



## Cisco Networking Academy: Virginia Profile

### Educating the Architects of the Networked Economy

Now in its second decade, Cisco® Networking Academy® has provided more than two million students worldwide with the information technology (IT) and networking skills necessary to compete in the 21st century global economy.

To prepare the Networking Academy for the decade ahead, Cisco has launched innovative new curricula including Cisco Certified Network Associate (CCNA®) Discovery and CCNA Exploration, as well as a new version of IT Essentials called PC Hardware and Software, and updates to the Cisco Certified Network Professional (CCNP®) curriculum. These new courses have been specifically designed to help students be more successful, whether they plan to be IT professionals or are simply seeking a deeper understanding of IT.

Our new courses align to industry certifications, including the recently launched Cisco Certified Entry-Level Technician (CCENT™). In addition to serving as an entry-level certification for employers, CCENT helps meet the new Carl D. Perkins Career and Technical Improvement Act funding requirements.

The new Networking Academy curricula provide seamless educational pathways between secondary and post-secondary institutions and are aligned to national and state education standards for math, science, and language arts. These courses can also help students prepare to pursue degrees related to science, technology, engineering, and math (STEM). In the United States, academies are located in high schools, technical schools, colleges, universities, and community-based organizations with more than 125,000 students enrolled at more than 2300 academies.<sup>†</sup>

As IT continues to be a high-demand job field in the United States, many educational institutions are incorporating IT into their offerings:

- Secondary schools are building pathways for students around the IT career cluster.
- Post-secondary institutions are integrating IT curriculum into degree programs ranging from computer science to networking to business.
- Community colleges and technical schools are providing existing workers with the opportunity to upgrade their skills, pursue additional education, and expand their expertise in technical fields.

Through its proven model of public-private partnerships with education, government, and business, Cisco Networking Academy is addressing the growing need for a pipeline of skilled IT professionals at a time when corporate technology leaders, public sector IT officials, and technology-service-oriented industries are concerned about the lack of a trained technical workforce to fill existing jobs.

<sup>†</sup> Source: AME/MRE FULL Package\_10 31 07 Quarterly Metrics\_v2 Date: November 28, 2007

An academy has a class currently in session or has taught a class, with at least 3 students, within the last 12 months.

A student is enrolled in a class or has taken a class within the last 12 months.

### Learn More

Table 1 lists data about academies in Virginia. Table 2 lists information about Networking Academy curricula in Virginia, and Table 3 shows information by student education level.

For additional information about Cisco Networking Academy, visit <http://www.cisco.com/go/netacad>

**Table 1.** Cisco Networking Academy in Virginia

<b>Networking Academy students</b>	3164
<b>Distinct cumulative academy students (having successfully completed a course)</b>	16,028
<b>Academy instructors</b>	115
<b>Total estimated cumulative contribution value to Virginia academies*</b>	\$ 9,127,452

Off-shore DoDDS and DoDEA academies, while linked systemically to Virginia via the academy locator tool, are not included in the commonwealth data. For information on the DoDDS and DoDEA academies, please refer to the Federal profile.

Source: AME/MRE FULL Package\_10 31 07 Quarterly Metrics\_v2 Date: November 28, 2007

Cumulative students are distinct; therefore, each student is only counted once.

\*This estimate includes donations and discounts made to educational institutions implementing Cisco Networking Academy within Virginia.

\*Sources: AME/MRE reports 1210\_1908, date: November 1, 2007, and 3114 Date: November 30, 2007

**Table 2.** Networking Academy Curricula in Virginia

<b>Curriculum</b>	<b>CCNA®</b>	<b>CCNP®</b>	<b>IT Essentials</b>	<b>Security</b>	<b>Wireless</b>
<b>Number of academies by curriculum</b>	64	5	17	2	0

The above curricula represent the core Networking Academy curricula. Panduit Network Infrastructure Essentials, Java, and UNIX are also available.

Academies often teach multiple curricula and may be counted more than once in this table.

Source: AME/MRE rpt 3087 Date: December 5, 2007

**Table 3.** Virginia Academies and Students by Education Level

<b>Education Level</b>	<b>Number of Virginia Academy Students</b>	<b>Percentage of Virginia Students</b>	<b>Number of Virginia Networking Academies</b>	<b>Percentage of Virginia Academies*</b>
<b>Secondary schools</b>	1993	63%	52	73%
<b>Community colleges</b>	1139	36%	16	23%
<b>Universities</b>	31	1%	2	3%
<b>Other</b>	1	0%	1	1%
<b>Total by education level</b>	3164	100%	71	100%

Source: AME/MRE FULL Package\_10 31 07 Quarterly Metrics\_v2 Date: November 28, 2007

Academies represented in "Other" category include the following: community-based organizations, middle schools, the military, nontraditional educational settings, and post-graduate institutions



## Cisco Networking Academy: Workforce Development

If the United States is to remain competitive in this global economy, leading experts believe we must have a trained and educated workforce. And yet the number of U.S. students pursuing careers in science, technology, engineering and math—critical areas for educating the workforce of tomorrow—continues to decline.

Cisco Networking Academy addresses this gap by providing students with the skills needed to succeed in the wide range of careers available today and tomorrow. In addition to integrating IT skills, the Networking Academy also embeds math, science, and language arts skills in the curricula.

### IT Occupational Data

Table 4 lists information about IT-related occupations in the United States, and Table 5 lists this information for Virginia.

**Table 4.** Selected IT-Related Occupations in the United States

Occupation	Employment		Employment Change		Average Annual Openings	Occupational Employment as of May 2006*
	2004	2014	Numeric	Percent		
Computer Support Specialists	518,370	637,560	119,190	22	18,300	514,460
Computer Systems Analysts	486,550	639,500	152,960	31	20,800	446,460
Network and Computer Systems Administrators	278,380	385,250	106,870	38	13,770	289,520
Network Systems and Data Communications Analysts	231,270	357,460	126,190	54	15,340	203,710
Computer and Information Systems Managers	280,290	352,920	72,620	25	12,350	251,210

U.S. Department of Labor, Bureau of Labor Statistics, <http://www.bls.gov/oco/oco20024.htm>, based on data availability as of December 2007

\*U.S. Department of Labor, Bureau of Labor Statistics, May 2006 State Occupational Employment and Wage Estimates (US), [http://stat.bls.gov/oes/current/oes\\_nat.htm](http://stat.bls.gov/oes/current/oes_nat.htm)

**Table 5.** Selected IT-Related Occupations in Virginia

Occupation	Employment		Employment Change		Average Annual Openings	Occupational Employment as of May 2006 <sup>^</sup>
	2004	2014	Numeric	Percent		
Computer Support Specialists	23,050	30,171	7121	30.9	284	21,570
Computer Systems Analysts	33,998	46,914	12,916	38	385	28,420
Network and Computer Systems Administrators	14,101	21,297	7196	51	156	16,690
Network Systems and Data Communications Analysts	14,562	24,633	10,071	69.2	171	12,400
Computer and Information Systems Managers	10,135	13,954	3819	37.7	184	9,540

Virginia Employment Commission, [http://velma.virtuallmi.com/occupation\\_onet.asp?session=occdetail\\_lms&geo=5101000000](http://velma.virtuallmi.com/occupation_onet.asp?session=occdetail_lms&geo=5101000000), based on data availability as of December 2007

<sup>^</sup> U.S. Department of Labor, Bureau of Labor Statistics, May 2006 State Occupational Employment and Wage Estimates (by state), <http://stat.bls.gov/oes/current/oesrcst.htm>





## Virginia Student and Graduate Profile

Charles Stembriage's early interest in technology was a clear indication of things to come. "I have been fascinated with computers and networks since I was a toddler," says Charles. "It started with electrical circuits and eventually progressed to computers and telephony by the time I was in elementary school," he recalls. Charles' attraction to computer networking emerged when in second grade he noticed that the Apple II computers could all share the same network. Five years later, in seventh grade, Charles built his own PC using a "bare-bones" kit his father ordered for him that included the case, motherboard, and processor. Charles ordered the memory, hard drive, floppy, and CD-ROM and then built the computer from the ground up.

Charles enrolled in Cisco® Networking Academy® as a sophomore at James River High School in Midlothian, Virginia and, within the next two years, not only earned his Cisco Certified Network Associate (CCNA®) certification but also began his own PC repair and network installation service. By the time he graduated from college, Charles had leveraged his three years of experience as an information technology (IT) business owner to land a corporate IT job where he soon earned a promotion.

Charles first heard of the Networking Academy from Linda Lester, his freshman computer instructor at James River High School. Charles notes, "Cisco seemed to be the major network vendor to know, so when there was an opportunity for me to learn it, I jumped at it." Linda, who taught some of the Networking Academy classes, allowed Charles to enroll as a sophomore even though the school restricted the curriculum to juniors and seniors.

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**"The Cisco courses gave me a huge leap ahead of nearly every other student enrolled in the Information Systems program," Charles explains. "I had already learned the basics behind the technologies, which allowed me to work on the content of various projects through my college career instead of having to first catch up to the principles."**

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He continued his technical education at Virginia Commonwealth University (VCU). "The Cisco courses gave me a huge leap ahead of nearly every other student enrolled in the Information Systems program," Charles explains. "I had already learned the basics behind the technologies, which allowed me to work on the content of various projects through my college career instead of having to first catch up to the principles. The courses gave me the background necessary to open doors to other information systems disciplines such as programming, hardware prototyping, and database design."

Although Charles had been running his small network installation and PC repair business for three years, in his junior year of college he decided he needed more corporate experience. Charles began working as a seasonal information systems technician at Kings Dominion, a theme park in nearby Doswell, and was promoted to Information Systems engineer where he is now responsible for the network infrastructure and designing and modifying corporate and local level applications used throughout the organization. Charles also maintains back office and point-of-sale systems and administers two of the primary SQL servers.



Charles commented on his Networking Academy education: “Many of the things I learned taking the Cisco courses I still apply today, even in an environment that is not fully network based. Many of the diagnostic skills you learn in Cisco carry over with you no matter what field of IS you are working in.”

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Charles graduated from VCU in December 2007 with a bachelor’s degree of science in information systems. He plans to earn a master’s degree in computer information systems security in the next two years.

When asked what he enjoyed most about the Networking Academy, Charles replied “I felt challenged throughout the program, more so than most of my classes at the time. I had an interest in the material and principles, and I knew it would benefit me throughout my career. Finally, the teacher, Ms. Lester is one of the best I have ever had.”

Charles remains in touch with his former instructor, serving on the advisory committee at Chesterfield Technical Center where Linda now teaches. Linda adds, “Charles has been an active member of our advisory council for the past year. He attends and participates in all activities such as speaking to the classes and working with the second year students on their gaming event and capstone project. He is a great guy and continues to work with our students.”

When Charles is not working on computers, he builds houses and enjoys fishing, going to the beach, and gaming. Looking back he says, “The Networking Academy has given me a distinct advantage throughout my career. It provides both the theoretical and practical knowledge necessary to work in the real world. It opened doors for me and gave me the confidence to walk through them.”

For more information on the Networking Academy at James River High School: <http://jrhs.ccpsnet.net/> or [http://jrhs.ccpsnet.net/cte\\_infosystech.php](http://jrhs.ccpsnet.net/cte_infosystech.php)



## Active Cisco Networking Academies in Virginia

### U.S. Congressional District Database

Data for this report was gathered using the U.S. Congressional District Database. This tool was developed to communicate with congressional representatives about Cisco Networking Academy implementation in their home districts. The database maps active academies by congressional district or by all districts within a state, providing academy name, city, state, and congressional district. The listing by state is updated annually.

Table 6 lists information about academies in Virginia congressional districts. Custom reports by congressional districts may be run upon request by contacting Melody Buchanan at [Melody.Buchanan@ciscolearning.org](mailto:Melody.Buchanan@ciscolearning.org).

**Table 6.** Networking Academies in Virginia Congressional Districts

Number of Virginia Congressional Districts	Number of Virginia Congressional Districts <u>with</u> Networking Academies	Number of Virginia Congressional Districts <u>without</u> Networking Academies	% Virginia Congressional District Penetration
11	11	0	100%

Academies listed here have taught a class, with at least one student, within the last six months

Source: MRE/Academy Connection, U.S. Congressional District Database Date: January 3, 2008

### Active Virginia Cisco Networking Academies by Congressional District

\* Indicates Cisco Networking Academy Training Center

Academies listed here have taught a class, with at least one student, within the last six months

Source: MRE/Academy Connection, U.S. Congressional District Database Date: December 31, 2007

#### Congressional District 1

- Rappahannock Community College - Local (Saluda)
- Brooke Point High School (Stafford)
- DODEA/USA - Quantico High School (Quantico)
- ECPI Newport News (ACC) (Newport News)
- Fredericksburg City Schools (Fredericksburg)
- \*Germanna Community College (Fredericksburg)
- Gloucester High School (Gloucester)
- North Stafford High School (Stafford)
- Spotsylvania High Schools (Spotsylvania)
- \*Thomas Nelson Community College (Hampton)

#### Congressional District 2

- \*ECPI Virginia Beach (ACC) (Virginia Beach)
- Langley SOJT (Langley AFB)

- \*Tidewater Community College VB (Virginia Beach)
- VA Beach Schools (Virginia Beach)

#### Congressional District 3

- Norfolk State University (Norfolk)
- Norfolk Technical Vocational Center (Norfolk)
- Phoebus High School (Hampton)

#### Congressional District 4

- \*Chesterfield County Public Schools - Regional (Chesterfield)
- Chesterfield Technical Center (Chesterfield)
- Matoaca High School (Chesterfield)
- Paul D. Camp Community College (Franklin)
- TCC, Chesapeake (Chesapeake)

### **Congressional District 5**

- Bedford Science & Technology Center (Bedford)
- Campbell County Tech Center (Rustburg)
- \*Danville Community College (Danville)
- Danville Community College Wireless and Security (Danville)
- Geo. Washington High School (Danville)

### **Congressional District 6**

- \*Central Virginia Community College (Lynchburg)
- Roanoke Technical Education Center (Roanoke)
- Triplett Business and Technical Institute (Mount Jackson)
- \*Virginia Western Community College (Roanoke)

### **Congressional District 7**

- Culpeper (Culpeper)
- Cosby High School (Midlothian)
- Hanover High School (Mechanicsville)
- James River High School (Midlothian)
- Midlothian High School (Midlothian)
- Page County Technical Center (Luray)

### **Congressional District 8**

- Arlington County (Arlington)
- DODDs/HQ (Arlington)
- Edison (Alexandria)
- Fairfax County On-Line (Alexandria)
- TC Williams High School (Alexandria)

### **Congressional District 9**

- Buchanan County Technical and Career Center (Grundy)
- Dabney S. Lancaster Community College (Clifton Forge)
- Lee County Career and Technical School (Ben Hur)

- Honaker High School (Honaker)
- Lebanon High School (Lebanon)
- Mountain Empire Community College (Big Stone Gap)
- Neff Center For Science & Technology (Abingdon)
- New River Community College - Local (Dublin)
- Scott County (Gate City)
- Smyth Career & Technology Center (Marion)
- \*Southwest Virginia Community College - Regional (Richlands)
- Virginia High School (Bristol)
- Wise County Vocational Center (Wise)
- Wytheville Community College (Wytheville)

### **Congressional District 10**

- Chantilly Academy (Chantilly)
- ECPI Manassas (ACC) (Manassas)
- James Wood High School (Winchester)
- \*Lord Fairfax Community College (Middletown)
- Milbrook High School (Winchester)
- Monroe Technology Center (Leesburg)
- Osbourn High School (Manassas)
- Sherando High School (Stephens City)
- Stonewall Jackson High School (Manassas)
- Warren County High School (Front Royal)

### **Congressional District 11**

- Forest Park High School (Woodbridge)
- Battlefield High School - VA (Haymarket)
- NVCC - Annandale Campus (Annandale)
- NVCC - Woodbridge Campus (Woodbridge)
- \*George Mason University - Regional (Fairfax)



## Cisco Networking Academy: Promoting IT Careers

Technology jobs will not only continue to grow, but the role of information technology (IT) workers will continue to evolve since today nearly every company in every industry relies on IT. The skills learned through Cisco Networking Academy lay a critical foundation for almost any profession, even non-IT careers. Networking Academy graduates not only build careers, but also help build businesses, communities, and countries.

If the United States is to remain competitive and continue to innovate in a global economy, we must foster student interest in pursuing technology- and engineering-related careers. A critical strategy in building a technical workforce for the 21st century is the development of seamless programs like Networking Academy that build pathways between secondary and post-secondary institutions and lead to professional career development.

Through the Cisco Promoting IT Careers initiatives, students are introduced to potential careers in IT and networking and given valuable information about pathways to advanced education, certification, and careers.

Visit the Promoting IT Careers Website, <http://www.cisco.com/go/promoteitcareers>, which is dedicated to the following:

- Increasing awareness and interest in opportunities in IT and networking
- Creating interest in IT and networking as a profession
- Helping students establish career goals
- Providing tools and resources to support success as students pursue IT careers
- Creating opportunities for students and graduates to transition from classroom to careers

### Five Ways to Promote IT Careers

The following events and activities engage students at all levels of experience. Valuable tools and resources for each event are available through the Promoting IT Careers Website.

#### 1. Host Your Own All Academy Day

**All Academy Day** is a competition that gives students the chance to show off the skills they have learned in the Networking Academy and to explore career pathways by interacting with IT professionals. Teams of students participate in a series of hands-on events selected from the following options: cable making, component identification, computer building, home networking, quiz bowl, router configuration, TAC/professionalism, and virtual computers. For more information, visit: <http://www.cisco.com/go/allacademyday>

#### 2. Help Students See Your Shadow

Job shadowing can be an important first step in pointing students toward IT careers. You can put on a full **Job Shadow Day** or offer an event as simple as a guest speaker in your classroom. Hearing first-hand about the world of work from IT professionals helps students relate their classroom experiences to the workplace and can inspire students to pursue careers in math, science, and technology. For more information, visit: <http://www.cisco.com/go/jobshadow>

### 3. Introduce Young Students to the World of IT

**Packetville** is a public e-learning portal filled with interactive and educational resources for introducing students aged 8 to 14 to the world of IT. Lesson plans, which are aligned with the standards of the International Society for Technology in Education, include community service projects and career exploration. For more information, visit: <http://www.cisco.com/go/packetville>

### 4. Connect Students with Employers

The Networking Academy is connecting Networking Academy alumni with employers through the Career Connection job board. For more information, visit: <http://cc.netacad.net/home.do>

### 5. Explore the Landscape of IT

This series of **Virtual Field Trips** helps Networking Academy students and instructors explore and understand the landscape of IT and prepare for networking careers, all without leaving the classroom. Designed to engage students early on in their Networking Academy experience, the videos cover a range of topics that encourage students to continue their education and begin early to build their career path. A companion module that accompanies each video reinforces the content from the video. For more information, visit: <http://www.cisco.com/go/virtualfieldtrip>

## Learn More about IT and Networking Careers

- Certification Magazine, “Hot Jobs & Skills for 2007”  
[http://www.certmag.com/articles/templates/CM\\_gen\\_Article\\_template.asp?articleid=2521&zoneid=1](http://www.certmag.com/articles/templates/CM_gen_Article_template.asp?articleid=2521&zoneid=1)
- CNNMoney.com, “Skilled Worker Shortage Hurts U.S.”  
[http://money.cnn.com/2007/01/04/news/economy/jobs\\_outlook/index.htm](http://money.cnn.com/2007/01/04/news/economy/jobs_outlook/index.htm)
- Job Data Resources
  - U.S. Department of Labor Bureau of Labor Statistics, Occupational Employment Statistics  
<http://data.bls.gov/oes/search.jsp>
  - State-Level Job Projections  
<http://www.projectionscentral.com>
- John Chambers on the role of technology in education  
[http://www.forbes.com/opinions/2008/01/23/solutions-education-chambers-oped-cx\\_sli\\_0123chambers.html](http://www.forbes.com/opinions/2008/01/23/solutions-education-chambers-oped-cx_sli_0123chambers.html)
- “The Quiet Crisis,” Shirley Ann Jackson, Ph.D.; President, Rensselaer Polytechnic Institute  
<http://www.rpi.edu/homepage/quietcrisis/>



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