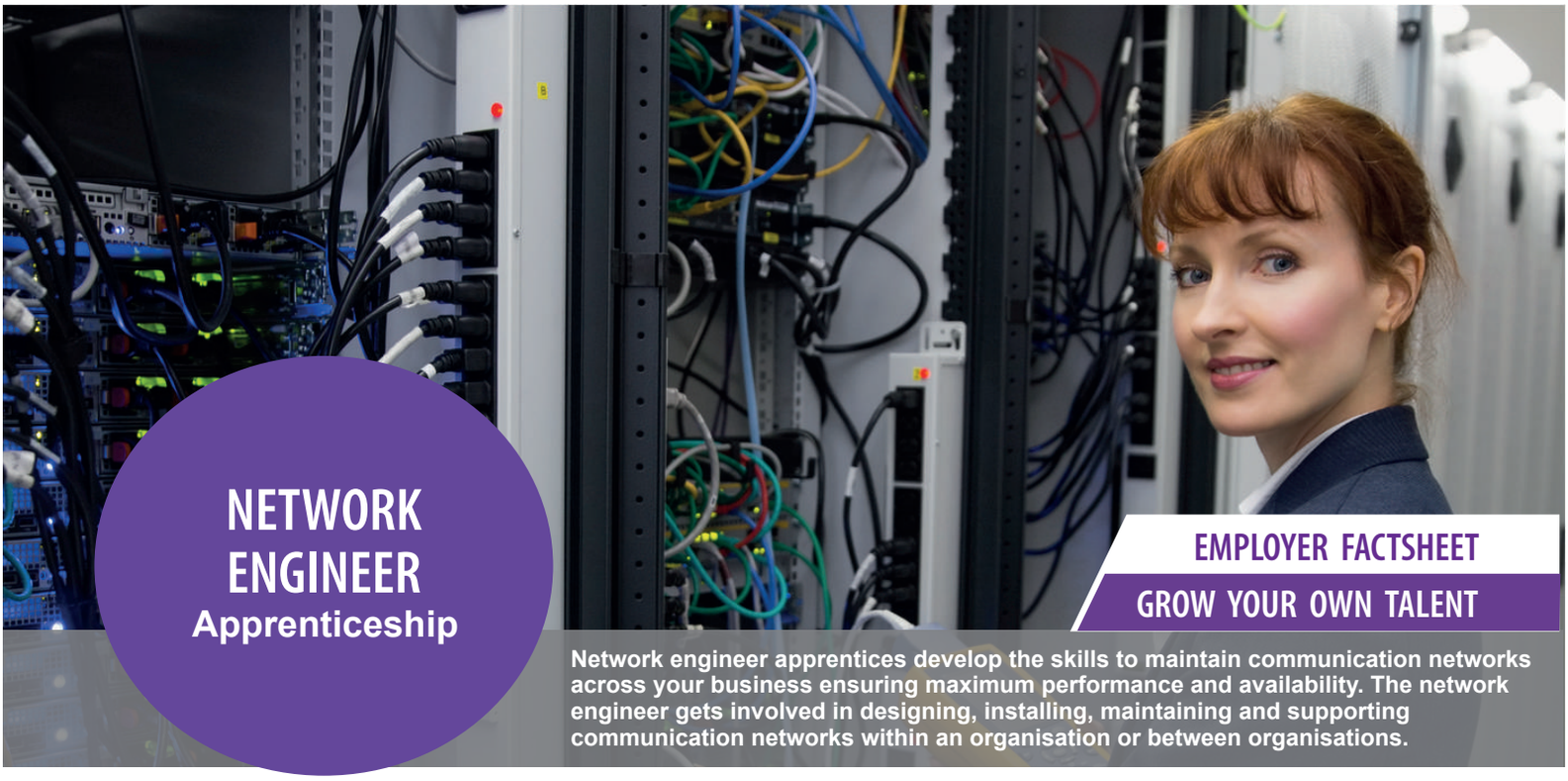

NETWORK ENGINEER
Apprenticeship

EMPLOYER FACTSHEET

GROW YOUR OWN TALENT

Network engineer apprentices develop the skills to maintain communication networks across your business ensuring maximum performance and availability. The network engineer gets involved in designing, installing, maintaining and supporting communication networks within an organisation or between organisations.

Key Information

Level	4
Duration	30 months

Entry requirements

- 16 years or over
- A levels
- Level 3 apprenticeship
- Please contact our Apprenticeship team for further entry requirements.

Delivery

A minimum of 30 hours of on the job training at work place per week including a day/ block release to study theory at our Uxbridge/ Hayes/ Harrow campus

Typical job titles

Desk based engineer, Dynamic network engineer, Field based engineer, Infrastructure engineer, Network administrator, Network architect, Network engineer, and Systems engineer

Professional Recognition

This standard aligns with the following professional recognition:
BCS, The Chartered Institute for IT for Register of IT Technicians (RITTech) level 4

Qualifications

English & Maths
Apprentices without level 2 English and maths will need to achieve this level prior to taking the End-Point Assessment. For those with an education, health and care plan or a legacy statement, the apprenticeship's English and maths minimum requirement is Entry Level 3. A British Sign Language (BSL) qualification is an alternative to the English qualification for those whose primary language is BSL.

Choose a Trusted Provider

We are a top provider in London with consistently high success rates

We are the largest college provider of apprenticeships in west London

We work with major companies including British Airways Brunel University London & Menzies etc.

Government funding may be available. Eligibility and criteria apply

Employers involved in creating this standard:

IBM, Accenture, BA, BT, Capgemini, Cisco, Fujitsu, HP, John Lewis, Lloyds, Microsoft, NCA, The Royal Signals, Telefonica, The Test Factory, Virgin Media, Visa, BCS - Chartered Institute of IT

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HRUC

Apprenticeships & Skills

Harrow, Richmond & Uxbridge Colleges

Modules and Content Summary

Occupation summary

This occupation is found in large and small businesses, in all sectors, and within public, private, and voluntary organisations. Network Engineers are a key occupation in most organisations which are increasingly dependent on their digital networks.

Organisations of all types are increasingly applying digital technologies across all their business functions to maximise productivity. Large organisations will have sophisticated complex systems whilst smaller consultancies offer support to clients on a contract basis.

For example, a Network Engineer may work within a network of hotels to ensure that the booking system functionality and performance is maintained and customer access to courtesy systems such as Wi-Fi are managed appropriately for performance.

In a large infrastructure project, a Network Engineer may work in a team to ensure that significant project milestones are reached in delivering network services both within the project and by servicing the project teams with reliable network capability to enable them to deliver that project successfully.

Large communications organisations use Network Engineers to service world-leading global networks at the cutting edge - adapting and evolving with changes to new technologies to give customers the very best digital experience from delivering major communications installations to monitoring nationwide networks.

The demand for people who can manage, build, maintain virtual and physical networks is increasing. This is because of technological developments such as, 5G and Cloud. The broad purpose of the occupation is to install computer networks, maintain them, and offer technical support to users where necessary.

A Network Engineer provides networks and systems to deliver the objectives of varied organisations. They will make sure that systems are working at optimum capacity and problem solve where they are not. To be able to do this effectively a Network Engineer must interpret technical information and understand organisational requirements and expectations. They support delivery of legislatively compliant solutions to challenges in network and infrastructure.

Network Engineers deal with both hardware and software issues. They are a key part of putting things right quickly when networks fail, and they communicate problems that they have identified with network integrity or performance rapidly to ensure service is resumed and downtime minimised. Network Engineers help customers both technical and non-technical to install computer networks, maintain them, and offer technical support to users where necessary.

Network Engineers can be customer facing or internal. In their daily work, an employee in this occupation interacts with management within organisations, team members, staff, clients, customers, and suppliers. They may interact face to face or remotely by using a range of technologies. They may be working independently or collaboratively as part of a team. They will be aware of their organisational escalation routes and understand their role in their team.

The work of a Network Engineer is office-based, although they may need to work across different sites depending on the size of the organisation and their network. When working as a consultant a Network Engineer may spend a lot of time at clients' offices and on large installations, which may mean spending time away from home or their usual work base.

Duty

Duty 1 Install, configure, and test appropriate network components or devices securely to well-defined specifications whether physical or virtual
Duty 2 Acquire and analyse network performance data to monitor network activity
Duty 3 Optimise and maintain the performance of network systems or services in line with well-defined specification whether physical or virtual
Duty 4 Investigate and problem solve to address technical performance issues in networks to return the network to successful operation and escalate as necessary
Duty 5 Undertake upgrades to a network including physical or virtual systems
Duty 6 Interpret written requirements and technical specifications in relation to delivery of network systems and services
Duty 7 Maintain accurate logical records in line within organisational policy when carrying out network tasks
Duty 8 Use operational data to manage weekly work schedule in an efficient and cost effective way
Duty 9 Consider the impact and risks when implementing network changes in line with work activities and escalating as required by organisational policies
Duty 10 Communicate technical network requirements effectively and professionally with a range of stakeholders ensuring stakeholder relationships are maintained
Duty 11 Practice continuous self-learning to keep up to date with technological developments to enhance relevant skills and take responsibility for own professional development
Duty 12 Incorporate considerations of the requirements of the wider digital context in which they operate to ensure that network engineering activities are carried out effectively
Duty 13 Ensure all network engineering activity complies with organisational policies, technical standards, Health and Safety legislation, data security requirements, professional ethics, privacy and confidentiality
Duty 14 Deliver and manage a high quality service under pressure

Knowledge, Skills and Behaviours

Knowledge

K1: the causes and consequences of network and IT infrastructure failures
K2: the architecture of typical IT systems, including hardware, OS, server, virtualisation, voice, cloud and applications
K3: the techniques for systems performance and optimisation
K4: diagnostic techniques and tools to interrogate and gather information regarding systems performance
K5: organizational procedures to deal with recording information effectively and in line with protocols
K6: Service Level Agreements (SLAs) and their application to delivering network engineering activities in line with contractual obligations and customer service
K7: their role in Business Continuity and Disaster Recovery
K8: the purposes and uses of ports and protocols
K9: devices, applications, protocols and services at their appropriate OSI and, or, TCP or IP layers
K10: the concepts and characteristics of routing and switching
K11: the characteristics of network topologies, types and technologies
K12: wireless technologies and configurations
K13: cloud concepts and their purposes
K14: functions of network services
K15: the different types of network maintenance
K16: how current legislation relates to or impacts occupation
K17: troubleshooting methodologies for network and IT infrastructure
K18: how to integrate a server into a network
K19: the types of security threats to networks and IT infrastructure assets
K20: how to use tools to automate network tasks
K21: approaches to change management

Skills

S1: apply the appropriate tools and techniques when securely operating and testing networks
S2: install and configure the elements required to maintain and manage a secure network
S3: implement techniques to monitor and record systems performance in line with defined specifications
S4: maintain security and performance of the system against known and standard threats
S5: apply the appropriate tools and techniques to identify systems performance issues
S6: apply the appropriate tools and techniques to gather information to troubleshoot issues and isolate, repair or escalate faults
S7: communicate outcomes of tasks and record in line with organisational procedures and SLAs including adherence to customer service standards
S8: upgrade, apply and test components to systems configurations ensuring that the system meets the organisation's requirements and minimises downtime. This should include backup processes
S9: record task details whether face-to-face, remote or in writing in line with ogranisational requirements
S10: interpret information received from a manager, customer or technical specialist and accurately implement the defined requirements
S11: monitor, identify and implement required maintenance procedures
S12: implement techniques to optimise systems performance in line with defined specifications
S13: organise and prioritise clients or stakeholders' requests in line with SLAs and organization processes
S14: explain their job role within the business context to stakeholders to enable a clear understanding on both sides of what their remit is and convey technical constraints in appropriate language considering accessibility and diversity implications
S15: operate securely and apply the appropriate process, policies and legislation within their business responsibilities
S16: communicate with a range of stakeholders taking into consideration the organisations cultural awareness and technical ability
S17: apply the appropriate level of responsibility when planning and prioritising work tasks
S18: apply the relevant numerical skills (Binary, dotted decimal notation) required to meet the defined specifications
S19: ensure compliance of network engineering outputs with change management processes
S20: select the appropriate tools and comply with organisation policies and processes when upgrading systems

Behaviours

B1: work independently and demonstrate initiative being resourceful when faced with a problem and taking responsibility for solving problems within their own remit
B2: work securely within the business
B3: work within the goals, vision and values of the organisation
B4: take a wider view of the strategic objectives of the tasks or projects they are working on including the implications for accessibility by users and diversity
B5: works to meet or exceed customers' requirements and expectations
B6: Identifies issues quickly, investigates and solves complex problems and applies appropriate solutions. Ensures the true root cause of any problem is found and a solution is identified which prevents recurrence