 :: Create an EC2 Instance as below

Note :: Ensure you add the IAM role created in previous step



Once the instance is UP run the below commands as root user

```

yum -y update
yum install -y ruby wget
cd /home/ec2-user
wget https://aws-codedeploy-us-east-1.s3.us-east-1.amazonaws.com/latest/install
chmod +x ./install
./install auto

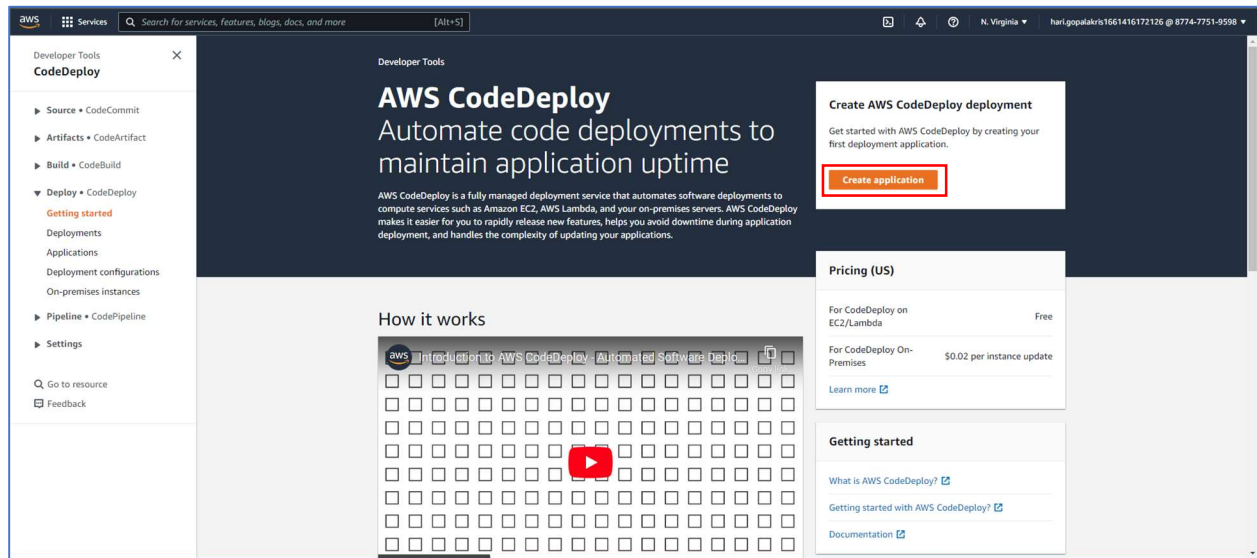
```

service codedeploy-agent start

```
[root@ip-172-31-25-201 ec2-user]# service codedeploy-agent status
The AWS CodeDeploy agent is running as PID 6431
[root@ip-172-31-25-201 ec2-user]#
```

Step 3 :: Create a CICD

Step 3.1 : Goto CodeDeploy in services and click Create Application



Developer Tools > CodeDeploy > Applications > Create application

Create application

Application configuration

Application name
Enter an application name

100 character limit

Compute platform
Choose a compute platform

[Cancel](#) [Create application](#)

Assignment_11_CICD

Notify ▼

Delete application

Application details

Name	Assignment_11_CICD	Compute platform	EC2/On-premises
------	--------------------	------------------	-----------------

Deployment groups

View details

Edit

Create deployment group

<

1

>

Name	Status	Last attempted deployment	Last successful deployment	Trigger count
No deployment groups				
Before you can deploy your application using CodeDeploy, you must create a deployment group.				
<div>Create deployment group</div>				

Step 3.2 :: Click on “Create deployment group” in above screen

Developer Tools > CodeDeploy > Applications > Assignment_11_CICD > Create deployment group

Create deployment group

Application
Application
Assignment_11_CICD
Compute type
EC2/On-premises

Deployment group name
Enter a deployment group name

100 character limit

Service role
Enter a service role
Enter a service role with CodeDeploy permissions that grants AWS CodeDeploy access to your target instances.

Deployment type

Choose how to deploy your application

☒ **In-place**

Updates the instances in the deployment group with the latest application revisions. During a deployment, each instance will be briefly taken offline for its update

☐ **Blue/green**

Replaces the instances in the deployment group with new instances and deploys the latest application revision to them. After instances in the replacement environment are registered with a load balancer, instances from the original environment are deregistered and can be terminated.

Environment configuration

Select any combination of Amazon EC2 Auto Scaling groups, Amazon EC2 instances, and on-premises instances to add to this deployment

☐ Amazon EC2 Auto Scaling groups

☒ Amazon EC2 instances

1 unique matched instance. [Click here for details](#)

You can add up to three groups of tags for EC2 instances to this deployment group.

One tag group: Any instance identified by the tag group will be deployed to.

Multiple tag groups: Only instances identified by all the tag groups will be deployed to.

Tag group 1

Key

Value - optional

Q Name

X

Q

Assignment_11_CICD_inst

X

Remove tag

Add tag

+ Add tag group

Agent configuration with AWS Systems Manager [Info](#)

AWS Systems Manager will install the CodeDeploy Agent on all instances and update it based on the configured frequency.



Complete the required prerequisites before AWS Systems Manager can install the CodeDeploy Agent.
Make sure the AWS Systems Manager Agent is installed on all instances and attach the required IAM policies to them. [Learn more](#)

Install AWS CodeDeploy Agent

- ☐ Never
- ☐ Only once
- ☒ Now and schedule updates

Basic scheduler

Cron expression

14

Days



Deployment settings

Deployment configuration

Choose from a list of default and custom deployment configurations. A deployment configuration is a set of rules that determines how fast an application is deployed and the success or failure conditions for a deployment.

CodeDeployDefault.AllAtOnce



or

Create deployment configuration

Load balancer

Select a load balancer to manage incoming traffic during the deployment process. The load balancer blocks traffic from each instance while it's being deployed to and allows traffic to it again after the deployment succeeds.

☐ Enable load balancing

Success
Deployment group created

Developer Tools > CodeDeploy > Applications > Assignment_11_CICD > Assignment_11_CICD

Assignment_11_CICD

Edit

Delete

Create deployment

Deployment group details

Deployment group name	Application name	Compute platform
Assignment_11_CICD	Assignment_11_CICD	EC2/On-premises
Deployment type	Service role ARN	Deployment configuration
In-place	arn:aws:iam::877477519598:role/CICD_Role	CodeDeployDefault.AllAtOnce
Rollback enabled	Agent update scheduler	
False	Learn to schedule update in AWS Systems Manager	

Step 3.3 :: Create a Pipeline

Developer Tools > CodePipeline > Pipelines > Create new pipeline

Step 1

Choose pipeline settings

Step 2

Add source stage

Step 3

Add build stage

Step 4

Add deploy stage

Step 5

Review

Choose pipeline settings [Info](#)

Pipeline settings

Pipeline name
Enter the pipeline name. You cannot edit the pipeline name after it is created.

Assignment-11-CICD

No more than 100 characters

Service role

☒ **New service role**
Create a service role in your account

☐ **Existing service role**
Choose an existing service role from your account

Role name

AWSCodePipelineServiceRole-us-east-1-Assignment-11-CICD

Type your service role name

☒ **Allow AWS CodePipeline to create a service role so it can be used with this new pipeline**

▼ Advanced settings

Artifact store

☒ **Default location**
Create a default S3 bucket in your account.

☐ **Custom location**
Choose an existing S3 location from your account in the same region and account as your pipeline

Encryption key

☒ **Default AWS Managed Key**
Use the AWS managed customer master key for CodePipeline in your account to encrypt the data in the artifact store.

☐ **Customer Managed Key**
To encrypt the data in the artifact store under an AWS KMS customer managed key, specify the key ID, key ARN, or alias ARN.

Cancel

Next

Developer Tools > CodePipeline > Pipelines > Create new pipeline

Step 1
Choose pipeline settings

Step 2
Add source stage

Step 3
Add build stage

Step 4
Add deploy stage

Step 5
Review

Add source stage Info

Source

Source provider
This is where you stored your input artifacts for your pipeline. Choose the provider and then provide the connection details.

GitHub (Version 1) ▾

Grant AWS CodePipeline access to your GitHub repository. This allows AWS CodePipeline to upload commits from GitHub to your pipeline.

Connected

✓ You have successfully configured the action with the provider.

The GitHub (Version 1) action is not recommended

The selected action uses OAuth apps to access your GitHub repository. This is no longer the recommended method. Instead, choose the GitHub (Version 2) action to access your repository by creating a connection. Connections use GitHub Apps to manage authentication and can be shared with other resources. [Learn more](#)

Repository

hari-gopalakrishnan/cicd-sample ✕

Branch

main ✕

Change detection options
Choose a detection mode to automatically start your pipeline when a change occurs in the source code.

GitHub webhooks (recommended)

Use webhooks in GitHub to automatically start my pipeline when a change occurs

AWS CodePipeline

Use AWS CodePipeline to check periodically for changes

Cancel

Previous

Next

Skip build stage

Developer Tools CodePipeline

► Source • CodeCommit

► Artifacts • CodeArtifact

► Build • CodeBuild

► Deploy • CodeDeploy

▼ Pipeline • CodePipeline

Getting started

Pipelines

► Settings

Go to resource

Feedback

Developer Tools > CodePipeline > Pipelines > Create new pipeline

Step 1
Choose pipeline settings

Step 2
Add source stage

Step 3
Add build stage

Step 4
Add deploy stage

Step 5
Review

Add build stage Info

Build - optional

Build provider
This is the tool of your build project. Provide build artifact details like operating system, build spec file, and output file names.

▾

Cancel

Previous

Skip build stage

Next

Developer Tools

CodePipeline

Source • CodeCommit

Artifacts • CodeArtifact

Build • CodeBuild

Deploy • CodeDeploy

▼ Pipeline • CodePipeline

Getting started

Pipelines

Settings

Go to resource

Feedback

Developer Tools > CodePipeline > Pipelines > Create new pipeline

Step 1

Choose pipeline settings

Step 2

Add source stage

Step 3

Add build stage

Step 4

Add deploy stage

Step 5

Review

Add deploy stage

You cannot skip this stage

Pipelines must have at least two stages. Your second stage must be either a build or deployment stage. Choose a provider for either the build stage or deployment stage.

Deploy

Deploy provider

Choose how you deploy to instances. Choose the provider, and then provide the configuration details for that provider.

AWS CodeDeploy

Region

US East (N. Virginia)

Application name

Choose an application that you have already created in the AWS CodeDeploy console. Or create an application in the AWS CodeDeploy console and then return to this task.

Assignment_11_CICD

Deployment group

Choose a deployment group that you have already created in the AWS CodeDeploy console. Or create a deployment group in the AWS CodeDeploy console and then return to this task.

Assignment_11_CICD

Cancel

Previous

Next

After reviewing the provided details click on “Create Pipeline”

Developer Tools

CodePipeline

Source • CodeCommit

Artifacts • CodeArtifact

Build • CodeBuild

Deploy • CodeDeploy

▼ Pipeline • CodePipeline

Getting started

Pipelines

Pipeline

History

Settings

Settings

Go to resource

Feedback

Developer Tools > CodePipeline > Pipelines > Assignment-11-CICD

Assignment-11-CICD

Notify

Edit

Stop execution

Clone pipeline

Release change

Source

Succeeded

Pipeline execution ID: 66263943-3e32-43cf-9aaa-5cf7b748859f

Source

GitHub (Version 1)

Succeeded - Just now

711bbbc4

711bbbc4 Source: First Commit

Disable transition

Deploy

In progress

Pipeline execution ID: 66263943-3e32-43cf-9aaa-5cf7b748859f

Deploy

AWS CodeDeploy

In progress - Just now

Details

711bbbc4 Source: First Commit

Feedback

Looking for language selection? Find it in the new Unified Settings

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Developer Tools > CodePipeline > Pipelines > Assignment-11-CICD

Assignment-11-CICD

Notify Edit Stop execution Clone pipeline Release change

Source Succeeded
Pipeline execution ID: 2fe85f41-efda-466e-8174-ac0cd3fe491f

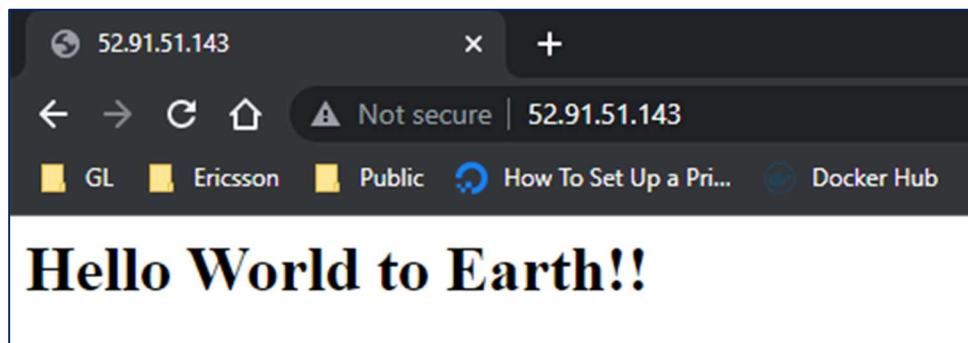
Source
GitHub (Version 1)
Succeeded - 23 minutes ago
c4ceba73 Source: Updated index file

Disable transition

Deploy Succeeded
Pipeline execution ID: 2fe85f41-efda-466e-8174-ac0cd3fe491f

Deploy
AWS CodeDeploy
Succeeded - 22 minutes ago
Details
c4ceba73 Source: Updated index file

Result 1 ::



Result 2 :: Now Do some changes in code

Changed the index.html file. Automatically it got triggered.

Developer Tools > CodePipeline > Pipelines > Assignment-11-CICD

Assignment-11-CICD

[Notify](#) [Edit](#) [Stop execution](#) [Clone pipeline](#) [Release change](#)

Source Succeeded
Pipeline execution ID: a3b5d10b-1330-4756-b99d-0ebb87eef655

Source

GitHub (Version 1)

Succeeded - Just now
d7a9dd34

d7a9dd34 Source: Updated index file 1

Disable transition

Deploy In progress
Pipeline execution ID: a3b5d10b-1330-4756-b99d-0ebb87eef655

Deploy

AWS CodeDeploy

In progress - Just now
Details

d7a9dd34 Source: Updated index file 1

Developer Tools > CodePipeline > Pipelines > Assignment-11-CICD

Assignment-11-CICD

[Notify](#) [Edit](#) [Stop execution](#) [Clone pipeline](#) [Release change](#)

Source Succeeded
Pipeline execution ID: a3b5d10b-1330-4756-b99d-0ebb87eef655

Source

GitHub (Version 1)

Succeeded - Just now
d7a9dd34

d7a9dd34 Source: Updated index file 1

Disable transition

Deploy Succeeded
Pipeline execution ID: a3b5d10b-1330-4756-b99d-0ebb87eef655

Deploy

AWS CodeDeploy

Succeeded - Just now
Details

d7a9dd34 Source: Updated index file 1

Deployment status

Installing application on your instances

100%

1 of 1 instances updated Succeeded

Deployment details

Application	Deployment ID	Status
Assignment_11_CICD	d-4i409VJGJ	Succeeded
Deployment configuration	Deployment group	Initiated by
CodeDeployDefault.AllAtOnce	Assignment_11_CICD	User action
Deployment description		
-		

Revision details

Revision location	Revision created	Revision description
s3://codepipeline-us-east-1-193047669111/Assignment-11-CICD/SourceArtifacts/V5RJPCs.zip?eTag=7d27e2768fdb2745247599a1b2a6eab-1	Just now	Application revision registered by Deployment ID: d-4i409VJGJ

Deployment lifecycle events

< 1 > ⚙

Instance ID	Duration	Status	Most recent event	Events	Start time	End time
i-0f2a908fbf62559d2 🔗	7 seconds	Succeeded	ValidateService	View events	Aug 25, 2022 5:02 PM (UTC+5:30)	Aug 25, 2022 5:02 PM (UTC+5:30)

52.91.51.143

×

+

← → ↻ 🏠

⚠ Not secure | 52.91.51.143

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Hello World to AWS CICD Pipeline Testing