LINUX ESSENTIALS Exam 010-160

Topic 1: The Linux Community and a Career in Open Source

1.1		Linux Evolution and Popular Operating Systems
	Weight	2
	Description	Knowledge of Linux development and major distributions.
	Key Knowledge Areas	• Distributions • Embedded Systems • Linux in the Cloud
	The following is a partial list of the used files, terms and utilities	• Debian, Ubuntu (LTS) • CentOS, openSUSE, Red Hat, SUSE • Linux Mint, Scientific Linux • Raspberry Pi, Raspbian • Android

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
	The following is a partial list of the used files, terms and utilities	• OpenOffice.org, LibreOffice, Thunderbird, Firefox, GIMP • Nextcloud, ownCloud • Apache HTTPD, NGINX, MariaDB, MySQL, NFS, Samba • C, Java, JavaScript, Perl, shell, Python, PHP • dpkg, apt-get, rpm, yum

1.3.		Open Source Software and Licensing
	Weight	1
	Description	Open communities and licensing Open Source Software for business.
	Key Knowledge Areas	• Open source philosophy • Open source licensing • Free Software Foundation (FSF), Open Source Initiative (OSI)
	The following is a partial list of the used files, terms and utilities	• Copyleft, Permissive • 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
	The following is a partial list of the used files, 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 2: Finding Your Way on a Linux System

2.1		Command Line Basics
	Weight	3
	Description	Basics of using the Linux command line.
	Key Knowledge Areas	• Basic shell • Command line syntax • Variables • Quoting
	The following is a partial list of the used files, terms and utilities	• Bash • echo • history • PATH environment variable • export • type
2.2.		Using the Command Line to Get Help
	Weight	2
	Description	Running help commands and navigation of the various help systems.
	Key Knowledge Areas	• Man pages • Info pages
	The following is a partial list of the used files, terms and utilities	• man • info • /usr/share/doc/ • locate

2.3.		Using Directories and Listing Files
	Weight	2
	Description	Navigation of home and system directories and listing files in various locations.
	Key Knowledge Areas	• Files, directories • Hidden files and directories • Home directories • Absolute and relative paths
	The following is a partial list of the used files, terms and utilities	• Common options for ls • Recursive listings • cd • . and .. • home and ~

2.4.		Creating, Moving and Deleting Files
	Weight	2
	Description	Create, move and delete files and directories under the home directory.
	Key Knowledge Areas	• Files and directories • Case sensitivity • Simple globbing
	The following is a partial list of the used files, terms and utilities	• mv, cp, rm, touch • mkdir, rmdir

Topic 3: The Power of the Command Line

3.1.		Archiving Files on the Command Line
	Weight	2
	Description	Archiving files in the user home directory.
	Key Knowledge Areas	• Files, directories • Archives, compression
	The following is a partial list of the used files, terms and utilities	• tar • Common tar options • gzip, bzip2, xz • zip, unzip

3.2.		Searching and Extracting Data from Files
	Weight	3
	Description	Search and extract data from files in the home directory.
	Key Knowledge Areas	• Command line pipes • I/O redirection • Basic Regular Expressions using ., [ ], *, and ?
	The following is a partial list of the used files, terms and utilities	• grep • less • cat, head, tail • sort • cut • wc

3.3.		Turning Commands into a Script
	Weight	4
	Description	Turning repetitive commands into simple scripts.
	Key Knowledge Areas	• Basic shell scripting • Awareness of common text editors (vi and nano)
	The following is a partial list of the used files, terms and utilities	• #! (shebang) • /bin/bash • Variables • Arguments • for loops • echo • Exit status

Topic 4: The Linux Operating System

4.1.		Choosing and Operating System
	Weight	1
	Description	Knowledge of major operating systems and Linux distributions.
	Key Knowledge Areas	• Differences between Windows, OS X and Linux • Distribution life cycle management
	The following is a partial list of the used files, terms and utilities	• GUI versus command line, desktop configuration • Maintenance cycles, beta and stable
4.2.		Understanding Computer Hardware
	Weight	2
	Description	Familiarity with the components that go into building desktop and server computers.
	Key Knowledge Areas	• Hardware
	The following is a partial list of the used files, terms and utilities	• Motherboards, processors, power supplies, optical drives, peripherals • Hard drives, solid state disks and partitions, /dev/sd* • Drivers
4.3.		Where Data is Stored
	Weight	3
	Description	Where various types of information are stored on a Linux system.
	Key Knowledge Areas	• Programs and configuration • Processes • Memory addresses • System messaging • Logging
	The following is a partial list of the used files, terms and utilities	• ps, top, free • syslog, dmesg • /etc/, /var/log/ • /boot/, /proc/, /dev/, /sys/

4.4.		Your Computer on the Network
	Weight	2
	Description	Querying vital networking configuration and determining the basic requirements for a computer on a Local Area Network (LAN).
	Key Knowledge Areas	• Internet, network, routers • Querying DNS client configuration • Querying network configuration
	The following is a partial list of the used files, terms and utilities	• route, ip route show • ifconfig, ip addr show • netstat, ss • /etc/resolv.conf, /etc/hosts • IPv4, IPv6 • ping • host

Topic 5: Security and File Permissions

5.1.		Basic Security and Identifying User Types
	Weight	2
	Description	Various types of users on a Linux system.
	Key Knowledge Areas	• Root and standard users • System users
	The following is a partial list of the used files, terms and utilities	• /etc/passwd, /etc/shadow, /etc/group • id, last, who, w • sudo, su
5.2.		Creating Users and Groups
	Weight	2
	Description	Creating users and groups on a Linux system.
	Key Knowledge Areas	• User and group commands • User IDs
	The following is a partial list of the used files, terms and utilities	• /etc/passwd, /etc/shadow, /etc/group, /etc/skel/ • useradd, groupadd • passwd
5.3.		Managing File Permissions and Ownership
	Weight	2
	Description	Understanding and manipulating file permissions and ownership settings.
	Key Knowledge Areas	• File and directory permissions and ownership
	The following is a partial list of the used files, terms and utilities	• ls -l, ls -a • chmod, chown

5.4.		Special Direstories and Files
	Weight	1
	Description	Special directories and files on a Linux system including special permissions.
	Key Knowledge Areas	• Using temporary files and directories • Symbolic links
	The following is a partial list of the used files, terms and utilities	• /tmp/, /var/tmp/ and Sticky Bit • ls -d • ln -s