2.9.3 View File Contents

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

View File Contents 0:00-0:35

In this demonstration, we're going to discuss viewing the contents of files in the Linux file system. Being able to view the contents of a file is a key skill that all Linux administrators must learn, and that's because most Linux configuration settings are saved in files and most Linux logging information is saved in files. Therefore, being able to view a file is very important. In this lesson, we're going to look at doing this using several different utilities. First, we'll look at the cat command. Then we'll look at the less command. Then we'll look at the head command. And then we'll look at the tail command.

---

cat 0:36-1:34

Let's begin with the cat command. cat is very commonly used; it simply reads a file and writes the output to the screen. In my /home directory, here, you can see that I have a file called myfile. It has a little bit of text in it. We need to view it. To do that, we can type 'cat myfile'. When we do, the contents of the file are read and they're written on the screen. As you can see, this is a very small file; it contains one line of text that simply says, "This is my new file."

cat works great, but it's got one glaring weakness, and that is the fact that it does not pause the output of a very long file. Here, we ran it against a very short file. It worked great. But I also have a file right here called logfile. It's quite a bit bigger. Let's use cat to view the contents of logfile. As you can see, logfile is a big file that extends way past the top of the screen, and cat just threw all the contents on the screen at once.

Use cat with more 1:35-2:10

One thing you can do to slow cat down is to actually take the output of the cat command and then pipe it to input of the more command. We type 'cat' and then the name of the file that we want to view with the cat command, 'logfile', and then we'll 'l' the output to the input of the 'more' command. Notice, when I do this, that the output of the cat command is paused one page at a time. And that I can press the Spacebar to go down through the file one page at a time. If I want to get out, I just press q, and it closes out more.

In addition to the cat command,

Use cat with less 2:11-4:30

you can also use the less command to view the contents of a file. Using the less command works in much the same way as using cat along with more. In fact, it's really a better option than using cat with more. Like the cat command, the less command will read the contents of a file and write it to the screen. And like the more command, the less command will pause the output one page at a time. Let's look at the same file that we were looking at earlier, logfile. Notice that the output is paused one page at a time, and I can page through it using the spacebar, just like we did with the more command. But less has one key advantage over the more command. That's the fact that more only lets you go one direction through the file,and that is down. So, if you started paging down with the cat and the more command and realized, "Oh, the information that I needed was two pages back," you can't page up to that. You'll have to break out, re-run the command, and go through it again until you hit the right information.

That's not the case with the less command. You can page up, you can page down, you can use the arrow keys to go one line at a time, which you cannot do with the more command, either. less is, really, a very, very useful utility for analyzing files on Linux. In fact, if I'm analyzing a big file, I always use less; I rarely use cat with more. If I need to look at a small file, then I just use cat without the more option. Another advantage that less has over the more command and the cat command is the fact that you can search for specific text within the file specified. To do this, you enter a '/', and then you enter the search term that you're looking for. Let's say we want to find information about boot. I hit Enter. And when I do, the instances of boot are highlighted, and I can work through the file, finding all of these instances. Can you search with the cat command? Not with the cat command by itself. If you need to search, then the less command is the better choice. Although you can search with a cat command if you pipe the output from cat to another utility called grep.

For example, let's say we want to search through that same file again, logfile, and we want to look again for all instances of boot. We would enter 'cat logfile', and then w would pipe the output through the grep command, then tell grep what search term we're looking for--in this case, boot. The output of the grep command lists every single line in the file that has the word "boot" in it.

Use cat with head 4:31-5:23

Another utility you can use to display the contents of a file is called the head command. Let's clear our screen, clean things up a little bit. You simply type 'head' followed by the name of the file that you want to view. Let's look at logfile once again. Notice that very little information is displayed, and that's because the head command only displays the first few lines of the file that you specify. And, honestly, I don't use head very often because I find its usefulness rather limited. The thing here is that if you're using head to analyze a file, such as a logfile, then it really doesn't display very useful information because typically, the most recent information is added to the end of the logfile. Everything you see at the beginning of a logfile is really old information and probably not terribly useful. I suppose it's possible that head could be useful if you're analyzing a configuration file that doesn't change, but, again, I hardly ever use it.

Use cat with tail 5:24-7:38

A more useful utility is the tail utility. tail is a utility I use all of the time. It's kind of the opposite of head. Where head looks at the first few lines in the file, tail does just the opposite; it displays the last lines in a file. This is important, especially when you're dealing with log files, because that is, most likely, where the most recent information resides. Let's try using tail and run it against the same file, logfile. This time, the last few lines of the file are displayed, and these are the most recent entries that were added to this file.

One other very useful feature of tail is the -F option. If you run tail like we did right here, it reads the file, displays the last view lines, and then exits. Well, when you're troubleshooting, there may be times when you want to actually monitor a log file to see what messages are being written to that log file as you go about your troubleshooting work. It might give you some clues as to what might be wrong with the system. Well, you can use the tail command to do just this. If you use tail with the -F option, it will monitor that logfile, in which case it will open the logfile, display the last few lines of the file, and then continuously monitor that file. As new entries are added to the logfile, it displays them on the screen for you so you can keep tabs on what's going on. We'll enter here, 'tail -F logfile'. Notice that tail did not exit; it's still monitoring the logfile file. What we're going to do now is open up a new terminal session. And now, what I'm going to do is manually add lines to this file to simulate what would happen if we were monitoring a live log file on a Linux system. What we're working with down here is just a dummy file.

I'm going to type the cat command, and then I'm going to read the contents of myfile. Instead of displaying it on the screen, we're going to redirect it to the logfile. Because we used two greater-than signs (>), it will write the contents of myfile to the end of the logfile without overriding the existing contents. Hit Enter and notice when I did that, this new entry was added down here, to the end of the log file, and it was displayed by tail. You can stop tail from monitoring the file by pressing Ctrl+C, and it breaks out.

Summary 7:39-7:52

That's it for this demonstration. In this demo, we talked about how you can view the contents of files on a Linux system. We talked about using the cat command. We talked about using the cat command with more. We talked about using the less command and the head command, and then we looked at using the tail command.
