RGIT australia
INTERNATIONAL COLLEGE

ICT50415 - Diploma of Information Technology Networking

ICTNWK506 - Configure, verify and troubleshoot WAN links and IP services in a medium enterprise network

Student Assessment Booklet

Version no: 2.1

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ASSESSMENT RECEIPT FORM

STUDENT NAME:	
STUDENT ID:	
COURSE NAME:	Diploma of Information Technology Networking
ASSESSOR'S NAME:	SHUAI XIAO
DATE DUE:	27/02/2020
UNIT CODE AND TITLE:	ICTNWK506 - Configure, verify and troubleshoot WAN links and IP services in a medium enterprise network

NOTE:

1. This form must be stapled on top of the completed Student Assessment Booklet when submitting same.
2. The Assessment Receipt Form must be stamped and signed.

DECLARATION:

1. I am aware that penalties exist for plagiarism and cheating.
2. I am aware of the requirements set by my assessor.
3. I have retained a copy of my assessment.

Student Signature: _____ Date: _____

Assessment received by RGIT Staff

Name: SHUAI XIAO Signature: _____

==========TEAR HERE ==========

Students must retain this as a Record of Submission

Assessment handed in on:_____

Unit code and title: **ICTNWK506 - Configure, verify and troubleshoot WAN links and IP services in a medium enterprise network**

Assessment received by RGIT staff	
Name: ……	***Student ID:……..***
Signature: ……..……..……..	***Student Signature:……***

About this booklet

This assessment booklet has been designed for students undertaking face-to-face mode of study to provide information before you undertake these assessments. It also contains assessment tools to assess the skills and knowledge required from you to be deemed competent in this unit.

This booklet might not be suitable for students taking other modes of study e.g. online or work based.

Please read all the information given to you when you receive this assessment booklet. If you do not understand any part of this booklet, please inform your assessor.

The assessment booklet contains two (2) parts:

PART 1: Assessment information: This part contains information on the assessment for this unit of competency and how an assessment will be conducted throughout this unit to achieve the competency. It includes:

- Application of the unit of competency.
- Purpose of assessment.
- Elements, performance evidence and knowledge evidence requirements of the unit.
- Conditions, context, required resources and location of the assessment.
- Assessment tasks.
- Outline of evidence to be collected.
- Administration, recording and reporting the requirements including special adjustments, appeals, reasonable adjustments and assessors' intervention.

PART 2: Assessment tasks: This part contains the information to successfully undertake the assessment task. In each assessment task, students will find the following information:

- Task instructions.
- Role play / Practical Demonstration information.
- Information on resources required, where applicable

PART 1: Assessment information

Application of the unit of competency:

This unit describes the skills and knowledge required to use appropriate tools, equipment, software and protocols to install, operate, and troubleshoot medium enterprise switches.

It applies to individuals with excellent communication skills who are working as help desk technicians and network support technicians.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Purpose of assessment:

The purpose of assessment is to determine competency in the unit ICTNWK506 - Configure, verify and troubleshoot WAN links and IP services in a medium enterprise network.

Elements

1. Prepare to install medium enterprise WAN links
2. Configure WAN links
3. Configure and verify IP services on a router
4. Secure a network using router services
5. Troubleshoot medium enterprise WAN links

Performance evidence:

Evidence of the ability to:

- plan and prepare for the wide area network (WAN) link installation task
- install and configure WAN links
- configure and troubleshoot the following internet protocol (IP) services:
    - network address translation (NAT)
    - dynamic host configuration protocol (DHCP)
    - access control lists (ACLs)
    - configure and troubleshoot ADSL links
    - configure and troubleshoot VPNs
- document solutions.

Knowledge evidence:

To complete the unit requirements safely and effectively, the individual must:

- outline the basic operation and configuration of internet protocol version 6 (IPv6)
- identify and describe typical router setup and operations, including:
    - ACLs
    - router calling line identification (CLI) configuration
    - router debug commands
- explain typical problems and solutions with WAN link installations.

Context and conditions for assessment:

To comply with the **assessment conditions** of this unit:

- Skills for this unit of competency will be demonstrated in a simulated lab environment.
- You will have access to suitable facilities, equipment and resources, including template documentation to undertake the assessment tasks for this unit of competency.
- During Project, you will undertake simulated case study assessment activities that involve complex interactions with real time situations where you have to give your suggestions.
- Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances must be typical of those experienced in the network industry.

Resources required:

The assessor will ensure that assessment is conducted in a safe environment and you have access to the following resources for the unit.

- a site where network installation may be conducted
- hardware and software
- organisational guidelines
- computers
- WAN service point of presence.

Clustering/holistic assessment:

There is no provision for clustering of assessments in this unit.

Competency requirements:

To be judged competent in this unit, you will be required to demonstrate all indicators which are shown in the Marking Guide (assessor's document).

You must satisfactorily complete all assessment tasks to be Competent (C) in the unit. Students with unsatisfactory completion of any of the assignment tasks will be deemed Not Yet Competent (NYC).

Assessors will ensure that the evidence collected meets the requirements of the Rules of Evidence (authentic, current, sufficient and valid) prior to entering results into the competency record sheet.

Students unsuccessful at achieving "Satisfactory" for any assessment at the first attempt will be given two opportunities for reassessment. If the student is still deemed Not Yet Competent (NYC) after two reassessments in a unit of competency student will be required to repeat the unit as per the scheduled delivery of the course. For further details, refer to RGIT Re-Assessment Policy and RGIT Course Progress Policy.

Assessment tasks:

To achieve competency in this unit, you must satisfactorily complete all the following assessment tasks within the date and time specified in the session plan. This will demonstrate that you have all the required skills and knowledge for this unit.

Assessment tasks	Assessment description	Due date	Location of assessment
Assessment 1: Project	This assessment includes a case study scenario and you need to design a network diagram, configurations and complete the project documentation as per scenario requirements.	27/02/2020	Needs to be completed as part of self-paced learning.
Assessment 2: Practical Demonstration	This assessment includes two scenarios outlining workplace conditions and you are required to respond to a number of tasks and configurations.	27/02/2020	Needs to be completed in the classroom.
Assessment 3: Written Test	This assessment contains 27 questions; you need to answer all questions.	27/02/2020	Needs to be completed in the classroom.

Outline of evidence to be collected:

You must submit the following evidence to be marked competent for this unit. Your assessor will ensure that the evidence submitted meets the Rules of Evidence which are **valid, sufficient, current and authentic.**

Assessment 1: Project	• Design and configure all tasks provided in the project assessment • Cover sheet for assessment task
Assessment 2: Practical Demonstration	• Configure all tasks provided in the practical demonstration assessment which needs to be verified by your assessor • Cover sheet for assessment task
Assessment 3: Written Test	• Answer all questions in the written test assessment • Cover sheet for assessment task

Administration, recording and reporting requirements:

You must read and follow this information carefully while completing assessments for this unit of competency and if you are unsure of any instruction, please contact your assessor to clarify.

The assessments are intended to be equitable, fair and flexible.

Submission of assessment:

You must ensure that the completed assessment tasks are submitted along with the assessment cover sheet:

- Your assessor will mark the submitted assessment, provide feedback to you and complete the comments section against each task, where applicable.
- ALL tasks must be completed in legible English. It is preferred that the tasks submitted for assessments are typed and that they are legible and clear, if handwritten.
- You must submit all assessments on or before the due date specified by the assessor as per the training plan.
- Extensions for individual assessment tasks may be negotiated in specific circumstances with your assessor/trainer. However, you need to provide genuine evidence documents when seeking an extension to due date (e.g. extensions due to illness will require a medical certificate). To arrange an extension, you must speak to your assessor prior to the due date. Extensions must be confirmed by the trainer in writing.
- You are permitted to use dictionaries and to seek support, as required.
- Unless the assessment task specifically allows pair work or group activities such as brainstorming, you must submit your own original work and must not copy the work of other students. Plagiarism is unacceptable.
- You can submit your assessment tasks through the learning management system or hand in hard copies in the class room.

Recording an assessment result:

Once the assessments have been completed, the assessor will record the assessment results on the student assessment record sheets and LMS/student management system and all results will be approved by the course coordinator.

Assessors will check that you have completed the student declaration prior to filling out the assessment sheet.

Retaining assessment records:

RGIT will securely retain all completed student assessment items for each student for a period of six months from the date on which the judgement of competence for the student was made. RGIT will also retain sufficient data to be able to reissue AQF certification documentation for a period of 30 years.

All assessment records submitted to the assessor for marking will be stored and retained properly. And a hard copy submitted to student administration for filing along with the evidence.

The assessor will ensure that the student records are securely retained in accordance with the RGIT record control policy accessible by the Student Administration Officer.

Assessment outcomes:

For unit of competency:

There are two outcomes for assessments: C = Competent and NYC = Not Yet Competent (requires more training and experience).

You will be awarded C = Competent on completion of the unit when the assessor is satisfied that you have completed all assessments and have provided the appropriate evidence required to meet all criteria in line with the Rules of Evidence. If you fail to meet this requirement, you will receive the result NYC = Not Yet Competent and will be eligible to be re-assessed in accordance with the RGIT's policies and procedures.

For assessment task:

There are two assessment outcomes for tasks. S = Satisfactory and NS = Not Satisfactory.

On the individual assessment cover sheet for assessment tasks you will be marked Satisfactory, if you have completed the task successfully, submitted all evidence and satisfied the assessment criteria and Not Satisfactory, if you have not completed the task, the evidence is not sufficient or does not meet the requirements.

Re-assessment:

If you are unsuccessful at achieving competency at the first attempt, you will be given two further opportunities for re-assessment at a mutually agreed time and date. For further details, refer to the RGIT Re-Assessment Policy and RGIT Course Progress Policy. As this is a competency based program, the assessment continues throughout the program until you either achieve Competency in the assessment tasks or a further training need is identified and addressed.

Student access to records:

You have the right to access current and accurate records of your participation and results at any time. You can see your results or attendance progress by logging in to the Learning Management System at any time or you can request a copy of your records by contacting the student administration and the assessor.

Support:

You may seek clarification about the assessment information and the instructions and tasks at any time from the assessor.

Reasonable adjustments and special learning needs:

RGIT Australia works to ensure that students with recognized disadvantages can access and participate in education and training on the same basis as other students. Disadvantages may be based, for example, upon age, cultural background, physical disability, limited or non-current industry experience, language, numeracy or digital literacy issues.

Where pre-training interviews and assessments reveal that a student may require special support or where, after enrolment, it is made apparent that the student requires special support, reasonable

adjustments will be made to the learning environment, training delivery, learning resources and/or assessment tasks to accommodate the particular needs of the student. An adjustment is reasonable if it can accommodate the student's particular needs, while also taking into account factors such as the student's views, the potential effect of the adjustment on the student and others and the costs and benefits of making the adjustment.

Any adjustments made must:

a. Be discussed and agreed to by the student.
b. Benefit the student.
c. Maintain the competency standards and course requirements as stipulated in the training package.
d. Be reasonable to expect in a workplace.

Reasonable adjustment may consist of:

a. Providing additional time for students to complete learning and assessment tasks.
b. Presenting questions orally for students with literacy issues.
c. Asking questions in a relevant practical context.
d. Using large print material.
e. Extending the course duration.
f. Presenting work instructions in diagrammatic or pictorial form instead of words and sentences.

Complaints and appeals:

If you are dissatisfied with an assessment outcome, you may appeal the assessment decision. In the first instance, you are encouraged to appeal informally by contacting the assessor and discussing the matter with them. If you are dissatisfied with the outcome of such discussion, you may appeal further to either the course coordinator and/or Head of Department. If you are still dissatisfied, you may appeal formally and in writing to have the result reviewed. For more information, refer to the Assessment Policy and the Complaints and Appeals Policy and Procedures.

Assessor intervention:

Assessors will check if you are ready for the assessment, and defer the assessment if you are not. Feedback will be given to you at the completion of the assessment. During role play, the assessor may act as a client, where required, but the assessor will not interfere with the assessment. If the assessment activities might impact on your safety or that of others, the assessor will stop the assessment immediately.

Plagiarism, cheating and assessment dishonesty:

RGIT considers plagiarism and cheating as a serious misdemeanor. Evidence of plagiarism and cheating is treated on a case by case basis and the consequences for students engaging in such practices may include failure of the assessment or unit or exclusion from the course. For more information, refer to RGIT's Assessment Policy.

Assessor feedback:

Assessors will provide feedback on the assessment that you have submitted. This can identify your strengths and weaknesses or be an overall comment on your submission. A copy of the feedback along with your submission will be given to you and you must keep a copy of it throughout the completion of the course.

Student Declaration: ..... *(Student Name*)

I have read and understand the information provided above and also understand and accept that any act of plagiarism and academic dishonesty may have penalties including cancellation or suspension of my enrolment with RGIT. I further declare that:

- All assessment work submitted for this unit competency is my own original work and plagiarism and collusion has not occurred.
- Assessment work has not been copied or submitted for any other unit/course.
- I have taken proper care and effort to ensure my work has not been copied by another person.
- I have retained a copy of this assessment for my own records in the event I have to reproduce my work.
- I am aware that any assessment deemed unsatisfactory will require me to undergo reassessment which may be different to the one originally submitted.

Student signature: ..... **Date:** ...../...../.....

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Assessment Cover Sheet:

Student details	
Student name:	
Student ID:	
Assessment details	
Unit of competency:	ICTNWK506 - Configure, verify and troubleshoot WAN links and IP services in a medium enterprise network
Assessment task:	Project
Date of submission:	
Assessment Outcome: ☐ Satisfactory ☐ Not Satisfactory ☐ Not Assessed	
Assessor signature:	
Assessor name: SHUAI XIAO	
Feedback:	

Student Plagiarism Declaration: By submitting this assessment to the college, I declare that this assessment task is original and has not been copied or taken from another source except where this work has been correctly acknowledged. I have made a photocopy or electronic copy or photograph of my assessment task, which I can produce if the original is lost.

Assessor: I declare that I have conducted a fair, valid, reliable and flexible assessment of this student, and I have provided appropriate feedback. I also declare that I have undertaken the indicated assessment integrity checks	**Student:** I have received, discussed and accepted my result as above for this assessment and I am aware of my appeal rights.
Google check for plagiarism ☐ Yes ☐ No	
Check for copying/collusion ☐ Yes ☐ No	
Check for authenticity (own work) ☐ Yes ☐ No	
Cheating or use of model answers ☐ Yes ☐ No	
Signature:	Signature:.....
Date:.....	Date:.....

Assessment task 1: Project

Required documents and equipment:

- Computer with internet connection to refer to various resources.
- Computer with Cisco packet tracer and Microsoft word installed to design and configure the network and documentation.
- Student assessment booklet and a pen (organized by the student).
- RGIT Learners' resources for the unit ICTNWK506 - Configure, verify and troubleshoot WAN links and IP services in a medium enterprise network (organised by the trainer).

Instructions for students:

This assessment will be conducted in the RGIT classroom or outside the campus with access to the resources listed above.

You must satisfactorily perform all tasks to be deemed Satisfactory for this assessment.

Planning the assessment

- Recommended date for assessment: After session 6.
- Access all resources mentioned in required resources either printed copies or access via the internet.
- Time required for assessment: 3-4 Weeks.
- You must:
  - Perform all tasks in the Project assessment.
  - Complete them and submit in due timelines.
  - Submit with a completed assessment cover sheet.
- Your assessor will set a time to provide feedback.

Evidence specifications: At the end of the assessment, you will be required to submit the following evidence before the due date specified by the assessor:

- Satisfactory completion of all task for the given scenario.
- Cover sheet for assessment.

Evidence submission:

- Documentation can be submitted electronically or paper-based.
- Your assessor will record the assessment outcome on the assessment cover sheet.

Project scenario and tasks:

Scenario

The IFL Delight Bread and Cake Company is a company that makes and distributes bread and cake products. The head Office occupies one building over 2 floors at the Melbourne site. The company also has a production group at Hobart and Sydney. Hobart site is connected to Melbourne via a Frame Relay link and Melbourne is connected to Sydney ISP via a WAN PPP Link.

The company is applying a network that should support possible growth over next 3 years. The task is to design, implement and fully document IFL Delight Break and Cake company network.

The company also wants to use private address and Dynamic Host configuration Protocol (DHCP).

Network Address Translation (NAT) must be applied for Internet connectivity. The company requires the implementation of ACLs to control the flow of IP traffic within its network and to the Internet.

Although private address (RFC 1918) will be used, to minimise wasted address space, they need VLSM to be used.

The IFL Delight Bread and Cake Company require you to use Packet Tracer for development and demonstration purpose.

Task 1: Initial Planning

1. 80 employees in the Product Development group, based at Melbourne.
2. 30 employees in the sales & marketing group, based at Melbourne.
3. 10 employees in the Site Security group, based at Melbourne.
4. 15 employees in the Administration group, based at Melbourne.
5. 120 employees in the production group, based at Hobart.
6. A dedicated Server Farm subnet, you can decide the number and type of servers required.
7. Use VLSM for the IP addressing scheme.
8. All devices must have IP address.

Task 2: Produce a Logical Network Diagram, and include:

9. Router and switch names
10. Router interface details
11. Network/subnet address
12. IP addresses on interface
13. DCE serial interface are to be clearly indicated
14. Clearly indicate DHCP router, PPP links, and Frame relay links.
15. Type of cable
16. Identify different methods for connecting to WAN by completing site identification.

Task 3: Preparation and Paper work

17. Prepare for given work according to legislations, work health and safety codes, regulations and standards.
18. Follow the organisation procedure to get access to the site for preparation
19. Assess existing network design documentation and develop new design according to the organisation requirements.

20. Select required network devices for the organisation for installation as per the new design and contact different vendors and suppliers to obtain specifications and availability of identified components.
21. Develop action plans for installation of components for new network design with minimum disruption to client. Please include prioritised task and contingency arrangement in your action plans.
22. Obtain approval for the plan, including security clearance and timing from appropriate person (Your assessor can give you an approval).

Task 4: Configure Routers, Routing Protocol and WAN Protocols

The following addressing should be used for the configurations:

- Internal network address: **192.168.0.0/18**
- Router serial interface: **136.128.10.0/30**
- NAT pool public address: **178.4.0.0/23**
- ISP network connection address: **207.2.4.0/30**

23. Configure and verify router serial interfaces as specified in Project design.
24. Configure and verify routing protocol OSPF and use wildcard mask to advertise subnets.
25. Configure and Default route to Sydney ISP.
26. Redistribute default route.
27. Configure and verify a static route on Sydney ISP to the internal network.
28. Configure and verify DHCP to provide IP address information to PC workstations.
29. Configure Frame Relay to connect to company's sites.
30. Configure and verify PPP and CHAP authentication on the link to the ISP.

Task 5: NAT Configuration

31. Configure NAT on the router that is acting as your gateway router to the Internet as follows:
    - Define the NAT pool. Use the given NAT pool public address given to you.
    - Define an access control list, which will permit all IP traffic from all the internal addresses.
    - Test that NAT is working from a host on any LAN. The host should able to ping ISP.
    - Document the NAT translations.

Task 6: Security Access Policies

32. Test that each PC is able to ping each other, router interfaces, servers, and ISP.
33. Prepare ACLs as per the requirement.

Task 7: Troubleshooting and Documentation

34. Troubleshoot WAN implementation by various methods and document them.
35. Describe and provide rationale/justification for your design in the document.
36. Describe implementation of the following:
    - WAN Protocols
    - DHCP service
    - NAT service

- Security Access Policies
- Troubleshooting and verification strategy
- Asymmetric digital subscriber line

37. Document the following configurations:
    - Router configuration (for each router)
        - Show run
        - Show ip interface brief
        - Show access-lists
        - Show ip route
    - NAT Output
        - Show ip nat translation
    - DHCP Output
        - Show dhcp bindings
    - Frame Relay Verification
        - Show frame-relay map
        - Show frame-relay pvc
        - Show frame-relay lmi
38. A Packet Tracer file of the Network

Project checklist – to be completed by the assessor

Marking criteria **During the Project, the student:**	**Student's response (to be completed by the assessor)**
Initial Planning	☐S ☐NS
• Use VLSM for the IP addressing scheme.	☐S ☐NS
• All devices must have IP address.	☐S ☐NS
Produce a Logical Network Diagram	☐S ☐NS
• Router and switch names	☐S ☐NS
• Router interface details	☐S ☐NS
• Network/subnet address	☐S ☐NS
• IP addresses on interface	☐S ☐NS
• DCE serial interface are to be clearly indicated	☐S ☐NS
• Clearly indicate DHCP router, PPP links, and Frame relay links.	☐S ☐NS
• Type of cable	☐S ☐NS
• Site identification.	☐S ☐NS
Preparation and Paper work	☐S ☐NS
• Prepare given work according to legislations, work health and safety codes, regulations and standards.	☐S ☐NS
• Review existing network design documentation and develop new design according to the requirements.	☐S ☐NS
• Select required network devices by contacting different vendors and suppliers to obtain specifications and availability of identified components.	☐S ☐NS
• Develop designing and implementation plan with minimum disruption to client.	☐S ☐NS
• Obtain approval for the plan, including security clearance and timing from appropriate person.	☐S ☐NS
Configure Routers, Routing Protocol and WAN Protocols	☐S ☐NS
• Configure and verify router serial interfaces as specified in Project design.	☐S ☐NS
• Configure and verify routing protocol OSPF and use wildcard mask to advertise subnets.	☐S ☐NS
• Configure Default route to Sydney ISP.	☐S ☐NS
• Redistribute default route.	☐S ☐NS
• Configure and verify a static route on Sydney ISP to the internal network.	☐S ☐NS

Marking criteria During the Project, the student:	Student's response (to be completed by the assessor)
• Configure and verify DHCP to provide IP address information to PC workstations.	☐S ☐NS
• Configure Frame Relay to connect to company's sites.	☐S ☐NS
• Configure and verify PPP and CHAP authentication on the link to the ISP.	☐S ☐NS
NAT Configuration	☐S ☐NS
• Configure NAT on the router that is acting as your gateway router to the Internet as follows:	☐S ☐NS
• Define the NAT pool. Use the given NAT pool public address given to you.	☐S ☐NS
• Define an access control list, which will permit all IP traffic from all the internal addresses.	☐S ☐NS
• Test that NAT is working from a host on any LAN. The host should able to ping ISP.	☐S ☐NS
• Document the NAT translations	☐S ☐NS
Security Access Policies	☐S ☐NS
• Test that each PC is able to ping each other, router interfaces, servers, and ISP.	☐S ☐NS
• Prepare ACLs as per the requirement.	☐S ☐NS
Troubleshooting and Documentation	☐S ☐NS
• Troubleshoot the configurations by various methods and document them.	☐S ☐NS
• Describe and provide rationale/justification for your design in the document.	☐S ☐NS
• Describe implementation of the following:	☐S ☐NS
• Document the following configurations:	☐S ☐NS
• A Packet Tracer file of the Network	☐S ☐NS
Task outcome	☐**S** ☐**NS**

Assessor's remarks	
Assessor's signature	
Assessment date	
Student's signature and date	

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Assessment Cover Sheet:

Student details	
Student name:	
Student ID:	
Assessment details	
Unit of competency:	ICTNWK506 - Configure, verify and troubleshoot WAN links and IP services in a medium enterprise network
Assessment task:	Practical Demonstration
Date of submission:	
Assessment Outcome: ☐ Satisfactory ☐ Not Satisfactory ☐ Not Assessed	
Assessor signature:	
Assessor name: SHUAI XIAO	
Feedback:	

Student Plagiarism Declaration: By submitting this assessment to the college, I declare that this assessment task is original and has not been copied or taken from another source except where this work has been correctly acknowledged. I have made a photocopy or electronic copy or photograph of my assessment task, which I can produce if the original is lost.

Assessor: I declare that I have conducted a fair, valid, reliable and flexible assessment of this student, and I have provided appropriate feedback. I also declare that I have undertaken the indicated assessment integrity checks	**Student:** I have received, discussed and accepted my result as above for this assessment and I am aware of my appeal rights.
Google check for plagiarism ☐ Yes ☐ No	
Check for copying/collusion ☐ Yes ☐ No	
Check for authenticity (own work) ☐ Yes ☐ No	
Cheating or use of model answers ☐ Yes ☐ No	
Signature:.....	Signature:.....
Date:.....	Date:.....

Assessment task 2: Practical Demonstration

Required documents and equipment:

- Computer with internet connection to refer to various resources.
- Computer with Cisco packet tracer installed to design and configure the network.
- Student assessment booklet and a pen (organised by the student).
- RGIT Learners' Guide for the unit ICTNWK506 - Configure, verify and troubleshoot WAN links and IP services in a medium enterprise network (organised by the trainer).

Instructions for students:

This assessment will be conducted in the RGIT classroom with access to the resources listed above.

You must satisfactorily perform all tasks to be deemed Satisfactory for this assessment.

Planning the assessment

- Recommended date for assessment: After session 6.
- Access all resources mentioned in required resources either printed copies or access via the internet.
- Time required for assessment: 3-4 hours.
- You must:
  - Answer all tasks in the practical demonstration assessment.
  - Complete them and submit in due timelines.
  - Submit with a completed assessment cover sheet.
- Your assessor will set a time to provide feedback.

Evidence specifications: At the end of the assessment, you will be required to submit the following evidence before the due date specified by the assessor:

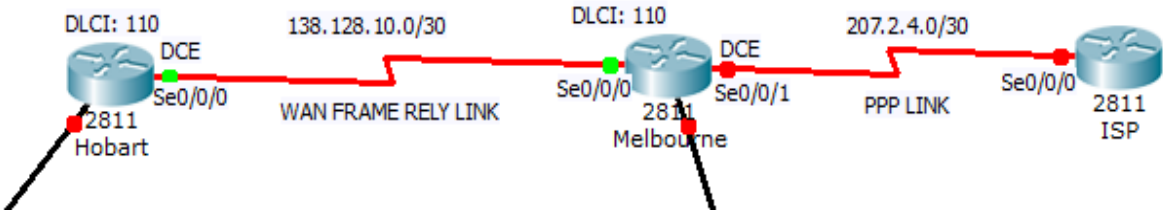
- Completed scenarios with all tasks answered.
- Cover sheet for assessment.

Evidence submission:

- Documentation can be submitted electronically or paper-based.
- Your assessor will record the assessment outcome on the assessment cover sheet.

Practical demonstration scenarios and tasks:

Scenario 1



In this assessment you have to configure the following:

- Router name
- Banner MOTD
- Configure and verify serial interfaces of routers
- Interface description
- Configure and verify Frame relay link between Hobart Router and Melbourne Router
- Configure and verify PPP between Melbourne Router and ISP Router

The following addressing should be used for the configurations:

Router serial interface: **136.128.10.0/30**

ISP network connection address: **207.2.4.0/30**

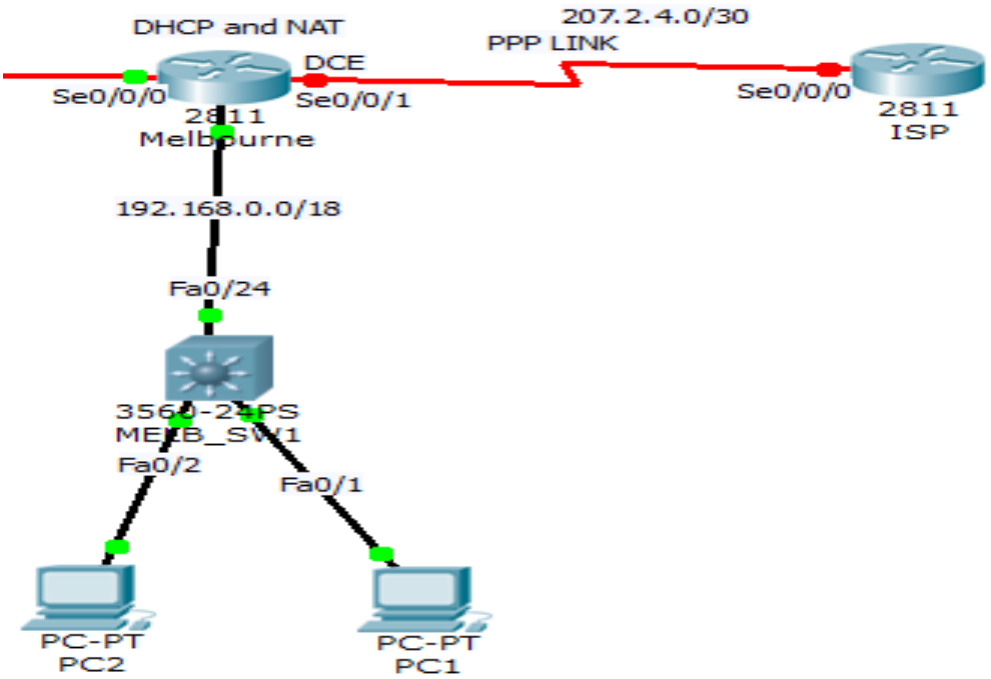
Task 1: Configure Routers and WAN Protocols

1. Configure and verify router serial interfaces as specified design.
2. Configure and verify Frame Relay to connect to company's sites.
3. Configure PPP and CHAP authentication on the link to the ISP.

Task 2: Troubleshooting and Documentation

4. Perform the following troubleshooting methods to rectify the connectivity issues.
    a. Router configuration (for each router)
        - Show run
        - Show ip interface brief
        - Show ip route
    b. Frame Relay and PPP Verification
        - Show frame-relay map
        - Show frame-relay pvc
        - Show frame-relay lmi
        - Show interface serial xxx
        - Show controllers serial xxx
5. Document the output.

Scenario 2



In this scenario you have to configure the following:

- Configure serial interfaces of routers and the Melbourne router to switch
- Configure DHCP, NAT and ACL
- Configure Static routes between Melbourne and ISP Routers

The following addressing should be used for the configurations:

ISP network connection address: **207.2.4.0/30**
Internal network address: **192.168.0.0/18**
NAT pool public address: **178.4.0.0/23**

Task 3: Configure DHCP and NAT

6. Configure and verify DHCP to provide IP address information to PC workstations.
7. Configure Static route to Sydney ISP
8. Configure a static default route on Sydney ISP to the internal network
9. Configure NAT on the Melbourne router to translate internal addresses.
10. Define the NAT pool
11. Create an access-list to permit all the internal traffic "192.168.0.0/18"
12. Combine ACL and NAT pool
13. Configure and apply ACLs to provide secure access to the router
14. Ping from one of PC in the network and document the address translations

Task 4: Troubleshooting and Documentation

15. Perform the following troubleshooting methods to rectify the connectivity issues.
    a. Router configuration: Perform the following for each router
        - Show run
        - Show access-lists
        - Show ip nat translations
        - Document the output.

Practical Demonstration checklist – to be completed by the assessor

Marking criteria **During the demonstration, the student:**	**Student's response (to be completed by the assessor)**
Configured Routers and WAN Protocols	☐S ☐NS
• Configured and verify router serial interfaces as specified design.	☐S ☐NS
• Configured Frame Relay to connect to company's sites.	☐S ☐NS
• Configured PPP and CHAP authentication on the link to the ISP.	☐S ☐NS
Troubleshooting and Documentation	☐S ☐NS
• Performed the following troubleshooting methods to rectify the connectivity issues. o Router configuration (for each router) o Frame Relay and PPP Verification • Documented the output.	☐S ☐NS
Configured DHCP and NAT	☐S ☐NS
• Configured DHCP to provide IP address information to PC workstations.	☐S ☐NS
• Configured Static route to Sydney ISP	☐S ☐NS
• Configured a static default route on Sydney ISP to the internal network	☐S ☐NS
• Configured NAT on the Melbourne router to translate internal addresses.	☐S ☐NS
• Defined the NAT pool	☐S ☐NS
• Created an access-list to permit the all the internal traffic "192.168.0.0/18"	☐S ☐NS
• Combined ACL and NAT pool	☐S ☐NS
• Ping from one of PC in the network and document the address translations	☐S ☐NS
Troubleshooting and Documentation	☐S ☐NS
Task outcome	☐**S** ☐**NS**

Assessor's remarks	
Assessor's signature	
Assessment date	
Student's signature and date	

Assessment Cover Sheet:

Student details	
Student name:	
Student ID:	
Assessment details	
Unit of competency:	ICTNWK506 - Configure, verify and troubleshoot WAN links and IP services in a medium enterprise network
Assessment task:	Written Test
Date of submission:	
Assessment Outcome: ☐ Satisfactory ☐ Not Satisfactory ☐ Not Assessed	
Assessor signature:	
Assessor name: SHUAI XIAO	
Feedback:	

Student Plagiarism Declaration: By submitting this assessment to the college, I declare that this assessment task is original and has not been copied or taken from another source except where this work has been correctly acknowledged. I have made a photocopy or electronic copy or photograph of my assessment task, which I can produce if the original is lost.

Assessor: I declare that I have conducted a fair, valid, reliable and flexible assessment of this student, and I have provided appropriate feedback. I also declare that I have undertaken the indicated assessment integrity checks	**Student:** I have received, discussed and accepted my result as above for this assessment and I am aware of my appeal rights.
Google check for plagiarism ☐ Yes ☐ No	
Check for copying/collusion ☐ Yes ☐ No	
Check for authenticity (own work) ☐ Yes ☐ No	
Cheating or use of model answers ☐ Yes ☐ No	
Signature:.....	Signature:.....
Date:.....	Date:.....

Assessment task 3: Knowledge questions

Required documents and equipment:

- Computer with internet connection to refer to various resources
- Student assessment booklet and pen (organised by the student).
- RGIT Learners' resources for the unit ICTNWK506 - Configure, verify and troubleshoot WAN links and IP services in a medium enterprise network (organised by the trainerr/assessor).

Instructions for students:

This assessment will be conducted as part of the student's self-paced learning (in their own time) with access to the resources listed above.

You must answer all knowledge questions as part of this assessment and you can submit answers in either hand written or typed form. The assessor will verify the authenticity of your work by asking questions regarding the answers provided. You must satisfactorily answer all knowledge questions to be deemed Satisfactory for this assessment.

Planning the assessment:

- Recommended date for assessment: After session 5.
- Access all resources mentioned in required resources, either printed copies or access via the internet.
- Time required for assessment: 4-5 hours.
- You must:
    - Answer all questions in the knowledge questions assessment.
    - Complete them and submit in due timelines.
    - Submit with a completed assessment cover sheet.
- Your assessor will set a time to provide feedback.

Evidence specifications:

At the end of the assessment, you will be required to submit the following evidence before the due date specified by the assessor:

- Completed Student Assessment Booklet with all questions answered.
- Cover sheet for the assessment.

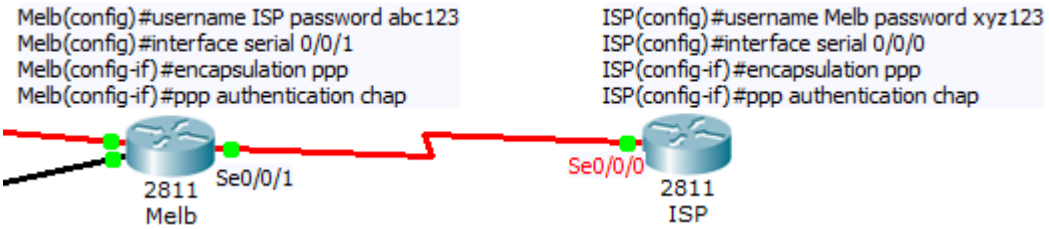
Evidence submission:

- Documentation can be submitted electronically or paper-based.
- Your assessor will record the assessment outcome on the assessment cover sheet.

Knowledge questions:

PART 1 – MULTIPLE CHOICE

1. The Melbourne router is unable to authenticate to the ISP router. What is the cause of the problem?



   a) The usernames are incorrectly configured on the two routers.
   b) The passwords do not match on the two routers.
   c) CHAP authentication cannot be used on a serial interface.
   d) The routers cannot be connected from interface s0/0/0 to interface s0/0/0

2. How many bits are contained in IPv6 address?
   a) 32
   b) 16
   c) 8
   d) 128

3. Which WAN protocol is being used?
   a) Frame Relay
   b) PPP
   c) HDLC
   d) ATM

4. At which layer of the OSI does PPP perform?
   a) Layer 1
   b) Layer 2
   c) Layer 3
   d) Layer 4

5. Which two options are valid WAN connectivity methods? (Choose Two)
   a) PPP
   b) OSPF
   c) DSL
   d) Ethernet

6. Which command allows you to verify the DLCI for a Frame Relay link?
   a) show running-configuration

b) show interfaces serial
c) show frame-relay map
d) show frame-relay pvc

7. What is the first step in the NAT configuration process?
a) Define inside and outside interfaces.
b) Define public and private IP addresses.
c) Define IP address pools.
d) Define global and local interfaces.

8. What are the three reasons that an organisation with multiple branch offices implement VPN solution instead of point-to-point WAN links? (Choose three).
a) Reduced cost
b) increased security
c) scalability
d) Above all

9. On which options are standard access lists based?
a) destination address and wildcard mask
b) destination address and subnet mask
c) source address and subnet mask
d) source address and wildcard mask

10. Which command would verify access-lists?
a) show ip access-lists
b) show interface
c) show access-lists
d) show ip interface

11. Which item represents the standard IP ACL?
a) access-list 2 permit ip any any
b) access-list 3 deny 192.168.1.0 0.0.0.255
c) access-list 50 permit 192.168.100.0 0.0.0.255
d) Above all

12. Which two addresses you should never be assigned to the hosts while configuring DHCP operation on the router?
a) Network or subnetwork IP address
b) Broadcast address on the network
c) IP address used by the interfaces
d) Designated IP address to the DHCP server

13. Which commands can be used to verify and troubleshoot connectivity problems? (Choose three)
    a) Ping
    b) Tracert
    c) Ipconfig
    d) Show interfaces

14. What are two benefits of using NAT? (Choose two)
    a) NAT eliminates the need to re-address all hosts that require external access
    b) NAT protects network security because private networks are not advertised
    c) NAT conserves addresses through host MAC-level multiplexing
    d) NAT facilitates end-to-end communication when IPsec is enabled.

15. What are the router commands used to verify WAN Frame-relay connects? (Choose three)
    a) show running-configuration
    b) show interfaces serial
    c) show frame-relay map
    d) show frame-relay pvc

16. When are three features of IPv6 protocol? (Choose three)
    a) auto configuration
    b) no broadcasts
    c) plug-and play
    d) operational IPsec

PART 2 – QUESTIONS AND ANSWER

17.List and explain methods in connecting a Wide Area Network (WAN)

Answer:

18.What is asymmetric digital subscriber line (ADSL) technology?

Answer:

19. What is DHCP? List at least two benefits of using DHCP.

Answer:

20. What is a NAT and how does it operate?

Answer:

21. List the differences between IPv4 and IPv6. Describe the basic operation and configuration of IPv6.

Answer:

22. What is an ACL? List and explain the two types of ACL.

Answer:

23. What are the two key benefits of VPN?

Answer:

24. What is the difference between a static and a dynamic IP address?

Answer:

25. What is IP Security, and what is its purpose?

Answer:

26. List the key features of IPv6.

Answer:

27. What are typical problems and solutions with WAN link installations?

Written Test checklist – to be completed by the assessor

Marking criteria **During the Written Test, the student:**	**Student's response (to be completed by the assessor)**
The Melbourne router is unable to authenticate to the ISP router. What is the cause of the problem?	☐S ☐NS
How many bits are contained in IPv6 address?	☐S ☐NS
Which WAN protocol is being used?	☐S ☐NS
At which layer of the OSI does PPP perform?	☐S ☐NS
Which two options are valid WAN connectivity methods? (Choose Two)	☐S ☐NS
Which command allows you to verify the DLCI for a Frame Relay link?	☐S ☐NS
What is the first step in the NAT configuration process?	☐S ☐NS
What are three reasons that an organisation with multiple branch offices implement VPN solution instead of point-to-point WAN links? (Choose three).	☐S ☐NS
On which options are standard access lists based?	☐S ☐NS
Which command would verify access-lists?	☐S ☐NS
Which item represents the standard IP ACL?	☐S ☐NS
Which two addresses you should never be assigned to the hosts while configuring DHCP operation on the router?	☐S ☐NS
Which commands can be used to verify and troubleshoot connectivity problems? (Choose three)	☐S ☐NS
What are two benefits of using NAT? (Choose two)	☐S ☐NS
What are the router commands used to verify WAN Frame-relay connects? (Choose three)	☐S ☐NS
When are three features of IPv6 protocol? (Choose three)	☐S ☐NS
List and explain methods in connecting a Wide Area Network (WAN).	☐S ☐NS
What is asymmetric digital subscriber line (ADSL) technology?	☐S ☐NS
What is DHCP? List at least two benefits of using DHCP.	☐S ☐NS
What is a NAT and how does it operate?	☐S ☐NS
List the differences between IPv4 and IPv6.	☐S ☐NS
What is an ACL? List and explain the two types of ACL.	☐S ☐NS
What are the two key benefits of VPN?	☐S ☐NS
What is the difference between a static and a dynamic IP address?	☐S ☐NS

Marking criteria During the Written Test, the student:		Student's response (to be completed by the assessor)
What is IP Security, and what is its purpose?		☐S ☐NS
List the key features of IPv6.		☐S ☐NS
Task outcome		**☐S ☐NS**
Assessor's remarks		
Assessor's signature		
Assessment date		
Student's signature and date		

Competency Record Summary Sheet			
Student's name:		**Student's ID:**	
Assessor's name:	SHUAI XIAO	**Date of completion:**	
Unit of competency:	**ICTNWK506 - Configure, verify and troubleshoot WAN links and IP services in a medium enterprise network**		

Assessments	**Student results**		
	Satisfactory	Not Satisfactory	Not Completed
Assessment 1: Project	☐	☐	☐
Assessment 2: Practical Demonstration	☐	☐	☐
Assessment 3: Written Test	☐	☐	☐

Comments:

Unit outcome:	☐ Competent	☐ Not Yet Competent	
Is re-assessment required?	☐ Yes	☐ No	
Assessor's signature:		**Date:**	
Student's signature:		**Date:**	

Unit Feedback Form

The purpose of this evaluation is to obtain your feedback on the content, delivery and assessments of the unit of competency provided by RGIT. Your response will be treated in the strictest confidence and will assist us to review and improve our delivery.

Student name (optional)	
Qualification in which enrolled	

DIRECTIONS: Along each scale given below, please tick the box that matches most closely with your opinion as indicated below:

Criteria	Feedback
How would you rate the content of the unit?	☐ All completely new information ☐ Mostly new but with some familiar ideas ☐ Mostly refreshing ideas with some new ideas ☐ All refreshing ideas
How useful were the practical/class activities in helping you learn new information or refreshing ideas you had previously learned?	☐ Useful ☐ Somewhat useful ☐ Not useful
How useful were the practical/ class activities in understanding of the unit?	☐ Useful ☐ Somewhat useful ☐ Not useful
How well did your trainer/assessor explain the concepts covered in the unit?	☐ Useful ☐ Somewhat useful ☐ Not useful
I received the assessment information prior to the date of assessment	☐ Strongly Disagree ☐ Disagree ☐ Not sure ☐ Agree ☐ Strongly agree
Unit criteria and assessment process were available or explained	☐ Strongly Disagree ☐ Disagree ☐ Not sure ☐ Agree

Criteria	Feedback
	☐ Strongly agree
The trainer/assessor covered all WHS/OHS issues (where applicable)	☐ Strongly Disagree ☐ Disagree ☐ Not sure ☐ Agree ☐ Strongly agree
Instructions were clear and easy to understand	☐ Strongly Disagree ☐ Disagree ☐ Not sure ☐ Agree ☐ Strongly agree
I knew exactly what was expected from me	☐ Strongly Disagree ☐ Disagree ☐ Not sure ☐ Agree ☐ Strongly agree
The assessment procedure was explained	☐ Strongly Disagree ☐ Disagree ☐ Not sure ☐ Agree ☐ Strongly agree
The trainer/assessor used appropriate language	☐ Strongly Disagree ☐ Disagree ☐ Not sure ☐ Agree ☐ Strongly agree
The trainer/assessor was professional	☐ Strongly Disagree ☐ Disagree ☐ Not sure ☐ Agree ☐ Strongly agree
How would you rate the degree of easiness of the assessments?	☐ Definitely easy ☐ Somewhat easy ☐ Easy ☐ Difficult

Criteria	Feedback
FURTHER COMMENTS: If you have additional comments, please use the space below.	