2017 CSR General Industry Information Technology
Compensation Survey Report - U.S.

Willis **Towers** **Watson** **I.I'I'I.I**

Benchmark/ Discipline/ Function	Code	Title	Description	GI CSR US
F	AIC	Information Technology	Responsible for both the design, development and implementation of short- and long-term solutions to information technology (IT) needs through new and existing applications, systems architecture, network systems and applications infrastructure and the management of the IT infrastructure within an organization.	X
B	AIC000-EX	Chief Information Officer	Establishes the strategic direction of the organization's information technology resources | Identifies changes in computer and systems technology and communicates these changes to senior management | Provides support to information users and determines information needs throughout the organization | Identifies systems software and hardware necessary for the successful integration of information systems | Coordinates through subordinate staff the operations of the technology functions on a day-to-day basis	X
B	AIC002-EX	Top Information Technology Executive	Directs the information technology functions on a day-to-day basis | Provides direction and control of activities such as systems design and analysis, applications and systems programming, database management, network systems, telecommunications and data processing operations | Establishes computer operations control policies and procedures and designates priorities for computer operations and applications development work	X
B	AIC010-EX	Top Information Security Executive	Has primary responsibility for developing strategies used in the protection of the organization's information systems from unauthorized access and use | Develops information security policies and procedures | Evaluates and recommends hardware and software to provide the appropriate level of protection for data, software and hardware	X
B	AIC035-EX	Top Technology Platforms Executive	Has primary responsibility for developing and integrating the organization's core technological platforms and is not focused on the maintenance of internal systems | Responsibilities include technology standards, technology convergence, technology migration and/or new product development | May be responsible for promoting the technological vision of the organization among industrial partners	X
F	AID	IT Development	Designs, develops, modifies, adapts and implements short- and long-term solutions to information technology (IT) needs through new and existing applications, systems architecture, network systems and applications infrastructure. Reviews system requirements and business processes; codes, tests, debugs and implements software solutions.	X
B	AID010-EX	Top Applications Development Executive	Has primary responsibility for the organization's applications programming and systems analysis activities | Oversees analysis and preparation of systems feasibility studies, design of new computer systems and programs, and revision of existing computer systems and programs | Directs coding, testing, installation and maintenance of all business and scientific applications programs | Develops systems design standards and quality control standards for programmers	X
B	AID015-EX	Top E-commerce Technology Executive	Has primary responsibility for designing, developing, implementing and maintaining the organization's e-commerce systems, including web interfaces and related internal databases and systems | Identifies changes in e-commerce and related systems technology, communicates these changes to senior management, and helps develop overall e-commerce strategy to meet the organization's needs and goals	X
B	AID100-EX	Top Enterprise Resource Planning Executive	Has primary responsibility for directing and coordinating all enterprise resource planning (ERP) business management systems to integrate all facets of the business, including planning, manufacturing, sales and marketing | Reviews and evaluates project feasibility studies based on management's requirements and priorities and implements the installation and operation of ERP systems | Typically manages the implementation of more widely accepted software applications such as SAP and Oracle	X
D	AID000	IT Development Generalist/Multidiscipline	Designs, develops, modifies, adapts and implements short- and long-term solutions to information technology (IT) needs through new and existing applications, systems architecture, network systems and applications infrastructure | Reviews system requirements and business processes; codes, tests, debugs and implements software solutions | Responsibilities are within the IT Development Function as a generalist or in a combination of Disciplines	X
D	AID010	Application Development	Provides application software development services typically in a defined project | Develops program logic for new applications or analyzes and modifies logic in existing applications | Codes, tests, debugs, documents and implements software applications | Analyzes requirements, tests and integrates application components | Ensures that system improvements are successfully implemented	X

2017 CSR General Industry Information Technology
Compensation Survey Report - U.S.

WillisTowers Watson **I.I'I'I.I**

Benchmark/ Discipline/ Function	Code	Title	Description	GI CSR US
D	AID015	Internet/Web Application Development	Designs and develops primarily Internet/web pages and applications such as e-commerce and content-driven websites | Codes, tests, debugs, documents and implements web applications using a variety of languages and platforms such as HTML, Java, PHP, JSP, Python, AJAX, JavaScript, ASP, CGI, Perl, XML | Develops proof-of-concepts and prototypes of easy-to-navigate user interfaces (UI) that consist of web pages with graphics, icons and color schemes that are visually appealing | Ensures that applications are compatible across multiple computing platforms and browsers | May require familiarity with streaming media concepts and techniques, including digital video and audio compression standards such as MP3, WAV and MPEG | May also involve responsive web design techniques	X
D	AID020	Business Systems Analysis	Acts as a liaison between the IT development group and business units for the development and implementation of new systems and enhancement of existing systems | Evaluates new applications and identifies systems requirements | Evaluates new IT developments and evolving business requirements and recommends appropriate systems alternatives and/or enhancements to current systems | Prepares communications and makes presentations on system enhancements and/or alternatives	X
D	AID030	IT Architecture (Systems Design)	Designs and develops IT architecture (integrated process, applications, data and technology) solutions to business problems in alignment with the enterprise architecture direction and standards | Performs technical planning, architecture development and modification of specifications | Develops specifications for new products/services, applications and service offerings | Assesses the compatibility and integration of products/services proposed as standards in order to ensure an integrated architecture across interdependent technologies	X
D	AID040	Systems Software Development	Designs, develops, tests, debugs and implements operating systems components, software tools and utilities | Determines systems software design requirements | Ensures that system improvements are successfully implemented and monitored to increase efficiency | Generates systems software engineering policies, standards and procedures	X
D	AID050	Software Quality Assurance and Testing	Conducts a wide range of quality control tests and analyses to ensure that software meets or exceeds specified standards and end user requirements | Drafts, revises and approves test plans and scripts to ensure alignment with standards and IT strategy | Creates test data files with valid and invalid records to thoroughly test program logic and verify system flow | Coordinates with users to plan user acceptance testing, alpha and beta testing | Ensures that system tests are successfully completed and documented and all problems are resolved	X
D	AID055	Application Development Support	Maintains, integrates and implements software applications within the organization | Coordinates software application testing, quality assurance, configuration, installation and support to ensure smooth, stable and timely implementation of new software and updates to installed applications | Ensures proper controls are established and maintained over test and production systems and software source code	X
D	AID060	Database Design and Analysis	Analyzes, designs, creates and implements databases, including data models, logical and physical databases, data dictionaries and schemas, access methods, device allocations, validation checks, organization and security | Develops and implements database recovery plans and procedures | Develops and implements database analysis and development policies, standards and procedures | Collaborates with database software vendors and external technical support on issues such as software upgrades, problems and potential solutions	X
D	AID070	Database Warehousing/Mining	Creates data warehouses (very large databases, usually loaded from transaction and Enterprise Resource Planning systems, to support decision making in an organization) and/or data marts (a subset of a data warehouse for a single department or function) | Designs, develops and implements data mining tools and analyses to sift through large amounts of data stored in a data warehouse or data mart to find relationships and patterns	X
D	AID080	Network Architecture Design	Plans, researches, evaluates, designs and develops network systems by applying engineering, hardware and software design theories and principles to develop a compatible system infrastructure in line with organization strategies	X
D	AID090	Network Planning and Implementation	Researches networking requirements; prepares detailed architectural and installation plans | Conducts internal studies of network performance and traffic analysis | Researches problems, conducts cable and equipment installations, and evaluates new technologies	X
D	AID100	Enterprise Resource Planning	Configures, implements, maintains and upgrades enterprise resource planning (ERP) application modules (e.g., Human Resources, Finance, Supply Chain Management) | Analyzes user requirements to determine ERP system configuration and customization | Provides ongoing ERP system support | May participate in defining requirements and selecting software vendors	X

2017 CSR General Industry Information Technology
Compensation Survey Report - U.S.

Willis Towers Watson **I.I'I'I.I**

Benchmark/ Discipline/ Function	Code	Title	Description	GI CSR US
D	AID110	IS and Cyber Security Development	Designs, develops, implements and troubleshoots various information system (IS) and cyber security software | Develops, tests and validates solutions to remediate exploitable conditions on devices such as web servers, mail servers, routers, firewalls and intrusion detection systems | Evaluates, codes and implements software fixes (patches) to address system vulnerabilities such as malicious code (e.g., viruses), system exploitation using SQL injection, cross-site scripting, buffer overflows, parameter tampering, hidden field manipulation, cookie poisoning and web services manipulation | Conducts security assessments of systems and applications using penetration tests, ethical hacking tools and risk assessment/mediation methodologies to evaluate vulnerabilities	X
D	AID999	IT Development - No Applicable Discipline	Responsibilities are within the IT Development Function but are not described in other Discipline summaries	X
F	AIT	IT Administration	Manages the Information Technology (IT) infrastructure within an organization, including the physical network (e.g., LANs/WANs, servers, terminals) as well as server applications and software (e.g., PeopleSoft, Oracle). Configures, installs, maintains and upgrades server applications and hardware.	X
B	AIT005-EX	Top Technology Infrastructure Executive	Has primary responsibility for the strategic and operational direction of the organization's technological infrastructure, including planning, design, implementation and maintenance | Assures the seamless interface across different systems and the effective operations of LANs/WANs, mainframe and minicomputer platforms	X
B	AIT035-EX	Top Telecommunications Executive	Has primary responsibility for designing, implementing and maintaining the organization's voice and data communications networks | Ensures that the installed systems are operating effectively and that proposed systems will meet the organization's needs in the future | Collaborates with systems software programmers and may provide some direction in the installation and maintenance of the telecommunications network software	X
D	AIT000	IT Administration Generalist/Multidiscipline	Administers the IT infrastructure within an organization, including the physical network (e.g., LANs/WANs, servers, terminals) as well as server applications and software (e.g., PeopleSoft, Oracle) | Responsibilities are within the IT Administration Function as a generalist or in a combination of Disciplines	X
D	AIT010	Computer Systems Administration	Configures, installs, maintains and upgrades computer systems hardware and software | Administers and maintains security of operating systems | Restores files or systems by designing, writing and implementing back-up procedures | Provides operational support for the organization's information systems and peripheral equipment such as application servers, database servers, web servers, desktops, printers and storage devices | Performs recovery procedures, scheduling and back-ups and monitors batch processes	X
D	AIT015	Website Administration	Plans and administers web systems hardware and operating system server software, including web server setup and implementation | Maintains and monitors website functionality (e.g., links, calculators, news feeds) and website security | Conducts performance monitoring, capacity planning, workload modeling and predictive analyses to identify and resolve potential issues (e.g., performance, security breaches) | Collaborates with internal and/or external resources (i.e., content owners, editors, web developers) to maintain current information and tools on the organization's website(s) | Troubleshoots network problems and security issues	X
D	AIT020	IT Help Desk Support	Provides technical support to the organization's internal users of computer applications and hardware (e.g., PCs, servers, mainframes) | Answers questions regarding system procedures, online transactions, systems status and downtime procedures and is typically located within a call center | Collaborates with network services, software systems engineering and/or application development in order to restore service and/or identify problems | Maintains a troubleshooting tracking log ensuring timely resolution of problems	X
D	AIT025	IT On-Site Support	Provides on-site technical support to the organization's internal users of computer applications and hardware (e.g., PCs, servers, mainframes) | Collaborates with network services, software systems engineering and/or application development in order to restore service and/or identify problems | Typically resolves issues referred by help desk support	X
D	AIT030	Database Administration	Administers database utilities, monitors the relationships between the database users and applications, and maintains the organization's databases across multiple platforms and computing environments | Applies understanding of relational database concepts and query languages in order to design required summary or aggregation tables to support analyses | Collaborates with technology/infrastructure staff to identify data relationships and functional requirements; analyzes and resolves issues related to information flow and content | Maintains database support tools, database tables and dictionaries and recovery and back-up procedures | Performs data modeling studies and develops detailed data models; maintains data model and entity relationship diagrams	X

2017 CSR General Industry Information Technology
Compensation Survey Report - U.S.

Willis Towers Watson **I.I'I'I.I**

Benchmark/ Discipline/ Function	Code	Title	Description	GI CSR US
D	AIT040	Network Control/Administration	Provides technical expertise in the management of a public and/or private network; tests and analyzes network facilities, including network control software, routers, switches, lines, modems, adapters and servers | Installs, supports and/or maintains LANs and/or WANs; evaluates and recommends networking product and software upgrades | Performs technical analyses of software, hardware and transmission facilities using various diagnostic tools in support of efficient network operations | Monitors data traffic and controls network resource performance to ensure high-quality transmission | Identifies, diagnoses and resolves technical problems related to network failure/integrity and usage of PC hardware and software	X
D	AIT050	Email Administration	Provides overall administration and support for email applications to ensure that the system's integrity and security are not compromised | Embargoes incoming email on notice of virus alert, assesses the impact of the virus on email applications and works with other IT administrators to identify affected systems | Measures and maintains email capacity and utilization and notifies users when utilization exceeds established limits | May administer GroupWare systems	X
D	AIT060	IS Disaster Recovery/Business Continuation	Develops and tests plans to ensure the continuity of critical business functions and minimizes information loss in the event of a disaster (e.g., fire, flood, hurricane, earthquake) | Sets up hot sites so that backup systems can be brought up and running quickly | Institutes loss-reduction mechanisms to lessen exposure to disaster risks such as sprinkler systems, insurance policies and evacuation procedures | In the event of disaster, assesses damage to computer hardware, vital records, etc., to determine what should be salvaged, restored or replaced	X
D	AIT070	IS and Cyber Security	Evaluates, tests, recommends, develops, coordinates, monitors and maintains information systems (IS) and cyber security policies, procedures and systems, including access management for hardware, firmware and software | Ensures that IS and cyber security architecture/designs, plans, controls, processes, standards, policies and procedures are aligned with IS standards and overall IS and cyber security | Identifies security risks and exposures, determines the causes of security violations and suggests procedures to halt future incidents and improve security | Develops techniques and procedures for conducting IS and cyber security risk assessments and compliance audits, the evaluation and testing of hardware, firmware and software for possible impact on system security, and the investigation and resolution of security incidents | Implements IS and cyber security policies and takes measures against intrusion, frauds, attacks or leaks	X
D	AIT080	IT Training/Documentation	Develops, coordinates and conducts IT training, educational and orientation programs for users | Develops and maintains documentation of information technology systems and applications and coordinates incorporation of documentation within applications (e.g., online help) | Develops, implements and/or approves training and documentation policies, standards and procedures | Maintains records and prepares documentation of training programs, scheduling, employee attendance and training program effectiveness	X
D	AIT090	Voice Communications	Performs technical analysis of software, hardware and transmission systems for voice communications | Ensures that remote hardware and communication facilities have procedures for installation and support of voice communications systems | Collaborates with internal and external customers and vendors to determine voice communications system requirements	X
D	AIT999	IT Administration - No Applicable Discipline	Responsibilities are within the IT Administration Function but are not described in other Discipline summaries	X