COIT20264 *Enterprise and Cloud Networking*
Term 2 - 2026

Profile information current as at 08/09/2026 04:49 am

All details in this unit profile for COIT20264 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student).The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

General Information

Overview
This unit equips you with the skills and knowledge necessary to design enterprise-level networks utilising the latest on-premises, wireless, and cloud networking technologies. It also provides you with the ability to gather business and technical requirements, as well as to justify the selection of network technologies when there are conflicting requirements, such as cost, performance, security, and business goals. The unit includes the application of industry-grade tools and techniques in network design, deployment, and management, including automation, remote access, high availability, testing, and documentation.

Details
Career Level: *Postgraduate*
Unit Level: *Level 9*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites
Prerequisite: COIT20261 Network Routing and Switching
Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the Assessment Policy and Procedure (Higher Education Coursework).

Offerings For Term 2 - 2026
- Brisbane
- Melbourne
- Online
- Rockhampton
- Sydney

Attendance Requirements
All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Website
This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit Postgraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

Regional Campuses
Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses
Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. Report and Presentation of Initial Network Design (Written Assessment)
Weighting: 30%
2. Portfolio (Portfolio)
Weighting: 20%
3. The Final Report of Comprehensive Network Design (Group Assessment) (Written Assessment)
Weighting: 50%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the University's Grades and Results Policy for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the CQUniversity Policy site.
You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Academic Progression Policy and Procedure
- Student Refund and Credit Balance Policy and Procedure
- Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the CQUniversity Policy site.

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from Student Feedback

Feedback
Insufficient interactions in the lectures.

Recommendation
Develop interactive activities, such as checkpoint questions, to enhance student interaction during online lectures.

Feedback from Unit Coordinator's Reflection

Feedback
Integrate advanced cloud computing practices to facilitate capstone projects.

Recommendation
Develop and integrate practical cloud computing practices (web server, email server, and Azure Active Directory service) within this unit.

Unit Learning Outcomes

On successful completion of this unit, you will be able to:

1. Analyse business and technical requirements to create plans and designs for enterprise networks
2. Justify the selection of network technologies when there are conflicting requirements, such as cost, performance, security and business goals
3. Design networks comprising a range of technologies, including on-premise, wireless and cloud
4. Apply industry-grade tools and techniques when designing, deploying and managing networks, including automation, remote access and high availability.

The Australian Computer Society (ACS), the professional association for Australia's ICT sector, recognises the Skills Framework for the Information Age (SFIA). SFIA is adopted by organisations, governments, and individuals in many countries and provides a widely used and consistent definition of ICT skills. SFIA is increasingly being used when developing job descriptions and role profiles. ACS members can use the tool MySFIA to build a skills profile.
This unit contributes to the following workplace skills as defined by SFIA 8 (the SFIA code is included):

- IT Infrastructure (ITOP)
- Network Design (NTDS)
- Network Support (NTAS)
- Information Security (SCTY)
- Security Operations (SCAD)
- Problem Management (PBMG)
- Service Level Management (SLMO)
- Change Control (CHMG)

The National Initiative for Cybersecurity Education (NICE) Framework defines knowledge, skills and tasks needed to perform various cyber security roles. Developed by the National Institute of Standards and Technology (NIST), the NICE Framework is used by organisations to plan their workforce, including recruit into cyber security positions.
This unit helps prepare you for roles such as Systems Security Analyst, Network Operations Specialist and Systems Administrator, contributing to the following knowledge and skills:

- K0010 Knowledge of communication methods, principles, and concepts that support the network infrastructure.
- K0011 Knowledge of capabilities and applications of network equipment including routers, switches, bridges, servers, transmission media, and related hardware.
- K0029 Knowledge of organization's Local and Wide Area Network connections.
- K0050 Knowledge of local area and wide area networking principles and concepts including bandwidth management.
- K0053 Knowledge of measures or indicators of system performance and availability.
- K0061 Knowledge of how traffic flows across the network (e.g., Transmission Control Protocol [TCP] and Internet Protocol [IP], Open System Interconnection Model [OSI], Information Technology Infrastructure Library, current version [ITIL]).
- K0071 Knowledge of remote access technology concepts.
- K0088 Knowledge of systems administration concepts.

- K0104 Knowledge of Virtual Private Network (VPN) security.
- K0108 Knowledge of concepts, terminology, and operations of a wide range of communications media (computer and telephone networks, satellite, fiber, wireless).
- K0111 Knowledge of network tools (e.g., ping, traceroute, nslookup).
- K0113 Knowledge of different types of network communication (e.g., LAN, WAN, MAN, WLAN, WWAN).
- K0130 Knowledge of virtualization technologies and virtual machine development and maintenance.
- K0137 Knowledge of the range of existing networks (e.g., PBX, LANs, WANs, WIFI, SCADA).
- K0138 Knowledge of Wi-Fi.
- K0160 Knowledge of the common attack vectors on the network layer.
- K0180 Knowledge of network systems management principles, models, methods (e.g., end-to-end systems performance monitoring), and tools.
- K0318 Knowledge of operating system command-line tools.
- K0332 Knowledge of network protocols such as TCP/IP, Dynamic Host Configuration, Domain Name System (DNS), and directory services.
- K0333 Knowledge of network design processes, to include understanding of security objectives, operational objectives, and trade-offs.
- S0004 Skill in analyzing network traffic capacity and performance characteristics.
- S0033 Skill in diagnosing connectivity problems.
- S0035 Skill in establishing a routing schema.
- S0041 Skill in installing, configuring, and troubleshooting LAN and WAN components such as routers, hubs, and switches.
- S0073 Skill in using virtual machines. (e.g., Microsoft Hyper-V, VMWare vSphere, Citrix XenDesktop/Server, Amazon Elastic Compute Cloud, etc.).
- S0084 Skill in configuring and utilizing network protection components (e.g., Firewalls, VPNs, network intrusion detection systems).

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level | • Introductory Level | • Intermediate Level | • Graduate Level | ◦ Professional Level | ◦ Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes			
	1	2	3	4
1 - Written Assessment - 30%	•	•		
2 - Portfolio - 20%	•		•	•
3 - Written Assessment - 50%		•	•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes			
	1	2	3	4
1 - Knowledge	◦	◦	◦	◦
2 - Communication	◦	◦	◦	◦
3 - Cognitive, technical and creative skills	◦	◦	◦	◦
4 - Research		◦		◦
5 - Self-management	◦	◦	◦	◦
6 - Ethical and Professional Responsibility	◦	◦	◦	◦
7 - Leadership				
8 - First Nations Knowledges				
9 - Aboriginal and Torres Strait Islander Cultures				

Textbooks and Resources

Textbooks

There are no required textbooks.

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Cisco Packet Tracer
- draw.io

Referencing Style

All submissions for this unit must use the referencing style: Harvard (author-date)
For further information, see the Assessment Tasks.

Teaching Contacts

Jahan Hassan Unit Coordinator
j.hassan@cqu.edu.au

Schedule

Week 1 - 13 Jul 2026

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to Enterprise and Cloud Networking		

Week 2 - 20 Jul 2026

Module/Topic	Chapter	Events and Submissions/Topic
Analysing Business Goals and Constraints		

Week 3 - 27 Jul 2026

Module/Topic	Chapter	Events and Submissions/Topic
Characterising Existing Networks and Traffic		Students must complete their group formation for Assignments 1 and 3 by the end of this week.

Week 4 - 03 Aug 2026

Module/Topic	Chapter	Events and Submissions/Topic
Resource Planning for Network Design		

Week 5 - 10 Aug 2026

Module/Topic	Chapter	Events and Submissions/Topic
Network Topology Design		

Week 6 - 17 Aug 2026

Module/Topic	Chapter	Events and Submissions/Topic
Selecting Network Technologies		Assignment 1: Due Week 6 Monday, 11:45 PM AEST Report and Presentation of Initial Network Design Due: Week 6 Monday (17 Aug 2026) 11:45 pm AEST

Vacation Week - 24 Aug 2026

Module/Topic	Chapter	Events and Submissions/Topic

Week 7 - 31 Aug 2026

Module/Topic	Chapter	Events and Submissions/Topic
Networking in the Cloud		

Week 8 - 07 Sep 2026

Module/Topic	Chapter	Events and Submissions/Topic
Remote Access		

Week 9 - 14 Sep 2026

Module/Topic	Chapter	Events and Submissions/Topic
Reliability in the Cloud		

Week 10 - 21 Sep 2026

Module/Topic	Chapter	Events and Submissions/Topic
Wireless Networks		

Week 11 - 28 Sep 2026

Module/Topic	Chapter	Events and Submissions/Topic
Network Management and Automation		Assessment 2: Due Week 11 Monday, 11:45 PM AEST Portfolio Due: Week 11 Monday (28 Sept 2026) 11:45 pm AEST

Week 12 - 05 Oct 2026

Module/Topic	Chapter	Events and Submissions/Topic
Review and Discussion		

Exam Week - 12 Oct 2026

Module/Topic	Chapter	Events and Submissions/Topic
		Assessment 3: Due Exam Week Monday, 11:45 PM AEST The Final Report of Comprehensive Network Design (Group Assessment) Due: Exam Week Monday (12 Oct 2026) 11:45 pm AEST

Vacation/Exam Week - 19 Oct 2026

Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

Unit Coordinator: Associate Professor Jahan Hassan; j.hassan@cqu.edu.au
Use of Generative Artificial Intelligence (AI) in Learning Resources and Assessments: Generative artificial intelligence (AI) tools may have been used by educators in the development of learning resources and assessments (e.g., for initial drafting, content organisation, activity generation, image creation, editing, summarisation, accessibility support, rubric development, or feedback scaffolding) in this unit. Any AI-assisted resources have been critically reviewed, refined, and contextualised by academic staff. The final learning resources, assessments and guidance provided reflect academic judgement and align with CQUniversity learning, teaching, accessibility, and academic integrity requirements.

Assessment Tasks

1 Written Assessment

Assessment Title
Report and Presentation of Initial Network Design

Task Description
In this assessment task, leveraging insights from your weekly group discussions and lab exercises, you will analyse the provided scenario to initially plan and design an enterprise network, applying the knowledge and skills acquired in this unit. The Process involves active participation in weekly discussions, brainstorming, and conducting weekly lab exercises, ultimately consolidating these efforts into an initial report accompanied by a presentation.
This assessment comprises two parts completed collaboratively in groups of 3 or 4:
Part A: A presentation
Part B: A written report

Important Submission Requirement: While this is a collaborative group assignment, every student must submit their work individually. Failure to submit individually will result in a mark of zero.
Additional details regarding this assessment task are available in the Assessment Item 1 specifications on the Moodle unit website.
AI ASSESSMENT SCALE - AI PLANNING
You may use AI for planning, idea development, and research. Your final submission should show how you have developed and refined these ideas.

Assessment Due Date
Week 6 Monday (17 Aug 2026) 11:45 pm AEST
Late submissions are subject to the university's late submission penalty policies.

Return Date to Students
Week 8 Monday (7 Sept 2026)
Assessments will be returned through Moodle website. Late submissions with or without extension approvals may be returned after the above date.

Weighting
30%

Assessment Criteria
Your report and presentation will be evaluated based on quality, correctness, and clarity using specified marking criteria. The two parts of this assessment task carry the following weightings:
- Presentation (Part A) – 10%
- Written Report (Part B) – 20%

Additional details regarding the assessment criteria are available in the Assessment Item 1 specifications on the Moodle unit website.

Referencing Style
Harvard (author-date)

Submission
Online

Submission Instructions
Each student is required to submit their report individually. Failure to submit will result in a mark of zero.

Learning Outcomes Assessed
- Analyse business and technical requirements to create plans and designs for enterprise networks
- Justify the selection of network technologies when there are conflicting requirements, such as cost, performance, security and business goals

2 Portfolio

Assessment Title
Portfolio

Task Description
The Portfolio requires students to maintain a diary/journal for tutorial questions and/or lab exercises (e.g., screenshots, testing results, reflections, etc.) in a computer lab on a weekly basis from Week 1 to Week 10. This assignment is individual, and students collaborating in a group are required to submit their distinct work.
AI ASSESSMENT SCALE - NO AI
You must not use AI at any point during the assessment. You must demonstrate your core skills and knowledge.

Assessment Due Date
Week 11 Monday (28 Sept 2026) 11:45 pm AEST
Late submissions are subject to the university's late submission penalty policies.

Return Date to Students
Exam Week Monday (12 Oct 2026)
Late submissions with or without extension approvals may be returned after the above dates.

Weighting

20%

Assessment Criteria
The Portfolio will be evaluated according to the clarity, relevance, and quality of the consistent contributions documented in a diary/journal for tutorial questions and/or lab exercises each week. Lab exercises recorded in the Portfolio will account for 20% of the total assessment. Further details regarding the assessment criteria are available on the unit Moodle website.

Referencing Style
Harvard (author-date)

Submission
Online

Submission Instructions
The assignment must be submitted online in Moodle.

Learning Outcomes Assessed
- Analyse business and technical requirements to create plans and designs for enterprise networks
- Design networks comprising a range of technologies, including on-premise, wireless and cloud
- Apply industry-grade tools and techniques when designing, deploying and managing networks, including automation, remote access and high availability.

3 Written Assessment

Assessment Title
The Final Report of Comprehensive Network Design (Group Assessment)

Task Description
In this group assessment task, building upon your initial network design from Assessment 1, you will perform an extended network design that incorporates optimization, justification, and security strategies to enhance the network robustness. Working collaboratively with your team (3 to 4 members), you must deliver a comprehensive report, detailing both teamwork and individual contributions to the network design within the specified scenario. While this assessment task is a group assignment, you are required to submit your work individually; failure to do so will result in a zero mark.
Additional information regarding this assessment task are available in the Assessment 3 specifications on the Moodle unit website.
AI ASSESSMENT SCALE - AI PLANNING
You may use AI for planning, idea development, and research. Your final submission should show how you have developed and refined these ideas.

Assessment Due Date
Exam Week Monday (12 Oct 2026) 11:45 pm AEST
Late submissions are subject to the university's late submission penalty policies.

Return Date to Students
Assessments will be returned on the Certification date.

Weighting
50%

Assessment Criteria
You will be evaluated based on your group report, which involves designing a network that includes both on-premise and cloud-based solutions for the given scenario. This should demonstrate the knowledge and skills gained from this and previous units. The two components, teamwork and individual contributions, will be assessed separately, as outlined in the provided marking criteria.
For further details on the assessment requirements, please refer to the Assessment 3 specifications available on the Moodle unit website.

Referencing Style
Harvard (author-date)

Submission
Online

Submission Instructions
The assignment must be submitted online in Moodle.

Learning Outcomes Assessed
- Justify the selection of network technologies when there are conflicting requirements, such as cost, performance, security and business goals
- Design networks comprising a range of technologies, including on-premise, wireless and cloud
- Apply industry-grade tools and techniques when designing, deploying and managing networks, including

automation, remote access and high availability.

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the Student Academic Integrity Policy and Procedure. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?

A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?

A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?

For academic advice and guidance, the Academic Learning Centre (ALC) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?

Be Honest
If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

Seek Help
If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

Produce Original Work
Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem