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| **SKILLS FRAMEWORK FOR INFOCOMM TECHNOLOGY SKILLS MAP – SOFTWARE ARCHITECT** | | | | | | |
| **Sector** | Infocomm Technology | | | | | |
| **Track** | Software and Applications/Product Development | | | | | |
| **Sub-track** | Software Engineering/Software Development | | | | | |
| **Occupation** | Enterprise Architect | | | | | |
| **Job Role** | **Software Architect** | | | | | |
| **Job Role Description** | The Software Architect analyses, designs, and develops roadmaps and implementation plans based on a current versus future state business architecture. He/She also reviews recommendations to software architectural standards for approval. He leads and facilitates the software architecture governance process based on the enterprise architecture governance structure and manages exceptions to architectural standards at a software level. He assesses near-term needs to establish business priorities and aligns architectural requirements with IT strategy. He consults with clients and IT teams on software architecture solutions and provides recommendations on emerging technology to senior management. He oversees the development of guidelines and standards to be used in software development, as well as the integration and formulation of the concepts and detailed architecture for the development of applications.  The Software Architect is imaginative and creative, drawing connections from diverse disciplines to develop application architectures and solutions. He analyse, resolve complex issues and interacts effectively with others to gain buy-in where required. | | | | | |
| **Critical Work Functions and Key Tasks** | **Critical Work Functions** | **Key Tasks** | | | | |
| **Develop architecture requirements and maintain oversight** | Analyse software architectural requirements | | | | |
| Align architectural requirements with IT strategy | | | | |
| Assess near-term needs to establish business priorities | | | | |
| Ensure compatibility with existing solutions, infrastructure, services and strategic requirements | | | | |
| Coordinate architecture implementation and modification activities | | | | |
| Assist in post-implementation and continuous improvement efforts to enhance performance and provide increased functionality | | | | |
| Ensure conceptual completeness of the technical solution | | | | |
| **Manage quality and continuous improvement of architecture** | Analyse the current architecture for weaknesses and opportunities for improvement | | | | |
| Propose variances to the architecture to accommodate project needs | | | | |
| Perform ongoing architecture quality review activities | | | | |
| **Research emerging technologies** | Consults with clients and IT teams on software architecture solutions | | | | |
| Analyses cost versus benefits, risks, impact and technology priorities | | | | |
| Provide recommendations on emerging technology to senior management | | | | |
| Develop a communication plan for software architecture | | | | |
| Lead the research and evaluation of emerging technology, industry and market trends to assist in project development | | | | |
| Identify organisational requirements for resources | | | | |
| **Manage software architecture design** | Oversee the development of guidelines and standards to be used in software development and integration | | | | |
| Formulate the conceptual and detailed architecture for the development of applications | | | | |
| Manage the software architecture governance process | | | | |
| Define transition steps and strategy from current to the future software architecture | | | | |
| Develop methods to integrate systems that interact and extend across organisational and functional lines | | | | |
| **Managing software development governance** | Develop software governance guidelines in alignment with development and business strategy | | | | |
| Establish guidelines and frameworks for development, operational, and deployment processes | | | | |
| Develop roadmaps and implementation plans based on a current versus future state | | | | |
| Design standard configurations and patterns | | | | |
| Deploy automation capabilities into the product development lifecycle | | | | |
| Monitor product team's adherence to organisational guidelines and frameworks | | | | |
| Set software coding standards and platforms to be used for the end-to-end product development process | | | | |
| **Skills and Competencies** | **Technical Skills and Competencies** | | | **Generic Skills and Competencies** | | |
| Agile Software Development\* | | Level 4 | Communication | | Intermediate |
| Applications Development\* | | Level 5 | Creative Thinking | | Intermediate |
| Applications Integration\* | | Level 5 | Decision Making | | Advanced |
| Business Requirements Mapping\* | | Level 4 | Learning Agility | | Advanced |
| Continuous Integration and Continuous Deployment\* | | Level 4 | Transdisciplinary Thinking | | Advanced |
| Enterprise Architecture\* | | Level 4 |  | | |
| Infrastructure Design\* | | Level 4 |
| Networking\* | | Level 4 |
| Quality Standards\* | | Level 5 |
| Security Architecture\* | | Level 4 |
| Software Design\* | | Level 5 |
| Software Testing\* | | Level 4 |
| Solution Architecture\* | | Level 4 |
| Stakeholder Management\* | | Level 5 |
| System Integration\* | | Level 4, Level 5 |
| Agile Coaching | | Level 4 |
| Business Environment Analysis | | Level 4 |
| Business Innovation | | Level 5 |
| Business Needs Analysis | | Level 5 |
| Business Risk Management | | Level 4 |
| Change Management | | Level 4 |
| Cloud Computing | | Level 5 |
| Data Design | | Level 4 |
| Embedded Systems Interface Design | | Level 5 |
| Emerging Technology Synthesis | | Level 5 |
| Product Management | | Level 5 |
| Project Management | | Level 4 |
| Test Planning | | Level 3, Level 4 |
| **Programme Listing** | For a list of Training Programmes available for the ICT sector, please visit: www.skillsfuture.sg/skills-framework/ict | | | | | |
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| The information contained in this document serves as a guide. | | | | | | |

\*Note: Technical Skills and Competencies (TSCs) with an asterisk (\*) refer to Priority Skills (i.e., TSCs to be prioritised for this role).