LESSON NOTES

Intro to Linux

System Management

1.2.1 File Editing

Lesson Overview:

Students will:

- Create text in different text editors and then use different stream editing commands to change the way that text appears on the screen

Guiding Question: What are some ways to create text and then manipulate that text on a standard output?

Suggested Grade Levels: 9 - 12

Technology Needed: None

CompTIA Linux+ XK0-005 Objective:

1.2 - Given a scenario, manage files and directories

- File Editing
  - sed
  - awk
  - printf
  - nano

This content is based upon work supported by the US Department of Homeland Security's Cybersecurity & Infrastructure Security Agency under the Cybersecurity Education Training and Assistance Program (CETAP).

File Editing

The ability to create and edit text is an important skill when using a Linux system. Whether you are editing a configuration file or creating new firewall rules or writing an automation script, having competency with a text editing tool will be valuable. For this lesson we will learn about ***nano*** and ***vi(m)***, the 2 text editors most commonly found on Linux systems.

nano is a great beginner text editor that is used in the Terminal interface. To start, type nano and the name of the file you want to create or the file you are changing. Once the file is open you can start typing right away. In nano terminal at the bottom of the screen, you will see a list of shortcut keys to help guide the user experience.

vi(m) is found with different names on different Linux distributions. Some call it ***vi*** and others name it vim but it is essentially the same editing tool. Vi(m) has a reputation of being a more powerful editing tool but also of being more challenging for new users. Just like nano, to use this editor you open a terminal and type vi (or vim) and then the name of the file. vi(m) works without menus so it requires you to master different commands to be able to use it properly. And with a plethora of plug-ins that can be incorporated into vi(m), it can pretty much become a full-blown integrated development environment (IDE) once you master using it. Vi(m) is for many professionals the preferred choice for scripting or writing code.

Stream Editors

printf allows you to print some text to the screen that is formatted, i.e. pleasant to look at. The printf command really only has one option, -v that takes whatever string you entered and turns it into a variable instead of a standard output, but printf has lots of format settings that let you control how your input will appear on the standard output – your screen.

sed stands for "stream editor" in Linux. It's a powerful and widely used command-line tool for parsing and transforming text. Essentially, sed receives text input, processes it line by line, and applies specified text transformations based on a set of rules or commands provided by the user. It's often used for tasks like search and replace, text substitution, and basic text manipulation in scripts and one-liners. This is a handy tool for text processing once users get accustomed to the syntax.

awk is a program language that can be used to stream edit. More advanced than sed, awk can be used to create filters to write scripts to accept data from a standard input, change it some way, and send that data back out via standard output in its changed form.