

# **Making the Most of Your Component Manager**

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## 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 million 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?

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**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.

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**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+

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**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+

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**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

→ Nexus is a key component of your enterprise development infrastructure

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## 15 Community Projects

Nexus [plugins and integrations](#)

- Chef and Puppet script
- Command line tools
- CI server integrations
- and many more

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**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

→ 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

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## 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

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### 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

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**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

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**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 ...

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**Tip**

a chance to to win a DJI Phantom FC40 Drone.

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