| Chap ter | required | Free/Propri etary | testing | propriet ary, then cost of the | | Hardware specifications | OS required |
|-------------|---|----------------------|---------|--------------------------------|---|--|----------------|
| 2 | Ubuntu 18.04 (or other Linux Distribut ion) | Free | N/A | N/A | https://www.ubuntu.com/downlo ad | 2GHz dual core processor or better 2GB System Memory 25GB of free hard drive space Installation media | Linux |
| 2 | Python 3.6+ | Free | N/A | N/A | https://www.python.org/ (Note. Python 3.6 is pre-installed with Lots of Linux Distribution) | N/A | Linux |

| 2 | VIRL (optional if you have other lab equipme nts) | Proprietary | | \$199 | virlfaq/hardware | See requirem ents |
|---|---|-------------|--|-------|------------------|-------------------------|
| | | | | | | |

Detailed installation steps (software-wise)

- 1. Ubuntu Installation Steps: https://tutorials.ubuntu.com/tutorial/tutorial-install-ubuntu-desktop#0
- 2. Python 3.6 pre-installed with Ubuntu 18.04
- 3. Cisco VIRL (optional) installation steps: http://virl.cisco.com/

^{*} Other required software and installation steps will be provided in the respective chapters related to the topic