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TRAINING

Installing Software Packages

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Overview

Installing software packages, including updates to installed software packages, is one of the most common system administration tasks. Open source software is constantly updated to add new features, fix bugs, and protect against security issues.

Key Ideas

Software repository: trusted central source of compiled, tested, integrated software packages provided by a distribution.

Low level package management: actions that pertain to an individual package: install, upgrade, query, remove. Does not handle dependency resolution: dpkg command in Debian-derived distributions, and rpm in distributions made up of rpms.

High level package management: System level actions like system updates, accessing repository metadata, multiple package upgrades, and dependency resolution: apt in Debian-derived distributions, yum in rpm-based distributions, zypper in OpenSuse

Example Scenario

Install and remove some packages using both high and low level package management tools.

Now Do It

1. Install the wget package using your distribution's high level package management tool.
2. Use wget to download the ImageMagick package for your distribution

   Ubuntu:
   http://security.ubuntu.com/ubuntu/pool/main/i/ImageMagick/ImageMagick_6.6.9.7-5ubuntu3.3_amd64.deb

   OpenSuse:
   http://download.opensuse.org/repositories/openSUSE:/13.1/standard/x86_64/ImageMagick-6.8.6.9-2.5.1.x86_64.rpm

   CentOS:
   http://www.ImageMagick.org/download/linux/CentOS/x86_64/ImageMagick-6.9.1-2.x86_64.rpm

3. Install the ImageMagick package you just downloaded using your distribution's low level package management tool (rpm or dpkg).

4. Find the ImageMagick package in your distribution's repositories.
5. Install the ImageMagick package in your distribution's repositories.
6. Update all the packages on your system.
7. Remove the ImageMagick package.

If you remember nothing else...

Keeping your software packages up to date is a good way to prevent security risks. The Linux design philosophy of doing one thing well means that open source software uses other open source software, which can mean unexpected dependencies.

Answer Key

Put the output from the commands run in the “now do it” section so that readers can compare their own results against something.

1. Install the wget package.
sudo apt-get install wget
yum install wget
zypper install wget

2. Use wget to download the ImageMagick package for your distribution
wget http://...
...
HTTP request sent, awaiting response... 200 OK
Saving to: ‘ImageMagick...’
...
2015-05-11 22:37:32 (64.3 KB/s) - ‘ImageMagick...’ saved

3. Install the ImageMagick package you just downloaded using your distribution’s low level package management tool (rpm or dpkg).
rpm -Uvh imagemagic...
dpkg -i imagemagic...

4. Find the ImageMagick package in your distribution’s repositories.
yum makecache && yum search all ImageMagick
sudo apt-get update && apt-cache search ImageMagick
zypper refresh && zypper ImageMagick

5. Install the ImageMagick package in your distribution’s repositories.
yum install ImageMagick
sudo apt-get install ImageMagick
zypper install ImageMagick

6. Update all the packages on your system.
yum update
sudo apt-get update && sudo apt-get upgrade
zypper refresh && zypper update

7. Remove the ImageMagick package.
rpm -e ImageMagick
sudo dpkg -r ImageMagick
or
yum remove ImageMagick
sudo apt-get remove ImageMagick
zypper remove ImageMagick

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