

## National Apprenticeship - Occupational Profile

**Apprenticeship Title** ICT Associate Professional Network Engineer

**NFQ Level** 6

**Duration** 2 Years

**Typical tasks/  
responsibilities**

The ICT Associate Professional Network Engineer designs, installs, maintains and supports communication networks within an organisation or between organisations. Network engineers maintain high levels of network availability in order to provide maximum performance for their users, such as staff, clients, customers and suppliers. They understand network configuration, cloud, network administration and monitoring tools, and are able to give technical advice and guidance.

**On successful completion, the ICT Associate Professional Network Engineer will have:**

**Knowledge**

- 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 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
- Understands the importance of service level agreements, standards and/or agreed response times and operates within these parameters
- Understands and operates effectively in the business environment and responds to business issues related to network engineering
- Understands and applies the applied maths required to be a network engineer (e.g. algorithms, number systems, IT-related units of measurement, probability and statistics)

**Skills**

- Designs simple networks from a well-defined specification and apply appropriate security products and processes
- Installs and configures 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
- Applies diagnostic tools and techniques to identify the causes of network performance issues

**Skills**  
Cont'd

- Can apply structured approaches to troubleshooting network issues and repair faults in hardware, software products and the network
- Undertakes system upgrades to network hardware, software and operating systems
- Integrates 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
- Logs and responds to network service calls and provides technical network support to end users as required
- Documents work done in accordance with agreed procedures

**Competencies**

- Logical thinking and creative approach to problem solving
- Maintains a productive, professional and safe work environment
- Communicates effectively in a variety of situations
- Analytical and problem solving skills
- Progresses allocated tasks in accordance with reporting and quality systems
- Applies strong interpersonal skills when dealing with colleagues, customers and clients
- Flexible attitude
- Ability to work independently and to take responsibility
- A thorough approach to work
- Passion for IT

**Industry/industries served by the apprenticeship**

Network communication systems, hardware and cloud based systems are widely used across many sectors and potentially all sectors in a modern economy. Most ICT Associate Network Engineers will work in sectors which use computer network systems to support their activity. Others will work in the ICT sector industries who research, develop, design, manufacture, sell, install and maintain computer network systems and services.