## Qualification details

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title</strong></td>
<td>New Zealand Diploma in Information Technology Technical Support (Level 5)</td>
</tr>
<tr>
<td><strong>Version</strong></td>
<td>1</td>
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<tr>
<td><strong>Qualification type</strong></td>
<td>Diploma</td>
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<tr>
<td><strong>Level</strong></td>
<td>5</td>
</tr>
<tr>
<td><strong>Credits</strong></td>
<td>120</td>
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<tr>
<td><strong>NZSCED</strong></td>
<td>029999</td>
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<tr>
<td><strong>Qualification developer</strong></td>
<td>Institute of IT Professionals New Zealand (IITP) and NZQA National Qualifications Services</td>
</tr>
<tr>
<td><strong>Next review</strong></td>
<td>December 2019</td>
</tr>
<tr>
<td><strong>Approval date</strong></td>
<td>April 2015</td>
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### Strategic purpose statement

The purpose of this qualification is to provide Aotearoa New Zealand with people who have attained a broad understanding of the core concepts and practical skills in Information Technology (IT), with a technical support focus. It will equip people for employment in roles such as computer technician, service desk or technical support, or prepare them for further study.

Graduates will have an awareness of the IT environment, appreciate the needs of users, and be able to provide IT technical support. They will also be able to operate within the applicable professional standards and practice, as part of a team, or independently with a broad level of supervision. Businesses, organisations and communities will benefit by having IT Professionals with technical support skills that will be internationally relevant.

### Graduate profile

Graduates will be able to:

**Technical skills:**
- Select, install and configure IT hardware and systems software to meet organisational requirements.
- Apply a broad operational knowledge of networking, and associated services and technologies to meet typical organisational requirements.
- Configure and administer systems and applications to meet typical organisational IT support requirements.
- Apply a broad operational knowledge of database administration to meet typical organisational data storage and retrieval requirements.
- Troubleshoot and resolve a range of common system problems using appropriate tools and procedures.
- Identify common issues related to IT security and apply a range of solutions.
- Demonstrate an operational knowledge and understanding of IT service management to meet typical organisational customer service requirements.

**Core IT skills:**
- Apply the fundamentals of information systems concepts and practice to
support and enhance organisational processes and systems.

• Apply the fundamentals of interaction design concepts and practice to enhance interface design.
• Apply the principles of software development to create simple working applications.
• Apply professional, legal, and ethical principles and practices in a socially responsible manner as an emerging IT professional.
• Apply communication, personal and interpersonal skills to enhance effectiveness in an IT role.
• Use problem-solving and decision-making techniques to provide innovative and timely Information Technology outcomes.

| Education pathway | The qualification provides a pathway to a Level 6 specialist IT qualification. This may include:
| | • New Zealand Diploma in Networking (Level 6) [Ref: 2600]
| | • New Zealand Diploma in Systems Administration (Level 6) [Ref: 2601]
| | • New Zealand Diploma in Database Administration (Level 6) [Ref: 2602]
| | • New Zealand Diploma in Information Systems with strands in Business Analysis, User Experience, IT Project Management, Information Systems Innovation (Level 6) [Ref: 2603]
| | • New Zealand Diploma in Software Development (Level 6) [Ref: 2604]
| Other intended pathways include undergraduate degree qualifications.
| This qualification may also equip learners to attempt optional industry certifications at the appropriate level and area of specialty.
| This qualification provides an education pathway from:
| • NCEA Level 2 or 3
| • New Zealand Certificate in Computing (Intermediate User) (Level 3) [Ref: 2592]
| • New Zealand Certificate in Computing (Advanced User) (Level 4) [Ref: 2593]
| • New Zealand Certificate in Information Technology Essentials (Level 4) [Ref: 2594]
| • New Zealand Certificate in Information Technology (Level 5) [Ref: 2595]
| Graduates of Ref: 2595 may be granted credit recognition toward this qualification. Please see credit transfer arrangements, below.

| Employment pathway | Graduates of this diploma will have the skills and knowledge to work in roles such as computer technician, help desk and technical support officer, and entry level network administrator, network engineer, and applications support analyst roles.

Qualification specifications

| Qualification award | This qualification may be awarded by any education organisation with an approved programme towards this qualification accredited under section 250 of the Education Act 1989.
| The graduate will be awarded the qualification by the education organisation when the accredited and approved programme has |
been successfully completed.

The formal document certifying the award of this qualification will display the full qualification title, date of award, the NZQF logo and may also include the name and/or logo of the qualification developer or programme owner or other awarding education organisation.

<table>
<thead>
<tr>
<th>Evidence requirements for assuring consistency</th>
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<tbody>
<tr>
<td>New Zealand qualifications can be obtained through different programmes, pathways, and education organisations. The process of ‘assuring national consistency of graduate outcomes’ will be coordinated by NZQA, with a focus on comparing graduates from different programmes and education organisations in relation to the qualification graduate outcomes.</td>
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<tr>
<td>All programme owners and education organisations arranging training or delivering approved programmes leading to the qualification must engage with arrangements for assuring consistency, including participating in the relevant consistency review event and covering actual and reasonable related costs.</td>
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<tr>
<td>Detailed information regarding arrangements for managing consistency will be published and updated via the NZQA website. For more information, please visit: <a href="http://www.nzqa.govt.nz/providers-partners/consistency-of-graduate-outcomes/">http://www.nzqa.govt.nz/providers-partners/consistency-of-graduate-outcomes/</a> and download the guidelines.</td>
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**Evidence for consistency**

Each education organisation is responsible for preparing a summary self-assessment report which uses evidence to demonstrate how well its graduates meet the graduate profile outcomes at the appropriate threshold. Each education organisation decides what specific evidence it will provide.

The core evidence requirements for assuring consistency **must** include:

- Effective internal and external moderation systems and processes, including results relating to graduate outcomes. This may also include evidence of meeting requirements for external industry certifications and associated consistency demands where appropriate e.g. Certified/Authorised Partner Program (such as Microsoft, CompTIA, etc.)

- Results of end-user surveys and actions taken or proposed from feedback. This includes consultation with graduates and employers to obtain destination information and end-user feedback specifically assessing the graduates against the graduate profile (e.g. employment, progression, further study)

- Samples of assessment materials and learners assessments/work (e.g. portfolios of work)

- Relevant External Evaluation and Review (EER) data, including programme/qualification completion data and course results

- Comparison of the application of credit transfer and
| Credit transfer and recognition of prior learning arrangements | Education providers must have policies and procedures in place for managing credit transfer, and assessing recognition of prior learning and recognition of current competency. These policies and procedures, and information about associated fees, must be available to the learner prior to enrolment. Information on and evidence of the application of the credit transfer and recognition of prior learning arrangements by accredited providers must be made available for benchmarking as part of the evidence requirements for assuring consistency. The New Zealand Certificate in Information Technology (Level 5) [Ref: 2595] may be recognised for credit towards this qualification. This diploma builds on Ref: 2595 and shares some outcomes which are explicitly stated in this qualification under the heading ‘Core IT skills’, while others are embedded within the technical outcomes that extend the learning beyond that in Ref: 2595. |
| Minimum standard of achievement and standards for grade endorsements | The minimum standard of achievement required for the award of the qualification will be the achievement of all the graduate outcomes in the graduate profile. There are no grade endorsements for this qualification. |
| Entry requirements (including prerequisites to meet regulatory body or legislative requirements) | There are no mandatory prerequisites for this qualification. Learners enrolling are recommended to hold one of the following qualifications, or equivalent knowledge, skills and experience. |

- NCEA Level 2 or 3
- New Zealand Certificate in Computing (Intermediate User) (Level 3) [Ref: 2592]
- New Zealand Certificate in Computing (Advanced User) (Level 4) [Ref: 2593]
- New Zealand Certificate in Information Technology Essentials
International students must have an appropriate level of English proficiency for the level at which they intend to study. Details of English language entry requirements are contained in the NZQF Programme Approval and Accreditation Rules 2013 (Appendix 2). E.g. IELTS Academic score of 5.5, with no band score lower than 5; or the New Zealand Certificate in English Language (Academic) (Level 4) [Ref: 1883].

### Qualification conditions

#### Overarching conditions relating to the qualification

<table>
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<tr>
<th>Conditions for programme structure</th>
<th>Conditions for programme context</th>
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<tr>
<td>It is recommended programmes be designed to involve experiential learning to engage the learners in the field of IT. Professional practice must be an integral part of the curriculum and delivery. It is expected that all programmes have professionalism both purposefully taught and integrated with technical content. Here, professional practice includes the 'soft skills' of communication, team work, interpersonal skills, and ethical principles. Programmes must reflect industry best practice and maintain currency with amendments to, and replacements of, relevant legislation, regulations, Australia/New Zealand standards (AS/NZS), and security responsibilities.</td>
<td>Programme design and delivery, and assessment, where applicable, will be conducted in and for the context of real or realistic organisations and/or settings; and be relevant to current and/or emerging practice. A simulated approach (such as case study) may also be appropriate for this qualification. Programmes leading to the award of this qualification must identify the context, and must justify the allocation of credits to graduate profile outcomes within the programme, in light of the requirements of the context and conditions. The graduate’s capabilities must clearly align with the definition of a Level 5 graduate on the NZQF. See the NZQF level descriptors for further information. All programmes are to be developed with Level 5 descriptors in mind – broad operational knowledge, applied to familiar and sometimes</td>
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<tr>
<td>• Current legislation and regulations can be accessed at <a href="http://legislation.govt.nz">http://legislation.govt.nz</a></td>
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<td>• Current AS/NZS standards can be accessed at <a href="http://standards.co.nz">http://standards.co.nz</a></td>
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<td>• The Information Technology Code of Practice - Guidelines of good and acceptable practice for IT professionals and organisations operating in New Zealand can be accessed at <a href="http://itp.nz/about/ethics">http://itp.nz/about/ethics</a>, as can the Code of Professional Conduct.</td>
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<tr>
<td>This qualification may build on the core learning from the New Zealand Certificate in Information Technology (Level 5) [Ref: 2595]. Programmes may embed the underpinning knowledge and skills from Ref: 2595, and learners will need to demonstrate competence for the additional skills and knowledge required to meet the requirements for this qualification.</td>
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This qualification may build on the core learning from the New Zealand Certificate in Information Technology (Level 5) [Ref: 2595]. Programmes may embed the underpinning knowledge and skills from Ref: 2595, and learners will need to demonstrate competence for the additional skills and knowledge required to meet the requirements for this qualification.
unfamiliar topics.

The scope of the programme should match requirements for IT support roles at Tier 1 and 2.

Consideration should be given to bicultural, multicultural, and gender issues when designing programmes, in relation to encouraging a greater diversity within the professional IT workforce.

Programmes may be developed based on Māori principles and values, and are intended to enable Wānanga to meet obligations under the Education Act (1989, section 162(4)(b)(iv)).

Other conditions

Some outcomes include embedded learning from the New Zealand Certificate in Information Technology (Level 5) [Ref: 2595] but the final graduate must clearly align with the graduate profile outcomes of this qualification.

Some programme content could also be aligned with industry certifications.

There is a preference for including open and vendor neutral standards, protocols and technologies where possible.

Glossary:

- **Addressing**: any device connected to a computer network must have an identifier such as an IP (Internet Protocol) address allocated to support/enable connectivity. The process of allocating such addresses is referred to as ‘addressing’

- **Command Line Interface (CLI)** — is a basic computer software interface which enables a user (most often a technician, programmer, or administrator) to enter commands by typing text, rather than via mouse interaction. This is often used to communicate directly with the operating system where operator speed and efficiency is desired, but requires more skill to use than a GUI, as the user needs to understand language commands and syntax.

- **Cloud services** — a cloud service is the general term for the delivery of hosted services provided over the Internet, rather than maintaining infrastructure. Clouds can be classified as public (external to an organisation and accessed over the internet), private (owned by the organisation using the resources, and accessed via an intranet) or hybrid (a mix of public and private). Cloud computing employs remote servers that allow centralized data storage and shared access to computer services or resources to meet needs, without capital expenditure for infrastructures.

- **Database Management System (DBMS)** – a program (or suite of programs) that enables users to create, store, modify, access and extract data from a data repository, commonly referred to as a database. The DBMS has many features including multi-user access/updates, control of data redundancy, maintenance of data security and integrity, audit trails, and transaction processing.

- **Graphical User Interface (GUI)** – is a computer interface using windows, icons, menus (rather than just text). Functions are activated via mouse movements and clicks, rather than by just typing text in a command line interface (CLI)

- **Integrated development environment (IDE)** – is a programming
environment that has been packaged as a tool to facilitate application development. It often comprises a syntax-aware text editor, compiler/interpreter, run-time environment, and a debugging tool.

- Information Technology (IT) – the common term for the entire spectrum of technologies for information processing and related to computing technology, such as networking, hardware, software, the internet or the people that work these technologies

- Local area network (LAN) – is a computer network that interconnects computers within a limited area such as home, school, or office

- Networking: a computer or data network; the study and application of technical knowledge and skill to design, build, support, and manage infrastructure to connect computing devices which enables resource sharing and exchange of data

- Tier 1 (IT Support): the initial support level responsible for handling basic customer IT issues and a general understanding or product and services

- Tier 2 (IT Support): more in-depth technical support, these specialists have more experience and knowledge and can assist Tier 1 with basic technical problems and investigate elevated, more complex, issues

- User experience (Ux) – the overall experience of a person using a particular product, system or service such as a website or computer application, especially in terms of how easy or pleasing it is to use.

- Virtualisation: the act of creating a ‘simulated’ rather than ‘real’ version of something, such as server, storage device or network resource. For example, a single server may host multiple different operating systems, which appear to users as separate machines (i.e. virtual machines)

- Wide area network (WAN) – is a computer network that covers a broad area using media such as telephone lines, fibre-optic cable, microwaves, or radio waves, to span large distances such as across a city, or around the world.

### Specific conditions relating to the Graduate profile

<table>
<thead>
<tr>
<th>Qualification outcomes</th>
<th>Conditions</th>
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<tr>
<td><strong>Technical skills (75 credits)</strong></td>
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</table>
| 1 Select, install and configure IT hardware and systems software to meet organisational requirements | Programmes must include:  
- Common computer architecture from personal to enterprise;  
- Operating system internals, relationship between hardware and operating system;  
- General purpose and specialist operating systems in current use, both proprietary and open source;  
- Conceptual knowledge of cloud services and virtualisation.  
- Application of the core information technology skills and knowledge underpinned in the first outcome of the New Zealand Certificate in Information Technology [Ref: 2595]. |
<table>
<thead>
<tr>
<th></th>
<th>Apply a broad operational knowledge of networking, and associated services and technologies to meet typical organisational requirements. Credits 20</th>
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</table>
|   | **Programmes must include:**  
|   | • Networking includes reference models, addressing, cabling, wireless, protocols, topologies, security, industry networking standards, LAN and WAN devices;  
|   | • Network services including name resolution, access to data, applications, printing, authentication;  
|   | • Application of the core information technology skills and knowledge underpinned in the first outcome of the New Zealand Certificate in Information Technology [Ref: 2595]. |
| 3 | Configure and administer systems and applications to meet typical organisational IT support requirements. Credits 15 |
|   | **Programmes must include:**  
|   | • Hardware resources, network connectivity, systems and application software;  
|   | • Using graphical (GUI) and command line interfaces (CLI);  
|   | • Organisational requirements, which must include performance, capacity, and business continuity;  
|   | • Understanding of application types, such as standalone, client-server, peer to peer, web service, mobile;  
|   | • Application of the core information technology skills and knowledge underpinned in the first outcome of the New Zealand Certificate in Information Technology [Ref: 2595]. |
| 4 | Apply a broad operational knowledge of database administration to meet typical organisational data storage and retrieval requirements. Credits 8 |
|   | **Programmes must include:**  
|   | • Query languages;  
|   | • Database management system (DBMS) optimisation, security and backups. |
| 5 | Troubleshoot and resolve a range of common system problems using appropriate tools and procedures. Credits 8 |
| 6 | Identify common issues related to IT security and apply a range of solutions. Credits 5 |
|   | **Programmes must include common issues such as:**  
|   | • Protecting against unauthorised access;  
|   | • Auditing, logging, authentication, authorisation;  
|   | • Human behaviour that affects security. |
| 7 | Demonstrate an operational knowledge and understanding of IT service management to meet typical organisational customer service requirements. Credits 4 |
|   | **Programmes must include:**  
|   | • Application within an established framework;  
|   | • Following standard procedures when providing IT services;  
|   | • Focusing on the delivery of best services to end user. |

**Core IT skills (45 credits)**
|   | Apply the fundamentals of information systems concepts and practice to support and enhance organisational processes and systems. Credits 10 | Programmes must include core Information Systems knowledge and skills in:  
|   |   | - Business concepts – functions, structure, cultural context of business, and impact of IT on Business;  
|   |   | - Development life cycle including migrating changes through environments;  
|   |   | - Data modelling; designing and creating a simple (multiple tables) database application;  
|   |   | - User experience (Ux) and usability concepts in IT;  
|   |   | - Information management and retrieval.  
|   | Apply the fundamentals of interaction design concepts and practice to enhance interface design. Credits 5 | Programmes must include core knowledge and skills in:  
|   |   | - Basic principles of interaction design and human computer interaction (including accessibility), employing current and emerging technologies;  
|   |   | - Web design and interactivity;  
|   |   | - Basic principles of media design, including graphics, sound, video, text.  
|   | Apply the principles of software development to create simple working applications. Credits 10 | Programmes must include:  
|   |   | - Programming concepts and tools  
|   |   |   | - Number and Coding systems;  
|   |   |   | - Creating a simple single module application;  
|   |   |   | - Fundamental programming constructs and principles; syntax, logic, coding standards, debugging and testing;  
|   |   |   | - Tools - text editors and/or integrated development environments (IDEs), logic diagrams and/or pseudo code; accessing and reading technical documentation.  
|   |   | - Awareness of procedural and object oriented programming;  
|   |   | - Principles of Implementation (user testing, deployment).  
|   | Apply professional, legal, and ethical principles and practices in a socially responsible manner as an emerging IT professional. Credits 7 | Programmes must include:  
|   |   | - Professional, sustainable, socially responsible and ethical principles, accessibility and equity issues, ethical work practice;  
|   |   | - Privacy and security responsibilities, relevant legislation and industry codes of practices, and codes of conduct (e.g. IITP, health and safety, contract management);  
|   |   | - Treaty of Waitangi.  
|   | Apply communication, personal and interpersonal skills to enhance effectiveness in an IT role. Credits 8 | Programmes must include:  
|   |   | - Oral and visual presentations, research literacy, referencing, information design skills, report writing and technical writing skills.  
|   |   | - Personal and interpersonal skills, including self-management, teamwork, customer service, relationship management, social and multicultural awareness.  
<p>|   | Use problem-solving and decision making techniques to provide innovative and timely Information | Programmes must include logic, computational thinking and mathematical concepts, problem solving methods, critical thinking, abstract reasoning and systems thinking. |</p>
<table>
<thead>
<tr>
<th>Technology outcomes.</th>
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<td>Credits 5</td>
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