# T Level Technical Qualification in Digital Support Services

Employer set project (ESP)

# Core skills

Digital Infrastructure and Network Cabling

Project Brief – Task 1

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**Employer set project (ESP)**

# Core skills

**Project Brief**

Digital Infrastructure and Network Cabling

# 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.

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

# Scenario

Oak Marketing is a company that provides sales/marketing support for other companies in the North-West of England. The company has a head office in Carlisle and a satellite office in Bolton. The satellite office in Bolton runs a 'hybrid working' model, where staff can work either in the office or remotely. Access to network services is a requirement for all staff. 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. Staff in the Bolton branch require access resources at head office.

Staff at head office have been complaining that their internet connection does not work unless they connect via the VPN. When they try and use the Wi-Fi, they cannot access the internet; however, when connected on VPN, everything works as expected but they cannot access any of the printers or shared files. The file shares work when connected to the Wi-Fi.

## Brief

As you are a 3rd line engineer you have been asked to identify the root cause and resolve the issue.

Once you have resolved the initial connectivity issue at head office, you should suggest an improved solution that will support the wider infrastructure project you are working on, with the aim of allowing the remote staff in Bolton to work with the resources in head office.

# Task 1: 2 hours 30 minutes

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

**(22 marks)**

## Scenario

Your line manager has asked you to investigate the issues at head office. As you are working remotely, you have been provided with a logical topology diagram (Control Document A) that shows the current network configuration. This will allow you to troubleshoot issues and plan your changes to the network. You also have a copy of the current configuration page (Control Document B) for the switches' virtual LAN (VLAN) setup.

Your line manager works remotely. She has therefore asked you to:

- show your proposed changes required to resolve the issue on the logical topology diagram (Control Document A)
- design a test plan that could be followed by a colleague in the office in order to test that the changes made have resolved the issue

## Instructions for students

Using the information provided above and in Control Documents A and B, you should investigate and identify the root cause of the issue. Add your required steps to resolve the fault onto the logical topology diagram (Control Document A).

You should produce:

- recommendations of changes to make to network settings on Control Document A **(6 marks)**
- a test plan document **(16 marks)** for use when troubleshooting network connectivity issues

You should consider:

- use of troubleshooting frameworks
- tools used during the troubleshooting process

Your test plan document should include:

- user details
- test dates
- computer specification and software
- proposed tests
- expected/actual outcomes of tests
- ability to record changes based on test outcomes
- record of diagnosis
- user acceptance of work completed

# Evidence required for submission to NCFE

- logical topology diagram (Control Document A) with any of your proposed changes in .pdf format. Changes to settings should be clearly explained

- test plan document to be submitted at the end of task 1 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_Task1)

# Additional guidance

For this task you will be issued with Control Documents A and B.

You will have access to a word processing application or other suitable software to enable you to complete this task.
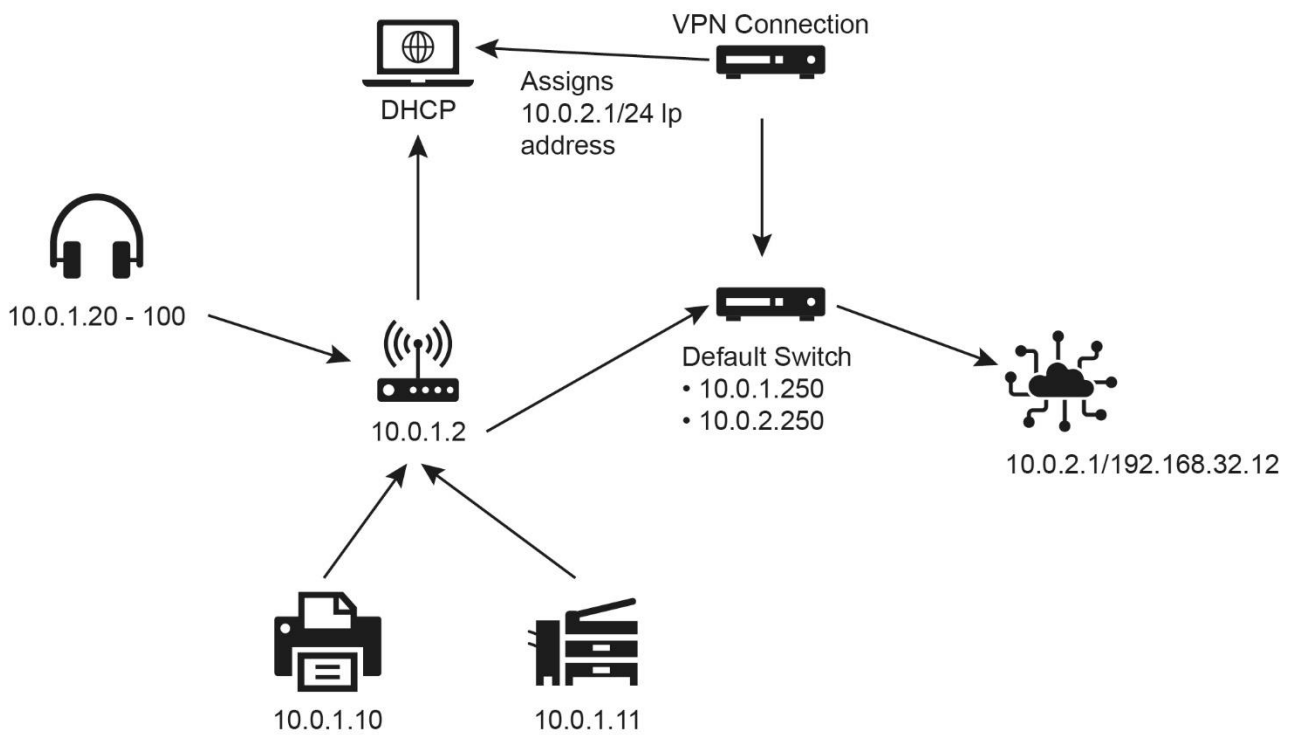
Access to the internet is permitted.

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.

# Control Document A: Logical Topology Diagram – Oak Marketing Current Network Configuration (Task 1)

VPN Connection

DHCP

Assigns
10.0.2.1/24 lp
address

10.0.1.20 - 100

((·))
10.0.1.2

Default Switch
• 10.0.1.250
• 10.0.2.250

10.0.2.1/192.168.32.12

10.0.1.10

10.0.1.11

# Control Document B: Configuration Page – Current Switches Setup (Task 1)

| VLAN Name | IP Range | Purpose |
|:---:|:---:|:---:|
| 1 | 10.0.0.1/24 | Default (Do Not Use) |
| 2 | 10.0.1.1/24 | All staff |
| 3 | 10.0.2.1/24 | Head office |

# Document information

Owner: Head of Assessment Design.