CANTERBURY
TECHNICAL INSTITUTE

ASSESSMENT

ICT50715
Diploma of Software Development

Networks and Servers

Assessment Code:

DITS-NETSRV-1

ICTNWK505 - Design, build and test a network server
ICTNWK531 - Configure an internet gateway

Assessment Overview

This assessment deals with the skills required to plan, build and implement a network server with internet gateway routing configuration. This server will also be configured as a webserver with MySQL database capability for centralised distribution for web 2.0 application technology.

Version 1.0 - 2017
CRICOS Code – 02938M RTO No: 31645

Information for Candidate:

- All work is to be entirely of the candidate.

General Information for this assessment:

- Read the instructions for each question very carefully.
- Be sure to PRINT your FULL name & LAST name in every place that is provided.
- Short questions must be answered in the spaces provided.
- For those activities requesting extra evidence such as: research reports, ESSAY reports, etc. The student must attach its own work formatted in double space, Arial 12 pts.
- All activities must be addressed correctly in order to obtain a competence for the unit of competency.
- If the candidate doesn't understand the assessment, they can request help from the assessor to interpret the assessment.

Re-assessment of Result & Academic Appeal procedures:

If a student at CTI is not happy with his/ her results, that student may appeal against their grade via a written letter, clearly stating the grounds of appeal to the Deputy Principal. This should be submitted after completion of the subject and within fourteen days of commencement of the new term.

Re-assessment Process:

- An appeal in writing is made to the Deputy Principal providing reasons for re-assessment /appeal.
- Deputy Principal will delegate another faculty member of CTI to review the assessment.
- The student will be advised of the review result done by another assessor.
- If the student is still not satisfied and further challenges the decision, then a review panel is formed comprising the lecturer/trainer in charge, the Deputy Principal and the Director of Student Services OR if need be an external assessor.
- The Institute will advise the student within 14 days from the submission date of the appeal. The decision of the panel will be deemed to be final.
- If the student is still not satisfied with the result, the he / she has the right to seek independent advice or follow external mediation option with CTI's nominated mediation agency.
- Any student who fails a compulsory subject or appeals unsuccessfully will be required to re-enrol in that subject.

The cost of reassessment will be borne by the Institute. The external assessor will base his/her judgement based on principles of assessment. These principles require assessment to be reliable, fair, practical and valid.

Academic Appeals

- If you are dissatisfied with the outcome of the re-evaluation process, you have a right to appeal through CTI's complaint / grievance protocol.
- The notice of appeal should be in writing addressed to the Deputy Principal and submitted within seven days of notification of the outcome of the re-evaluation process.
- If the appeal is not lodged in the specified time, the result will stand and you must re-enrol in the unit.
- In emergency circumstances, such as in cases of serious illness or injury, you must forward a medical certificate in support of a deferred appeal. The notice of appeal must be made within three working days of the concluding date shown on the medical certificate.
- The decision of Deputy Principal will be discussed with the PEO and will be final.
- Student would then have the right to pursue the claim through an independent external body as detailed in the students' complaint / grievance policy.

Submission Details:

The assessment task is due on trainer provided date. Any variations to this arrangement must be approved in writing by your assessor. Submit this document with any required evidence attached. See specifications below for details

Performance objective

The candidate must demonstrate skills, knowledge and understanding and promote the use and implementation of innovative work practices to effect change, as states the unit of competency **ICTNWK505 and ICTNWK531**. Throughout this program, you are to demonstrate knowledge in:

- Australian Computer Society Code of Ethics.
- Federal and state or territory legislation and policy relevant to an IT environment relating to:
  access and equity, copyright and intellectual property and OHS.
- Privacy.
- Organisational communication processes and procedures.
- Organisational requirements for customer service.

And skills in:

- Communication skills to liaise with internal and external personnel on ethical and privacy, operational and business-related matters.
- Learning skills to update personal ethical and privacy knowledge through professional development literacy skills to apply standards and legislation to policy and procedure development and monitoring.
- Planning and organisational skills to plan, prioritise and monitor own work.
- Research skills to gain and maintain current industry privacy and ethical information.
- Technical skills to perform application and system security and storage management.

Assessment description:

You will undertake **computer based test** based on class lectures and activities in this Practical Activity.

Procedure:

1 You will need to follow instructions below and address all activities required.
2 This is an individual activity where each candidate will be assessed individually;
3 Complete all activities and submit assessment evidence (including these papers) to your assessor the date specified above (see submission details).
4 Referencing: All findings from the internet or other sources must be referenced as per standards laid by APA referencing guide at: http://www.usq.edu.au/library/help/referencing/apa

Specifications/Conditions:

Your assessor will be looking for evidence of:

- Analyse legislation and standards relating to professional conduct and privacy in the IT industry
- Contribute to the development of a code of ethics and monitor the workplace to ensure code of ethics is being applied and is appropriate
- Contribute to the development of a privacy policy and monitor the workplace to ensure the policy is being applied and is appropriate.
- Relevant organisational policies, legislation and standards documentation.
- Industry codes of practice.

Assessment Details

BUILD, CONFIGURE AND INSTALL NETWORK SERVER

Task 1: Plan and design network server to meet business requirements.

Review the below case scenario, then produce a **design plan** and **installation checklist** with configuration details based on the requirements. This must also include the following:

- Server operating system.
- Network services.
- Server applications.
- Redundancy
- IP addressing system
- Internet Gateway configuration

This task requires two documents that **must** be submitted with this assessment, a design plan named "**LpaNetServerPlan.docx**" produced in MS Word 2010 or higher or equivalent word processing software. The other document is an installation checklist named "**Lpa_NSI_Checklist.docx**" indicating steps used for the installation of the server. Both documents **must** have your student number and name clearly displaced.

Case Scenario

A company named Logic Peripherals Australia (LPA) has implemented a new stock control system to be rolled out across its corporate network, this will include a centralised database to supply data to three different application interfaces as follows:

- Desktop Application (Java)
- Web Application (HTML, PHP, JavaScript).
- Android Application (Java Android Libraries using WebView).

The server will also host an eCommerce website for the online sales of products. LPA have instructed, they would like the following base configuration standard:

1. Linux Operating System:
2. Apache Web Server
3. MySQL Database server

As this will be a new system with a new server configuration, there are no system migration requirements, the server will need to allow for multiple concurrent connections, from both internal network and the internet. The server will be required to route internal network data for internet access, and will need to be configured as an internet gateway, with a firewall only allowing return requests generated from within the internal network to pass back through the firewall.

The Java desktop application will require access to the server from the internal workstations only, with the mobile Android application having access from both the internal network and the internet, this also applies to the web application.

Task 2: Prototype and install network server. (Observation assessment)

In this task, you're required to download the latest stable release of CentOS Linux operating system, then install and configure a virtual machine server using the configuration checklist produced in task 1.

Virtual machine software must be created with VirtualBox and configured to specification from the design plan created in task 1.

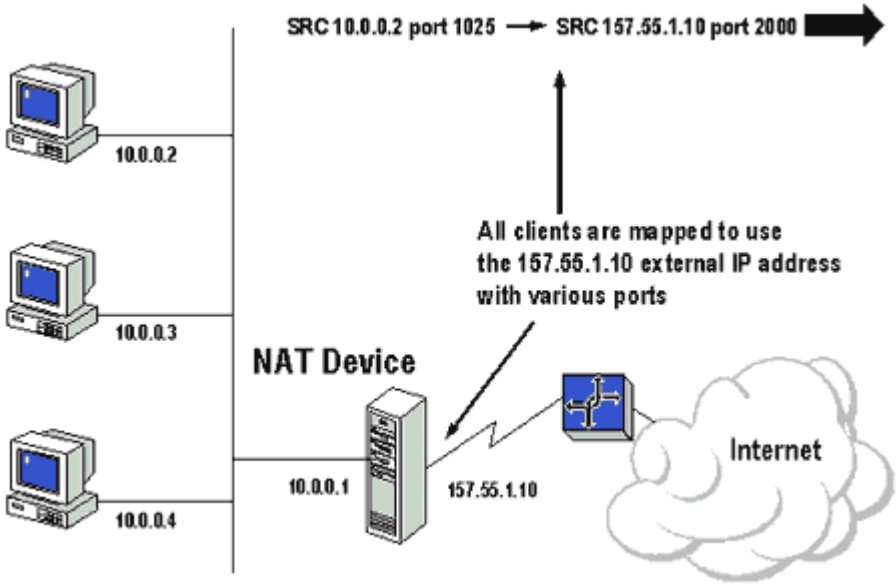
Create user accounts as follows:

Username	Password	First Name	Last Name	Group
admin	password	Bill	Smith	Administrator
philipse	password	Emma	Philips	User
andrewsp	password	Pauline	Andrews	User

Install and configure stock control system "**LPA ecomms**" with MySQL database access, all devices must be able to connect to the stock control system.

Task 3: Configure for internet access of internal private network.

Configure the server to provide internet access for the internal private network, this must use network address translation (NAT) to share the single public internet connection as demonstrated in the example below:



The above diagram is only an example for illustration purpose, you will need to produce your own network topology diagram, using your IP addressing system and configuration details. Save your internet gateway configuration schematic diagram with the configuration details in a file named "**IGW_schematic.docx**" and **must** be submitted with this assessment and have your student number and name clearly displaced.

Task 4: Test server for readiness against requirements.

Perform a series of tests to ensure that the new network server is ready for deployment. Create a test case checklist with the following minimum items to test:

- **Server Start-up:** Boots operating system and waits at the login prompt (screen).
- **User Accounts:** All user account are active and assigned to the correct group.
- **Application distribution:** LPA ecomms is accessible from all devices.
- **Internet connectivity:** All internal private host are able to reach the internet via gateway.
- **Mobile Accessibility:** Android application (WebView) connects to stock control system.

Save the testing checklist as "**SRV_testing.docx**" and include with this assessment.

Assessment Submission Details

This assessment requires the following evidence:

Required documentation to be included in a single compressed archive (**ZIP** or **7z**) file as follows:

- LpaNetServerPlan.docx
- Lpa_NSI_Checklist.docx
- IGW_schematic.docx
- SRV_testing.docx
- Any other relevant documents/source code/reports for this assessment.

Submit the compressed archive electronically via edRES submissions section or if otherwise instructed by your assessor/instructor.