# Unit 128: Microsoft Windows Server 2008, Network Infrastructure, Configuring (70-642)

**Unit code:** J/502/3640

**QCF Level 3:** BTEC in IT

**Credit value:** 11

**Guided learning hours:** 90

## ● Aim and purpose

The Microsoft Certified Technology Specialist (MCTS) on Windows Server 2008 credential is intended for IT professionals who work in the complex computing environment of medium-sized to large companies. The MCTS candidate should have at least one year of experience implementing and administering a network operating system in an environment that has the following characteristics:

- 250 to 5,000 or more users

- Three or more physical locations

- Three or more domain controllers

- Network services and resources, such as messaging, a database, file and print, a proxy server, a firewall, the internet, an intranet, remote access, and client computer management

- Connectivity requirements, such as connecting branch offices and individual users in remote locations to the corporate network and connecting corporate networks to the internet.

## ● Unit introduction

This unit is a comprehensive introduction to the principles of Microsoft Windows Server 2008, Network Infrastructure enabling a learner to explore the range of techniques and skills common to the utilisation of this server infrastructure in a commercial environment.

The unit explores the management of a Windows Server 2008, supporting a range of Network Infrastructure services including ip addressing and related services, domain name resolution, network address translation and network access services. Learners will manage firewall settings, wireless authentication, network authentication, file servers, print services and monitor the performance of the services.

Microsoft link with a range of different partners to offer a range of learning resources, where learners and centres can access these through Microsoft's Academic learning programme. To attain a pass, learners must take the Microsoft 70-642 certification exam.

To view general information about Microsoft objectives please visit: https://www.microsoft.com/education/MSITAcademy/default.mspx 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    configure IP Addressing and Services

2    configure Name Resolution

3    configure Network Access

4    configure File and Print Services

5    monitor and manage a Network Infrastructure.

# Unit content in relation to the Merit and Distinction Criteria

*Network Infrastructure Environment*: two or more Windows 2008 servers with at least two Windows based desktop clients.

*Network Access*: eg network address translation, internet connection sharing, Virtual Private Networks, Routing and Remote Access Services (RRAS), inbound/outbound filters, configure Remote Authentication Dial-In User Service (RADIUS) server, configure RADIUS proxy, remote access protocols, Connection Manager, Network Access Protection (NAP), Kerberos, firewall settings, ports settings, protocol settings, access control, domain name resolution, routing protocol, dynamic host configuration protocol

*Network services*: eg file service, encrypting file system, distributed file system, backup, data restoration, disk quotas, print services, name resolution

*Monitoring*: eg event logs, performance data, network data, security analysis, snmp traps and data

# 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 the Microsoft 70-642 certification exam.**<br><br>The centre will evidence this with a copy ofthe learners results, the learner MUST PASS at the minimum set by Microsoft. | **M1** plan the deployment of a Windows Server 2008, Network Infrastructure environment [IE, CT] | **D1** critically Test and troubleshoot the Network Infrastructure environment [IE, CT, SM] |
| | **M2** design Network access and network services [IE, SM] | **D2** evaluate the network infrastructure environment after monitoring. [SM, IE] |
| | **M3** implement a Windows 2008, Network Infrastructure environment [TW, EP, SM] | |
| | **M4** implement Network access and network services. [TW, EP, SM] | |

**PLTS**: This summary references where applicable, in the square brackets, the elements of the personal, learning and thinking skills applicable in the pass criteria. 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

Microsoft courses 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.

If learners are taking Microsoft study as part of their BTEC programme, it is recommended that both programmes of study are integrated. Practical and theory tasks for the Microsoft 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 Microsoft units as well as those offered by Cisco, CompTIA 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 Microsoft units to enhance the learners experience.

## Outline learning plan

Microsoft as part of the their academy programme, provide learning plans and study guidance for their courses. Microsoft suggest 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 Microsoft 70-642 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 | Design a Windows Server 2008, Network Infrastructure system | Learners will plan the installation of Windows Server 2008, network infrastructure on an installation environment of choice. | Report/Presentation<br><br>The installation environment may be virtual machines, or bare bones boxes, with the need for at least two servers and two workstations, to optimise resources learners may be encouraged to work in groups. |
| M3, M4, D1, D2 | Install the Windows Server 2008, Network Infrastructure | Learners will configure Windows Server 2008 and client testing and troubleshooting the Network Infrastructure environment and monitoring of the system. | Observation/Practical/Report/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 Microsoft modules.

## Essential resources

As members of the Microsoft 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 installation versions of Microsoft products 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 Microsoft Virtual PC may be used, or Oracle Virtual Box which can be run on a wide range of platforms.

## Employer engagement and vocational contexts

Microsoft 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 Microsoft academic programme resources and more information on joining the programme, please visit https://www.microsoft.com/education/MSITAcademy/default.mspx

## 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 network infrastructure installation |
| Creative thinkers | planning the network infrastructure installation |
| Reflective learners | planning the network infrastructure installation |
| Team workers | working in groups, they may jointly implement an agreed design |
| Self-managers | planning the network infrastructure installation. |

## 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 | Implementing the design and plan |
| Manage information storage to enable efficient retrieval | Implementing the design and plan |
| Follow and understand the need for safety and security practices | Implementing, testing and troubleshooting the Network Infrastructure infrastructure |
| Troubleshoot | Implementing, testing and troubleshooting the Network Infrastructure infrastructure |
| **English** | |
| Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts | Monitoring the networking infrastrucutre |
| Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions | Monitoring the networking infrastrucutre. |