

IT Solutions Technician (Hardware Route)

Apprenticeship Standard



Role/Occupation: IT Hardware Solutions Technician Level 3

Overview: IT Hardware Solutions Technicians undertake duties across the complete IT solution, working on the team's core activities so all apprentices take a common core and then choose to specialise in the **Hardware route**.

IT Hardware Solutions Technicians develop, implement and maintain complete IT solutions including their hardware infrastructure (such as servers and networks). They will work as part of a multi-disciplinary team which may be a modern 'dev-ops' style team. An IT Hardware Solutions Technician will apply a professional methodology or framework to gather and analyse requirements to design, develop, test and implement IT solutions and provide ongoing support to end users and underlying IT services. Tasks will vary depending on the needs to be achieved, and may be technical in nature, others may be more analytical, business or user focused.

DURATION

The apprenticeship will typically take 21 months to complete.

ENTRY REQUIREMENTS

Each employer will set their own entry requirements, but typically an apprentice might be expected to already have GCSEs and/or other relevant qualifications.

ENGLISH & MATHS

Apprentices without Level 2 English or Maths will need to achieve this prior to taking their End Point Assessment.

For those with an education, health and care plan or a legacy statement, the minimum English and Maths requirement is Entry Level 3. For those whose primary language is British Sign Language, BSL qualifications are an alternative to English qualifications.

QUALIFICATIONS

There are no mandatory qualifications for this apprenticeship standard.

LINK TO PROFESSIONAL REGISTRATION

This apprenticeship is recognised for entry onto the BCS (**The Chartered Institute for IT**) Register of IT Technicians confirming Level 3 Professional Competence. Upon successful completion of this apprenticeship, the apprentice can apply for registration.

COMPETENCIES

Core Technical Knowledge

The stages within the overall solution lifecycle

The main principals, features, differences and benefits of Waterfall and Agile type methodologies and the function of service management frameworks

The aims and benefits of DevOps approaches; including the benefits of automation, the ideas behind continuous integration and monitoring

The principles of Solution Architecture including the importance of re-use

Why testing is necessary, the need for both functional and non-functional testing, the different types of testing available, including unit testing, integration testing, user acceptance testing and performance testing

Planning and delivery within their role and how this contributes to the wider team and the organisation

How the end-user context influences the solution

The key features of, and where to find, organisational requirements in relation to policies, standards, legislation, professional ethics, privacy and confidentiality

The main legislation, policies and standards that apply to IT solutions

The concepts of networking including the ISO (International Organisation for Standardisation) and TCP/IP (Transmission Control Protocol/Internet Protocol) network stacks, Ethernet LANs (Local Area Networks), IP addressing, Port numbers, DNS (Domain Name System), DHCP (Dynamic Host Configuration Protocol), and the principals of routing between LANs and WANs (Wide Area Networks)

The different types of network devices, routers and network switches, their relationship to the stack model and the use of firewalls

The main components within an IT Solution including how hardware and software components work together

The main components of a computer system and their purpose, including servers, end-user computers, and mobile devices (both physical and virtual), user interfaces, CPUs, storage and connectivity

The purpose of an Operating System

The concepts of Cloud, Cloud Services and storage

How their work contributes to business performance, continuity and resilience

The main trends in emerging technologies – including the Internet of Things (IoT), artificial intelligence, and automation - and the potential implications for digital activities

The necessary numerical skills including Binary and Hexadecimal

Why cyber security is essential as part of the delivery of any solution

The importance of working securely and the main classifications of types of threats and common mitigation practices

The meaning of risk in the context of security and can explain the relationship between levels of risk, impact, and designed level of protection in IT Solutions

The role of configuration management and version control systems and when they should be used

The concepts of virtualisation

Core Technical Knowledge *(Continued)*

The use of different platforms (including web, mobile, or desktop applications)

The concepts of relational databases, non-relational structured and unstructured databases

The concepts of solutions development to a given set of requirements, including the use of standard approaches for web and cloud-based solutions

The benefits of and requirements for vendor support including commercial cloud offerings

Hardware Solutions: Specific Technical Knowledge & Understanding

The principles of Solution Architecture as applied to hardware

The advantages and disadvantages of different types of hardware configurations

A range of cabling and connectivity

The concepts of standard builds

The concepts of mobile data, Bluetooth, 3G, 4G and wifi and the security implications of such solutions

Different types of storage including locally attached, SAN (storage area network) and networked, and the concepts of RAID (Redundant Array of Independent Discs) and knowledge of RAID levels

Requirements when working with electro static sensitive equipment (including personal grounding devices) and when working in a server room or data centre and when handling equipment

How to install, configure and test hardware components, networks and devices – including servers, end-user computers and mobile devices

The need to follow a logical approach and how to ensure connectivity within solutions

Core Skills

Applies a professional methodology or framework in their work tasks

Executes appropriate due diligence, including formal testing or validation

Applies a range of technical IT skills, including: accessing remote systems; file manipulation; file editing, changing system or application settings; system administration; setting up and upgrading components (infrastructure or software)

Operates in line with organisational policies, standards, legislation, security requirements, professional ethics, privacy and confidentiality; and understands escalation policies

Creates and maintains documentation in accordance with best practice, organisational guidance and legislation

Identifies appropriate technical solutions using both logical and creative thinking

Diagnoses and understands client requirements and problems using sound analytical and problem solving skills

Communicates effectively in a variety of situations including formal and informally both within their team and externally

Operates securely across all their areas of responsibility, in line with organisational guidance and legislation

Hardware Solutions: Specific Skills

Works at any stage of the hardware solution lifecycle

Hardware Solutions: Specific Skills *(Continued)*

Undertakes maintenance of a range of contemporary or legacy hardware solutions to required levels of service

Installs and configures basic hardware system components, networks and devices (including servers, end-user computers, and mobile devices, whether physical or virtual) as required

Demonstrates safe application of the concepts of Electro Static Discharge (ESD) and meets appropriate health and safety standards when working with hardware

Core Behaviours

Works professionally and independently, taking responsibility and initiative as appropriate

Demonstrates standard business courtesies and professional ethics in how they work

Demonstrates a productive and organised approach to their work

Works effectively with customers, clients and users

ON-PROGRAMME DELIVERY

Each apprentice will be allocated a Coach to support ongoing learning and preparation for End Point Assessment. In addition Progress Reviews will take place regularly to ensure the apprentice is on track. All apprentices will be invited to attend relevant workshops to support the development of their Knowledge, Skills and Behaviours. We may also offer technical training sessions, where required, for example ITIL.

END POINT ASSESSMENT

The EPA will consist of three assessment methods:

1. Four multiple choice knowledge tests
2. A portfolio of evidence or 'showcase'
3. A Project and Interview

The EPA will be conducted by an Independent External Assessment Organisation (IEAO).

PROGRESSION

Please talk to us about progression from this Apprenticeship.

REALITY CHECK

- Time and support required from the employer to the apprentice during the apprenticeship to include: regular Performance Reviews, relevant off the job training and preparation for the final EPA
- Expectation of significant amounts of study/work from the apprentice in order to meet the requirements of the apprenticeship
- Employer has to be involved in the EPA and provide support and time to the apprentice in preparation for the EPA

COSTINGS

Maximum Funding Band: £13,000

The cost of the apprenticeship will be negotiated with you in line with Government guidelines

PLEASE CONTACT APPRENTICESHIPS@CIRENCESTER.AC.UK FOR FURTHER INFORMATION
TELEPHONE: 01285 626259