Next Generation Higher National Unit Grading Pack

Higher National Diploma Networking and Cloud Infrastructure

Qualification code: GV21 48

This qualification is available in a restricted delivery model from academic session 2025

This grading pack provides information about the process of grading the Higher National Diploma (HND) Networking and Cloud Infrastructure. It is for lecturers and assessors, and contains all the mandatory information you need to grade the HND.

You must read it alongside the Educator Guide.

Contents

Approach to grading

Grading in Next Generation: Higher National (NextGen: HN) Qualifications produces a valid and reliable record of a learner's level of achievement across the breadth of the qualification content.

As well as grading the whole qualification, you assess individual units on a pass or fail basis. Each unit has evidence requirements that learners must achieve before you can consider them for whole-qualification grading.

Whole-qualification grade outcomes

Learners who pass NextGen: HN Qualifications receive one of the following grade outcomes for the qualification as a whole:

- Achieved with Distinction
- Achieved with Merit
- Achieved

To determine a learner's whole-qualification grade, you use the grading matrix to assess and judge their performance across the key aspects of the HND. You must align your judgements with the following whole-qualification grade descriptors.

Whole-qualification grade descriptors

Achieved with Distinction

The learner has achieved an excellent standard across the course content, going significantly beyond meeting the qualification requirements. They showed a comprehensive knowledge and understanding of course concepts and principles, and consistently used them to apply skills to complete high-quality work. They engaged significantly with the process of developing their meta-skills in the context of their HN Qualification.

Achieved with Merit

The learner has achieved a very good standard across the course content, going beyond meeting the qualification requirements. They showed a very good knowledge and understanding of course concepts and principles, and consistently used them to apply skills to complete work of a standard above that expected for an Achieved grade. They actively engaged with the process of developing their meta-skills in the context of their HN Qualification.

Achieved

The learner has achieved a good standard across the course content, credibly meeting the qualification requirements. They showed a good knowledge and understanding of course concepts and principles, and used them to apply skills to complete work of the required standard. They engaged with the process of developing their meta-skills in the context of their HN Qualification.

What the whole-qualification grade descriptors do and how they are used

The whole-qualification grade descriptors outline the skills, knowledge and understanding a learner needs to show across the whole qualification to achieve that specific grade. They align with the Scottish Credit and Qualifications Framework (SCQF) level descriptors.

NextGen: HND qualifications are at SCQF level 8. Learners who complete a NextGen: HND can:

- convey an insightful understanding of the subject's core theories, concepts and principles, along with its scope and defining features
- apply skills, knowledge and understanding of the subject in relevant practical and professional contexts, showing some specialist knowledge and using a range of relevant techniques and materials
- describe and explain significant topical issues and specific areas of interest

- exercise autonomy and initiative in carrying out activities, and have developed their professional practice and behaviours relevant to the context of the qualification
- formulate and critically evaluate evidence-based responses to issues in the context of the subject area, appropriately applying research and academic processes

Please use this information, as well as the whole-qualification grade descriptors, to help you understand the standard at which learners should be assessed and graded.

Higher education institutes (HEIs) can use the grade descriptors to set admissions requirements, and employers can use them to help make decisions during a recruitment process.

SQA's quality assurance teams use the grade descriptors and the grading matrix to ensure that grades awarded in a particular NextGen: HN Qualification are at a consistent national standard, regardless of the setting in which they are achieved.

Successful learners receive their grade, along with the grade descriptor, on their certificate.

Using the grading matrix

You must use the grading matrix to judge the learner's whole-qualification grade. You can use the grading matrix at any time, but you only make a whole-qualification grading judgement when you are confident the learner has met all the evidence requirements of all the required units.

The criteria in the grading matrix reflect the knowledge, skills and qualities HEIs and employers can expect of a learner who has completed the qualification. These criteria align with the overall purpose of the qualification, and remain the same for its duration.

Each criterion has sector-specific descriptors of a typical learner's performance standard, aligned to the whole-qualification grade outcomes of Achieved, Achieved with Merit and Achieved with Distinction. These descriptors describe the standard a learner of that whole-qualification grade is expected to show.

The guidance accompanying each criterion can include, but is not limited to, information on:

- relevant types of assessment that may produce useful or meaningful evidence for judging that criterion
- mapping to content that is particularly relevant to that criterion
- mapping to meta-skills

This guidance may be updated over time.

When you make your final grading judgement, you must use a 'best fit' approach based on the learner's achievement across the grading matrix. This may be straightforward — for example, if the learner's evidence shows a consistent standard across the grading matrix criteria. If it is not straightforward, you must make a 'best fit' judgement — for example, if a learner shows a mix of standards across the grading matrix criteria, with no clear pattern. The criteria may not always have equal value. You can decide some are more important to the final grade than others.

Meta-skills

Meta-skills are a key part of NextGen: HN Qualifications and learners can develop them throughout the qualification. A learner's engagement with developing their own meta-skills contributes to their qualification grade. You do not assess or grade competence or progress in individual meta-skills — for example, by judging the quality of a learner's feeling or creativity. Instead, you look at the process of development learners go through. This means learners need to provide evidence of planning, developing and reflecting on their meta-skills.

If qualification content also contributes to meta-skills development, it contributes to a learner's whole-qualification grading through the grading matrix approach.

Learning for Sustainability

Learning for Sustainability does not contribute to a learner's qualification grade.

If qualification content is also Learning for Sustainability content, it does contribute to a learner's whole-qualification grade through the grading matrix approach.

Grading matrix

Criterion 1 descriptors

Criterion 1	Achieved	Merit	Distinction
Demonstrate knowledge of enterprise infrastructure concepts and technologies	The learner describes, in basic terms: • the types, benefits, and challenges of enterprise networks, such as local area networks (LANs), wide area networks (WANs), and cloud networks • the components of enterprise networks, such as routers, switches, firewalls, and wireless access points	The learner provides clear explanations of: • the types, benefits, and challenges of enterprise networks, such as LANs, WANs, and cloud networks • the function of components of enterprise networks, such as routers, switches, firewalls, and wireless access points • the protocols, and standards of enterprise networks, such as ethernet, TCP/IP, VPN, and SD-WAN	The learner provides detailed, clear explanations of: • the types, benefits, and challenges of enterprise networks, such as LANs, WANs, and cloud networks • the role of components of enterprise networks, such as routers, switches, firewalls, and wireless access points • the protocols, and standards of enterprise networks, such as ethernet, TCP/IP, VPN, and SD-WAN

Criterion 1	Achieved	Merit	Distinction
Demonstrate knowledge of enterprise infrastructure concepts and technologies (continued)	The learner describes, in basic terms: • the protocols and standards of enterprise networks, such as ethernet, transmission control protocol/internet protocol (TCP/IP), virtual private network (VPN), and software-defined wide area network (SD-WAN) • security and performance issues of enterprise networks, such as encryption, authentication and firewall configuration • cloud computing models and services like infrastructure as a service (IaaS), platform as a service (PaaS), and software as a service (SaaS)	The learner provides clear explanations of: • security and performance issues of enterprise networks, such as encryption, authentication and firewall configuration • cloud computing models and services like IaaS, PaaS, SaaS • the practices of successful enterprise networking, such as network design, optimisation and automation • the concepts and principles of security, reliability, scalability, and maintainability in the context of infrastructure design and implementation	The learner provides detailed, clear explanations of: • security and performance issues of enterprise networks, such as encryption, authentication and firewall configuration • cloud computing models and services like IaaS, PaaS, SaaS • the practices of successful enterprise networking, such as network design, optimisation and automation • the concepts and principles of security, reliability, scalability, and maintainability in the context of infrastructure design and implementation

Criterion 1	Achieved	Merit	Distinction
Demonstrate knowledge of enterprise infrastructure concepts and technologies (continued)	The learner describes, in basic terms: • the practices of successful enterprise networking, such as network design, optimisation and automation • the concepts and principles of security, reliability, scalability, and maintainability in the context of infrastructure design and implementation		

Criterion 1 guidance

This criterion relates to the professional knowledge and skills that a network infrastructure engineer requires. This competence can be evidenced in the following units:

Network Infrastructure (J68T 48)

- Design and document a network including topologies, media, IP addressing, device configuration, services, and security. This provides knowledge evidence of:

  - types, benefits and challenges of enterprise networks
  - components of enterprise networks
  - network design and optimisation practices
  - concepts of reliability, scalability, and maintainability

Advanced Network Technology (J7E2 48)

- Explain network routing technologies, WAN technologies, access control, firewalls, and perform secure network builds and tests. This provides knowledge evidence of:

  - protocols and standards such as TCP/IP and SD-WAN
  - security issues such as access control and intrusion detection
  - the use of WANs and their benefits and challenges
  - principles of security in infrastructure design

Cloud Virtualisation Infrastructure (J7E3 48)

- Explain cloud computing models, build and secure cloud infrastructure, and configure containers. This provides knowledge evidence of:

    - cloud models and services like IaaS, PaaS, SaaS
    - performance and security of cloud-based enterprise networks
    - automation of infrastructure
    - scalability and portability through virtualisation and containerisation

Firewall Technology (J7E5 48)

- Configure and analyse a next-generation firewall and implement deep packet inspection, encrypted traffic handling, and redundancy. This provides knowledge evidence of:

    - firewall configuration
    - authentication and security principles
    - performance and security monitoring

Infrastructure Maintenance and Support (J7E6 48)

- Secure and maintain an enterprise network using documentation, backups, analytics, and disaster recovery. This provides knowledge evidence of:

  - security and performance practices
  - maintainability and reliability in enterprise networks
  - successful infrastructure operation and monitoring

Professional Practice in Networking and Cloud Infrastructure (J7EA 48)

- Analyse and solve a complex infrastructure problem, implement the solution, and reflect on design, implementation and sustainability. This provides knowledge evidence of:

  - network design and optimisation
  - consideration of reliability, scalability, and sustainability
  - enterprise-level network practices

Criterion 2 descriptors

Criterion 2	Achieved	Merit	Distinction
Design an infrastructure technology solution to meet client requirements	The learner: • produces basic documentation of the network design, that shows understanding of the client's requirements • demonstrates a valid approach to designing a solution that meets the client's needs and aligns with the project scope and duration • selects appropriate technologies, tools, and methods to implement a networking solution, including network devices, protocols, and standards	The learner: • produces accurate documentation of the network design that shows good understanding of the client's requirements • demonstrates a logical approach to designing a solution that meets the client's needs and aligns with the project scope and duration • selects and justifies technologies, tools, and methods appropriate to implementing a networking solution, including network devices, protocols, and standards	The learner: • produces a detailed and accurate documentation of the network design that shows sound understanding of the client's requirements • demonstrates a logical and creative approach to designing a solution that meets the client's needs and aligns fully with the project scope and duration • selects and justifies technologies, tools, and methods highly appropriate to implementing a networking solution, including network devices, protocols, standards and security measures

Criterion 2 guidance

This criterion relates to the professional knowledge and skills that an infrastructure engineer requires in practice. This competence can be evidenced in the following units:

Network Infrastructure (J68T 48)

- Design a network infrastructure including topologies, cabling, device configuration, services, IP addressing, and security measures. This provides evidence of:

  - accurate documentation of the network design, showing good understanding of the client's requirements
  - a logical approach to designing a solution
  - selecting and justifying technologies, tools, and methods (for example routers, switches, protocols, standards)

Professional Practice in Networking and Cloud Infrastructure (J7EA 48)

- Produce a fully documented and working solution to a complex network infrastructure problem, with project specification, design, and test strategy. This provides evidence of:

  - accurate documentation, showing understanding of client needs
  - a logical approach to designing a solution that aligns with the project scope
  - selecting and justifying appropriate technologies and methods as part of the design process

Advanced Network Technology (J7E2 48)

- Plan, build and test a network to meet a given brief, including routing, security, and WAN technologies. This provides evidence of:

  - a logical approach to designing a solution
  - selecting and justifying technologies (for example routing protocols, firewalls, tunnelling, access control)

Cloud Virtualisation Infrastructure (J7E3 48)

- Build cloud-based network infrastructure with security, storage, and access control. This provides evidence of:

  - selecting and justifying technologies (for example cloud services, access controls, automation tools)
  - documenting a network configuration that reflects a given problem brief

Criterion 3 descriptors

Criterion 3	Achieved	Merit	Distinction
Demonstrate practical competence in the implementation of an infrastructure technology solution	The learner: • demonstrates basic technical skills and competencies required to configure and test the network design, including routing, troubleshooting, and debugging • implements basic server configurations and virtual machines (VMs) in a cloud environment • follows defined procedures for system backup and recovery	The learner: • demonstrates a range of technical skills and competencies to configure and test the network design, including routing, troubleshooting, coding and debugging • manages VMs using a virtualisation platform • automates system backup tasks using scripts or playbooks	The learner: • demonstrates a wide range of high-level technical skills and competencies to configure and test the network design, such as routing, troubleshooting, coding and debugging • manages VMs and configures load balancing using a virtualisation platform • architects a backup and disaster recovery system

Criterion 3 guidance

This criterion relates to the professional knowledge and skills that a network infrastructure engineer requires. This competence can be evidenced in the following units:

Network Infrastructure (J68T 48)

- Implement and troubleshoot a network design, including routers, IP addressing, access points, and secure services. Test the network and maintain it. This provides evidence of technical skills to configure and test the network, including routing and troubleshooting.

Advanced Network Technology (J7E2 48)

- Build and test a network, including static and dynamic routing, WAN technology, access control lists (ACLs), secure network address translation (NAT), tunnelling, and firewall configuration. This provides evidence of:

  - skills in routing, testing, and troubleshooting
  - creating network configuration scripts (coding) and debugging and testing network functions

Cloud Virtualisation Infrastructure (J7E3 48)

- Configure virtual private clouds (VPCs), build compute instances, manage access control, and automate deployment using yet another markup language (YAML) and JavaScript Object Notation (JSON). This provides evidence of:

  o managing VMs using a virtualisation platform (for example cloud instances)

  o automating system tasks using templates or scripts (YAML/JSON)

  o troubleshooting cloud network components

DevOps Principles in Practice (J897 48)

- Create a continuous integration (CI) and continuous delivery/deployment (CD) pipeline, implement infrastructure as code (IaC), deploy containers, and automate a build and test. This provides evidence of:

  o automating backup and deployment tasks using scripts or configuration files (IaC)

  o debugging and configuration of CI/CD systems

  o using version control and scripting tools to configure environments

Network Server Operating Systems (J7E9 48)

- Install and manage server operating systems (OS), configure users and groups, and perform secure backups and restorations. This provides evidence of:

  o managing VMs or physical servers

- configuring server features and performing troubleshooting tasks
- automating secure backup and restoration tasks

Infrastructure Maintenance and Support (J7E6 48)

- Secure and support a network, implement disaster recovery, archive configuration files, and monitor network performance. This provides evidence of:

  - automating backups and archiving tasks using scripts or tools
  - troubleshooting and performance analysis skills

Criterion 4 descriptors

Criterion 4	Achieved	Merit	Distinction
Implement systematic approaches to plan, test, validate, monitor and manage infrastructure solutions	The learner: • provides a project plan that outlines the objectives, scope, deliverables, timeline, budget, and risks of their infrastructure solution • performs basic testing on individual network components • validates that network functionality meets minimum requirements • selects appropriate tools and methods to monitor and troubleshoot network performance and availability • selects and applies appropriate tools and methods to support basic optimisation of network performance, availability, and security	The learner: • provides a clear project plan that describes the objectives, scope, deliverables, timeline, and budget of their infrastructure solution • executes integration and system testing based on test plans • uses tools to validate network performance under load • selects and justifies appropriate tools and methods to monitor and troubleshoot network performance and availability	The learner: • provides a clear and detailed project plan that outlines the objectives, scope, deliverables, timeline, budget, and risks of their infrastructure solution • automates integration and system testing • models network system behaviour under varied conditions through simulation • selects and justifies the most appropriate tools and methods to monitor and troubleshoot network performance and availability

Criterion 4	Achieved	Merit	Distinction
Implement systematic approaches to plan, test, validate, monitor and manage infrastructure solutions (continued)	The learner: • documents and communicates their network evaluation processes and outcomes, using diagrams, specifications, and reports • checks system logs and event data on a regular schedule • monitors basic infrastructure metrics like uptime and resource usage	The learner: • consistently applies suitable tools and techniques to enhance performance, availability, and security, demonstrating effective monitoring and management • documents and communicates their network evaluation processes and outcomes, using clear diagrams, specifications, and reports • queries log data to investigate user activities and system events • correlates metrics with issues to diagnose problems	The learner: • critically evaluates and integrates advanced tools and methods to optimise performance, maximise availability, and strengthen security, while anticipating and mitigating potential risks • documents and communicates their network evaluation processes and outcomes, using clear and accurate diagrams, specifications, and reports • aggregates data from across systems to discover operational trends and anomalies • develops custom analytics dashboards and insightful visualisations

Criterion 4 guidance

This criterion relates to the professional knowledge and skills that a network infrastructure engineer requires. This competence can be evidenced in the following units:

Professional Practice in Networking and Cloud Infrastructure (J7EA 48)

- Produce a project plan detailing objectives, scope, timeline and deliverables. Implement and test a solution, document evaluation with reports and diagrams, and present findings to a client. This provides evidence of:

  o providing a clear project plan

  o executing integration and system testing based on test plans and documents

  o communicating network evaluation processes

Network Infrastructure (J68T 48)

- Design and implement a network, perform testing and troubleshooting, and maintain and document the solution. This provides evidence of:

  o executing integration and system testing

  o selecting and justifying appropriate tools and methods for troubleshooting

  o documenting evaluation in the form of diagrams and specifications

  o optimising and securing the network based on testing and configuration

Advanced Network Technology (J7E2 48)

- Test a complex routed network and use monitoring and troubleshooting techniques, and assess capacity and risks. This provides evidence of:

  o using tools to validate network performance under load

  o selecting and justifying monitoring and optimisation tools

  o correlating metrics with issues to diagnose problems

Infrastructure Maintenance and Support (J7E6 48)

- Analyse and secure a network using tools for performance monitoring and documentation, and perform disaster recovery. This provides evidence of:

  o querying log data to investigate events

  o correlating metrics and problems through monitoring tools

  o using documentation to support troubleshooting and optimisation

Firewall Technology (J7E5 48)

- Produce threat and traffic reports, interpret logs, apply security rules, and analyse configuration logs. This provides evidence of:

  o querying log data to investigate system events and user activities

  o correlating traffic metrics with security and performance issues

DevOps Principles in Practice (J897 48)

- Use telemetry and logs to monitor deployed systems, validate performance, and identify issues in CI/CD pipelines. This provides evidence of:

    o using tools to validate performance under load (CI/CD environment)
    o querying and correlating logs and metrics
    o documenting monitoring and troubleshooting activities

Criterion 5 descriptors

Criterion 5	Achieved	Merit	Distinction
Demonstrate understanding of security, reliability, scalability, and maintainability concerns in creating infrastructure solutions	The learner: • identifies potential threats, risks, and challenges that affect the security, reliability, scalability, and maintainability of infrastructure solutions • selects and applies appropriate techniques and tools to address security, reliability, scalability, and maintainability concerns in their infrastructure solutions • provides a basic comparison of the trade-offs and benefits of different solutions in terms of security, reliability, scalability, and maintainability	The learner: • identifies and analyses potential threats, risks, and challenges that affect the security, reliability, scalability, and maintainability of infrastructure solutions • selects, justifies and applies appropriate techniques and tools to address the security, reliability, scalability, and maintainability concerns in their infrastructure solutions • evaluates the trade-offs and benefits of different solutions in terms of security, reliability, scalability, and maintainability	The learner: • identifies, analyses and documents potential threats, risks, and challenges that affect the security, reliability, scalability, and maintainability of infrastructure solutions • selects, justifies and applies appropriate strategies, techniques and tools to address the security, reliability, scalability, and maintainability concerns in their infrastructure solutions

Criterion 5	Achieved	Merit	Distinction
Demonstrate understanding of security, reliability, scalability, and maintainability concerns in creating infrastructure solutions (continued)	The learner: • implements basic hardening of a server to improve security • provides extra capacity in their network solution to allow for some scalability • performs routine maintenance based on schedules	The learner: • develops a layered security plan for a server that includes tools and policies • designs a modular, distributed system that could scale horizontally • automates routine maintenance tasks to improve maintainability	The learner: • evaluates the trade-offs and benefits of different solutions in terms of security, reliability, scalability, and maintainability and compares their performance • develops a zero-trust and defence-in-depth security plan for a server • engineers a fault-tolerant network solution with redundancy at all layers • plans ongoing maintenance and lifecycle management

Criterion 5 guidance

This competence relates to the professional knowledge and skills that a network infrastructure engineer requires. This competence can be evidenced in the following units:

Network Infrastructure (J68T 48)

- Design, secure, and maintain a network, including firewalls, DMZs, IP addressing, and documentation. Implement access control and troubleshooting. This provides evidence of:

  o identifying and addressing threats to security and reliability

  o selecting and applying tools (for example access control, firewall) to support security and scalability

  o evaluating trade-offs (for example secure zones versus performance)

  o applying layered security (host, device, firewall) and documenting maintainability features such as monitoring and access control

Advanced Network Technology (J7E2 48)

- Plan and test a routed and secured network using dynamic routing, tunnelling, firewalls, DMZ, and access control. This provides evidence of:

  o identifying threats and risks (intrusion, routing failures, segmentation issues)

  o selecting and justifying security and reliability tools (for example ACLs, NAT, traffic shaping)

- o   evaluating different routing and access strategies (trade-offs and benefits)
- o   implementing modular network elements (segmented LANs, routing domains)

Cloud Virtualisation Infrastructure (J7E3 48)

- Design and implement scalable cloud infrastructure using IaaS and PaaS, configure access control and automate using YAML/JSON. This provides evidence of:

  - o   designing a distributed, scalable system (horizontal scaling in cloud)
  - o   automating routine maintenance (for example deployment, scaling)
  - o   addressing security and reliability through AWS Identity and Access Management (IAM) and security groups
  - o   selecting tools to support cloud maintainability (for example templates, cloud logging)

Infrastructure Maintenance and Support (J7E6 48)

- Apply backup strategies, failover configuration, device patching, security auditing, and documentation. This provides evidence of:

  - o   addressing maintainability and reliability (for example backup policy, rollback plans)
  - o   selecting and justifying tools to mitigate threats (for example device security, compliance checks)
  - o   evaluating trade-offs in backup types or failover models

Firewall Technology (J7E5 48)

- Configure next-gen firewall rules, deep packet inspection and redundancy, and generate threat reports. This provides evidence of:

  - developing a layered security plan (rule sets, policies, firewall protection)
  - evaluating firewall configurations (for example inspection depth versus performance impact)
  - identifying security threats and applying protective configurations

J897 48 DevOps Principles in Practice

- Automate infrastructure with IaC, implement containerisation, monitor services and configure CI/CD pipelines. This provides evidence of:

  - automating routine maintenance tasks (for example updates, deployments)
  - selecting scalable and reliable deployment tools (for example containers, IaC)
  - evaluating toolchains in terms of reliability and maintainability

Criterion 6 descriptors

Criterion 6	Achieved	Merit	Distinction
Demonstrate teamworking by collaborating with others to produce a solution to a problem, sharing findings and insights and contributing to a shared goal	The learner: • communicates effectively with team members, using appropriate channels, tools, and language • contributes actively to the team's tasks and decisions by sharing ideas, knowledge, and skills • collaborates with team members, by giving and receiving feedback, and contributing to solutions • reflects on their own and their team's performance, strengths, and weaknesses, and identifies areas for improvement	The learner: • communicates effectively and respectfully with team members, using appropriate channels, tools, and language • contributes actively and constructively to the team's tasks, goals, and decisions by sharing ideas, knowledge, and skills • collaborates creatively with team members, by giving and receiving feedback and generating solutions • reflects on their own and their team's performance, strengths, and weaknesses, and identifies actions for improvement	The learner: • communicates with their team members at a high standard, using appropriate channels, tools and language, demonstrates leadership in the team's communication efforts, ensures clarity across the team, and resolves misunderstandings constructively • demonstrates leadership in contributing actively and constructively to the team's tasks, goals, and decisions, by sharing ideas, knowledge, and skills

Criterion 6	Achieved	Merit	Distinction
Demonstrate teamworking by collaborating with others to produce a solution to a problem, sharing findings and insights and contributing to a shared goal (continued)			The learner: • collaborates creatively and critically with team members, by giving and receiving feedback, resolving conflicts, and generating solutions • reflects critically on their own and their team's performance, strengths and weaknesses, and identifies and initiates actions for improvement

Criterion 6 guidance

This competence relates to the professional knowledge and skills that a network infrastructure engineer requires. This competence can be evidenced in the following units:

Professional Practice in Networking and Cloud Infrastructure (J7EA 48)

- Work collaboratively in a team to analyse, plan, design, implement, test, and present a solution. Maintain a project diary, reflect on conduct and teamwork, and complete a self-assessment of meta-skills. This provides evidence of:

  o communicating effectively and respectfully using appropriate tools (for example digital platforms, meetings)
  o contributing actively and constructively to project tasks and group deliverables
  o collaborating creatively by generating solutions and participating in team and client meetings
  o reflecting on individual and team performance, and identifying actions for improvement

This unit is the primary and most comprehensive source of evidence for this competence.

DevOps Principles in Practice (J897 48)

- Use version control systems, CI/CD pipelines, and collaboration tools such as GitHub or Azure DevOps as part of project delivery. This provides evidence of:

  o communicating and collaborating using appropriate tools (for example version control platforms, comments, branches)
  o contributing actively through code sharing, merges, and documenting shared processes
  o giving and receiving feedback through collaborative tools and pull request workflows

Criterion 7 descriptors

Criterion 7	Achieved	Merit	Distinction
Demonstrate regard for legal requirements and consideration of ethical and sustainability issues	The learner: • complies with organisational policies and guidelines in their work • identifies key legal and regulatory requirements relevant to networking and cloud infrastructure and demonstrates basic compliance • respects the rights, interests, and perspectives of different stakeholders, such as college staff, peers and other learners and seeks to balance them in a fair and inclusive manner	The learner: • evaluates the ethical implications of professional activities • applies relevant laws, standards, and ethical considerations consistently, ensuring solutions are aligned with security, privacy, and sustainability obligations • recognises and respects the rights, interests, and perspectives of different stakeholders, such as college staff, peers and other learners, and seeks to balance them in a fair and inclusive manner	The learner: • evaluates the ethical implications of professional activities and promotes ethical behaviour • demonstrates proactive compliance with legal, ethical, and sustainability standards, critically evaluating their impact and embedding best practices into infrastructure design, deployment, and management • recognises and fully respects the rights, interests, and perspectives of different stakeholders, such as college staff, peers and other learners, and seeks to balance them in a fair and inclusive manner

Criterion 7	Achieved	Merit	Distinction
Demonstrate regard for legal requirements and consideration of ethical and sustainability issues (continued)	The learner: • reflects on the ethical and social implications of their actions and decisions, and considers the potential benefits and harms for themselves, others, and the environment • applies the basic principles and practices of sustainability in their work, including reducing waste and saving energy	The learner: • evaluates and reflects on the ethical and social implications of their actions and decisions, and considers the potential benefits and harms for themselves, others, and the environment • applies the principles and a range of practices of sustainability in their work, including reducing waste and saving energy	The learner: • evaluates and critically reflects on the ethical and social implications of the actions and decisions taken by themselves and the team, and considers the potential benefits and harms for themselves, others, and the environment • effectively applies the principles and a range of practices of sustainability in their work, including reducing waste, saving energy, and promoting innovation

Criterion 7 guidance

This competence relates to the professional knowledge and skills that a network infrastructure engineer requires. This competence can be evidenced in the following units:

Professional Practice in Networking and Cloud Infrastructure (J7EA 48)

- Reflect on project conduct, team challenges, and sustainability and ethics; produce a self-assessment of meta-skills; and consider stakeholder and environmental impact in a written reflection. This provides evidence of:

  - evaluating the ethical implications of professional activities
  - recognising and respecting different stakeholders' rights and perspectives
  - evaluating the social and environmental impact of decisions
  - applying sustainability practices in solution design (for example efficient design, cloud deployment)

Digital Forensics (J7E4 48)

- Demonstrate knowledge of relevant laws and policies, confidentiality, data storage and handling, and chain of custody. This provides evidence of:

  - identifying and complying with laws, including data protection and cyber security
  - evaluating ethical implications related to digital evidence
  - understanding confidentiality and the impact of actions on others

Infrastructure Maintenance and Support (J7E6 48)

- Create a checklist for staff training on compliance and mitigation, and address configuration compliance and threat mitigation. This provides evidence of:

  - identifying and complying with relevant security and data standards
  - applying principles of cyber security and responsible handling of infrastructure risks
  - supporting system reliability and minimising harm from failures

DevOps Principles in Practice (J897 48)

- Manage infrastructure as code and demonstrate secure, repeatable practices using CI/CD. Demonstrate monitoring and issue identification, including checking for vulnerabilities. This provides evidence of:

  - identifying and applying cyber security standards
  - using ethical design principles for automation and deployment pipelines
  - applying sustainability through efficient provisioning and lightweight containerisation

Criterion 8 descriptors

Criterion 8	Achieved	Merit	Distinction
Develop meta-skills	The learner adequately engages with the process of meta-skills development in the context of the qualification by: • carrying out self-assessment of meta-skills, giving reasons for ratings or judgements made • setting clear and measurable goals, plus action strategies to develop meta-skills in all three categories • using reflective practice strategies to track progress and analyse the links between course activities, experiences and meta-skills development	The learner demonstrates a clear commitment to the process of meta-skills development in the context of the qualification by: • carrying out self-assessment of meta-skills, giving some insightful reasons for ratings or judgements made • setting clear and measurable goals, plus action strategies to develop meta-skills in all three categories • using reflective practice strategies to track progress and demonstrate some insight into the impact of their course activities and experiences on their meta-skills development	The learner demonstrates strong commitment to the process of meta-skills development in the context of the qualification by: • carrying out self-assessment of meta-skills, giving some insightful reasons for ratings or judgements made • setting clear and measurable goals, plus action strategies to develop meta-skills in all three categories, and updating these as required • using reflective practice strategies very effectively to track progress and demonstrate insight into the impact of their course activities and experiences on their meta-skills development

Criterion 8 guidance

Practitioners must make this judgement alongside the separate meta-skills assessment guidance. This guidance details the expectations of the learner's engagement with meta-skills in the context of their particular qualification.

Competence in individual meta-skills is not being judged here, for example the quality of a learner's feeling or creativity. Rather, it is the process of development the learner goes through — planning, developing, and reflecting — that should be evidenced and assessed.

Although a meta-skills outcome is located in one unit, evidence of meta-skills development can be gathered from any activity at any time during the course. For meaningful reflection to take place, the process of meta-skills development should happen continually throughout the course. The range of contexts in which this can happen is very wide, and dependent on the sector, as well as individual preferences. Each unit signposts opportunities for meta-skills development.

Additional grading guidance

Grading model

The competence criteria reflect the academic, technical, and professional skills and behaviours learners should demonstrate in their performance in this qualification. The competence criteria are described in generic terms, so you can apply them regardless of which optional units a learner completes. This allows you to use evidence from any mandatory or optional unit when evaluating the competencies, as indicated in the grading matrix.

Each criterion has a grading matrix entry with performance statements at three levels in the form of a rubric that will help you evaluate and grade consistently. There is separate guidance on grading the meta-skills competence criterion in [Meta-skills — assessment and grading information for centres](#).

When grading an individual criterion, you should refer to the grading matrix, which identifies where you are most likely to find relevant evidence across the course units. You should determine which rubric statement best reflects the quality and depth of the learner's submitted evidence for each contributing unit. Where multiple units contribute to a single criterion (for example 'Design an infrastructure technology solution to meet client requirements'), you should use the highest level of performance demonstrated in any unit to inform the grade. For instance, if the evidence for Unit A indicates that the learner 'produces basic documentation of the network design, that shows an understanding of the client's requirements' while the evidence for Unit C shows that the learner 'produces a detailed and accurate documentation of the network design that shows a sound understanding of the client's requirements', then the evidence from Unit C should be applied in forming a grade judgement for this criterion. We have provided a more complete example for the criterion below. For this example, you would assign a grade of Merit to the criterion:

Criterion 2	Achieved	Merit	Distinction
Design an infrastructure technology solution to meet client requirements	The learner: • produces basic documentation of the network design, that shows understanding of the client's requirements **[Unit A]** • demonstrates a valid approach to designing a solution that meets the client's needs and aligns with the project scope and duration • selects appropriate technologies, tools, and methods to implement a networking solution, including network devices, protocols, and standards	The learner: • produces accurate documentation of the network design that shows good understanding of the client's requirements **[Unit B]** • demonstrates a logical approach to designing a solution that meets the client's needs and aligns with the project scope and duration **[Unit B and Unit C]** • selects and justifies technologies, tools, and methods appropriate to implementing a networking solution, including network devices, protocols, and standards **[Unit B and Unit C]**	The learner: • produces a detailed and accurate documentation of the network design that shows sound understanding of the client's requirements **[Unit C]** • demonstrates a logical and creative approach to designing a solution that meets the client's needs and aligns fully with the project scope and duration • selects and justifies technologies, tools, and methods highly appropriate to implementing a networking solution, including network devices, protocols, standards and security measures

In the example above, while Unit C provides evidence of performance at Distinction level in one rubric, the learner evidence is mainly assessed as performing at Merit level. This includes the key aspect of this criterion, which is to design a network solution that meets the client requirements and justify the choice of technologies and tools.

The tables below illustrate the process of moving from the evidence of performance level as described in the individual rubrics to an assigned grade for each criterion. The examples are for illustrative purposes only.

The process will require the exercise of your professional judgement, taking into account the relative contributions that each rubric makes to the key competence expressed in the criterion.

Criterion 1

Achieved	Merit	Distinction
Rubric 1 Achieved	**Rubric 1 Merit**	Rubric 1 Distinction
Rubric 2 Achieved	Rubric 2 Merit	Rubric 2 Distinction
Rubric 3 Achieved	**Rubric 3 Merit**	Rubric 3 Distinction

Assigned grade: Merit

Criterion 2

Achieved	Merit	Distinction
Rubric 1 Achieved	Rubric 1 Merit	**Rubric 1 Distinction**
Rubric 2 Achieved	**Rubric 2 Merit**	Rubric 2 Distinction
Rubric 3 Achieved	**Rubric 3 Merit**	Rubric 3 Distinction
Rubric 4 Achieved	Rubric 4 Merit	Rubric 4 Distinction

Assigned grade: Merit

Criterion 3

Achieved	Merit	Distinction
Rubric 1 Achieved	Rubric 1 Merit	Rubric 1 Distinction
Rubric 2 Achieved	Rubric 2 Merit	Rubric 2 Distinction
Rubric 3 Achieved	**Rubric 3 Merit**	Rubric 3 Distinction

Assigned grade: Achieved

Criterion 7

Achieved	Merit	Distinction
Rubric 1 Achieved	**Rubric 1 Merit**	Rubric 1 Distinction
Rubric 2 Achieved	Rubric 2 Merit	**Rubric 2 Distinction**
Rubric 3 Achieved	Rubric 3 Merit	**Rubric 3 Distinction**
Rubric 4 Achieved	**Rubric 4 Merit**	Rubric 4 Distinction

Assigned grade: Distinction

Criterion 8

Achieved	Merit	Distinction
Rubric 1 Achieved	Rubric 1 Merit	Rubric 1 Distinction
Rubric 2 Achieved	**Rubric 2 Merit**	Rubric 2 Distinction
Rubric 3 Achieved	Rubric 3 Merit	Rubric 3 Distinction

Assigned grade: Achieved

See the following example for further guidance.

Worked example of grading model

The table below illustrates the process of arriving at a final grade for a learner, adopting a holistic approach to judgement.

Criterion	Achieved	Merit	Distinction
1. Demonstrate knowledge of enterprise infrastructure concepts and technologies		Merit	
2. Design an infrastructure technology solution to meet client requirements		Merit	
3. Demonstrate practical competence in the implementation of an infrastructure technology solution		Merit	
4. Implement systematic approaches to plan, test, validate, monitor and manage infrastructure solutions	Achieved		
5. Demonstrate understanding of security, reliability, scalability, and maintainability concerns in creating infrastructure solutions	Achieved		
6. Demonstrate teamworking by collaborating with others to produce a solution to a problem, sharing findings and insights and contributing to a shared goal		Merit	
7. Demonstrate regard for legal requirements and consideration of ethical and sustainability issues			Distinction
8. Develop meta-skills		Merit	

In arriving at a final grade of Merit for this learner, you would note that they do not reach Merit level in implementing systematic approaches to testing and validation, nor in demonstrating understanding of security and maintainability concerns. However, the learner's strengths in designing and building a network solution and demonstrating knowledge and understanding of networking concepts are vital

competences for a network engineer and support the decision to award a Merit grade.

Administrative information

Published: October 2025 (version 1.0)

History of changes

Version	Description of change	Date

Please check SQA's website to ensure you are using the most up-to-date version of this guide.

If a unit is revised:

- no new centres can be approved to offer the previous version of the unit
- centres should only enter learners for the previous version of the unit if they can complete it before its finish date

For more information on NextGen: HN Qualifications please email nextgen@sqa.org.uk.