Installing Programs from Source

LPIC-2: Linux Engineer (201-450)

Objectives:

At the end of this episode, I will be able to:

1. Describe the benefits of installing Linux applications from source.
2. Use GNU utilities to build and install an application from source code.

> Additional resources used during the episode can be obtained using the download link on the overview episode.

- Reasons to install from source

  - Latest updates
  - No package available
  - Unsupported distro
  - Code review
  - Hardware optimization

- Required Tools

  - Compiler
  - Libraries
  - Documentation

- Obtaining source code

  - Linux repositories
  - Github
  - Vendor websites

- Example

  - John the Ripper
  - https://www.openwall.com/john/
  - https://www.openwall.com/john/k/john-1.9.0-jumbo-1.tar.gz

- Validating source code archives

  - Look for signatures or hashes for the archives

    - https://www.openwall.com/john/k/john-1.9.0-jumbo-1.tar.gz.sign
    - https://www.openwall.com/signatures/openwall-offline-signatures.asc

  - Validating a signature

    - `gpg --import openwall-offline-signatures.asc`
    - `gpg --verify john-1.9.0-jumbo-1.tar.gz.sign john-1.9.0-jumbo-1.tar.gz`

- Building an application

  1. Obtain the source code

     - `wget https://github.com/openwall/john/archive/bleeding-jumbo.tar.gz`

  2. Extract the code to a working directory

     - `tar -xvzf ./bleeding-jumbo.tar.gz`

  3. Perform configuration tasks

- cd john-bleeding-jumbo/src
- configure
- sudo apt install libssl-dev
- configure

4. Compile the application

- make

- Installing the software

  - Run in-place

    - ../run/john

  - Run an install script

    - ./install-sh

  - Run the installer

    - make install

  - Install the package

    - sudo apt install john.deb