LESSON NOTES

Intro to Linux

System Management

1.1.3 Configuration and Installation

Lesson Overview:

Students will:

- Understand some common installation processes of most Linux based operating systems

Guiding Question: What are some standard ways of installing software and applications on a Linux operating system?

Suggested Grade Levels: 9 - 12

Technology Needed: None

CompTIA Linux+ XK0-005 Objective:

1.1 - Summarize Linux fundamentals

- Summarize Linux fundamentals.
  - Basic package compilation from source
    - ./configure
    - make
    - make install

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).

Basic Package Compilation from Source

In the context of compiling and installing software from source on a Linux system, the **`./configure`**, **`make`**, and **`make install`** commands are commonly used. These commands help you prepare, compile, and install software from its source code. Here's an explanation of each command:

1. **`./configure`**
   The **`./configure`** script is used to build the software on your system. When you run **`./configure`** in the source code directory of the software you want to compile, it performs several tasks:

   - It checks your system for dependencies and required libraries. If any are missing, it will typically display an error message indicating which dependencies are lacking.

   - Generates a **`Makefile`** specific to your system and configuration. This **`Makefile`** contains instructions for the **`make`** command on how to compile the software.

2. **`make`**
   After you've run **`./configure`**, you can use the **`make`** command to compile or build the software based on instructions in the generated **`Makefile`**. The **`make`** command reads the **`Makefile`** and compiles the source code into executable binaries or libraries.

3. **`make install`**
   Once the software has been successfully compiled using make, you can then use the **`make install`** command to install it on your system. The command copies the compiled binaries, libraries, and other necessary files to the specified installation directory. By default, it typically installs to **`/user/local`**.

Together, these three commands **`./configure`**, **`make`**, and **`make install`** provide a standardized way to configure, compile and install software from source code on Linux systems.