



Set Up a Web App Using AWS and VS Code

MA

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```
↳ index.jsp  X
src > main > webapp > ↳ index.jsp > ⚡ html > ⚡ body > ⚡ h2
1   <html>
2
3   <body>
4
5   <h2>Hello Madhavan!</h2>
6
7   <p>This is my NextWork web application working!</p>
8
9   </body>
10
11  </html>
12
```

Introducing Today's Project!

Today I will be building a web app using AWS EC2 and VS code where I will be using VS code to set up a remote connection with my EC2 instance to generate a web app inside.

Key tools and concepts

Services I used where EC2 instances, IAM user and key pair Key concepts I learnt include establishing remote access to EC2 instance, Maven, AMI,

Project reflection

I didn't expect to find it easy to establish remote SSH connection with the EC2 instance.

This project took me approximately 150 minutes The most challenging part was configuring SSH file It was most rewarding to see the connection established message.

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 in One day

Launching an EC2 instance

I start my project by launching an EC2 instance because its a virtual computer where we can deploy our web app of our desired configurations.

I also enabled SSH

Secure Shell (SSH) is a protocol used to establish a secure connection with a remote server. It verifies the user using a private key and encrypts all communication between the user and the server, making it an ideal method for secure remote access.

Key pairs

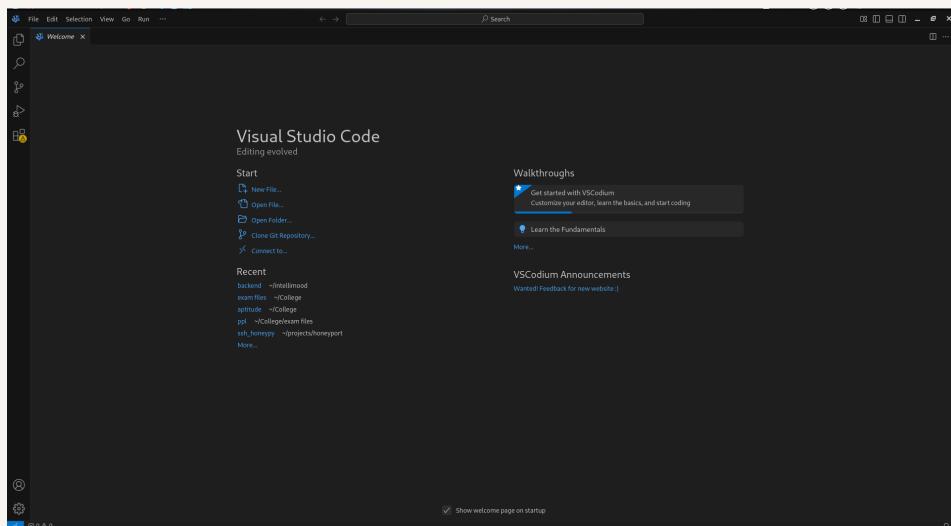
A key pair is a mechanism used to connect with EC2 instances securely, In a key pair we get a public key which AWS keeps it to itself and private key for the user. When connecting user uses the private key for verification with AWS.

Once I set up my key pair, AWS automatically dowloaded keypair.pem which is the private key provided by the AWS to the user when a key pair is created. After downloading moved it to a private folder so that I don't lose track of it.

Set up VS Code

VS code is a popular IDE used by engineers to manage their coding projects and it comes with a handy extension to ease establishing connection with an EC2 instance.

I installed VS code to manage our web app code and the most important part about using it is to establish SSH connection with an EC2 instance.



My first terminal commands

A terminal is a interface used to send instructions to the computer using commands instead of some clicks, The first command I ran was cd Documents/Devops to navigate to the folder containing .pem file for authentication purpose.

I also updated my private key's permission by executing the command chmod 400 <filename>.pem, this sets the file permission to read only and revokes all permission for other users and groups.

```
<areus> cd Documents/Next\ work\ report/DevOps/  
~/Documents/Next work report/DevOps<areus> chmod 400 keypair.pem
```

SSH connection to EC2 instance

To connect to my EC2 instance, I ran the command `ssh -i <.pem file path> ec2-user@<ipaddr>` where ssh starts the connection with the instance , -i mentions the identity file and `ec2-user@<ip>` specifies the username and ip address of the EC2 instance.

This command required an IPv4 address

A server's IPV4 DNS is like a public address that can be used to find the server over the internet. Our local computer needs this because it tells where to find the EC2 instance to establish connection with it.

```
(192.168.34.21)~/Documents/Next work report/DevOps<areus> ssh -i keypair.pem ec2-user@13.233.91.62
The authenticity of host '13.233.91.62 (13.233.91.62)' can't be established.
ED25519 key fingerprint is SHA256:B1fMVeCxXajX5dkGbbh5SK/KS5+LJ/oamTzE4FqKcCM.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? y
Please type 'yes', 'no' or the fingerprint: yes
Warning: Permanently added '13.233.91.62' (ED25519) to the list of known hosts.
,      #
~\_ ###_      Amazon Linux 2023
~~ \####\
~~ \###|
~~ \#/      https://aws.amazon.com/linux/amazon-linux-2023
~~ V~' '-'>
~~ /
~~ .-' /_
~~ /_/
~~ /m/
[ec2-user@ip-172-31-12-185 ~]$
```

Maven & Java

Apache Maven is a tool used to manage java based projects, it also comes with an ability to act as a package manager where it downloads dependencies and plugins, in our case archetypes predefined web app templates to spin up a web app easily.

Maven is required in this project because we need to utilise its ability to spin up a web app easily using archetypes. I will be using archetypes to

Java is a programming language which is used to built everything from a web and mobile application to large scale enterprise softwares, we are using Java in this project to build a web application.

Java is required in this project because it forms the base to write our web app code as well as Maven requires Java to run.

Create the Application

I generated a Java web app using the command mvn archetype:generate which insists maven to create a web app from a pre-existing template and - DartifactId=nextwork-web-project names the project as nextwork-web-project.

I installed Remote-SSH, which is a extension in VS code, I installed it to establish a remote secure connection with an EC2 instance. Only after establishing remote connection we can

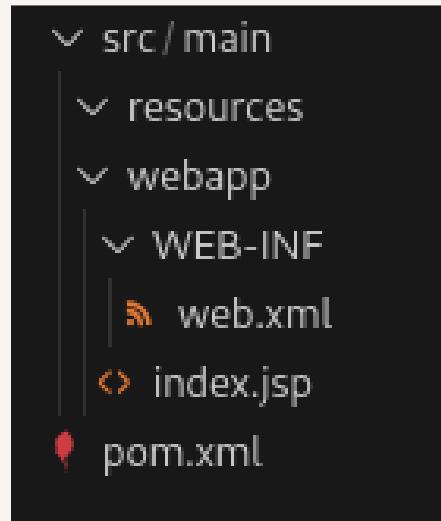
To set up a remote connection, the required configuration details include the identity file (private key), the username for logging in, and the public IP address of the EC2 instance.

```
[INFO] Parameter: basedir, Value: /home/ec2-user
[INFO] Parameter: package, Value: com.nextwork.app
[INFO] Parameter: groupId, Value: com.nextwork.app
[INFO] Parameter: artifactId, Value: nextwork-web-project
[INFO] Parameter: packageName, Value: com.nextwork.app
[INFO] Parameter: version, Value: 1.0-SNAPSHOT
[INFO] project created from Old (1.x) Archetype in dir: /home/ec2-user/nextwork-w
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 9.643 s
[INFO] Finished at: 2025-06-18T20:10:38Z
[INFO] Final Memory: 17M/78M
[INFO] -----
```

Create the Application

Using VS Code's file explorer, I could see files and subfolders of the project which can be expanded using >.

Two of the project folders created by Maven are src and webapp, which contain source code files that defines look and feel of the website.



Using Remote - SSH

index.jsp is a file found in java based web apps it contains HTML for markup to display web pages and sometimes it has java code for dynamic content generation based on the user input

I edited index.jsp by updating the HTML saying hello world to hello madhavan and also added a paragraph with some text.

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