



Network and Computer Systems Administrators

Course Overview: Encompass entry level, technical, and professional careers related to the design, development and support of hardware, software, multimedia, and systems integration services.

Career Goal (O*NET Code): (15-1071) - 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. They organize, install, and support an organization's computer systems, including local area networks (LANs), wide area networks (WANs), network segments, intranets, and other data communication systems.

Student Name: _____

Grade: _____

School: _____

SUGGESTED COURSEWORK

EXTENDED LEARNING EXPERIENCES

Middle School	8th	HS Courses:	(Local districts may list high school credit courses here)		Curricular Experiences***: Business Professionals of America Future Business Leaders of America SkillsUSA Technology Student Association	Extracurricular Experiences: Academic Decathlon Computer Tutor Language Immersion Programs School Newspaper Student Council UIL Academic Competitions Yearbook
High School	9th	Courses*:	English I Algebra I or Geometry Biology	World Geography Foreign Language I Physical Education or Athletics		
		Career-Related Electives:	Principles of Information Technology			
	10th	Courses:	English II Geometry or Algebra II Chemistry	World History Foreign Language II Elective		
		Career-Related Electives:	Digital & Interactive Multimedia			
	11th	Core Courses:	English III Algebra II or Pre-Calculus Physics	United States History Foreign Language III ** Professional Communications or Speech		
		Career-Related Electives:	Web Technologies			
	12th	Core Courses:	English IV Pre-Calculus or Calculus 4th Science	Government/Economics Elective Elective		
		Career-Related Electives:	Research in IT Solutions			
How to Become a Network and Computer Systems Administrators A bachelor's degree in fields related to computer or information science is most common. However, because administrators work with computer hardware and equipment, a degree in computer engineering or electrical engineering usually is acceptable as well.					COLLEGE CREDIT OPPORTUNITIES -- High School Students should take Advanced Placement (AP), International Baccalaureate (IB), dual credit, Advanced Technical Credit (ATC), or locally articulated courses (Tech Prep), if possible. List those courses that count for college credit on your campus.	
Postsecondary	Texas Southmost College South Texas College Texas State Technical College			Carrer Options (Sample of reported job titles)		Professional Associations: <ul style="list-style-type: none"> • Association for Computing Machinery • Institute of Electrical and Electronics Engineers Computer Society • National Workforce Center for Emerging Technologies • National Center for Women and Information Technology
	Computer Information Technology (CERT)	Computer and Information Technologies Specialist (CERT)		• Systems Administrator	• Information Technology Manager (IT Manager)	
	Computer Information Systems (AAS)	Computer Support Specialist (CERT)		• Network Administrator	• Information Technology Director (IT Director)	
	Technology (AS)	Information Security Specialist (CERT)		• Network Engineer	• Systems Engineer	
		Networking Specialist (AAS)		• Information Technology Specialist (IT Specialist)	• Network Manager	
		Computer Specialist (AAS)		• Local Area Network Administrator (LAN Administrator)	• Network Specialist	
	The University of Texas at Brownsville The University of Texas - Pan American					
	Computer Science (BS)	Computer Science (BS)				

* Students must meet local & state high school graduation requirements. ** Required course for the Distinguished Graduation Plan (in addition to other measures). *** Based on campus availability. Students may select other elective courses for personal enrichment purposes.

This plan of study serves as a guide, along with other career planning materials, for pursuing a career path and is based on the most recent information as of 2009. All plans meet high school graduation requirements as well as college entrance requirements.



Network and Computer Systems Administrators

TEA Industry Cluster	Computer/IT
SOC Code	15-1071
Identified by	None
Projected Growth (2018)	32 %
BISD Magnet School Available	Yes

Source: Demand Occupations by Cluster, updated June 27, 2012

Description

What Network and Computer Systems Administrators Do

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. They organize, install, and support an organization's computer systems, including local area networks (LANs), wide area networks (WANs), network segments, intranets, and other data communication systems.

Duties

Network and computer systems administrators typically do the following:

- Determine what the organization needs in a network and computer system before it is set up
- Install all network hardware and software and make needed upgrades and repairs
- Maintain network and computer system security and ensure that all systems are operating correctly
- Collect data to evaluate the network's or system's performance and help make the system work better and faster
- Train users on the proper use of hardware and software when necessary
- Solve problems quickly when a user or an automated monitoring system lets them know about a problem

Administrators manage an organization's servers. They ensure that email and data storage networks work properly. They also make sure that employees' workstations are working efficiently and stay connected to the central computer network. Some administrators manage telecommunication networks at their organization.

In some cases, administrators help network architects who design and analyze network models. They also participate in decisions about buying future hardware or software to upgrade the organization's network. Some administrators provide technical support to computer users, and they may supervise computer support specialists who help users with computer problems.

Training Opportunities Linked to Those Jobs

(Degree Types and Colleges/Universities)

How to Become a Network and Computer Systems Administrators

Network and computer systems administrators must often have a bachelor's degree, although some positions require an associate's degree or professional certification along with related work experience.

Education

A bachelor's degree in fields related to computer or information science is most common. However, because administrators work with computer hardware and equipment, a degree in computer engineering or electrical engineering usually is acceptable as well. These programs usually include classes in computer programming, networking, or systems design.

Some positions require an associate's degree or a postsecondary certificate in a computer field with related work experience.

Because network technology is continually changing, administrators need to keep up with the latest developments. Many continue to take courses throughout their careers. Some businesses require that an administrator get a master's degree.

Certification

Certification is a way to show a level of competence and may provide a jobseeker with a competitive advantage. Certification programs are generally offered by product vendors or software firms. Companies may require their network and computer systems administrators to be certified in the product they use. Some of the most common certifications are offered from Microsoft, Red Hat, and Cisco.

Important Qualities

Analytical skills. Administrators need analytical skills to evaluate network and system performance and determine how changes in the environment will affect it.

Communication skills. Administrators work with many other types of workers and have to be able to describe problems and their solutions to them.

Computer skills. Administrators oversee the connections of many different types of computer equipment and must ensure that they all work together properly.

Multi-tasking skills. Administrators may have to work on many problems and tasks at the same time.

Problem-solving skills. Administrators must be able to quickly resolve problems with computer networks when they occur.

Texas Southmost College	South Texas College	Texas State Technical College	The University of Texas at Brownsville	The University of Texas - Pan American
Computer Information Technology (CERT)	Computer and Information Technologies Specialist (CERT)		Computer Science (BS)	Computer Science (BS)
Computer Information Systems (AAS)	Computer Support Specialist (CERT)			
Technology (AS)	Information Security Specialist (CERT)			
	Networking Specialist (AAS)			
	Computer Specialist (AAS)			

Local Employers

Austin Elementary School	Harlingen	Malone & Shimotsu Llp	Harlingen
Brownsville Mineral Warehouse	Brownsville	Quality Data Imaging	Brownsville
Control Engineering Assoc	Harlingen	Rios Surveying CO	San Benito
Industrial Consultants	Harlingen	Sprint	Brownsville
Laguna Madre Christian Academy	Laguna Vista	Web Works Web Design	Harlingen

Career Options (Specific Job Types)

- Systems Administrator
- Network Administrator
- Network Engineer
- Information Technology Specialist (IT Specialist)
- Local Area Network Administrator (LAN Administrator)
- Information Technology Manager (IT Manager)
- Information Technology Director (IT Director)
- Systems Engineer
- Network Manager
- Network Specialist

Salary Ranges

Wages for Network and Computer Systems Administrators

Location	Pay Period	2011				
		10%	25%	Median	75%	90%
United States	Hourly	\$20.87	\$26.52	\$34.12	\$43.34	\$53.95
	Yearly	\$43,400	\$55,200	\$71,000	\$90,100	\$112,200
Texas	Hourly	\$19.45	\$25.43	\$33.00	\$41.69	\$52.69
	Yearly	\$40,500	\$52,900	\$68,600	\$86,700	\$109,600
Brownsville-Harlingen, TX MSA	Hourly	\$18.69	\$22.97	\$27.85	\$36.78	\$45.47
	Yearly	\$38,900	\$47,800	\$57,900	\$76,500	\$94,600
McAllen-Edinburg-Mission, TX MSA	Hourly	\$11.68	\$19.11	\$25.36	\$30.15	\$35.75
	Yearly	\$24,300	\$39,700	\$52,700	\$62,700	\$74,400

Professional Associations linked to the Careers

For more information about computer careers, visit

[Association for Computing Machinery](#)

[Institute of Electrical and Electronics Engineers Computer Society](#)

For more information about IT education, visit

[National Workforce Center for Emerging Technologies](#)

For more information about opportunities for women pursuing IT careers, visit

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

Sources

The information provided in this document was collected from the following sources:

- Occupational Outlook Handbook (<http://www.bls.gov/ooh/>)
- O*NET OnLine (<http://www.onetonline.org/>)
- Texas CARES (<http://www.texascaresonline.com/>)
- CareerOneStop (<http://www.careeronestop.org/>)