

yum – yellowdog updater

automatic package management

David Morgan

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rpm's problem

- rpm tool requires dependency resolution
 - program x depends on library y
 - library y must be in place
 - rpm *won't install* program x otherwise
- rpm tool *doesn't do* dependency resolution
 - if library y isn't there, *you* must obtain and install it separately
 - finding library y can be hard
 - library y has its own dependencies

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RPM dependency hell

“How would you get around these issues it can become rather frustrating...”

<http://linuxgazette.net/issue71/tag/3.html>

“Let’s look at some of the problems with RPM.”

<http://grimthing.com/archives/2004/06/27/let-rpm-sink/>

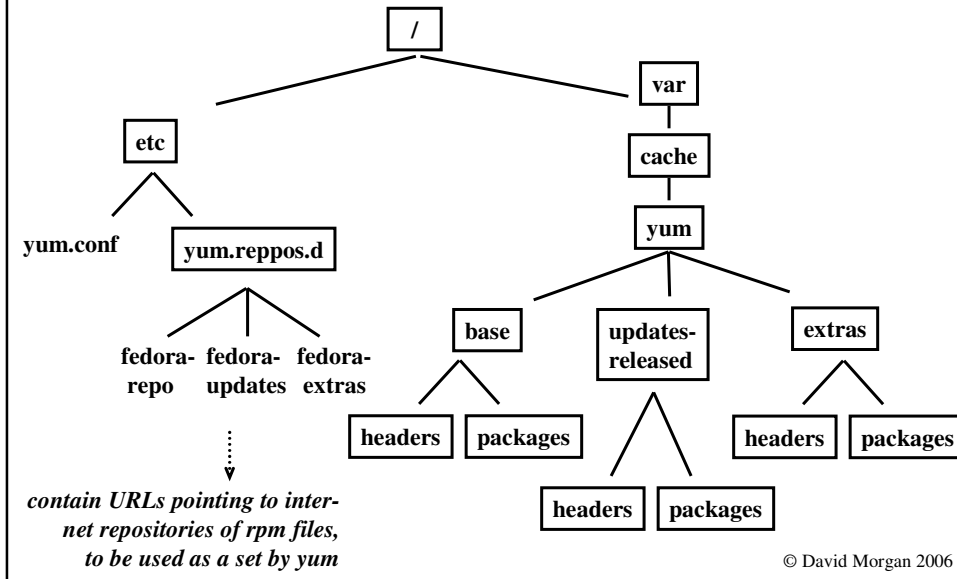
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internal “.rpm” file constituents

- header
 - info paragraph
 - supply and demand
 - files provided
 - files needed (dependencies)
- component files

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yum default directories and files

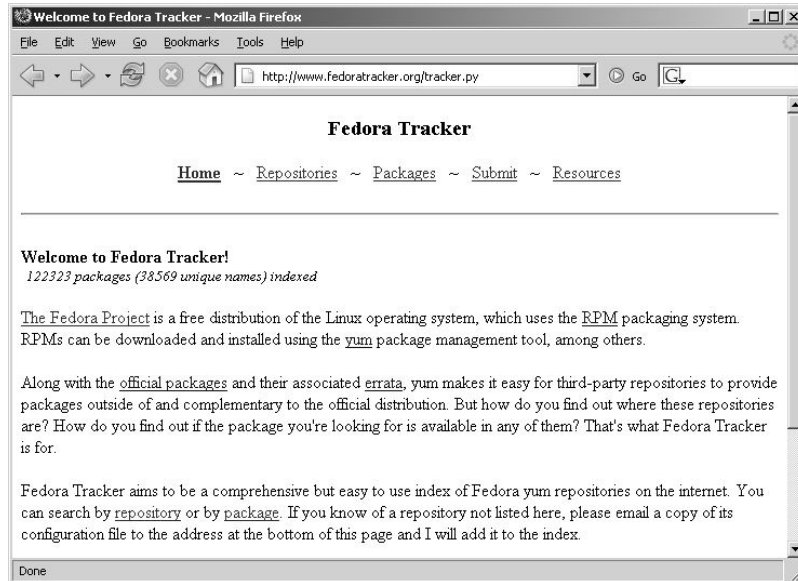


What are some repositories?

- Fedora project
 - base/core – packages on the CDs (fedora.repo)
 - extras – other packages (fedora-extras.repo)
- 3rd-party
 - livna
 - dag
 - freshrpms
 - atrpms
 - too numerous to mention!

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Finding other repositories



client server

- yum-arch tool makes server
- listens on port 80

metadata

- repomd.xml
 - this is the file that describes the other metadata files. It is like an index file to point to the other files. It contains timestamps and checksums for the other files. This lets a client download this one, small file and know if anything else has changed. This also means that cryptographically (ex: gpg) signing this one file can ensure repository integrity.
- primary.xml[.gz]
 - this file stores the primary metadata information. This includes information such as:
 - name, epoch, version, release, architecture
 - file size, file location, description, summary, format, checksums header byte-ranges, etc.
 - dependencies, provides, conflicts, obsoletes, suggests, recommends
 - file lists for the package for CERTAIN files - specifically files matching: /etc*, *bin/, /usr/lib/sendmail [1]
 - it also includes a 'format' element which allows for format specific information to be stored. The formats known about right now are deb and rpm
- filelists.xml.[gz]
 - this file stores the complete file and directory listings for the packages. The package is identified by: name, epoch, version, release, architecture and package checksum id.

see <http://linux.duke.edu/projects/metadata/index.ptml>

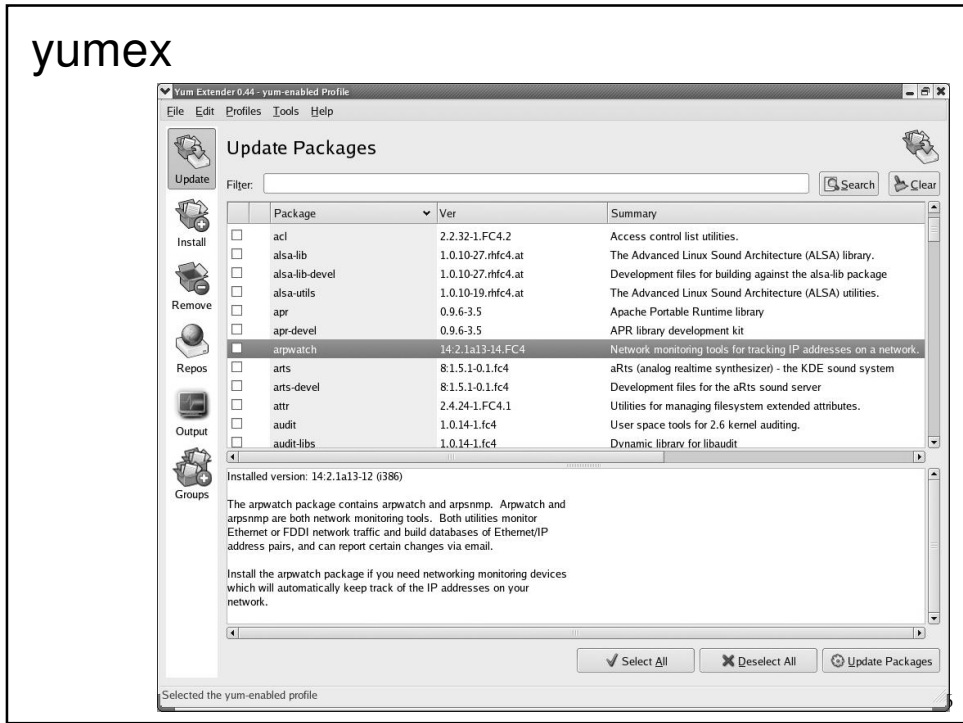
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Using yum

- Installing
 - # yum install package1 [package2 package3...]
- Updating
 - # yum update package1 [package2 package3...]
 - # yum update *(all installed packages)*

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yumex



cron job

- centralizes
- scales
- see intro to HOWTO

Where to find more information

- HOWTO
 - http://www.phy.duke.edu/~rgb/General/yum_HOWTO/yum_HOWTO/
- homepage
 - <http://linux.duke.edu/projects/yum/>

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