2.9.1 Commands for Viewing Files

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

Commands for Viewing Files 0:00-0:57

In this lesson, we are going to review several commands that you can use to view the contents of files within the Linux file system. Now, knowing how to do this, how to look at the contents of a file, is a critical skill for a Linux administrator. For example, your Linux system and all the services that run off on are primarily configured using text files that are usually stored in the /etc directory within the file system.

Now, because Linux uses text files to configure and manage just everything in the system, you will frequently need to view the contents of these files. One way to do this, one option, would be to use just a text editor to open up the file for viewing. However, this could be overkill. There will be many occasions when you just simply need to quickly see what's in there, and you don't need to load up the file in a full text editor.

Linux provides you with a variety of command line tools that you can use to accomplish this.

The cat Command 0:58-2:08

One of the most frequently used commands on Linux for viewing files is the cat command. All you have to do is run cat followed by the file name that you want to look at the shell prompt, and then the text will be displayed on the screen. That is what we did in this example. We entered —˜cat', and then we specified the full path to the file that we want to look at, /etc/ssh/sshd_config. This file is used to config the secure shell service running on our system.

Notice, after I type that command, that the contents of the file are simply listed on the screen. Now, just as with any other Linux command, we can use either an absolute path, or we can use a relative path to the file that we want to display. In this case, I used an absolute path because I specified the full path to the file starting at the root of the file system down to the file itself. If I were already in the /etc/sshd directory, I wouldn't have to specify the full path to the file. I could instead just type cat sshd_config. Because I didn't supply a path, the shell would assume that the file that I am looking for is in the current directory. If it found it, it would display it on the screen.

Piping cat Through the more Command 2:09-2:58

Here's one thing that you need to remember about cat: it has one key weakness, and that is the fact that the cat command does not pause the output. So, if you are using cat to view a file that is longer than one page, then it will just scroll off of the screen, and that's actually what's happened in this example. This file actually goes on, and on, and on, down this direction. Frequently, you are going to want to actually pause that output a page at a time so you can actually see what's in the file. One way to do this is to actually pipe the output of the cat command to the input of the more command.

The more command will simply take the input that it's given, display the first page on the screen, and then pause and wait for you to hit a key on the keyboard to go on to the next screen.

The less Command 2:59-4:44

In addition to cat, you can also use the less command to view Linux files. The less command is extremely useful. Like cat, the less command will also display the contents of a text file on the screen. However, it addresses the key weakness that we just discussed with the cat command. The less command will also automatically pause the output of a long text file on the screen one page at a time.

Then you can use the space bar, the page up, page down, and arrow keys to navigate around within the output. In this example, I type the less command and then a space, and then the name of the file that I wanted to view. I use the same file that I viewed with the cat command previously, /etc/ssh/sshd_config. Notice, down here, that the less command actually paused the output one page at a time so I can actually see what's in the file.

You might be asking, "What's the difference between using cat and piping the output to more, and using less?" They are both basically the same. But using less has a couple of key advantages, and that is primarily with navigation.

If you cat a file, take the output, and pipe to more, the more command goes one direction only, and that is down in the file. If I am piping the output of the cat command more and I hit the space bar, it goes down a page. But if I need to go back up a page to see what was there, say I missed something, I can't do it with more. I have to exit out and re-type the command again.

The less command, on the other hand, allows you to go forward and backwards and whatever direction you need to in the output of the command until you find the information that you need. less is a very, very flexible, very, very useful file viewing utility.

The head Command 4:45-6:32

Another command that you can use to view the contents of a file on a Linux system is the head command. Now, honestly, I don't use head very often. head displays just the first few lines of the file you specify on the screen. As you can see here, I ran the head command, and then I specified the name of the file I wanted to look at, /etc/ssh/sshd_config, and all it displayed were the first few lines of the file.

This file is actually much, much longer than this. It's several pages long. But head just grabbed the first couple of lines, put them on the screen, and then exited out. That's one of the reasons why I don't typically use head very often, because usually, that's not very helpful. There may be instances where it is, where you only need to view the beginning of a file.

A command that I do use fairly frequently is the tail command. The tail command is the opposite of the head command. Where the head command simply displays the first few lines at the beginning of the file, the tail command displays the last few lines at the end of the file.

You might be asking, "Why on earth would that be more useful than head?" tail command is very useful when you are displaying files such as log files because a log file is created incrementally. The oldest entries are at the beginning, and the newest entries are at the end of the file. When I am troubleshooting a problem, I want to see the most recent entries in the log file, and that's where tail really shines because it displays the last few lines of that file.

In this example, I used a tail command to display the last few lines of the /etc/ssh/sshd_config file. That is only moderately useful. I don't typically use tail to view configuration files like we did in this example. Like I said, it's very useful for displaying the last few entries in a log file.

The tail -f Option 6:33-8:27

Now, the tail command includes an option that is extremely useful, and that is the -f option. If you just run the tail command and supply a file name to view, it looks at the file, displays the last few lines of the contents of that file on the screen, and then it exits out.

But when you use the -f option, the tail command will then continuously monitor the file that you specified. And if new content is added to the end of the file, such as is the case with a log file, the new lines will be displayed on screen by the tail command as they are added to the file. This can be really, really useful when you are trying to troubleshoot a problem on your system such as a misbehaving service or maybe a configuration problem.

Here's what we have done here. We've run the tail -f command in one window. Notice that I am running tail -f, and I am looking at the firewalld file located in the /var/log directory. You can see that right here. Now, the firewalld file in /var/log is my firewall log file. In this situation, we are assuming that I am having some type of problem with my firewall service, and so I am monitoring over here, with the tail -f command, the firewall log file.

Over in this other window, I am doing various things, trying to troubleshoot what is wrong with my firewall. In this case, I am stopping the firewall service, and then I am starting again. As I do that, the various entries that are added to the firewalld log file are dynamically displayed on the screen by the tail -f command.

This is a very useful way to troubleshoot system problems. tail command will continue to monitor that file until we tell it to stop. You do that by pressing Control+C over here, in this window, which will break out of the tail command.

Summary 8:28-8:35

That's it for this lesson. In this lesson, we reviewed the various commands that you can use to view the contents of Linux files. We talked about the cat command, the less command, the tail command, and the head command.
