



Build a Web App and IDE in AWS



Elena

The screenshot shows the AWS CloudWatch Metrics Insights interface. At the top, there's a search bar with the placeholder "Find Instance by attribute or tag (case-sensitive)". Below it, a table lists instances with the following columns: Name, Instance ID, Instance state, and Instance type. One instance is selected, showing its details below.

Name	Instance ID	Instance state	Instance type
NextWorkIDE	i-026f8c16b079165b4	Running	t2.micro

i-026f8c16b079165b4 (NextWorkIDE)

Details Status and alarms Monitoring Security Networking Storage Tags

Instance summary

Instance ID i-026f8c16b079165b4 (NextWorkIDE)	Public IPv4 address 3.27.206.174 open address	Private IPv4 addresses 172.31.1.180
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-3-27-206-174.ap-southeast-2.compute.amazonaws.com open address



Introducing Today's Project!

What is AWS Cloud9 and why is it useful?

AWS Cloud9 is a cloud-based IDE. It offers accessibility, pre-configured tools, collaboration, AWS integration, and cost-effectiveness. While I didn't use it here, it's probably valuable for future projects.

How I'm using Cloud9 in this project

I used a local IDE (VS Code) connected to my EC2 instance via SSH. Maven I used to manage the project structure and build process. For the index.jsp file, I directly edited it online using the nano text editor on the EC2 instance.

One thing I didn't expect...

One thing I didn't expect in this project was the depth of Java knowledge required. Despite not having prior experience, I was able to successfully use it to build the web application.

This project took me...

Two hours



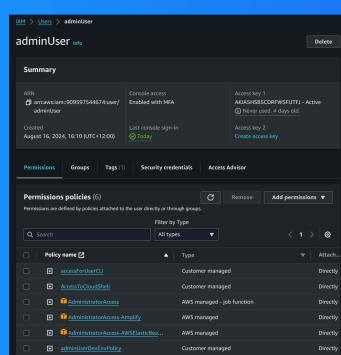
Set up an IAM User

An IAM user is a person or entity that has access to AWS resources. It's like a username and password that allows you to log in and use AWS services.

The importance of IAM users

It's important to use IAM users because they provide a way to control access to AWS resources. You can grant specific permissions to different users, so only authorized people can perform certain actions.

I created an IAM user with a comprehensive set of permissions, including full administrative privileges (AdministratorAccess). While I anticipate using other permissions in future projects, I currently have the user configured with full admin access.





Environments & IDEs

What is an environment?

An environment is a set of tools, configurations, and settings that you use to develop and run a software application. In the context of cloud computing, it's like a virtual workspace where you can create, test, and deploy your projects.

What is an IDE?

An IDE is a software application that provides a comprehensive set of tools for software development. It typically includes a text editor, compiler, debugger, and build automation tools. Think of it as a one-stop shop for programmers.



Launch a Cloud9 IDE

The benefit of using Cloud9

Even though Cloud9 offered a more streamlined and automated experience, it's no longer available. As a result, I'm using VSCode with SSH for more control and flexibility, even though it's manual.

The screenshot shows the AWS CloudWatch Metrics interface. At the top, there's a search bar and a dropdown menu labeled "All states". Below that is a table with columns for Name, Instance ID, Instance state, and Instance type. One row is selected, showing "NextWorkIDE" as the name, "i-026f8c16b079165b4" as the instance ID, "Running" as the state, and "t2.micro" as the type. At the bottom of the table, there's a link to "View details".

Instances (1/1) [Info](#)

Last updated 1 minute ago [C](#) [Connect](#) Instance state Actions [Launch instances](#)

[Find Instance by attribute or tag \(case-sensitive\)](#) All states [<](#) [1](#) [>](#) [⚙️](#)

Name	Instance ID	Instance state	Instance type
NextWorkIDE	i-026f8c16b079165b4	Running	t2.micro

[View details](#)

i-026f8c16b079165b4 (NextWorkIDE)

[Details](#) [Status and alarms](#) [Monitoring](#) [Security](#) [Networking](#) [Storage](#) [Tags](#)

Instance summary [Info](#)

Instance ID i-026f8c16b079165b4 (NextWorkIDE)	Public IPv4 address 3.27.206.174 open address	Private IPv4 addresses 172.31.1.180
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-3-27-206-174.ap-southeast-2.compute.amazonaws.com open address



Maven & Java

Maven is a popular build automation tool primarily used for Java projects. It helps streamline the build process by managing dependencies, compiling code, running tests, and packaging applications.

Maven is essential for this project because it automates the build process, streamlining tasks like dependency management, compilation, testing, and packaging. This ensures consistency and efficiency.

Java is a high-level, OOP language that is used for developing a variety of applications, from web and mobile apps to enterprise software and big data systems. It's known for its portability, platform independence, and strong community support.

Java is required in this project because it's a versatile and widely-used language that's well-suited for building various types of applications. Java's portability, community, and rich ecosystem make it ideal for enterprise software.

```

-- Processing Dependency: libcurl-4.0.0.so (>=0.9.4) found in /usr/lib/curl-4.0.0
-- Running transaction check
-- Transaction Check Error for libcurl-4.0.0-1.i386 (libcurl-4.0.0)
--   Expected: libcurl-4.0.0-1.i386-0.422-389.1.i386 will be installed
--   Installed: libcurl-4.0.0-1.i386-0.422-389.1.i386

Dependencies Resolved

Available Packages
Name        Arch      Version           Repository      Size
Installing:
  curl        i386     4.0.0-1.i386-0.422-389.1.i386  maven-artifactory  46 kB
  libcurl     i386     4.0.0-1.i386-0.422-389.1.i386  maven-artifactory  39 kB

Transaction Summary

  Install 1 Package (1 Dependent package)

Total download size: 85B
Is this ok? [y/N] y

[1/2] Getting: curl-4.0.0-1.i386-0.422-389.1.i386.i386.rpm
[1/2] Getting: libcurl-4.0.0-1.i386-0.422-389.1.i386.i386.rpm
[1/2] Preparing: curl-4.0.0-1.i386-0.422-389.1.i386.i386.rpm
[1/2] Preparing: libcurl-4.0.0-1.i386-0.422-389.1.i386.i386.rpm
[1/2] Verifying: curl-4.0.0-1.i386-0.422-389.1.i386.i386.rpm
[1/2] Verifying: libcurl-4.0.0-1.i386-0.422-389.1.i386.i386.rpm
[1/2] Cleaning up: curl-4.0.0-1.i386-0.422-389.1.i386.i386.rpm
[1/2] Cleaning up: libcurl-4.0.0-1.i386-0.422-389.1.i386.i386.rpm
[1/2] Transaction complete
[1/2] Total download size: 90 kB
[1/2] Is this ok? [y/N] y

```



Create the Application

Command: mvn archetype:generate ... Purpose: Creates a new Java web project using Maven's archetype plugin to generate a new project with the specified group ID, artifact ID, and archetype (in this case, a basic web application).

Once the web app was created, my IDE's file explorer was populated with the following files and directories: pom.xml, src/main/java, src/main/resources, and src/test/java. These are the standard directory structure for Maven-based Java projects.

To customize this web app's display, I updated the index.jsp file. This file is the entry point for web applications and controls the content and layout that is displayed in the browser.

```
GNU nano 2.9.8                               index.jsp

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



NextWork.org

Everyone should be in a job they love.

Check out nextwork.org for
more projects

