 Computer Science and Creative Technologies

**Coursework or Assessment Specification**

## Module Details

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| **Module Code** | UIFCFDU-30-1 |
| **Module Title** | Networking |
| **Module Leader** | Andrew Cracknell |
| **Module Tutors** | Andrew Cracknell, Leonard Shand |
| **Year** | 2020/21 |
| **Component/Element Number** | 1 |
| **Total number of assessments for this module** | 2 |
| **Weighting** | 60% |
| **Total Assignment Time** |  |
| **Element Description** | Presentation |

## Dates

|  |  |
| --- | --- |
| **Date issued to students** |  |
| **Date to be returned to students** |  |
| **Submission Date** |  |
| **Submission Place** |  |
| **Submission Time** |  |
| **Submission Notes** |  |

## Feedback

|  |  |
| --- | --- |
| **Feedback provision will be** | given when returning the submission |

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# Section 1: Overview of Assessment

This assignment assesses the following module learning outcomes:

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| **Module Learning Outcomes** | **Reference** |
| Explain networking devices and operations. | MO2 |
| Compare common networking principles and how protocols enable the effectiveness of networked systems. | MO3 |
| Explain the impact of network topology, communication and bandwidth requirements. | MO4 |

The assignment is worth ***60%*** of the overall mark for the module.

Broadly speaking, the assignment requires you to determine the network requirements and determine whether a proposed design is fit for purpose. You will also discuss how you could change the network to make it better or have better functionality.

The assignment is described in more detail in section 2.

This is an individual assignment.

Working on this assignment will help you to better understand the complexities of internetworked networks in a commercial environment.

If you have questions about this assignment, please ask the module leader.

# Section 2: Task Specification

Your company provides IT support services to local SMEs. You are a Network Engineer responsible for supporting several customers. One of your customers, AWC Limited, a local produce distributer in Townsville has recently taken over another firm with 25 people in Citylimits, a neighbouring town.

The office at Townsville has 461 desktop computers 17 printers and one server. The network is connected to the internet via a service provider. The site has wireless capability with 7 access points installed. The server is running Windows 2008R2 and has DNS, DHCP and Active directory installed. Users gain access to the networked environment by logging in with their AD credentials.

The office in Citylimits has 278 desktop machines, three servers and two printers. Wireless capability is supplied via 4 access points in ad-hoc configuration. The servers are in a domain forest with an Active Directory setup, DNS and DHCP.

They wish to implement a new fibre WAN to link the offices, which are 20kM apart. The new setup should include a firewall at each site. The WAN link is to be configured using RIP2. It has been proposed that the three servers in Citylimits be consolidated. To that end, someone suggested that the Main AD server remain as is, and one other server should be backed up fully (cloned) and then reconfigured with ESXi. The remaining server will be cloned and then implemented on that hypervisor.

Your 30-minute presentation must include the following sections:

* An explanation of how the given implementation and components could function.

You should consider security aspects.

* An explanation of how the given implementation meets, or does not meet, the design requirement. Explain the effectiveness of the proposed protocol and whether a better protocol could be used.
* Your proposed changes to the given implementation to take account of scalability. You should consider bandwidth and server configurations.

Any sources must be fully referenced

# Section 3: Deliverables

* A 30-minute presentation and question and answer session covering the requirements of the task specification
* The slide set you have used during the presentation and this document

# Section 4: Marking Criteria

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 0-29 | 30-39 | 40-49 | 50-59 | 60-69 | 70-84 | 85-100 | Mark & Advice for Improvement |
| **Communication and responses to questions****20%**  | Incoherent presentation with no audience contact. Superficial answers that don’t exhibit any understanding. | Poor presentation with little eye contact. Answers that exhibit a little understanding | Acceptable presentation.Most answers exhibit some understanding | Good presentation with clear narrative and audience engagement. All answers exhibit understanding, with some showing depth. | Good presentation with clear narrative, text and graphics delivered with audience engagement.Good answers showing depth of understanding. | Excellent presentation and slide deck delivered with audience engagement.Excellent answers showing depth of understanding | Excellent presentation and slide deck delivered with full audience engagement. Excellent answers showing depth of understanding and referencing sources |  |
| **Implementation and function****20%** | Minimal explanation | Some explanation of components and function | Implementation and major components explained. No security aspects. | Implementation and major components explained. Some security aspects. | Implementation explained with system diagrams. Major components explained. Some security aspects. | Implementation explained with system diagrams. Major components explained. Relevant security aspects. | Comprehensive and illustrated explanations of implementation, components and security |  |
| **Requirements and effectiveness****40%** | Minimal explanation | Some explanation of meeting requirements.Minimal discussion of protocols | Reasonable explanation of meeting requirements.Minimal discussion of protocols | Reasonable explanation of meeting requirements.Reasonable discussion of protocols | Good explanation of meeting requirements.Justified discussion of protocols | Excellent explanation of meeting requirements.Justified and referenced discussion of protocols | Excellent explanation of meeting requirements.Justified and referenced discussion of protocols with examples |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 0-29 | 30-39 | 40-49 | 50-59 | 60-69 | 70-84 | 85-100 | Mark & Advice for Improvement |
| **Proposed changes****20%** | No suggestions  | Some generic suggestions  | Some relevant suggestions  | Some relevant suggestions and configuration details | Good relevant suggestions and configuration details | Justified relevant suggestions and configuration details | Excellent relevant suggestions and configuration details |  |

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# Section 5: Feedback mechanisms

You will not receive feedback on any of the sections until after the whole assignment has been marked and returned to you. The feedback will be added to the returned submission.

# Appendices and Additional Information

None