



Software Quality Assurance Analysts and Testers

15-1253.00



Bright Outlook



Updated 2025

Develop and execute software tests to identify software problems and their causes. Test system modifications to prepare for implementation. Document software and application defects using a bug tracking system and report defects to software or web developers. Create and maintain databases of known defects. May participate in software design reviews to provide input on functional requirements, operational characteristics, product designs, and schedules.

Sample of reported job titles: Automation Tester, Information Technology Analyst (IT Analyst), Quality Assurance Analyst (QA Analyst), Quality Assurance Engineer (QA Engineer), Quality Engineer, Software Quality Assurance Analyst (SQA Analyst), Software Quality Assurance Engineer (SQA Engineer), Software Quality Engineer, Software Test Engineer, Test Engineer

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Occupation-Specific Information

Tasks

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| Importance | Category | Task |
|------------|----------|---|
| 93 | Core | <ul style="list-style-type: none">+ Identify, analyze, and document problems with program function, output, online screen, or content. |
| 92 | Core | <ul style="list-style-type: none">+ Document software defects, using a bug tracking system, and report defects to software developers. |
| 88 | Core | <ul style="list-style-type: none">+ Develop testing programs that address areas such as database impacts, software scenarios, regression testing, negative testing, error or bug retests, or usability. |
| 84 | Core | <ul style="list-style-type: none">+ Design test plans, scenarios, scripts, or procedures. |

| Importance | Category | Task |
|------------|----------|---|
| 83 | Core | + Document test procedures to ensure replicability and compliance with standards. |
| 82 | Core | + Provide feedback and recommendations to developers on software usability and functionality. |
| 82 | Core | + Install, maintain, or use software testing programs. |
| 80 | Core | + Test system modifications to prepare for implementation. |
| 79 | Core | + Create or maintain databases of known test defects. |
| 78 | Core | + Develop or specify standards, methods, or procedures to determine product quality or release readiness. |

Technology Skills

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- + **Access software** — Citrix cloud computing software; PuTTY
- + **Accounting software** — Tax software
- + **Administration software** — Software distribution management software
- + **Analytical or scientific software** — IBM SPSS Statistics 🔥; Minitab; SAS 🔥; The MathWorks MATLAB 🔥; [5 more](#)
- + **Application server software** — Docker 🔥; GitHub 🔥; Red Hat OpenShift 🔥; Spring Boot 🔥; [4 more](#)
- + **Backup or archival software** — Backup and archival software; Veritas NetBackup
- + **Business intelligence and data analysis software** — IBM Cognos Impromptu; Oracle Business Intelligence Enterprise Edition; Qlik Tech QlikView; Tableau 🔥; [1 more](#)
- + **Cloud-based data access and sharing software** — Dropbox; Google Drive; Slack 🔥
- + **Cloud-based management software** — Amazon Web Services AWS CloudFormation 🔥; IBM WebSphere; Splunk Enterprise 🔥
- + **Clustering software** — VMware
- + **Communications server software** — IBM Domino
- + **Computer aided design CAD software** — Autodesk AutoCAD 🔥; Bentley MicroStation 🔥; Dassault Systemes CATIA
- + **Computer based training software** — Moodle
- + **Configuration management software** — Chef 🔥; Perforce Helix software; Puppet 🔥; Visible Razor; [6 more](#)
- + **Content workflow software** — Emerald Software Group Emerald Green Office; Twiki; Workflow software

- + **Customer relationship management CRM software** — Blackbaud The Raiser's Edge; Oracle Eloqua; Salesforce software 🔥
- + **Data base management system software** — Amazon DynamoDB 🔥; Elasticsearch 🔥; MongoDB 🔥; Oracle PL/SQL 🔥; [22 more](#)
- + **Data base reporting software** — Microsoft SQL Server Reporting Services SSRS 🔥; Oracle Business Intelligence Discoverer; SAP Business Intelligence; SAP Crystal Reports; [3 more](#)
- + **Data base user interface and query software** — Airtable; Apache Hive 🔥; Blackboard software; IBM DB2 🔥; [12 more](#)
- + **Data mining software** — Google Analytics 🔥
- + **Desktop communications software** — Skype
- + **Desktop publishing software** — Adobe InDesign 🔥; Microsoft Publisher
- + **Development environment software** — Apache Kafka 🔥; Apache Maven 🔥; Apache Subversion SVN 🔥; Oracle Java 2 Platform Enterprise Edition J2EE 🔥; [61 more](#)
- + **Device drivers or system software** — Microsoft DirectX
- + **Document management software** — Adobe Acrobat 🔥; Document management system software; Microsoft SharePoint 🔥
- + **Electronic mail software** — Google Gmail; IBM Notes; Microsoft Exchange; Microsoft Outlook 🔥
- + **Enterprise application integration software** — Extensible markup language XML 🔥; IBM InfoSphere DataStage; Jenkins CI 🔥; Microsoft SQL Server Integration Services SSIS 🔥; [4 more](#)
- + **Enterprise resource planning ERP software** — Microsoft Dynamics 🔥; Oracle JD Edwards EnterpriseOne; Oracle PeopleSoft 🔥; SAP software 🔥; [6 more](#)
- + **Enterprise system management software** — IBM Power Systems software
- + **Expert system software** — Ansible software 🔥
- + **File versioning software** — Git 🔥; Version control software
- + **Filesystem software** — File server software
- + **Financial analysis software** — Delphi Technology; Oracle E-Business Suite Financials
- + **Geographic information system** — ESRI ArcGIS software 🔥; Geographic information system GIS software
- + **Graphical user interface development software** — Graphical user interface GUI builder software; Graphical user interface GUI design software; Salesforce Visualforce
- + **Graphics or photo imaging software** — Adobe Creative Cloud software 🔥; Adobe Illustrator 🔥; JamBoard; Trimble SketchUp Pro 🔥; [4 more](#)
- + **Human resources software** — Human resource management software HRMS
- + **Industrial control software** — Supervisory control and data acquisition SCADA software
- + **Information retrieval or search software** — Apache Avro; LexisNexis
- + **Instant messaging software** — Blink; GroupMe
- + **Internet browser software** — Apple Safari 🔥; Microsoft Internet Explorer; Mozilla Firefox 🔥; Web browser software
- + **Internet protocol IP multimedia subsystem software** — Voice over internet protocol VoIP system software
- + **Medical software** — Epic Systems 🔥

- + **Metadata management software** — Quest Erwin Data Modeler; Talend Data Fabric
- + **Network conferencing software** — LogMeIn GoToWebinar
- + **Network monitoring software** — Nagios; Wireshark
- + **Network operation system software** — IBM z/OS operating systems
- + **Network security and virtual private network VPN equipment software** — Firewall software; Network intrusion detection software; Virtual private networking VPN software
- + **Object or component oriented development software** — Apache Spark 🔥; jQuery 🔥; Scala 🔥; Swift 🔥; [32 more](#)
- + **Object oriented data base management software** — Hibernate ORM 🔥; PostgreSQL 🔥
- + **Office suite software** — LibreOffice; Microsoft Office software 🔥
- + **Operating system software** — Bash 🔥; Microsoft Windows Server 🔥; Red Hat Enterprise Linux 🔥; UNIX Shell 🔥; [22 more](#)
- + **Platform interconnectivity software** — Migration software
- + **Portal server software** — Apache HTTP Server
- + **Presentation software** — Google Slides; Microsoft PowerPoint 🔥
- + **Process mapping and design software** — Microsoft Visio 🔥
- + **Program testing software** — Hewlett Packard LoadRunner; IBM Rational Robot; JUnit 🔥; Selenium 🔥; [36 more](#)
- + **Project management software** — Atlassian Confluence 🔥; Atlassian JIRA 🔥; Microsoft Team Foundation Server 🔥; Microsoft Teams 🔥; [2 more](#)
- + **Requirements analysis and system architecture software** — IBM Rational RequisitePro; Requirements management software; Unified modeling language UML
- + **Spreadsheet software** — Google Sheets 🔥; Microsoft Excel 🔥
- + **Storage networking software** — Amazon Simple Storage Service S3 🔥; Storage area network SAN software
- + **Transaction security and virus protection software** — Anti-spyware software; Antivirus software; McAfee; NortonLifeLock cybersecurity software; [1 more](#)
- + **Transaction server software** — Customer information control system CICS; IBM Middleware; Microsoft Internet Information Services (IIS); Object Management Group Object Request Broker; [1 more](#)
- + **Video conferencing software** — Cisco Webex 🔥; Google Meet; LogMeIn GoToMeeting; Zoom 🔥; [1 more](#)
- + **Video creation and editing software** — Adobe After Effects 🔥; Flipgrid; Screencastify; YouTube; [1 more](#)
- + **Web page creation and editing software** — Adobe Dreamweaver; Google Sites; LinkedIn; Social media sites
- + **Web platform development software** — Django 🔥; Google Angular 🔥; React 🔥; Spring Framework 🔥; [25 more](#)
- + **Word processing software** — 3M Post-it App; Google Docs 🔥; Microsoft OneNote; Microsoft Word 🔥; [1 more](#)



Hot Technologies are requirements most frequently included across all employer job postings.

[See all 126 Hot Technologies for this occupation.](#)



In Demand skills are frequently included in employer job postings for this occupation.

[See all 18 In Demand skills for this occupation.](#)

Tools Used

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- + **Central processing unit CPU processors** — Graphics processing unit GPU; Multi-core central processing unit CPU
- + **Computer servers** — Application servers
- + **Desktop computers**
- + **Digital cameras**
- + **Flash memory storage card** — Flash disks
- + **High end computer servers** — Directory servers
- + **Integrated circuit testers** — In circuit emulators ICE; Logic analyzers
- + **Mainframe computers** — Mainframe operating systems; Supercomputers
- + **Network routers** — Computer network routers
- + **Notebook computers** — Laptop computers
- + **Personal computers**

Occupational Requirements

Work Activities

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| Importance | Work Activity |
|------------|--|
| 99 | + Working with Computers — Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information. |
| 91 | + Getting Information — Observing, receiving, and otherwise obtaining information from all relevant sources. |
| 86 | + Communicating with Supervisors, Peers, or Subordinates — Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person. |
| 85 | + Processing Information — Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data. |

| Importance | Work Activity |
|------------|---|
| 84 | + Updating and Using Relevant Knowledge — Keeping up-to-date technically and applying new knowledge to your job. |
| 82 | + Analyzing Data or Information — Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts. |
| 81 | + Evaluating Information to Determine Compliance with Standards — Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards. |
| 81 | + Identifying Objects, Actions, and Events — Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events. |
| 77 | + Documenting/Recording Information — Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form. |
| 77 | + Organizing, Planning, and Prioritizing Work — Developing specific goals and plans to prioritize, organize, and accomplish your work. |

Detailed Work Activities

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- + Document operational activities.
- + Analyze data to identify or resolve operational problems.
- + Troubleshoot issues with computer applications or systems.
- + Compile technical information or documentation.
- + Report maintenance or equipment problems to appropriate personnel.
- + Develop testing routines or procedures.
- + Document design or development procedures.
- + Recommend changes to improve computer or information systems.
- + Install computer software.
- + Test computer system operations to ensure proper functioning.
- + Create databases to store electronic data.
- + Monitor computer system performance to ensure proper operation.
- + Develop performance metrics or standards related to information technology.
- + Collaborate with others to determine design specifications or details.
- + Develop detailed project plans.
- + Test software performance.

- + Provide customer service to clients or users.
- + Manage documentation to ensure organization or accuracy.
- + Read documents to gather technical information.
- + Collaborate with others to resolve information technology issues.
- + Analyze data to identify trends or relationships among variables.
- + Evaluate utility of software or hardware technologies.
- + Assess database performance.
- + Modify software programs to improve performance.
- + Prepare data for analysis.
- + Provide recommendations to others about computer hardware.

Find occupations related to multiple detailed work activities

Work Context

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- + **E-Mail** — How frequently does your job require you to use E-mail?

100% Every day

- + **Face-to-Face Discussions with Individuals and Within Teams** — How frequently does your job require face-to-face discussions with individuals and within teams?

75% Every day

22% Once a week or more but not every day

- + **Spend Time Sitting** — How much does this job require sitting?

71% Continually or almost continually

26% More than half the time

- + **Importance of Being Exact or Accurate** — How important is being very exact or highly accurate in performing this job?

50% Extremely important

44% Very important

- + **Work With or Contribute to a Work Group or Team** — How important is it to work with or contribute to a work group or team in this job?

58% Extremely important

27% Very important

15% Important

- + **Freedom to Make Decisions** — How much decision making freedom, without supervision, does the job offer?

- 24%** A lot of freedom
- 65%** Some freedom
- 12%** Limited freedom

+ Indoors, Environmentally Controlled — How often does this job require working indoors in an environmentally controlled environment (like a warehouse with air conditioning)?

- 67%** Every day
- 12%** Once a week or more but not every day
- 15%** Never

+ Telephone Conversations — How often do you have telephone conversations in this job?

- 42%** Every day
- 42%** Once a week or more but not every day

+ Contact With Others — How much does this job require the worker to be in contact with others (face-to-face, by telephone, or otherwise) in order to perform it?

- 29%** Constant contact with others
- 47%** Contact with others most of the time
- 18%** Contact with others about half the time

+ Determine Tasks, Priorities and Goals — How much freedom does the worker have in determining the tasks, priorities, or goals of the job?

- 12%** A lot of freedom
- 74%** Some freedom
- 15%** Limited freedom

Experience Requirements

Job Zone

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Title Job Zone Four: Considerable Preparation Needed

Education Most of these occupations require a four-year bachelor's degree, but some do not.

Related Experience A considerable amount of work-related skill, knowledge, or experience is needed for these occupations. For example, an accountant must complete four years of college and work for several years in accounting to be considered qualified.

Job Training Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

Job Zone Examples Many of these occupations involve coordinating, supervising, managing, or training others. Examples include real estate brokers, sales managers, database

administrators, graphic designers, conservation scientists, art directors, and cost estimators.

SVP Range (7.0 to < 8.0)

Training & Credentials

| | | |
|--|----------------|----|
| State training | Select a State | Go |
| Local training | ZIP Code | Go |
| Certifications Find certifications nationwide | | |
| State licenses | Select a State | Go |

Apprenticeship Opportunities

Start your career and build your skillset. Visit [Apprenticeship.gov](#) to learn about opportunities related to this occupation.

Worker Requirements

Skills

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| Importance | Skill |
|------------|---|
| 75 | ⊕ Reading Comprehension — Understanding written sentences and paragraphs in work-related documents. |
| 72 | ⊕ Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times. |
| 72 | ⊕ Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems. |
| 72 | ⊕ Speaking — Talking to others to convey information effectively. |

| Importance | Skill |
|------------|---|
| 69 | + Writing — Communicating effectively in writing as appropriate for the needs of the audience. |
| 66 | + Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action. |
| 66 | + Programming — Writing computer programs for various purposes. |
| 60 | + Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions. |
| 60 | + Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance. |
| 56 | + Systems Evaluation — Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system. |

Knowledge

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| Importance | Knowledge |
|------------|--|
| 85 | + Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming. |
| 70 | + English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, and rules of composition and grammar. |
| 57 | + Engineering and Technology — Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services. |
| 57 | + Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications. |
| 50 | + Design — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models. |

| Importance | Knowledge |
|------------|---|
| 47 | + Education and Training — Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects. |
| 42 | + Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction. |
| 36 | + Administration and Management — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources. |
| 35 | + Administrative — Knowledge of administrative and office procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and workplace terminology. |
| 30 | + Telecommunications — Knowledge of transmission, broadcasting, switching, control, and operation of telecommunications systems. |

Education

How much education does a new hire need to perform a job in this occupation? Respondents said:

- 50% Bachelor's degree required
- 26% Associate's degree required
- 9% Post-secondary certificate required

Worker Characteristics

Abilities

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| Importance | Ability |
|------------|--|
| 75 | + Deductive Reasoning — The ability to apply general rules to specific problems to produce answers that make sense. |

| Importance | Ability |
|------------|---|
| 75 | + Inductive Reasoning — The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events). |
| 75 | + Oral Comprehension — The ability to listen to and understand information and ideas presented through spoken words and sentences. |
| 75 | + Oral Expression — The ability to communicate information and ideas in speaking so others will understand. |
| 75 | + Problem Sensitivity — The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing that there is a problem. |
| 75 | + Written Comprehension — The ability to read and understand information and ideas presented in writing. |
| 72 | + Written Expression — The ability to communicate information and ideas in writing so others will understand. |
| 69 | + Information Ordering — The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations). |
| 66 | + Near Vision — The ability to see details at close range (within a few feet of the observer). |
| 56 | + Speech Recognition — The ability to identify and understand the speech of another person. |

Interests

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| Occupational Interest | Interest |
|-----------------------|---|
| 79 | + Investigative — Work involves studying and researching non-living objects, living organisms, disease or other forms of impairment, or human behavior. Investigative occupations are often associated with physical, life, medical, or social sciences, and can be found in the fields of humanities, mathematics/statistics, information technology, or health care service. |

| Occupational Interest | Interest |
|-----------------------|---|
| 78 | <ul style="list-style-type: none"> + Conventional — Work involves following procedures and regulations to organize information or data, typically in a business setting. Conventional occupations are often associated with office work, accounting, mathematics/statistics, information technology, finance, or human resources. |
| 47 | <ul style="list-style-type: none"> + Realistic — Work involves designing, building, or repairing of equipment, materials, or structures, engaging in physical activity, or working outdoors. Realistic occupations are often associated with engineering, mechanics and electronics, construction, woodworking, transportation, machine operation, agriculture, animal services, physical or manual labor, athletics, or protective services. |
| 12 | <ul style="list-style-type: none"> + Artistic — Work involves creating original visual artwork, performances, written works, food, or music for a variety of media, or applying artistic principles to the design of various objects and materials. Artistic occupations are often associated with visual arts, applied arts and design, performing arts, music, creative writing, media, or culinary art. |
| 10 | <ul style="list-style-type: none"> + Enterprising — Work involves managing, negotiating, marketing, or selling, typically in a business setting, or leading or advising people in political and legal situations. Enterprising occupations are often associated with business initiatives, sales, marketing/advertising, finance, management/administration, professional advising, public speaking, politics, or law. |
| 9 | <ul style="list-style-type: none"> + Social — Work involves helping, teaching, advising, assisting, or providing service to others. Social occupations are often associated with social, health care, personal service, teaching/education, or religious activities. |

Work Values

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| Extent | Work Value |
|--------|--|
| 67 | <ul style="list-style-type: none"> + Achievement — Occupations that satisfy this work value are results oriented and allow employees to use their strongest abilities, giving them a feeling of accomplishment. Corresponding needs are Ability Utilization and Achievement. |
| 67 | <ul style="list-style-type: none"> + Independence — Occupations that satisfy this work value allow employees to work on their own and make decisions. Corresponding needs are Creativity, Responsibility and Autonomy. |

| Extent | Work Value |
|--------|---|
| 67 | + Support — Occupations that satisfy this work value offer supportive management that stands behind employees. Corresponding needs are Company Policies, Supervision: Human Relations and Supervision: Technical. |
| 67 | + Working Conditions — Occupations that satisfy this work value offer job security and good working conditions. Corresponding needs are Activity, Compensation, Independence, Security, Variety and Working Conditions. |
| 61 | + Recognition — Occupations that satisfy this work value offer advancement, potential for leadership, and are often considered prestigious. Corresponding needs are Advancement, Authority, Recognition and Social Status. |
| 56 | + Relationships — Occupations that satisfy this work value allow employees to provide service to others and work with co-workers in a friendly non-competitive environment. Corresponding needs are Co-workers, Moral Values and Social Service. |

Work Styles

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| Importance | Work Style |
|------------|--|
| 98 | + Attention to Detail — Job requires being careful about detail and thorough in completing work tasks. |
| 89 | + Analytical Thinking — Job requires analyzing information and using logic to address work-related issues and problems. |
| 88 | + Cooperation — Job requires being pleasant with others on the job and displaying a good-natured, cooperative attitude. |
| 86 | + Integrity — Job requires being honest and ethical. |
| 84 | + Adaptability/Flexibility — Job requires being open to change (positive or negative) and to considerable variety in the workplace. |
| 84 | + Dependability — Job requires being reliable, responsible, and dependable, and fulfilling obligations. |
| 81 | + Persistence — Job requires persistence in the face of obstacles. |

| Importance | Work Style |
|------------|--|
| 76 | + Initiative — Job requires a willingness to take on responsibilities and challenges. |
| 74 | + Self-Control — Job requires maintaining composure, keeping emotions in check, controlling anger, and avoiding aggressive behavior, even in very difficult situations. |
| 73 | + Stress Tolerance — Job requires accepting criticism and dealing calmly and effectively with high-stress situations. |

Workforce Characteristics

Wages & Employment Trends

| | |
|---------------------------------------|--|
| Median wages (2024) | \$49.33 hourly, \$102,610 annual |
| State wages | Select a State <input type="button" value="Go"/> |
| Local wages | ZIP Code <input type="button" value="Go"/> |
| Employment (2023) | 205,000 employees |
| Projected growth (2023-2033) |  Much faster than average (9% or higher) |
| Projected job openings (2023-2033) | 15,000 |
| State trends | Select a State <input type="button" value="Go"/> |
| Top industries (2023) | Professional, Scientific, and Technical Services (41% employed in this sector) Information (20%) Finance and Insurance (12%) |

Source: Bureau of Labor Statistics [2024 wage data](#) and [2023-2033 employment projections](#). "Projected growth" represents the estimated change in total employment over the projections period (2023-2033). "Projected job openings" represent openings due to growth and replacement.

Job Openings on the Web

State job openings

Local job openings

ZIP Code

Go

More Information

Related Occupations

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- 15-1299.07 [Blockchain Engineers](#)
- 17-2061.00 [Computer Hardware Engineers](#)
- 15-1251.00 [Computer Programmers](#)
- 15-1211.00 [Computer Systems Analysts](#)
- 15-1299.08 [Computer Systems Engineers/Architects](#)
- 15-1243.00 [Database Architects](#)
- 15-1299.05 [Information Security Engineers](#)
- 15-1299.04 [Penetration Testers](#)
- 15-1252.00 [Software Developers](#)
- 17-2112.02 [Validation Engineers](#)

Professional Associations

Disclaimer: Sources are listed to provide additional information on related jobs, specialties, and/or industries. Links to non-DOL Internet sites are provided for your convenience and do not constitute an endorsement.

National Associations

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- [American Society for Quality](#) ↗
- [Association for Computing Machinery](#) ↗
- [Computing Research Association](#) ↗
- [IEEE Computer Society](#) ↗
- [IEEE-USA](#) ↗

Accreditation, Certification, & Unions

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- [American Software Testing Qualifications Board](#) ↗
- [Association for Testing and Software Quality Assurance](#) ↗
- [CompTIA](#) ↗
- [Institute for Certification of Computing Professionals](#) ↗
- [International Software Testing Qualifications Board](#) ↗