



Set Up a Web App Using AWS and VS Code



naveen msd

```
<html>
<body>
<h2>Hello Naveen!</h2>
<p>This is my NextWork web application working!</p>
</body>
</html>
```



Introducing Today's Project!

In this project, I will establish a CI/CD pipeline foundation by creating a web application from scratch. I will be launching an EC2 Instance and connecting to it using VS Code to generate a web app inside.

Key tools and concepts

Services I used were VS Code and an Amazon EC2 Instance. Key concepts I learnt include using SSH, an IDE, launching an Instance, editing index.jsp, and using a key pair.

Project reflection

One thing I didn't expect in this project was using VS code to remote ssh to EC2 instance and accessing the instance without IDE.

This project took me approximately 1.5 hrs. It was most rewarding to see a successful SSH Connection.



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This project is part one of a series of DevOps projects where I'm building a CI/CD pipeline! I'll be working on the next project Tomorrow



Launching an EC2 instance

I started this project by launching an EC2 instance because EC2 Instances are virtual computers. I want a web app to live in the cloud. So I am launching an EC2 Instance to develop webapp code.

I also enabled SSH

Secure Shell is a protocol used to ensure only authorized users can access a remote server. When I connect to my EC2 instance later in this project, SSH verifies that I have the correct private key, which matches the public key on the server.

Key pairs

A key pair is a set of security credentials used for secure access to your instances. It includes a public key, which AWS stores on the instance, and a private key (a .pem file) that you download and use to log in via SSH.

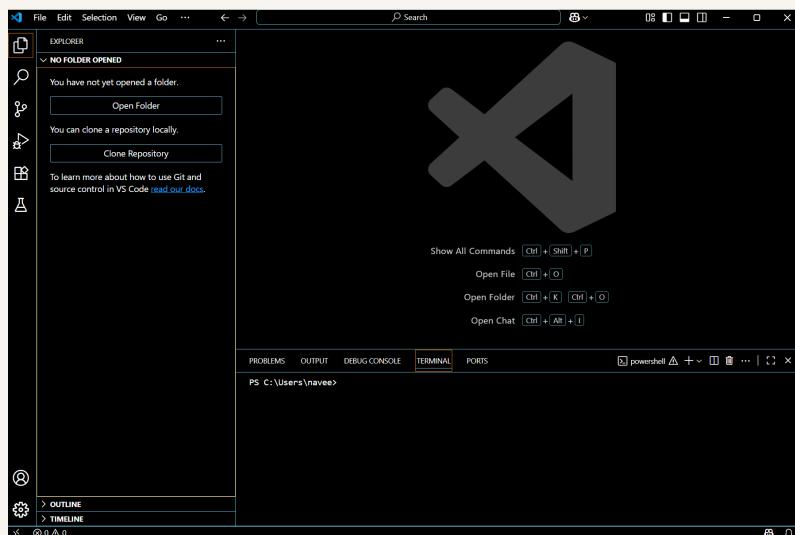
The file downloaded to your local computer is the private key file, usually with a .pem extension. I use this file with an SSH client to securely connect to your EC2 instance.



Set up VS Code

VS Code is a free, lightweight, and highly extensible source code editor. It provides core development tools like syntax highlighting, IntelliSense (intelligent code completion), debugging, and built-in git integration.

I installed VS Code to connect to EC2 Instance and to develop a web app





My first terminal commands

A terminal is where you send instructions to your computer using text instead of clicks. The first command I ran for this project is cd/Desktop/Devops Project/

I also updated my private key's permissions by changing the ownership of the file.

```
icacls ".\network-keypair.pem" /reset icacls ".\network-keypair.pem" /grant:r  
"username: R" icacls ".\network-keypair.pem" /inheritance:r
```

```
PS C:\Users\navee\Desktop\Devops Project> icacls ".\network-keypair.pem" /reset  
processed file: .\network-keypair.pem  
Successfully processed 1 files; Failed processing 0 files  
PS C:\Users\navee\Desktop\Devops Project> icacls ".\network-keypair.pem" /grant:r "navee:R"  
processed file: .\network-keypair.pem  
Successfully processed 1 files; Failed processing 0 files  
PS C:\Users\navee\Desktop\Devops Project> icacls ".\network-keypair.pem" /inheritance:r  
processed file: .\network-keypair.pem  
Successfully processed 1 files; Failed processing 0 files  
PS C:\Users\navee\Desktop\Devops Project>
```



SSH connection to EC2 instance

To connect to my EC2 instance, I ran the command `ssh -i path to private key ec2-user@public IPv4 address`. This command sets up an SSH connection directly between the local computer and the EC2 instance.

This command required an IPv4 address

A server's IPV4 DNS is a public address that identifies where the server is located in the cloud. In this case, an EC2 instance's IPV4 DNS is useful to give it to the local computer.

The screenshot shows the GitHub desktop application interface. On the left, there's a sidebar with options like 'EXPLORER', 'NO FOLDERS OPENED', 'Open Folder...', 'Clone Repository', and 'To learn more, see how to use Git and source control in VS Code at [code.visualstudio.com/docs](#)'. The main area has tabs for 'PROJECTS', 'OUTPUT', 'DEBUG CONSOLE', 'TERMINAL', and 'PULLS'. The 'TERMINAL' tab is active, displaying the command 'ssh -i "/Users/naveenmsd/.ssh/ec2-user.pem" ec2-user@ec2-38-191-191-168.us-east-2.compute.amazonaws.com'. Below the terminal, there's a status message: 'Warning: Permanently added "ec2-38-191-191-168.us-east-2.compute.amazonaws.com" (ED05515) to the list of known hosts.' The right side of the screen shows a file tree for an Amazon Linux 2013 repository.



Maven & Java

Apache Maven helps in organizing Java projects, like the web app. It has a lot of use cases like, package manager, downloading certain pieces of code.

Maven is required in this project because of its ability to spin off using archetypes!. I am about to set up a Java web app using WebApp archetypes.

Java is a popular programming language used to build different types of applications, from mobile apps to large enterprise systems.

Java is required in this project because it lays the foundation for writing about web app code. It's just like needing to know another language to speak. Maven needs Java to work.



Create the Application

I generated a Java web app using the command "mvn archetype generate". This command tells Maven to generate a webapp using the existing template.

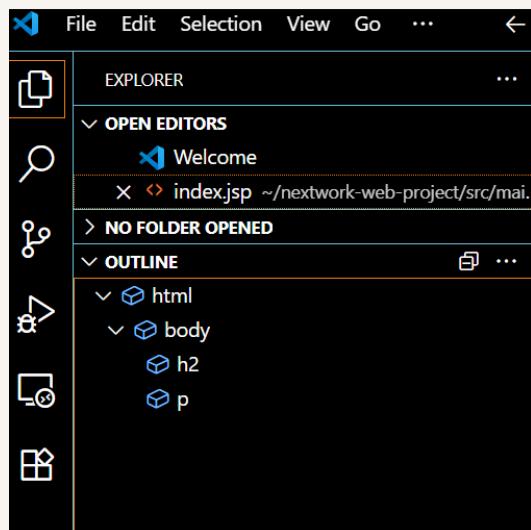
I installed Remote SSH, which is an extension in VS Code that lets me connect directly via SSH to another computer securely over the internet(EC2 Instance). I installed it to run commands or manage files

Configuration details required to set up a remote connection include. path of .pem file and EC2 Public DNS address. (ssh -i "path to the file" ec2-user@Public Ipv4 address.

Create the Application

Using VS Code's file explorer, I could see all the files and subfolders under nextwork-web-project are parts of a web app!.

Two of the project folders created by Maven are src and webapp. The src folder holds all the source code files that define how the web app looks and works. src is further divided into webapp, which are the web app's files.





Using Remote - SSH

The index.jsp is a file used in Java web apps. It's similar to an HTML file because it contains markup to display web pages. However, index.jsp can also include Java code, which lets it generate dynamic content.

I edited index.jsp by updating the HTML code. Also added some text.

```
File Edit Selection View Go ... Search
EXPLORER ... Welcome index.jsp ...
OPEN EDITORS
  Welcome
  index.jsp ...
NO FOLDER OPENED
OUTLINE
  html
    body
      h2
      p
  ...
home > ec2-user > nextwork-web-project > src > main > webapp > index.jsp > ...
1 <html>
2
3 <body>
4
5 <h2>Hello Naveen!</h2>
6
7 <p>This is my NextWork web application working!</p>
8
9 </body>
10
11 </html>
12
```



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