Information Technology (IT)
Job Family Descriptors

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Application Development

Definition

Work that involves the design, documentation, development, modification, testing, installation, implementation, maintenance, and support of new or existing applications software.

Common Positions

- Applications Developer
- Software Developer
- GIS Developer
- Mobile App Developer

IT WORKER	IT USER
Using software development methods and tools to develop applications and databases for staff and/or the public to consume to perform their daily work.	Uses specialized software to perform their work (modeling tools, excel macros, PowerPoint, etc.)
Web Development: Develops user-interface (UI) design, coding, test, and implementation of application components and web services; writes re-usable code using industry, and agency standard development tools and framework.	Updates agency website content, links documents, posts pictures, monitors analytics.
Design and develop SQL databases systems for large scale data tracking, reporting, and multi-user access.	Create an Access database to track data specific to them.
Using software development methods and tools to integrate and support Custom-Off-the-Shelf (COTS) software and services. Coordinates with vendor technical staff on implementing and coordinating system upgrades and enhancements.	Utilizes "off-the-shelf" tools to perform individual tasks and functions to perform work.
Develop, test, implement, and support custom developed business application or development of custom features within an off the shelf system or proprietary application.	Implement and test configurable functionality in a business application.
Uses a combination of Geographic Information System (GIS), web programming skills and development tools to build GIS map and data services that are **created** in a web map format. The web maps are combined with other web tools that allow the user to dynamically interact with the map to search for and display the information.	Uses GIS as one of the tools in their toolbox in order to conduct the scientific or engineering investigation.
Develop mockup / prototype interaction designs, including users' interaction models, information architecture, wire frames and screen flows.	Participate as a subject matter expert in functional and user acceptance testing.

Application Development – Functional Competencies

<u>Knowledge, Skills and Abilities:</u>

• Understands existing and emerging technologies and their applicability in the software implementation environment [e.g., vendor or open source, Service Oriented Architectures (SOA)].

• Knows and considers available off-the-shelf software to make 'build or buy' decisions.

• Knows Internet standards relative to web technology development.

• Considers web technology in relation to privacy standards and Federal regulations.

• Identifies and uses tools for information management and technology product design and development.

• Ability to analyze and refine systems requirements.

• Analyzes and resolves complex problems, such as multiple product problems, dump analysis or major conflicts caused by new software version.

• Applies expert system analysis skills to maintain, monitor and troubleshoot system performance and environment.

<u>Skilled in performing one or more of the following activities:</u>

• Determines overall technical design and structure of Internet services.

• Identifies and uses modeling and simulation approaches/tools (e.g., dynamics modeling, cost benefit analysis, costing, forecasting, sourcing models—build or buy) to make decisions.

• Identifies criteria and integrates "go/no go" consideration stages into development life cycle.

• Compares benefits and limitations of open source software with vendor developed software.

• Adopts and applies systems engineering perspectives and processes to software development.

• Evaluates software quality and applicability in testing software capabilities.

• Monitors software configuration changes to anticipate and address the impact of data reliability and customer satisfaction issues.

• Tests, debugs and maintains detailed instructions (programs) for computers to follow and ensure performance of their intended functions.

• Conceives, designs and tests logical structures for solving problems by computer.

• Evaluates current collaborative web technologies and the benefits/risks associated

Application Development – Functional Competencies

with them.

• Assesses delivery strategies, web technologies, oversight and organizational implications for web-based development.

• Monitors functionality, security and integrity of Internet services.

• Troubleshoots and resolves technical problems with the design and delivery of Internet services.

• Translates systems requirements into applications prototypes; plans and designs systems architecture; writes, debugs and maintains code; and determines and designs application architecture.

• Designs user interfaces.

• Works with customers to test applications.

• Writes and maintains program documentation.

• Designs user interfaces.

• Conducts unit testing on code changes prior to release.

• Develops and maintains functionality used by software applications, including change management, security and authentication, application distribution, disaster recovery planning, support for data access, email connections, search routines, system wide configurations and reports.

• Writes and maintains computer code programs using any one of a number of languages to fulfill a particular business function.

IT Architecture

Definition

Work that involves the analysis, planning, design, implementation, documentation, assessment, governance, and management of the structural and decision making framework to align IT strategy, plans, and systems with the mission, goals, structure, and processes of the organization.

Common Positions

- Chief or Senior Enterprise Architect
- Enterprise Architect
- Information Technology Architect
- Solutions Architect

IT WORKER	IT USER
Designs and develops a solution approach to: 1) integrating with other systems, 2) securing user interactions with data, and 3) executing workflow and triggers for a technology area based on Federal, State and agency requirements.	Performs "super user" support and training functions for an agency line of business area. This could be in the form of SharePoint "super user", Office Products "super user", specialized software, "super user", etc.

IT Architecture – Functional Competencies
Knowledge, Skills and Abilities: • Demonstrates understanding of basic architecture documentation (i.e., work product) methodologies at each level of a commonly used framework. • Able to identify opportunities for improving systems that support business processes. • Able to provide guidance and support to customers and stakeholders on the use of the enterprise system. • Able to apply emerging and evolving technologies to current and future business needs at the enterprise, operational and tactical levels. • Able to identify opportunities to improve enterprise-level systems to support business processes and utilize emerging technologies. • Ensures rigorous application of information security/assurance policies, principles and practices to all components of the enterprise architecture.

IT Architecture – Functional Competencies

• Knowledge of key regulatory requirements and guidance relating to enterprise architecture.

Skilled in performing one or more of the following activities:

• Provides enterprise architecture guidance, support and coordination to customers and IT project teams.

• Documents the enterprise architecture infrastructure, including the business units and key processes, using modeling techniques.

• Ensures technical integration is achieved across the enterprise by participating in test planning, validation and reviews.

• Evaluates the impact of enterprise architecture products and services on IT investments, business operations, stakeholder satisfaction and other outcomes.

• Defines the policies and principles to guide technology decisions for the enterprise architecture.

• Coordinates and conducts governance and portfolio management activities associated with ensuring compliance with the enterprise architecture

• Analyzes, designs and implements enterprise wide IT solutions (e.g., applications, platforms, security) that align with the organization's structure, goals and systems.

• Identifies and uses various criteria (e.g., time, budget, etc.) to determine IT success and ensure alignment with stakeholder needs.

• Follows the enterprise architecture transition plan for moving from baseline business and technology operating environment to the target environment.

1. IT Business Analysis

Definition

Work that involves applying analytical processes to the planning, design, and implementation of IT systems to meet the business requirements of customer organizations. Also includes the work of translating business needs to technical requirements. These activities apply to establishing new IT systems as well as improving existing IT systems.

Common Positions

- Systems Analyst
- Business Analyst

IT WORKER	IT USER
Elicit business requirement from business stakeholders and business subject matter experts. Translate business requirements and function specs into technical requirements, review functional specifications and design documents for technical compliance against business requirements, identify gaps between functional spec and the capabilities of the technology, manage small IT business project deliverables coordinating IT resources with resource managers.	As a subject matter expert, provides business requirements, approve functional specifications and design documents, accept deliverables for business applications.
Work with product specialists, usability specialists and interaction designers to develop and iterate user interface designs based on research and usability test results.	Participates as a business user or subject matter expert on agency business projects involving the use of technology to represent the business needs of the organization. May have technical knowledge regarding the specific system or business requirement but focus of job is representing the business as the subject matter expert.
Assist in defining functional interaction requirements specifications. Also non-functional requirements (performance, availability, etc.)	
Surveys applicable technologies and reports on the strengths and weaknesses of those technologies to address the business process. Makes recommendations on the technology approach to use and identifies where new technology customizations are necessary to adapt the technology to the business needs of the organization.	

IT Business Analysis – Functional Competencies

Knowledge, Skills and Abilities:

- Able to identify stakeholders and select appropriate business analysis techniques to manage requirements and assess the progress of the work.

- Able to ensure stakeholder's actual underlying needs are understood and captured.

- Able to understand and apply the usability engineering lifecycle, particularly user-centered analysis and usability testing techniques.

- Able to assess proposed solutions to determine the best solution to meet business needs,

- Able to identify gaps and shortcomings in solutions and determine necessary workarounds or changes to the solution.

- Able to work with stakeholders to identify and understand their needs, concerns and working environment.

Skilled in performing one or more of the following activities:

- Identifies business needs, refines and clarifies the definition of that need, and defines a solution scope that can be feasibly implemented by the business.

- Prioritizes and progressively clarifies and validates stakeholder and solution requirements in order to enable the project team to implement a solution that meets the needs of the sponsoring organization and stakeholders.

- Analyzes stakeholder needs to define solutions, assesses the current state of the business to identify and recommend improvements and the verification and validation of the resulting requirements.

- Manages conflicts, issues and changes in order to ensure that stakeholders and the project team remain in agreement on the solution scope, how requirements are communicated to stakeholders and how knowledge gained by the business analyst is maintained for future use.

- Ensures the solution delivered to stakeholders meets the business need(s) for which the project was undertaken by planning and facilitating user acceptance testing.

- Uses Business Process Modeling (BPM) techniques for analyzing the 'as-is' business processes and rules in scope and then the 'to-be' processes.

- Works with the organization's approved Software Development Life Cycle (SDLC) methodology (waterfall, iterative, agile, scrum, etc.) that is applied to the project.

- Converts requirements into different types of 'models' or 'diagrams', uses Unified Modeling Language (UML), each of which describes a particular aspect of the requirements.

- Assesses deployed solutions to see how well they met the original need so the sponsoring organization can assess the performance and effectiveness of the solution

2. Customer Support

Definition

Work that involves the planning and delivery of customer support services, including installation, configuration, troubleshooting, and customer assistance for customer technology. For example: desktop computers, phone, laptops, email accounts, and video conferencing.

Common Positions

- Technical Support Specialist
- Customer Support Specialist
- Help Desk Representative
- Applications Administration

IT WORKER	IT USER
Provide technical support for business applications using IT tools such as remote desktop, configuring automated systems to deploy software updates/installations, troubleshoot application connectivity issues, create and maintain technical documentation of desktop management, create an agency standard PC image.	Provide training and business process support on business applications.
Provides technical advice and guidance relative to problems involving user interface, browser, hardware and supporting software. Troubleshoots and restores technical service and equipment troubles by analyzing, identifying and diagnosing faults and symptoms.	Initial point of contact for customers regarding IT issues. Responsible for triaging (help tickets/requests) and based upon specific criteria, processes and procedures, forwards to appropriate technical expert.
Coordinates efforts with the Help Desk to ensure all calls outside the customer environment are effectively resolved. Similar to experienced Help Desk professional, with the added responsibility of interfacing directly with external customers to the business.	

IT Customer Support – Functional Competencies

Knowledge, Skills and Abilities:

- Uses knowledge of IT principles in the practical application of methods and practices to plan, implement and coordinate services to diagnose and resolve problems, and ensure continuous service.

IT Customer Support – Functional Competencies

<u>Skilled in performing one or more of the following activities:</u>

- Performs Tier 2 or higher (complex) issue resolution for incoming help requests from end users, including installing and upgrading software, installing hardware, configuring systems and applications.

- Serves as designated application or system lead for complex problem resolution and vendor interactions.

- Creates standard PC imaging for installation on computer workstations.

- Resolves application software issues within critical systems.

- Develops metrics, critical success factors and key indicators to monitor and assess results.

- Ensures continuous customer support and contact with customer.

- Provides guidance to, and monitors customer support services provided by, paraprofessionals and/or professional staff.

- Tests and executes bug fixes in applications.

- Consults with vendors on resolutions to identified issues.

- Evaluates unusual circumstances; considering different approaches; and dealing with incomplete and conflicting data.

- Plans the work and refines the methods and techniques being used.

- Researches and evaluates new customer service management systems.

- Recommends purchase of systems where it is determined they would enhance the quality and effectiveness of the customer support program.

- Oversees implementation of new systems and services and develops training guides for customer support employees.

- Develops performance metrics to evaluate the efficiency and effectiveness of the customer support center and to apply results in increasing productivity, professionalism and improving service quality.

- Integrates metrics within existing performance measurement systems and guides customer support supervisors and managers in their application.

- Develops resource reference materials for system users (user manuals, online help pages, tutorial videos and web page content).

- Monitors system environment to identify availability and functionality issues.

- Provides system outage and status communication to users; escalates according to established procedures.

- Develops system release documentation and communication.

- Performs End User application security access maintenance.

3. Data Management

Definition

Work that involves the planning, development, implementation, designing and administration of IT systems for the acquisition, storage, and retrieval of data. This does not include business users such as research and business analyst that use data systems to compile data for analysis.

Common Positions

- Database Developer
- Database Administrator
- Business Intelligence Specialist
- Data Architect
- Data Warehouse Specialist

IT WORKER	IT USER
Take business requirements and design, develop, test, implement agency databases. Administer agency databases to include schema development, performance tuning and integration between different business applications.	Using standard or off-the-shelf COTS or SaaS data query tools, write data query scripts to extract business data from the data warehouse. Use ad-hoc data query tools to extract business data from the data warehouse.
Practices architectural techniques and tools for achieving consistent access to and delivery of data across the spectrum of data subject areas and data structure types in the enterprise, to meet the data consumption requirements of all applications and business processes.	Use options presented by the application to make configuration changes to user-oriented application behaviors.
Design, test and implement data retrieval methods (including exports, proprietary reports, and database views).	Uses MS Access, Excel or other standard database tool to manage data.
	Interact with applications, through the user interface to accomplish business tasks.

IT Data Management – Functional Competencies
Knowledge, Skills and Abilities: • Ensures rigorous application of information security/assurance policies, principles and practices in the delivery of data management services.

IT Data Management – Functional Competencies

- Ensures data recovery, maintenance, data integrity and space requirements are met for physical database through formulations of policies, procedures and standards to ensure effective data management enterprise wide.

Skilled in performing one or more of the following activities:

- Analyzes and defines data requirements and specifications to design, normalize, develop, install and implement databases and data warehouses.
- Maintains, monitors, conducts performance tuning and backup and recovery of databases.
- Installs, configures and maintains database management systems software.
- Analyzes and plans for anticipated changes in data capacity requirements.
- Develops and administers data standards, policies and procedures.
- Develops and implements data mining and data warehousing programs.
- Evaluates and provides recommendations on new database technologies and architectures.
- Conducts data modeling techniques and methodology development.
- Conducts physical schema design of table spaces, rollback segments and data files.
- Provides applications support, performance monitoring, maintaining database backup and recovery environment.
- Performs capacity planning and reporting, configures and manages cloud data services for data management and analytics.
- Provides tools and develops policies and procedures for creating and maintaining the entity data enterprise model.
- Produces entity relationship diagrams, data flow diagrams, database normalization schemata, logical to physical database mapping, data table parameters, etc.
- Supports the maintenance of metadata infrastructure.
- Coordinates database performance monitoring and tuning tasks including the design of optimization and indexing schemes.
- Design, create, test, performance tune, maintain and monitor data extract, transform and load jobs (ETL).
- Designs and documents ETL data structures, metadata and ETL routines.
- Reviews, tests and provides feedback to proposed data models and architecture relating to ETL requirements.
- Creates, tests and maintains conceptual, logical and physical models for business intelligence.
- Defines and implements enterprise information management strategy.
- Manages and maintains data model repository.
- Creates and maintains Data Definition Language used to create physical data objects.

4. IT Policy and Planning

Definition

Work that involves a wide range of IT management activities that typically extend and apply to an entire organization or major components of an organization. This includes strategic planning, capital planning and investment control, workforce planning, policy and standards development, resource management, knowledge management and auditing.

Common Positions

- Enterprise Resource Planner
- IT Policy and Planning Analyst
- IT Auditor

IT WORKER	IT USER
Plans, analyzes and leads strategic business initiatives and legislative mandates that require the development implementation and integration of technology.	Support for executive IT staff in researching, compiling data, and drafting documents for developing strategies for the use of available resources, defining departmental needs and priorities, long-range planning, and setting goals and objectives.
Works with service owners and business owners to develop approaches in network design, secure data access, and data management to ensure operational resilience and availability.	
Recommend implementing new technology solution to improve a business system; Provide recommendations for IT funding priorities based on organizational goals; Participate in an IT system audit and provide recommendations for improvement; Develop and implement a new policy to mitigate system risks.	Participates as a business user or subject matter expert on agency business projects involving the use of technology to represent the business needs of the organization.

IT Policy and Planning – Functional Competencies

Knowledge, Skills and Abilities:

• Able to align IT investments with the organization's mission (e.g., capital planning and investment control, Enterprise Performance Life Cycle).

• Able to use established analysis, business cases and decision making processes to evaluate capital investments in IT and IT-alternative investments.

• Able to consider organizational strategic and performance plans to identify specific requirements and capital planning processes to drive the acquisition strategy (e.g., Enterprise performance life cycle).

• Applies knowledge of organization's IT acquisition approach to compare, contrast and evaluate acquisitions.

Skilled in performing one or more of the following activities:

• Evaluates current and emerging best practices in IT relative to the enterprise's strategic plan.
• Acquires feedback from external organizations and end users.
• Establishes and utilizes methodologies to compare and contrast cost, benefits and risks.
• Analyzes cost and economic data to assess quality and communicate meaning to others.
• Evaluates needs and a variety of potential IT   based solutions.
• Identifies and designs shared solutions between organizations to leverage technology investments.
• Develops metrics, critical success factors and key indicators to monitor and assess results.
• Develops security plans to protect the confidentiality, integrity and availability of the organization's information, information systems and networks in accordance with policies, procedures and control techniques and agency and federal regulations.

5. Network and Telecommunications

Definition

Work that involves the planning, analysis, design, development, testing, configuration, installation, implementation, integration, maintenance, and/or management of networked systems used for the transmission of information in voice, data, and/or video formats.

Common Positions

- Network Administrator
- Network Analyst
- Network Architect
- Telecommunications Specialist
- Remote Access Administrator

IT WORKER	IT USER
Using network engineering methods, works with consultants and WaTech to design and support agency LAN/WAN Infrastructure.	Performs end-user acceptance testing for telecommunication projects. Demonstrating new products to customers. Gathering new requirements for customers.
Using structured language and command line interfaces to navigate, evaluate and design the state network.	Calls vendors to do cabling for networks and phones. Ordering and tracking vendor circuits based on predesigned network requirements.
Design and represent physical and logical network topologies within a database.	Managing warranty and maintenance contracts. Maintain historical records, system support documents, and technical diagrams.
Install and configure physical and virtual network components to implement a network design.	Data entry of predesigned network topologies using predefined network elements. Maintain historical records, system support documents, and technical diagrams.
Research and evaluation of immerging network equipment, technologies and trends for continual re-alignment and improvement of state network.	
Engineering and designing new telecommunications systems.	

IT Network and Telecommunications – Functional Competencies

Knowledge, Skills and Abilities:

• Knowledge of capabilities and limitations of data transmission modes and media.

• Knowledge of data transmission concepts, functions and mechanisms.

• Applies network systems knowledge to plan, design and develop systems, and properly deploy systems to support the organization.

• Uses network engineering knowledge in design, operations and security activities.

• Skilled in the Acquisition, technical acceptance, installation, testing, modification, or replacement of telecommunications equipment, services and systems.

• Able to analyze missions, plans, organization structure, current and planned infrastructures and other related factors affecting enterprise network requirements.

Skilled in performing one or more of the following activities:

• Evaluates the benefits and limitations of commonly used local wired and wireless voice and data communication architectures, devices and protocols; as well as wide-area voice and data architectures, devices and protocols.

• Coordinates installation, maintenance, troubleshooting, and fine-tuning of the LAN and WAN including all hardware, software, security, telecommunications and networking components.

• Develops plans and designs for network modifications and enhancements.

• Reviews proposed applications for compatibility and interoperability.

• Analyzes LAN and WAN utilization statistics, performance measures and system profiles to ensure network effectiveness and robustness.

• Identifies potential performance or capacity problems and plans for changes to avert problems.

• Evaluates available enterprise network systems including performance, security, capacity, scalability, cost and other relevant factors; recommends optimal network solutions.

• Identifies and controls all LAN and WAN hardware and software configuration;

• Develops technical standards and procedures for LAN and WAN development, implementation and management.

• Evaluates overall LAN and WAN performance against relevant standards.

• Identifies and implements required corrective actions; and devises solutions to prevent future interruptions.

6. IT Project Management

Definition

Work that involves the monitoring or management of technology projects using standard project management techniques. Includes creating projects estimates, reporting, resource, and capacity planning.

Common Positions
- IT Project Manager
- IT Program Manager
- IT Project Analyst
- IT Program Analyst
- Product Manager
- IT Release Manager

IT WORKER	IT USER
Leads in the development of strategic vision, roadmaps, and release plans for technology projects. Coordinates releases and sprints across different technology work streams and identifies potential technology gaps or collisions.	Supports IT Project in drafting reports, communications and other documentation for Project Manager approval. Maintains status reports and ensures timely distribution.
Reports directly to Executive Sponsor / CIO on project deliverables, resources, budget and overall performance.	Member of a project team participating as a business subject matter expert.
Manages the work of technical teams including project and product backlogs, the tracking and resolution of impediments, develops the key metrics required to monitor implementation success, and triages issues in team velocity. Work with business and product owners to reprioritize backlog work items and adjustments in scope, schedule, and budgets.	Compiles, monitors and analyzes budget data for IT Project. Reports regular status and escalates identified issues. Coordinates contracts and purchasing.

IT Project Management – Functional Competencies

Knowledge, Skills and Abilities:

- Able to empower and inspire others to deliver successful change initiatives.
- Able to identify, address and resolve differences between individuals and/or interest groups.
- Able to identify and/or develop frameworks and methodologies to ensure management of change initiatives will be comprehensive and consistent across different initiatives. In this context 'framework' means the parameters, constraints or rules established to standardize delivery.

IT Project Management – Functional Competencies

<u>Skilled in performing one or more of the following activities:</u>

- Selects, develops and manages IT teams.
- Secures necessary resources for change initiatives from internal and/or external providers.
- Manages contracts for the provision of goods and/or services, to monitor compliance, and to manage variances.
- Prepares and maintains change initiative definitions and requirements.
- Determines the best means of satisfying requirements within the context of the change initiative's objectives and constraints.
- Prepares and maintains schedules for activities and events for change initiatives, taking into account dependencies and resource requirements.
- Develops, implements and updates resource allocation plans (other than for finance) for change initiatives, taking into account availabilities and scheduling.
- Develops budgets for change initiatives, control forecast and actual costs against the budgets.
- Identifies and monitors risks (threats and opportunities), plans and implements responses to risks and responds to other issues affecting change initiatives.
- Develops, maintains and applies quality management processes for change initiative activities and outputs.
- Consolidates and documents the fundamental components, schedules, resource requirements, budgets, risks, opportunities and issues, and quality requirements of change initiatives.
- Integrates change initiative outputs into business operations, addresses readiness of users, compatibility of work systems and the realization of benefits.
- Plans and controls the finances of programs or portfolios and their related change initiatives as a means of driving performance and as part of the organization's overall financial management.
- Prepares and maintains overall schedules for resource use in related change initiatives to avoid bottlenecks and conflicting demands, and determines sequences of outcomes to enable efficient realization of benefits.
- Establishes and maintains governance structures that define clear roles, responsibilities and accountabilities for governance and delivery of change initiatives that align with organization practice.
- Manages stakeholders, taking account of their levels of influence and particular interests.
- Establishes and manages reviews at appropriate points, during and after change initiatives, to inform governance and provide evaluations of progress, methodologies and continuing relevance.
- Establishes protocols to alter the scope of change initiatives, implementing the protocols when necessary, and updating configuration documentation including contracts.

IT Project Management – Functional Competencies

- Gathers independent evidence and validates change initiative is achieving its aims.

- Prepares, gains approval of, refines and updates business cases that justify the initiation and/or continuation of change initiatives in terms of benefits, costs and risks.

7. IT Security

Definition

Work that involves ensuring the confidentiality, integrity, and availability of systems, networks, and data through the planning, analysis, development, implementation, maintenance, and enhancement of information systems security programs, policies, procedures, and tools.

Common Positions

- Information Systems Security Analyst/Specialist
- Information Systems Security Officer
- Network Security Officer

IT WORKER	IT USER
Evaluate proposed system changes to maintain security and data protection policies.	Administrative rights to grant access to SharePoint, websites; Outlook groups; listservs.
Responsible for conducting security audits and implementing corrective actions.	Reset passwords, manage credentials. Report suspected security compromise.
Develop and execute security policies, plans, and procedures; design and implement data network security measures; operate Network Intrusion Detection and Forensics; conduct performance analysis of Information Systems security incidents; develop COOP/DR plans and support certification of Information Systems and Networks.	Program SME assigned to work with IT staff to ensure program requests/requirements can be developed/designed and implemented within IT security and data protection parameters.
Operate and manage all aspects of Information Systems, data availability, integrity, authentication, confidentiality, and non-repudiation. Implement and monitor security measures for communication systems, networks, and provide advice that systems and personnel adhere to established security standards and Governmental requirements for security on these systems.	Performs "super-user" functions for an agency line of business area. Ensure data being utilized and shared complies with security programs, policies, procedures, and tools.

IT Security – Functional Competencies

<u>Knowledge, Skills and Abilities:</u>

• Ability to promote awareness of security issues among management and ensuring sound security principles are reflected in organizations' visions and goals.

• Skilled in the development and implementation of programs to ensure that systems, network, and data users are aware of, understand, and adhere to systems security policies and procedures.

<u>Skilled in performing one or more of the following activities:</u>

• Develops policies and procedures to ensure information systems reliability and accessibility and to prevent and defend against unauthorized access to systems, networks, and data.

• Conducts risk and vulnerability assessments of planned and installed information systems to identify vulnerabilities, risks, and protection needs.

• Conducts systems security evaluations, audits, and reviews.

• Develops systems security contingency plans and disaster recovery procedures.

• Participates in network and systems design to ensure implementation of appropriate systems security policies.

• Facilitates the gathering, analysis, and preservation of evidence used in the prosecution of computer crimes.

• Assesses security events to determine impact and implementing corrective actions; and/or ensures rigorous application of information security/ information assurance policies, principles, and practices in the delivery of all IT services.

• Performs penetration testing exercises.

8. Systems Administration

Definition

Work that involves planning and coordinating the installation, testing, operation, troubleshooting, and maintenance of hardware, software systems, and systems environment. Includes defining or coordinating common processes or procedures to support IT operations.

Common Positions

- Systems Administrator
- Operating System Administrator
- Storage Administrator
- Email Administrator
- Enterprise Document Management Administrator
- Identity / Access Management Administrator
- Data Center Operations
- Print Manager
- Batch Scheduler

IT WORKER	IT USER
Customizes, configures, and extends content management tools used by web content producers.	Develops, publishes and updates web content using content publishing tools, templates, and agency standards & best practices for content publishing.
Analyze, plan, test, and implement application configuration changes that include system control data affecting application behaviors, including behaviors that affect integration with other systems.	Participate in testing: as a subject matter expert, functional testing, and user acceptance testing.
Designs and prototypes application. Create, maintain and implement source code for application or program.	Business area point of contact for any upgrades or changes made and works with IT technical experts to evaluate potential impacts.
Conduct testing: unit testing of application modules and their changes, integration testing of interaction of application modules and changes, as well as testing the interfaces between systems. Load testing, Regression tests. Respond to findings of tests (troubleshooting and repairing bugs).	Provides technical training to end users.
Develop, prepare, and deploy system changes into technology environments (development, test, pre-production, production).	As a SharePoint site owner, maintains and administers the SharePoint site assigned.

IT WORKER	IT USER
Develop system administration automation, monitoring, and event handling to identify and rapidly resolve faults in systems.	

IT Systems Administration – Functional Competencies

Knowledge, Skills and Abilities:

• Ensures information security/assurance policies, principles, practices are an integral element of the operating environment.

• Ability to anticipate and forecast hardware requirements when software needs change.

• Supports decisions to determine when hardware upgrades are required based on emerging software requirements.

• Ensures system availability, functionality, integrity and efficiency, and maintains system configuration.

• Ensures customers receive current versions of supported software as they become available.

Skilled in performing one or more of the following activities:

• Evaluates, selects, and installs compilers, assemblers and utilities.

• Integrates hardware and software components within the systems environment.

• Evaluates new systems engineering technologies and their effect on the operating environment.

• Monitors the systems environment to ensure effective performance.

• Manages hardware and software obsolescence.

• Plans and schedules the installation of new or modified hardware, operating systems and software.

• Addresses opportunities and challenges of implementing transformational technology (e.g., virtualization, cloud computing) into the Federal environment.

• Manages accounts, network rights and access to systems and equipment.

• Implements security procedures and tools to ensure rigorous security measures are in place.

• Plans and schedules the installation of new or modified hardware and operating systems and applications software.

• Manages accounts, network rights, and access to systems and equipment.

• Manages systems resources including performance, capacity, availability, serviceability, and recoverability.

• Develops and documents systems administration standard operating procedures.

• Resolves hardware/software interface and interoperability problems.

• Maintains systems configuration.

• Monitors and troubleshoots systems availability.

• Recovers data in the event of hardware or software failure.

9. IT Vendor Management

Definition

Work that manages IT vendors and ensures that all service level agreements (SLAs) or underpinning contracts for information technology services across the organization are delivered according to specifications. Work also includes working with IT, business units, and contract managers in identifying and evaluating technology services providers that are consistent with the organizations business strategy and architecture.

Common Positions

- IT Vendor Manager
- SLA Manager
- Vendor Management Analysis

IT WORKER	IT USER
Research different technology, assessing technology for fit within the existing environment, identifying proper technical criteria and requirements for selection.	Contracts specialist who executes contracts in support of IT procurement and purchasing functions for a specialized area (IT) for an agency or an area of an agency. To include analysis of bids for multi-commodity purchase contracts and/or procurement of products, development of specifications and analysis of bids for products and services.
Serves as internal and external contact regarding system and service requirements, coordinates issues across multiple technology disciplines, and serves as the domain expert and an information manager.	Submit standard maintenance and operations work orders to vendors via established procedures, participates in user acceptance testing and/or verifies completion of work with technical staff.
Develops and leads the implementation of all vendor management strategic planning. Oversees contracts, contract management, procurement, vendor relationships, and asset management for the IT function. Establishes the standards, procedures, and guidelines that direct all aspects of IT vendor management, consistent with procurement and financial policies and controls.	

IT Vendor Management – Functional Competencies

Knowledge, Skills and Abilities:

• Establishes and formalize vendor relationship to create mutually beneficial partnerships.

• Brings about vendor performance and client expectations.

• Recognizes, monitors, and manages vendor risk to the organization.

• Coordinates and oversees vendor relationships, contracts, performance and risks.

• Balances contractual requirements against expectations to ensure both stakeholders and vendors work toward a common understanding of outcomes.

• Partners in the evaluation and negotiation of vendor contracts.

Skilled in performing one or more of the following activities:

• Monitors and maintains vendor contracts and outcomes.

• Measures and reports vendor progress on deliverables to senior / executive staff or project manager.

• Mediates disputes and differences of opinion.

• Leverages metrics, dashboards and scorecards; extracts data from each quadrant of the life cycle, analyzes and uses data and uses it to oversee vendor performance.

• Establishes rules of engagement, guidelines and principles by which actions can be taken.

• Establishes the appropriate governance structures to drive vendors to deliver the appropriate products and services to the required level of quality and risk, at the required time, place and at the right price.

• Responsible for vendor performance, monitors and mitigates vendor risks, and maintains vendor relationships.

10. Quality Assurance (QA)

Definition

Work that involves monitoring the software engineering processes and methods used to ensure quality. QA is a supporting process that has to provide the independent assurance in which all the work products, activities and processes comply with the predefined plans. The methods by which this is accomplished are varied and may include ensuring conformance to one or more standards such as ISO 9000 or a model such as CMMI. QA encompasses the entire software development process, which includes process such as requirements definition, software design, coding, source code control, code reviews, software configuration management, testing, release management, and product integration.

Common Positions

- Application Testing Analyst
- Software Quality Assurance Tester
- Software Quality Assurance Specialist
- IT Project Quality Assurance Specialist
- Quality Assurance Manager
- Quality Assurance Analyst
- Testing Analyst (Dev (Unit testing); Functional, non-functional, integration, destructive); test automation
- Test Manager
- Configuration Manager
- Release Manager
- Information Assurance Analyst/Specialist

IT WORKER	IT USER
Analyzes business requirements, design documents for completeness and testability. Develops test plans, test scenarios, test cases, test data and test scripts for different types of testing activities.	Performs end-user acceptance testing.
Develops quality assurance plans by conducting hazard analyses; identifying critical control points and preventive measures; establishing critical limits, monitoring procedures, corrective actions, and verification procedures; monitoring inventories.	Submits work requests for bug fixes or system enhancements.
Manage source code control and stored procedures between development lifecycles utilizing TFS. Manages application control through whitelisting, SCCM packages, updates and version control. Partners with test leads and architects to develop and establish Quality Assurance standards and best practices.	Provides business user requirements for new or enhanced applications.

IT Quality Assurance (QA) – Functional Competencies

<u>Knowledge, Skills and Abilities:</u>

- Able to apply various assurance assessment methods (such as validation of security requirements, risk analysis, threat analysis, vulnerability assessments and scans, and assurance evidence) to determine if the software/system being assessed is sufficiently secure within tolerances.

- Able to execute multiple phases of test, including system, regression and user acceptance testing

- Able to establish and specify the required or desired level of assurance for a specific software application, set of applications, or software-reliant system.

<u>Skilled in performing one or more of the following activities:</u>

- Provides quality assurance support to the development, maintenance or enhancement of systems through testing, problem reporting and analysis, and participation in system implementation.

- Analyzes system requirements and creates test data and test plans to ensure that new and revised systems meet the customers' needs.

- Works with users, system analysts, designers and programmers to create and analyze various required project documents.

- Participates in production implementation verification and validating system quality.

- Plans, documents, evaluates, and tracks testing results to ensure system applications are free from defects.

- Communicates and interact with appropriate areas on problems, changes and enhancements that may affect data, workflow and /or functionality within Information Technology software.

- Complies with standards of the software development life cycle and follow strategies, plans and procedures within information technology software.

- Plans, prioritizes all the test-related tasks.

- Writes test strategies and scripts.

- Reviews test plans against business requirements.

- Reviews code.

- Uses tools such as bug-tracking database or versioning systems.

- Provides tool and documentation support for assurance assessment activities.

- Researches, analyzes, and recommend best practices for assurance assessment methods and techniques.

- Maintains a test documentation library.

- Uses automated test tools to assess quality of software.

- Uses technical tools (such as SQL Queries, file managers) to create and manage test data, and analyzes test results.