**Networking (Advocate: Mike Watkins)**

**P1 Discuss the benefits and constraints of different network types and standards.**

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| Link: <https://github.com/matthewsides/Networking/blob/master/README.md#networking-types-and-standards> |
| The evidence for this criterion can be found in the Networking repository's README.md. This constitutes as evidence as different types of networks for example: peer based, client server, cloud, cluster, etc. Have been covered with the purpose, benefits and constraints explained. In addition, the OSI and TCP/IP model has been explained with a comparison of the differences. Working standards and protocols for instance routed protocols and IEEE standards were also covered along with service and network applications being explained. |

**P2 Explain the impact of network topology, communication and bandwidth requirements.**

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| Link: <https://github.com/matthewsides/Networking/blob/master/README.md#impact-of-topologies-and-differences> |
| This criterion has been met and can be located in the networking repository's README.md. Where the impact of networking topology, communication and bandwidth is expanded upon, with an explanation of differences and a review of the following topologies: logical (e.g. Ethernet/Bus, Token Ring) and physical (star, ring, bus, mesh and tree. Communication is also discussed, along with the effect bandwidth has on data communication (Requirements). |

**P3 Discuss the operating principles of networking devices and server types.**

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| Link: <https://github.com/matthewsides/Networking/blob/master/README.md#operating-principles-glossary> |
| This criterion has been achieved as networking devices (hubs, routers; switches; multilayer switch, firewall, HIDS, repeaters; bridges; wireless devices; access point (wireless/wired), content filter, Load balancer, Modem, Packet shaper, VPN concentrator.) and server types (Web, file, database, combination, virtualisation and terminal services server.) have been identified and explained in the form of a glossary and through brief paragraphs. This evidence can be found in the Networking repository's README.md. |

**P4 Discuss the interdependence of workstation hardware with relevant networking software.**

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| Link: <https://github.com/matthewsides/Networking/blob/master/README.md#work-station-hardware> |
| This evidence can be found in the Networking repository's README.md and meets the criteria as the interdependence of hardware on networking software is outlined with examples of software that runs on hardware devices briefly explained. The differences between network card, wireless, mobile and the different type of cabling (infrastructure, patch, networking, shielded and twisted pair) is also covered. Whilst the need for permissions along with the differences between permission types (local permissions, NTFS and network shared permissions) and work stations are explained. With a small section detailing a system bus and how it works (CPI->Memory->IO->Data->Control). |

**P5 Design a networked system to meet a given specification.**

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| Link: <https://github.com/matthewsides/Networking/blob/master/README.md#network-design> |
| This criterion has been achieved as given specifications for a network have been outlined, user stories produced and a design of a networked system drafted and illustrated through an image. The evidence for this criterion can be found in the Networking repository's README.md, under the heading network design. |

**P6 Test and evaluate the design to meet the requirements and analyse user feedback.**

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| Link: <https://github.com/matthewsides/Networking/blob/master/README.md#justification-network-design>  <https://github.com/matthewsides/Networking/blob/master/README.md#evalutation> |
| Proof of completion and meeting this pass can be found in the Networking README.md document, with user feedback shown and justification of the choices made regarding the design. Whilst an evaluation factoring in the user feedback can be seen near the bottom of the document, suggesting possible improvements and where the design falls short, despite meeting the specifications layed out. |

**P7 Implement a networked system based on a prepared design.**

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| Link: <https://github.com/matthewsides/Networking/blob/master/README.md#system-implemented>  [https://github.com/matthewsides/Networkin](https://github.com/matthewsides/Networking)g |
| The evidence for this criterion can be found in the Networking repository, with a packet tracer file that contains the implemented and working network, whilst the implemented network is also illustrated through an image in the README.md document. This constitutes as evidence as it shows the implementation of a networked based system based on a prepared design (implemented image and design image can be compared, showing implementation). |

**P8 Document and analyse test results against expected results.**

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| <https://github.com/matthewsides/Networking/blob/master/README.md#test> |
| This evidence may be located in the Networking repository's README.md document and is applicable to the criteria as a test plan has been carried out pertaining to the network to see whether the test/observed results appeared similar to the expected results. This test essentially enables logical and functional errors to be found through comparison of both the observed/tested and the expected. |

**M1 Compare common networking principles and how protocols enable the effectiveness of networked systems.**

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**M2 Explore a range of server types and justify the selection of a server, considering a given scenario regarding cost and performance optimisation.**

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**M3 Install and configure network services and applications on your choice.**

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**M4 Recommend potential enhancements for the networked systems.**

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**D1 Considering a given scenario, identify the topology protocol selected for the efficient utilisation of a networking system.**

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**D2 Design a maintenance schedule to support the networked system.**

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**D3 Use critical reflection to evaluate own work and justify valid conclusions.**

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