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Deploy an App with CodeDeploy

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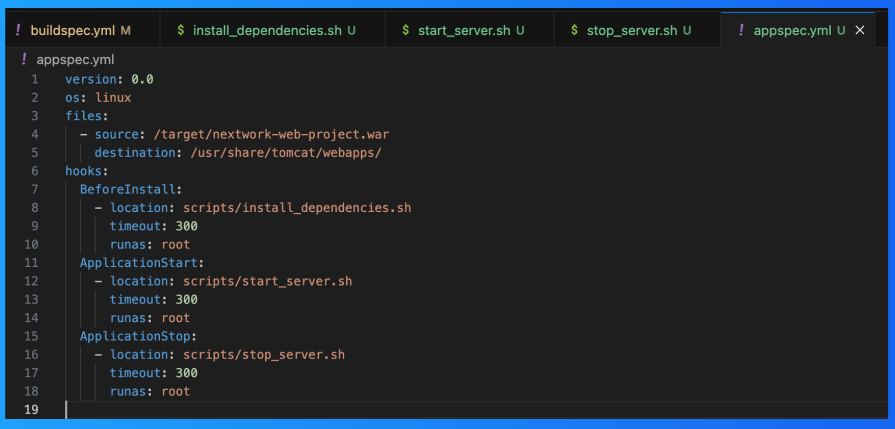

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Introducing today's project!

What is AWS CodeDeploy?

CodeDeploy automates the flow from setting up the web servers with the right dependencies, starting the correct services, and towards installing the web app onto the servers for either testing or staging or production purposes.

How I'm using AWS CodeDeploy in this project

We used CodeDeploy to install tomcat and httpd and start it, and take the WAR file and install it to our EC2 instances.

One thing I didn't expect...

I didn't know that deployment needed so many routes and how complicated it could be depending on the company's needs. I thought developing the app was the end of it, but deployment can be quite complex too, with many options.

This project took me...

This took me around an hour.

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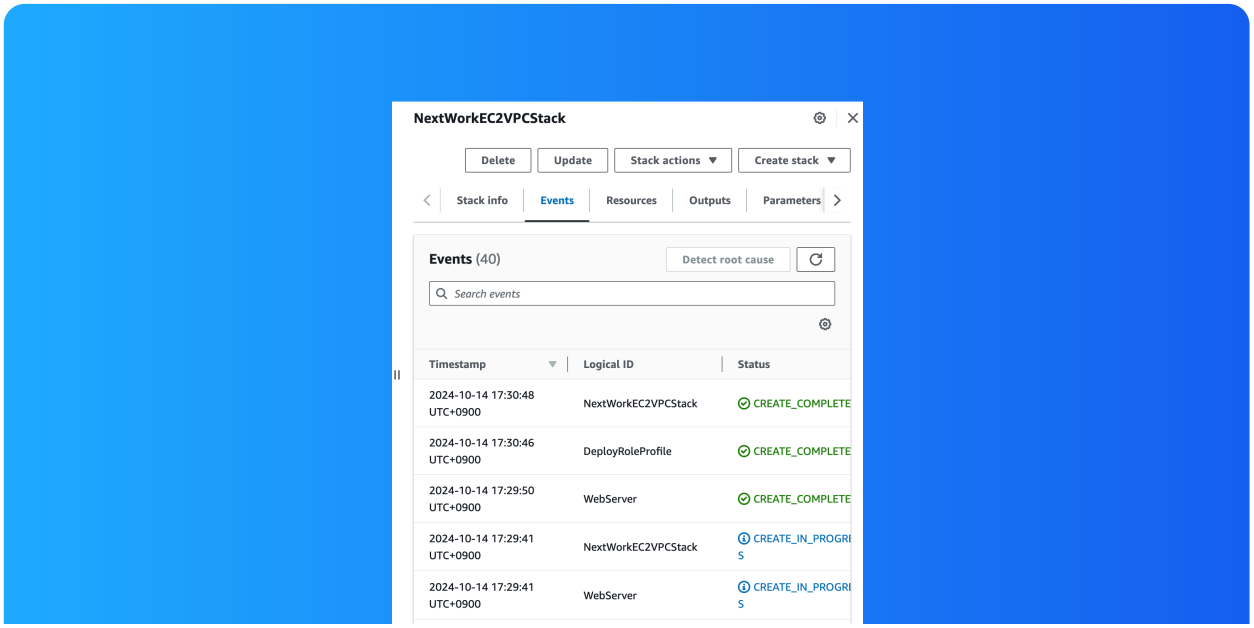
Set up an EC2 instance

I set up an EC2 instance and VPC because this instance will be in charge of running the deployed version of the app, while the VPC ensures a secure connection to the necessary resources behind the scenes to serve the web app, such as a database.

We manage production and development environments separately because we want to separate the testing versions from those that are shown publicly to clients. Separating the environments helps prevent unintentional changes from being publicly seen.

To set up my EC2 instance and VPC, I used CloudFormation, which could take a template file to set up the stack, making the process repeatable and consistent.

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Bash scripts

Scripts are text files that contain multiple commands, automating the input of commands to the bash shell.

I used three scripts for my project's deployment

The first script I created was install_dependencies.sh, which are responsible for installing tomcat and httpd, the webserver packages which are necessary for running our web app.

The second script I created was start_server.sh, which tells the EC2 instance what services it should start and enable for auto-start each time. This ensures the necessary programs for running the web app are live after each reboot.

The third script I was the stop_server.sh, which ensures any running processes for the current web server are terminated, so that it doesn't carry on to the next deployment. Doing this ensures the latest app version is always shown.

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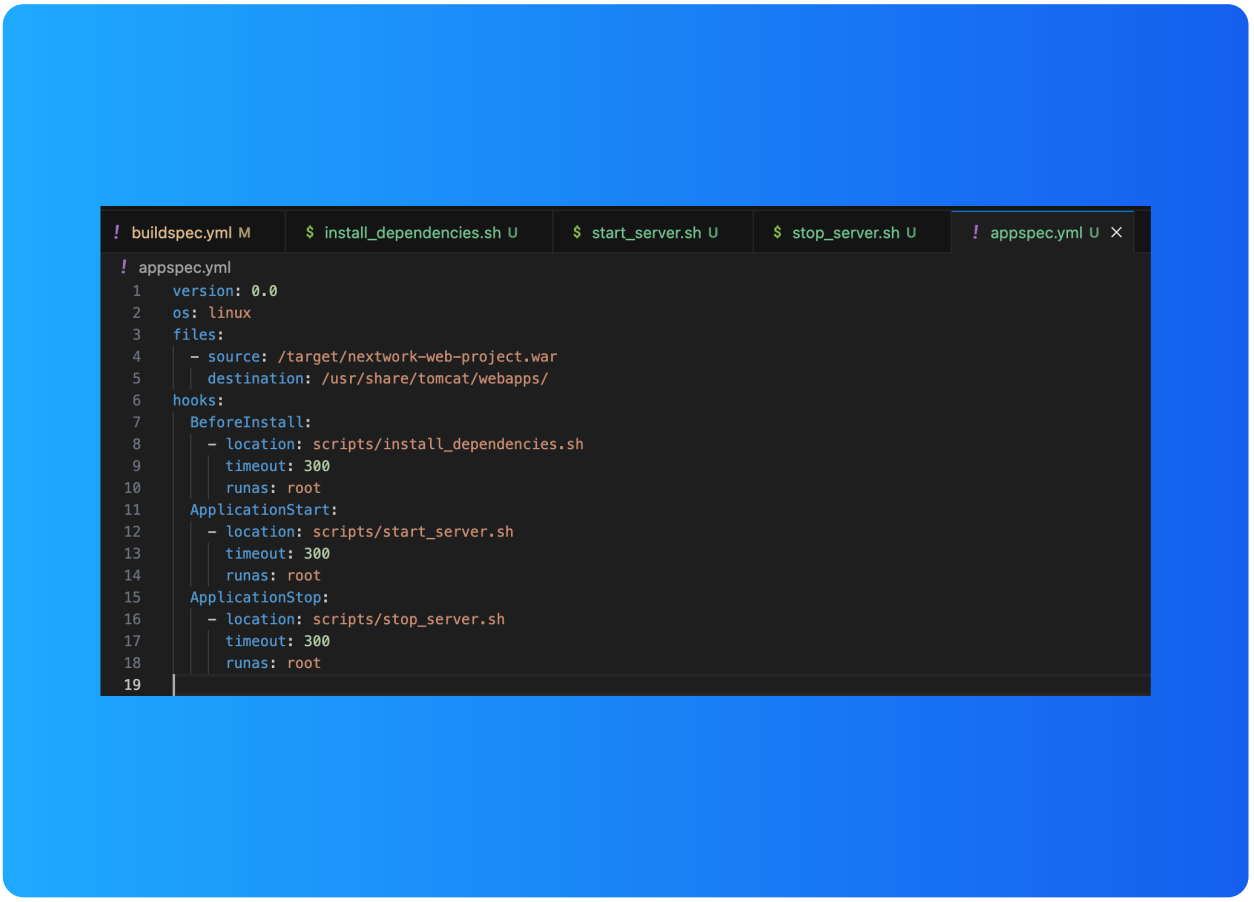
Bash scripts



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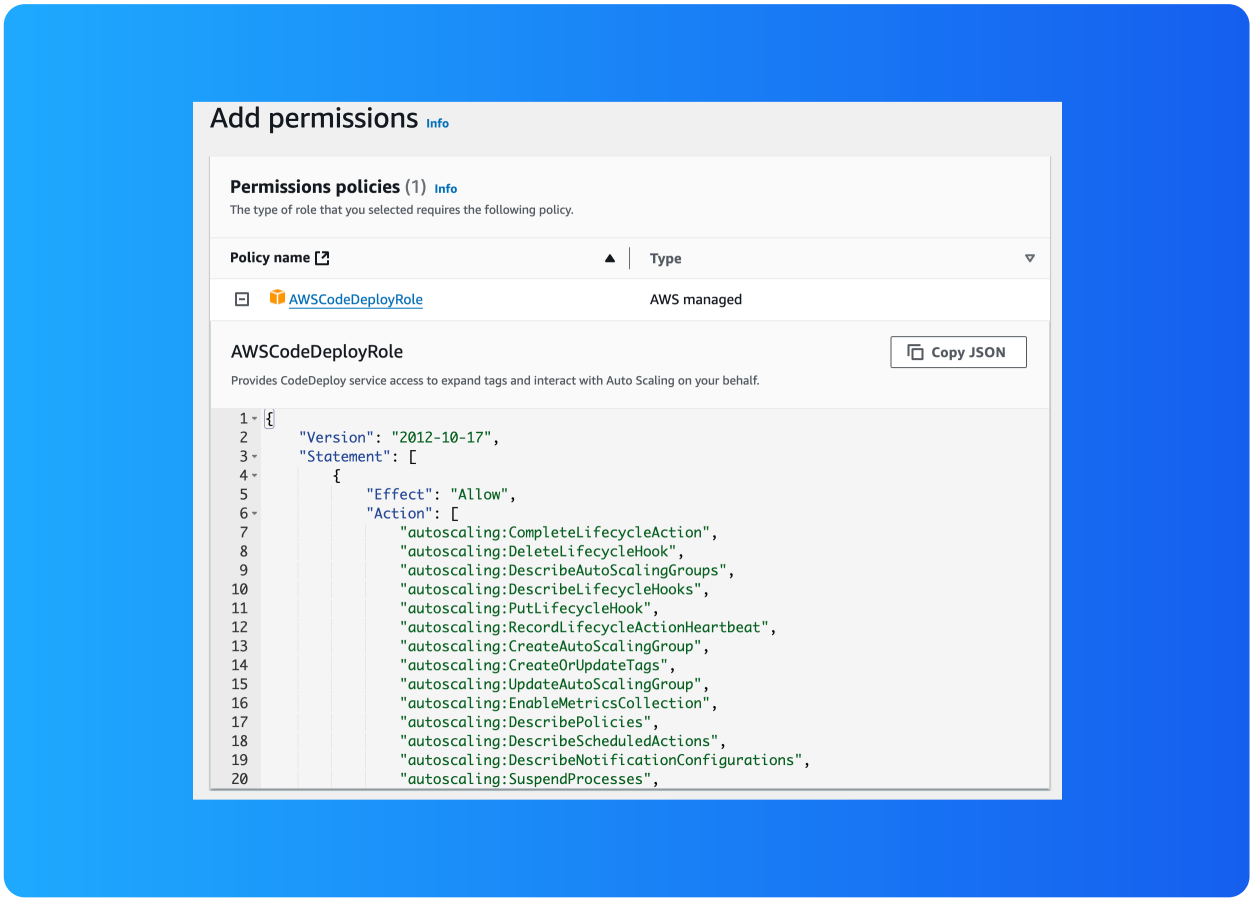
CodeDeploy’s IAM Role

I created an IAM service role for CodeDeploy because by default, it doesn't have access to the EC2 production server instance where we want it to deploy to.

To set up CodeDeploy’s IAM role, I chose CodeDeploy as the service that needs the role, and gave it the AWSCodeDeployRole as permission.



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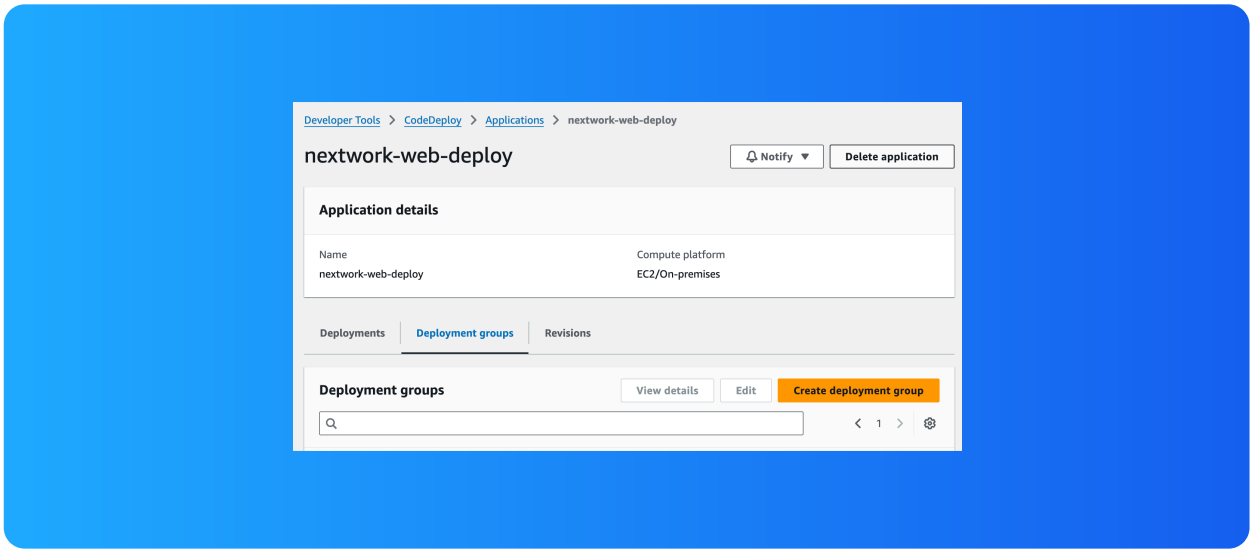
CodeDeploy application

A CodeDeploy application is like a template that holds all the settings necessary for deployment.

To create a CodeDeploy application, I had to select a compute platform, which means choosing what type of instance we want our web app to run on. We can choose EC2, serverless (lambda), containerized deployment (ECS), or even to on-premise servers.

The compute platform I chose was EC2 because we want to configure and run a full web server on the cloud.



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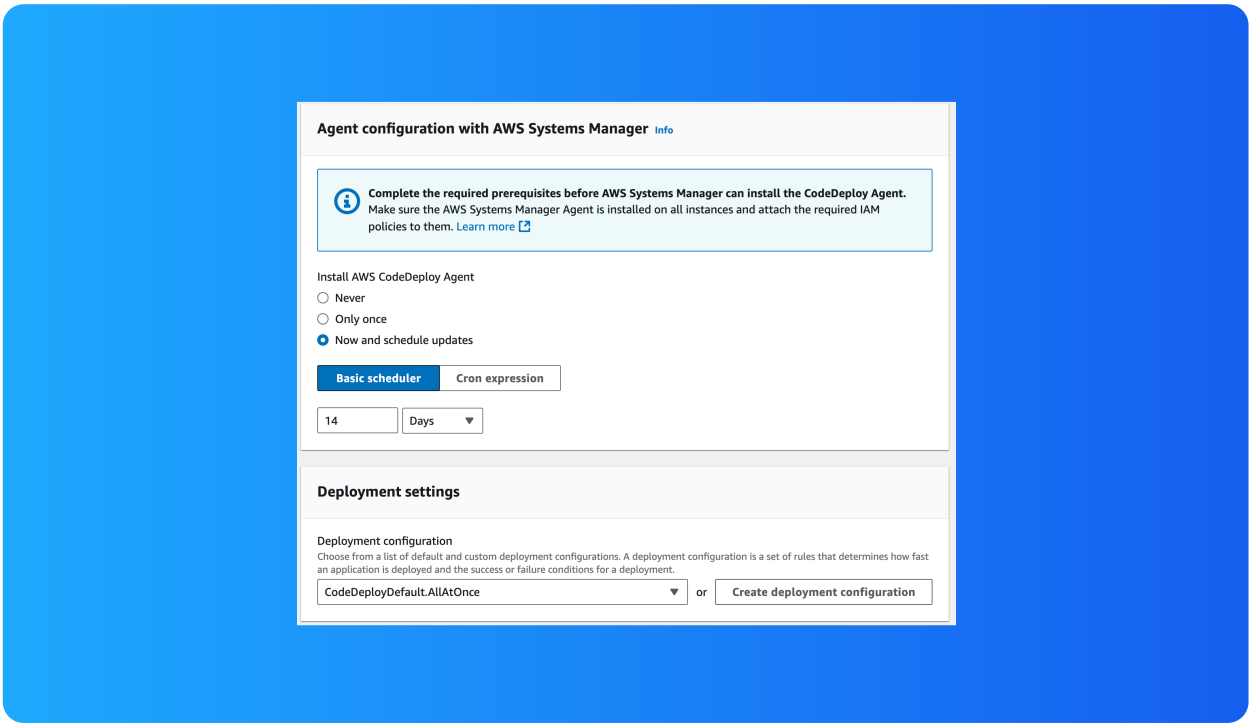
Deployment group

A deployment group means the specific settings for one deployment run. This can be used to separate the deployment flow for staging a testing version onto a testing server and another flow for installing a public version.

Two key configurations for a deployment group

Environment means the computing resource type to be used to run the web app, which in this case is an EC2 instance.

A CodeDeploy Agent is the software installed onto the deployment server that CodeDeploy communicates with to execute commands on the server itself.



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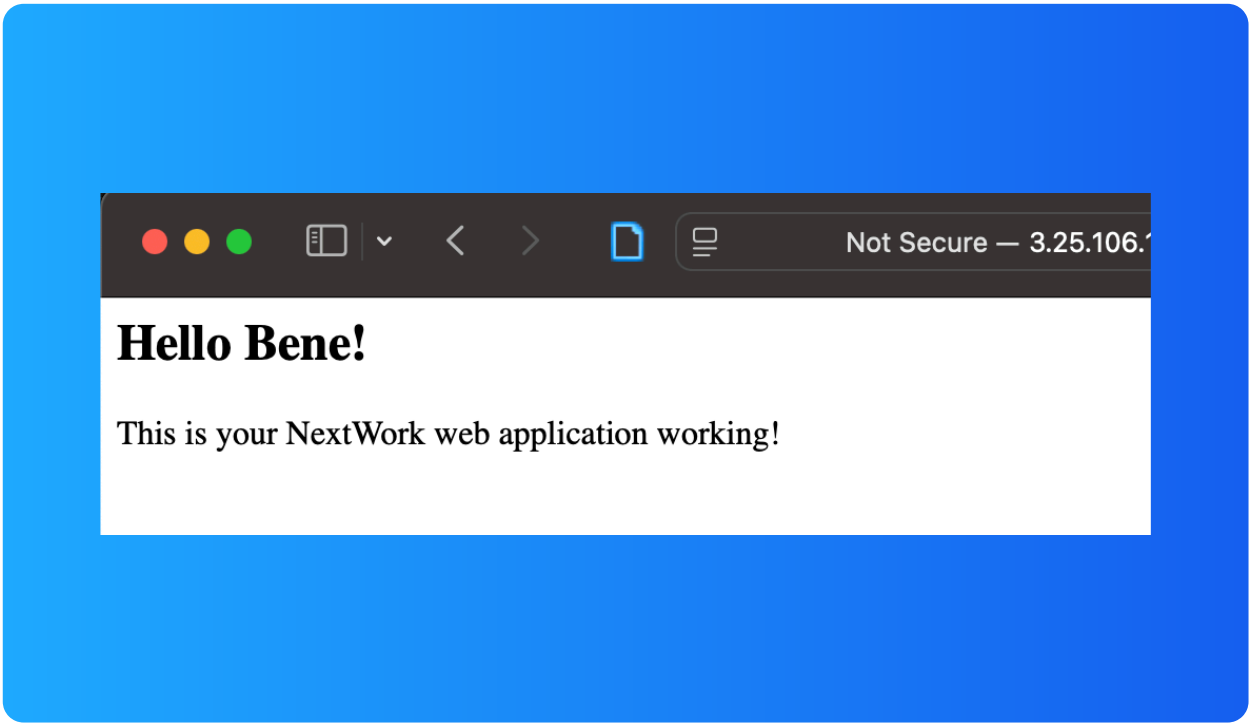
CodeDeploy application

To create my deployment, I had to set up a revision location, which means pointing to the latest version of the web app.

My revision location was my zipped WAR file that CodeBuild created and then uploaded to the S3 bucket.

To visit my web app, I had to visit the EC2 instance's IP address.



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