



Dependencies and CodeArtifact



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Packages info						
	Package name	Namespace	Format	Latest version	Latest publish date	Publish
○	classworlds	classworlds	maven	1.1	Just now	Block
○	commons-cli	commons-cli	maven	1.0	Just now	Block
○	junit	junit	maven	3.8.1	Just now	Block
○	maven	org.apache.maven	maven	2.0.6	Just now	Block
○	maven-artifact	org.apache.maven	maven	2.0.6	Just now	Block
○	maven-artifact-manager	org.apache.maven	maven	2.0.6	Just now	Block
○	maven-core	org.apache.maven	maven	2.0.6	Just now	Block
○	maven-error-diagnostics	org.apache.maven	maven	2.0.6	Just now	Block
○	maven-model	org.apache.maven	maven	2.0.6	Just now	Block

Introducing today's project!

What is AWS CodeArtifact?

AWS CodeArtifact is a managed repository service that allows storage and retrieval of dependencies and packages that the we application needs.

How I used CodeArtifact in this project

I used AWS CodeArtifact to connect my EC2 instnace which contains the web application to a repository for its packages.

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

I didn't expect all this new information for me to learn and understand in a straightforward lesson.

This project took me...

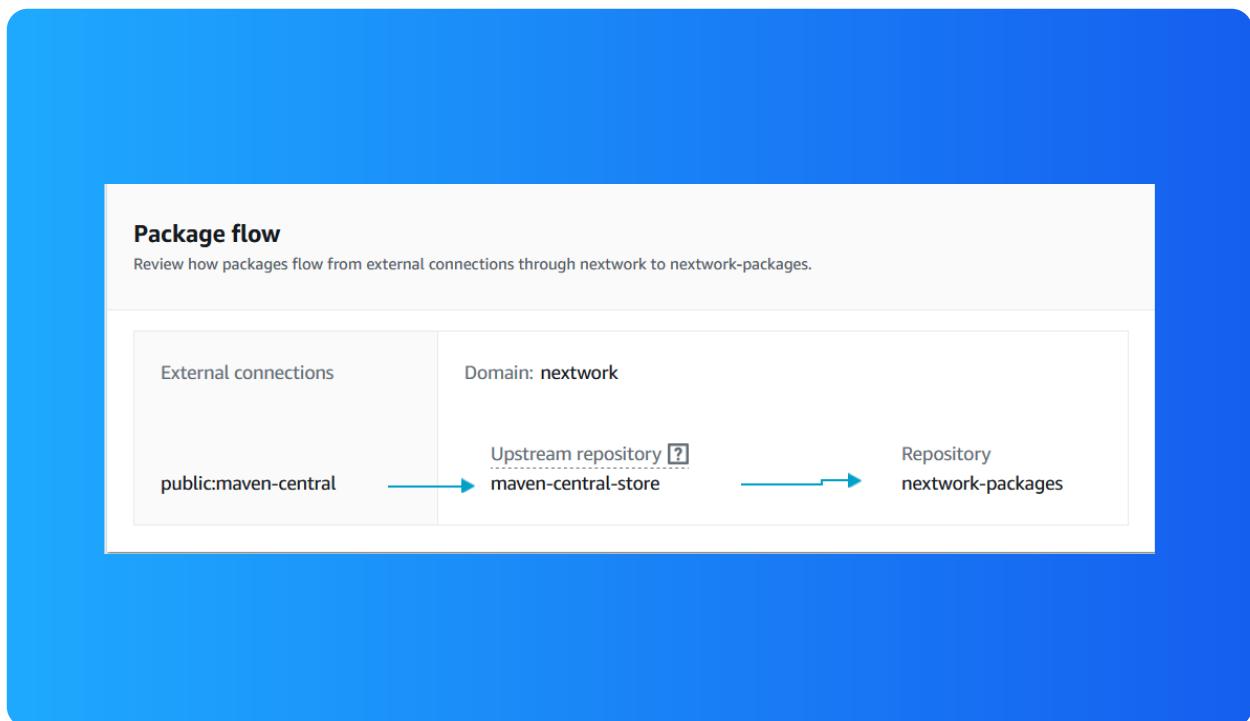
One hour.

My project has three artifact repositories

The local repository is the local resource where software packages installed in the EC2 instance are kept. When Maven builds a project, it first checks the local repository if these resources are readily available.

The upstream repository is a repository of resources that is easily accessible if the resources/tools are not readily available in the local repository.

The public repository is the main resource that stores a vast amount of tools and supplies, but might be slower to access due to distance and traffic.



Connecting my project with CodeArtifact

I connected my web app project (via VSCode) to CodeArtifact so that my web app can fetch and store dependencies it needs.

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

settings.xml is a file that specifies to Maven where to find the dependencies and how to connect to the right repositories

The snippets of code define certain details and settings so that Maven can correctly work with CodeArtifact to fetch and store my project's dependencies.

```
> index.jsp  ▶ settings.xml
  settings.xml
  <settings>
    <servers>
      <server>
        <id>nextwork-nextwork-packages</id>
        <username>${env.CODEARTIFACT_USER}</username>
        <password>${env.CODEARTIFACT_AUTH_TOKEN}</password>
      </server>
    </servers>
    <profiles>
      <profile>
        <id>nextwork-nextwork-packages</id>
        <activation>
          <expressions></expressions>
          <activation>
            <repositories>
              <repository>
                <id>nextwork-nextwork-packages</id>
                <url>https://nextwork-06d42656791.d.codeartifact.ap-southeast-2.amazonaws.com/maven/nextwork-packages/</url>
              </repository>
            </repositories>
          </activation>
        </profile>
      </profiles>
      <mirrors>
        <mirror>
          <id>nextwork-nextwork-packages</id>
          <name>nextwork-nextwork-packages</name>
          <url>https://nextwork-06d42656791.d.codeartifact.ap-southeast-2.amazonaws.com/maven/nextwork-packages/</url>
        </mirror>
      </mirrors>
    </settings>
```

Testing the connection

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

Compiling means translating code into a language that the computer comprehend and execute.

Success!

After compiling, I checked the CodeArtifact UI in AWS and it was filled with packages that maven successfully fetched.

Packages Info							
<input type="button" value="C"/> Delete package View connection instructions							
<input type="text"/> Filter by package name prefix, format, namespace prefix, and origin controls < 1 2 > 							
Package name	Namespace	Format	Latest version	Latest publish date	Publish	Upstream	
○ classworlds	classworlds	maven	1.1	Just now	Block	Allow	
○ commons-cli	commons-cli	maven	1.0	Just now	Block	Allow	
○ junit	junit	maven	3.8.1	Just now	Block	Allow	
○ maven	org.apache.maven	maven	2.0.6	Just now	Block	Allow	
○ maven-artifact	org.apache.maven	maven	2.0.6	Just now	Block	Allow	
○ maven-artifact-manager	org.apache.maven	maven	2.0.6	Just now	Block	Allow	
○ maven-core	org.apache.maven	maven	2.0.6	Just now	Block	Allow	
○ maven-error-diagnostics	org.apache.maven	maven	2.0.6	Just now	Block	Allow	
○ maven-model	org.apache.maven	maven	2.0.6	Just now	Block	Allow	

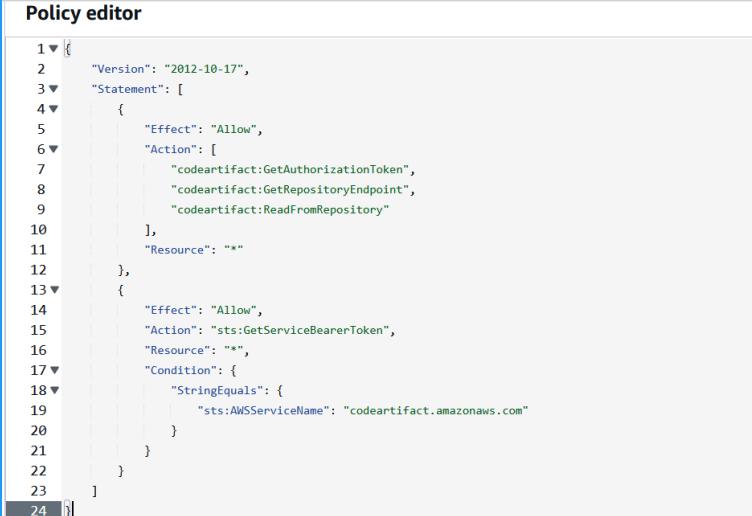
Create IAM policies

The importance of IAM policies

I also created an IAM policy because I want to grant access to different AWS services that need the packages in my CodeArtifact repository.

I defined my IAM policy using JSON

This policy will allow other services to use the packages installed into our CodeArtifact repository



The screenshot shows the AWS Policy Editor interface with a blue header bar. Below the header, the title "Policy editor" is visible. The main area contains a JSON code block representing an IAM policy. The code is numbered from 1 to 24 on the left side. The policy defines a single version and two statements. The first statement grants "Allow" effect for actions related to CodeArtifact (GetAuthorizationToken, GetRepositoryEndpoint, ReadFromRepository) on all resources. The second statement grants "Allow" effect for the sts:GetServiceBearerToken action on all resources, with a condition that the sts:AWSServiceName must be "codeartifact.amazonaws.com".

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



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