Making the Most of Your Component Manager

Contents

1   So What is a Component?

- All the stuff you use to create your applications

- The plumbing you don't want to write yourself

- Logging, IoC, persistence layer, ORM, . . .

- And that you get easily by declaring dependencies with Maven, Gradle, NuGet, npm. . .

- Comprises 80-90% of your application

⚠ **Warning**
And you are responsible for it all.

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2   So What is a Component?

- But also all the parts you create and use

  – Including the application deployment packages

- JARs, WARs, EARs..

  – but also rpm and npm packages or tar.gz files

3   What is a Repository?

- Organized storage for components

- Uses e.g. GAV coordinates for structure

→ A **Component Manager** helps with administration and usage of components stored in repositories

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Tip
Just like a Git server helps you manage source code in Git repositories

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4   Problems Without Component Manager

- Common complaint "Maven/Gradle/npm/NuGet is downloading the internet, again!"

- Everything is cached locally (e.g. in ~/.m2/repository)

- Components are used from local repo in **all** your projects

- But new versions or new components trigger downloads

  – E.g. 500 developers and 500 CI nodes = 1000 downloads
  – Global bank reduced from 2.6 millon to 90k downloads
  – That's a lot of wasted bandwidth and **time**

- How do I use the x.y.z proprietary component - I can't find it in the Central Repository (or wherever)?

- How do I share my components with the other teams?

Tip
This is where Sonatype Nexus can help!

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5   Component Manager Tasks

Nexus is a dedicated server software:

It is used to. . .

- Proxy and manage access to public repositories

- Store components that are **not** in public repositories

- Manage and host internal releases

- Distribute components internally and beyond

→ Facilitate internal collaboration across components and teams

5.1   Component Usage Growth. . .

is exploding. And so is usage of Nexus.

images/repository-growth.jpg

Data from access logs to Central Repository.

6   Nexus Open Source - Nexus OSS

- 64% marketshare

  - RebelLabs, Java Tools and Technologies Landscape 2014

- Eclipse licensed

- Highly performant

- Easy to install and use

- Large community of users

7 Getting Started - Nexus OSS

Installation is simple:

1. Install Java 7

2. Get the bundle with the embedded Eclipse Jetty server

3. Extract archive, create symbolic link and run

```
sudo cp nexus-x.y.z-bundle.tar.gz /opt
cd /opt
sudo tar xvzf nexus-x.y.z-bundle.tar.gz
ln -s nexus-x.y.z nexus
cd nexus
./bin/nexus console
```

4. Go to http://localhost:8081/nexus and log in with admin/admin123

5. It's easy and the benefits are immediate.

Tip
Let's have a look..

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8 Nexus User Interface Tour

- Search for components

    - including advanced search
    - and find components available in remote repositories!

- View component details

    - including security and license details in Nexus Pro

- Repositories

- Server administration

- Security

    - fine-grained control
    - component access and user interface

9 Maven Repository Format

- Maven repository format is the de-facto standard for JVM build tools

- Allows build tool independent sharing

- Ant/Ivy, Ant/Aether, Maven, Gradle, SBT, Grails, Leiningen

- Proxy Central Repository and others

- Hosted repository for your releases and third party components

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Tip
Detailed instructions for different tools are in the Nexus book.

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10   NuGet

- Package management for .Net developers

- Proxy NuGet Gallery

- Hosted repository for your releases and third party components

- Support in Visual Studio

- Nexus OSS 2.9+

Tip
More on the website.

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11   NPM Support

- Package management for Node.js development

- Proxy npmjs.org registry

- Hosted repository for your releases and third party components

- Part of Nexus OSS 2.10+

Tip
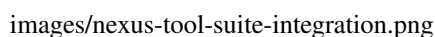Setup and more tips are in the Nexus book.

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12   RPM/Yum

- Expose your Maven repository in Yum format

- Use it for production deployment of your application

- Originally a community contribution

- Long time part of Nexus OSS

13   (J)Ruby Gems Support

- Active open source project

- Used by JRuby community

- Works with Nexus OSS

14   Sonatype Nexus as Central Hub

images/nexus-tool-suite-integration.png

$\rightarrow$ Nexus is a key component of your enterprise development infrastructure

15   Community Projects

Nexus plugins and integrations

- Chef and Puppet script

- Command line tools

- CI server integrations

- and many more

Tip
Write your own with REST or Java API.

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16   The Nexus

- New community site at http://www.sonatype.org/nexus

- With blog posts, videos, free training material, downloads

- Regular Nexus Live event

- Looking for guest contributions

- Sonatype can help with presentations, presenter and support at meetings

$\rightarrow$ Come to the Sonatype booth!

17   OSSRH

- Open Source Repository Hosting at http://oss.sonatype.org

- Free hosted Nexus Professional for community

- Hosts snapshot deployments

- Releases are synced to the Central Repository

- Publishing is easy!

18   Central Repository

images/central-stats.png

19   Central Repository

- 13 **billion** downloads in 2013

- Beyond that for 2014

- Largest Repository of JVM components

- Up to date, comprehensive documentation

- Available via HTTPS at https://repo1.maven.org/maven2

  - Time to update your configuration

- Search at http://search.maven.org

- Highly performant, global CDN

20   Repository Health Check

Checks all components in a Nexus repository for * Security vulnerabilities

- License issues

- Overview in Nexus OSS

- Details in Nexus Pro

- >35000 checks run daily

- >10000 Nexus instances

21   Nexus Professional

- Takes component management to the next level

- Available for free, if you run a open source forge like JBoss, Apache, . . .

- More component information

- More security features

- Staging suite for release management

- CLM integration

Tip
Demo time. . .

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22 Sonatype CLM

- Component Lifecycle Management

- Define policies

  - including security, license, coordinates, labels and other metadata

- Work with and enforce policies

  - in IDE
  - in CI server
  - SonarQube
  - Maven plugin
  - Command line tool

- and inspect the results of the analysis

Tip
Do we have time for a demo? Sure. . .

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23 Application Health Check

- Scan a file for components
- Analyze for security and license checks
- Inspect a comprehensive report
- For free available on the Sonatype website

24 Nexus 3

- Milestone releases available
- New user interface
- New backend
- New features
- Lots more coming

Tip
We want your feedback! Give it a whirl!

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25 Resources

- [Repository Management with Nexus](#) - free book
- [The Nexus Community](#)
    - with articles, videos, mailing Lists, Nexus Live and more
- [Sonatype Support](#)
- [Nexus Professional website](#)
- [Nexus Professional Trial Bundle and Guide](#) - some examples can be used with Nexus OSS as well
- [Talk to the developers/support - HipChat](#)
- [Training classes](#)
- [Presentation in HTML format and related resources](#)

26 Visit Us

Come and drop by the Sonatype booth for

- T-shirts
- Lightsabers
- Nexus Professional license for your forge
- Contact for user group meetings
- Demos, a chat and . . .

Tip
a chance to to win a DJI Phantom FC40 Drone.