Basic system configuration

Unit objectives

After completing this unit, you should be able to:

- Discuss system management tools
- Install and deinstall additional software
- Configure a printer
- Configure a sound card
- Configure a network adapter

Why system configuration?

- Most system configuration is done during installation.
- You might need to change system configuration afterwards.
  - Things not configured during installation
  - Configuration failed during installation
  - Environment changed after installation
- There are three ways to change system configuration.
  - Temporary: Until next system reboot
  - Manually: Changing config files by hand
  - Automated: Using system administration tools
- The following are typical items that need to be configured on a workstation:
  - Add or remove software
  - Printers
  - Sound cards
  - Network

System configuration tools

- Various tools have been developed to ease system administration.
  - Application specific (Samba SWAT and so on)
  - Distribution specific (RH system-config-*, SLES YaST, and so on)
  - Desktop environment specific (gmenu, kcontrol, and so on)
  - Generic Linux/UNIX (webmin and so on)
- The perfect tool does not exist (yet).

Adding or removing software using RPM

- Use RPM to install or upgrade software packages.
- Common options include:
  - **-i:** Installing new packages
  - **-U:** Upgrading existing packages
  - **-e:** Removing packages

```
$ rpm -ihv myprog-1.2-34.i386.rpm
myprog  ################....

$ rpm -Uhv myprog-1.2-78.i386.rpm
myprog  ################.....

$ rpm -e myprog
```

- The -h option shows a progress bar. The -v option is verbose output.

Querying the RPM database

- Options
  - **-i:** List information
  - **-l:** List all files
  - **-p:** Queries new packages before installing

```
# rpm -qi myprog
Name        : myprog      Relocations: (not relocatable)
Version     : 1.0.1            Vendor: IBM Inc.
...

# rpm -ql myprog
/usr/bin/myprog
/etc/myprogrc
/usr/share/man/man1/myprog.1.gz

# rpm -qlp yourprog-1.2-34.i386.rpm
/usr/bin/foo
/etc/foorc
/usr/sha   re/man/man1/foo.1.gz
```

Adding or removing software from a .tar.gz file

- `.tar.gz (.tgz)` is default distribution format for source code.
  - tar = tape archiver: Stores a directory tree in a single file
  - gz = GNU Zip: Compression program
- To unpack a `.tar.gz` or `.tgz` archive:

```
cd /usr/src
tar -zxvf archive-version.tar.gz
cd <archivename>
```

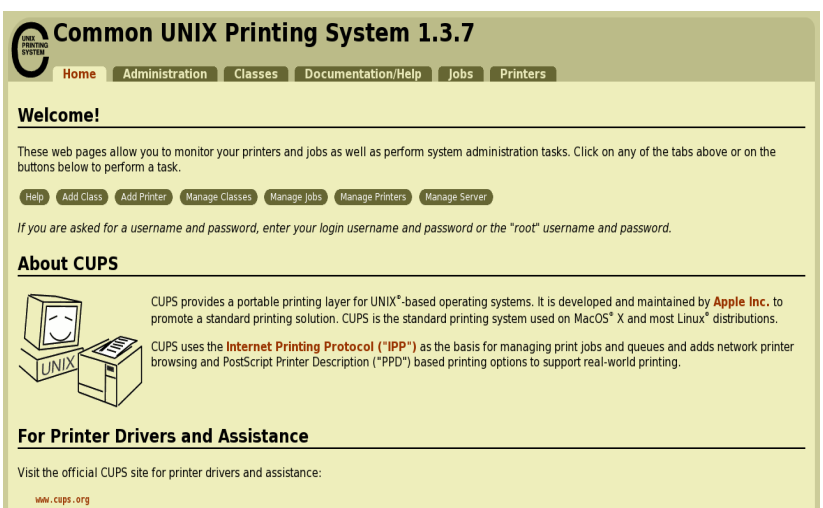
- Read INSTALL or README file for installation instructions.
- It should be installed under `/usr/local`.

Other Linux software installers

- Other methods of installing or updating software on Linux distributions include the following:
  - Yum is a RedHat update tool. RH support license is required. Yum will also download other necessary packages from software repository if possible.
  - Current is an opensource RedHat update tool.
  - There are many others.

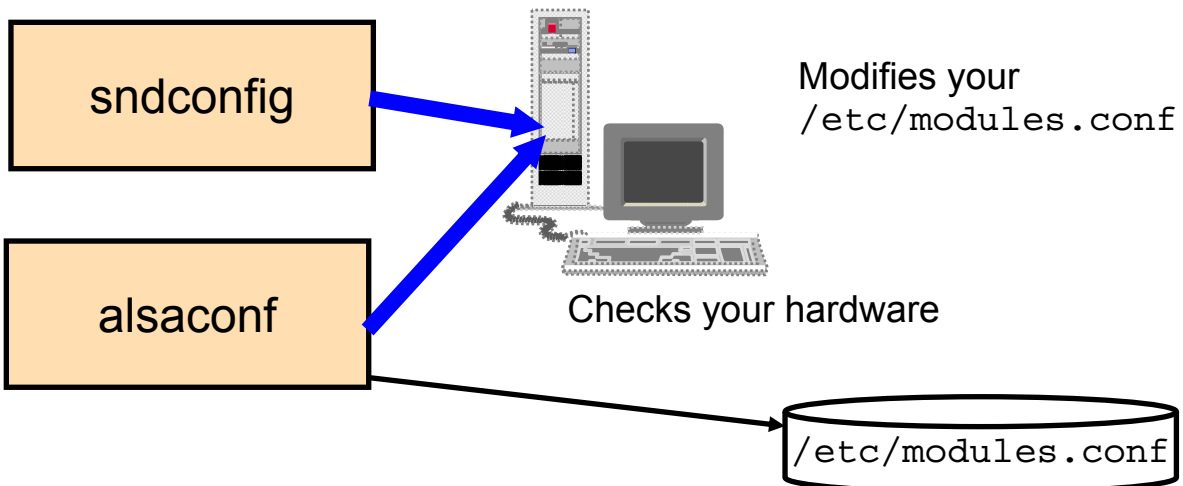
Printer configuration

- On RHEL and SLES, the printer subsystem is Common UNIX Printing System (CUPS).
  - Configuration is done through lpadmin or with a browser (http://hostname:631/) (*recommended*)



Sound card configuration

- Configuration is usually done with a dedicated tool.
  - RHEL: system-config-soundcard
  - SLES: YaST2 or Alsaconf



Sound card support requires correct loading of kernel modules!

Network configuration

- Need correct network module to be loaded into kernel
  - `/etc/modules.conf` or `/etc/modprobe.conf`
- Need to set correct IP addresses and so forth.
  - Generally done with **ifconfig** command
  - For DHCP, **dhcpcd**, **pump**, or **dhclient**
- Configuration done through scripts, which are different in each distribution
  - RHEL: `/etc/sysconfig/network-scripts/ifcfg-eth0`
  - SLES: `/etc/sysconfig/network/ifcfg-eth0`
- Use distribution-specific tool to configure
  - RHEL: system-config-network
  - SLES: YaST

Unit review

- System configuration is necessary if the installation program did or could not configure your system or if your environment changed after installation.
- System administration can be temporary, manual, or automatic.
- System administration is made easy by system administration tools.
- The perfect system administration tool does not yet exist.
- You must find out which tools are available on your distribution and which tool works for you.
- Common things to do on a workstation are adding and removing software, configuring printers, configuring sound cards, and configuring network interfaces.

Checkpoint

1. True or False: When you configure your system as a DHCP client, you do not need to configure IP addresses, and so forth, yourself.

2. The correct command to install an additional RPM would be which of the following:
   a. `rpm -U xpuzzles.rpm`
   b. `rpm -e xpuzzles-5.5.2-4.i386.rpm`
   c. `rpm -qip xpuzzles.rpm`
   d. `rpm -i xpuzzles-5.5.2-4.i386.rpm`

3. What is the proper series of commands to install a `.tar.gz` file?

Checkpoint solutions

1. True or False: When you configure your system as a DHCP client, you do not need to configure IP addresses, and so forth, yourself.
   The answer is true.

2. The correct command to install an additional RPM would be which of the following:
   a. `rpm -U xpuzzles.rpm`
   b. `rpm -e xpuzzles-5.5.2-4.i386.rpm`
   c. `rpm -qip xpuzzles.rpm`
   d. `rpm -i xpuzzles-5.5.2-4.i386.rpm`

   The answer is `rpm -i xpuzzles-5.5.2-4.i386.rpm`.

3. What is the proper series of commands to install a `.tar.gz` file?
   The answer is:

```
cd /usr/src
tar -zxvf archive-version.tar.gz
cd <archivename>
```

   Read INSTALL or README file for further installation instructions.

Exercise: Basic system configuration

What you will do in this exercise:

- Install and uninstall RPMs
- Configure a printer
- Configure a sound card
- Configure the network interface

Unit summary

Having completed this unit, you should be able to:

- Discuss system management tools
- Install and deinstall additional software
- Configure a printer
- Configure a sound card
- Configure a network adapter