Topic 1:The Linux Community and a Career in Open Source (weight: 7)

1.1 Linux Evolution and Popular Operating Systems

**Weight:** 2

**Description:** Knowledge of Linux development and major distributions.

Key Knowledge Areas:

* Open Source Philosophy
* Distributions
* Embedded Systems

The following is a partial list of the used files, terms and utilities:

* Android
* Debian, Ubuntu (LTS)
* CentOS, openSUSE, Red Hat
* Linux Mint, Scientific Linux

1.2 Major Open Source Applications

**Weight:** 2

**Description:** Awareness of major applications as well as their uses and development.

Key Knowledge Areas:

* Desktop Applications
* Server Applications
* Development Languages
* Package Management Tools and repositories

Terms and Utilities:

* OpenOffice.org, LibreOffice, Thunderbird, Firefox, GIMP
* Apache HTTPD, NGINX, MySQL, NFS, Samba
* C, Java, Perl, shell, Python, Samba
* dpkg, apt-get, rpm, yum

1.3 Understanding Open Source Software and Licensing

**Weight:** 1

**Description:** Open communities and licensing Open Source Software for business.

Key Knowledge Areas:

* Licensing
* Free Software Foundation (FSF), Open Source Initiative (OSI)

Terms and Utilities:

* GPL, BSD, Creative Commons
* Free Software, Open Source Software, FOSS, FLOSS
* Open Source business models

1.4 ICT Skills and Working in Linux

**Weight:** 2

**Description:** Basic Information and Communication Technology (ICT) skills and working in Linux.

Key Knowledge Areas:

* Desktop Skills
* Getting to the Command Line
* Industry uses of Linux, Cloud Computing and Virtualization

Terms and Utilities:

* Using a browser, privacy concerns, configuration options, searching the web and saving content
* Terminal and Console
* Password issues
* Privacy issues and tools
* Use of common open source applications in presentations and projects

Topic 212: System Security

212.1 Configuring a router

**Weight:** 3

**Description:** Candidates should be able to configure a system to perform network address translation (NAT, IP masquerading) and state its significance in protecting a network. This objective includes configuring port redirection, managing filter rules and averting attacks.

Key Knowledge Areas:

* iptables configuration files, tools and utilities
* Tools, commands and utilities to manage routing tables.
* Private address ranges
* Port redirection and IP forwarding
* List and write filtering and rules that accept or block datagrams based on source or
* Destination protocol, port and address
* Save and reload filtering configurations
* Awareness of ip6tables and filtering

Terms and Utilities:

* /proc/sys/net/ipv4/
* /etc/services
* iptables

212.2 Securing FTP servers

**Weight:** 2

**Description:** Candidates should be able to configure an FTP server for anonymous downloads and uploads. This objective includes precautions to be taken if anonymous uploads are permitted and configuring user access.

Key Knowledge Areas:

* Configuration files, tools and utilities for Pure-FTPd and vsftpd
* Awareness of ProFTPd
* Understanding of passive vs. active FTP connections

Terms and Utilities:

* vsftpd.conf
* important Pure-FTPd command line options

212.3 Secure shell (SSH)

**Weight:** 4

**Description:** Candidates should be able to configure and secure an SSH daemon. This objective includes managing keys and configuring SSH for users. Candidates should also be able to forward an application protocol over SSH and manage the SSH login.

Key Knowledge Areas:

* OpenSSH configuration files, tools and utilities
* Login restrictions for the superuser and the normal users
* Managing and using server and client keys to login with and without password
* Usage of multiple connections from multiple hosts to guard against loss of connection to remote host following configuration changes

Terms and Utilities:

* ssh
* sshd
* /etc/ssh/sshd\_config
* /etc/ssh/
* Private and public key files
* PermitRootLogin, PubKeyAuthentication, AllowUsers, PasswordAuthentication, Protocol

212.4 Security tasks

**Weight:** 3

**Description:** Candidates should be able to receive security alerts from various sources, install, configure and run intrusion detection systems and apply security patches and bugfixes.

Key Knowledge Areas:

* Tools and utilities to scan and test ports on a server
* Locations and organizations that report security alerts as Bugtraq, CERT or other sources
* Tools and utilities to implement an intrusion detection system (IDS)
* Awareness of OpenVAS and Snort

Terms and Utilities:

* telnet
* nmap
* fail2ban
* nc
* iptables

212.5 OpenVPN

**Weight:** 2

**Description:** Candidates should be able to configure a VPN (Virtual Private Network) and create secure point-to-point or site-to-site connections.

Key Knowledge Areas:

* OpenVPN

Terms and Utilities:

* /etc/openvpn/
* openvpn