



OCCUPATIONAL OUTLOOK HANDBOOK

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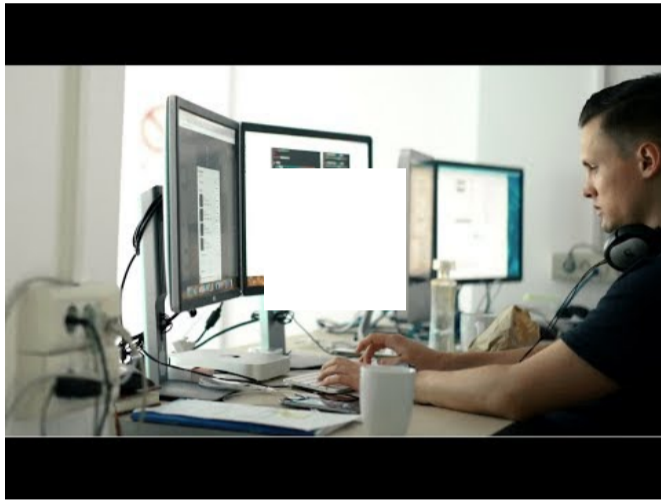
Information Security Analysts

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Summary

Summary



Quick Facts: Information Security Analysts

2021 Median Pay	\$102,600 per year \$49.33 per hour
Typical Entry-Level Education	Bachelor's degree
Work Experience in a Related Occupation	Less than 5 years
On-the-job Training	None
Number of Jobs, 2021	163,000
Job Outlook, 2021-31	35% (Much faster than average)
Employment Change, 2021-31	56,500

[What Information Security Analysts Do](#)

Information security analysts plan and carry out security measures to protect an organization's computer networks and systems.

[Work Environment](#)

Most information security analysts work for computer companies, consulting firms, or business and financial companies.

[How to Become an Information Security Analyst](#)

Information security analysts typically need a bachelor's degree in a computer science field, along with related work experience. Employers may prefer to hire analysts who have professional certification.

[Pay](#)

The median annual wage for information security analysts was \$102,600 in May 2021.

[Job Outlook](#)

Employment of information security analysts is projected to grow 35 percent from 2021 to 2031, much faster than the average for all occupations.

About 19,500 openings for information security analysts are projected each year, on average, over the decade. Many of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.

[State & Area Data](#)

Explore resources for employment and wages by state and area for information security analysts.

[Similar Occupations](#)

Compare the job duties, education, job growth, and pay of information security analysts with similar occupations.

[More Information, Including Links to O*NET](#)

Learn more about information security analysts by visiting additional resources, including O*NET, a source on key characteristics of workers and occupations.

[What They Do ->](#)

What They Do

What Information Security Analysts Do

Information security analysts plan and carry out security measures to protect an organization's computer networks and systems.

Duties

Information security analysts typically do the following:

- Monitor their organization's networks for security breaches and investigate when one occurs
- Use and maintain software, such as firewalls and data encryption programs, to protect sensitive information
- Check for vulnerabilities in computer and network systems
- Research the latest information technology (IT) security trends
- Prepare reports that document general metrics, attempted attacks, and security breaches
- Develop security standards and best practices for their organization
- Recommend security enhancements to management or senior IT staff
- Help computer users when they need to install or learn about new security products and procedures

Information security analysts are heavily involved with creating their organization's disaster recovery plan, a procedure that IT employees follow in case of emergency. These plans allow for the continued operation of an organization's IT department. The recovery plan includes preventive measures such as regularly copying and transferring data to an offsite location. It also involves plans to restore proper IT functioning after a disaster. Analysts continually test the steps in their recovery plans.

Information security analysts must stay up to date on IT security and on the latest methods attackers are using to infiltrate computer systems. Analysts need to research new security technology to decide what will most effectively protect their organization.

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Work Environment

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Work Environment

Information security analysts held about 163,000 jobs in 2021. The largest employers of information security analysts were as follows:

Computer systems design and related services	27%
Finance and insurance	15
Information	14
Management of companies and enterprises	8
Administrative and support services	5

Many information security analysts work with other members of an information technology department, such as [network administrators](#) or [computer systems analysts](#).

Work Schedules

Most information security analysts work full time, and some work more than 40 hours per week. Information security analysts sometimes have to be on call outside of normal business hours in case of an emergency.

[← What They Do](#)

How to Become One

[How to Become One →](#)

How to Become an Information Security Analyst

Information security analysts typically need a bachelor's degree in a computer science field, along with related work experience. Employers may prefer to hire analysts who have professional certification.

Education

Information security analysts typically need a bachelor's [degree](#) in [computer and information technology](#) or a related field, such as [engineering](#) or [math](#). However, some workers enter the occupation with a high school diploma and relevant industry training and certifications.

Work Experience in a Related Occupation

Information security analysts may need to have work experience in a related occupation. Many analysts have experience in an information technology department, often as a [network and computer systems administrator](#).

Licenses, Certifications, and Registrations

Many employers prefer to hire candidates who have information security certification. Some of these certifications, such as [Security+](#), are for workers at the entry level; others, such as the [Certified Information Systems Security Professional \(CISSP\)](#), are designed for experienced information security workers. Certification in specialized areas, such as systems auditing, also is available.

Advancement

Information security analysts may advance to become chief security officers or another type of [computer and information systems manager](#). Information security analysts also may advance within the occupation as they gain experience. For example, they may lead a team of other information security analysts or become an expert in a particular area of information security.

Important Qualities



Information security analysts install software, such as firewalls, to protect computer networks.



Many analysts work in IT departments and manage the security of their companies computer networks.



There are a number of information security certifications available, and many employers prefer candidates to have certification.

Analytical skills. Information security analysts study computer systems and networks and assess risks to determine improvements for security policies and protocols.

Communication skills. Information security analysts must be able to explain information security needs and potential threats to technical and nontechnical audiences within their organizations.

Creative skills. Information security analysts must anticipate information security risks and implement new ways to protect their organizations' computer systems and networks.

Detail oriented. Because cyberattacks may be difficult to detect, information security analysts must pay careful attention to computer systems and watch for minor changes in performance.

Problem-solving skills. Information security analysts must respond to security alerts and uncover and fix flaws in computer systems and networks.

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Pay

Pay

The median annual wage for information security analysts was \$102,600 in May 2021. The median wage is the wage at which half the workers in an occupation earned more than that amount and half earned less. The lowest 10 percent earned less than \$61,520, and the highest 10 percent earned more than \$165,920.

In May 2021, the median annual wages for information security analysts in the top industries in which they worked were as follows:

Information	\$128,970
Finance and insurance	104,790
Management of companies and enterprises	101,350
Computer systems design and related services	101,170
Administrative and support services	95,270

Most information security analysts work full time, and some work more than 40 hours per week. Information security analysts sometimes have to be on call outside of normal business hours in case of an emergency.

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Job Outlook

Job Outlook

Employment of information security analysts is projected to grow 35 percent from 2021 to 2031, much faster than the average for all occupations.

About 19,500 openings for information security analysts are projected each year, on average, over the decade. Many of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.

Employment

High demand is expected for information security analysts. Cyberattacks have grown in frequency, and these analysts will be needed to create innovative solutions to prevent hackers from stealing critical information or creating problems for computer networks.

As businesses focus on enhancing cybersecurity, they will need information security analysts to secure new technologies from outside threats or hacks. A shift to remote work and the rise of e-commerce have increased the need for enhanced security, contributing to the projected employment growth of these workers over the decade.

Strong growth in digital health services and telehealth will also increase data security risks for healthcare providers. More of these analysts are likely to be needed to safeguard patients' personal information and data.

Employment projections data for information security analysts, 2021-31

Information security analysts

SOC Code:
15-1212

Employment, 2021:
163,000

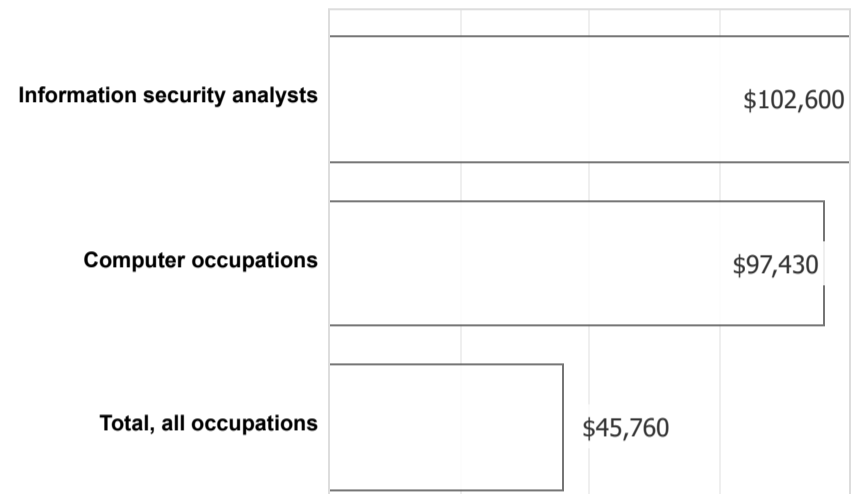
Projected Employment, 2031:
219,500

Change, 2021-31 (Percent):

SOURCE: U.S. Bureau of Labor Statistics, Employment Projections program

Information Security Analysts

Median annual wages, May 2021

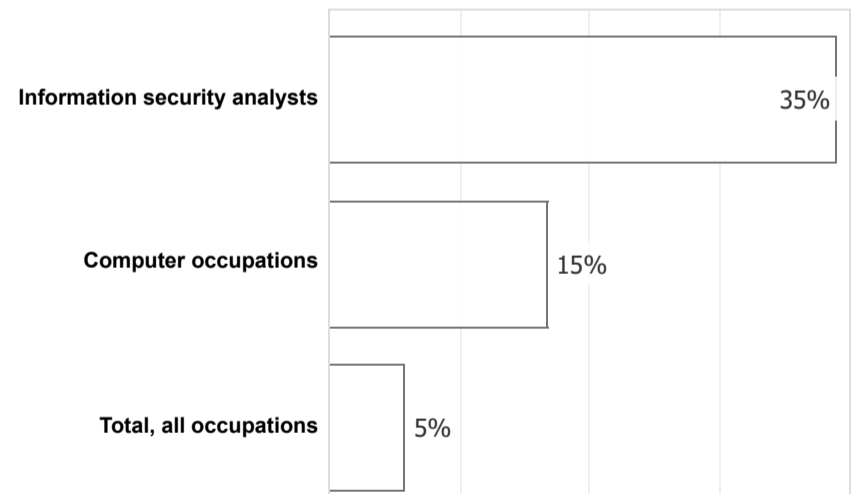


Note: All Occupations includes all occupations in the U.S. Economy.
Source: U.S. Bureau of Labor Statistics, Occupational Employment and Wage Statistics

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Information Security Analysts

Percent change in employment, projected 2021-31



Note: All Occupations includes all occupations in the U.S. Economy.
Source: U.S. Bureau of Labor Statistics, Employment Projections program

35

Change, 2021-31 (Numeric):
56,500

Employment By Industry:
[Get data](#)

SOURCE: U.S. Bureau of Labor Statistics, Employment Projections program

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State & Area Data

State & Area Data

Occupational Employment and Wage Statistics (OEWS)

The [Occupational Employment and Wage Statistics](#) (OEWS) program produces employment and wage estimates annually for over 800 occupations. These estimates are available for the nation as a whole, for individual states, and for metropolitan and nonmetropolitan areas. The link(s) below go to OEWS data maps for employment and wages by state and area.

- [Information security analysts](#)

Projections Central

Occupational employment projections are developed for all states by Labor Market Information (LMI) or individual state Employment Projections offices. All state projections data are available at www.projectionscentral.com. Information on this site allows projected employment growth for an occupation to be compared among states or to be compared within one state. In addition, states may produce projections for areas; there are links to each state's websites where these data may be retrieved.

CareerOneStop

CareerOneStop includes hundreds of [occupational profiles](#) with data available by state and metro area. There are links in the left-hand side menu to compare occupational employment by state and occupational wages by local area or metro area. There is also a [salary info tool](#) to search for wages by zip code.

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Similar Occupations

Similar Occupations

This table shows a list of occupations with job duties that are similar to those of information security analysts.

[Computer and Information Research Scientists](#)

Job Duties:

Computer and information research scientists design innovative uses for new and existing computing technology.

Entry-Level Education:

Master's degree

2021 Median Pay:

\$131,490

[Computer and Information Systems Managers](#)

Job Duties:

Computer and information systems managers plan, coordinate, and direct computer-related activities in an organization.

Entry-Level Education:

Bachelor's degree

2021 Median Pay:

\$159,010

[Computer Network Architects](#)

Job Duties:

Computer network architects design and build data communication networks, including local area networks (LANs), wide area networks (WANs), and Intranets.

Entry-Level Education:

Bachelor's degree

2021 Median Pay:

\$120,520

[Computer Programmers](#)

Job Duties:

Computer programmers write, modify, and test code and scripts that allow computer software and applications to function properly.

Entry-Level Education:

Bachelor's degree

2021 Median Pay:

\$93,000

[Computer Support Specialists](#)

Job Duties:

Computer support specialists maintain computer networks and provide technical help to computer users.

Entry-Level Education:

[See How to Become One](#)

2021 Median Pay:

\$57,910

Computer Systems Analysts**Job Duties:**

Computer systems analysts study an organization's current computer systems and design ways to improve efficiency.

Entry-Level Education:

Bachelor's degree

2021 Median Pay:

\$99,270

Database Administrators and Architects**Job Duties:**

Database administrators and architects create or organize systems to store and secure data.

Entry-Level Education:

Bachelor's degree

2021 Median Pay:

\$101,000

Network and Computer Systems Administrators**Job Duties:**

Network and computer systems administrators are responsible for the day-to-day operation of computer networks.

Entry-Level Education:

Bachelor's degree

2021 Median Pay:

\$80,600

Software Developers, Quality Assurance Analysts, and Testers**Job Duties:**

Software developers design computer applications or programs. Software quality assurance analysts and testers identify problems with applications or programs and report defects.

Entry-Level Education:

Bachelor's degree

2021 Median Pay:

\$109,020

Web Developers and Digital Designers**Job Duties:**

Web developers create and maintain websites. Digital designers develop, create, and test website or interface layout, functions, and navigation for usability.

Entry-Level Education:

Bachelor's degree

2021 Median Pay:

\$78,300

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Contacts for More Information

For more information about computer careers, visit

[Association for Computing Machinery](#)

[Computing Research Association](#)

[IEEE Computer Society](#)

For information about opportunities for women pursuing information technology careers, visit:

[National Center for Women & Information Technology](#)

O*NET

[Information Security Analysts](#)

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SUGGESTED CITATION:

Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Information Security Analysts, at <https://www.bls.gov/ooh/computer-and-information-technology/information-security-analysts.htm> (visited February 14, 2023).

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