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| **SKILLS FRAMEWORK FOR INFOCOMM TECHNOLOGY SKILLS MAP – NETWORK ENGINEER** | | | | | | |
| **Sector** | Infocomm Technology | | | | | |
| **Track** | Infrastructure | | | | | |
| **Sub-track** | Build and Maintain | | | | | |
| **Occupation** | Infrastructure Engineer | | | | | |
| **Job Role** | **Network Engineer** | | | | | |
| **Job Role Description** | The Network Engineer is responsible for the design, installation, configuration and maintenance of Software Defined Network (SDN) infrastructure. His primary responsibilities include the design and build of network infrastructure components, and integrating technologies from various virtualised servers and storage vendors. He/She manages and optimises complex core networks, and configures network equipment and software to ensure alignment with defined network performance levels and security standards and regulations. He collaborates across network and orchestration teams to ensure the smooth delivery of end-to-end network slicing and automation solutions.  He is knowledgeable in the use of networking systems and devices, firewalls, wireless controls and technology, network standards including 5G, and network routing protocols. He may be required to work on a rotational on-call or shift basis.  The Network Engineer is organised with strong analytical and troubleshooting skills. He has a passion for innovation and new technologies, and is adaptable to dynamic environments. | | | | | |
| **Critical Work Functions and Key Tasks** | **Critical Work Functions** | **Key Tasks** | | | | |
| **Configure and administer networks** | Design cost-effective network systems and services that meet product specifications and comply to standards and best practices | | | | |
| Prepare and execute test plans including integration, performance, coverage and capacity verification | | | | |
| Review technical documents for processes, technology and devices | | | | |
| Designate the direction for Local Area Network (LAN) and/or Wide Area Network (WAN), internet, wireless, and remote access services | | | | |
| Validate the Software Defined Network (SDN) infrastructure within the IT ecosystem | | | | |
| Oversee the installation, upgrading, operation, control, maintenance and effective use of LAN and/or WAN for the communication of data, voice, text or images | | | | |
| Perform technical evaluation and proof-of-concept of new technologies for network infrastructure | | | | |
| Review releases, upgrades and fixes available from systems software and supplies and identify those which merit action | | | | |
| **Manage network operations and incidents** | Manage network infrastructure to ensure alignment of technical requirements | | | | |
| Provide technical inputs on the procurement of network equipment and ensure compliance with procurement policies | | | | |
| Develop the disaster recovery plan, processes and protocols for disaster recovery of network infrastructure | | | | |
| Ensure disaster recovery plan testing activities are performed and technical criteria are met | | | | |
| Perform network fault troubleshooting and root cause analysis to locate sources of network issues | | | | |
| Develop and verify recovery solutions in test environments and execute in production network | | | | |
| Implement automation workflow for the management of repeated network issues in collaboration with relevant teams | | | | |
| Plan and coordinate network security measures for network infrastructure, software and data | | | | |
| **Manage network security** | Review compliance with information security policies and standards | | | | |
| Assess configurations and security procedures for adherence to legal and regulatory requirements | | | | |
| Investigate and assess the risks of network attacks and recommend remedial action | | | | |
| Prioritise and resolve security incidents, and escalate where necessary | | | | |
| **Skills and Competencies** | **Technical Skills and Competencies** | | | **Generic Skills and Competencies** | | |
| Budgeting | | Level 3 | Problem Solving | | Advanced |
| Business Environment Analysis | | Level 3 | Service Orientation | | Intermediate |
| Business Innovation | | Level 4 | Sense Making | | Intermediate |
| Business Needs Analysis | | Level 3 | Teamwork | | Basic |
| Business Requirements Mapping | | Level 3 | Decision Making | | Basic |
| Business Risk Management | | Level 3 |  | | |
| Change Management | | Level 3 |
| Configuration Tracking | | Level 3 |
| Contract Management | | Level 3 |
| Cyber and Data Breach Incident Management | | Level 4 |
| Emerging Technology Synthesis | | Level 4 |
| Infrastructure Design | | Level 4 |
| Network Administration and Maintenance | | Level 3 |
| Network Configuration | | Level 3 |
| Network Security | | Level 4 |
| Performance Management | | Level 4 |
| Problem Management | | Level 3 |
| Process Improvement and Optimisation | | Level 3 |
| Procurement | | Level 3 |
| Security Administration | | Level 3 |
| Solution Architecture | | Level 4 |
| Stakeholder Management | | Level 3 |
| Systems Design | | Level 4 |
| Test Planning | | Level 3 |
| Vendor Management | | Level 4 |
| **Programme Listing** | For a list of Training Programmes available for the ICT sector, please visit: [www.skillsfuture.sg/skills-framework/ict](http://www.skillsfuture.sg/skills-framework/ict) | | | | | |
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| The information contained in this document serves as a guide. | | | | | | |