

# NETWORK ENGINEER

**Reference Number: ST0127**

## Details of standard

### Role Profile

The primary role of a network engineer is to design, install, maintain and support communication networks within an organisation or between organisations. Network engineers need to maintain high levels of operation of communication networks in order to provide maximum performance and availability for their users, such as staff, clients, customers and suppliers. They will understand network configuration, cloud, network administration and monitoring tools, and be able to give technical advice and guidance.

Typical Job Roles: Network Technician, Network Engineer, Systems Engineer, Network Administrator

### Entry Requirements

Individual employers will set the selection criteria, but this is likely to include A levels; a level 3 apprenticeship or other relevant qualifications; relevant experience and/or an aptitude test with a focus on functional maths.

### Technical Competencies

- Can design simple networks from a well-defined specification and apply appropriate security products and processes
- Can install and configure network components, including switches, routers and firewalls
- Can optimise the performance of network systems and services
- Can monitor, test and adjust network systems and performance to meet accepted standards using diagnostic tools, analysers and other equipment
- Can apply diagnostic tools and techniques to identify the causes of network performance issues
- Can apply structured approaches to troubleshooting network issues and repair faults in hardware, software products and the network
- Can undertake system upgrades to network hardware, software and operating systems
- Can integrate network related software into an existing network environment
- Can interpret written requirements and technical specifications for network activities and maintain accurate records of network maintenance activities
- Can log and respond to network service calls and provide technical network support to end users as required
- Can document work done in accordance with agreed procedures
- Can operate within the parameters of service level agreements, standards and/or agreed response times
- Can operate effectively in the business environment and responds to business issues related to network engineering

### Technical Knowledge and Understanding

- Understands and applies the principles of networking, protocols and associated technologies (specifically this should include the latest published versions of OSI layer model, IP, TCP/IP, routing and switching, WANs, LANs)
- Understands and applies the applied maths required to be a network engineer (e.g. algorithms, data, binary, probability and statistics)
- Understands the causes and consequences of system failure including load balance and storage protocols and responds appropriately
- Understands the architecture of a typical business IT system, including hardware, OS, server, virtualisation, middleware and applications
- Understands and responds to security threats, firewalls and vulnerabilities

## Underpinning Skills, Attitudes and Behaviours

- Logical and creative thinking skills
- Analytical and problem solving skills
- Ability to work independently and to take responsibility
- Can use own initiative
- A thorough and organised approach
- Ability to work with a range of internal and external people
- Ability to communicate effectively in a variety of situations
- Maintain productive, professional and secure working environment

## Qualifications

Apprentices must achieve one internationally recognised vendor or professional qualification, from the right hand column in the table below. This then exempts one of the Ofqual-regulated knowledge modules, as shown in the left hand column.

The knowledge modules are summarised below and further details are available in the occupational brief available from <https://www.nsar.co.uk/digital-eqa/digital-apprenticeship-standards/>

Knowledge Modules	Vendor or Professional Qualifications
Knowledge Module 1: Network Principles (for Level 4 Network Engineer Apprenticeship)	Network + Juniper JNCIA - Junus
Knowledge Module 2: Network Systems and Architecture (for level 4 Network Engineer Apprenticeship)	Cisco 200-301 MCP MS Exchange Server 2016 MCP Server 2016 MCP Windows Administrator Server + Juniper JNCIS - Ent
Knowledge Module 3: Network Security (for	Security +

level 4 Network Engineer Apprenticeship)

CCNA Cyber Security Operations

Juniper JCNIA - Junus

Juniper JNCIS – Sec

Individual employers will select which vendor or professional qualification the apprentice should take.

## English and Maths

Level 2 English and Maths will need to be achieved, if not already, prior to taking the end point assessment.

## Professional Recognition

This apprenticeship is recognised for entry onto the register of IT technicians confirming SFIA level 3 professional competence and those completing the apprenticeship are eligible to apply for registration.

## Duration

The duration of this apprenticeship is typically 24 months.

## Level

This is a level 4 apprenticeship

## Review Date

This standard will be reviewed in December 2017.

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## Version log

VERSION	DATE UPDATED	CHANGE	PREVIOUS VERSION
1	10/03/2020	Minor amendment to the vendor qualification table	Not available
1	04/03/2019	The funding band for this standard has been reviewed as part of the apprenticeship funding band review. The new funding band is £17000	Not available
1	12/11/2014	Approved for delivery	Not available
1	30/09/2013	Initial creation	Not available