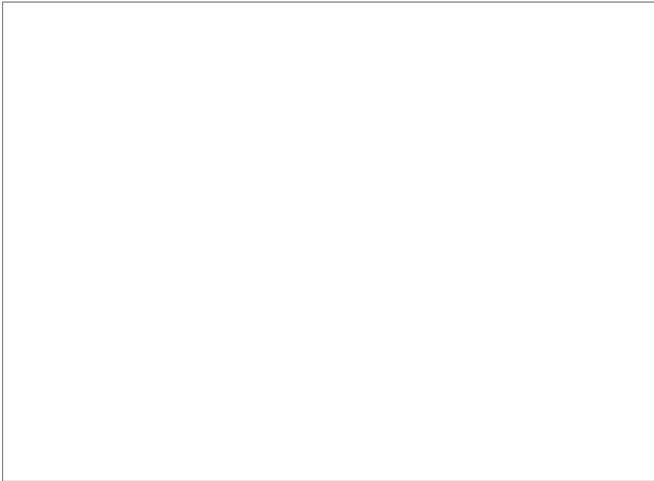




# Information Security Analysts

## Summary



Information security analysts work to protect a company's computer systems.

### Quick Facts: Information Security Analysts

<b>2018 Median Pay</b>	\$98,350 per year \$47.28 per hour
<b>Typical Entry-Level Education</b>	Bachelor's degree
<b>Work Experience in a Related Occupation</b>	Less than 5 years
<b>On-the-job Training</b>	None
<b>Number of Jobs, 2016</b>	100,000
<b>Job Outlook, 2016-26</b>	28% (Much faster than average)
<b>Employment Change, 2016-26</b>	28,500

### What Information Security Analysts Do

Information security analysts plan and carry out security measures to protect an organization's computer networks and systems. Their responsibilities are continually expanding as the number of cyberattacks increases.

### Work Environment

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

## **How to Become an Information Security Analyst**

Most information security analyst positions require a bachelor's degree in a computer-related field. Employers usually prefer to hire analysts with experience in a related occupation.

### **Pay**

The median annual wage for information security analysts was \$98,350 in May 2018.

### **Job Outlook**

Employment of information security analysts is projected to grow 28 percent from 2016 to 2026, much faster than the average for all occupations. Demand for information security analysts is expected to be very high, as these analysts will be needed to create innovative solutions to prevent hackers from stealing critical information or causing problems for computer networks.

### **State & Area Data**

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

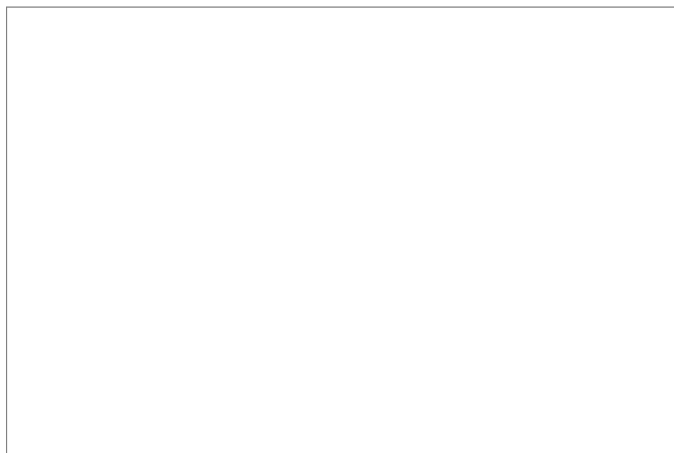
### **Similar Occupations**

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 Information Security Analysts Do**



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

Information security analysts plan and carry out security measures to protect an organization's computer networks and systems. Their responsibilities are continually expanding as the number of cyberattacks increases.

### **Duties**

Information security analysts typically do the following:

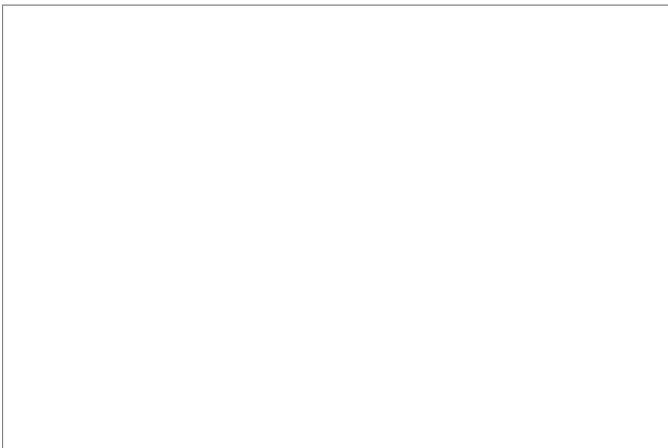
- Monitor their organization's networks for security breaches and investigate a violation when one occurs

- Install and use software, such as firewalls and data encryption programs, to protect sensitive information
- Prepare reports that document security breaches and the extent of the damage caused by the breaches
- Conduct penetration testing, which is when analysts simulate attacks to look for vulnerabilities in their systems before they can be exploited
- Research the latest information technology (IT) security trends
- 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

IT 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.

## Work Environment



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

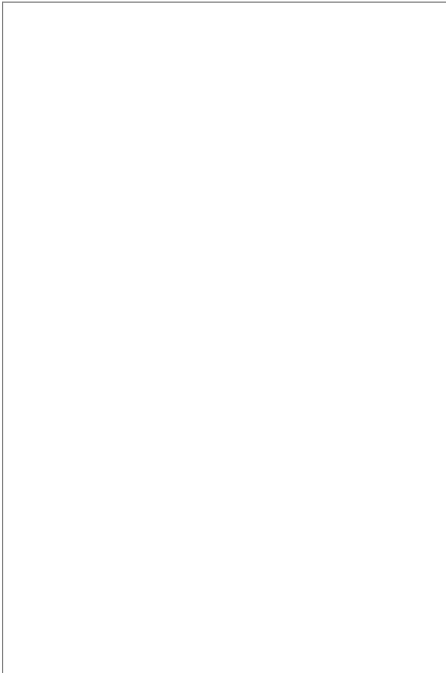
Information security analysts held about 100,000 jobs in 2016. The largest employers of information security analysts were as follows:

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. Information security analysts sometimes have to be on call outside of normal business hours in case of an emergency. Some work more than 40 hours per week.

## How to Become an Information Security Analyst



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

Most information security analyst positions require a bachelor's degree in a computer-related field. Employers usually prefer analysts to have experience in a related occupation.

### Education

Information security analysts usually need at least a bachelor's degree in computer science, information assurance, programming, or a related field.

Some employers prefer applicants who have a Master of Business Administration (MBA) in information systems. Programs offering the MBA in information systems generally require 2 years of study beyond the undergraduate level and include both business and computer-related courses.

### Work Experience in a Related Occupation

Information security analysts generally need to have previous experience in a related occupation. Many analysts have experience in an information technology department, often as a [network or computer systems administrator](#). Some employers look for people who have already worked in fields related to the one in which they are hiring. For example, if the job opening is in database security, they may look for a database administrator. If they are hiring in systems security, a computer systems analyst may be an ideal candidate.

### Licenses, Certifications, and Registrations

There are a number of information security certifications available, and many employers prefer candidates to have certification, which validates the knowledge and best practices required from information security analysts. Some are general information security certificates, such as the [Certified Information Systems Security Professional](#) (CISSP), while others have a more narrow focus, such as

penetration testing or systems auditing.

## Advancement

Information security analysts can advance to become chief security officers or another type of [computer and information systems manager](#).

## Important Qualities

**Analytical skills.** Information security analysts must carefully study computer systems and networks and assess risks to determine how security policies and protocols can be improved.

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

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

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

## Pay

### Information Security Analysts

Median annual wages, May 2018

Information security analysts

\$98,350

Computer occupations

\$86,320

Total, all occupations

\$38,640

Note: All Occupations includes all occupations in the U.S. Economy.

Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics

The median annual wage for information security analysts was \$98,350 in May 2018. 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 \$56,750, and the highest 10 percent earned more than \$156,580.

In May 2018, the median annual wages for information security analysts in the top industries in which they worked were as follows:

Computer systems design and related services	\$102,620
Finance and insurance	101,130

Information	96,580
Management of companies and enterprises	94,180
Administrative and support services	94,120

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

## Job Outlook

### Information Security Analysts

Percent change in employment, projected 2016-26

Information security analysts

28%

Computer occupations

13%

Total, all occupations

7%

Note: All Occupations includes all occupations in the U.S. Economy.

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

Employment of information security analysts is projected to grow 28 percent from 2016 to 2026, much faster than the average for all occupations.

Demand for information security analysts is expected to be very high. Cyberattacks have grown in frequency, and analysts will be needed to come up with innovative solutions to prevent hackers from stealing critical information or creating problems for computer networks.

Banks and financial institutions, as well as other types of corporations, will need to increase their information security capabilities in the face of growing cybersecurity threats. In addition, as the healthcare industry expands its use of electronic medical records, ensuring patients' privacy and protecting personal data are becoming more important. More information security analysts are likely to be needed to create the safeguards that will satisfy patients' concerns.

Employment of information security analysts is projected to grow 56 percent in computer systems design and related services from 2016 to 2026. The increasing adoption of cloud services by small and medium-sized businesses and a rise in cybersecurity threats will create demand for managed security services providers in this industry.

## Job Prospects

Job prospects for information security analysts should be good. Information security analysts with related work experience will have the best prospects. For example, an applicant with experience as a database administrator would have better prospects in database security than someone without that experience.

Employment projections data for information security analysts, 2016-26

Occupational Title	SOC Code	Employment, 2016	Projected Employment, 2026	Change, 2016-26 Percent Numeric	Employment by Industry
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SOURCE: U.S. Bureau of Labor Statistics, Employment Projections program

Information security analysts	15-1122	100,000	128,500	28	28,500 <a href="#">xlsx</a>
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## State & Area Data

### Occupational Employment Statistics (OES)

The [Occupational Employment Statistics](#) (OES) 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 OES 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](http://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.





## Similar Occupations

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

Occupation	Job Duties	ENTRY-LEVEL EDUCATION	2018 MEDIAN PAY
 <a href="#">Computer and Information Research</a>	Computer and information research scientists invent and design new approaches to computing technology and	Master's degree	\$118,370

Occupation	Job Duties	ENTRY-LEVEL EDUCATION	2018 MEDIAN PAY
<a href="#"><u>Scientists</u></a>	find innovative uses for existing technology. They study and solve complex problems in computing for business, medicine, science, and other fields.		
 <a href="#"><u>Computer and Information Systems Managers</u></a>	Computer and information systems managers, often called information technology (IT) managers or IT project managers, plan, coordinate, and direct computer-related activities in an organization. They help determine the information technology goals of an organization and are responsible for implementing computer systems to meet those goals.	Bachelor's degree	\$142,530
 <a href="#"><u>Computer Network Architects</u></a>	Computer network architects design and build data communication networks, including local area networks (LANs), wide area networks (WANs), and Intranets. These networks range from small connections between two offices to next-generation networking capabilities such as a cloud infrastructure that serves multiple customers.	Bachelor's degree	\$109,020
 <a href="#"><u>Computer Programmers</u></a>	Computer programmers write and test code that allows computer applications and software programs to function properly. They turn the program designs created by software developers and engineers into instructions that a computer can follow.	Bachelor's degree	\$84,280
 <a href="#"><u>Computer Support Specialists</u></a>	Computer support specialists provide help and advice to computer users and organizations. These specialists either support computer networks or they provide technical assistance directly to computer users.	<a href="#"><u>See How to Become One</u></a>	\$53,470
 <a href="#"><u>Computer Systems Analysts</u></a>	Computer systems analysts, sometimes called <i>systems architects</i> , study an organization's current computer systems and procedures, and design solutions to help the organization operate more efficiently and effectively. They bring business and information technology (IT) together by understanding the needs and	Bachelor's degree	\$88,740



Occupation	Job Duties	ENTRY-LEVEL EDUCATION	2018 MEDIAN PAY
	<p>limitations of both.</p> <p>Database administrators (DBAs) use specialized software to store and organize data, such as financial information and customer shipping records. They make sure that data are available to users and secure from unauthorized access.</p>	Bachelor's degree	\$90,070
	<p>Computer networks are critical parts of almost every organization. Network and computer systems administrators are responsible for the day-to-day operation of these networks.</p>	Bachelor's degree	\$82,050
	<p>Software developers are the creative minds behind computer programs. Some develop the applications that allow people to do specific tasks on a computer or another device. Others develop the underlying systems that run the devices or that control networks.</p>	Bachelor's degree	\$105,590
	<p>Web developers design and create websites. They are responsible for the look of the site. They are also responsible for the site's technical aspects, such as its performance and capacity, which are measures of a website's speed and how much traffic the site can handle. In addition, web developers may create content for the site.</p>	Associate's degree	\$69,430

## 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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U.S. Bureau of Labor Statistics | Office of Occupational Statistics and Employment Projections, PSB Suite 2135, 2 Massachusetts Avenue, NE Washington, DC 20212-0001

[www.bls.gov/ooh](http://www.bls.gov/ooh) | Telephone: 1-202-691-5700 | [Contact OOH](#)