



# TORO Analysis of Network and Computer Systems Administrators to Computer Systems Analysts

## INPUT SECTION:

Transfer	Title	O*NET	Filters		
From Title:	Network and Computer Systems Administrators	15-1071.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Computer Systems Analysts	15-1051.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

## OUTPUT SECTION:

Grand TORQ:



93

Ability TORQ		Skills TORQ		Knowledge TORQ	
Level	97	Level	90	Level	93

Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Imp	Skill	Level	Gap	Imp	Knowledge	Level	Gap	Imp
Speech Clarity	44	3	62	Quality Control Analysis	74	27	74	English Language	62	6	72
				Time Management	75	17	74				
				Judgment and Decision Making	72	13	71				
				Monitoring	72	11	74				
				Coordination	71	6	72				
				Technology Design	64	6	71				
				Complex Problem Solving	72	5	84				
				Learning Strategies	65	5	69				
				Systems Analysis	65	4	72				
				Critical Thinking	71	3	84				
				Active Listening	68	2	79				
				Service Orientation	67	2	74				
				Active Learning	73	1	88				
				Equipment Selection	67	1	70				



LEVEL and IMPT (IMPORTANCE) refer to the Target Computer Systems Analysts. GAP refers to level difference between Network and Computer Systems Administrators and Computer Systems Analysts.

### ASK ANALYSIS

#### Ability Level Comparison - Abilities with importance scores over 50

Description	Network and Computer Systems Administrators	Computer Systems Analysts	Importance
Oral Comprehension	66	57	75
Problem Sensitivity	69	51	75
Deductive Reasoning	71	55	72
Inductive Reasoning	73	51	72
Written Comprehension	67	57	68
Oral Expression	73	57	65
Near Vision	66	55	65
Speech Recognition	53	46	65
Information Ordering	62	53	62
Speech Clarity	41	44	62
Selective Attention	53	42	59
Originality	59	50	56
Category Flexibility	57	46	56
Written Expression	51	51	50
Fluency of Ideas	60	44	50
Mathematical Reasoning	51	46	50
Memorization	57	35	50
Flexibility of Closure	60	42	50
Perceptual Speed	50	39	50

#### Skill Level Comparison - Abilities with importance scores over 69

Description	Network and Computer Systems Administrators	Computer Systems Analysts	Importance
Active Learning	72	73	88
Reading Comprehension	73	73	86
Critical Thinking	68	71	84
Complex Problem Solving	67	72	84
Active Listening	66	68	79
Troubleshooting	74	71	76



Monitoring	61	72	74
Service Orientation	65	67	74
Quality Control Analysis	47	74	74
Time Management	58	75	74
Coordination	65	71	72
Systems Analysis	61	65	72
Technology Design	58	64	71
Judgment and Decision Making	59	72	71
Equipment Selection	66	67	70
Learning Strategies	60	65	69
Knowledge Level Comparison - Knowledge with importance scores over 69			
Description	Network and Computer Systems Administrators	Computer Systems Analysts	Importance
Computers and Electronics	88	86	87
English Language	56	62	72

Experience & Education Comparison					
Related Work Experience Comparison			Required Education Level Comparison		
Description	Network and Computer Systems Administrators	Computer Systems Analysts	Description	Network and Computer Systems Administrators	Computer Systems Analysts
10+ years	0%	2%	Doctoral	0%	0%
8-10 years	3%	0%	Professional Degree	0%	0%
6-8 years	3%	5%	Post-Masters Cert	0%	0%
4-6 years	23%	54%	Master's Degree	4%	2%
2-4 years	47%	37%	Post-Bachelor Cert	9%	0%
1-2 years	15%	0%	Bachelors	42%	62%
6-12 months	1%	0%	AA or Equiv	14%	2%
3-6 months	3%	0%	Some College	9%	0%
1-3 months	0%	0%	Post-Secondary Certificate	18%	31%
0-1 month	1%	0%	High School Diploma or GED	1%	1%
None	0%	0%	No HSD or GED	0%	0%
Network and Computer Systems Administrators			Computer Systems Analysts		
Most Common Educational/Training Requirement:					
Bachelor's degree			Bachelor's degree		
Job Zone Comparison					
4 - Job Zone Four: Considerable Preparation Needed			4 - Job Zone Four: Considerable Preparation Needed		



A minimum of two to four years 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.

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

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

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## Tasks

### Network and Computer Systems Administrators

#### Core Tasks

##### Generalized Work Activities:

- Interacting With Computers - Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.
- Updating and Using Relevant Knowledge - Keeping up-to-date technically and applying new knowledge to your job.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems.
- Thinking Creatively - Developing, designing, or creating new applications, ideas, relationships, systems, or products, including artistic contributions.

#### Specific Tasks

##### Occupation Specific Tasks:

- Confer with users to discuss issues such as computer data access needs, security violations, and programming changes.
- Coordinate implementation of computer system plan with establishment personnel and outside vendors.
- Develop plans to safeguard computer files against accidental or unauthorized modification, destruction, or disclosure and to meet emergency data processing needs.
- Document computer security and emergency measures policies, procedures, and tests.
- Encrypt data transmissions and erect firewalls to conceal confidential information as it is being transmitted and to keep out tainted digital transfers.
- Maintain permanent fleet cryptologic and carry-on direct support systems required in special land, sea surface and subsurface operations.

### Computer Systems Analysts

#### Core Tasks

##### Generalized Work Activities:

- Interacting With Computers - Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.
- Processing Information - Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data.
- Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Updating and Using Relevant Knowledge - Keeping up-to-date technically and applying new knowledge to your job.

#### Specific Tasks

##### Occupation Specific Tasks:

- Analyze information processing or computation needs and plan and design computer systems, using techniques such as structured analysis, data modeling and information engineering.
- Assess the usefulness of pre-developed application packages and adapt them to a user environment.
- Confer with clients regarding the nature of the information processing or computation needs a computer program is to address.
- Consult with management to ensure agreement on system principles.
- Coordinate and link the computer systems within an organization to increase compatibility and so information can be shared.
- Define the goals of the system and devise flow charts and diagrams describing logical operational steps of programs.



- Modify computer security files to incorporate new software, correct errors, or change individual access status.
- Monitor current reports of computer viruses to determine when to update virus protection systems.
- Monitor use of data files and regulate access to safeguard information in computer files.
- Perform risk assessments and execute tests of data processing system to ensure functioning of data processing activities and security measures.
- Review violations of computer security procedures and discuss procedures with violators to ensure violations are not repeated.
- Train users and promote security awareness to ensure system security and to improve server and network efficiency.

#### Detailed Tasks

##### Detailed Work Activities:

- adjust computer operation system
- communicate technical information
- conduct computer diagnostics to determine nature of problems
- confer with personnel to discuss security violations or programming
- develop policies, procedures, methods, or standards
- evaluate computer system user requests or requirements
- follow confidentiality procedures
- follow data security procedures
- identify appropriate software for project
- install electronic equipment, components, or systems
- install security measures
- maintain or repair computers or related equipment
- monitor use of computer data files to safeguard information
- obtain information from individuals
- perform minor repairs to hardware, software, or peripheral equipment
- plan computer security measures
- prepare instruction manuals
- provide technical support to computer users
- revise or correct errors in computer programs, software, or systems
- test computer programs or systems
- train workers in use of computer and related equipment
- understand computer equipment operating manuals
- understand technical information for

Determine computer software or hardware needed to set up or alter system.

- Develop, document and revise system design procedures, test procedures, and quality standards.
- Expand or modify system to serve new purposes or improve work flow.
- Interview or survey workers, observe job performance or perform the job to determine what information is processed and how it is processed.
- Prepare cost-benefit and return-on-investment analyses to aid in decisions on system implementation.
- Provide staff and users with assistance solving computer related problems, such as malfunctions and program problems.
- Read manuals, periodicals, and technical reports to learn how to develop programs that meet staff and user requirements.
- Recommend new equipment or software packages.
- Review and analyze computer printouts and performance indicators to locate code problems, and correct errors by correcting codes.
- Specify inputs accessed by the system and plan the distribution and use of the results.
- Supervise computer programmers or other systems analysts or serve as project leaders for particular systems projects.
- Test, maintain, and monitor computer programs and systems, including coordinating the installation of computer programs and systems.
- Train staff and users to work with computer systems and programs.
- Use object-oriented programming languages, as well as client and server applications development processes and multimedia and Internet technology.
- Utilize the computer in the analysis and solution of business problems such as development of integrated production and inventory control and cost analysis systems.

#### Detailed Tasks

##### Detailed Work Activities:

- adjust computer operation system
- analyze business, scientific, or technical problems in electronic data processing systems
- analyze programs using workflow chart or diagram
- analyze workflow
- communicate technical information
- conduct training for personnel
- confer with management or users
- consult with customers concerning needs



- electronic repair work
- use computers to enter, access or retrieve data
- use interpersonal communication techniques
- use knowledge of investigation techniques
- use precision tools in electronics repair
- use spreadsheet software
- use word processing or desktop publishing software

Technology - Examples

Access software

- Access management software
- Mac HelpMate
- Remote desktop control software

Administration software

- Cisco Systems CiscoWorks
- Element management software
- Hewlett-Packard HP Network Node Manager
- Network address management software
- Network documentation software
- Network management software
- Network shutdown software
- Simple network management protocol SNMP software
- SolarWinds software

Analytical or scientific software

- Root cause analysis software

Authentication server software

- Password management software

Backup or archival software

- Backup and archival software
- Symantec Ghost Solution Suite
- System and data disaster recovery software
- VERITAS Backup Exec

Compiler and decompiler software

- Command interpreters

Computer based training software

- Computer based training software

Configuration management software

- consult with staff or users to identify operating procedure problems
- create mathematical or statistical diagrams or charts
- design computer hardware or software interface
- design computer programs or programming tools
- design control systems
- design data processing systems
- design data security systems
- design systems in cooperation with colleagues
- develop mathematical simulation models
- develop or maintain databases
- develop records management system
- develop tables depicting data
- encode equations for processing
- evaluate computer system user requests or requirements
- evaluate prototype computer software systems
- follow data security procedures
- follow data storage procedures
- implement computer system changes
- install computer programs
- maintain client-server database
- maintain or repair computers or related equipment
- make presentations
- monitor computer operation
- operate computer networks
- prepare technical reports or related documentation
- prepare workflow chart
- program computers for electronic engineering applications
- program computers for management analysis applications
- program computers for medical applications
- program computers for social science applications
- program computers using existing software
- program mainframe computer
- provide technical computer training
- provide technical support to computer users
- recommend software or hardware purchases
- resolve computer program operational problems
- resolve symbolic formulations in data processing applications
- revise or correct errors in computer programs, software, or systems



• Application management software
• Automated installation software
• Configuration management software
• Microsoft Windows Sysprep
• Patch and update management software
• Systems and applications migration software
Data base management system software
• Oracle software
Data base reporting software
• ReCrystallize Crystal Reports
Data base user interface and query software
• Structured query language SQL
Desk top communications software
• Secure shell SSH software
Development environment software
• C
Enterprise application integration software
• Enterprise application integration EAI software
• Systems integration software
Gateway software
• Microsoft Windows Terminal Services Access Manager
Graphical user interface development software
• Tk software
Helpdesk or call center software
• Help desk software
Internet directory services software
• Active directory software
• Berkeley Internet Domain Name BIND software
• Domain name system DNS software
• Network addressable storage NAS software
Network monitoring software
• Dartware InterMapper
• Etheareal
• IBM Director
• IBM NetView
• Lavalys Everest

programs, software, or systems
• select business applications for computers
• supervise programming personnel
• test computer programs or systems
• train workers in use of equipment
• use computer application flow charts
• use computer networking technology
• use computer programming language
• use computers to enter, access or retrieve data
• use cost benefit analysis techniques
• use geographical information system (GIS) software
• use interpersonal communication techniques
• use interviewing procedures
• use knowledge of mainframe computers
• use object-oriented computer programming techniques
• use project management techniques
• use relational database software
• use spreadsheet software
• use structural analysis techniques to analyze computer systems
• write business project or bid proposals
• write computer software, programs, or code
• write documentation for computer programming
• write technical specifications for computer systems, software or applications

Technology - Examples
Access software
• Access management software
Administration software
• Element management software
Analytical or scientific software
• Hierarchical simulation program with integrated circuit emphasis HSPICE
• SAS software
• Statistical software
• Structure prediction software
Application server software
• IBM WebSphere
Backup or archival software
• Backup and archival software
• System and data disaster recovery software
Charting software



- Micromuse NetCool
- Multi-router traffic grapher MRTG software
- Nagios software
- Network and application load and performance testing software
- Network and component performance analysis software
- Network availability monitoring software
- Network modeling, mapping, and analysis software
- Network traffic flow monitoring and analysis software
- Network traffic probe software
- Novell Netware Management Station
- Online traffic calculator software
- Packet tracing software
- Quest BigBrother
- Quest Foglight
- Remote monitoring software
- Sun Microsystems NetManage
- Tcpdump software
- Veritas NerveCenter
- ZABBIX software
- Network operating system enhancement software
  - Management information base MB software
  - Network, server and operating system optimization software
  - Operating system process control software
- Network security and virtual private network VPN equipment software
  - Firewall software
- Network security or virtual private network VPN management software
  - Citrix MetaFrame
  - Intrusion prevention system IPS software
  - Network and system vulnerability assessment software

- Microsoft Office Visio
- Compiler and decompiler software
  - Time sharing option TSO software
- Computer aided design CAD software
  - Computer aided design CAD software
  - Electronic design automation EDA software
  - OrCAD Capture
  - Spectra Quest software
- Configuration management software
  - Application management software
  - Automated installation software
  - Configuration management software
  - HyperSpace software
  - IBM Rational ClearCase
  - InstallShield software
  - Patch and update management software
  - Software distribution software
  - Systems and application deployment and migration software
  - Wise Solutions software
  - Wise Solutions Wise for Windows Installer
- Data base management system software
  - Database management software
  - IBM DB2
  - Microsoft Access
  - Microsoft SQL Server
  - MySQL software
  - Oracle DBMS
  - Oracle procedural language/structured query language PL/SQL
  - Relational database management software
  - Sybase SQL Server
- Data base user interface and query software
  - IBM Rational ClearQuest
  - Software asset management SAM software



- Network intrusion detection software

- OpenService Open NerveCenter

- Security incident handling software

- Virtual local area network management software

Object or component oriented development software

- Practical extraction and reporting language Perl

- Python

Operating system software

- Kornshell

- Shell script

Optical network management software

- Optical network management software

Pattern design software

- Diagramming software

Platform interconnectivity software

- Virtual network computing VNC software

Program testing software

- Computer system diagnostics software

- Mercury Interactive LoadRunner

Requirements analysis and system architecture software

- Requirements management software

Storage networking software

- Storage area network SAN software

Transaction security and virus protection software

- Encryption software

- Honeypot

- Packet filter software

- Ping software

- Root kit detection software

Tools - Examples

- Cable verifiers

- Computer tool kits

- Desktop computers

- Redundant array of independent disks RAID

- Structured query language SQL

Data conversion software

- Data conversion software

Desktop communications software

- CrossTec NetOp Remote Control

- Remote control software

- Stac Software ReachOut

- Symantec pcAnywhere

Development environment software

- Ada

- Borland JBuilder

- C

- Common business oriented language COBOL

- Eclipse software

- Extensible markup language XML

- Formula translation/translator FORTRAN

- IBM Rational Rose XDE Developer

- Integrated development environment IDE software

- J

- Microsoft Visual Basic

- Microsoft Visual Basic Scripting Edition VBScript

- Microsoft Visual Studio

- Sun Microsystems Java 2 Platform Enterprise Edition J2EE

- Symantec Visual Caf

Enterprise application integration software

- Enterprise application integration EAI software

- WebFOCUS software

Enterprise resource planning ERP software

- Enterprise resource planning ERP software

- Oracle PeopleSoft

- SAP software

File versioning software

- Version control software

Financial analysis software



systems

- Optical spectrum analyzers
- Mainframe computers
- Asynchronous transfer mode ATM analyzers
- Network switches
- Notebook computers
- Power meters
- Protocol analyzers
- Punchdown tools
- Optical time domain reflectometers
- Screwdrivers
- Load balancers
- Tape libraries
- Wire crimpers

- Cost estimation software
- Graphics or photo imaging software
  - Graphics software
- Helpdesk or call center software
  - Help desk software
- Internet directory services software
  - Active directory software
- Metadata management software
  - Data modeling software
- Object or component oriented development software
  - C++
  - Component object model COM software
  - Distributed component object model DCOM software
  - DRAGOON software
  - Eiffel
  - Microsoft Visual Basic .NET
  - Microsoft Visual C# .NET
  - Object or component oriented development software
  - Objective-C
  - Practical extraction and reporting language Perl
  - Python
  - Rapide
  - Smalltalk
  - Sun Microsystems Java
- Object oriented data base management software
  - Microsoft Visual FoxPro
- Operating system software
  - Job control language JCL
  - Personal computer diagnostic software
- Pattern design software
  - Diagramming software
  - Flowchart software
  - Omni Group OmniGraffle
- Presentation software



• Presentation software
Program testing software
• Compatibility testing software
• Defect tracking software
• Dynamic analysis software
• Functional testing software
• IBM Rational PurifyPlus
• Integration testing software
• Interoperability testing software
• Load testing software
• Mercury Interactive LoadRunner
• Mercury Interactive WinRunner
• Migration testing software
• Mutation testing software
• Recovery testing software
• Regression testing software
• Security testing software
• Static analysis software
• Stress testing software
• System testing software
• Test design software
• Test implementation software
• Unit testing software
• Usability testing software
Project management software
• Project management software
Requirements analysis and system architecture software
• AcmeStudio
• Architecture description language ADL
• Popkin System Architect
• Requirements management software
• Unified modeling language UML
• Wright software



	Spreadsheet software
	<ul style="list-style-type: none"> <li>• Microsoft Excel</li> </ul>
	Transaction security and virus protection software
	<ul style="list-style-type: none"> <li>• Virus scanning software</li> </ul>
	Transaction server software
	<ul style="list-style-type: none"> <li>• Apache software</li> </ul>
	<ul style="list-style-type: none"> <li>• Customer information control system CICS software</li> </ul>
	<ul style="list-style-type: none"> <li>• Microsoft Internet Information Service IIS</li> </ul>
	<ul style="list-style-type: none"> <li>• Sun Microsystems Sun ONE</li> </ul>
	<ul style="list-style-type: none"> <li>• Web server software</li> </ul>
	Web platform development software
	<ul style="list-style-type: none"> <li>• Adobe Systems Adobe Flex</li> </ul>
	<ul style="list-style-type: none"> <li>• Allaire ColdFusion</li> </ul>
	<ul style="list-style-type: none"> <li>• Cascading Style Sheets CSS</li> </ul>
	<ul style="list-style-type: none"> <li>• Hypertext markup language HTML</li> </ul>
	<ul style="list-style-type: none"> <li>• JavaScript</li> </ul>
	<ul style="list-style-type: none"> <li>• Microsoft Active Server Pages ASP</li> </ul>
	<ul style="list-style-type: none"> <li>• PHP: Hypertext Preprocessor</li> </ul>
	<ul style="list-style-type: none"> <li>• Ruby on Rails</li> </ul>
	Word processing software
	<ul style="list-style-type: none"> <li>• Microsoft Word</li> </ul>
	Tools - Examples
	<ul style="list-style-type: none"> <li>• Desktop computers</li> </ul>
<ul style="list-style-type: none"> <li>• Mainframe computers</li> </ul>	
<ul style="list-style-type: none"> <li>• Notebook computers</li> </ul>	
<ul style="list-style-type: none"> <li>• Personal digital assistants PDA</li> </ul>	

Labor Market Comparison			
Description	Network and Computer Systems Administrators	Computer Systems Analysts	Difference
Median Wage	\$ 57,690	\$ 69,340	\$ 11,650
10th Percentile Wage	\$ 40,040	\$ 46,370	\$ 6,330
25th Percentile Wage	N/A	N/A	N/A



75th Percentile Wage	\$ 68,360	\$ 82,620	\$ 14,260
90th Percentile Wage	\$ 78,720	\$ 98,420	\$ 19,700
Mean Wage	\$ 58,030	\$ 70,010	\$ 11,980
Total Employment - 2007	1,070	1,650	580
Employment Base - 2006	1,077	1,688	611
Projected Employment - 2016	1,267	2,019	752
Projected Job Growth - 2006-2016	17.6 %	19.6 %	2.0 %
Projected Annual Openings - 2006-2016	44	78	34

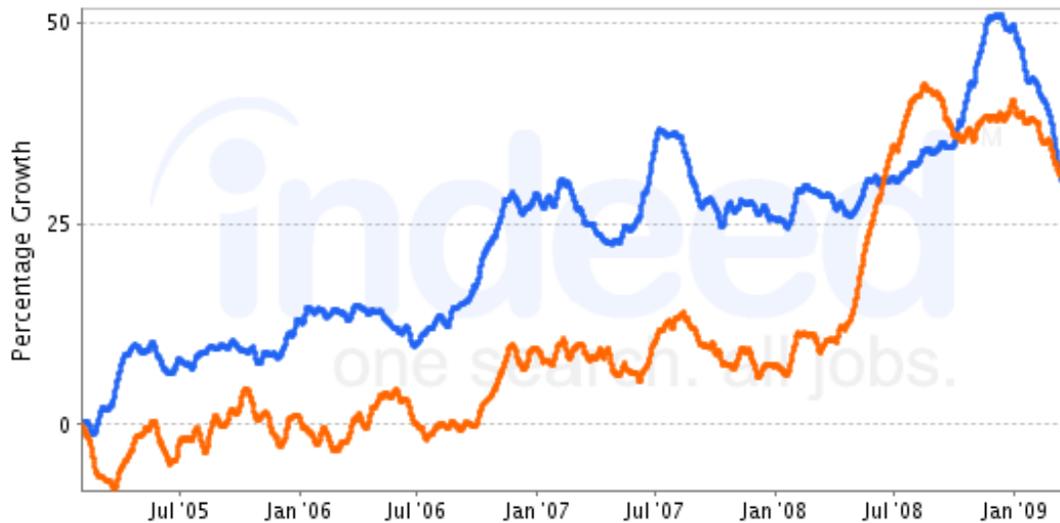
### National Job Posting Trends

Trend for Network and Computer Systems Administrators

Trend for Computer Systems Analysts

#### Job Trends from Indeed.com

— Network Administrator — Computer Systems Analyst



Data from [Indeed](http://Indeed.com)

### Recommended Programs

Computer and Information Sciences, General

Computer and Information Sciences, General. A general program that focuses on computing, computer science, and information science and systems as part of a broad and/or interdisciplinary program. Such programs are undifferentiated as to title and content and are not to be confused with specific programs in computer science, information science, or related support services.

Institution	Address	City	URL
University of Maine at Augusta	46 University Dr	Augusta	<a href="http://www.uma.maine.edu/">www.uma.maine.edu/</a>
University of Maine at Augusta	46 University Dr	Augusta	<a href="http://www.uma.maine.edu/">www.uma.maine.edu/</a>
University of Maine at Augusta	46 University Dr	Augusta	<a href="http://www.uma.maine.edu/">www.uma.maine.edu/</a>



Husson College	One College Circle	Bangor	<a href="http://www.husson.edu">www.husson.edu</a>
Husson College	One College Circle	Bangor	<a href="http://www.husson.edu">www.husson.edu</a>
Thomas College	180 W River Rd	Waterville	<a href="http://www.thomas.edu">www.thomas.edu</a>
Thomas College	180 W River Rd	Waterville	<a href="http://www.thomas.edu">www.thomas.edu</a>

#### Information Technology

Information Technology. A program that focuses on the design of technological information systems, including computing systems, as solutions to business and research data and communications support needs. Includes instruction in the principles of computer hardware and software components, algorithms, databases, telecommunications, user tactics, application testing, and human interface design.

Institution	Address	City	URL
University of Maine		Orono	<a href="http://www.umaine.edu/">www.umaine.edu/</a>

#### Computer Programming

Computer Programming/Programmer, General. A program that focuses on the general writing and implementation of generic and customized programs to drive operating systems and that generally prepares individuals to apply the methods and procedures of software design and programming to software installation and maintenance. Includes instruction in software design, low- and high-level languages and program writing; program customization and linking; prototype testing; troubleshooting; and related aspects of operating systems and networks.

Institution	Address	City	URL
Washington County Community College	One College Drive	Calais	<a href="http://www.wccc.me.edu">www.wccc.me.edu</a>
Northern Maine Community College	33 Edgemont Dr	Presque Isle	<a href="http://www.nmcc.edu">www.nmcc.edu</a>

#### Computer Systems Analysis

Computer Systems Analysis/Analyst. A program that prepares individuals to apply programming and systems analysis principles to the selection, implementation, and troubleshooting of customized computer and software installations across the life cycle. Includes instruction in computer hardware and software; compilation, composition, execution, and operating systems; low- and high-level languages and language programming; programming and debugging techniques; installation and maintenance testing and documentation; process and data flow analysis; user needs analysis and documentation; cost-benefit analysis; and specification design.

No schools available for the program

#### Web/Multimedia Management and Webmaster

Web/Multimedia Management and Webmaster. A program that prepares individuals to develop and maintain web servers and the hosted web pages at one or a group of web sites, and to function as designated webmasters. Includes instruction in computer systems and networks; server installation and maintenance; web page design and editing; information resources management; web policy and procedures; Internet applications of information systems security; user interfacing and usability research; and relevant management and communications skills.

No schools available for the program

#### Management Information Systems and Business Data P

Management Information Systems, General. A program that generally prepares individuals to provide and manage data systems and related facilities for processing and retrieving internal business information; select systems and train personnel; and respond to external data requests. Includes instruction in cost and accounting information systems, management control systems, personnel information systems, data storage and security, business systems networking, report preparation, computer facilities and equipment operation and maintenance, operator supervision and training, and management information systems policy and planning.

Institution	Address	City	URL
Kennebec Valley Community College	92 Western Ave	Fairfield	<a href="http://www.kvcc.me.edu">www.kvcc.me.edu</a>
Kennebec Valley Community College	92 Western Ave	Fairfield	<a href="http://www.kvcc.me.edu">www.kvcc.me.edu</a>



Andover College	901 Washington Ave	Portland	<a href="http://WWW.ANDOVERCOLLEGE.edu">WWW.ANDOVERCOLLEGE.edu</a>
Andover College	901 Washington Ave	Portland	<a href="http://WWW.ANDOVERCOLLEGE.edu">WWW.ANDOVERCOLLEGE.edu</a>
York County Community College	112 College Drive	Wells	<a href="http://www.yccc.edu">www.yccc.edu</a>

### Maine Statewide Promotion Opportunities for Network and Computer Systems Administrators

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings
15-1071.00	Network and Computer Systems Administrators	100	4	1,070	\$57,690.00	\$0.00	18%	44
15-1051.00	Computer Systems Analysts	93	4	1,650	\$69,340.00	\$11,650.00	20%	78
15-1081.00	Network Systems and Data Communications Analysts	91	3	610	\$59,790.00	\$2,100.00	47%	54
15-1021.00	Computer Programmers	89	4	720	\$58,240.00	\$550.00	-12%	16
15-1061.00	Database Administrators	89	4	300	\$60,260.00	\$2,570.00	20%	11
15-1032.00	Computer Software Engineers, Systems Software	86	4	290	\$73,410.00	\$15,720.00	11%	8
15-1031.00	Computer Software Engineers, Applications	84	4	1,060	\$63,750.00	\$6,060.00	30%	47
15-1071.01	Computer Security Specialists	83	4	1,070	\$57,690.00	\$0.00	18%	44
17-2072.00	Electronics Engineers, Except Computer	82	4	210	\$76,420.00	\$18,730.00	-26%	4
17-2071.00	Electrical Engineers	80	4	260	\$73,050.00	\$15,360.00	-10%	6
11-3021.00	Computer and Information Systems Managers	79	5	870	\$83,130.00	\$25,440.00	8%	21
27-1011.00	Art Directors	78	4	90	\$66,570.00	\$8,880.00	10%	7
17-2031.00	Biomedical Engineers	78	4	20	\$86,560.00	\$28,870.00	-10%	1
13-1081.00	Logisticians	77	4	190	\$59,120.00	\$1,430.00	4%	4
17-2112.00	Industrial Engineers	77	4	580	\$68,350.00	\$10,660.00	11%	22



### Top Industries for Computer Systems Analysts

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Computer systems design and related services	541500	19.83%	99,858	148,307	48.52%
Management of companies and enterprises	551100	7.31%	36,812	46,680	26.81%
State government, excluding education and hospitals	929200	3.93%	19,805	21,378	7.94%
Self-employed workers, primary job	000601	3.87%	19,512	22,866	17.19%
Professional and commercial equipment and supplies merchant wholesalers	423400	3.66%	18,410	23,606	28.23%
Colleges, universities, and professional schools, public and private	611300	3.55%	17,889	22,014	23.06%
Local government, excluding education and hospitals	939300	3.34%	16,843	20,814	23.57%
Data processing, hosting, and related services	518200	3.24%	16,325	24,276	48.71%
Management, scientific, and technical consulting services	541600	3.17%	15,976	31,374	96.38%
General medical and surgical hospitals, public and private	622100	2.62%	13,193	16,066	21.78%
Federal government, excluding postal service	919999	2.45%	12,318	12,809	3.99%
Software publishers	511200	2.43%	12,256	17,359	41.63%
Depository credit intermediation	522100	2.21%	11,136	12,490	12.15%
Self-employed workers, secondary job	000602	1.90%	9,546	10,454	9.51%
Research and development in the physical, engineering, and life sciences	541710	1.70%	8,547	10,030	17.36%

### Top Industries for Network and Computer Systems Administrators

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Computer systems design and related services	541500	14.73%	45,535	67,628	48.52%
Management of companies and enterprises	551100	6.04%	18,676	23,682	26.81%
Colleges, universities, and professional schools, public and private	611300	4.65%	14,385	17,702	23.06%
Elementary and secondary schools, public and private	611100	3.97%	12,261	14,213	15.92%
Local government, excluding education and hospitals	939300	3.28%	10,144	12,535	23.57%
Wired telecommunications carriers	517100	3.15%	9,751	8,420	-13.64%
Depository credit intermediation	522100	2.72%	8,418	9,441	12.15%
Data processing, hosting, and related services	518200	2.61%	8,062	11,988	48.71%



Federal government, excluding postal service	919999	2.59%	8,022	8,342	3.99%
Management, scientific, and technical consulting services	541600	2.45%	7,589	14,903	96.38%
General medical and surgical hospitals, public and private	622100	1.96%	6,065	7,386	21.78%
Professional and commercial equipment and supplies merchant wholesalers	423400	1.86%	5,749	7,372	28.23%
State government, excluding education and hospitals	929200	1.78%	5,499	5,936	7.94%
Internet service providers and Web search portals	518100	1.66%	5,146	4,013	-22.02%
Software publishers	511200	1.63%	5,030	7,125	41.63%