# Week 11 Linux Projects - Chapter 8 System Initialization, X Windows, and Localization

Activities

[Week 11 Linux Projects - Chapter 8 System Initialization, X Windows, and Localization 1](#_Toc171861035)

[Update Kali Linux 1](#_Toc171861036)

[Project 8-2: Use SysV init and Systemd 1](#_Toc171861037)

[Project 8-3: Configure Service Units 4](#_Toc171861038)

[Project 8-5: Examine X Windows, accessibility, and localization options 5](#_Toc171861039)

[Assignment Submission 7](#_Toc171861040)

**How to Create Screenshots:** Please use the Windows Snip and Sketch Tool or the Snipping Tool. Paste a screenshot of just the program you are working on. If you are snipping a virtual machine, make sure your focus is outside the virtual machine before you snip.

1. Press and hold down the **Windows key** & **Shift**, then type **S.** This brings up the on-screen snipping tool.
2. Click and Drag your mouse around whatever you want to snip.
3. Release the mouse button. This places the snip into the Windows Clipboard.
4. Go into Word or wherever you want to paste the snip. Hold down **CTRL**, then type **V** to paste the snip.

## Update Kali Linux

In Kali Linux in the terminal.

|  |
| --- |
| sudo apt update  sudo apt dist-upgrade -y |

# Project 8-2: Use SysV init and Systemd

Time required: 30 minutes

In this hands-on project, you explore and configure the SysV and Systemd system initialization process on Kali Linux.

1. Switch to a command-line terminal (tty5) by pressing **Ctrl+Alt+F5** and log in to the terminal using the user name of **root** and the password of **LINUXrocks!**.
2. At the command prompt, type **runlevel** and press **Enter**.
3. What is your current runlevel? What is the most recent runlevel?

Click or tap here to enter text.

1. At the command prompt, type **cat /etc/inittab** and press **Enter**. View the commented sections.
2. Why is /etc/inittab not used in later versions of Fedora?

Click or tap here to enter text.

1. At the command prompt, type **ls /usr/lib/systemd/system** and press **Enter**.
2. What do the contents represent?

Click or tap here to enter text.

1. At the command prompt, type **ls /etc/rc.d** and press **Enter**.
2. Do you see init.d and rc[runlevel].d subdirectories? Why?

Click or tap here to enter text.

1. At the command prompt, type **ls /etc/rc.d/init.d** and press **Enter**. Which UNIX SysV daemons are available on this version of Fedora?

Click or tap here to enter text.

1. At the command prompt, type **chkconfig --list livesys** and press **Enter**.
2. In which runlevels is the livesys daemon started by default?

Click or tap here to enter text.

1. At the command prompt, type **chkconfig --level 2345 livesys on** and press **Enter** to configure the livesys daemon to start in runlevels 2 through 5.
2. Type **ls /etc/rc.d/rc[2-5].d** and press **Enter**.
3. Does the symbolic link to the livesys rc script start with S? Why?

Click or tap here to enter text.

1. At the command prompt, type **init 3** and press **Enter** to switch to runlevel 3 (multiuser. target). Note that you are on tty1 and the gdm is not loaded. Log in to the terminal using the user name of root and the password of **LINUXrocks!**.
2. Type **runlevel** and press **Enter**.
3. What is your current and most recent runlevel?

Click or tap here to enter text.

1. Insert a screenshot.

Click or tap here to enter text.

1. At the command prompt, type **init 1** and press **Enter** to switch to single user mode (rescue.target). Supply the root password of **LINUXrocks!** when prompted.
2. Type **runlevel** and press **Enter**.
3. What is your current and most recent runlevel?

Click or tap here to enter text.

1. At the command prompt, type **systemctl isolate graphical.target** and press **Enter** to switch to runlevel 5 (graphical.target). Note that the gdm is loaded. Press **Ctrl+Alt+F5** and log in to the terminal using the user name of **root** and the password of **LINUXrocks!**.
2. At the command prompt, type **systemctl status crond.service** and press **Enter**.
3. Is the Systemd cron daemon running?

Click or tap here to enter text.

1. Press **q** to return to your command prompt.
2. At the command prompt, type **systemctl restart crond.service** and press **Enter** to restart the cron daemon.
3. At the command prompt, type **systemctl disable crond.service** and press **Enter** to prevent the system from starting the cron daemon in your current runlevel/target. Note that the existing symbolic link in the crond.service rc script is removed.
4. Why was this link from the /etc/systemd/system/multi-user.target.wants directory instead of the /etc/systemd/system/graphical.target.wants directory?

Click or tap here to enter text.

1. At the command prompt, type **systemctl enable crond.service** and press **Enter** to start the cron daemon in your current runlevel/target.
2. Was the symbolic link recreated?

Click or tap here to enter text.

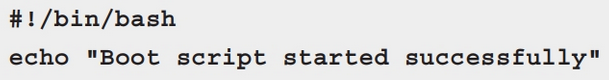
1. At the command prompt, type **service livesys restart** and press **Enter**. Note that Systemd started the UNIX SysV livesys daemon using the systemctl command because Systemd is backwards compatible with UNIX SysV.
2. At the command prompt, type **poweroff** and press **Enter** to power off your Fedora Linux virtual machine.

# Project 8-3: Configure Service Units

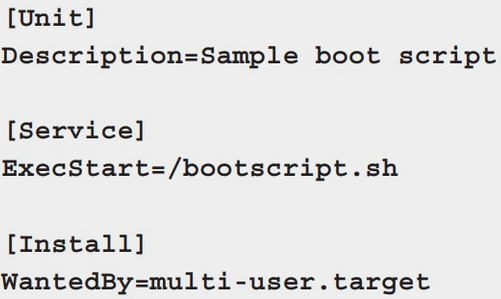
Time required: 20 minutes

In this hands-on project, you configure a basic rc script that is used to execute a shell script (/ bootscript.sh) during the Systemd system initialization process on Fedora 28.

1. Switch to a command-line terminal (tty5) by pressing **Ctrl+Alt+F5** and log in to the terminal using the user name of **root** and the password of **LINUXrocks!**.
2. At the command prompt, type **vi /bootscript.sh** and press **Enter**. Add the following lines. When finished, save and quit the vi editor.



1. At the command prompt, type **chmod u+x /bootscript.sh** and press **Enter** to ensure that the newly created script can be executed by the system.
2. At the command prompt, type **vi /etc/systemd/system/bootscript.service** and press **Enter**. Add the following lines. When finished, save and quit the vi editor.



1. At the command prompt, type **systemctl start bootscript.service** and press **Enter**. Next, type **journalctl | tail** at the command prompt and press **Enter**.
2. Did your boot script execute successfully? How can you tell?

Click or tap here to enter text.

1. At the command prompt, type **systemctl enable bootscript.service** and press **Enter**.
2. Why was a symbolic link created in the /etc/systemd/system/multi-user.target. wants/ directory?

Click or tap here to enter text.

1. At the command prompt, type **reboot** and press **Enter**. After the system has rebooted, press **Ctrl+Alt+F5** and log in to the terminal using the user name of **root** and the password of **LINUXrocks!**.
2. At the command prompt, type **journalctl | grep -i "Boot script"** and press **Enter**. Note the timestamps shown.
3. Did your boot script execute successfully during the previous boot?

Click or tap here to enter text.

1. At the command prompt, type **poweroff** and press **Enter** to power off your Fedora Linux virtual machine.

# Project 8-5: Examine X Windows, accessibility, and localization options

Time required: 30 minutes

In this hands-on project, you start X Windows without the gdm and as well as examine X Windows configuration utilities, accessibility options, and localization.

1. Boot your Fedora Linux virtual machine. After your Linux system has been loaded, switch to a command-line terminal (tty5) by pressing **Ctrl+Alt+F5** and log in to the terminal using the user name of **root** and the password of **LINUXrocks!**.
2. At the command prompt, type **init 3** and press **Enter** to switch to runlevel 3 (multiuser.target). Note that the gdm is no longer loaded in tty1. Log into tty1 using the user name of **root** and the password of **LINUXrocks!**.
3. At the command prompt, type **startx** and press **Enter**.
4. What desktop environment was loaded by default and why?

Click or tap here to enter text.

1. Since the root user has not logged into GNOME previously, you will be prompted to choose GNOME preferences.

Click or tap here to enter text.

* 1. At the Welcome screen, ensure that **English** (**United States**) is selected and click **Next**.
  2. At the Input Sources screen, ensure that the **English** (**US**) keyboard layout is selected and click **Next**.
  3. At the Privacy screen, turn off both options and click Next.
  4. At the Online Accounts screen, click Skip to bypass personal account configuration.
  5. On the Ready to Go screen, click Start using Fedora.
  6. Close the Getting Started window.

1. Click the power icon in the upper right of the GNOME desktop, click **root**, **Log Out**, and then click **Log Out** again to log out of the GNOME desktop.
2. Were you returned to your original BASH shell on tty1?

Click or tap here to enter text.

1. At the command prompt, type **init 5** and press **Enter** to switch to runlevel 5 (graphical.target). Note that the gdm is now loaded in tty1. Log into the GNOME desktop using the user name of **user1** and the password of **LINUXrocks!**.
2. Click the **Activities** menu and navigate to **Show Applications**, **Settings**. Click **Displays** and select your display. Note that you can configure the resolution for your current display, which is limited by the virtualized graphics adapter provided by your hypervisor. Next, click the **Back** button in the upper-left corner of the Settings application and select **Universal Access**. Explore the different assistive technologies available and close the Settings window when finished.
3. Click the **Activities** menu and navigate to **Show Applications**, **Utilities**, **Terminal** to open a command-line terminal. At the command prompt, type **su - root** and press **Enter** to switch to the root user. Supply the root user password of **LINUXrocks!** when prompted.
4. At the command prompt, type **system-config-keyboard** and press **Enter**. Note that you can optionally choose a different keyboard for use with X Windows. Use the Tab key to select the **Cancel** button and press **Enter** to quit the Keyboard Selection utility.
5. At the command prompt, type **cat /etc/X11/xorg.conf.d/00-keyboard.conf** and press **Enter**. Note the keyboard localization used by X Windows.
6. At the command prompt, type **locale** and press **Enter**.
7. Which locale is used by default for all format types?

Click or tap here to enter text.

1. Type **locale -a | less** and press **Enter**. View the available locales on your system and press **q** to return to your command prompt when finished.
2. At the command prompt, type **cat /etc/locale.conf** and press Enter. Next, type **localectl** and press **Enter**.
3. Does the default locale listed by both commands match the output of the previous step?

Click or tap here to enter text.

1. At the command prompt, type **timedatectl** and press **Enter**. Next, type **11/etc/ localtime** and press **Enter**.
2. Does the output of each command indicate the correct time zone information for your system?

Click or tap here to enter text.

1. At the command prompt, type **poweroff** and press **Enter** to power off your Fedora Linux virtual machine.

## Assignment Submission

Submit this completed document in Blackboard.