T Level Technical Qualification in Digital Support Services

Employer set project (ESP)

Core skills

Digital Infrastructure and 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

- Control Document to be issued at the start of task 3

Plagiarism

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

The use of artificial intelligence (AI) during the assessment is considered plagiarism, with the use of AI potentially resulting in disqualification/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:

  o 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 your tutor 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

The satellite office in Bolton runs a 'hybrid working' model, where staff can work either in the office or remotely. There are currently 15 staff working at this office. Access to network services is a requirement for all staff.

You have been provided by your line manager (technical audience) with a full specification of requirements (Control Document C) for head office. Additionally, this needs to consider connectivity for workers based at the Bolton satellite office, and any remote workers, as currently there have been some issues reported when connecting to head office remotely.

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 any potential connectivity issues for the staff located in the Bolton satellite office and remote workers.

Instructions for students

Your project proposal **(24 marks)** should include:

- an introduction outlining the current issues for access to systems across virtual LANs (VLANs)

- a detailed overview of how to upgrade the network to improve connectivity – consider 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 decisions you make about any equipment, software or cloud services

- estimated costs for any equipment, software or cloud services recommended; your decisions should provide value for money whilst meeting the brief (you should use the internet to research this)

- an explanation of any potential network security issues with justification for recommended mitigations

- a final summary

When identifying costs, this task requires that you research possible preferred suppliers. Where possible, these suppliers should be used for all equipment, software and cloud-based recommendations before considering other suppliers.

Evidence required for submission to NCFE

- a detailed project proposal in .pdf format

- a detailed network diagram in .pdf format

When you have completed this task, you must save it 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 C.

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 C: Specification of Requirements

Network setup

Head office

The network is separated to help maintain data security between departments. A shared server provides access to documents between offices and other services, this Windows Server 2019 currently has a network adapter with IP addresses of 10.0.4.10 (primary VLAN for this device), it also has access to all the other VLANs. It does not act as a router.

The server has roles including:

- domain controller
- file server
- print server
- web server (internal intranet)
- remote desktop protocol (RDP) server

The switches and firewall that do the routing have been recently upgraded. Configuration was manually copied from old to new equipment; automatic uploads were not available due to software incompatibility.

The head office has 40 members of staff, including a small call centre for customer services (10 staff), and then other staff take up the remainder of the roles. Call centre staff have internet access on a whitelist and other staff have full internet access. Call centre staff use thin clients and connect to the server to receive their desktops. All other users are laptop-based with software VPNs they can use outside of the office.

VPN is handled currently by the firewall but is limited to 10 users at a time due to licensing.

Instructions for students

Assume that the current servers are due to be retired. Any solution you propose should either replace or remove the need to maintain the onsite servers.

The senior management team are very keen to identify ways to use cloud resources to manage company computers.

Your solution should include:

- a robust solution for storing, managing and providing access to company files and data, regardless of location
- the ability to manage company computers and devices centrally
- a virtual desktop solution to allow secure access to data on personal equipment
- a unified communication solution that will allow staff to communicate and collaborate effectively with each other, as well as take phone calls from external contacts

Document information

Owner: Head of Assessment Design.