Linux Startup and Shutdown

Part 2 of 2

Lab

Section O11

__1. Log in as root.
» Login: **root**
» Password: **ibmlnx**

__2. Change the /boot/grub/grub.conf configuration file so that a password is required when you try to alter the various boot options. Make sure the password is encrypted. For convenience in class, use the password ibmlnx.
Note: When starting **grub**, it starts probing devices to guess BIOS drives. This may take a long time - up to several minutes, depending on your hardware. Wait until this is done before typing the **md5crypt** command within **grub**.
» **# grub**
grub> **md5crypt**
Password: **ibmlnx**
Encrypted: 1JGuR//$kjOu7Q9kTZk01wFKWQqMb/
grub> **quit**
» **# vi /boot/grub/menu.lst**
Add the following line below the "" line (Red Hat) or below the "" the (SuSE):
```
password --md5 $1$JGuR//$kjOu7Q9kTZk01wFKWQqMb/
```

__3. Reboot your machine. Use the **shutdown** command to perform the reboot. Then try to alter the GRUB boot sequence without and with supplying the password.
» **# shutdown -r now**
» Wait for your system to shutdown, and watch GRUB menu as it comes up. Look at the screen carefully to determine which menu options are available. Try to alter the Linux boot sequence, for instance by adding a kernel parameter like **mem=64M**.
» Load **linux** again.
Retrieving kernel messages
The messages which are displayed by the kernel can be a helpful tool in problem determination. That is why you might want to retrieve them, even after your system has booted.

__4. Log in as root.
» Login: **root**
» Password: **ibmlnx**

__5. View the kernel messages and the log file /var/log/messages.
» **# dmesg | less**
» **# less /var/log/messages**

Setting the default runlevel

The default runlevel can be altered to configure your system for your situation. In this exercise, we will set the default to 5, so that you will get a graphical login prompt. Note however that, depending on your hardware, kickstart or autoyast

may not have configured X correctly. So we need to test and, if needed, configure X first.

__6. Start X with the **X** command. (This only starts the XFree86 server.) If X comes up correctly, stop the X server with **Ctrl-Alt-Del** and continue with the next step. If X does not come up correctly, run **redhat-config-xfree86** (Red Hat) or **sax2** (SuSE) to configure X.
» **# X**
If X comes up correctly (you' see a grey screen with an X-shaped mouse cursor), then exit X with **Ctrl-Alt-Del.** Otherwise, start **redhat-config-xfree86** (Red Hat) or **sax2** (SuSE).

__7. Edit the file /etc/inittab so that the default runlevel will be 5.
» **# vi /etc/inittab**
» Change the line
```
id:3:initdefault:
```
» into
```
Id:5:initdefault:
```

__8. Reboot your system, this time using Ctrl-Alt-Delete.
» **<Ctrl-Alt-Delete>**

__9. When LILO or GRUB appears, do nothing. After five to ten seconds, LILO or GRUB should automatically boot your default operating system.

__10. When the graphical login prompt appears, switch to the first virtual terminal. Then switch back to VT 7.
» **<Ctrl-Alt-F1>**
» You should see a text-based login prompt. (If you see a lot of X messages, press Enter once. This is caused by the X server sending its output to tty1.)
» **<Alt-F7>**
» You should be back at the graphical login screen.

__11. Log in as root, then start a terminal screen.
» Login: **root**
» Password: **ibmlnx**
» When logged in, click the terminal icon.

Configuring Services

__12. Make a long list of files in the directories /etc/rc.d/rc3.d, /etc/rc.d/rc4.d, /etc/rc.d/rc5.d and /etc/rc.d/init.d.
» **# ls -l /etc/rc.d/rc3.d**
» **# ls -l /etc/rc.d/rc4.d**
» **# ls -l /etc/rc.d/rc5.d**

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__13. Create a list of services with **chkconfig**, and check its output with the output from the previous commands.
   » # **chkconfig --list**

__14. Verify that the **portmap** service is enabled in your current runlevel. Disable this service, then check the symbolic links in /etc/rc.d/rc5.d again.
   » # **chkconfig --list portmap**
   » # **chkconfig portmap off**
   » # **chkconfig --list portmap**
   » # **ls -l /etc/rc.d/rc5.d**

__15. Check whether the portmap daemon is currently running. Then reboot the system.
   » redhat# **service portmap status**
   suse# **rcportmap status**
   » # **reboot**

__16. Log in and check whether the portmap daemon is running now.
   » Login: **root**
   » Password: **ibmlnx**
   » redhat# **service portmap status**
   suse# **rcportmap status**

__17. Enable the portmap service again, and start the service manually.
   » # **chkconfig portmap on**
   » # **chkconfig --list portmap**
   » redhat# **service portmap start**
   suse# **rcportmap start**

Using Single User Mode

Single User Mode is very convenient for system maintenance.

__18. Log out, reboot the system with Ctrl-Alt-Delete and boot in single user mode.
   » # **exit**
   » **<Ctrl-Alt-Delete>**
   » If your system uses LILO, type **linux single** at the LILO prompt.
   » If your system uses GRUB, then press **p** and enter the password. Then, press **e** to edit the operating system entry, and press **e** once again to edit the kernel line. Then, add **single** at the end and press enter. Then, press **b** to boot Linux.
   » On a Red Hat system, you don' have to log in: you will get a root prompt immediately.
   » On a SuSE system, type the root password **ibmlnx** to get a root prompt.

__19. Look at the list of running processes.
   » # **ps ax**

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__20. Reboot the system.
    » **# reboot**

END OF EXERCISE