Gold - Unit 2 - Using an Operating System Efficiently

Relevant LINKS

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Overview

The candidate can show a clear understanding of the basic operations of a graphical user interface and also how to extend it with widgets and applications in order to improve it's functionality for users. They must also demonstrate knowledge and skills of a command line to manage a system, including installation of applications, using built in help, and creating basic scripts to improve system performance.

A work activity will typically be 'non-routine or unfamiliar' because the task or context is likely to require some preparation, clarification or research to separate the components and to identify what factors need to be considered. For example, time available, audience needs, accessibility of source, types of content, message and meaning, before an approach can be planned; and the techniques required will involve a number of steps and at times be non-routine or unfamiliar.

Example of context – configuring a basic desktop with a GUI and also modifying the system using the command line tools.

Assessor's guide to interpreting the criteria

General Information
QCF general description for Level 2 qualifications.

- Achievement at QCF level 2 (EQF Level 3) reflects the ability to select and use relevant knowledge, ideas, skills and procedures to complete well- defined tasks and address straightforward problems. It includes taking responsibility for completing tasks and procedures and exercising autonomy and judgement subject to overall direction or guidance.
- Use understanding of facts, procedures and ideas to complete well-defined tasks and address straightforward problems. Interpret relevant information and ideas. Be aware of the types of information that are relevant to the area of study or work.

Requirements

- Standards must be confirmed by a trained Level 2 assessor or higher
- Assessors must at a minimum record assessment judgements as entries in the online mark book on the INGOTs.org certification site.
- Routine evidence of work used for judging assessment outcomes in the candidates' records of their day to day work will be available from their e- portfolios and online work. Assessors should ensure that relevant web pages are available to their Account Manager on request by supply of the URL.
- When the candidate provides evidence of matching all the criteria to the specification subject to the guidance below, the assessor can request the award using the link on the certification

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site. The Account Manager will request a random sample of evidence from candidates' work that verifies the assessor's judgement.
- This unit should take an average level 2 learner 40 guided hours of work to complete.
- Once the candidate has satisfied all the criteria by demonstrating practical competence in realistic contexts they achieve the unit certificate.
- When the Account Manager is satisfied that the evidence is sufficient to safely make an award, the candidate's success will be confirmed and the unit certificate will be printable from the web site. Open Systems IT Management

Assessment Method

Assessors can score each of the criteria N, L, S or H. N indicates no evidence and it is the default setting. L indicates some capability but some help still required to meet the standard. S indicates that the candidate can match the criterion to its required specification in keeping with the overall level descriptor. H indicates performance that goes beyond the expected in at least some aspects. Candidates are required to achieve at least S on all the criteria to achieve the full unit award.

Expansion of the assessment criteria

1. Be able to use a range of desktop management tools

1.1 I can navigate a graphical user interface

Candidates should be fluent in using the desktop including coping with differences in set up and configuration in different desktops.

Evidence: from assessor observations.

Additional information and guidance

Candidates should have a lot of experience of exploring the options provided on the desktop including configuring the appearance, adjusting systems settings and using desktop tools such as system monitor, disc management tools and other system utilities. In principal a central purpose of navigating a graphical user interface is to find and run applications related to managing the system. It will be an advantage to teach more than one graphical user environment e.g. KDE and Gnome on Linux and Windows in order to instill confidence in switching between them. Another option is to compare desktop and mobile GUIs.

1.2 I can use help and searches to extend learning

Candidates should be able to use a variety of techniques to find out how to do things related to the user interface.

Evidence: from assessor observations, content of learner portfolios.

Additional information and guidance
There are a number of search strategies that all should be taught. There is help available on most applications. It is unrealistic to memorise how to do everything in all applications but experienced users can usually find what they need using a combination of the help provided with the application and internet searches. Taking some unfamiliar applications and finding out how they operate is a good way to do this. Candidates should be shown how to search the web for information, look for social media discussion groups and search YouTube for tutorials. They will need significant guidance because although it sounds obvious to search the internet or help, adopting particular strategies make success and speed of success much more likely.

1.3 I can adjust system settings

Candidates should be able to alter the way the system behaves by making adjustments through the

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desktop interface.

Evidence: from assessor observation and content of learner portfolios.

Additional information and guidance
Candidates should be taught systematically what adjustments can be made using the desktop. They should be aware that the facilities for making adjustments are generally small programs that sit on top of the command line programs to make it easier to remember what to do without having to learn the details of the syntax but the price to pay for this is sometimes flexibility in the range of operations that can be carried out. Ideally the candidate should be provided with a computer where there is no lock-down so that they are free to configure it to any degree they want. A RaspberryPI or similar device or older computer that is out of commission are suitable targets. One exercise might be to work out what additional features an up to date operating system offers over one that is 5 years old and what the resource penalty is for running the additional facilities and whether they consider it worth it.

1.4 I can improve productivity using tools and widgets

Candidates should be able to identify tools and utility applications that can support their productivity.

Evidence: From content of learner portfolios.

Additional information and guidance
Candidates should be guided to a range of applications that they might find useful in supporting general productivity. The range should be more extensive than their immediate needs to demonstrate potential. Typical tools might include a text editor for script management, desktop recorder to support producing user guides, file format changers to enable interoperability of files e.g. video or audio between applications. A graphics program such as Inkscape will help them draw diagrams and illustrate work, audacity for sound editing and openshot [3] for video. The exact tools will be down to individual preference but since there are abundant open source applications [4] try to use these in preference.

2. Use the command line for system management

2.1 I can open a terminal and set suitable permissions for operations

The candidate should know how to open a terminal and operate as the super user to set permissions for files and users.

Evidence: from assessor observations, internal assessments, schemes of work.

Additional information and guidance
Candidates will need structured guidance in specific techniques including CTR ALT T to open a terminal. The use of sudo [5] and password to authorise their commands, and chmod, chown, chgrp. A useful resource for the whole of this learning outcome is here [6].

2.2 I can install applications from the command line

The candidate should be familiar with at least one package management system and understand it well enough to install, remove and update software.

Evidence: from assessor observations, internal assessments, schemes of work.

Additional information and guidance
Candidates should understand that software is often made up of several components that are packaged in a consistent way so that a program called a package manager can automate the process. The two systems most likely to be encountered are APT on Debian derived distros and RPM

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on RedHat derived distros. Candidates should know both exist but detailed practice of one of the package managers is sufficient. Typical activities will include searching for software managing repositories, updating sources, installing and removing software, updating, cleaning unwanted cached packages from the system.

2.3 I can get help from the command line

The candidate should be able to use help from the command line as well as the man command.

Evidence: from assessor observations, internal assessments, schemes of work.

Additional information and guidance
Candidates should be able to use -h and -help switches from the command line to get help on specific commands. Introduce the use of pipes and the use of the man command for manual pages. There is a useful guide here [7].

2.4 I can perform common operations on files from the command line

The candidate should be able to copy, move, delete and rename single files and groups of files.

Evidence: from assessor observations, internal assessments, schemes of work.

Additional information and guidance
Candidates should cover the basic file operations and useful switches such as recursive copying and deleting. They should understand equivalencies such as copy and deleting the source is the same as moving. It would be useful to compare command line file operations with desktop equivalents and which is most efficient in different circumstances.

2.5 I can produce short scripts to automate sequences of instructions

The candidate should be able to produce shell scripts to automate commonly used sequences of instructions.

Evidence: from assessor observations, internal assessments, schemes of work.

Additional information and guidance
The main objective is to get a basic grasp of shell scripts. Bash is a good stating point as it is commonly the default on Linux systems. A useful guide is here [8].

Moderation/verification

The assessor should keep a record of assessment judgements made for each candidate and make notes of any significant issues for any candidate. They must be prepared to enter into dialog with their Account Manager and provide their assessment records to the Account Manager through the on-line mark book. They should be prepared to provide evidence as a basis for their judgements through reference to candidate e-portfolios and through signed witness statements associated with the criteria matching marks in the on-line markbook. Before authorizing certification, the Account Manager must be satisfied that the assessors judgements are sound.

Source URL: https://theingots.org/community/sysml2u2x

Links
[1] https://theingots.org/community/Open_Systems_Management
[2] http://theingots.org/community/handbook2
[3] http://openshot.org/

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[4] http://www.osalt.com/
[5] http://simple.wikipedia.org/wiki/Sudo
[6] http://linuxcommand.org/index.php
[7] http://www.howtogeek.com/108890/how-to-get-help-with-a-command-from-the-inux-terminal-8-tricks-for-beginners-pros-alike/
[8] http://www.freeos.com/guides/lsst/

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