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Show Name: CompTIA Linux+ (XK0-004)

Topic: Managing Packages and Software

Episode Name: Building from Source

Description: In this episode, Zach and Don walk the users through how to compile software from source code. This is particularly useful when software is only available in source form or if there is no trusted source of pre-compiled binaries.

Building from Source

[?] Why would we build an application from source code?

- Not all software is distributed as a pre-compiled binary
- May change too frequently
- May not have the resources to maintain packages

[?] What if we have both options? How do we choose?

- Pros
 - Compiling allows you to build the software to your needs
 - Will typically perform better and consume less space
- Cons
 - Requires manual updates
 - Prone to error / Debugging
 - Mistakes are possible
 - Requires dev tools to be installed
 - GCC
 - Make
 - Kernel Source

[?] Can you give us an example of a program we would want to build from source?

- [John the Ripper \(http://www.openwall.com/john/\)](http://www.openwall.com/john/)
- Open source password brute-force utility
- Binaries are paid commercial software
- Source code is free
 - <http://www.openwall.com/john/j/john-1.8.0.tar.gz> (<http://www.openwall.com/john/j/john-1.8.0.tar.gz>)

[?] What tools do we need to get started?

- Pre-requisites
 - `sudo yum install gcc make gzip`
 - `wget http://www.openwall.com/john/j/john-1.8.0.tar.gz`

[?] Can you run us through the build process real quick?

1. Unpack the source code

- `tar -xvzf ./john-1.8.0.tar.gz`

2. Move to the source folder

- `cd ./john-1.8.0/src`

3. (Optional) Set configuration options

- `make config`

4. List the supported build architectures

- `make`

5. Execute the desired build

- `make clean linux-x86-64`
- `clean` indicates to use a fresh config
- `oldconfig` would re-use existing config files

6. (Optional) Move binaries to system directories

- `sudo make install`

7. Test the application

- `cd ../run`
- `./john --test`