

Occupation: Information Technology Generalist		ONET Code 15-1151.00
		RAPIDS Code 1059
OCCUPATIONAL OVERVIEW		
Potential Job Titles: IT Generalist, Network Manager, Network Support Technician, Network Administrator, IT Administrator, Help Desk Specialist, IT Technician, IT Professional, IT Technical Support Professional		
Occupational Context: The IT generalist provides a large number of support functions, particularly if he or she works in a small- to medium-size company that has a small IT department with few specialist positions. IT generalists support a variety of functions that range from setting up technology for employees, to maintaining internal networks, supporting telework functions and providing help desk support. This position works with a variety of individuals, including IT colleagues, staff at all levels within an organization, external clients and vendors.		
Occupational Purpose: Maintains functioning information technology equipment and networks, provides support to technology users, ensures security of information and IT infrastructure and upholds company policies regarding use, security and redundancy of data.		
Occupational Pathways: An individual may begin an IT generalist apprenticeship having had little to no formal IT education or training; however, typically such an individual will be an IT hobbyist or enthusiast and enjoy working with technology. IT generalists can move into leader and manager positions and with additional training can specialize in particular areas within information technology. Often times vendor certifications are required to move into more specialized or advanced positions.		
Attitudes & Behaviors - IT generalists must have strong communications and customer service skills, must understand technology and be able to troubleshoot faults, must think logically and analytically, must be able to learn quickly and must be patient.		
Prerequisites for Apprenticeship:		
Certification or Licensure		
Credential	Awarding Body	Timing Before, During or After Apprenticeship
Multiple vendor certifications available	Microsoft, Cisco, CompTIA, software/hardware vendors	During or after
Trade Associations and Labor Organizations		
Size of Current Workforce: 586,000		
Number of additional job openings predicted (2014-2024): 150,500		
Median Salary (2015): \$48,620		
Job Function 1: Sets up and removes employee or client workstations or devices, including setting up access controls	Basic	
Job Function 2: Installs, provides user support for, or troubleshoots hardware and commercial software	Basic	
Job Function 3: Supports internal or external clients in the use of audio/visual technology and conference technology	Optional	
Job Function 4: Installs, maintains and troubleshoots networks	Basic	
Job Function 5: Makes minor software modifications to improve performance or customize to user needs	Intermediate	
Job Function 6: Assists in maintaining or updating web content and manages user access profiles and authorities	Optional	
Job Function 7: Monitors and helps maintain network security by adhering to security policies		

CROSS-CUTTING COMPETENCIES (These come from the Competency Model Clearinghouse)

Personal Effectiveness Competencies

	Relevance (Using Lumina Beta Credentials Framework)	0	1	2	3	4	5	6	7	8
	Interpersonal Skills			X						
	Integrity			X						
	Professionalism			X						
	Initiative		X							
	Reliability			X						
	Dependability & Reliability				X					
	Adaptability & Flexibility		X							
	Lifelong Learning				X					

Academic Competencies

	Relevance (Based on Lumina Beta Credentials Framework)	0	1	2	3	4	5	6	7	8
	Reading				X					
	Writing		X							
	Mathematics		X							
	Science & Technology			X						
	Communication			X						
	Critical & Analytical Thinking				X					
	Basic Computer Skills				X					

Workplace Competencies

	Relevance (Based on Lumina Beta Credentials Framework)	0	1	2	3	4	5	6	7	8
	Teamwork				X					
	Customer Focus				X					
	Planning & Organization		X							
	Creative Thinking			X						

	Problem Solving & Decision Making				X					
	Working with Tools & Technology				X					
	Scheduling & Coordinating			X						
	Checking, Examining & Recording				X					
	Business Fundamentals			X						
	Sustainable Practices		X							
	Health & Safety		X							

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WORK PROCESS SCHEDULE				Information		ONET Code 15-1151
Technology Generalist						
Job Title:						
Apprenticeship Type: Competency Based						
Minimum Time Requirements: This framework is designed to support an apprenticeship that lasts from 12 to 24 months, with the expectation that most apprentices will require 18 months to complete the program.						
Required Certifications: Multiple vendor-specific certifications exist, but given the speed at which IT evolves, our advisory board recommended that employers determine which certifications they require based on the scope of their work.						
JOB FUNCTION				Core/ Optional	OJT	RI
JOB FUNCTION 1: Sets up and removes employee or client workstations or devices, including setting up access controls			Core			
Sets up desktop, laptop and other devices for employees				Core		
Installs software on network or individual users' computers, laptops or devices and sets appropriate access controls or authorities				Core		
Sets up user identifications and passwords and implements policies regarding passwords and user/administrator permissions				Core		
Establishes secure external connections to network or desktops using secure remote access technology				Core		
Installs printers on networks or individual devices				Core		
Sets up network map, employee folders and centralized data repositories				Core		
Sets up email account for users and establishes storage limits and backup parameters				Core		
Maintains and manages software licenses				Core		
Removes users from network, archives data and files, removes workstations and disables devices for users exiting the organization or prohibited from using IT resources				Core		
JOB FUNCTION 2: Installs, provides user support for, or troubleshoots hardware and commercial software			Core			
Uses FAQ's or other job aids to troubleshoot hardware or software faults				Core		
Uses logic to discover source of faults and recommends appropriate solutions				Core		
Demonstrates ability to use basic software, including set-up of preferred default settings, instructs other users on the basic features of standard software packages, and identifies and remedies typical faults in relevant software packages				Core		
Identifies situations in which the fault must be escalated to a higher-level technology support individual, including an outside vendor				Core		
Contacts outside vendors or vendor-supported help desk to solve difficult problems or procure software patches				Core		
Prioritizes "tickets" or requests for help based on business need, staff hierarchy or urgency of problems				Core		
JOB FUNCTION 3: Supports internal or external clients in the use of audio/visual technology and conference technology			Optional			
Sets up and links audiovisual equipment, including projectors, screens, laptops, cameras and related devices						

Installs, launches, operates and troubleshoots software designed to facilitate presentations, web-based conferencing and audioconferencing						
Tests equipment and software prior to use to ensure sound and video quality is acceptable						
Sets up, schedules and manages web-based or video conferences						
Provides support to users during meetings, conferences or webinars						
Sets up user accounts on voice technologies or systems, including voicemail						
JOB FUNCTION 4: Installs, maintains and troubleshoots networks				Core		
Installs and maintains wired and wireless networks				Core		
Connects devices to networks physically and using remote access technologies				Core		
Installs network security software and devices and monitors system for signs of hacking, intrusion or viruses				Core		
Tests resiliency of security devices or software and monitors bandwidth utilization				Core		
Establishes and sets access levels and permissions based on employees' job roles and company policies				Core		
Assists in setting up, configuring and managing servers including data storage				Core		
Sets up user identification parameters on servers				Core		
Assists in monitoring server use, efficacy of data back-up and storage systems and integrity of redundant systems or technologies				Core		
JOB FUNCTION 5: Makes minor software modifications to improve performance or customize to user needs				Optional		
Surveys user needs to understand what modifications are needed						
Modifies a program within a software package, including securing permission from vendors to do so						
Inserts or loads organizational templates or standards into software, such as presentation templates in PowerPoint or equivalent software						
Monitors computer performance and recommends/makes upgrades or modifications as necessary to improve speed or other performance parameters						
Uses software to set up needed business functions, such as workflows, tracking, archiving or other functions						
JOB FUNCTION 6: Assists in maintaining or updating web content and manages user access profiles and authorities				Optional		
Sets user/author access permissions based on organization's policies						
Uploads new content to organization's website or removes old content as instructed						
Tests functionality of links embedded in the website						
Notifies appropriate person if incorrect, outdated or otherwise problematic content is identified						
Notifies appropriate person if website is not functioning properly						
JOB FUNCTION 7: Monitors and helps maintain network security by adhering to security policies				Core		

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Job Function 1: Sets up and removes employee or client workstations or devices, including setting up access controls		Level	Required	Optional
	RELATED INSTRUCTION			
	Working via phone, online chat or in person to set up technology at employee work stations, for remote employees, and on employee devices.			
	Skills			
	Use of email, chat rooms and phone			
	Able to communicate technical information to technical experts as well as non-technical users			
	Use of internet			
	Set up user email account, calendar and contacts			
	Agility and flexibility (if setting up physical workstations or equipment)			
	Knowledge & Understanding			
	Basic components of computers, computer networks, and ancillary technologies			
	Basic understanding of key software packages, such as email, word processing, database and workflow packages			
	Intellectual property rights, copyright, licensing and piracy laws and regulations			
	Techniques for transporting (in person or by mail/courier) computer hardware and software			
	Basic installation procedures			
	Tools & Technology			
	Microsoft Exchange			
	Microsoft Office Suite			
	Adobe products			
	Desktop and laptop computers			
	Printers, scanners, projection screens, monitors			
	Handheld devices including smart phones, tablets, etc.			
Competency 1a: Sets up desktop, laptop and other devices for employees		Basic	X	
	Performance Standards			
Competency 1b: Installs software on network or individual users' computers, laptops or devices and sets appropriate access controls or authorities		Basic	X	
	Performance Standards			
Competency 1c: Sets up user identifications and passwords and implements policies regarding passwords and user/administrator permissions		Basic	X	
	Performance Standards			
Competency 1d: Establishes secure external connections to network or desktops using secure remote access technology		Basic	X	
	Performance Standards			

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Job Function 2: Installs, provides user support for, or troubleshoots hardware and commercial software		Level	Required	Optional
	RELATED INSTRUCTION			
	SCOPE: IT generalists are expected to know the basic features of standard software packages, such as those used by the company or organization for email, word processing, working with data, creating presentations and supporting business uses (such as statistical software packages or software packages that operate machines).			
	Skills			
	Use logic to problem solve and draw connections between related pieces of information			
	Good listening skills			
	Good communication skills, including with senior executives and non-technical experts			
	Knowledge & Understanding			
	Basic features and functions of standard software packages			
	Reference materials for use in troubleshooting software, such as FAQs or technical guides			
	Specifications, default and optional settings, customization menus for standard software packages.			
	Tools & Technology			
	Software to support network functions			
	Software to support email and chat communications			
	Software to support basic office functions, such as word processing, data management, presentations, maintaining calendars and maintaining contact lists.			
	Cloud storage and software solutions			
	Competency 2a: Uses FAQ's or other job aids to troubleshoot hardware or software faults	Basic	X	
	Performance Standards			
	Competency 2b: Uses logic to discover source of faults and recommends appropriate solutions	Intermediate	X	
	Performance Standards			
	Competency 2c: Demonstrates ability to use basic software, including set-up of preferred default settings, instructs other users on the basic features of standard software packages, and identifies and remedies typical faults in relevant software packages	Basic	X	
	Performance Standards			
	Competency 2d: Identifies situations in which the fault must be escalated to a higher-level technology support individual, including an outside vendor	Basic	X	
	Performance Standards			

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Job Function 3: Supports internal or external clients in the use of audio/visual technology and conference technology (Optional)		Level	Required	Optional X
	RELATED INSTRUCTION			
	SCOPE: In some organizations, the IT staff are required to assist in setting up and running audiovisual equipment, including projectors, screens, television panels and online conferencing technologies. This work involves physical set up, such as running cables or attaching equipment to a computer or other device, and can also involve virtual technologies.			
	Skills			
	Logic and the ability to connect pieces of equipment			
	Communication			
	Meeting deadlines			
	Patience and staying calm during tense situations			
	Customer service			
	Knowledge & Understanding			
	Use of technology ports and cables to connect computers or other devices to projection screens			
	Setting up screens to receive and display desired presentations or images			
	Setting up technology to access internet or run audio/video clips			
	Use of presentation and conferencing software and devices			
	Use of voice technologies, such as phones or VOIP technologies			
	Tools & Technology			
	Presentation software			
	Conferencing software			
	Cables and connective devices			
	Telephone systems and VOIP technologies			
Optional	Competency 3a: Sets up and links audiovisual equipment, including projectors, screens, laptops, cameras and related devices			X
	Performance Standards			
Optional	Competency 3b: Installs, launches, operates and troubleshoots software designed to facilitate presentations, web-based conferencing and audioconferencing			X
	Performance Standards			
Optional	Competency 3c: Tests equipment and software prior to use to ensure sound and video quality is acceptable			X
	Performance Standards			
Optional	Competency 3d: Sets up, schedules and manages web-based or video conferences			X
	Performance Standards			

Optional	Competency 3e: Provides support to users during meetings, conferences or webinars			X
	Performance Standards			
Optional	Competency 3f: Sets up user accounts on voice technologies or systems, including voicemail			X
	Performance Standards			

Job Function 4: Installs, maintains and troubleshoots networks		Level	Required	Optional
	RELATED INSTRUCTION			
	SCOPE: Sets up, maintains and troubleshoots networks including wired and wireless networks, monitors bandwidth utilization and challenges and ensures that data is being stored properly based on company or organizational policies.			
	Skills			
	Reading and interpreting written documents			
	Linking and unlinking devices on a wired or wireless network			
	Problem solving and logic			
	Applying information learned in one instance to new situations			
	Knowledge & Understanding			
	Methods to back up, store and retrieve data			
	Network management principles			
	Basic electronics			
	Basic structure and function of networks			
	Network security protocols			
	Tools & Technology			
	Routers			
	Cables			
	Network security software such as antiviral software, firewalls, etc.			
Core	Competency 4a: Installs and maintains wired and wireless networks	Intermediate	X	
	Performance Standards			
Core	Competency 4b: Connects devices to networks physically and using remote access technologies	Basic	X	
	Performance Standards			
Core	Competency 4c: Installs network security software and devices and monitors system for signs of hacking, intrusion or viruses	Intermediate	X	
	Performance Standards			
Core	Competency 4d: Tests resiliency of security devices or software and monitors bandwidth utilization	Intermediate	X	
	Performance Standards			

Core	Competency 4e: Establishes and sets access levels and permissions based on employees' job roles and company policies	Basic	X	
	Performance Standards			
Optional	Competency 4f: Assists in setting up, configuring and managing servers including data storage	Intermediate	X	
	Performance Standards			
Optional	Competency 4g: Sets up user identification parameters on servers	Intermediate	X	
	Performance Standards			
Optional	Competency 4h: Assists in monitoring server use, efficacy of data back-up and storage systems and integrity of redundant systems or technologies	Intermediate	X	
	Performance Standards			

Job Function 5: Makes minor software modifications to improve performance or customize to user needs		Level	Required	Optional
	RELATED INSTRUCTION			
	SCOPE: Changing performance parameters, settings, or using software to set up specific functions or processes. In some settings could including writing simple code or making minor modifications to existing code to improve performance. Includes installing vendor-provided patches or updates.			
	Skills			
	Writing basic code			
	Manipulating software parameters and settings			
	Listening and interpreting, including descriptions provided by non-technical staff			
	Use of advanced features within standard and company-specific software packages			
	Logic			
	Knowledge & Understanding			
	Functionality and intended use of software			
	Implications of changing use parameters			
	Coding logic			
	Tools & Technology			
Competency 5a: Surveys user needs to understand what modifications are needed		Intermediate		X
	Performance Standards			
Competency 5b: Modifies a program within a software package, including securing permission from vendor to do so		Intermediate		X
	Performance Standards			
Competency 5c: Inserts or loads organizational templates or standards into software, such as presentation templates in PowerPoint or equivalent software		Basic	X	
	Performance Standards			
Competency 5d: Monitors computer performance and recommends/makes upgrades or modifications as necessary to improve speed or other performance parameters		Intermediate		X
	Performance Standards			

	Competency 5e: Uses software to set up needed business functions, such as workflows, tracking, archiving or other functions	Intermediate		X
	Performance Standards			

Job Function 6: Assists in maintaining or updating web content and manages user access profiles and authorities		Level	Required	Optional X
	RELATED INSTRUCTION			
	Includes uploading documents, text, video or audio files to website, assigning access levels to others to upload or modify content to the website and monitoring basic web analytics to understand utilization patterns.			
	Skills			
	Basic web design			
	Identifying and assigning permission hierarchy			
	Checking links to ensure functionality			
	Knowledge & Understanding			
	Ease of use criteria			
	Organization's policy regarding review and clearance of web information			
	Organization's policy regarding access levels			
	Tools & Technology			
	Web development software, e.g. HTML, Java, Wordpress			
	Competency 6a: Sets user/author access permissions based on organization's policies	Basic		X
	Performance Standards			
	Competency 6b: Uploads new content to organization's website or removes old content as instructed	Intermediate		X
	Performance Standards			
	Competency 6c: Tests functionality of links embedded in the website	Basic		X
	Performance Standards			
	Competency 6d: Notifies appropriate person if incorrect, outdated or otherwise problematic content is identified	Basic		X
	Performance Standards			

	Competency 6e: Notifies appropriate person if website is not functioning properly	Basic	X
	Performance Standards		

Job Function 7: Monitors and helps maintain network security by adhering to security policies		Level	Required	Optional
	RELATED INSTRUCTION			
	SCOPE: Depending upon the size of the organization, this job function could range from setting and implementing policies, to implementing software solutions, monitoring security threats to assisting others adhere to security policies. Security measures include the use of software and threat minimization and mitigation technologies, employee education, restricting web access and screening incoming email for potential threats.			
	Skills			
	Able to identify examples of security threats			
	Recommend "safe" passwords and password update protocols			
	Knowledge & Understanding			
	Current IT threats and recent security breeches (at your organization and others)			
	Current threat mitigation technologies and strategies			
	Use of access limits to minimize security risks			
	Privacy laws and limitations on the use and required protections of sensitive data			
	Tools & Technology			
	Antiviral software			
	Firewall technology			
Core	Competency 7a: Monitors adherence to password policies, including enforcement of password update intervals	Basic	X	
	Performance Standards			
Core	Competency 7b: Sets user access levels and permissions based on organizational policies	Basic	X	
	Performance Standards			
Core	Competency 7c: Monitors antiviral software to understand potential threats and updates as needed	Basic	X	
	Performance Standards			
Core	Competency 7d: Reads, attends conferences or interacts with other IT professionals to know and understand current threat levels and mechanisms	Intermediate	X	
	Performance Standards			

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Job Function 8:		OJT	RI
	Scope		
	Skills		
	Knowledge & Understanding		
	Tools & Technology		
Core or Optional	Competency 8a:		
	Performance Standards		
Core or Optional	Competency 8b:		
	Performance Standards		
Core or Optional	Competency 8c:		
	Performance Standards		
Core or Optional	Competency 8d:		
	Performance Standards		

Core or Optional	Competency 8e:		
	Performance Standards		

Job Function 9:		OJT	RI
	Scope		
	Skills		
	Knowledge & Understanding		
	Tools & Technology		
Core or Optional	Competency 9a:		
	Performance Standards		
Core or Optional	Competency 9b:		
	Performance Standards		
Core or Optional	Competency 9c:		
	Performance Standards		
Core or Optional	Competency 9d:		
	Performance Standards		

Core or Optional	Competency 9e:		
	Performance Standards		

Job Function 10:		OJT	RI
	Scope		
	Skills		
	Knowledge & Understanding		
	Tools & Technology		
Core or Optional	Competency 10a:		
	Performance Standards		
Core or Optional	Competency 10b:		
	Performance Standards		
Core or Optional	Competency 10c:		
	Performance Standards		
Core or Optional	Competency 10d:		
	Performance Standards		
Core or Optional	Competency 10e:		
	Performance Standards		
