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Dependencies and CodeArtifact



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Introducing today's project!

What is AWS CodeArtifact?

AWS CodeArtifact is a fully managed artifact repository service. It's useful for securely storing and managing software packages and dependencies, facilitating version control, and integrating seamlessly with AWS services to streamline the development process.

How I used CodeArtifact in this project

I used AWS CodeArtifact in today's project to store and manage Maven dependencies. This allowed me to securely access and share packages, ensuring consistent and efficient dependency management throughout the development process.

One thing I didn't expect in this project was...

One thing I didn't expect was how easily AWS CodeArtifact integrated with Maven, simplifying dependency management and improving workflow efficiency.

This project took me...

The project took me about 30mins to complete, including setup, configuration, and integration tasks.



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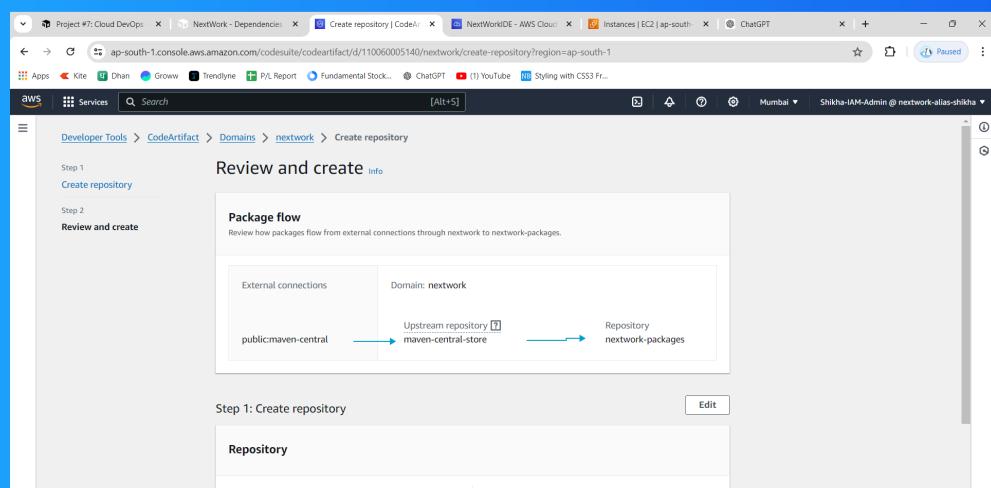
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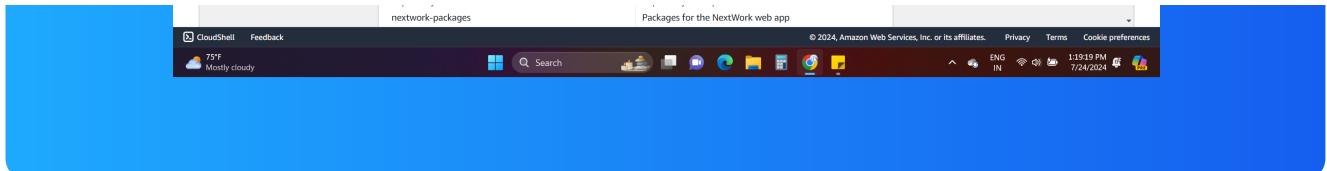
My project has three artifact repositories

The personal toolbox where you keep all the specific tools and materials for your current project.

Your contact point to the big library (Maven Central), helping us get and store new tools when we need them for your toolbox.

The vast package library on the internet where all sorts of Java tools and materials are stored. It's the primary source that supplies packages to other repositories, like maven-central-store.





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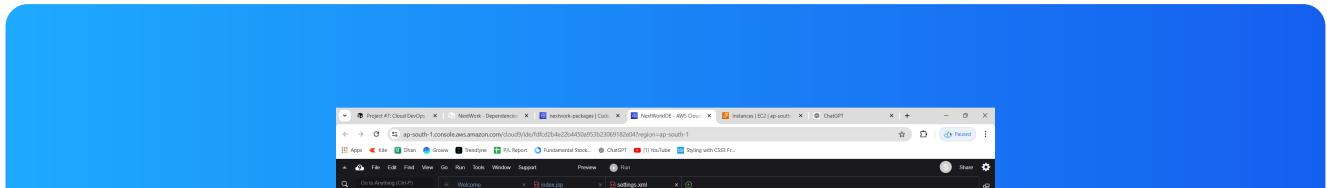
Connecting my project with CodeArtifact

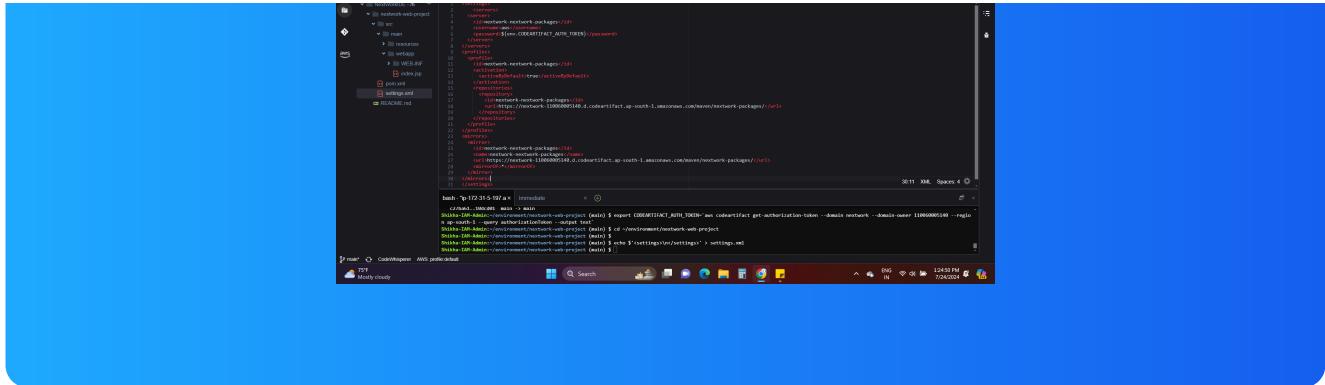
I connected my web app project (via my Cloud9 IDE) to CodeArtifact to securely manage and store my Maven dependencies, making them easily accessible and well-organized.

I created a new file, `settings.xml`, in my web app

`settings.xml` tells Maven where to find the dependencies and how to connect to the right repositories (e.g. the ones in CodeArtifact) to get access.

The snippets of code in `settings.xml` configure Maven to use specific repositories and credentials, managing where to find and deploy dependencies.





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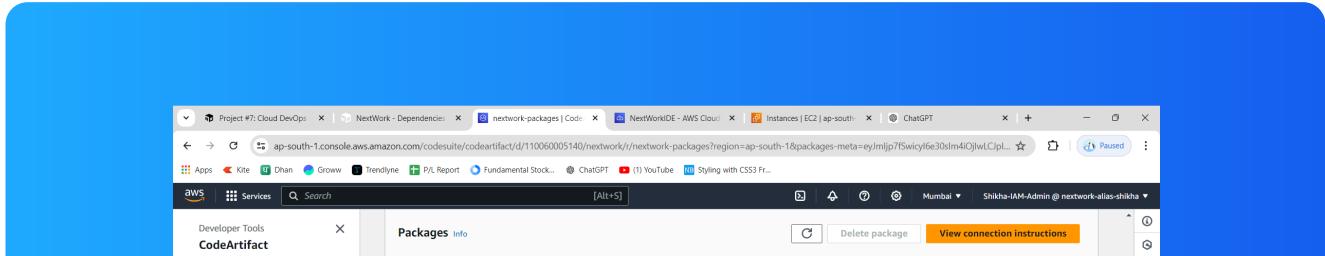
Testing the connection

To test the connection between Cloud9 and CodeArtifact, I compiled my web app

Compiling is like translating your project's code into a language that computers can understand and run. When you compile your project, you're making sure everything is correctly set up and ready to turn into a working app.

Success!

After compiling, I checked network-package repository.



Package name	Namespace	Format	Latest version	Latest publish date	Publish	Upstream
backport-util-concurrent	backport-util-concurrent	maven	3.1	Just now	Block	Allow
classworlds	classworlds	maven	1.1	1 minute ago	Block	Allow
google	com.google	maven	1	Just now	Block	Allow
jsr305	com.google.code.findbugs	maven	2.0.1	Just now	Block	Allow
google-collections	com.google.collections	maven	1.0	Just now	Block	Allow
commons-cli	commons-cli	maven	1.0	1 minute ago	Block	Allow
commons-logging-api	commons-logging	maven	1.1	Just now	Block	Allow
junit	junit	maven	3.8.2	Just now	Block	Allow
log4j	log4j	maven	1.2.12	Just now	Block	Allow



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Create IAM policies

The importance of IAM policies

I also created an IAM policy because AWS CodeBuild, AWS CodePipeline, and your development environments (like Cloud9) need access to the packages stored in CodeArtifact - but they don't have access by default.

I defined my IAM policy using JSON

This policy allows access to AWS CodeArtifact for tasks like retrieving tokens and repository endpoints. It also enables obtaining a service bearer token from AWS STS for secure interactions with CodeArtifact.

The screenshot shows the AWS IAM Policy Editor interface. The left pane displays the JSON code for a policy named "NextWork - Dependencies and CodeArtifact document". The right pane contains a sidebar with options like "Edit statement", "Select a statement", and "+ Add new statement". The bottom of the screen shows a Windows taskbar with various icons and system status.

```
1 Version: "2012-10-17",
2 Statement: [
3     {
4         Effect: "Allow",
5         Action: [
6             "codeartifact:GetAuthorizationToken",
7             "codeartifact:GetRepositoryEndpoint",
8             "codeartifact:ReadFromRepository"
9         ],
10        Resource: "*"
11    },
12    {
13        Effect: "Allow",
14        Action: "sts:GetServiceBearerToken",
15        Resource: "*",
16        Condition: [
17            {
18                StringEquals: {
19                    "sts:AWSServiceName": "codeartifact.amazonaws.com"
20                }
21            }
22        ]
23    }
24 ]
```



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