

**DEPARTMENT OF INFORMATION TECHNOLOGY**

ICT50220 Diploma of Information Technology

Assessment

**ICTNWK562 Configure Internet Gateways**

Assessment Task 2

2022

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**Course:** ICT50220 Diploma of Information Technology

**Unit of competency:** ICTNWK562 Configure Internet Gateways



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Assessment Task 2: Short Answer Questions

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| Course code and name | ICT50220 Diploma of Information Technology |
| Unit code and name | ICTNWK562 Configure Internet Gateways |
| Due date | ….. / ….. / ……Week 2 (Students have 1 week to complete this task) |
| Resources required | * Learner resource ICTNWK562 * Access to computer and internet |
| Decision making rules | All questions must be answered satisfactorily to achieve a satisfactory result for this task. |
| Instructions | **Common Instructions**   * This assessment will be conducted using written question method. * It is to be completed in your own time. * You have one week to complete this task. * All questions must be answered. * Sufficient time is provided in class for you to read and review the assessment task and seek clarification on key points prior to undertaking the assessment task. * At this time if you require reasonable adjustments discuss it with the assessor. It is important to ensure the integrity of the assessment is maintained and the intent is not compromised (e.g. extension of time, oral questions and answers etc.). * You must complete the answers electronically and save it as Assessment Task 2 Short Answer Questions Student ID.docx (where Student ID is your student number i.e. s1234567). * Please include Full Name and Student ID in the footer of the answer document. * Submit the saved file in the Assessment Task 2 folder Melbourne Polytechnic Learning Management System. * You must agree (via an ‘I confirm’ radio button) with the assessment submission terms and condition in Melbourne Polytechnic LMS prior to the submission. |

## Questions & Answers

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| 1 | Describe the industry-recognised methods to configure network components using required technical and national guidelines. [50-100 words] | | | |
|  | Answer | Satisfactory | Unsatisfactory | |
|  | Methods to configure network components [50-100 words] |  |  | |
| According to the "China Telecom Network Equipment Configuration Specification," the basic configuration methods for Juniper devices are as follows:   1. **Example for Configuring Device Name:**   Hostname M-NN-XIJIAO-B-E320-01 // String format, length range 1~30   1. **Example for Configuring Time:**   clock timezone CST 8 // Set the system timezone to GMT+8  clock set 06:56:00 12 04 2009 // Set the system time   1. **NTP Configuration:**   ntp enable  ntp server 202.103.194.43 version 3   1. **Primary and Backup Card Switching Configuration:**   no disable-autosync  !  Redundancy  mode high-availability | | | | |

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| 2 | Outline hardware, software and tools for internet gateway and node configurations. [50–100 words] | | |
|  | Answer | Satisfactory | Unsatisfactory |
|  | hardware, software and tools for internet gateway and node configurations [50-100 words] |  |  |
| 1. **Pulseway:**   Pulseway is a powerful network configuration and management software suitable for various devices. It is highly scalable and can host this multi-account platform on the cloud or a Pulseway server.   1. **ManageEngine NCM:**   ManageEngine is another renowned tool in the field of network monitoring and configuration. Its Network Configuration Manager is a multi-vendor network solution for configuration, management, and compliance.   1. **Tor-Router:**   Tor-Router allows users to use Tor as a transparent proxy, sending all network traffic from the device through Tor, including DNS requests. Users only need a device with systemd (if you need to use this service) and Tor to enjoy the convenience of Tor-Router. | | | |

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| 3 | What is the difference between a switch and a router? [50-80 words] | | |
|  | Answer | Satisfactory | Unsatisfactory |
|  | The difference between a hub and a switch [50-80 words] |  |  |
| A switch connects multiple machines to form a local area network (LAN). Switches appeared much earlier than routers, so routers can be considered an upgraded version of switches. They are related but have distinct differences, being interconnected yet independent. Routers have improved situations like the lack of data packet forwarding paths.   1. **Different Uses**   The types of networks they connect differ. For instance, switches are primarily used to connect LANs, while routers connect to external networks. Because routers appeared later and are more compatible, they can also connect LANs. Generally, individual users do not have a high demand for routers, which are typically used by households or companies.   1. **Different Functions**   Routers can connect multiple electronic devices and allocate IPs so that multiple hosts share one IP while externally appearing as having only one IP address. The main function of a switch is to connect many hosts, each with its own IP address, creating a scenario where multiple IP addresses work together.   1. **Different Working Layers**   The primary distinction between routers and switches lies in their operational layers. Switches work at the second layer, the Data Link Layer of the OSI model, while routers operate at the third layer, the Network Layer. This is mainly because the principles of switches are simpler than those of routers, so routers have a higher layer and broader functionality. | | | |

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| 4 | Describe the required operations for configuring network components. [60-80 words] | | |
|  | Answer | Satisfactory | Unsatisfactory |
|  | Required operations for configuring network components [60-80 words] |  |  |
| The configuration methods for the basic components of the network in the "China Telecom Network Equipment Configuration Specification" include basic system configuration, security configuration, routing configuration, and business-related configuration. Basic configuration includes device name configuration, system time configuration, NTP configuration, master/slave card switching configuration, interface configuration, etc. Security configuration includes Telnet configuration, SNMP configuration, SYSLOG configuration, AAA login, anti-attack settings, etc. Routing configuration includes static routing configuration, black hole routing configuration, OSPF configuration, etc. Business-related configuration includes Radius configuration, billing authentication, domain configuration, PPPoE, IPoE, VPN configuration, etc. | | | |

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| 5 | Describe the networking techniques to analyse and minimise system vulnerabilities. [60-80 words] | | |
|  | Answer | Satisfactory | Unsatisfactory |
|  | Networking techniques to analyse and minimise system vulnerabilities [60-80 words] |  |  |
| Vulnerability detection techniques can be categorized based on the target of detection into host-based detection and network-based detection:   1. **Host-Based Detection:** The detection program runs on the host being scanned, checking the security status of that host. Since it is initiated from within the system, it is also known as internal scanning. The operator must have certain permissions. 2. **Network-Based Detection:** The detector is located on the local network or a remote network, analyzing the security vulnerabilities of hosts on the network by sending and receiving network data. This is also known as external scanning. In practice, external scanners simulate a hacker's intrusion process and do not require an account on the target system. | | | |

## Student Declaration

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| Please read, tick and sign below | | | |
| * I declare that the attached assessment I have submitted is my own original work and any contributions from and references to other authors are clearly acknowledged and noted. * This document has been created for the purpose of this assessment only and has not been submitted as another form of assessment at Melbourne Polytechnic or any other tertiary institute. * I have retained a copy of this work for my reference in the event that this application is lost or damaged. * I give permission for Melbourne Polytechnic to keep, make copies of and communicate my work for the purpose of investigating plagiarism and/or review by internal and external assessors. * I understand that plagiarism is the act of using another person’s idea or work and presenting it as my own. This is a serious offence and I will accept that penalties will be imposed on me should I breach Melbourne Polytechnic’s plagiarism policy. | | | |
| Student Signature | WangYiZhuo | Date |  |
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