

DevOps at Sonatype

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1 DevOps at Sonatype

Lessons Learned from Using Repository Managers and Software Supply Chain Tools

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Sonatype - www.sonatype.com

2 What Are You Learning Today?

- See what worked for us
- And what caused us problems

→ Improvements for your own situation

3 What does Sonatype actually do?

Manages and develops:

- Nexus repository manager
- Nexus Lifecycle software supply chain automation
- Nexus IQ Data Services component intelligenece
- Central Repository (formerly Maven Central)
- OSSRH and related Forges
- Related documentation, websites, blogs, videos,...

4 Nexus Repository Manager

- Nexus 2 - 70% market share
 - Nexus 3 - upcoming
 - Open source: Maven2, npm, RubyGems, NuGet, Docker, ...
 - Commercial: Staging, Smart Proxy, ...
-

5 Software Supply Chain Automation

- Nexus Lifecycle
- Nexus IQ Server
- Partner integrations (HP Fortify On Demand ?)
- Nexus Firewall (?)
- Integrations with Jenkins, Hudson, Bamboo
- Eclipse IDE/M2e Plugin
- SonarQube Integration

All of this is backed by...

6 Nexus IQ Data Services

Curated and managed data and services for:

- Age
- Popularity
- Security vulnerabilities
- License analysis data (observed and declared) *

7 Central Repository

- Largest Maven2 format repository (numbers!)
- High performance, global CDN
- Default in Maven2 and others

And the components come from

8 OSSRH and Forges

Input funnel for Central Repository

- OSSRH - large deployment of Nexus Pro
- Apache, JBoss, ... - secondary Nexus instances that sync
- Community support - onboarding and documentation
- TBD add some numbersf

9 Who Helps at Sonatype

- Internationally distributed
- Multiple-time zones
- Remote work the rule, not exception

10 Teams

- Numerous smaller teams
- Different focus of teams
- Cross-team members

11 Communication

- Google Drive
- HipChat
- Good old phone and VOIP
- Google Hangouts

12 SCM

- GitHub
- Atlassian Stash

13 Track and Plan

- JIRA
- Aha
- Trello

14 Continuous Integration

- Bamboo
- feature branch builds

15 Build

- Apache Maven
 - Grunt and NPM for client side
 - Bash Scripts
-

16 Maven Tips and Tricks

- Maven wrapper
- Follow
- Find balance of number of projects vs.
- Avoid forking third party libraries

17 Develop

- Feature branches
 - with CI
 - short lived
- IDE
 - Eclipse IDE
 - IntelliJ IDEA
- Lots of OSX, some Windows & Linux

18 Test

- Geb
- Spock

19 Document

- AsciiDoc
- Pelican

20 Continuously Build

- Atlassian Bamboo
 - > 100 build plans
 - Elastics Bamboo - EC2 instances
 - Feature branch builds increases number
 - Automated functional test suite runs
 - Automated release
 - Documentation builds and deployments
-

21 Bamboo Tips

- Resource project (link to video maybe)
- Fresh Maven repo for each build off Nexus
- Build plan notifications into HipChat channels
- Links to GitHub and JIRA

22 More Bamboo Tips

- Share repo and other outputs as build artifacts
- Static documentation = usable artifact
- Limited number of standard Amazon Machine Images (AMI)
- Include standard tools
- Build artifacts stored on Amazon Elastic Block Storage (EBS)
- Base build plan with tool configuration\

23 Build Plan Commonalities

All builds plans:

- Common configuration from base plan - used as shared artifact, managed in git repo
- Global variables - defaults that allow overrides
- *build* task - compile and test code.
- *release* task - publish to Nexus and tag in git
- bundle test artifacts
- Main vs features branches - different config
- Branch builds auto-created

24 Validate

- SonarQube - integrated in Bamboo and GitHub
 - License check with Maven plugin
 - No merges without build passing and code review
 - Nexus Lifecycle TBD
-

25 Release

- Workflow and notification with Nexus staging
- Including validation with Nexus Lifecycle
 - Security checks
 - License checks
 - ?? anything else, maybe component age
- Usage of release build number - 2.11.4-01
- Same release stuff on OSSRH

26 Manage Components

Nexus Repository Manager and Nexus Lifecycle Nexus Repository Manager * within build cluster * also used by developers * target for deployments * proxy * host * staging * Thousands of users and projects on OSSRH * smart proxy to Nexus outside cluster

27 Deploy

Ops team:

- RPMs
- Docker images

28 Community

- Actively work with vendors
- Including open source projects
- Help upstream to help yourself
 - Report issues
 - Release testing
 - Contributions

29 Next?

- Join the [Nexus community](#)
 - Star using Nexus OSS
 - Try Nexus Repository Manager
 - Try Nexus Lifecycle
 - Come to our booth
-

30 The End

Questions, Remarks & Discussion

Tip

Slides and examples at <http://sonatype.github.io/nexus-presentations/> or email manfred@sonatype.com

i. and we are hiring!

31 Resources

- sonatype.com
- [Nexus community](#)
- [Central Repository](#) and [documentation](#)
- [Youtube channel](#)
- [Inside Engineering](#) - blog post
- [Inside Engineering](#) - videos
- [Nexus Tips from the Trenches](#) video series