

# Linux Patching

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- Once a software is installed in a machine, it typically
  - Creates one or more directories or re-uses an existing directory
  - Copies one or more library files, header file, man-pages (help files) binary file configuration files to different directories on the machine.
- Over a period of time it is possible that the provider will offer
  - Permanent fixes will be offered for the bugs reported and resolved.
  - Minor enhancements / minor few features will be offered for this software
- When we install any bug fixes and/or minor enhancements, we only replace a small part of the software that was defective (bug) or requires a change (enhancement). Typically we will replace one or more defective file (library files, header files, binary files, configuration files, man pages) with the updated/fixed file.
- This sub-set of the entire software, is called as a Patch.

- Source packages are hard to manage:
  - Once you installed the tarball, there was no way to manage the software. It would be hard to know which version of the software you had. Because files could be spread across your filesystem, it could be difficult to remove the software or upgrade it
- Dependencies.
  - Binary RPM checks for dependencies for software installation. However installation of dependencies requires manual efforts.
  - Binary RPM allows to add software without dependencies and remove software by ignoring dependencies. Both these can leave the system in unstable state.
- PS: You can find architecture of your machine by running “uname -m”

- YUM is a package manager that was developed by Duke University to improve the installation of RPMs on linux
- YUM searches numerous repositories for packages and their dependencies so they may be installed together in an effort to alleviate dependency issues.
- It fetches download/copies required RPM's along with dependencies and then installs these packages in a sequence that takes care of dependencies.
- YUM provides functionality to manage software on the system
  - Update software packages
  - Add software packages
  - Delete software packages

- `/etc/yum.conf`
  - This the configuration file that controls behavior of YUM on the machine.
- `/etc/yum.repos.d`
  - This is the directory that holds information of various sources (repositories) used on this machine.
  - There can be one or more files with `*.repo` extension
- **Sqlite database:**
  - This stores the information about dependencies from various sources and the current state of the software installed on the machine.
  - This sqlite database is maintained in the file
    - `${cachedir}/${repo-name}/*.sqlite`
- **Log file**
  - The log file is `/var/log/yum.log`. Shows details of yum actions (updated / installed)

## Format for a typical record in \*.REPO File

Typical entries in /etc/yum.conf file:

### **[main]**

cachedir=/var/cache/yum

keepcache=0

debuglevel=2

logfile=/var/log/yum.log

distroverpkg=redhat-release

tolerant=1

exactarch=1

obsoletes=1

gpgcheck=1

plugins=1

metadata\_expire=1800

### **[myrepo]**

name=RHEL 5 \$releasever - \$basearch

baseurl=http://local/path/to/yum/repository/

enabled=1

# Frequently used command line options

yum option / sub command	Description
yum provides / whatprovides	Perform a deep scan in all rpm for specified file.
yum search / search all	Search for specified package
yum repolist	List out all the repos configured on the machine.
yum list [ <u>installed</u> ]	List all packages available from all enabled repositories. [ <u>List all installed packages in system</u> ]
yum group list	List all groups that are available for installation
yum info [package name]	Provide detailed information about package
yum install [package name]	Install the specified package
yum remove [package name]	Remove the specified package
yum update	Update the specified package

## 1. Registering the system with the Subscription Manager

### a) Graphical interface

Access the Subscription Management GUI client in Red Hat Enterprise Linux 8 via **Activities**, then select **Show Applications** and click **All**. Then select **Red Hat Subscription Manager**.

In Red Hat Enterprise Linux 7 open **Applications** -> **System Tools** -> **Red Hat Subscription Manager** and in Red Hat Enterprise Linux 6 via **System** -> **Administration** -> **Red Hat Subscription Manager**.

### b) Command line

A system can also be registered via the command line by using the "subscription-manager" command. To register your system either through the GUI or from the command line



Before installing an update, make sure all previously released errata relevant to the system have been applied.

To access updates when using Red Hat Enterprise Linux 7, launch the graphical update tool through **Applications -> System Tools -> Software Update**, or from the command line via the following command:

```
# gpk-update-viewer
```

For a command line interface, use the following command to update the operating system:

```
# yum update
```

To install a specific package, such as vsftpd, use the following command:

```
# yum install vsftpd
```

To update a specific package, such as bind, use the following command:

```
# yum update bind
```

1. Downloaded a DVD version of your chosen Rhel Version and copied it over to a location on your server.
2. Mount the RHEL installation ISO to a directory like /mnt/disc
3. Copy the media.repo file from the root of the mounted directory to /etc/yum.repos.d/ and set the permissions to 0644 or another similar permissions set
4. Edit the new repo file, changing the gpgcheck=0 setting to 1 and adding the following 3 lines

```
vi /etc/yum.repos.d/rhel7dvd.repo
enabled=1
baseurl=file:///mnt/disc/
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-redhat-release
```
5. Clear the cache and check whether you can get the packages list from the DVD repo



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