T Level Technical Qualification in Digital Support Services

Employer set project (ESP)

Core skills

Digital Infrastructure & Network Cabling

Project brief - Task 3

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Project brief

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Contents

Student instructions

- read the project brief carefully before starting your work

- you must work independently and make your own decisions as to how to approach the tasks within the employer set project

- you must clearly name and date all of the work that you produce during each supervised session

- you must hand over all of your work to your tutor at the end of each supervised session

- you must not work on the assessment in between supervised sessions

Student information

- the employer set project will assess your knowledge, understanding and skills from across the core content of the qualification

- in order to achieve a grade for the core component, you must attempt both of the external examinations and the employer set project

- the combined marks from these assessments will be aggregated to form the overall core component grade (A* to E and U) – if you do not attempt one of the assessments, or fail to reach the minimum standard across all assessments, you will receive a U grade

- the maximum time you will have to complete all tasks for the employer set project is 12 hours 10 minutes

  o your tutor will explain how this time is broken down per task and will confirm with you if individual tasks need to be completed across multiple sessions

  o at the end of each supervised session, your tutor will collect all employer set project assessment materials before you leave the room

  o you must not take any assessment material outside of the room (for example, via a physical memory device)

  o you must not upload any work produced to any platform that will allow you to access materials outside of the supervised sessions (including email)

- you can fail to achieve marks if you do not fully meet the requirements of the task, or equally if you are not able to efficiently meet the requirements of the task

- the project is assessed out of a total of 76 marks (this includes 2 marks for your use of mathematics in task 3, and 4 marks for your use of English throughout tasks 2, 3 and 4) – the individual task marks are also shown throughout the project brief booklet at the start of each task

Plagiarism

Plagiarism may result in the external assessment task being awarded a U grade.

Presentation of work

- all of your work should be completed electronically using black font, Arial size 12pt unless otherwise specified

- any work not produced electronically must be agreed with your tutor, in which case the evidence you produce should be scanned and submitted as an electronic piece of evidence

- all your work should be clearly labelled with the relevant task number and your student details and be legible (for example, front page and headers)

- electronic files should be named using the following format – Surname_Initial_student number_evidence reference for example: Smith_J_123456789_Task1 for identification purposes – where evidence reference is shown, this should be replaced with the task number for which the work reflects and saved as a .pdf format

- all pages of your work should be numbered in the format page X of Y, where X is the page number and Y is the total number of pages

- you must complete and sign the external assessment cover sheet (EACS) – declaration of authenticity form and include it at the front of your assessment task evidence

- you must submit your evidence to the supervisor at the end of each session

Task 3: 4 hours

You must read the information on all pages provided for this task before starting your response.

(24 marks)

Scenario

Following your meeting with the Newcastle office network manager, your line manager (technical audience) has provided you with a full specification of requirements (control document D) for connectivity for remote workers and in-house workers, all supported at the Newcastle site. As they are working within the care sector, special attention should be given to issues of security.

Your line manager has asked you to prepare a project proposal and a network diagram, using the specification of requirements, detailing how you will resolve the connectivity issues identified for the staff supported at the Newcastle office.

Instructions for students

Your project proposal (24 marks) should include:

- an introduction outlining the current issues for remote connectivity
- a detailed overview of your plans, including:
  - o how to upgrade the network to improve connectivity and access to the network
  - o consideration of the downtime this will cause and how you will minimise this
- your proposed solution detailed on a network diagram that accompanies the proposal
- a justification of any equipment, software or cloud services decisions you make
- estimated costs for any equipment, software or cloud services recommended. Your decisions should not only meet the brief but provide value for money (you should use the internet to research this), taking into consideration ongoing costs for licensing and updates
- an explanation of any potential network security issues with justification for recommended mitigations
- a final summary

When identifying costs, the company usually uses PC World Business/Fortinet and Dell as preferred suppliers. Where possible, these suppliers should be used for all equipment or software recommendations before considering other suppliers. For cloud-based solutions, the company is very interested in solutions provided by Microsoft and Amazon Web Services but would consider other solutions if they were appropriate.

Evidence required for submission to NCFE

- a detailed project proposal

- a detailed network diagram

When you have completed this task, you should save in a .pdf format, and name your file:

Surname_Initial_student number_evidence reference for example: Smith_J_123456789_Task3

Additional guidance

For this task you will be issued with control document D.

This task will also assess your English skills.

This task will also assess your mathematical skills which are worth 2 marks.

You will have access to a word processing application or other suitable software to enable you to complete this task.

Access to the internet is permitted.

Access to any online cloud storage is not permitted.

Use of online chat or emails is not permitted.

Access to previous class notes/teaching materials is not permitted.

You are permitted to have up to a maximum of 15 minutes rest break during this task. This must be supervised.

Control document D: specification of requirements (controlled document to be issued at the start of task 3)

Network setup

Head office

Network includes a single server running Windows Server 2016 which currently holds the following roles:

- dynamic host configuration protocol (DHCP)

- domain name system (DNS)

- domain controller

- virtual private network (VPN) server (allowing point-to-point tunneling protocol (PPTP) connectivity to the network – capacity for 50 concurrent connections)

- file server

- print server

- web server (for internal intranet)

- email server (internet message access protocol (IMAP) and simple mail transfer protocol (SMTP))

The internet service provider at the head office has recently been updated and the perimeter router and firewall have been replaced.

The head office supports approximately 20 staff full time and 10 contracted staff who work the hours necessary for site visits to patients. These working hours can be 24 hours a day, 7 days a week, 365 days a year. These staff also include senior management, finance and IT.

The contracted staff have been issued with laptops for working remotely, but they may attend head office for meetings. The remote workers are located around the country.

Newcastle office

This is a new office and currently only contains a simple local area network (LAN) with a single small office home office (SOHO) router providing services to the network, including DHCP and DNS. There is no domain control in Newcastle. Staff are connecting via VPN to the head office site each day to access necessary resources.

There are approximately 15 staff permanently located in the Newcastle office as well as a further 10 part time staff and 10 remote workers.

Network topology and configuration is detailed in the accompanying current network topology and firewall configuration documents.

Requirements for the updated network

Technology should be used to connect the head office and Newcastle networks, with all users able to access file shares and other network resources adequately.

All remote workers should be able to connect to the network remotely via VPN, or similar, to access network resources. Connection dropouts and lack of VPN availability should be minimised.

Protocols used for VPN software should be secure.

VPN traffic should not endpoint inside the head office network.

Document information

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