Information Technology Specialist GS-2210
Career Path Guide
August 2014
# TABLE OF CONTENTS

**INFORMATION TECHNOLOGY SPECIALIST GS-2210**

- Career Path Guide ..................................................................................................................... 1
- Your Career as an Equal Opportunity Specialist – SNAPSHOT .................................................. 1
- Your Expertise ............................................................................................................................... 1
- Previous Experience ...................................................................................................................... 1

**Key Duties and Responsibilities GENERAL – ALL GS LEVELS** .................................................. 1

**Competencies – ALL GS LEVELS** ............................................................................................... 2

**Career Development - ALL GS LEVELS** .................................................................................... 6

**The Importance of Mentoring** ..................................................................................................... 7

**Advancement** ............................................................................................................................... 7

**Information Technology Assistant GS-5-7** ............................................................................... 8

**Information Technology Specialist GS-9** ................................................................................ 10

**Information Technology Specialist GS-11** ............................................................................. 13

**Information Technology Specialist GS-12** ............................................................................. 16

**Information Technology Specialist GS-13** ............................................................................. 19

**Lead Information Technology Specialist GS-13** ................................................................. 22

**IT Project Manager GS-13** ......................................................................................................... 24

**Information Technology Specialist GS-14** ............................................................................. 27

**Supervisory Information Technology Specialist GS-14** .......................................................... 30

**Information Technology Project Manager GS-14** ................................................................. 32

**Information Technology Specialist GS-15** ............................................................................. 35

**Supervisory Information Technology Specialist GS-15** .......................................................... 38

**Information Technology Project Manager GS-15** ................................................................. 42

**Supervisory Information Technology Program Manager – Director GS-15** ............................. 45

**Parenthetical Titles** ..................................................................................................................... 47
INFORMATION TECHNOLOGY SPECIALIST GS-2210

Career Path Guide

The Information Technology Specialist is a government wide Mission Critical Occupation meaning that it is core to carrying out the primary mission of HUD. Whether you aspire to be a senior leader or choose to deliver steady technical expertise as an Information Technology professional, your contributions to the mission are valued and essential. The purpose of this career path guide is to provide you with a realistic preview of typical experiences, responsibilities, and duties associated with this occupation as well as strategies for developing and advancing your professional development as you grow your career at HUD.

Your Career as an Information Technology Specialist – SNAP SHOT

As an Information Technology Specialist, you perform a variety of tasks related to the development, design, delivery and support of information technology systems within HUD. Your work may involve providing customer support, developing new business processes and applications, ensuring information security, and creating and managing databases, amongst many other possible duties. Your job involves presenting technical information to a wide variety of audiences, including customers, clients, and management. This happens via multiple mediums, including training sessions, briefs, presentations and technical reports. It is important to be able to communicate with groups as well as individuals, and to tailor your message and communication style based on your audience.

Your Expertise

You have a background in computer science, information science, information systems management, mathematics, statistics, operations research, or engineering. This includes familiarity with an assortment of IT related services, including information assurance and management, systems engineering and life cycle management, quality assurance, compliance, enterprise architecture, hardware and software related topics, operations support, and web technology.

Previous Experience

It is advantageous for Information Technology Specialists to have background in: data processing functions, general management principles, programming languages, and collecting, analyzing and synthesizing data. Experience communicating technical information to both groups and individuals is valuable.

Key Duties and Responsibilities GENERAL – ALL GS LEVELS

The role of Information Technology Specialist involves developing, delivering, and supporting IT systems and services. Specialty titles are typically displayed in parentheses and referred to as parenthetical titles. Parenthetical titles, as defined below, may be used with the basic title of the position to further identify the duties and responsibilities performed and the special knowledge and skills needed. The most common parenthetical titles will be included in each position, if applicable. The basic title without a parenthetical specialty title are used for positions with no established specialty or emphasis area or for positions involving work in more than two of the established specialties. The Office of Personnel Management has prescribed eleven parenthetical titles for the Information Technology Management series, 2210:

- Applications Software – This parenthetical title encompasses work that involves the design, documentation, development, modification, testing, installation, implementation, and support of new or existing applications software.
Customer Support – This parenthetical title encompasses work that involves the planning and delivery of customer support services, including installation, configuration, troubleshooting, customer assistance, and/or training, in response to customer requirements.

Data Management – This parenthetical title encompasses work that involves the planning, development, implementation, and administration of systems for the acquisition, storage, and retrieval of data.

Enterprise Architecture – This parenthetical title encompasses work that involves the analysis, planning, design, implementation, documentation, assessment, and management of the enterprise structural framework to align IT strategy, plans, and systems with the mission, goals, structure, and processes of the organization.

Internet – This parenthetical title encompasses work that involves the technical planning, design, development, testing, implementation, and management of Internet, intranet, and extranet activities, including systems/applications development and technical management of Websites. This specialty only includes positions that require the application of technical knowledge of Internet systems, services, and technologies.

Network Services – This parenthetical title encompasses work that involves the planning, analysis, design, development, testing, quality assurance, configuration, installation, implementation, integration, maintenance, and/or management of networked systems used for the transmission of information in voice, data, and/or video formats.

Operating Systems – This parenthetical title encompasses work that involves the planning, installation, configuration, testing, implementation, and management of the systems environment in support of the organization’s IT architecture and business needs.

Policy and Planning – This parenthetical title encompasses 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, auditing, and information security management.

Security – This parenthetical title encompasses 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.

Systems Administration – This parenthetical title encompasses work that involves planning and coordinating the installation, testing, operation, troubleshooting, and maintenance of hardware and software systems.

Systems Analysis – This parenthetical title encompasses work that involves applying analytical processes to the planning, design, and implementation of new and improved information systems to meet the business requirements of customer organizations.

Competencies – ALL GS LEVELS
The competencies below are relevant to all Information Technology Specialists across all GS Levels. Knowledge, skills and abilities are also presented by specific GS Level.

<table>
<thead>
<tr>
<th>Competency</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>Knowledge of the tools, equipment and technologies used to help individuals with disabilities use computer equipment and software.</td>
</tr>
<tr>
<td>Awareness of Existing and Emerging</td>
<td>Knowledge of developing and new applications in information technology, including software, hardware and telecommunications; emerging technologies and their application to business processes, including cloud, shared services, open-source</td>
</tr>
<tr>
<td>Technology</td>
<td>software and mobile; applications and implementation of information systems to meet organizational requirements.</td>
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<tr>
<td>Business Process Reengineering</td>
<td>Knowledge of the methods, metrics, tools and techniques of business process reengineering.</td>
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<tr>
<td>Capital Planning and Investment Assessment</td>
<td>Knowledge of the principles and methods of capital investment analysis or business case analysis, including return on investment analysis.</td>
</tr>
<tr>
<td>Change Management</td>
<td>Knowledge of change management principles, strategies and techniques required for effectively planning, implementing and evaluating change in the organization. Demonstrating receptiveness to changes in the operating environment through supporting and embracing organizational change efforts, seeking clarity when the reason for organizational change efforts is unclear, and being fully supportive in implementing plans for organizational change.</td>
</tr>
<tr>
<td>Compliance</td>
<td>Knowledge of the procedures for evaluating and monitoring programs or projects for compliance with Federal laws, regulations and guidance.</td>
</tr>
<tr>
<td>Configuration Management</td>
<td>Knowledge of the principles and methods for planning and managing the implementation, update or integration of information system components.</td>
</tr>
<tr>
<td>Contracting/Procurement</td>
<td>Knowledge of the various types of contracts, techniques for contracting or procurement, and contract negotiation and administration.</td>
</tr>
<tr>
<td>Cost-Benefit Analysis</td>
<td>Knowledge of the principles and methods of cost-benefit analysis, including the time value of money, present value concepts, and quantifying tangible and intangible benefits.</td>
</tr>
<tr>
<td>Data Management</td>
<td>Knowledge of the principles, procedures, and tools of data management, such as modeling techniques, data backup, data recovery, data dictionaries, data warehousing, data mining, data disposal, and data standardization processes.</td>
</tr>
<tr>
<td>Database Administration</td>
<td>Knowledge of the principles, methods, and tools for automating, developing, implementing, or administration of databases.</td>
</tr>
<tr>
<td>Database Management Systems</td>
<td>Knowledge of the database management systems and software to control the organization, storage, retrieval, security and integrity of data.</td>
</tr>
<tr>
<td>Enterprise Architecture</td>
<td>Knowledge of the principles, concepts, and methods of enterprise architecture to align information technology strategy, plans, and systems with the mission, goals, structure and processes of the organization.</td>
</tr>
<tr>
<td>Enterprise Information Security Architecture</td>
<td>Knowledge of and ability to apply a comprehensive and rigorous method for describing current and/or future structure and behavior of an organization’s security processes, information security systems, personnel and organizational sub-units, so that they align with the core organizational goals and strategic directions.</td>
</tr>
<tr>
<td>Skill Type</td>
<td>Description</td>
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<tr>
<td>Financial Analysis</td>
<td>Knowledge of the principles, methods, and techniques of financial analysis, forecasting, and modeling to interpret quantitative and qualitative data. This includes data modeling, earned value management, and evaluating key financial indicators, trends, and historical data.</td>
</tr>
<tr>
<td>Financial Management</td>
<td>Preparing, justifying and administering the budget for program areas; planning, administering and monitoring expenditures to ensure cost-effective support of programs and policies; assessing the financial condition of an organization.</td>
</tr>
<tr>
<td>Hardware</td>
<td>Knowledge of the specifications, uses and types of computer or computer-related equipment.</td>
</tr>
<tr>
<td>Hardware Engineering</td>
<td>Knowledge of the principles, methods, and tools for designing, developing, and testing computer or computer-related equipment.</td>
</tr>
<tr>
<td>Impact and Influence</td>
<td>The ability to build relationships with clients, stakeholders and coworkers; accomplish tasks and objectives by resolving conflicts and influencing the actions of others; working to understand organizational culture in order to achieve goals; being perceived as knowledgeable and credible by colleagues, and establishing and maintaining personal credibility.</td>
</tr>
<tr>
<td>Incident Management</td>
<td>Knowledge of the tactics, technologies, principles, and processes to detect, analyze, prioritize, and handle incidents.</td>
</tr>
<tr>
<td>Information Assurance</td>
<td>Knowledge of the methods and procedures to protect information systems and data by ensuring their availability, authentication, confidentiality, and integrity.</td>
</tr>
<tr>
<td>Information Management</td>
<td>Identifying the need for additional information, and knowing where or how to gather it; organizing and maintaining information or information management systems.</td>
</tr>
<tr>
<td>Information Resources/Strategy and Planning</td>
<td>Knowledge of the principles, methods and techniques of information technology assessment, planning, management, monitoring, and evaluation. This includes IT baseline assessment, interagency functional analysis, contingency planning, and disaster recovery.</td>
</tr>
<tr>
<td>Information Systems Security Certification</td>
<td>Knowledge of the principles, methods, and tools for evaluating information systems security features against a set of specified security requirements. This includes developing certification and accreditation plans and procedures, documenting deficiencies, reporting corrective actions, and recommending changes to improve the security of information systems.</td>
</tr>
<tr>
<td>Information Systems/Network Security</td>
<td>Knowledge of methods, tools, and procedures of network security, including the development of information security plans, to prevent information systems vulnerabilities, and provide or restore security of information systems and network services.</td>
</tr>
<tr>
<td>Information Technology Architecture</td>
<td>Knowledge of architectural methodologies used in the design and development of information systems, including the physical structure of a system's internal...</td>
</tr>
<tr>
<td>Knowledge Area</td>
<td>Description</td>
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<td>----------------------------------------</td>
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</tr>
<tr>
<td>Operations and Interactions with Other Systems</td>
<td>Knowledge of the principles, methods and tools to assess the effectiveness and practicality of information technology systems. Possible methods include both surveys and system performance measures.</td>
</tr>
<tr>
<td>Information Technology Performance Assessment</td>
<td>Knowledge of the principles, methods, and tools for the coordinated management of an IT program which includes providing oversight for multiple IT projects, integrating dependent schedules and deliverables, and other related activities.</td>
</tr>
<tr>
<td>Infrastructure Design</td>
<td>Knowledge of the architecture and typology of software, hardware, and networks, including LANS, WANS, and telecommunications systems, their components and associated protocols and standards, and how they operate and integrate with one another and with associated controlling software.</td>
</tr>
<tr>
<td>IT Acquisition</td>
<td>Knowledge of the principles and methods for developing an integrated acquisition management plan that describes business, technical, and support strategies, including the relationship between acquisition phases, work efforts, and key program events (for example, decision points, contract awards, test activities).</td>
</tr>
<tr>
<td>Network Management</td>
<td>Knowledge of the operation, management, and maintenance of network and telecommunication systems and linked systems and peripherals.</td>
</tr>
<tr>
<td>Operating Systems</td>
<td>Knowledge of the computer network, desktop and mainframe operating systems and their applications.</td>
</tr>
<tr>
<td>Operations Support</td>
<td>Knowledge of the procedures to ensure production and delivery of new products and services, including tools and mechanisms for distributing new or enhanced software.</td>
</tr>
<tr>
<td>Organizational Awareness</td>
<td>Knowledge of the organization's mission, functions, and structure, and how the social, political, and technological systems work and how to operate effectively within them. This includes the programs, policies, procedures, rules, and regulations of the organization.</td>
</tr>
<tr>
<td>Personnel Security and Safety (Cyber Security)</td>
<td>Knowledge of the methods and controls of personnel, public safety and security operations, as well as investigation and inspection techniques; rules, regulations, precautions and prevention techniques for the protection of people, data or property.</td>
</tr>
<tr>
<td>Product Evaluation</td>
<td>Knowledge of the methods for researching and analyzing external products to determine their potential for meeting organizational standards and business needs.</td>
</tr>
<tr>
<td>Quality Assurance</td>
<td>Knowledge of the principles, methods, and tools of quality assurance and quality control used to ensure a product fulfills functional requirements and standards.</td>
</tr>
<tr>
<td>Skill</td>
<td>Description</td>
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<tr>
<td>Resource Management</td>
<td>The ability to manage human, financial, and/or informational resources effectively to drive achievements, as well as manage and distribute resources efficiently in a constrained environment by prioritizing efforts to optimize results while minimizing potential negative impacts.</td>
</tr>
<tr>
<td>Risk Management</td>
<td>Knowledge of the methods and tools used for risk assessment and mitigation of risk.</td>
</tr>
<tr>
<td>Software Development</td>
<td>Knowledge of the principles, methods, and tools for designing, developing, and testing software in a given environment.</td>
</tr>
<tr>
<td>Software Engineering</td>
<td>Knowledge of software engineering design and development methodologies, paradigms, and tools; the software life-cycle, reusability, and reliability metrics.</td>
</tr>
<tr>
<td>Software Testing and Evaluation</td>
<td>Knowledge of the principles, methods, and tools for analyzing and developing software test and evaluation procedures.</td>
</tr>
<tr>
<td>Stakeholder Management</td>
<td>Knowledge of the concepts, practices, and techniques used to identify, engage, influence, and monitor relationships with individuals and groups connected to a work effort. This includes those actively involved, those who exert influence over the process or results, and those who have a vested interest in the outcome (positive or negative). This involves being able to proactively identify relationships that are crucial to the success of the team, group and organization, takes steps to identify stakeholders with whom to establish and maintain collaborative relationships, cultivates these relationships effectively by building trust and rapport, and manages stakeholder expectations.</td>
</tr>
<tr>
<td>Systems Engineering</td>
<td>Knowledge of the practice of integrating multiple disciplines into a team as part of a structured development process throughout a systems life cycle.</td>
</tr>
<tr>
<td>Systems Life Cycle</td>
<td>Knowledge of systems life-cycle management concepts used to plan, develop, implement, operate and maintain information systems.</td>
</tr>
<tr>
<td>Systems Testing and Evaluation</td>
<td>Knowledge of the principles, methods, and tools for analyzing and developing systems testing and evaluation procedures and technical characteristics of IT systems, including identifying critical operational issues.</td>
</tr>
<tr>
<td>Systems Thinking</td>
<td>The ability to identify patterns and trends among discrete pieces of information to create a composite view of the situation; leveraging data throughout the evaluative process to think critically and creatively in order to create the desired plan; using systems thinking to respond to present and future environmental challenges.</td>
</tr>
<tr>
<td>Web Technology</td>
<td>Knowledge of the principles and methods of web technologies, tools, and delivery systems, including web security, privacy policy practices, and interface issues.</td>
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**Career Development - ALL GS Levels**

You are encouraged to take control of your career by participating in targeted developmental activities, taking relevant training, and seeking diverse and demanding assignments that will allow you to develop your skills.
Continually learning and investing in your education and training will help you better tackle obstacles on your job as well as increase the likelihood of your career advancement as an Information Technology Specialist.

**Participate in training and development areas that strengthen your skills in the following areas:**

- Attention to Detail
- Customer Service
- Problem Solving
- Oral Communication
- Written Communication

**Study and continuously revisit the following resources:**

- Departmental issuances and memoranda
- U.S. Government Accountability Office’s Policy and Procedure Manuals
- IT Solutions Life Cycle Methodology (ITSLCM).

**The Importance of Mentoring**

Information Technology Specialists gain a significant amount of valuable learning on the job. They learn by experience working with client groups and they learn from peers in both formal and informal mentoring relationships. Mentoring is an effective way to gain skills and develop competencies outside of a formal training setting.

Mentors provide mentees with developmental feedback, challenging assignments, as well as technical coaching. Mentees have an opportunity to test out new behaviors and tasks and practice skills such as oral communication and negotiation with high-level officials – tasks that are often challenging and critical to performance in this field. Mentors also benefit from the mentoring relationship. Serving as a mentor strengthens work-related skills, increases confidence, improves communication skills, and improves leadership skills. In addition, mentors benefit from the satisfaction of knowing they are helping someone else achieve their career goals.

Entry and Mid-Level IT Specialists should continually seek mentoring from senior specialists and experts should look for opportunities to mentor the next generation of talent in this area.

**Advancement**

Being eligible for promotion does not guarantee you will be promoted. You must compete and be selected for a vacancy at a higher grade level unless the promotion is within a "career ladder". Career ladder is the term used to describe a position that is filled at an entry level to allow an employee to develop, through training, to the full performance level. The promotion of an employee within a career ladder is made without competition. When a position has a range of grade levels, for example 9,11,12, with a maximum grade of 13, and the vacancy announcement stated that there was promotion potential to the 13, it is a career ladder position. Normally, after completing one year you are eligible for promotion to the next grade. For GS-13 levels and above, advancement is competitive.
Information Technology Specialist Grade Levels

Information Technology Assistant GS-5/7

While there are not presently any Information Technology Assistants at HUD, it is possible that some will be hired in the future. As a GS-5/7 Information Technology Assistant, you are helping Information Technology Specialists at higher levels with task assignments.

Education & Qualifications

- Undergraduate or graduate education with a major area study of computer science, information science, information systems management, mathematics, statistics, operations research, or engineering, or course work that required the development or adaptation of computer programs and systems and provided knowledge equivalent to a major in the computer field.
- Experience that provides a basic knowledge of data processing functions and general management principles, as well as an understanding of the stages required to automate a work process.
- For a GS-7: Experience translating detailed logical steps developed by others into language codes that computers accept; understanding of procedures and limitations appropriate to programmed languages; interviewing subject-matter personnel to get facts regarding work processes and synthesizing the resulting data into information flow charts; operating computer consoles that involve choosing from among various procedures in responding to machine commands or unscheduled halts.

At GS-5/7, focus on the following Training Areas and Developmental Activities:

- Keep up to date on current state of the art information technology, new or modified software, and applications software principles.
- Knowledge of customer support principles and methods.
- Contracts and contract administration.
- Technical writing.
- Seek out a mentor for technical and/or career guidance.

At GS-5/7, try to gain Work Experiences in these areas:

- Providing support and assistance to customers with desktop applications.
- Help prepare briefings and presentations on technical issues.
- Seek out a position where you can assist, and then lead in defining, developing, evaluating and implementing new or modified software.
INFORMATION TECHNOLOGY ASSISTANT (GS-5/7) CAREER MAP

Entry Level / Developmental

Full Performance Mid-Level

Information Technology Project Manager (GS 13)

Information Technology Project Manager (GS 14)

Information Technology Project Manager (GS 15)

Expert / Managerial

Information Technology Assistant (GS 5/7)

Information Technology Specialist (GS 9)

Information Technology Specialist (GS 11)

Information Technology Specialist (GS 12)

Information Technology Specialist (GS 13)

Information Technology Specialist (GS 14)

Information Technology Specialist (GS 15)

Lead Information Technology Specialist (GS 13)

Supervisory Information Technology Specialist (GS 14)

Supervisory Information Technology Specialist (GS 15)

Supervisory IT Program Director (GS 15)
Information Technology Specialist GS-9

As a GS-9 Information Technology Specialist, you provide assistance on all aspects of the Information Technology (IT) program including performing needs analyses to define opportunities for new or improved business process solutions, conducting feasibility and trade-off analysis, and conducting business process reengineering. It is also your responsibility to provide information and assistance to as well as consult with customers to identify and specify requirements. You prepare business cases for the application of IT solutions, define systems scope and objectives, and ensure the integration of all systems components, including procedures, databases, policies, software and hardware. You develop cost estimates for new or modified systems, engage in capacity planning, coordinate system implementation, and ensure the rigorous application of information security/information assurance policies, principles and practices to the systems analysis process. It is your responsibility to assure software and systems quality and functionality, work with customers to test the quality and functionality of applications, and ensure that maintenance systems are up and operable each day. You engage in budget execution, contract management, and client support. You are responsible for maintaining project metrics and associated performance measures, preparing and reviewing System Development Methodology (SDM) Documents, and pursuing training opportunities to broaden knowledge and skills in project management principles and methods, as well as life cycle management concepts.

Information Technology Specialist: Field. It is also possible that as an IT Specialist at the GS-9 level, you will be working in the field. In this position, your responsibilities include the standardization of the LAN configuration, monitoring of technical support and service provided on hardware and software, addressing cable-plant and data-line problems, developing software programs for local and enterprise systems, implementing national standards, coordinating all Office renovations affecting information technology equipment to ensure all needed communications are available, and coordinating with senior Field Office management areas to ensure that information technology services meet program requirements. It is also your responsibility to develop mechanisms for evaluating the quality of IT services provided to clients, and continually evaluate the feedback to ensure IT functions are being operated in a manner consistent with the policies and goals of the OCIO.

Education/Experience

- Undergraduate or graduate education with a major area study of computer science, information science, information systems management, mathematics, statistics, operations research, or engineering, or course work that required the development or adaptation of computer programs and systems and provided knowledge equivalent to a major in the computer field.
- Obtain experience that demonstrates knowledge of computer requirements and techniques in carrying out project assignments consisting of several related tasks, such as typically is the case in development of minor modifications to parts of a system on the bases of detailed specifications provided. The assignments must show completion of analysis of the interrelationships of pertinent components of the system, planning the sequence of actions necessary to accomplish the project, and personal responsibility for at least a segment of the overall project.
- Education substitute for experience: A Master’s or equivalent graduate degree, or two full years of progressively higher level graduate education leading to such a degree.

Knowledge, Skills, and Abilities

- Technology Application. You have knowledge of, and skill in applying a wide variety of applications, operating systems, protocols, and equipment used in customer organizations sufficient to analyze and communicate information in the appropriate format and provide and assistance to customers. This includes knowledge of current state of the art information technology through personal study and new or modified software, and experience presenting information of moderate difficulty to groups, including technology service providers, where there is a significant exchange of new information. You also have the
knowledge of applications software principles and methods needed to define, develop, evaluate and implement new or modified software.

- **Information Gathering and Dissemination.** You have knowledge of, and skill in planning and conducting studies, compiling factual evidence, analyzing data, applying analytical techniques, developing recommendations, writing reports, making oral presentations, implementing recommendations, and maintaining client relations. This includes designing, developing and customizing graphical presentations, publications and brochures for Regional distribution.

- **Communication.** You have the ability to express ideas and facts to individuals or groups effectively, the ability to make clear oral presentations, listen to others and facilitate an open exchange of ideas. You can also recognize and use correct English grammar, punctuation and spelling, communicate information in a succinct and organized manner, and produce written technical documents.

- **Customer Support.** You have knowledge of, and skill in applying customer support principles and methods, systems installation in customer organizations, and knowledge-based applications sufficient to participate in the planning and delivery of a full range of customer support services to the organization. This includes providing IT services to clients and evaluating their feedback to ensure IT functions are being operated consistently within the policies and goals of OCIO, as well as providing customer support and systems installations to complete delivery of a full range of customer support services to the organization.

- **Training Abilities.** You have knowledge of the concepts, principles and theories of instruction methods, such as teaching, training, research, making presentations, lecturing and testing; you have the skill in applying these methods to present formal and informal training and assistance to customers. This includes classroom-based training, distance learning, webcasting, and collaborative learning.

**At GS-9, focus on the following Training Areas and Developmental Activities:**

- Principles of Project Management.
- Life Cycle Management.
- Technical Writing.
- Knowledge of standard and advanced graphical applications.
- Seek out a mentor for technical and/or career guidance.

**At GS-9, try to gain Work Experiences in these areas:**

- Providing training, guidance, support and assistance to customers with desktop applications.
- Pursue opportunities to conduct briefings and presentations on technical issues, as well as preparing management briefings pertaining to OCIO technology.
- Seek out working on a team developing a variety of formal and informal training packages. This will demonstrate your ability to develop training curriculum, advertise training and conduct multiple levels of training courses.
Information Technology Specialist GS-11

As a GS-11 Information Technology Specialist, you are responsible for helping determine the gaps between the current and target enterprise architecture and developing plans for transitioning to target architecture; you identify opportunities to improve enterprise level systems to support business processes and utilize emerging technologies and educate customers and stakeholders on the use and value of enterprise architecture. It is your responsibility to develop modifications to parts of a system that require significant revisions in the logic or techniques used in the original development. You work with customers to provide training and guidance, and work with a team to develop and conduct both formal and informal training packages. You conduct briefings and presentations on technical issues and prepare written technical reports and briefs for management.

Education/Experience

- Undergraduate or graduate education with a major area study of computer science, information science, information systems management, mathematics, statistics, operations research, or engineering, or course work that required the development or adaptation of computer programs and systems and provided knowledge equivalent to a major in the computer field.

- Obtain experience that demonstrates accomplishment of computer project assignments that required a range of knowledge of computer requirements and techniques. This involves knowledge of the customary approaches, techniques, and requirements appropriate to an assigned computer applications area or computer specialty area in an organization, planning the sequence of actions necessary to accomplish assignments requiring coordination with others outside of the organizational unit and development of project controls, and the adaptation of guidelines or precedents to the needs of the assignment.

Knowledge, Skills, and Abilities

- **Enterprise Architecture.** You have knowledge of the principles, concepts and methods of enterprise architecture to align IT strategy, plans and systems with the mission, goals, structure and processes of the organization.

- **Technology Application.** You have knowledge of, and skill in applying a wide variety of applications, operating systems, protocols, and equipment used in customer organizations sufficient to analyze and communicate information in the appropriate format and provide assistance to customers. This includes knowledge of current state of the art information technology through personal study and new or modified software, and experience presenting information of moderate difficulty to groups, including technology service providers, where there is a significant exchange of new information. You also have the knowledge of applications software principles and methods needed to define, develop, evaluate and implement new or modified software.

- **Communication.** You have the ability to express ideas and facts to individuals or groups effectively, the ability to make clear oral presentations, listen to others and facilitate an open exchange of ideas. You can also recognize and use correct English grammar, punctuation and spelling, communicate information in a succinct and organized manner, and produce written technical documents.

- **Customer Support.** You have knowledge of, and skill in applying customer support principles and methods, systems installation in customer organizations, and knowledge-based applications sufficient to participate in the planning and delivery of a full range of customer support services to the organization. This includes providing IT services to clients and evaluating their feedback to ensure IT functions are being operated consistently within the policies and goals of OCIO, as well as providing customer support and systems installations to complete delivery of a full range of customer support services to the organization.
Parenthetical Titles

- **Customer Support.**
  - Specialized Experience: Planning and delivering customer support services, including PC installations, configurations, troubleshooting, customer assistance and training; researching work station hardware and software to ensure compatibility with customer requests; providing operations, maintenance, management and support of business continuity laptops; and assisting in the completion of IT assessments, security assessments and other workload data to recommend configuration chances for maximizing the effectiveness of installed technology.
  - Competencies to focus on: Infrastructure Design, Configuration Management, Information Technology Performance and Assessment.
  - Duties: You will perform routine and recurring assignments in the delivery of IT customer support services. This includes identifying and resolving issues and problems, preparing and updating manuals, instructions and operating procedures, and providing information and assistance to customers on hardware and software installations, configurations, upgrades, and troubleshooting. It is also your responsibility to report, respond to and resolve customer requests and apply information security and information assurance policy, principles and practices.

At GS-11, focus on the following Training Areas and Developmental Activities:

- Principles of Project Management.
- Leadership.
- Communication/Public speaking.
- Technical Writing.
- Database Administration.
- Information Technology Architecture.
- Resource Management.
- Business Process Reengineering.
- Seek out a mentor for technical and/or career guidance.

At GS-11, try to gain Work Experiences in these areas:

- Help provide analysis, consultation and system administration support on information technologies and business modernization initiatives.
- Support the development of policies, procedures, and strategies governing the planning and delivery of services to customers and clients.
- Evaluate information technology programs and projects in terms of how they meet the overall information needs of your program area.
INFORMATION TECHNOLOGY SPECIALIST (GS-11) CAREER MAP

Entry Level / Developmental

Full Performance / Mid-Level

Expert / Managerial

Information Technology Assistant (GS 5/7)
Information Technology Specialist (GS 9)
Information Technology Specialist (GS 11)
Information Technology Specialist (GS 12)
Information Technology Specialist (GS 13)
Information Technology Specialist (GS 14)
Information Technology Specialist (GS 15)
Supervisory Information Technology Specialist (GS 15)
Supervisory IT Program Director (GS 15)
Information Technology Specialist GS-12

As a GS-12 Information Technology Specialist, you are responsible for providing analysis, consultation and system administration support on a variety of information technologies and business modernization initiatives. You help develop and interpret policies, procedures, and strategies governing the planning and delivery of services to customers and clients, as well as helping develop the policies, procedures, guidelines, and standards for the planning, development, integration, implementation, and evaluation of information technology programs and projects to meet the overall information needs of your program area. You are also responsible for assisting in the development of junior IT staff by helping identify training needs and helping prepare in-house training sessions in new methods, procedures, systems, and policies in a given project management group.

Education/Experience

- You must have one year of specialized experience at a level of difficulty and responsibility equivalent to the GS-11 grade level in the Federal service.
- Experience for this position includes: Application of enterprise architecture concepts, principles and best practices; which demonstrate the knowledge and understanding of computer systems and information technology principles which are consistent with education and training in computer science or information technology management.

Knowledge, Skills, and Abilities

- **Database Administration.** You have knowledge of the principles, methods, and tools for automating, developing, implementing, or administering databases
- **Information Technology Architecture.** You have knowledge of the architectural methodologies used in the design and development of information systems, including the physical structure of a system’s internal operations and interactions with other systems.
- **Resource Management.** You have the ability to manage human, financial and/or informational resources effectively to drive achievements; managing and distributing resources effectively in a constrained environment by prioritizing efforts to optimize results while minimizing potential negative impacts.
- **Business Process Reengineering.** You have knowledge of the methods, metrics, tools and techniques of Business Process Reengineering.

Parenthetical Titles

- **Application Software.**
  - Specialized Experience: Design, development, testing and deployment of applications and software.
  - Competencies to focus on: Systems Integration, Software Testing and Evaluation; Data Management; Configuration Management; Software Engineering; Oral Communication; Written Communication.
  - Duties: Is it your responsibility to provide expert technical advice, guidance and recommendations to management and other technical specialists on critical IT issues related to application design, documentation, development, modification, testing, installation and support of new or existing applications software. You analyze and refine system requirements and participate in cross-functional project teams and user groups to include technical and non-technical personnel.
- **Data Management.**
  - Specialized Experience: Performing complex analysis of various types and sizes of datasets; collecting, managing, analyzing, interpreting and drawing conclusions
Competencies to focus on: Data Collection, Data Analysis, Oral Communication and Presentations, Written Communication

Duties: You will participate in the design of data mining and data warehouse system and databases, identifying system components and requirements, as well as providing recommendations and solutions. It is your responsibility to analyze and define data requirements and specifications, analyze and plan for anticipated changes in data capacity requirements, and generate complex data queries and reports

At GS-12, focus on the following Training Areas and Developmental Activities:

- NIST Special Publications or Defense Information Assurance Certification and Accreditation Process (DIACAP).
- Leadership.
- Communication/Public speaking.
- Technical Writing.
- Project Management Skills.
- Employee Development.
- Seek out a mentor for technical and/or career guidance.

At GS-11, try to gain Work Experiences in these areas:

- Acting as a lead on a project or task.
- Determining short and long term goals for projects.
- Coordinating with other parts of HUD or other organizations to accomplish goals.
- Conducting training sessions and giving presentations.
- Developing technical briefings on policy, written manuals and guidelines, and preparing documents for training sessions.
Information Technology Specialist GS-13

As a GS-13 Information Technology Specialist, you are responsible for providing technical advice and guidance on data processing projects and software issues. You conduct analyses of systems to assist in determining the nature of system requirements and whether or not new systems or enhancements should be developed. It is your responsibility to provide input on IT budget feasibility and/or project justification studies, and to assist in developing and implementing data processing methods and techniques used in management information activities. You are also responsible for assisting in the development of junior IT staff by identifying training needs and conducting in-house training sessions in new methods, procedures, systems, and policies in a given project management group. You independently perform Information Technology (IT) and IT Security evaluations, including assessment of practices, security functions, methodologies and information management of the evaluation environment.

Education/Experience

- You must have one year of specialized experience at a level of difficulty and responsibility equivalent to the GS-12 grade level in the Federal service.

Knowledge, Skills, and Abilities

- **Database Administration.** You have knowledge of the principles, methods, and tools for automating, developing, implementing, or administering.

- **Information Technology Architecture.** You have knowledge of the architectural methodologies used in the design and development of information systems, including the physical structure of a system's internal operations and interactions with other systems.

- **Resource Management.** You have the ability to manage human, financial and/or informational resources effectively to drive achievements; managing and distributing resources effectively in a constrained environment by prioritizing efforts to optimize results while minimizing potential negative impacts.

- **Information Systems/Network Security.** You have knowledge of the methods, tools, and procedures, including development of information security plans, to prevent information systems vulnerabilities, and provide or restore security of information systems and network services.

- **Information Technology Performance Assessment.** You have knowledge of the principles, methods, and tools (for example, surveys, system performance measures) to assess the effectiveness and practicality of information technology systems.

- **IT Publications and Standards.** You are familiar with the NIST publications covering IT, IT Security, Information Assurance, Program Management and Privacy Controls for Federal Information Systems and Organizations, as well as the Federal Information Processing Standards (FIPS) for Federal Information Systems and Organizations and NIST Special Publications or Defense Information Assurance Certification and Accreditation Process (DIACAP).

Parenthetical Titles

- **Application Software.**
  - Specialized Experience: Integration, design, development, testing and deployment of applications software; consultation and support for information technologies and business process modernization initiatives.
  - Competencies to focus on: Systems Integration, Software Testing and Evaluation; Data Management; Configuration Management; Software Engineering; Oral Communication; Written Communication.
Duties: Is it your responsibility to provide expert technical advice, guidance and recommendations to management and other technical specialists on critical IT issues related to application design, documentation, development, modification, testing, installation and support of new or existing applications software. You analyze and refine system requirements and lead or participate in cross-functional project teams and user groups to include technical and non-technical personnel.

Customer Support.

Specialized Experience: Planning and delivering customer support services, including PC installations, configurations, troubleshooting, customer assistance and training; researching work station hardware and software to ensure compatibility with customer requests; providing operations, maintenance, management and support of business continuity laptops; and assisting in the completion of IT assessments, security assessments and other workload data to recommend configuration chances for maximizing the effectiveness of installed technology.

Competencies to focus on: Infrastructure Design, Configuration Management, Information Technology Performance and Assessment.

Policy and Planning.

Specialized Experience: Aiding in the development and maintenance of strategic plans; assessing policy needs and helping to develop the policies that govern IT activities; helping to identify and address IT workforce planning and management issues, including recruitment, retention and training; and assisting in preparing IT budgets and management of IT investment portfolios.


Duties: You are responsible providing policy guidance to IT management, staff and customers; you take on a larger role in terms of preparing IT budgets and managing the IT investment portfolios. You are involved in strategic planning, workforce planning, the development of policy and standards, and resource management. You conduct audits on IT projects and ensure the rigorous application of information security and information assurance policies, principles, and practices in the delivery of planning and management services.

At GS-13, focus on the following Training Areas and Developmental Activities:

- Leadership.
- Awareness of and issues pertaining to budgeting.
- Developing and implementing data processing methods.
- Communication.
- Training others.
- Seek out a mentor for technical and/or career guidance.
At GS-13, try to gain Work Experiences in these areas:

- Seek out a professional mentor with knowledge and experience relevant to your career goals.
- Mentor and coach junior staff in technical writing and advanced oral communications.
- Seek opportunities for public speaking and then seek feedback from supervisor.

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<thead>
<tr>
<th>INFORMATION TECHNOLOGY SPECIALIST (GS-13) CAREER MAP</th>
</tr>
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<tbody>
<tr>
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</tr>
<tr>
<td>Information Technology Assistant (GS 5/7)</td>
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<tr>
<td>Information Technology Specialist (GS 11)</td>
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<tr>
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<td>Supervisory Information Technology Specialist (GS 15)</td>
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Lead Information Technology Specialist GS-13

As a GS-13 Lead Information Technology Specialist, you spend at least 25% of your duty time leading a team of other GS employees. You also participate in the work performed by your team, taking the same kind and difficulty as the highest level employee on your team. It is your responsibility to explain team goals and objectives to assigned team members and assist them in accomplishing their work. You coach, facilitate and solve work problems within the team while providing information to the supervisor on performance of the team and individuals. You communicate assignments, milestones, and deadlines to the team and individuals based on your supervisor’s instructions and relay requests for resources and supplies. It is your responsibility to observe training needs and relay these needs and requests to your supervisor, as well as inform your supervisor of any attendance or behavioral problems.

Education/Experience

- You must have one year of specialized experience at a level of difficulty and responsibility equivalent to the GS-12 grade level in the Federal service.
- Experience working collaboratively with peers in other entities to accomplish the mission and achieve continuous improvement of service delivery.

Knowledge, Skills, and Abilities

- **Communication.** You have the ability to express information to individuals or groups effectively, taking into account the audience and nature of the information. You can make clear and convincing oral presentations, listens to others, attends to non-verbal cues, and respond appropriately. You can also recognize and use correct English grammar, punctuation and spelling, communicate information in a succinct and organized manner, and produce written technical documents. You can conduct training sessions, resolve customer complaints or problems both in person and over the phone, and persuade others to accept your findings. You can draft report products for managers, edit sensitive written products, and edit reports and research summaries.
- **Database Administration.** You have knowledge of the principles, methods, and tools for automating, developing, implementing, or administering.
- **Information Technology Architecture.** You have knowledge of the architectural methodologies used in the design and development of information systems, including the physical structure of a system's internal operations and interactions with other systems.
- **Resource Management.** You have the ability to manage human, financial and/or informational resources effectively to drive achievements; managing and distributing resources effectively in a constrained environment by prioritizing efforts to optimize results while minimizing potential negative impacts.
- **Information Systems/Network Security.** You have knowledge of the methods, tools, and procedures, including development of information security plans, to prevent information systems vulnerabilities, and provide or restore security of information systems and network services.
- **Information Technology Performance Assessment.** You have knowledge of the principles, methods, and tools (for example, surveys, system performance measures) to assess the effectiveness and practicality of information technology systems.
- **IT Publications and Standards.** You have a high level of familiarity with the NIST publications covering IT, IT Security, Information Assurance, Program Management and Privacy Controls for Federal Information Systems and Organizations, as well as the Federal Information Processing Standards (FIPS) for Federal Information Systems and Organizations and NIST Special Publications or Defense Information Assurance Certification and Accreditation Process (DIACAP).
At GS-13, focus on the following Training Areas and Developmental Activities:

- Leadership, Supervision and General Management.
- Setting Performance Expectations for Staff.
- Time Management.
- Resource Management.
- Effective Communication.
- Negotiation.
- Political Savvy.
- Motivating and Developing Staff.
- Seek out a mentor for technical and/or career guidance.

At GS-13, try to gain Work Experiences in these areas:

- Seek out a professional mentor with knowledge and experience relevant to your career goals.
- Mentor others informally or formally, providing technical and career guidance.
- Be aware and cautious regarding political climates.
IT Project Manager GS-13

As an Information Technology Project Manager, you are responsible for many administrative aspects of your project(s). This includes preparing project plans and associated communications documents, assisting with the draft budget proposals and preparing recommendations for project changes and providing project leads of ongoing progress and risks associated with an assigned project. It is your responsibility to meet project expectations with team members in a timely manner and provide progress reports, proposals, requirements documentation, and presentations. You exercise best practices and tools for project execution and management, and plan and coordinate business participation in testing, piloting, user-training and implementation activities. You plan and acquire resources and coordinate with team members, third-party contractors, and/or consultants in order to deliver projects according to plan.

Education/Experience

- You must have one year of specialized experience at a level of difficulty and responsibility equivalent to the GS-12 grade level in the Federal service.
- Experience that demonstrates experience in at least one area of project management duties to include: working with large IT systems development projects using project management methodologies and experience in the support of procurement efforts by preparing statements of work.
- Experience that demonstrates involvement in activities such as contract administration, that involves overseeing and tracking events against contract requirements that include developing independent government estimates.
- Experience working collaboratively with peers in other entities to accomplish the mission and achieve continuous improvement of service delivery.
- Certified as a Government Technical Representative (GTR) or equivalent.
- Certified Project Management Professional (PMP) or equivalent.

Knowledge, Skills, and Abilities

- **Systems Life Cycle.** You have knowledge of systems lifecycle management concepts used to plan, develop, implement, operate and maintain information systems. This includes development, testing, analyzing system requirements, and implementing new systems or major enhancements.
- **Technology Application.** You can use machines, tools or equipment effectively; you use computers and computer applications to analyze and communicate information in the appropriate format. You can use Microsoft Project and Visio, and are capable of using proper data storage, retrieval and presentation procedures.
- **Infrastructure Design.** You have knowledge of the architecture and typology of software, hardware, and networks, including LANS, WANS, and telecommunication systems. You can determine and design applications architecture, design user interfaces, and write and maintain program documentation.
- **Communication.** You have the ability to express information to individuals or groups effectively, taking into account the audience and nature of the information. You can make clear and convincing oral presentations, listens to others, attends to non-verbal cues, and respond appropriately. You can also recognize and use correct English grammar, punctuation and spelling, communicate information in a succinct and organized manner, and produce written technical documents. You can conduct training sessions, resolve customer complaints or problems both in person and over the phone, and persuade others to accept your findings. You can draft report products for managers, edit sensitive written products, and edit reports and research summaries.
Project Management. Organizing work, setting priorities and time frames, establishing goals, determining resource requirements, communicating with stakeholders in a timely and effective manner, and ensuring quality projects on time and within budget.


ITMRA. Deep knowledge of the Information Technology Management Reform Act (ITMRA, also known as the Clinger-Cohen Act).

PMBOK and ITSLCM. Proficiency in the Project Manager Book of Knowledge (PMBOK) and IT Solutions Life Cycle Methodology (ITSLCM).

At GS-13, focus on the following Training Areas and Developmental Activities:
- Leadership, Supervision and General Management.
- Setting Performance Expectations for Staff.
- Time Management.
- Resource Management.
- Effective Communication.
- Negotiation.
- Motivating and Developing Staff.

At GS-13, try to gain Work Experiences in these areas:
- Familiarize yourself with HR Processes (Government 101).
- Develop a knowledge of the Federal Enterprise Architecture Program Management, Office of Management and Budget Collaborative Planning Methodology (OBB CPM), and Office of Management and Budget Circular A-131 Value Engineering (Chief Information Office Council’s Value Measuring Methodology).
- Seek out a professional mentor with knowledge and experience relevant to your career goals.
- Mentor others informally or formally, providing technical and career guidance.
**Information Technology Specialist GS-14**

As an Information Technology Specialist, it is your responsibility to provide technical advice and assistance to the Director of the office on overall computer guidance and direction for data processing projects affecting all aspects of the program office. You represent the organization in leading project teams comprised of program office staff personnel. You perform difficult assignments independently, and are responsible for the planning, design, development, implementation, control and coordination of a diverse set of complex automated processing systems at a national level. It is also your responsibility to conduct or coordinate staff training as automated systems are implemented. Your duties include delivery and interpretation of policies, procedures and strategies governing the planning and delivery of services throughout, providing technical advice, guidance and recommendations to management and other technical specialist, applying new developments to previously unsolvable problems, and making decisions or recommendations that significantly influence important HUD policies and programs.

**Education/Experience**

- You must have one year of specialized experience at a level of difficulty and responsibility equivalent to the GS-13 grade level in the Federal service.
- Specialized experience for this position includes: Providing technical advice and guidance on data processing projects and software issues affecting the program office; conducting analysis of systems to assist in determining the nature of system requirements and whether or not new systems or enhancements should be developed; Providing input on IT budget feasibility and/or project justification studies; and assisting in developing and implementing data processing methods and techniques which are utilized in management information activities.

**Knowledge, Skills, and Abilities**

- **Application.** You have the ability to apply application design concepts and methods, as well as the ability to rest applications and systems for compatibility and conduct problem resolution.
- **Database Administration.** You have knowledge of the principles, methods, and tools for automating, developing, implementing, or administering databases.
- **Information Systems/Network Security.** Knowledge of methods, tools, and procedures, including development of information security plans, to prevent information systems vulnerabilities, and provide or restore security of information systems and network services.
- **Information Technology Performance Assessment.** Knowledge of the principles, methods, and tools (for example, surveys, system performance measures) to assess the effectiveness and practicality of information technology systems.

**Parenthetical Titles**

- **Application Software.**
  - You have the mastery of and skill in applying systems engineering concepts and factors, such as structured design, supportability, survivability, reliability, scalability and maintainability.
  - This is sufficient to ensure that applications are optimized for state-of-the-art technology and functionality.
- **Policy and Planning.**
  - You have the mastery of and skill in applying: the business value of information; methods and approaches for sharing information through the use of IT assets; capital planning regulations and
policies, such as the Clinger-Cohen Act, as applied to the agency’s business requirements; performance measurement tools; and methods for identifying and resolving IT workforce issues.

- This is sufficient to: develop knowledge management program plans, policies, and standards, provide input to the IT capital planning process, develop, implement, and interpret metrics for the evaluation of IT program effectiveness and efficiency; and leverage human resources in the accomplishment of mission requirements.

At GS-14, focus on the following Training Areas and Developmental Activities:

- Leadership and Supervision.
- Decision-making.
- Problem-solving.
- Resource Management.
- Effective Communication.
- Political Savvy.

At GS-14, try to gain Work Experiences in these areas:

- Exhibit dependability and self-reliance.
- Seek out a professional mentor with knowledge and experience relevant to your career goals.
- Mentor others informally or formally, providing technical and career guidance.
- Network within HUD; check-in with what is going on with organization as a whole.
- Be aware and cautious regarding political climates.
Supervisory Information Technology Specialist GS-14

As a GS-14 Supervisory Information Technology Specialist, you have supervisory work and related managerial responsibilities that require the accomplishment of work group combined technical and administrative direction of others, and constitute a major duty, occupying at least 25% of your time. It is your responsibility to set team goals, select team leaders, assign team members tasks and direct the work of subordinated both technically and administratively. You plan, assign, review and accept, amend or reject work done by teams and subordinates. It is your responsibility to assign performance ratings, approve awards, and take performance based corrective actions, as well as counsel employees on behavior and initiate disciplinary actions if needed. Your duties include making work assignments, setting or negotiating deadlines and completions dates, allocating resources to your team(s), and scheduling and approving funding for team and individual training.

Education/Experience

- You must have one year of specialized experience at a level of difficulty and responsibility equivalent to the GS-13 grade level in the Federal service.

Knowledge, Skills, and Abilities

- **Applications.** You have the ability to apply application design concepts and methods, as well as the ability to test applications and systems for compatibility and conduct problem resolution.
- **Database Administration.** You have knowledge of the principles, methods, and tools for automating, developing, implementing, or administering databases.
- **Information Systems/Network Security.** You have knowledge of methods, tools, and procedures, including development of information security plans, to prevent information systems vulnerabilities, and provide or restore security of information systems and network services.
- **Information Technology Performance Assessment.** You have knowledge of the principles, methods, and tools to assess the effectiveness and practicality of information technology systems.
- **Communication.** You have the ability to express information to individuals or groups effectively, taking into account the audience and nature of the information. You can make clear and convincing oral presentations, listens to others, attends to non-verbal cues, and respond appropriately. You can also recognize and use correct English grammar, punctuation and spelling, communicate information in a succinct and organized manner, and produce written technical documents. You can conduct training sessions and persuade others to accept your findings. You can write report products for managers, draft sensitive written products, and write reports and research summaries.

Parenthetical Titles

- **System Administration.**
  - You have the mastery of and skill in applying modeling simulation tools and techniques, as well as capacity management principles, concepts and tools.
  - This is sufficient to plan and conduct simulations to determine capacity requirements and recommend hardware/software replacements or upgrades to meet current and future requirements.

At GS-14, focus on the following Training Areas and Development Activities:

- Negotiation.
- Principles of Project Management.
- Leadership and Supervision.
- Decision-making.
- Problem-solving.
- Resource Management.
- Effective Communication.
- Political Savvy.

At GS-14, try to gain Work Experiences in these areas:
- Exhibit dependability and self-reliance.
- Seek out a professional mentor with knowledge and experience relevant to your career goals.
- Mentor others informally or formally, providing technical and career guidance.
- Network within HUD; check-in with what is going on with organization as a whole.
- Be aware and cautious regarding political climates.
Information Technology Project Manager GS-14

As a GS-14 Information Technology Project Manager, you are responsible for many administrative aspects of your project(s). This includes preparing project plans and associated communications documents, assisting with the draft budget proposals and preparing recommendations for project changes and providing project leads of ongoing progress and risks associated with an assigned project. It is your responsibility to meet project expectations with team members in a timely manner and provide progress reports, proposals, requirements documentation, and presentations. You exercise best practices and tools for project execution and management, and plan and coordinate business participation in testing, piloting, user-training and implementation activities. You plan, execute and complete projects according to strict deadlines and within budget. This includes planning and acquiring resources and coordinating the efforts of team members and third party contractors or consultants in order to deliver projects according to plan. You define project objectives and oversee quality control throughout the lifecycle.

Experience and Accreditations

- You must have one year of specialized experience at a level of difficulty and responsibility equivalent to the GS-13 grade level in the Federal service.
- Certified as a Government Technical Representative (GTR) or equivalent
- Certified Project Management Professional (PMP) or equivalent

Knowledge, Skills, and Abilities

- **Systems Life Cycle.** You have knowledge of systems lifecycle management concepts used to plan, develop, implement, operate and maintain information systems. This includes development, testing, analyzing system requirements, and implementing new systems or major enhancements
- **Technology Application.** You can use machines, tools or equipment effectively; you use computers and computer applications to analyze and communicate information in the appropriate format. You can use Microsoft Project and Visio, and are capable of using proper data storage, retrieval and presentation procedures.
- **Infrastructure Design.** You have knowledge of the architecture and typology of software, hardware, and networks, including LANS, WANS, and telecommunication systems. You can determine and design applications architecture, design user interfaces, and write and maintain program documentation.
- **Communication.** You have the ability to express information to individuals or groups effectively, taking into account the audience and nature of the information. You can make clear and convincing oral presentations, listens to others, attends to non-verbal cues, and respond appropriately. You can also recognize and use correct English grammar, punctuation and spelling, communicate information in a succinct and organized manner, and produce written technical documents. You can conduct training sessions, resolve customer complaints or problems both in person and over the phone, and persuade others to accept your findings. You can draft report products for managers, edit sensitive written products, and edit reports and research summaries.
- **Project Management.** Organizing work, setting priorities and time frames, establishing goals, determining resource requirements, communicating with stakeholders in a timely and effective manner, and ensuring quality projects on time and within budget.
- **Relevant Guidelines.** You have a deep knowledge of guidelines, including departmental issuances and memoranda, Office of Management and Budget circulars, and U.S. Government Accountability Office’s Policy and Procedure Manuals.
- **ITMRA and HR Processes.** You have a deep knowledge of the Information Technology Management Reform Act (ITMRA, also known as the Clinger-Cohen Act) and HR Processes (Government 101).
- **Relevant Programs and Methodologies.** Deep knowledge of the Federal Enterprise Architecture Program Management, Office of Management and Budget Collaborative Planning Methodology (OBB CPM), and Office of Management and Budget Circular A-131 Value Engineering (Chief Information Office Council’s Value Measuring Methodology)

- **PMBOK and ITSLCM.** A high level of proficiency in the Project Manager Book of Knowledge (PMBOK) and IT Solutions Life Cycle Methodology (ITSLCM).

At GS-14, focus on the following Training Areas and Development Activities:

- Negotiation.
- Leadership and Supervision.
- Decision-making.
- Problem-solving.
- Resource Management.
- Effective Communication.
- Political Savvy.

At GS-14, try to gain Work Experiences in these areas:

- Act as a liaison between HUD and different entities.
- Exhibit dependability and self-reliance.
- Seek out a professional mentor with knowledge and experience relevant to your career goals.
- Mentor others informally or formally, providing technical and career guidance.
- Network within HUD; check-in with what is going on with organization as a whole.
- Be aware and cautious regarding political climates.
Information Technology Specialist GS-15

As a GS-15 Information technology specialist, your duties include developing new theories, concepts, principles, standards and methods in your specialty area. You are responsible for advising other IT experts throughout and outside of HUD on a variety of situations and issues that involve applying and adapting new theories, concepts, principles, standards, methods or practices that are developed by you or as a result of your leadership. You are a senior expert and consultant to top HUD officials to advise on integrating IT programs with other programs of equivalent scope and efficacy.

Experience
- You must have one year of specialized experience at a level of difficulty and responsibility equivalent to the GS-14 grade level in the Federal service.

Knowledge, Skills, and Abilities
- **Systems Life Cycle.** You have knowledge of systems lifecycle management concepts used to plan, develop, implement, operate and maintain information systems. This includes development, testing, analyzing system requirements, and implementing new systems or major enhancements.
- **Technology Application.** You can use machines, tools or equipment effectively; you use computers and computer applications to analyze and communicate information in the appropriate format. You can use Microsoft Project and Visio, and are capable of using proper data storage, retrieval and presentation procedures.
- **Infrastructure Design.** You have knowledge of the architecture and typology of software, hardware, and networks, including LANS, WANS, and telecommunication systems. You can determine and design applications architecture, design user interfaces, and write and maintain program documentation.
- **Communication.** You have the ability to express information to individuals or groups effectively, taking into account the audience and nature of the information. You can make clear and convincing oral presentations, listens to others, attends to non-verbal cues, and respond appropriately. You can also recognize and use correct English grammar, punctuation and spelling, communicate information in a succinct and organized manner, and produce written technical documents. You can conduct training sessions, resolve customer complaints or problems both in person and over the phone, and persuade others to accept your findings. You can draft report products for managers, edit sensitive written products, and edit reports and research summaries.

Parenthetical Titles
- **Application Software.**
  - You have mastery of software engineering theories, concepts and practices, as well as project management methods and concepts.
  - This is sufficient to:
    - Manage the enterprise-wide implementation of new approaches to software development, such as major changes to the life cycle management process or implementation of the capability maturity model (CMM) approach; develop new work methods, standards, and practices designed to significantly improve the safety, quality, reliability, predictability, reusability, and cost performance of applications software systems; and create and lead teams to review software code and develop quality assurance measurement criteria.
    - Lead teams conducting independent validation and verification of agency-wide or multi-agency applications software prior to final acceptance.
• **Policy and Planning.**
  - You have mastery of IT policy and planning concepts, methods and practices, as well as project management methods and concepts.
  - This is sufficient to represent the agency on interagency work groups established to develop Government-wide IT policy initiatives and solutions to critical issues; negotiate for the acceptance of agency positions on key Government-wide policy initiatives; develop guidelines for implementing broad Government-wide directives; and align agency internal business practices with Government-wide regulations and policies.

At GS-15, focus on the following Training Areas and Development Activities:

- Negotiation.
- Leadership and Supervision.
- Decision-making.
- Problem-solving.
- Resource Management.
- Effective Communication.
- Political Savvy.

At GS-15, try to gain Work Experiences in these areas:

- Exhibit dependability and self-reliance.
- Seek out a professional mentor with knowledge and experience relevant to your career goals.
- Mentor others informally or formally, providing technical and career guidance.
- Network within HUD; check-in with what is going on with organization as a whole.
- Be aware and cautious regarding political climates.
- Stay informed on news within and outside of the organization that could affect HUD’s work.
Supervisory Information Technology Specialist GS-15

As a GS-15 Supervisory Information Technology Specialist, you have supervisory work and related managerial responsibilities that require the accomplishment of work group combined technical and administrative direction of others, and constitute a major duty, occupying at least 25% of your time. It is your responsibility to set team goals, select team leaders, assign team members tasks and direct the work of subordinated both technically and administratively. You plan, assign, review and accept, amend or reject work done by teams and subordinates. It is your responsibility to assign performance ratings, approve awards, and take performance based corrective actions, as well as counsel employees on behavior and initiate disciplinary actions if needed. Your duties include making work assignments, setting or negotiating deadlines and completions dates, allocating resources to your team(s), and scheduling and approving funding for team and individual training.

Experience

- You must have one year of specialized experience at a level of difficulty and responsibility equivalent to the GS-14 grade level in the Federal service.

Knowledge, Skills, and Abilities

- **Systems Life Cycle.** You have knowledge of systems lifecycle management concepts used to plan, develop, implement, operate and maintain information systems. This includes development, testing, analyzing system requirements, and implementing new systems or major enhancements

- **Technology Application.** You can use machines, tools or equipment effectively; you use computers and computer applications to analyze and communicate information in the appropriate format. You can use Microsoft Project and Visio, and are capable of using proper data storage, retrieval and presentation procedures.

- **Infrastructure Design.** You have knowledge of the architecture and typology of software, hardware, and networks, including LANS, WANS, and telecommunication systems. You can determine and design applications architecture, design user interfaces, and write and maintain program documentation.

- **Communication.** You have the ability to express information to individuals or groups effectively, taking into account the audience and nature of the information. You can make clear and convincing oral presentations, listens to others, attends to non-verbal cues, and respond appropriately. You can also recognize and use correct English grammar, punctuation and spelling, communicate information in a succinct and organized manner, and produce written technical documents. You can conduct training sessions, resolve customer complaints or problems both in person and over the phone, and persuade others to accept your findings. You can write and review sensitive written products, reports and research summaries.

Parenthetical Titles

- **Application Software.**
  - You have mastery of IT policy and planning concepts, methods and practices, as well as project management methods and concepts.
  - This is sufficient to:
    - Manage the enterprise-wide implementation of new approaches to software development, such as major changes to the life cycle management process or implementation of the capability maturity model (CMM) approach; develop new work methods, standards, and practices designed to significantly improve the safety, quality, reliability, predictability, reusability, and cost performance of applications software systems; and create and lead teams to review software code and develop quality assurance criteria
- Lead teams conducting independent validation and verification of agency-wide or multi-agency applications software prior to final acceptance.

**Customer Support.**

- You have mastery of and skill in applying customer support principles, practices and methods, interrelationships between multiple IT disciplines, agency-level infrastructure and project management methods sufficient to manage special projects that have a significant impact on the delivery of customer support services.

- You have mastery of and skill in applying customer support principles, practices and methods, interrelationships between multiple IT disciplines, agency-level infrastructure and project management methods sufficient to represent the customer support office in planning for the installation and implementation of new systems; e.g., upgrade to a new operating system; and lead efforts to define post-implementation support requirements.

- You have mastery of and skill in applying customer support principles, practices and methods and IT performance measurement tools and techniques sufficient to develop service level agreements (SLAs) that define requirements and expectations for the delivery of customer support services; and develop and implement performance criteria to ensure that requirements are achieved.

**Data Management.**

- You have mastery of and skill in applying database management concepts and techniques, project management principles and methods, data mining, storage and warehousing methods, as well as agency-level IT infrastructure. This is sufficient to lead a project to develop and implement new data management schema; plan and coordinate the development of data structures and access strategies in alignment with business and mission requirements; develop technical designs; identify systems requirements; validate data sources; establish testing, implementation, and post-implementation support procedures; develop user instructions; and coordinate the evaluation and selection of data management tools.

- You have mastery of and skill in applying database management concepts and techniques, the enterprise IT infrastructure, interrelationships among multiple IT specialties, and project management principles and methods. This is sufficient to plan and manage the migration of databases to new technologies, such as the migration from client-server to Web-enabled databases; and plan and oversee the installation or reinstallation process and coordinate with specialists in other functional areas to resolve connectivity, compatibility, reliability, security, and related issues.

**Enterprise Architecture.**

- You have mastery of the enterprise architecture concepts, methods and practices, as well as project management methods and concepts, sufficient to lead the evaluation of the agency’s mission, goals, plans, programs, and business processes to develop an enterprise architecture plan for the agency; conduct continuing evaluations of agency business needs to ensure enterprise architecture plans are aligned with those needs and the current and planned IT infrastructure supports the architecture plan; develop plans and strategies to modify the IT infrastructure to support short and long range agency goals, objectives, and plans; and evaluate, select, and advise others on the application of architecture modeling tool sets used to document, maintain, and enhance the architectural planning process.

- You have the mastery of the Federal Enterprise Architecture framework and reporting requirements sufficient to facilitate cross-organizational analyses to identify duplicative investments, gaps, or opportunities for collaboration within the agency and across Federal agencies; and oversee the process of linking major agency IT initiatives (i.e., IT 300 Exhibit) to
the agency’s enterprise architecture and the FEA framework to support the budget formulation process.

- **Information Security.**
  - You have mastery of the IT Security theories, concepts, practices and emerging issues, as well as project management methods and concepts.
  - This is sufficient to:
    - Plan, develop, and coordinate agency-level information assurance or information security programs and strategies; e.g., the agency workforce security training program or security audit program; and formulate agency-level IT security program initiatives in response to critical IT security issues.
    - Plan and coordinate agency-wide implementation of government-wide IT security defense strategies to ensure protection of the IT infrastructure.

At GS-15, focus on the following Training Areas and Development Activities:

- Negotiation.
- Leadership and Supervision.
- Decision-making.
- Problem-solving.
- Time Management.
- Resource Management.
- Effective Communication.
- Political Savvy.
- Budget laws and requirements.

At GS-15, try to gain Work Experiences in these areas:

- Exhibit dependability and self-reliance.
- Seek out a professional mentor with knowledge and experience relevant to your career goals.
- Mentor others informally or formally, providing technical and career guidance.
- Network within HUD; check-in with what is going on with organization as a whole.
- Be aware and cautious regarding political climates.
- Stay informed on news within and outside of the organization that could affect HUD’s work.
SUPERVISORY INFORMATION TECHNOLOGY SPECIALIST (GS-15)
CAREER MAP

Entry Level / Developmental

Full Performance Mid-Level

Expert / Managerial

Information Technology Assistant (GS 5/7)

Information Technology Specialist (GS 9)

Information Technology Specialist (GS 11)

Information Technology Specialist (GS 12)

Information Technology Specialist (GS 13)

Information Technology Specialist (GS 13)

Lead Information Technology Specialist (GS 13)

Supervisory Information Technology Specialist (GS 14)

Supervisory IT Program Director (GS 15)

Information Technology Project Manager (GS 13)

Information Technology Project Manager (GS 14)

Information Technology Project Manager (GS 15)
Information Technology Project Manager GS-15

As a GS-15 Information Technology Project Manager, you are responsible for many administrative aspects of your project(s). You are responsible for identifying customers' information systems requirements, ensuring appropriate product-related training and documentation are developed and made available to customers, and analyzing the requirements or environments information systems requirements or environment. You design and conduct analytical studies, cost-benefit analyses, and other research. It is your responsibility to evaluate, monitor, and ensure compliance with laws, regulations, policies, standards, or procedures, in addition to developing and implementing information systems security plans and procedures. You oversee the purchasing or contracts for IT services, equipment, products, supplies, property, or other items, integrate information systems subsystems and develop information systems testing strategies, plans, or scenarios. It is your responsibility to identify the standards or requirements for infrastructure configuration or change management, and participate in change control (for example, reviewing configuration change requests).

**Experience**

- You must have one year of specialized experience at a level of difficulty and responsibility equivalent to the GS-14 grade level in the Federal service.

**Knowledge, Skills, and Abilities**

- **Configuration Management.** You have knowledge of the principles and methods for planning or managing the implementation, update, or integration of information systems components.

- **Data Management.** You have knowledge of the principles, procedures, and tools of data management, such as modeling techniques, data backup, data recovery, data dictionaries, data warehousing, data mining, data disposal, and data standardization processes.

- **Information Management.** You have the ability to identify a need for and know where or how to gather information; organizes and maintains information or information management systems.

- **Information Resources Strategy and Planning.** You have knowledge of the principles, methods, and techniques of information technology (IT) assessment, planning, management, monitoring, and evaluation, such as IT baseline assessment, interagency functional analysis, contingency planning, and disaster recovery.

- **Information Systems/Network Security.** You have knowledge of methods, tools, and procedures, including development of information security plans, to prevent information systems vulnerabilities, and provide or restore security of information systems and network services.

- **Information Technology Architecture.** You have knowledge of the architectural methodologies used in the design and development of information systems, including the physical structure of a system’s internal operations and interactions with other systems.

- **Information Technology Performance Assessment.** You have knowledge of the principles, methods, and tools (for example, surveys, system performance measures) to assess the effectiveness and practicality of information technology systems.

- **Infrastructure Design.** You have knowledge of the architecture and typology of software, hardware, and networks, including LANS, WANS, and telecommunications systems, their components and associated protocols and standards, and how they operate and integrate with one another and with associated controlling software.

- **Systems Integration.** You have knowledge of the principles, methods, and procedures for installing, integrating, and optimizing information systems components.

- **Systems Life Cycle.** You have knowledge of systems life cycle management concepts used to plan, develop, implement, operate, and maintain information systems.
Technology Awareness. You have knowledge of developments and new applications of information technology (hardware, software, telecommunications), emerging technologies and their applications to business processes, and applications and implementation of information systems to meet organizational requirements.

Communication. You have the ability to express information to individuals or groups effectively, taking into account the audience and nature of the information. You can make clear and convincing oral presentations, listens to others, attends to non-verbal cues, and respond appropriately. You can also recognize and use correct English grammar, punctuation and spelling, communicate information in a succinct and organized manner, and produce written technical documents. You can conduct training sessions and persuade others to accept your findings. You can write and review the final versions of reports and sensitive written products, as well as reports and research summaries.

At GS-15, focus on the following Training Areas and Development Activities:

- Negotiation.
- Leadership and Supervision.
- Decision-making.
- Problem-solving.
- Resource Management.
- Effective Communication.
- Political Savvy.
- Budget laws and requirements.

At GS-15, try to gain Work Experiences in these areas:

- Act as a liaison between HUD and different entities.
- Exhibit dependability and self-reliance.
- Mentor others informally or formally, providing technical and career guidance.
- Network within and outside of HUD.
- Be aware and cautious regarding political climates.
- Stay informed on news within and outside of the organization that could affect HUD’s work.
Supervisory Information Technology Program Manager GS-15

As a GS-15 Supervisory IT Program Manager (also known as Program Director), you do work that involves managing one or more major multi-year IT initiatives of such magnitude they must be carried out through multiple related IT projects. You lead, coordinate, communicate, integrate and are accountable for the overall success of the program, ensuring alignment with critical agency priorities. You are responsible for ensuring the work efforts achieve the outcome specified within the agency’s business strategy, including appropriate strategic, life cycle management and capital IT investment plans. Work includes project selection, prioritization, evaluation and monitoring, cost schedule management, risk management, quality management and resource allocations. It is your responsibility to direct in the design, development, and implementation of all information systems, and you are responsible for all liaison activities with users of operational information. As Director, you serve as the principal consultant and advisor to top management on your program, and it is your responsibility to establish, review, and coordinate the many functions, programs, policies and procedures involved in the overall responsibility of assigning programs and projects to the Division staff, to discuss overall policies and objectives, and to provide necessary technical direction during the completion of programs and projects.

Experience

- You must have one year of specialized experience at a level of difficulty and responsibility equivalent to the GS-14 grade level in the Federal service.
- Specialized experience for this position includes: Supervision or management of staff responsible for the development of information systems and formulating policies impacting these systems

Knowledge, Skills, and Abilities

- **Project Management.** Ability to develop, schedule, coordinate and manage projects and resources, including inspecting and monitoring costs, work and contractor performance.
- **People Management.** Ability to plan, distribute, coordinate, monitor and evaluate the work of others.
- **Liaison Duties.** Ability to perform liaison activities.
- **Recent Field Developments.** Knowledge of developments and new applications of information technology; emerging technologies and their applications to the business processes.

At GS-15, focus on the following Training Areas and Development Activities:

- Advanced leadership.
- Negotiation.
- Critical Thinking.
- Decision-making.
- Problem-solving.
- Resource management.
- Effective communication.
- Grant management.
- Budget laws and requirements.

At GS-15, try to gain Work Experiences in these areas:

- Stay informed on news within and outside of the organization that could affect HUD’s work.
- Find a professional mentor.
- Mentor others informally or formally, providing technical and career guidance.
- Network within HUD; check-in with what is going on with organization as a whole.
- Be aware and cautious regarding political climates.

SUPERVISORY IT PROGRAM MANAGER (GS-15)
CAREER MAP
Parenthetical Titles

The descriptions below represent parenthetical titles that can be used in Information Technology; each parenthetical title is accompanied by a description of the sorts of tasks that individuals with that title typically perform.

<table>
<thead>
<tr>
<th>Technical Specialty</th>
<th>Functions commonly performed by employees may include:</th>
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<tbody>
<tr>
<td>Policy and Planning</td>
<td>- Developing and maintaining strategic plans</td>
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<td></td>
<td>- Assessing policy needs and developing policies to govern IT activities</td>
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<td></td>
<td>- Providing policy guidance to IT management, staff, and customers</td>
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<td></td>
<td>- Defining current and future business environments</td>
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<td>- Preparing IT budgets</td>
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<td>- Managing IT investment portfolios</td>
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<td>- Establishing metrics to measure and evaluate systems performance and total cost of ownership</td>
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<td></td>
<td>- Identifying and addressing IT workforce planning and management issues, such as recruitment, retention, and training</td>
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<td>- Conducting audits of IT programs and projects</td>
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<td></td>
<td>- Ensuring the rigorous application of information security/ information assurance policies, principles, and practices in the delivery of planning and management services</td>
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<tr>
<td>Enterprise Architecture</td>
<td>- Developing reference models of the enterprise and maintaining the information in the IT repository</td>
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<td>- Determining the gaps between the current and the target architecture and developing plans for transitioning to target architecture</td>
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<td></td>
<td>- Defining the policies and principles to guide technology decisions for the enterprise architecture</td>
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<td>- Identifying opportunities to improve enterprise-level systems to support business processes and utilize emerging technologies</td>
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<td>- Promoting and educating customers and stakeholders on the use and value of the enterprise architecture</td>
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<td>- Providing enterprise architecture guidance, support, and coordination to customers and IT project teams</td>
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<td>- Documenting the enterprise architecture infrastructure, including the business units and key processes, using modeling techniques</td>
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<td>- Ensuring technical integration is achieved across the enterprise by participating in test planning, validation, and reviews</td>
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<td></td>
<td>- Evaluating the impact of enterprise architecture products and services on IT investments, business operations, stakeholder satisfaction, and other outcomes</td>
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<td></td>
<td>- Coordinating and conducting governance and portfolio management activities associated with ensuring compliance with the enterprise architecture</td>
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<td>- Ensuring the rigorous application of information security/ information assurance policies, principles, and practices to all components of the enterprise architecture</td>
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<tr>
<td>Security</td>
<td>- Developing policies and procedures to ensure information systems reliability and accessibility and to prevent and defend against unauthorized access to systems, networks, and data</td>
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<td>- Conducting risk and vulnerability assessments of planned and installed information systems to identify vulnerabilities, risks, and protection needs</td>
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<td>- Promoting awareness of security issues among management and ensuring sound security principles are reflected in organizations’ visions and goals</td>
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<td>- Conducting systems security evaluations, audits, and reviews</td>
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<td>- Developing systems security contingency plans and disaster recovery procedures</td>
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<td></td>
<td>- Developing and implementing programs to ensure that systems, network, and data users are aware of, understand, and adhere to systems security policies and procedures</td>
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<td>System Awareness</td>
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<tr>
<td>Participating in network and systems design to ensure implementation of appropriate systems security policies</td>
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<tr>
<td>Facilitating the gathering, analysis, and preservation of evidence used in the prosecution of computer crimes</td>
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<td>Assessing security events to determine impact and implementing corrective actions</td>
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<tr>
<td>Ensuring the rigorous application of information security/information assurance policies, principles, and practices in the delivery of all IT services.</td>
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<thead>
<tr>
<th>System Awareness</th>
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<tbody>
<tr>
<td>Performing needs analyses to define opportunities for new or improved business process solutions</td>
</tr>
<tr>
<td>Consulting with customers to identify and specify requirements</td>
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<tr>
<td>Developing overall functional and systems requirements and specifications</td>
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<tr>
<td>Conducting business process reengineering</td>
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<tr>
<td>Conducting feasibility studies and trade-off analyses</td>
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<tr>
<td>Preparing business cases for the application of IT solutions</td>
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<tr>
<td>Defining systems scope and objectives</td>
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<tr>
<td>Developing cost estimates for new or modified systems</td>
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<tr>
<td>Ensuring the integration of all systems components</td>
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<tr>
<td>Planning systems implementation</td>
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<tr>
<td>Ensuring the rigorous application of information security/information assurance policies</td>
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<tr>
<th>Applications Software</th>
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<tbody>
<tr>
<td>Analyzing and refining systems requirements</td>
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<tr>
<td>Translating systems requirements into applications prototypes</td>
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<tr>
<td>Planning and designing systems architecture</td>
</tr>
<tr>
<td>Writing, debugging, and maintaining code</td>
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<tr>
<td>Determining and designing applications architecture</td>
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<tr>
<td>Determining output media/formats</td>
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<tr>
<td>Designing user interfaces</td>
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<tr>
<td>Working with customers to test applications</td>
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<tr>
<td>Assuring software and systems quality and functionality</td>
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<tr>
<td>Integrating hardware and software components</td>
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<tr>
<td>Writing and maintaining program documentation</td>
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<tr>
<td>Evaluating new applications software technologies</td>
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<tr>
<td>Ensuring the rigorous application of information security/information assurance policies, and principles</td>
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<tr>
<th>Operating Systems</th>
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<tbody>
<tr>
<td>Analyzing systems requirements in response to business requirements, risks, and costs</td>
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<tr>
<td>Evaluating, selecting, verifying, and validating the systems software environment</td>
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<tr>
<td>Evaluating, selecting, and installing compilers, assemblers, and utilities</td>
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<tr>
<td>Integrating hardware and software components within the systems environment</td>
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<tr>
<td>Monitoring and fine-tuning performance of the systems environment</td>
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<tr>
<td>Evaluating new systems engineering technologies and their effect on the operating environment</td>
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<tr>
<td>Ensuring that information security/information assurance policies, principles, and practices are an integral element of the operating environment</td>
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<tr>
<th>Network Services</th>
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<tbody>
<tr>
<td>Analyzing and defining network requirements</td>
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<tr>
<td>Defining and maintaining network architecture and infrastructure</td>
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<tr>
<td>Configuring and optimizing network servers, hubs, routers, and switches</td>
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<tr>
<td>Analyzing network workload</td>
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<tr>
<td>Monitoring network capacity and performance</td>
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<td>Diagnosing and resolving network problems</td>
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<tr>
<td>Developing network backup and recovery procedures</td>
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<tr>
<td>Installing, testing, maintaining, and upgrading network operating systems software</td>
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<tr>
<td>Data Management</td>
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<td>--------------------------------------------------------------------------------</td>
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</tbody>
</table>
| • Ensuring the rigorous application of information security/information assurance policies, principles, and practices in the delivery of network services | •Analyzing and defining data requirements and specifications  
•Designing, normalizing, developing, installing, and implementing databases  
•Maintaining, monitoring, performance tuning, backup, and recovery of databases  
•Installing, configuring, and maintaining database management systems software  
•Analyzing and planning for anticipated changes in data capacity requirements;  
•Developing and administering data standards, policies, and procedures  
•Developing and implementing data mining and data warehousing programs  
•Evaluating and providing recommendations on new database technologies and architectures  
•Ensuring the rigorous application of information security/information assurance policies, principles, and practices in the delivery of data management services | •Planning and scheduling the installation of new or modified hardware and operating systems and applications software  
•Managing accounts, network rights, and access to systems and equipment  
•Managing systems resources including performance, capacity, availability, serviceability, and recoverability  
•Implementing security procedures and tools  
•Developing and documenting systems administration standard operating procedures  
•Resolving hardware/software interface and interoperability problems  
•Ensuring systems availability, functionality, integrity, and efficiency  
•Maintaining systems configuration  
•Managing the installation and integration of systems fixes, updates, and enhancements  
•Ensuring the rigorous application of information security/information assurance policies, principles, and practices in the delivery of systems administration services | • Diagnosing and resolving problems in response to customer reported incidents  
•Researching, evaluating, and providing feedback on problematic trends and patterns in customer support requirements  
•Developing and maintaining problem tracking and resolution databases  
•Installing, configuring, troubleshooting, and maintaining customer hardware and software  
•Developing and managing customer service performance requirements  
•Developing customer support policies, procedures, and standards  
•Providing customer training  
•Ensuring the rigorous application of information security/information assurance policies, principles, and practices in the delivery of customer support services |