UNITED STATES OFFICE OF PERSONNEL MANAGEMENT

IT Program Management Career Path Guide

November 2011

a New Day for the Federal Service

UNITED STATES OFFICE OF PERSONNEL MANAGEMENT
Washington. DC 20415

The Director

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Memorandum for Chief Human Capital Officers

From: John Berry
Director

Subject: IT Program Management Career Path Guide

In continued support of the White House's ***25 Point Implementation Plan to Reform Federal Information Technology Management,*** the U.S. Office of Personnel Management (OPM) has developed the IT Program Management Career Path Guide and recommended training curriculum for the newly-established Information Technology (IT) Program Management job title. OPM worked closely with the Chief Information Officers (CIO) Council and the U.S. Office of Management and Budget on this project, initiated in May 2011, and included subject matter expert participation in various focus group meetings to develop the content for this product. The resulting resource builds upon tbe IT Program Management Competency Model released by OPM in July 2011, and provides guidance to Federal agencies on the creation and improvement of the IT Program Management career path at each agency.

The information presented in this Guide captures critical activities for agencies to achieve success in Federal IT Program Management through recruitment. development. and retention of top talent. This Guide serves as a roadmap for individuals interested in pursuing or advancing in an IT Program Management career. The Guide also constitutes a single-source reference for both employees and supervisors to support training and development initiatives within the IT Program Management career field.

Thank you for your continued support of this important initiative. If you have any questions regarding the IT Program Manager Career Path Guide, please contact Julie Brill. Manager of Training and Executive Development, by telephone at (202) 606-5067 or by e-mail at JuJie.Brill@opm.gov.

cc: Human Resources Directors

Introduction

The U.S. Office of Personnel Management (OPM), in collaboration with the Office of Management and Budget (OMB) and in support of the White House's **25 Point Implementation Plan to Reform Federal Information Technology Management,** has gathered data from IT Program Manager subject matter experts to create a career path and suggested training curriculum for the newly established Federal Information Technology Program Management job title. This Career Path Guide was developed to provide guidance to Federal agencies interested in creating or enhancing their own IT Program Management career path. The information presented in this Guide captures critical activities for agencies to achieve success in Federal IT Program Management through recruitment, development, and retention of top talent.

Purpose and Objectives

This Career Path Guide was based on the IT Program Management Competency Model established by OPM in July 2011, and focuses on general and technical competencies pertinent to the IT Program Management career field. The competency model can be viewed at http://www.chcoc.gov/Transmittals/TransmittalDetails.aspx?TransmittalID=4058. This Guide serves as a roadmap for individuals interested in pursuing a career in IT Program Management, and provides employees and their supervisors with a single-source reference to determine appropriate training opportunities for career advancement. This Guide will also help employees plan and sequence appropriate career training and development by providing valuable information in the following areas:

- **Identifying the typical and non-typical career paths into GS-13, GS-14, and GS-15 level IT Program Management positions, as well as the success factors that contribute to career development and successful performance.** The Guide provides a career progression outline of avenues for employees to move among and across jobs in Federal IT Program Management. Please note, however, the career paths identified in this Guide by subject matter experts do not constitute an exclusive list, and employees may identify alternative ways to successfully progress into the field of IT Program Management. The Guide also presents a number of success factors enabling individuals to maximize Federal IT Program Management performance and career advancement.

- **Identifying key work behaviors, training options, and developmental opportunities associated with each competency.** The Guide helps employees and supervisors make effective use of training resources by determining appropriate coursework and developmental experiences for each competency.

- **Listing common degrees and certifications completed by IT Program Managers in the Federal Sector.** While a degree or certificate is not required to advance in the Federal IT Program Management field, many individuals in this occupation possess

some type of certification or credentialing. Industry job experts commonly emphasize the importance of both experience and coursework for successful performance as an IT Program Manager.

Differentiating Job Titles within the GS-2210 Series

According to the Job Family Standard for the Information Technology Management Series GS-2210, found at http://www.chcoc.gov/Transmittals/TransmittalDetails.aspx?TransmittalID=3961, this series is defined as covering "*two-grade interval administrative positions that manage, supervise, lead, administer, develop, deliver, and support information technology (IT) systems and services. This series covers only those positions for which the paramount requirement is knowledge of IT principles, concepts, and methods; e.g., data storage, software applications, networking.*"

Three basic titles fall under the GS-2210 Job Series, including ***IT Specialist, IT Project Manager, and IT Program Manager.*** This Guide focuses on the career progression for the IT Program Manager job title; however, users of the Guide should understand the differences among the three titles for this occupation.

***IT Specialist*:** Work that involves developing, delivering, and supporting IT systems and services. Parenthetical specialty titles (listed below) can be applied to the basic title to further identify the duties performed and special knowledge and skills required.

IT Project Manager*:** Work that involves directly managing information technology projects to provide a unique service or product. Please note that a project has been defined in the Project Management Institute's Project Management Body of Knowledge (PMBOK®, an American National Standard ANSI/PMI 99-001-2000) as ***"a temporary endeavor undertaken to create a unique product, service, or result." The essential distinction between IT projects and other projects is that an IT project involves the delivery of an ***information technology*** product, service, or system.

***IT Program Manager*:** 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. The IT program manager leads, coordinates, communicates, integrates and is accountable for the overall success of the program, ensuring alignment with critical agency priorities. They 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.

Individuals interested in the IT program management field, should understand the key distinction between projects and programs. Specifically, a project has a defined beginning and end while a program constitutes an ongoing operation. A project serves to develop, modify, or enhance a product, service, or system and is constrained by the relationships among scope, resources, and time. In contrast, a program encompasses the missions, functions, operations, activities, laws,

rules, and regulations that an agency is authorized and funded by statute to administer and enforce. Additionally, a program typically provides products and/or services to the public, and agencies distribute available funding and provide ongoing staff support to carry out a continuing program.

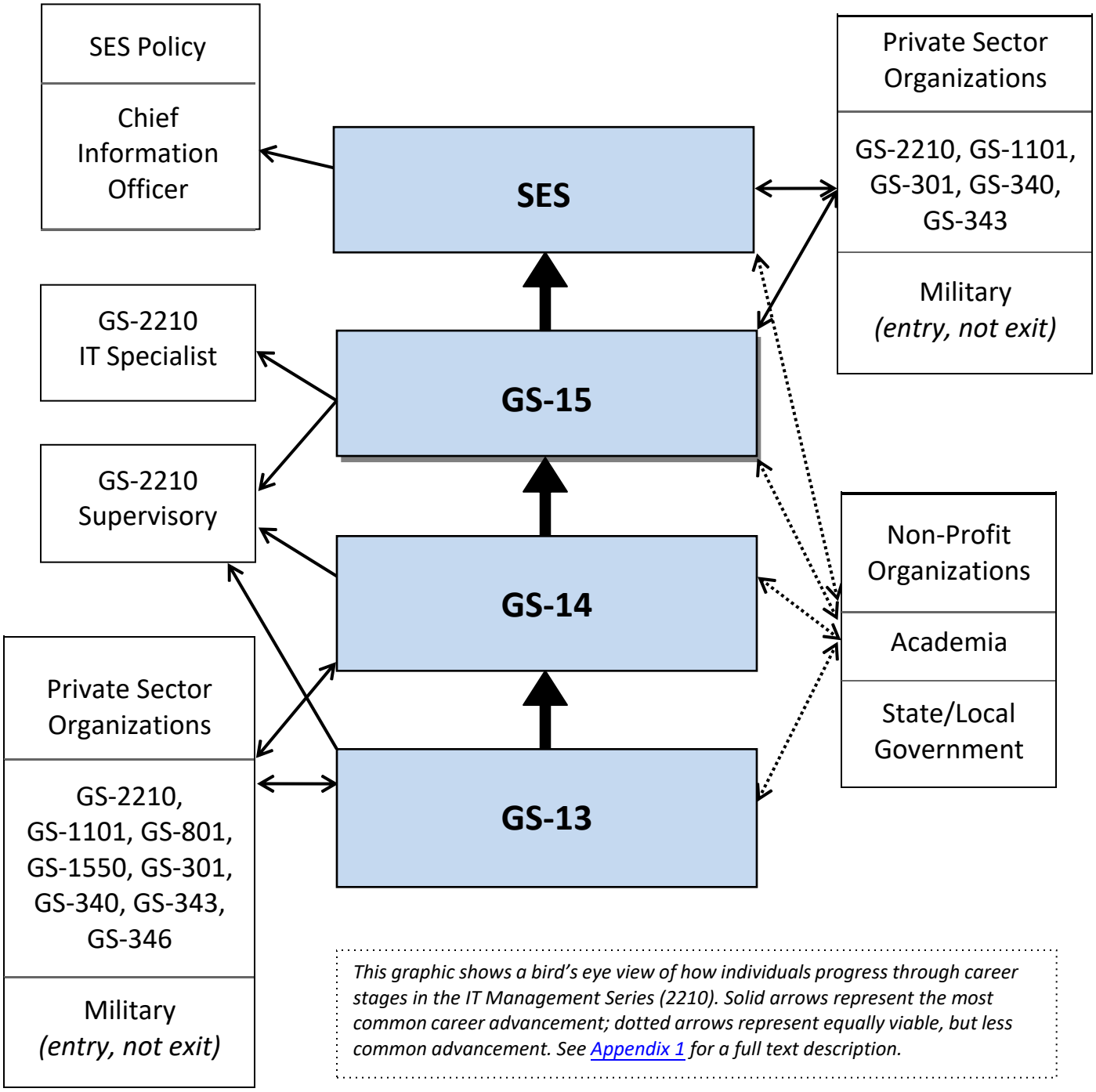
OPM has prescribed the following 11 parenthetical titles to provide further specificity to job titles within the Information Technology Management series, GS-2210:

- **Policy and Planning**
- **Enterprise Architecture**
- **Security**
- **Systems Analysis**
- **Applications Software**
- **Operating Systems**
- **Network Services**
- **Data Management**
- **Internet**
- **Systems Administration**
- **Customer Support**

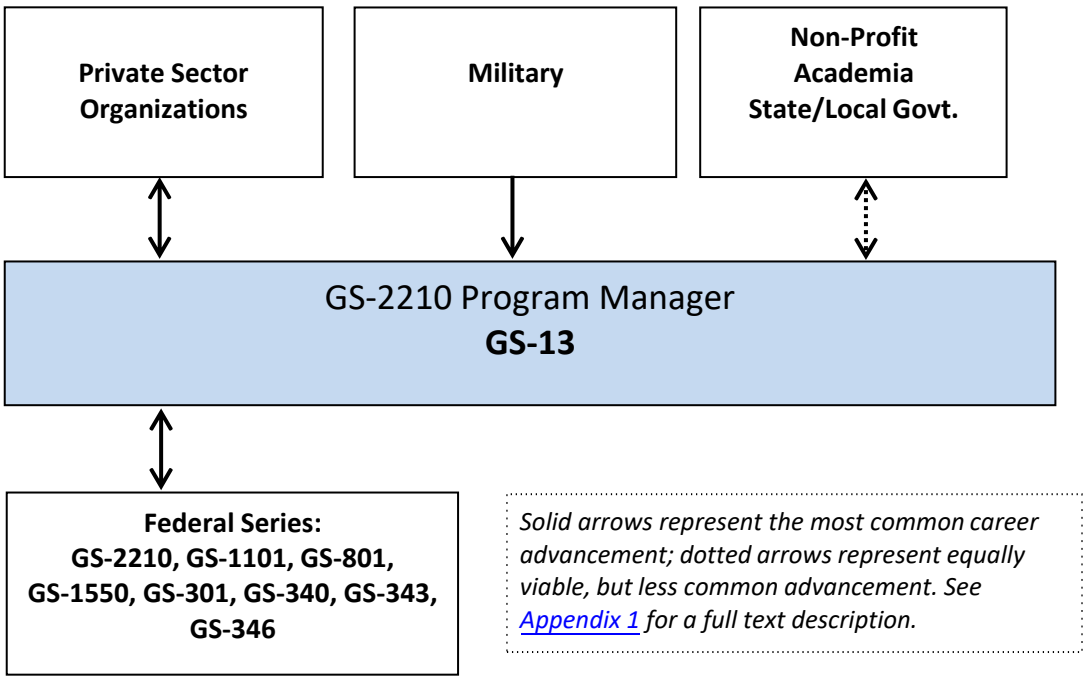
Understanding the Career Path

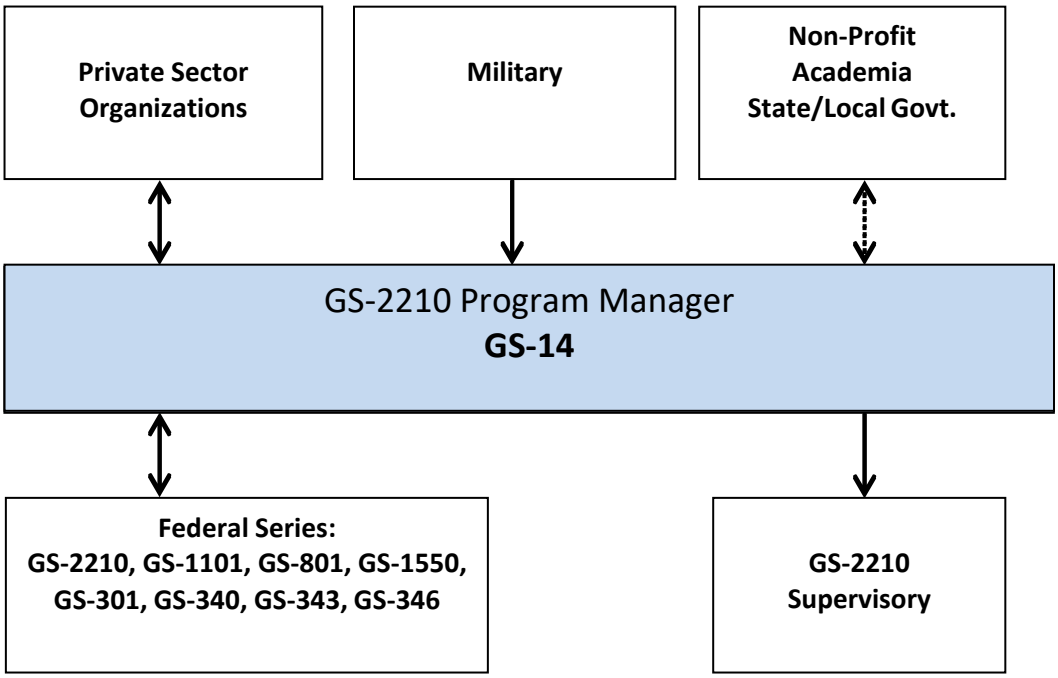
A career path is a progression of positions in one or more occupational series. As illustrated on page 4, each level of the IT Program Manager career path is comprised of entry and exit points; the solid lines represent typical career movement, while the dotted lines are representative of non-typical career patterns. Double-sided arrows signify movement both in and out of a certain level, while single-sided arrows indicate movement in only one direction. At the GS-13 level, it is common for individuals to come into Federal IT Program Management via the private sector, as well as from General Schedule occupations (GS-2210, GS-1101, GS-801, GS-1550, GS-301, GS-340, GS-343, GS-346). Individuals also exit Federal IT Program Management in pursuit of these opportunities. Individuals at all levels commonly transfer into Federal IT Program Management from the Military; however, individuals in IT Program Management positions rarely leave their positions to serve in the Military. IT Program Management positions also rarely involve entry from, or exit to, non-profit organizations, academia, and state and local government.

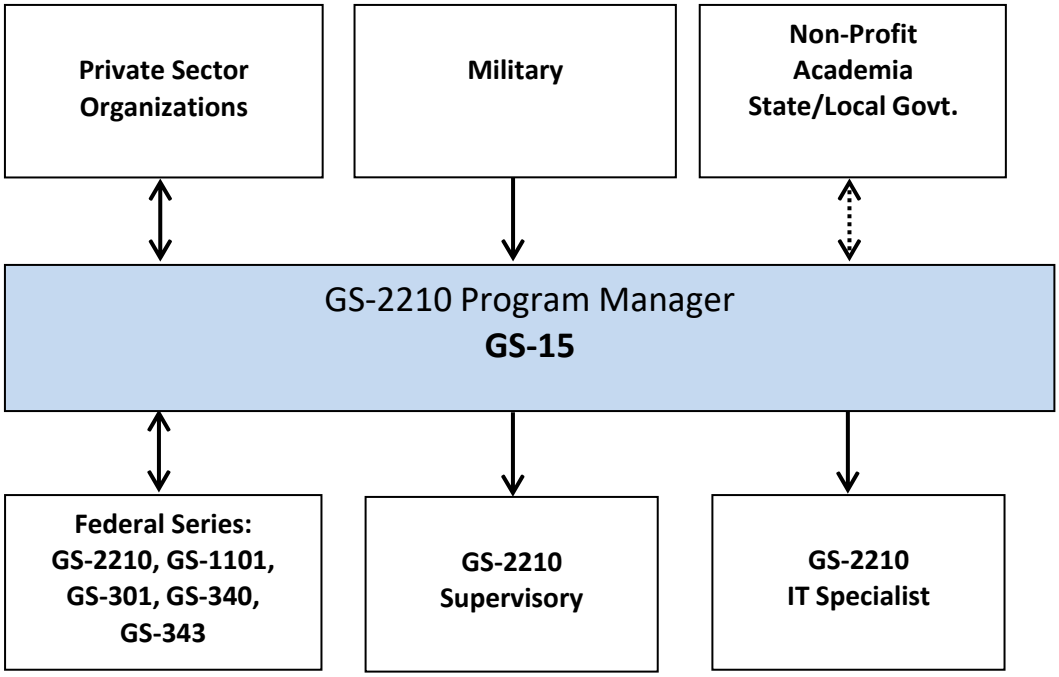
Typical Career Path for
IT Program Management — GS-2210



This graphic shows a bird's eye view of how individuals progress through career stages in the IT Management Series (2210). Solid arrows represent the most common career advancement; dotted arrows represent equally viable, but less common advancement. See Appendix 1 for a full text description.


Private Sector Organizations
Military
Non-Profit Academia State/Local Govt.
GS-2210 Program Manager
GS-13
Federal Series: GS-2210, GS-1101, GS-801, GS-1550, GS-301, GS-340, GS-343, GS-346
Solid arrows represent the most common career advancement; dotted arrows represent equally viable, but less common advancement. See Appendix 1 for a full text description.


Private Sector Organizations
Military
Non-Profit Academia State/Local Govt.
GS-2210 Program Manager
GS-14
Federal Series: GS-2210, GS-1101, GS-801, GS-1550, GS-301, GS-340, GS-343, GS-346
GS-2210 Supervisory



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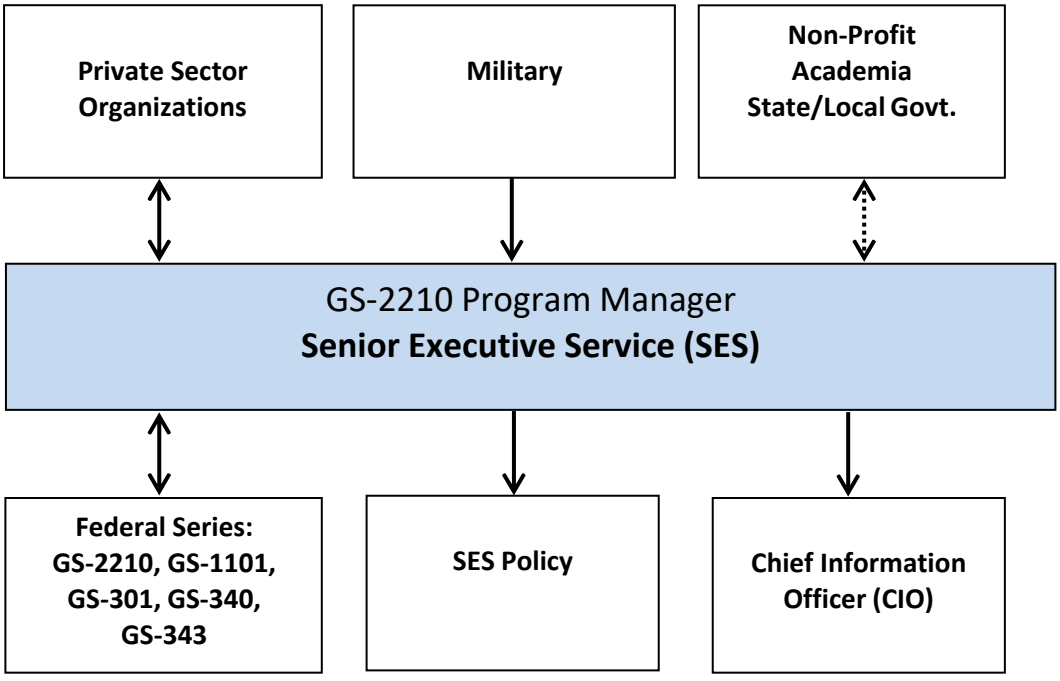

Success Factors

Success factors provide guidance on how individuals can maximize performance and career success as they progress through career stages in IT Program Management. These success factors represent "pieces of advice" from subject matter experts who have reflected on their experience in the IT Program Management field and provided a roadmap to maximize performance and career advancement. Note that many of the success factors indicated in this Guide do not tie to any particular specialty area or grade level. Additionally, these statements do not tie to any specific competency or developmental experience. After reading through the success factors, individuals should seek clarification from their supervisor on how best to implement some of the suggestions. The following constitute a list of success factors identified by subject matter experts in developing this Guide:

- Gain a broad experience in project management by managing multiple projects.
- Gain solid foundational knowledge in dealing with software, security networks, etc.
- Possess the ability to effectively speak to technical and business audiences.
- Develop a broad technical background.
- Develop proficiency in contract/subcontracting management, particularly managing different types of contracts, such as Cost, Firm Fixed Price, Time and Materials, Research and Development, Hybrid, Interagency, Operations and Sustainment, Software Development, Network Services, COTS Integration, Systems Acquisition, etc.
- Develop outstanding oral and written communication skills.
- Learn how to manage in multi-stakeholder environment.
- Develop a strong understanding of the strategic roles of stakeholders.
- Gain an understanding of the political environment.
- Develop effective talent management skill – be able to orchestrate a cross-functional team.
- Gain as much real-world experience as possible working with multiple and different types of projects and programs, as well working with a variety of stakeholders (e.g., by participating in rotational assignments inside or outside of the agency).
- Develop the ability to build consensus.
- Gather and manage the developing requirements of customers, setting expectations as appropriate.
- Gain knowledge of the legislative and regulatory requirements surrounding IT Program Management.

IT Program Management – GS-13, GS-14, GS-15		
Core Technical Competencies	**Key Work Behaviors**	**Training & Development Activities**
Risk Management: Knowledge of methods and tools used for risk assessment and mitigation, including assessment of failures and their consequences. ***Behaviors at different grade levels may vary based upon unique program factors such as risk, complexity, cost, location, and stakeholders.***	1. Proactively identifies IT program risks and threats; accurately assesses, prioritizes, plans risk responses, and tracks and controls risks. 2. Develops an effective risk management plan for a program. 3. Assesses and approves risk management plans for programs. 4. Coordinates the interdependencies of risk management across systems and organizations. 5. Identifies and recommends risk management strategies relevant to policies and regulations. 6. Determines the relevancy of policies and regulations and applies them to the risk management plan. 7. Develops and shares best practices regarding risk management. 8. Effectively communicates change across the enterprise.	**Courses/Subject Areas:** • Risk Analysis Techniques • IT Risk Management • Risk Estimation • Practice Standard for Risk Management **Developmental Opportunities:** • Detail to an IT program management office or CIO • Participate in a technical management professional association that addresses risk • Participate on an interagency or intra-agency task force, working group, or project • Serve as a project manager for a smaller project • Participate or lead an Integrated Product/Process Team (IPT)
Change Management: Knowledge of change management principles, strategies, and techniques required for effectively planning, implementing, and evaluating change in the organization. ***Behaviors at different grade levels may varybased upon unique program factors such as risk, complexity, cost, location, and stakeholders.***	1. Prioritizes and adjusts plans, schedules, and resources in response to changing needs and competing priorities. 2. Identifies the impacts of change on business processes. 3. Designs and implements a change management plan to manage changes to the program scope, schedule, quality, and costs. 4. Updates relevant plans and communicates approved changes. 5. Develops and approves program tolerance plans within the program.	**Courses/Subject Areas:** • Change Management • Strategic Planning and Analysis • Program Change Requests • Project Management Body of Knowledge **Developmental Opportunities:** • Detail to an IT program management office or CIO • Participate in a Professional Association • Participate on an interagency or intra-agency task force, working group, or project • Participate or lead an Integrated Product/Process Team (IPT)

Core Technical Competencies	Key Work Behaviors	Training & Development Activities
Project Management: Knowledge of the principles, methods, or tools for developing, scheduling, coordinating, and managing projects and resources, including monitoring and inspecting costs, work, and contractor performance. ***Behaviors at different grade levels may vary based upon unique program factors such as risk, complexity, cost, location, and stakeholders.***	1. Develops resource estimates related to cost, schedule, and performance. 2. Oversees execution of the project and closely monitors program progress; responds and adaptsplans to changes and manages risk. 3. Assesses the value and organizational impact of the project, ensuring that the target benefits are measurable and related to business goals. 4. Recognizes, understands, and interprets earned value management (EVM) and other performance evaluation policies, methodologies, and applicable software tools. 5. Manages and understands the application of EVM, the criticality of the Integrated Baseline Review (IBR) process, and how to interpret the EVM indicators and resulting analysis. 6. Develops and documents a work breakdown structure (WBS) and resource loaded project schedule using common project information systems technology and software. 7. Monitors and reports progress and performance of the program with regard to scope, schedule, cost,resources, quality, and risk.	**Courses/Subject Areas:** • Project Management Applications • Project Management Body of Knowledge • Project Management for Information Systems • Managing the Execution and Control of IT Projects • Software Development/Engineering Methodologies • Enterprise Architecture • IT Risk Management • Contract Management • Requirements Management **Developmental Opportunities:** • Serve as a COTR/COR for a project • Serve as a project manager for a smaller project • Conduct post-implementation and baseline reviews • Serve as a tester of an IT project Participate in a Professional Association

Core Technical Competencies	Key Work Behaviors	Training & Development Activities
Requirements Analysis: Knowledge of the principles and methods to identify, analyze, specify, design, and manage functional and infrastructure requirements; includes translating functional requirements into technical requirements used for logical design or presenting alternative technologies or approaches. ***Behaviors at different grade levels may vary based upon unique program factors such as risk, complexity, cost, location, and stakeholders.***	1. Identifies and uses appropriate techniques for requirements elicitation, analysis, and recording to accurately translate user needs into specified and derived functional and system performance requirements. 2. Ensures the use of standards or requirements for infrastructure, associated configuration and change management. 3. Builds consensus to validate and finalize requirements. 4. Develops and implements a requirements management process. 5. Provides for traceability of engineering and specification requirements back to the user/mission requirements. 6. Effectively manages stakeholders' competing requirements. 7. Formulates and approves policies and procedures.	**Courses/Subject Areas:** • Requirements Management • Project Scope and Requirements Management • Systems Requirements Analysis • How to Gather and Document User Requirements • Translating Functional into Technical Requirements • Requirements Trade-off Analysis • Reviewing and Approving Requirements **Developmental Opportunities:** • Shadow a requirements analysis expert • Serve as a project manager for a smaller project • Participate on an integrated project team developing and assessing requirements

Core Technical Competencies	Key Work Behaviors	Training & Development Activities
Cost-Benefit Analysis: 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. ***Behaviors at different grade levels may vary based upon unique program factors such as risk, complexity, cost, location, and stakeholders.***	1. Evaluates return on investment analyses of key investments related to IT programs. 2. Evaluate return on investment of following systems development life cycle or program life cycle processes compared to skipping established processes based on the complexity, scope, and risk ofwork to be delivered. 3. Identifies the interdependencies of benefits being delivered among various projects within the program. 4. Ensures target benefits are specific, measurable, actual, realistic, and time-based. 5. Identifies, collects, verifies, and validates individual project cost and schedule estimates of aggregate costs to a program-level business case. 6. Develops business cases that effectively and efficiently offer sound business solutions based on quantitative and qualitative decision criteria. Performs business case analysis to ensure the optimalimplementation of best value business solutions that balance cost, schedule, and performance risks of the project or program. 7. Applies and manages the appropriate forms of cost and schedule estimating, cost analysis, reconciliation of cost estimates, cost-benefit analysis,and Net Present Value analysis. 8. Plans and conducts trade-off studies.	**Courses/Subject Areas:** • Benefits Measurement and Analysis Techniques • Benefit Optimization • Business Value Measurement • Decision Tree Analysis • Impact Assessment Techniques • Earned Value Management **Developmental Opportunities:** • Detail to an IT program management office or CIO • Participate on an interagency or intra-agency task force, working group, or project • Serve as a project manager for a smaller project • Participate or lead an Integrated Product/Process Team (IPT) • Participate in a Professional Association

Core Technical Competencies	Key Work Behaviors	Training & Development Activities
Systems Life Cycle: Knowledge of systems life cycle management concepts used to plan, develop, implement, operate, and maintain information systems. ***Behaviors at different grade levels may vary based upon unique program factors such as risk, complexity, cost, location, and stakeholders.***	1. Plans, approves, and implements disciplined life cycle management processes and IT governance frameworks for programs. 2. Ensures compliance with relevant public law, policy, and regulation as it pertains to the life cycle ofa program. 3. Manages the IT systems life cycle to optimize system availability, supportability, and reliability/maintainability, while efficiently usingresources. 4. Provides technical and management guidance toproject managers on systems life cycle concepts.	**Courses/Subject Areas:** • Information Systems Life Cycle Management • Systems Engineering Life Cycle **Developmental Opportunities:** • Detail to an IT program management office or CIO • Participate on an interagency or intra-agency task force, working group, or project • Serve as a project manager for a smaller project • Participate or lead an Integrated Product/Process Team (IPT)
Technology Awareness: 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. ***Behaviors at different grade levels may vary based upon unique program factors such as risk, complexity, cost, location, and stakeholders.***	1. Keeps abreast of latest technology, information, research, etc., to maintain knowledge in relevant andappropriate fields within Information Technology. 2. Communicates and translates the opportunities of new technologies to the strategic objectives and goals.	**Courses/Subject Areas:** • Technology Readiness Assessments • Technology Awareness • Information Management **Developmental Opportunities:** • Read trade journals • Engage in frequent training, webinars, and workshops to maintain a current knowledge of IT functions

IT Program Management – GS-14, GS-15		
While proficiency in these focus areas is important at the GS-13 level, this set of competencies is critical for successful performance at the GS-14 and GS-15 levels.		
Core Technical Competencies	**Key Work Behaviors**	**Training & Developmental Activities**
Information Technology Program Management: Knowledge of the principles, methods, and tools for the coordinated management of an IT program to include providing oversight of multiple IT projects, integrating dependent schedules and deliverables, and related activities (for example, benefits management, life cycle management, program governance). ***Behaviors at different grade levels may vary based upon unique program factors such as risk, complexity, cost, location, and stakeholders.***	1. Manages the overall planning, execution, and timely delivery of multiple projects. 2. Manages a portfolio to assess program health and prioritize the various projects within the program. 3. Objectively advocates for program's organizational business value and funding needs to senior management. 4. Oversees the implementation of plans, procurements, risks and deliverables of program elements; develops and tracks performance metricsand provides regular program-level status updates. 5. Manages and evaluates the requirements development process to mitigate impact on cost, schedule, and performance. 6. Interprets, evaluates, and/or implements IT program management approaches. 7. Establishes a program charter (including budget, resources, stakeholders, authorities, scope, risks, constraints, dependencies). 8. Researches and analyzes data from a variety of sources to build a business case for approval of IT projects and programs.	**Courses/Subject Areas:** • Project Management Applications • Project Management for Information Systems • Managing the Execution and Control of IT Projects • Software Development/ Engineering • The Standard for Program Management **Developmental Opportunities:** • Work in a Project Management Office • Serve as a COTR/COR for a project • Serve as a project manager for a smaller project • Conduct post-implementation and baseline reviews • Conduct operational analysis on steady state investments • Serve as a tester of an IT project • Detail or work in a CIO office

Core Technical Competencies	Key Work Behaviors	Training & Developmental Activities
Stakeholder Management: Knowledge of the concepts, practices, and techniques used to identify, engage, influence, and monitor relationships with individuals and groups connected to a work effort; including those actively involved, those who exert influence over the process and its results, and those who have a vested interest in the outcome (positive or negative). ***Behaviors at different grade levels may vary based upon unique program factors such as risk, complexity, cost, location, and stakeholders.*** ****GS-15 (stakeholders change and include organizations such as GAO, CIO, OMB, Congress)***	1. Identifies all stakeholders, internal and external, formal and informal; reports to stakeholders formally and informally. 2. Sets clear expectations for stakeholders and establishes a mechanism for stakeholder input andfeedback throughout the program life cycle. 3. Identifies an escalation procedure for stakeholder issue management. 4. Proposes solutions for stakeholder issues; resolves identified issues. 5. Prepares and implements a program level stakeholder management plan that aligns with organizational objectives and considers the variouslevels of stakeholders. 6. Develops a communication strategy to engage stakeholders, manage their expectations, and improve their acceptance of the objectives of the program. 7. Accurately capture stakeholder needs and expectations, and maintain stakeholder supportthrough effective consensus building. 8. Engages and facilitates affected stakeholders, manages their expectations to improve their acceptance of the program objectives, schedule, and metrics. 9. Generates buy-in to the business goals and technical approach of the program.	**Courses/Subject Areas:** • Forging Stakeholder Relationships • Conflict Resolution • Negotiating • Communication • Consensus Building • Teambuilding **Developmental Opportunities:** • Detail to an IT program management office or CIO • Participate in a Professional Association and volunteer to work on a sub-committee • Participate on an interagency or intra-agency task force, working group, or project • Participate or lead an Integrated Product/Process Team (IPT)

Core Technical Competencies	Key Work Behaviors	Training & Developmental Activities
Acquisition Strategy: Knowledge of the principles and methods for developing an integrated acquisition management plan that describes the business, technical, and support strategies, including the relationship between the acquisition phases, work efforts, and key program events (for example, decision points, contract awards, test activities). ***Behaviors at different grade levels may vary based upon unique program factors such as risk, complexity, cost, location, and stakeholders.***	1. Formally initiates an acquisition project; develops acquisition schedule, expectations and requirements plan. 2. Formulates an acquisition strategy that incorporates risk mitigation strategies and opportunity costs. 3. Interprets and applies policies for emerging IT acquisition strategies; manages the application of government and agency acquisition policies to meetuser and mission requirements. 4. Identifies and develops selection criteria and required pre- and post-award actions to meet acquisition project goals. 5. Utilizes Earned Value Management (EVM) and other performance evaluation systems to control and evaluate acquisition investments. 6. Manages the leadership and management processes associated with acquisition and acquisition planning.	**Courses/Subject Areas:** • Systems Acquisition Management • IT Systems Engineering • Cost Analysis • Earned Value Management • Acquisition Law • Intermediate Acquisition Logistics • Boot Camp: COR Training • GSA Schedule • Government Contract Vehicles • Performance-Based Contracts • Social Impact & Consequences to Technical Strategy • Technology Security Acquisition Planning • Technology Security Acquisition Efficiency Analysis **Developmental Opportunities:** • Participate in a Professional Association and volunteer to work on a sub-committee • Serve as a project manager for a smaller project • Participate on an interagency or intra-agency task force, working group, or project • Test physical, logical, operational processes and consequences • Serve on proposal review and technical evaluation teams

Core Technical Competencies	Key Work Behaviors	Training & Developmental Activities
Financial Management: Prepares, justifies, and/or administers the budget for program areas; plans, administers, and monitors expenditures to ensure cost-effective support of programs and policies ***Behaviors at different grade levels may vary based upon unique program factors such asrisk, complexity, cost, location, and stakeholders.***	1. Develops short- or long-term financing plans, or identifies funding sources. 2. Prepares budget requests or justifications for funding. 3. Reviews and recommends the approval or disapproval of funding requests. 4. Manages budget (for example, monitors expenditures or income). 5. Monitors and controls burn rates against the spending plan. 6. Applies Earned Value Management (EVM) and other performance evaluation methods, processes,and tools. 7. Provides guidance and approves/recommendsthe program budget.	**Courses/Subject Areas:** • Budget Processes and Procedures • Economic Forecasting/Analysis • Cost Management • Financial Closure Processes **Developmental Opportunities:** • Detail to an IT program management office or CIO • Participate on an interagency or intra-agency task force, working group, or project • Serve as a project manager for a smaller project • Participate or lead an IntegratedProduct/Process Team (IPT)

IT Program Management – GS-15		
While proficiency in these focus areas is important at the GS-13 and GS-14 levels, this set of competencies is critical for successful performance at the GS-15 level.		
Core Technical Competencies	**Key Work Behaviors**	**Training & Developmental Activities**
Capital Planning and Investment Assessment: Knowledge of the principles andmethods of capital investment analysis or business case analysis, including return on investment analysis. ***Behaviors at different grade levels may vary based upon unique program factors such as risk, complexity, cost, location, and stakeholders.***	1. Formulates comprehensive business cases for ITcapital expenditures. 2. Formulates cost-estimating processes, methods, techniques, analytical principles, data, confidence bands, specialized costing, application of OMB A-94,and management applications. 3. Reviews and assesses business cases to ensurecompliance with relevant guidelines. 4. Develops and implements strategies for assessingthe value that IT projects create within the agency. 5. Recognizes, understands, and interprets earnedvalue management (EVM) and other performance evaluation policies, methodologies, and applicablesoftware tools. 6. Manages and understands the application of EVM, the criticality of the Integrated Baseline Review (IBR) process, and how to interpret the EVM indicators and resulting analysis. 7. Effectively integrates return on investment analysis, outcome-based performance metrics, andperformance assessment ratings. 8. Conducts regular evaluations to ensure continued investment performance and project goalcompletion.	**Courses/Subject Areas:** • Information Resources Strategy and Planning • IT Performance Assessment: Models andMethods • Capital Planning and Investment Control (CPIC) • Weighing Benefits of Alternative IT Investments • Capital Investment Analysis- Models and Methods • Business Case Analysis • Government Budget Process • Exhibit 300 • Technical Consequence Management and Strategy • Contingency Cost to Performance Analysis • Performance Assessment • Investment Review Process • Scheduling and Cost Control • Applied Earned Value Management (EVM) **Developmental Opportunities:** • Participate in cross-organizational detail assignments • Project/Program Human Capital Assessment • Financial Planning • Organizational Performance Baseline to Technical Strategy • Review OMB Exhibit 300 materials • Cost Estimation • Building an IT Business Case • Integrating Performance with Mission and Budget Process • Integrating Risk Assessment Programs

Core Technical Competencies	Key Work Behaviors	Training & Developmental Activities
Information Resources Strategy & Planning: Knowledge of the principles, methods, and techniques of information technology (IT) assessment, planning, management, monitoring, and evaluation, suchas IT baseline assessment, interagency functional analysis, contingency planning, and disaster recovery. ***Behaviors at different grade levels may vary based upon unique program factors such as risk, complexity, cost, location, and stakeholders.***	1. Conducts an initial program assessment by defining the program objectives, requirements, andrisks in order to ensure program alignment with agency goals. 2. Effectively applies management processes, including requirements development processes andperformance-based acquisition principles, to support the agency's mission to develop an acquisition program baseline from schedule requirements. 3. Establishes and maintains an effective IT contingency plan; selects an appropriate disaster recovery strategy.	**Courses/Subject Areas:** • Systems Test and Evaluation (Integrated) • Disaster Recovery Strategy • Fit-Gap Analysis • Technology Modeling • Technology Architecture Analysis • IT Baseline Assessment Analysis • Concepts of Rapid Prototyping • Technical Management Communication Strategy • Interdepartmental, Interagency IT Functional Analysis • IT Planning Methodologies • Contingency Planning • Monitoring and Evaluation Methods and Techniques **Developmental Opportunities:** • Participation in professional/technical societies • Participation in a mentoring/coaching program • Establish an interagency IT body/forum • Participation/Contribution from contractors • Plan for detailing to other agencies/cross-government • Integration of risk assessment projects

Core Technical Competencies	Key Work Behaviors	Training & Developmental Activities
Data Management: 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. ***Behaviors at different grade levels may vary based upon unique program factors such asrisk, complexity, cost, location, and stakeholders.***	1. Engages in strategic intermediate and long-termplanning, coordinating and implementation of data management strategies. 2. Ensures quality and consistency of data management policy by establishing and endorsing appropriate policies and standards. 3. Engages in corrective action. 4. Coordinates data management strategies acrossprojects and programs.	**Courses/Subject Areas:** • Data Management Strategies • Data Warehousing • Data Recovery • Data Backup • Data Modeling • Ethics/Legal Issues • Data Security/Privacy • Informatics/Org. Communication • Information Technology Architecture **Developmental Opportunities:** • Manage projects that involve resolving data management issues • Participation in professional organizations related to data management • Participation in a mentoring program

IT Program Management – GS-13, GS-14, GS-15		
General competencies are grouped by likeness into three distinct categories. The various work behaviors are relevant to all competencies comprising each category.		
Core Technical Competencies	**Key Work Behaviors**	**Training & Developmental Activities**
Problem Solving, Decision Making, Accountability, Planning, and Evaluating: • **Problem Solving:** Identifies problems; determines accuracy and relevance of information; uses sound judgment to generateand evaluate alternatives, and to make recommendations. • **Decision Making-** Makes sound, well-informed, and objective decisions; perceivesthe impact and implications of decisions; commits to action, even in uncertain situations, to accomplish organizational goals; causes change. • **Accountability-** Holds self and others accountable for measurable high-quality,timely, and cost-effective results. Determines objectives, sets priorities, and delegates work. Accepts responsibility for mistakes. Complies with established control systems and rules.	1. Makes sound and timely tactical decisions for projects, team, or work unit based on data; decisionsare made using sound tool set. 2. Prioritizes project steps and tasks. 3. Creates and executes quality assurance plans for expected program results. 4. Assesses, analyzes information and issues and provides alternatives analysis for managing risk. 5. Makes sound and timely decisions for multiple projects, teams, or work units assessing interactionacross interrelated projects in a program; decisionsare made using sound tool set. 6. Identifies potential and actual conflicts or issues which may arise among multiple projects or programs; formulates an action for resolution. 7. Prioritizes program issues and deliverables for action. 8. Makes sound and timely decisions for an organization or across organizations, assessing interaction across projects, programs and portfolios,sometimes with limited information; decisions are made using sound tool set. 9. Ensures program decisions align with agency strategic goals.	**Courses/Subject Areas:** • Decision-Making Techniques • Go/No-Go Decision Criteria • Decision-Making Tools • Scheduler and Coordinator • Cost Control • Risk Management • Quality Management • Project Management Body of Knowledge (PMBOK) • AGILE Development Course • Federal budget, contracting and acquisition, MOU development, Clinger-Cohen, HR processes (“Government 101”) • Ethics • 508 Compliance • COTR • Measuring Organizational Result • Personnel Management • Leadership Skills **Developmental Opportunities:** • Establish an understanding on how your contractors do business • Participate in an IT Exchange Program • Gain exposure to innovative IT practices

Core Technical Competencies	Key Work Behaviors	Training & Developmental Activities
(Problem Solving, Decision Making, Accountability, Planning, and Evaluating: Continued) • **Planning and Evaluating**- Organizes work, setspriorities, and determines resource requirements; determines short- or long- term goals and strategies to achieve them; coordinates with other organizations or parts of the organization to accomplish goals; monitors progress and evaluates outcomes ***Behaviors at different grade levels may vary based upon unique program factors such as risk, complexity, cost, location, and stakeholders.***	10. Identifies 2nd level and 3rd level consequences of decisions, intended and unintended consequences. 11. Assesses, analyzes information and issues and makes decisions managing enterprise risk. 12. Develops scorecards, metrics, and/or performance standards to accomplish desiredprogram results. 13. Identifies trade-offs and scenarios; provides and evaluates options; formulates recommendations forthe best program outcome. 14. Disseminates decisions clearly to key stakeholders ensuring terms and intent areunderstood. 15. Evaluates network architecture, infrastructure, or resource requirements (for example, bandwidth, capacity, telecommunications). 16. Evaluates the applicability of off-the-shelf (commercial or government) products or systems. 17. Investigates and evaluates “state of the art” technology of the industry.	

Core Technical Competencies	Key Work Behaviors	Training & Developmental Activities
Leadership, Strategic Thinking, Organizational Awareness, Political Savvy, Influencing, and Negotiating: • **Leadership**- Influences, motivates, and challenges others; adapts leadership styles to a variety of situations. • **Strategic Thinking**- Formulates effective strategies consistent with the business and competitive strategy of the organization in a global economy. Examines policy issues and strategic planning with a long-term perspective.Determines objectives and sets priorities; anticipates potential threats or opportunities. • **Political Savvy**- Identifies the internal and external politics that impact the work of theorganization. Perceives organizational and political reality and acts accordingly. • **Organizational Awareness**- Knows the organization's mission and functions, and how its social, political, and technological systems work and operates effectively within them; this includes the programs, policies, procedures, rules, and regulations of the organization. • **Influencing/Negotiating**- Persuades others to accept recommendations, cooperate, or changetheir behavior; works with others towards an agreement; negotiates to find mutually acceptable solutions ***Behaviors at different grade levels may vary based upon unique program factors such as risk, complexity, cost, location, and stakeholders.***	1. Establishes and maintains a baseline understanding of current organizational processes. 2. Creates alternatives to mitigate organizational riskand capitalizes on new and changing technologies. 3. Scans the environment for external trends (i.e.,technologies, policies, etc.), assesses impact for possible adoption, and adapts value-added innovations to transform service delivery. 4. Questions status quo and explores new ways ofmeeting organizational needs. 5. Manages organizational expectations for realisticprogram deliverables. 6. Creates and communicates a program vision. 7. Demonstrates ethics, integrity, and professionalconduct. 8. Provides a bridge between strategy and culture tomeet agency goals. 9. Serves as a bridge between CIO, legal, acquisition,budget and IT communities to meet customer needs. 10. Creates consensus (shows the win-win for all stakeholders) and gets to an interest-based outcome(versus a position-based outcome). 11. Ensures program decisions align with agencystrategic goals. 12. Establishes professional standards for carrying out the program (i.e., establishing customer servicestandards, collaborative approach). 13. Understands stakeholder motivations and utilizesthem effectively to meet program goals. 14. Creates a collaborative environment.	**Courses/Subject Areas:** • Strategic Planning and Analysis • Problem Solving Tools and Techniques • Professional Ethics • Business Ethics • Negotiation and Mediation • Conflict Resolution • Motivation • Managing Across Generations • Valuing Diversity • Change Management • Economics of Information Systems **Developmental Opportunities:** • Participate in professional organizations initiatives and conferences • Encourage development of others • Mentoring program • Stay current on certifications • Promote continuous learning

Core Technical Competencies	Key Work Behaviors	Training & Developmental Activities
Customer Service: Works with clients and customers (that is, any individuals who use or receive the services or products that your work unit produces, including the general public, individuals who work in the agency, other agencies, or organizations outside the Government) to assess their needs, provide information or assistance, resolve their problems, or satisfy their expectations; knows about available products and services; is committed to providing quality products and services. ***Behaviors at different grade levels may vary based upon unique program factors such as risk, complexity, cost, location, and stakeholders.***	1. Establishes a customer service management planfor triaging customer inquiries. 2. Analyzes trends of customer inquiries to establishroot causes for change recommendations. 3. Establishes value-added metrics for measuring customer service and continually refines to identifykey performance indicators. 4. Responds to requests and inquiries fromstakeholders. 5. Engages customers to identify requirements andbalance business goals. 6. Modifies products or services based onsuggestions or feedback from customers. 7. Assists customers to develop plans to modify existing business processes to capitalize on new orchanging technologies. 8. Guides and instructs others in providing the highest level of technical or complex informationabout benefits and services. 9. Anticipates and proactively addresses businessand customer IT program needs by presenting options, taking action, and following up as appropriate.	**Courses/Subject Areas:** • Customer Service • Customer Relationship Management Expectation Management • Public Relations Communication skills • Business process reengineering and streamlining • Workflow • Customer relationship management • SDLC • Capability Maturity Model • Sensitivity • Active listening • Customer viewpoint **Developmental Opportunities:** • Rotations to PMO, or other operational parts of agency • Rotations or visits to customer sites

Degrees and Certifications

The following is a comprehensive list of Degrees and Certifications possessed or recommended by IT Program Managers within the Federal Government. This list serves only as a guide to help individuals identify developmental opportunities for continued success; most IT Program Manager positions do not require a specific degree or certification for entry. Nevertheless, subject matter experts have emphasized the importance of both experience and coursework for successful performance as an IT Program Manager. Please note this list is not exhaustive, and certificationsmay be subject to change over time.

- Project Management Certification
- Program Manager Certification
- Information Technology Certification
- CIO Certification
- A+ Certification
- Agile Scrum Master Certification
- Scrum Master Certification
- Oracle Certification
- Software Development Professional Certification
- Software Quality Engineer Certification
- ITIL V3 Foundation Certification
- Contracting Officer Representative Certification
- Federal Acquisition Certification
- Federal Acquisition Certification in Program and Project Management
- Systems Analyst Certification
- Microsoft Certified Technology Specialist Certification
- Six Sigma Certification
- Project Officer Certification Certificate in Earned Value Management
- Certificate in Scheduling
- Master of Science in Information Systems Technology
- Master of Science in Information Technology Program Management
- Master of Business Administration Degree in Technology Management
- Masters Certificate in Information Technology Project Management
- Masters Certificate in Program Management
- Masters Certificate in Government Contracting

Appendix 1: Typical Career Path for IT Program Management – GS-2210 Descriptions

SES

Most common career advancement to Chief Information Officer and SES Policy. Common to come in at this career stage from private sector organizations and General Schedule occupations GS-2210, GS-1101, GS-301, GS-340 and GS-343 and to exit to pursue opportunities in private sector organizations and same General Schedule occupations. Common to transfer from military to this career stage. Less common advancement is to and from non-profit, academia and state and local governments.

GS-15

Most common career advancement to GS-2210, Supervisory and GS-2210, IT Specialist. Common to come in at this career stage from private sector organizations and General Schedule occupations GS-2210, GS-1101, GS-301, GS-340 and GS-343 and to exit to pursue opportunities in private sector organizations and same General Schedule occupations. Common to transfer from military to this career stage. Less common advancement is to and from non-profit, academia and state and local governments.

GS-14

Most common to come in at this career stage from private sector organizations and General Schedule occupations GS-2210, GS-1101, GS-801, GS-1550, GS-301, GS-340,GS-343 and GS-346 and to exit to pursue opportunities in the private sector organizations and same General Schedule occupations. Common to transfer from military to this career stage. Less common advancement is to and from non-profit, academia and state and local governments. Most common career advancement to GS-2210, Supervisory.

GS-13

Most common to come in at this career stage from private sector organizations and General Schedule occupations GS-2210, GS-1101, GS-801, GS-1550, GS-301, GS-340,GS-343 and GS-346 and to exit to pursue opportunities in the private sector organizations and same General Schedule occupations. Common to transfer from military to this career stage. Less common advancement is to and from non-profit, academia and state and local governments.

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