

Nexus Repository Manager



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Introduction to Repository Managers

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Compiling in Basic



```
package com.code.test;

public class Second {

    public void printInfo(User user) {
        System.out.println(user.getProfile().getName());
        Profile.Address address = user.getProfile().getAddress();

        int a = 3, b = 7;
        while (a < b && b > a && a < b) {
            System.out.print(address.getState());
            System.out.print(address.getCity());
            System.out.print(address.getStreet());
            System.out.print(address.getHomeNumber());
        }
    }
}
```

Source Code

compiling



Binary Code

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Why Do We Compile?

- ▶ Computers don't understand code directly. **Computers understand object level code.**
- ▶ Source code is human readable.
- ▶ Compiler translate the code into **machine-understandable format.**
- ▶ Compiler is an **intermediate between human and machine.**



Build vs Compile

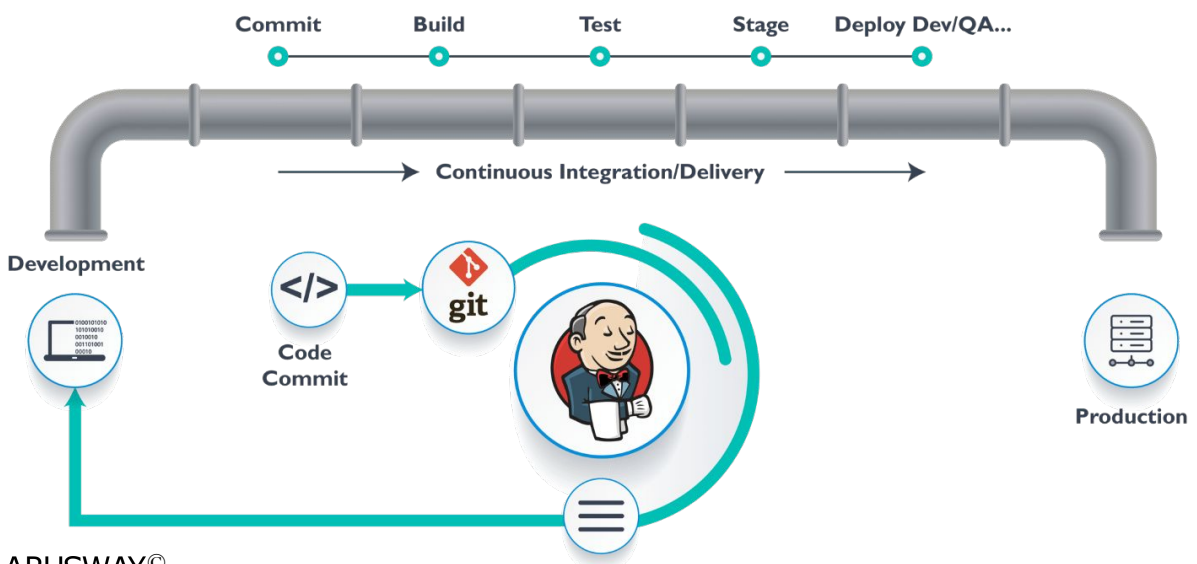
- ▶ **Build** = Deliverable of your software
 - ▶ Generating sources (sometimes)
 - ▶ **Compiling sources**
 - ▶ **Compiling test sources**
 - ▶ Executing tests (unit tests, integration tests, etc)
 - ▶ Packaging (into jar, war, ejb-jar, ear)
 - ▶ Generating reports

What do you know about artifact repositories ?

Type a few things...

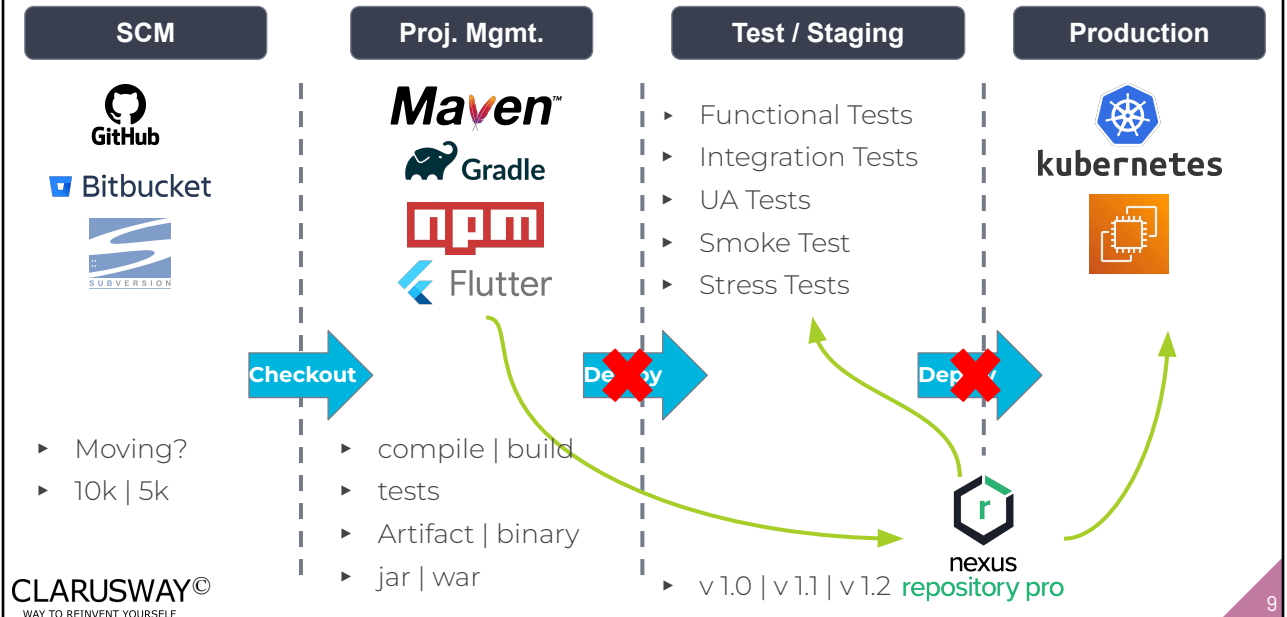


CI/CD Pipeline



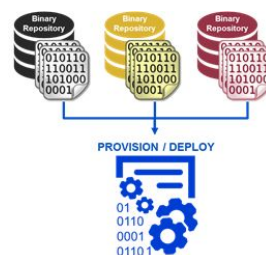


CI/CD Pipeline



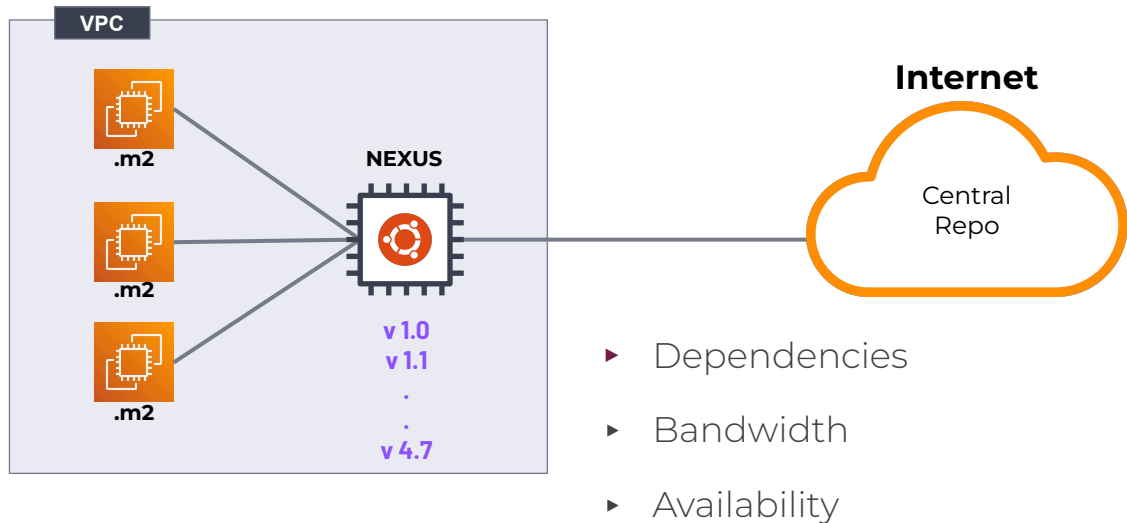
Introduction to Artifact Repository

- ▶ Also called a **binary repository**.
- ▶ It is used for storing building blocks of a project in **binary code**.
- ▶ It is mainly used for **deployment processes** rather than development processes.



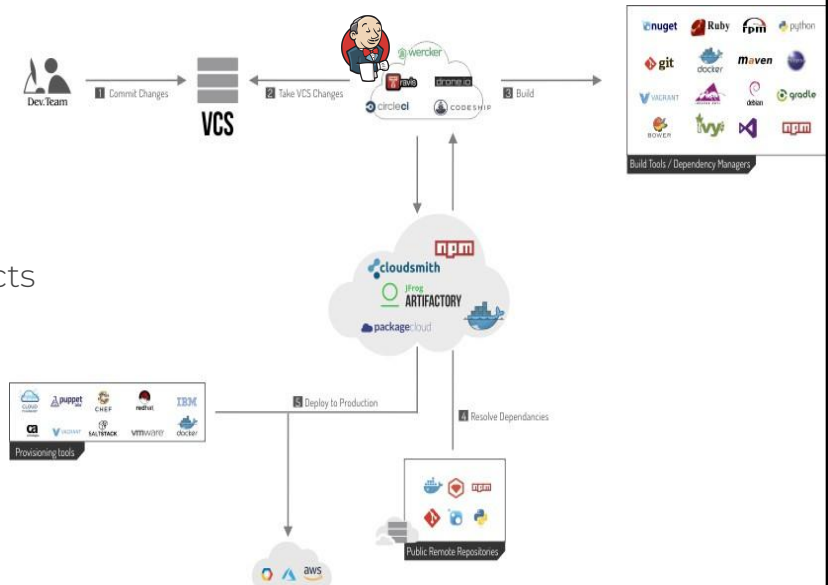


Introduction to Repository Manager



Introduction to Repository Manager

- **Server applications** for managing repositories
- **Reduce the bandwidth** used for retrieving artifacts
- They provide a target for **deploying the artifacts**



Why use a Repository Manager?

Type a few things...



► Features: Repository Manager



- **Proxy for remote repositories:**
 - Reduce the bandwidth to download artifact.
 - Reduce time to download artifact.
- **Hosts for artifacts:**
 - Providing host for deploying artifacts.



Benefits: Repository Manager

- ▶ **Cache binaries and save time:** Download binary files locally.
- ▶ **Predictable & repeatable binaries:** Guarantee that binaries and meta do not change.
- ▶ **Standardization of software:** Track the versions of your app. Checks the license of third party components.
- ▶ **Increase the collaboration:** Share the components of your app with other team members.

What are the differences
between Artifact
Repository Managers
and Version Control
Repository?

Type a few things...





Binary Repo vs VersionControl Repo



Control Development



Control Deployment

- ▶ **Binaries:** Larger in size and need metadata to be stored with them (file name, version, license etc.).
- ▶ **Repository managers** reduce risk. It is easier to inject malicious code to VCS.

You manage what you code in Git, and what you build in Nexus.



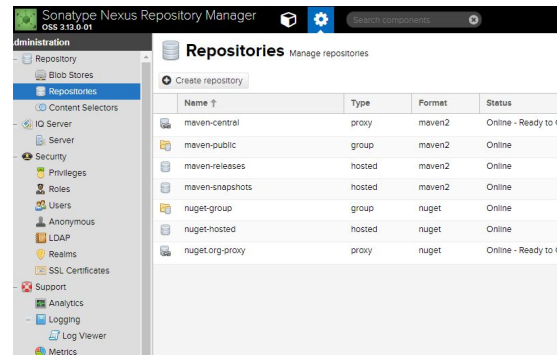
2 Introduction to Nexus Repository



What is Nexus?

- ▶ **Nexus** is the provider of one of the most popular **repository managers**.
- ▶ Compatible with many **popular tools**.

Use Your Favorite Tools.



Why Prefer Nexus?

- ▶ Easy to **install and configure**.
- ▶ Fast and easy **searching**.
- ▶ **Manage multiple repositories** from different domains.





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Components and Formats

What do you know
about components and
formats ?

Type a few things...



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What are Components?

- ▶ Components are the **building blocks** of the software.
- ▶ **Packages, libraries, containers** are examples of components.
- ▶ Open source components are available for use on the internet.

- ▶ Examples of component types:

Java byte code

C object files

XML, JS, HTML, CSS



What are Formats?

- ▶ Nexus repository may include binaries, containers, assemblies, and finished applications.
- ▶ Every component is identified with values depending on the format.
- ▶ **Maven components:** group, artifact ID, and version.

Upload / myrepo

Choose assets for this component

File	Classifier	Extension
<input type="text"/>	<input type="text"/>	<input type="text"/>
<small>This field is required</small>		<small>This field is required</small>
Add another asset		

Component coordinates

Group ID:

This field is required

Artifact ID:

This field is required

Version:

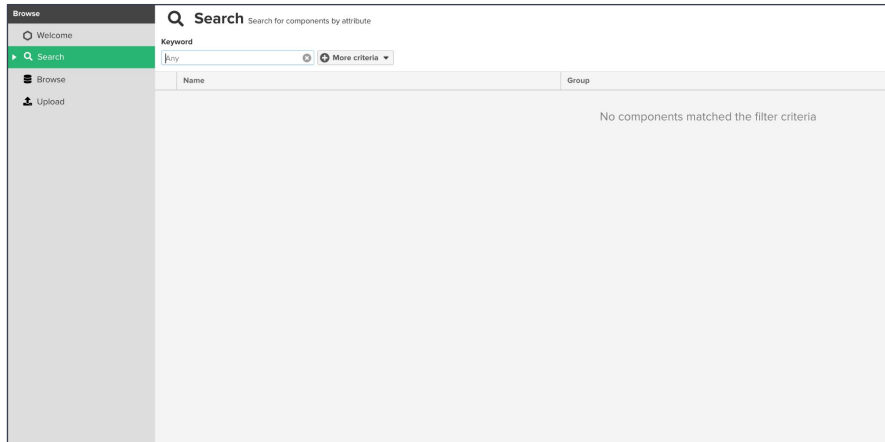
This field is required

☐ Generate a POM file with these coordinates

Packaging:



What are Formats?



- It is possible to make search in Nexus Repository. You can get the location and details of a component.



What are Formats?

- Formats are **ways of storing** components.
- Every tool has a **different format**.
- Examples of formats:
maven2, nuget, docker...





5

Repository Types

What are some of the repository types?

Type a few things...





What are Repository Types?

- There are 3 repository types in Nexus:

Hosted, proxy and group repository.



maven2 (group)



maven2 (hosted)



maven2 (proxy)



What do you know about proxy repositories?

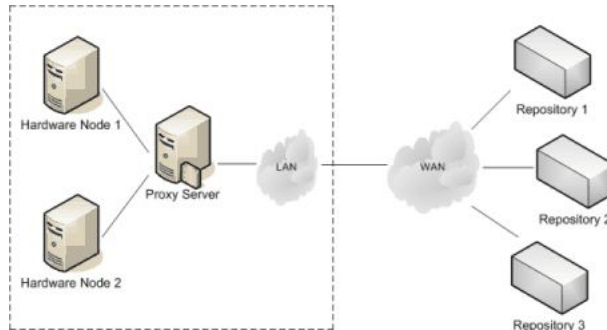
Type a few things...





Proxy Repository

- ▶ It is a **bridge** between the computer and remote repository.
- ▶ Components are **cached** in the proxy repository.
- ▶ **maven-central** and **nuget.org-proxy** are 2 built-in configured proxy repositories that come with Nexus Repository Manager.



What do you know about hosted repositories?

Type a few things...

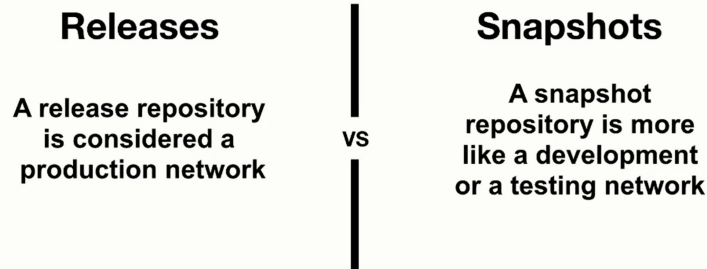




▶ Hosted Repository

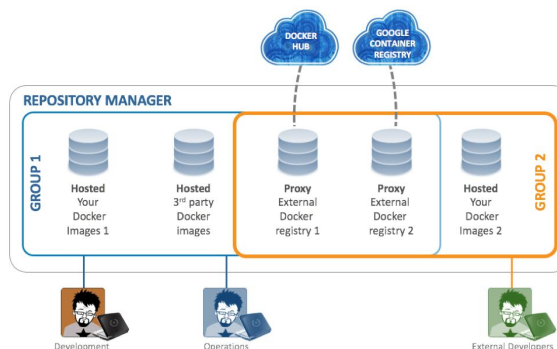
- ▶ It comes in handy when components are shared among different teams.
- ▶ Maven hosted repository consists of 2 separate repositories:

Snapshot repository and **release repository**.



▶ Group Repository

- ▶ It consists of **hosted**, **proxy** and other **group repositories**.
- ▶ Has its own **access point**.
- ▶ Both **remote** and **local** components can be accessed.





THANKS!

Any questions?

