



# Dependencies and CodeArtifact



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Developer Tools > CodeArtifact > Repositories > nextwork-packages

**nextwork-packages** Info

Repository Packages for the NextWork web app

**Details**  
Domain, policy, tags, ARN, and upstream repositories.

**Packages** Info

Filter by package name prefix, format, namespace prefix, and origin controls

Package name	Namespace	Format	Latest version	Latest publish date	Publish	Upstr
backport-util-concurrent	backport-util-concurrent	maven	3.1	11 minutes ago	Block	Allow
classworlds	classworlds	maven	1.1	12 minutes ago	Block	Allow
google	com.google	maven	1	11 minutes ago	Block	Allow
jsr305	com.google.code.findbugs	maven	2.0.1	11 minutes ago	Block	Allow



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# Introducing today's project!

## What is AWS CodeArtifact?

CodeArtifact archives dependency packages for my web app, so that I can continue to build the app even when the main repository experiences outages, and also to ensure that the web app always comes out as expected.

## How I used CodeArtifact in this project

We used CodeArtifact today to store the package dependencies, as well as common tools and libraries, so that we don't have to connect to the central repo everytime we want to build an app.

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

I didn't know that you could mirror the central repository, or that it was advised and recommended to do so!

## This project took me...

I ran into issues compiling the project due to the specific Maven version not working correctly. After installing Java 8 first, I got Maven version 3.2.5, which compiled correctly and saved the packages to CodeArtifact. If I had known this, 30 mins.



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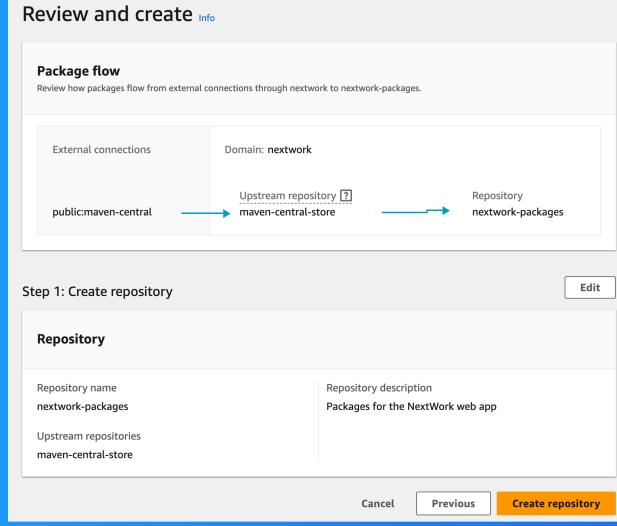
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## My project has three artifact repositories

The local repository is the files of software packages I have installed on my cloud instance.

The upstream repository is a smaller collection of common software used for building apps, and we can use it as a 'closer' source of packages rather than downloading from the central repository of packages.

The public repository is the main source of packages used for building apps, and it is where the upstream repo also goes to get its software packages, but it experiences high traffic due to being the main source.





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# Connecting my project with CodeArtifact

I connected my web app project (from the EC2 instance via terminal) to CodeArtifact to register it as a source to pull packages from.

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

settings.xml is a collection of settings that Maven uses to collect package dependencies, which is separate from the pom.xml that Maven uses as instructions in building the app itself.

The snippets of code in settings.xml contain the authentication parameters via servers, the repos to be used via profiles, and the repos to check in case of errors in its primary repository via mirrors.

```
<!-- settings.xml -->
<1><settings>
<2>  <servers>
<3>    <server>
<4>      <id>nextwork-nextwork-packages</id>
<5>      <username>${env.CODEARTIFACT_AUTH_TOKEN}</username>
<6>      <password>${env.CODEARTIFACT_SECRET}</password>
<7>    </server>
<8>  </servers>
<9>  <profiles>
<10>    <profile>
<11>      <id>nextwork-nextwork-packages</id>
<12>      <repositories>
<13>        <repository>
<14>          <id>nextwork-nextwork-packages</id>
<15>          <url>https://nextwork-498752641312.d.codeartifact.ap-southeast-2.amazonaws.com/maven/n
<16>        </repository>
<17>      </repositories>
<18>    </profile>
<19>  </profiles>
<20>  <mirrors>
<21>    <mirror>
<22>      <id>nextwork-nextwork-packages</id>
<23>      <name>nextwork-nextwork-packages</name>
<24>      <url>https://nextwork-498752641312.d.codeartifact.ap-southeast-2.amazonaws.com/maven/n
<25>      <mirrorOf>${env.CODEARTIFACT_MIRROR_OF}</mirrorOf>
<26>    </mirror>
<27>  </mirrors>
<28>  </settings>
```



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# Testing the connection

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

Compiling means putting together the classes in the source code and handles the dependencies in the project as well.

## Success!

After compiling, I checked the nextwork-packages repo in CodeArtifact, and I saw many packages uploaded to the repo.

The screenshot shows a web interface for managing a CodeArtifact repository named 'nextwork-packages'. At the top, there are buttons for 'Delete repository', 'Apply repository policy', and 'Edit'. Below this, a section titled 'Details' provides general information about the repository. The main area is titled 'Packages' and contains a table of uploaded packages. The table has columns for Package name, Namespace, Format, Latest version, Latest publish date, Publish status, and Upstream. Four packages are listed:

Package name	Namespace	Format	Latest version	Latest publish date	Publish	Upstr
backport-util-concurrent	backport-util-concurrent	maven	3.1	11 minutes ago	Block	Allow
classworlds	classworlds	maven	1.1	12 minutes ago	Block	Allow
google	com.google	maven	1	11 minutes ago	Block	Allow
jsr305	com.google.code.findbugs	maven	2.0.1	11 minutes ago	Block	Allow



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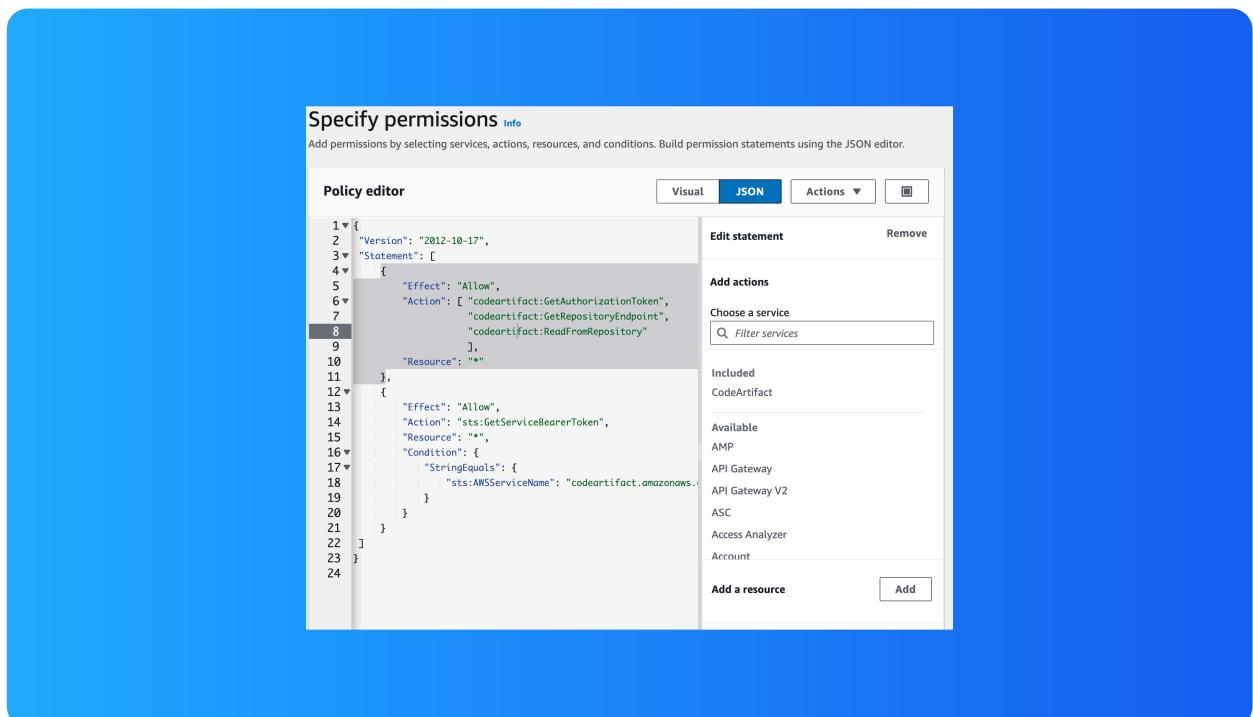
# Create IAM policies

## The importance of IAM policies

I also created an IAM policy because the other DevOps like CodeBuild and CodePipeline need access to the CodeArtifact repos, but do not have access by default.

## I defined my IAM policy using JSON

This policy will allow the other DevOps services to connect to my CodeArtifact repos when it needs to build the app later on.





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