4.2.5 Use GRUB2

Click one of the buttons to take you to that part of the video.

Use GRUB2 Boot Loader 0:00-0:49

In this demonstration we're going to practice working with the GRUB2 boot loader.

This Fedora system uses GRUB2, and as you can see, I have two menu items listed in my initial GRUB menu. I can select either the Fedora system or I can select a rescue system. There are actually many other menu options that are available, but they're currently being hidden.

In this demonstration we're going to go in and modify our GRUB configuration file to do a couple of things. We're going to enable some of the hidden menus, and we'll also modify our timeout and default menu selections. Let's go ahead and boot the system.

This will take a few minutes to boot up, so I'm actually going to pause the recording and we'll come back when the system is back up and ready.

Review Default Values in the GRUB Configuration File 0:50-2:42

My system is now booted. I've logged in as my rtracy user, and I've opened this shell session. The file that we use to configure the GRUB2 boot loader is '/etc/default/grub'. The actual GRUB boot loader configuration is controlled by many different files, but this is the one that you actually edit to make various changes.

As we'll see in a minute, after we make changes to this file, we then use the GRUB2 'mkconfig' command to actually write those changes to all the various configuration files.

As you can see, the GRUB configuration file in /etc/default contains many different parameters that control the way that the GRUB menu is going to work. For example, the GRUB_TIMEOUT parameter specifies how long, in seconds, a user has to make a selection from the GRUB menu before the default selection is automatically booted.

You can see here that it's currently set to a value of 5, which means we have five seconds to make a selection before the default is used. If we were to set this to negative one however, the timer would be disabled, and the user has to manually select an option from the GRUB menu before the system will boot.

We also have the GRUB_DEFAULT option right here. This parameter sets the default menu entry. For example, if we were to set this to a value of 0, then the first menu entry would become the default menu selection, unless the user selects something else.

Notice right now it's currently set to a value of saved, which means that whatever the user selected the last time the system was booted will be the default that will be used this time.

These two parameters here, GRUB_DISABLE_SUBMENU and GRUB_DISABLE_RECOVERY, control whether or not we can see all of the available boot options or just the two that we saw before. Right now we see only two, because these disable configuration parameters are set to true.

Modify Values to Adjust Timeout and Default Menu 2:43-3:28

Let's go ahead and modify our GRUB configuration and change a few things. To do this though, we need to switch to our root user account first, and now let's use the VI editor to open the '/etc/default/grub' configuration file.

Press Insert. Go into insert mode. First, let's change the GRUB_TIMEOUT value. Five seconds isn't very long. Let's increase that a little bit to '8'. That gives the end user a little more time to read all the various menu options before they select one.

Let's change the default from saved to a value of '0', which means we're always going to use the first menu item as the default boot option, regardless of what the user may have selected the previous time.

Enable Hidden Submenus 3:29-5:19

Let's enable our additional boot menu items by setting GRUB_DISABLE_SUBMENU to 'false' and also GRUB_DISABLE_RECOVERY to 'false' as well. Press Escape, we'll enter 'exit' to save our changes to the file and to exit the VI editor. Before these changes will take effect we

do have to apply them.

We do this by running the 'grub2-mkconfig' command, and we have to specify the name of the output file that we're going to create '-o /boot/grub2/grub.cfg'. Press Enter. Wait a second while the changes are made.

Notice that it's adding additional Linux images as menu items right here. Let's go ahead and see how that looks in the GRUB menu. Let's do a 'shutdown -r' command to reboot the system.

Notice that we have a counter at the bottom that's doing a countdown of how many seconds we have to pick a selection. I hit the arrow key to go down once and that turned the timer off.

Now I have a different second menu item. I have my default up at the top--Fedora, which we had before--but now we have advanced options for Fedora.

If I hit Enter, you can see that I have many different Linux kernels that I could boot. I have my default kernel, which is what we had before. We have Recovery Mode and then we have two rescue kernels that we could select from. Again, we can pick a particular kernel to boot by selecting it with the arrow keys and hitting Enter, and the system will boot the appropriate kernel.

Summary 5:20-5:31

That's it for this demonstration. In this demo we looked at configuring the GRUB boot loader. We first looked at the default values in the GRUB configuration file. Then we modified those values to adjust the timeout and the default menu selection, and we also enabled some hidden submenus.
