

Vocational Qualifications Pathway (VQP) for Cloud Computing

Area Job Level	Cloud Computing
Master Level	<i>The ICT practitioners at this level are mainly responsible for decision-making processes. They oversee the entire IT operations and strategic development direction in the organizations. The Professionals at this level are required to possess broad corporate perspective, good communication skills and in-depth technology knowledge.</i>
Relevant Job Titles	Chief Technology Officer Director of Cloud Solutions General Manager of Cloud Solutions Chief Cloud Architect
Specialist Level	<i>The ICT practitioners at this level are mainly involved in managerial processes. They may work with individual technical departments and manage those departments by applying their technical and managerial skills. The major tasks performed by the professionals at this level are to manage individual activities and project segments, and to lead the projects towards completion within the assigned budget and stipulated deadline.</i>
Relevant Job Titles	Cloud Architect Cloud Software Engineer Cloud Network Engineer Cloud Security Engineer
Practitioner Level	<i>The ICT practitioners at this level manage certain parts of technical processes depending on their subject matter expertise. The professionals at this level may be sub-degree graduates or those who possess certain work experience in the field.</i>
Relevant Job Titles	Cloud Support Engineer Junior Cloud System Analyst Junior Cloud Network Engineer
Support Level	<i>The ICT practitioners at this level provide entry-level technical operation and support functions depending on their subject matter expertise. The practitioners at this level may be S6 graduates with relevant ICT skills and knowledge or those who possess little work experience in the field.</i>
Relevant Job Titles	Computer Operator User Support Staff Technical Support Staff (TSS) Field Technician Help Desk Operator

Proposed Competency Requirements (Cloud Computing - Master Level)

Relevant Job Titles:

- Chief Technology Officer / Director of Cloud Solutions / General Manager of Cloud Solutions / Chief Cloud Architect

Area of Work / Cluster Name	Major Tasks	Competency Requirements	Units of Competency (UoCs) Number	Relevant Qualification for fulfilling Competency Requirements
Cloud Infrastructure Policies and Strategies	1. Lead, define, and design cloud infrastructure strategy and approach while developing and maintaining relationships with key technical client stakeholders	<ul style="list-style-type: none"> ▪ Formulate business strategies and policies ▪ Maintain the portfolio and supply chain management with different stakeholders ▪ Formulate IT strategies and policies ▪ Review the emerging technologies and cross-functional strategy ▪ Review the ethical and social issues for IT applications ▪ Conduct solicitation process in project outsourcing ▪ Conduct source selection and/or contract development 	111201L6 111203L6 ITSWSM603A 111207L6 111208L6 111196L5 ITSWPM523A	Obtain qualification via training programmes (QF Level 6)
	2. Define and ensure best practices and compliance to development standards are upheld across teams	<ul style="list-style-type: none"> ▪ Define data governance policies and architecture principles ▪ Review and comply with organisational policies and procedures, relevant laws and regulatory 	111123L6 111205L6	

Area of Work / Cluster Name	Major Tasks	Competency Requirements	Units of Competency (UoCs) Number	Relevant Qualification for fulfilling Competency Requirements
		requirements <ul style="list-style-type: none"> ▪ Set policy to control data security and privacy 	111206L6	
Planning and Evaluation of requirements for Cloud Infrastructure	3. Advise internal and clients teams on technical challenges and risks, costs and benefits, and alternative solutions	<ul style="list-style-type: none"> ▪ Establish a business case for an IT investment ▪ Prepare a budget based on the IT plan ▪ Conduct solicitation planning ▪ Project the potential costs, benefits and ROI of IT project 	ITSWG617A ITSW504A 111197L5 111211L5	(Continued) Obtain qualification via training programmes (QF Level 6)
	4. Develop and map technical requirements for network infrastructure to business goals and needs	<ul style="list-style-type: none"> ▪ Identify and evaluate information technologies that support the objectives of an organisation ▪ Define metrics to ensure that a technology architecture meets the business goals ▪ Formulate IT plan 	111202L6 111127L5 111210L5	
Strategic Management	5. Overview and review work of the team (Generic Skills)	<ul style="list-style-type: none"> ▪ Lead and motivate a team ▪ Delegate responsibilities ▪ Manage changes 	ITSWG604A ITSWG606A ITSWG613A	

Proposed Competency Requirements (Cloud Computing - Specialist Level)

Relevant Job Titles:

- Cloud Architect / Cloud Software Engineer / Cloud Network Engineer / Cloud Security Engineer

Area of Work / Cluster Name	Major Tasks	Competency Requirements	Units of Competency (UoCs) Number	Relevant Qualification for fulfilling Competency Requirements
Design and administration of Cloud infrastructure	1. Design and administrate the cloud environments	<ul style="list-style-type: none"> ▪ Develop procedures to implement incident response plan ▪ Develop the micro-service architecture ▪ Define the user requirements ▪ Manage organization resources for implementation across multiple processing environment 	<p>111170L5</p> <p>111128L5</p> <p>111162L4</p> <p>111163L4</p>	Obtain qualification via training programmes (QF Level 5)
	2. Design, develop, troubleshoot, and debug software programs for enhancements and integration with Cloud solutions	<ul style="list-style-type: none"> ▪ Analyse the performance, latency and accessibility of systems ▪ Ensure operable application integration architecture is in place ▪ Manage application integration architecture life cycle 	<p>111130L4</p> <p>ITSWAR516A</p> <p>ITSWAR517A</p>	
	3. Manage system migration and upgrade to create and deploy new cloud environments	<ul style="list-style-type: none"> ▪ Define a system migration plan ▪ Perform risk assessment on system migration 	<p>111155L6</p> <p>111157L6</p>	

Area of Work / Cluster Name	Major Tasks	Competency Requirements	Units of Competency (UoCs) Number	Relevant Qualification for fulfilling Competency Requirements
Evaluation on Business needs for Cloud infrastructure	4. Perform evaluation, maintenance and installation to ensure the network and infrastructure performance meets business requirements	<ul style="list-style-type: none"> ▪ Establish a business continuity planning strategy ▪ Analyze the available solutions from IT service providers 	<p>111209L5</p> <p>111199L4</p>	Obtain qualification via training programmes (QF Level 5)
Information Security (Cloud)	5. Design security measures that would enhance the security of cloud-based environments	<ul style="list-style-type: none"> ▪ Appraise the security threats in emerging technologies ▪ Formulate data security and consent policy for emerging technologies ▪ Ensure availability, integrity and confidentiality of information systems 	<p>111182L5</p> <p>111186L5</p> <p>ITSWIS508A</p>	

Proposed Competency Requirements (Cloud Computing - Practitioner Level)

Relevant Job Titles:

- Cloud Support Engineer / Junior Cloud System Analyst / Junior Cloud Network Engineer

Area of Work / Cluster Name	Major Tasks	Competency Requirements	Units of Competency (UoCs) Number	Relevant Qualification for fulfilling Competency Requirements
System configuration, maintenance and implementation of cloud infrastructure	1. Responsible for system configuration, maintenance, and provisioning as per set parameters	<ul style="list-style-type: none"> ▪ Perform system testing against user, technical and hosting requirements ▪ Verify and validate that the deployed / migrated software and the existing software are functioning properly 	<p>111160L4</p> <p>111159L4</p>	Obtain qualification via training programmes (QF Level 4)
	2. Deploy, document, implement, and manage the cloud-based network and client network infrastructure solutions based on specific project needs	<ul style="list-style-type: none"> ▪ Prepare system operation documentation ▪ Install and configure client/server application 	<p>111200L4</p> <p>111120L4</p>	
	3. Assist in the resolution of complex technical problems, while providing appropriate communications to all involved business partners and related stakeholders	<ul style="list-style-type: none"> ▪ Apply diagnostic and troubleshooting skills to solve hardware, software and networking related issues. ▪ Analyse the performance, latency and accessibility of systems ▪ Manage organization resources for implementation across multiple processing environment 	<p>111121L4</p> <p>111130L4</p> <p>111163L4</p>	

Area of Work / Cluster Name	Major Tasks	Competency Requirements	Units of Competency (UoCs) Number	Relevant Qualification for fulfilling Competency Requirements
		<ul style="list-style-type: none"> ▪ Provide support to users 	107867L2	
Quality Assurance and information security for cloud infrastructure	4. Support the quality assurance and security compliance	<ul style="list-style-type: none"> ▪ Understand general security and network security features on various types of platforms ▪ Support and implement information security practices and procedures ▪ Ensure information security procedures and guidelines support information security policies ▪ Manage the day-to-day operations of service delivery 	<p>111195L3</p> <p>ITSWIS404A</p> <p>ITSWIS402A</p> <p>ITSWOS421A</p>	<p>(Continued)</p> <p>Obtain qualification via training programmes (QF Level 4)</p>

Proposed Competency Requirements (Cloud Computing - Support Level)

Relevant Job Titles:

- Computer Operator / User Support Staff / Technical Support Staff (TSS) / Field Technician / Help Desk Operator

Area of Work / Cluster Name	Major Tasks	Competency Requirements	Units of Competency (UoCs) Number	Relevant Qualification for fulfilling Competency Requirements
Network Support	1. Network Support	<ul style="list-style-type: none"> ▪ Install and configure client/server application ▪ Configure WAN connection ▪ Troubleshoot network issues 	<p>107882L3</p> <p>107883L3</p> <p>107884L3</p>	<p>Obtain qualification via training programmes (QF Level 3)</p> <p>Or</p> <p>RPL Mechanism (QF Level 3 RPL Cluster: ITOS010L3)</p>
Network Security Support (Technical Support)	2. Network Security Support	<ul style="list-style-type: none"> ▪ Administer basic network security ▪ Administer basic website security ▪ Administer perimeter firewall ▪ Strengthen workstation protection 	<p>107887L3</p> <p>107889L3</p> <p>107890L3</p> <p>107891L3</p>	<p>Obtain qualification via training programmes (QF Level 3)</p> <p>Or</p> <p>RPL Mechanism (QF Level 3 RPL Cluster: ITOS011L3)</p>
System Security Support	3. System Security Support	<ul style="list-style-type: none"> ▪ Create and maintain user accounts on server ▪ Configure user access control on server ▪ Administer system security 	<p>107885L2</p> <p>107886L3</p> <p>107888L3</p>	<p>Obtain qualification via training programmes (QF Level 3)</p> <p>Or</p> <p>RPL Mechanism (QF Level 3 RPL Cluster: ITOS009L3)</p>
Web Support	4. Web Support	<ul style="list-style-type: none"> ▪ Troubleshoot web browser and connection issues ▪ Maintain website performance ▪ Build simple web site using content management systems ▪ Maintain website 	<p>107909L3</p> <p>107910L3</p> <p>107911L3</p> <p>107912L3</p>	<p>Obtain qualification via training programmes (QF Level 3)</p> <p>Or</p> <p>RPL Mechanism (QF Level 3 RPL Cluster: ITOS013L3)</p>

Area of Work / Cluster Name	Major Tasks	Competency Requirements	Units of Competency (UoCs) Number	Relevant Qualification for fulfilling Competency Requirements
Operation Support (Technical Support)	5. Operation Support	<ul style="list-style-type: none"> ▪ Maintain inventories of equipment / software ▪ Restore system or file from backups ▪ Monitor server system status ▪ Provide help desk support ▪ Perform system backup ▪ Perform simple webpage update 	<p style="text-align: center;">107892L1</p> <p style="text-align: center;">107897L2</p> <p style="text-align: center;">107898L2</p> <p style="text-align: center;">107899L2</p> <p style="text-align: center;">107901L2</p> <p style="text-align: center;">107908L2</p>	<p style="text-align: center;">Obtain qualification via training programmes (QF Level 2)</p> <p style="text-align: center;">Or</p> <p style="text-align: center;">RPL Mechanism (QF Level 2 RPL Cluster: ITOS002L2)</p>