# Unit 122: CompTIA Linux+/LPI102

**Unit code:** H/501/3598
**QCF Level 3:** BTEC in IT
**Credit value:** 9
**Guided learning hours:** 80

## Aim and purpose

The Linux+ Certification is designed to measure the competencies of the Linux Professional with six to twelve months experience with the Linux operating system. This person provides basic installation, operation, security, troubleshooting and basic Linux hardware services for the Linux operating system on workstations and servers.

## Unit introduction

This unit is a comprehensive introduction to the principles of Linux System management and enable a learner to explore the range of techniques and skills common to the utilisation of this operating system.

The unit enables the learner to explore the management and support of a range of Linux Systems, working on different shells, user interfaces and desktops as well as manage administrative tasks. Learners will utilise Linux based network services as well as Linux Systems Security.

CompTIA link with a range of different partners to offer a range of learning resources, where learners and centres can access these through CompTIAs Academic learning programme. To attain a pass, learners must take the CompTIA Linux+ powered by the Linux Professional Institute (LPI) 102 certification exam.

This unit will prepare learners to sit the CompTIA Linux+/LPI 102 certification exam, this unit is also assessed with BTEC merit and distinction criteria.

To view general information about CompTIA objectives please visit: www.comptia.org, where the detailed scope and sequence for all certifications are available for anyone to download.

## Learning outcomes

**On completion of this unit a learner should:**

1 Know the installation procedure

2 Manage Linux based clients

3 Configure system settings, network services and access rights

4 Implement security options

5 Complete documentation

6 Know the hardware that relates to typical Linux client and server systems.

## Unit content in relation to the Merit and Distinction Criteria

*System Tasks*: eg CRON, script file, backup, file copy,

*Linux Essential System Services*: eg managing system time, system logging, printers and printing

*Linux Networking*: eg TCP/IP, IPv4 addressing, subnet, default gateway, IPv6, network troubleshooting, client side DNS, ifconfig, routes,

*Linux Security*: eg encryption, file permissions, user permissions, sudo, superuser, firewall, antivirus, chmod, process permissions

# Assessment and grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria for a pass grade describe the level of achievement required to pass this unit.

| Assessment and grading criteria | | |
|---|---|---|
| **To achieve a pass grade the evidence must show that the learner is able to:** | **To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:** | **To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:** |
| **Pass CompTIA Linux+/LPI 102 Certification Exam**<br>The centre will evidence this with a copy of the learners results, the learner MUST PASS at the minimum set by CompTIA. | **M1** plan the automation of system tasks [IE, CT] | **D1** evaluate the automation of System Tasks [IE, CT, SM] |
| | **M2** implement the automation of system tasks [IE, SM] | **D2** critically review the effectiveness of the Linux Security implementation. [SM, IE] |
| | **M3** implement and Manage Linux Essential System Services [TW, EP, SM] | |
| | **M4** implement and Manage Linux Networking and Linux Security. [TW, EP, SM] | |

**PLTS**: This summary references where applicable in the pass criteria, in the square brackets, the elements of the personal, learning and thinking skills. It identifies opportunities for learners to demonstrate effective application of the referenced elements of the skills.

| Key | | | |
|---|---|---|---|
| | IE – independent enquirers | RL – reflective learners | SM – self-managers |
| | CT – creative thinkers | TW – team workers | EP – effective participators |

# Essential guidance for tutors

## Delivery

The CompTIA Linux+/LPI 102 course and associated certifications are delivered as part of an academic programme available to centres in UK and Eire. Centres may only access this certification's associated discounts from within this programme are advised to seek guidance on what current courses comprise the study/delivery required for learners to access the certification.

More information on the programme, membership and delivery requirements can be found at www.comptia.org.

If learners are taking CompTIA study as part of their BTEC programme, it is recommended that both programmes of study are integrated. Practical and theory tasks for the CompTIA programme can be integrated into the study required for the merit and distinction criteria within this unit.

The outcomes of this unit are synergic with the other CompTIA units as well as those offered by Cisco, Microsoft and VMWare, where there are considerable differences. This unit may be delivered in parallel or in sequence. Units in computer hardware, software installation, systems support and networking, that are both BTEC specific as well as from other vendors may be taught in conjunction with the CompTIA units to enhance the learners experience.

## Outline learning plan

CompTIA as part of the their academy programme, provide learning plans and study guidance for their courses. CompTIA recommend an estimated 75 hours of delivery to attain the pass criteria, in line with QCF credit and notional learning hours. The notional hours for managed learning is set at 40 for learners to attempt the merit and distinction

## Assessment

To achieve a pass grade, learners must pass the CompTIA Linux+/LPI 102 examination.

### Programme of suggested assignments

The table below shows a programme of suggested assignments that cover the merit and distinction criteria in the assessment and grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt any Edexcel assignments to meet local needs and resources.

| Criteria covered | Assignment title | Scenario | Assessment method |
|---|---|---|---|
| M1, M2, D1 | Automaton | Using a Linux version of choice, the learner will create more than one automation of system tasks | Observation/Practical/ report (power point, presentation) |
| M3, M4, D2 | Manage the system | Learners will complete a range of system commands to support a Linux Distribution, they will review the effectiveness of the security commands deployed. | Observation/Practical/ report (power point, presentation) |

## Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

To be completed, links to 6.1 of the NOS and may be co-presented with all other CompTIA modules

## Essential resources

As members of the CompTIA academic programme, centres may choose to access a range of teaching and assessment practice resources. The technological requirement for this unit does not demand any more than the 'average' centre is already providing for a computer systems session, old computers, spare components, replacement parts will enhance the learning experience. Many Linux distributions exist, that are easy to install in both desktop and server versions and now comparable in support and management terms to other popular operating systems. This unit can be delivered using virtual machines, where Oracle Virtual Box can be run on a wide range of platforms.

## Employer engagement and vocational contexts

CompTIA certification is internationally recognized by a diverse range of employers (from SME's to large corporations) as one of the principal certifications in systems support and maintenance.

## Indicative reading for learners

For access to the CompTIA academic programme resources and more information on joining the programme, please visit www.comptia.org

## Delivery of personal, learning and thinking skills

The table below identifies the opportunities for personal, learning and thinking skills (PLTS) that have been included within the pass assessment criteria of this unit.

| Skill | When learners are ... |
|---|---|
| **Independent enquirers** | The pass criteria is set by an examination, the PLTS of self management and reflective learning is supported by the learner, taking personal study and revision in advance of the Examination. |
| **Creative thinkers** | |
| **Reflective learners** | |
| **Team workers** | |
| **Self-managers** | |
| **Effective participators** | |

Although PLTS are identified within this unit as an inherent part of the assessment criteria, there are further opportunities to develop a range of PLTS through various approaches to teaching and learning.

| Skill | When learners are ... |
|---|---|
| **Independent enquirers** | planning the system automation and implementation of the different system management commands |
| **Creative thinkers** | planning the system automation and implementation of the different system management commands |
| **Reflective learners** | evaluating the commands deployed |
| **Self-managers** | using linux commands to manage the system. |

## Functional Skills – Level 2

| Skill | When learners are ... |
|---|---|
| **ICT – Use ICT systems** | |
| Select, interact with and use ICT systems independently for a complex task to meet a variety of needs | Planning the utilisation of a range of complex Linux commands |
| Manage information storage to enable efficient retrieval | Using the range of complex Linux Commands |
| Follow and understand the need for safety and security practices | Working on M4 and D2 in using Linux Security commands |
| Troubleshoot | Completing all tasks in the Linux Operating System |
| **ICT – Find and select information** | |
| Select and use a variety of sources of information independently for a complex task | Selecting the commands to use for the automation of the system |
| Access, search for, select and use ICT-based information and evaluate its fitness for purpose | Selecting the commands to use for the automation of the system |
| **Mathematics** | |
| Identify the situation or problem and the mathematical methods needed to tackle it | Working on file permissions, the octal values via the CHMOD command require a mathematical solution. |