



# Cisco Networking Academy

NECC: June 2009

**Marie Zwickert, Business Development Manager**

“The American Recovery and Reinvestment Act is a historic opportunity to lay the groundwork for a generation of education reform...coming at a time of economic and education crisis...‘the perfect storm for reform’. It includes great leadership, proven strategies that work, and new money.”

U.S. Secretary of Education Arne Duncan

Speaking at the National Science Teachers Association Conference

March 20, 2009

<http://www.ed.gov/news/speeches/2009/03/03202009.html>

# What is Cisco Networking Academy?

An innovative education initiative, delivering valuable IT and networking skills, meeting national academic standards, and preparing students to be career and college ready



Curriculum is designed to prepare diverse students for higher education, and high-wage, high-skill, high-demand careers in today's competitive global economy

# Networking Academy: 21<sup>st</sup> Century Education

- Web-delivered curriculum
- Aligned to:
  - academic standards
  - CTE Information Technology skills and standards
  - IT Career Cluster
- Interactive learning tools
- Online assessment
- Hands-on labs with learning in context
- Interactive course guides for instructor professional development
- Pathways for students to
  - relevant industry certifications
  - in-demand careers
  - higher education – earning college credit



# Networking Academy in the United States

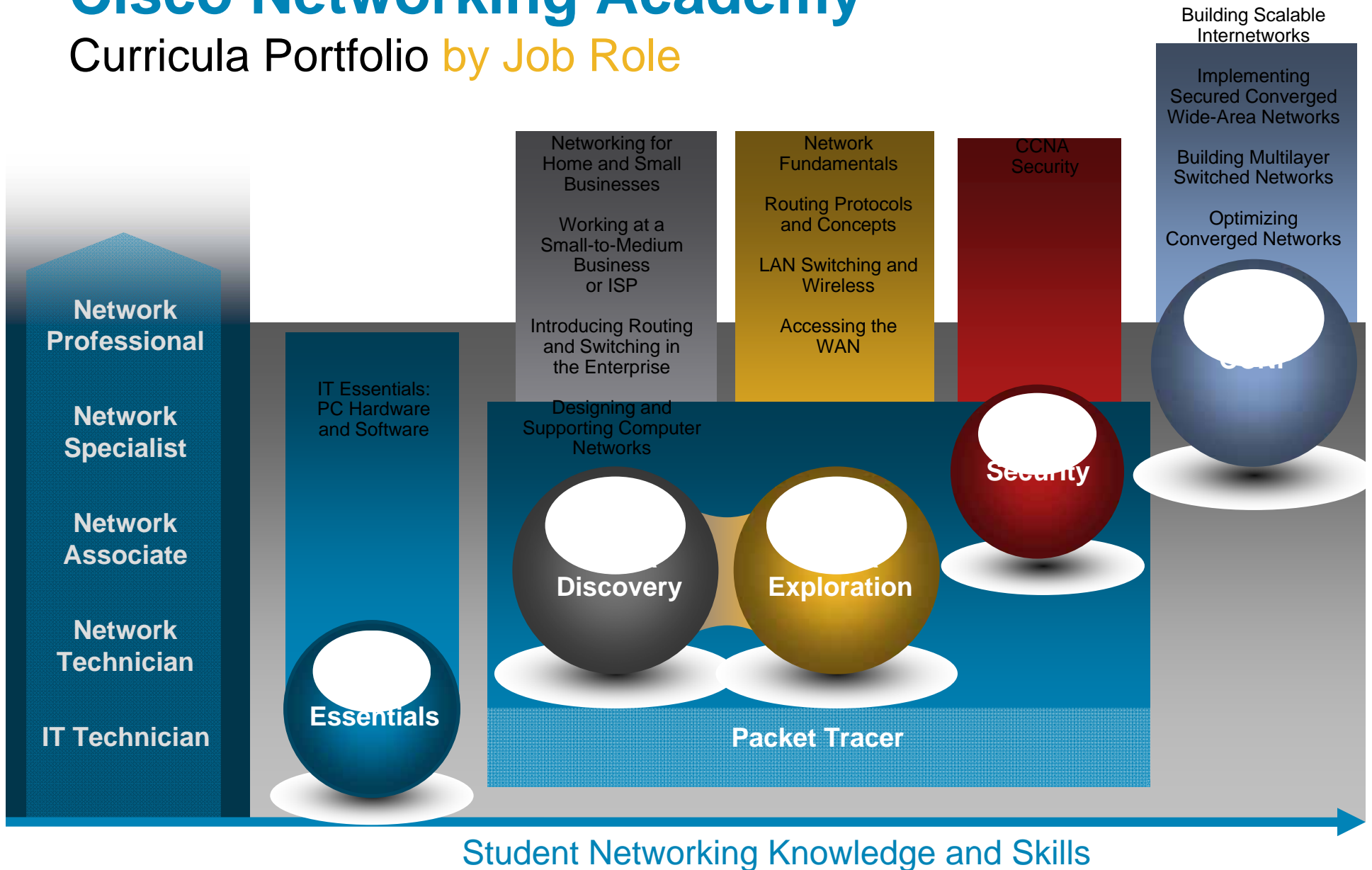
<b>Networking Academy Students</b>	<b>128,318</b>				
<b>Distinct cumulative Networking Academy graduates (having successfully completed at least one course)</b>	<b>549,845</b>				
<b>Academies</b>	<b>2,219</b>				
<b>Instructors</b>	<b>3,747</b>				
<b>Cumulative contribution value to United States Networking Academies *</b>	<b>&gt; \$300,000,000</b>				
<b>Education Level</b>	<b>All</b>	<b>Secondary High Schools</b>	<b>2-3 year or Community College</b>	<b>4 year College or University</b>	<b>Other</b>
<b>Students</b>	<b>128,318</b>	<b>45%</b>	<b>44%</b>	<b>10%</b>	<b>1%</b>
<b>Academies</b>	<b>2,219</b>	<b>60%</b>	<b>31%</b>	<b>7%</b>	<b>2%</b>

Source: AME/MRE FULL Package of Quarterly Metrics\_10 31 08\_v1.xls

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

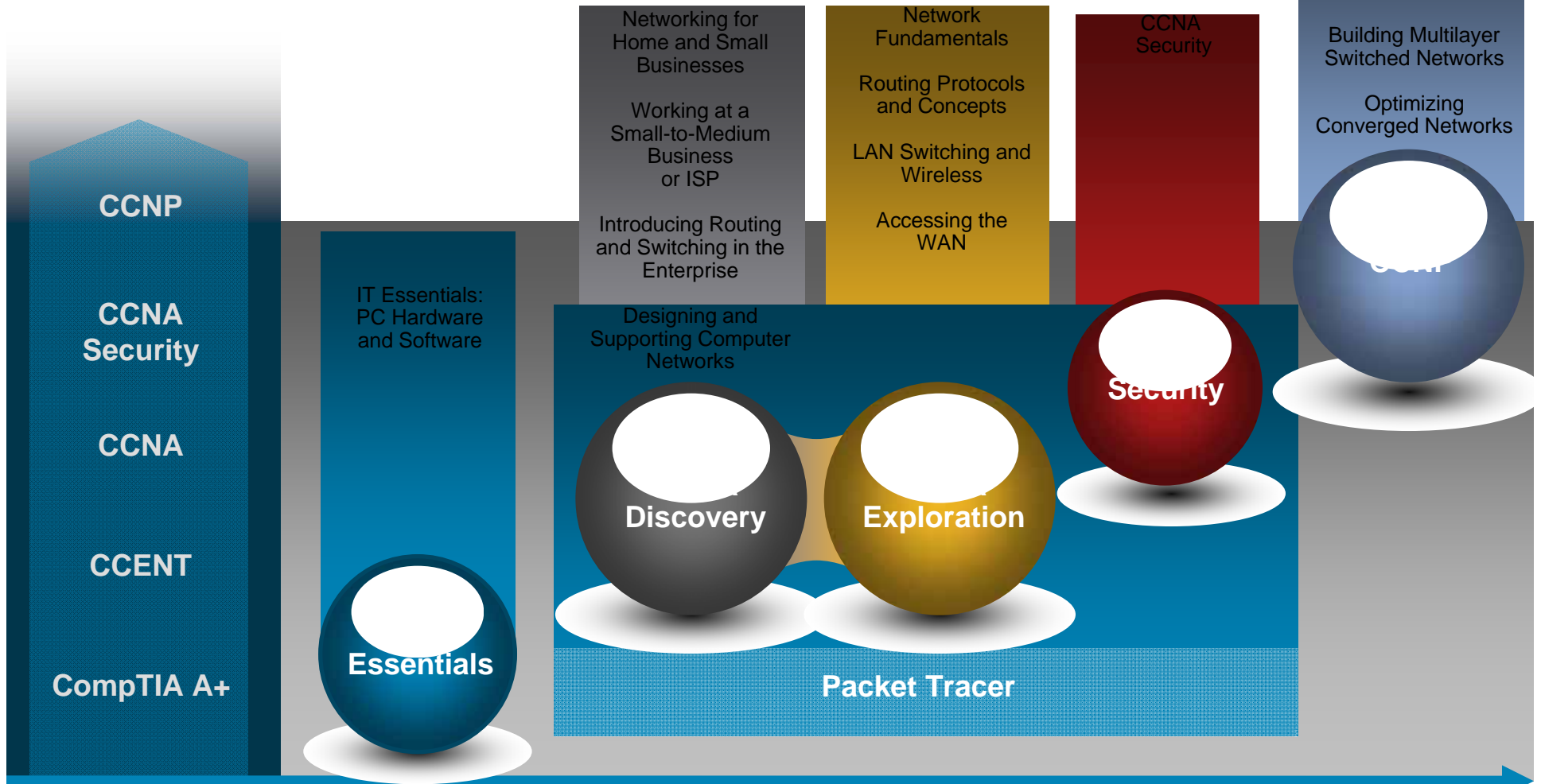
# Cisco Networking Academy

## Curricula Portfolio by Job Role



# Cisco Networking Academy

## Curricula Portfolio by Certification



# Education Implementation

High School	Community College	4-Year College	Graduate Program
<b>Program Areas</b>			
<ul style="list-style-type: none"> <li>• Career Cluster: Information Technology, and across other clusters including Business and STEM</li> <li>• Credit for core coursework in Math, Science, or Language Arts, and Career and Technical Education credit</li> </ul>	<ul style="list-style-type: none"> <li>• Applied Technology</li> <li>• Business</li> <li>• Computer Science</li> </ul>	<ul style="list-style-type: none"> <li>• Computer Science Engineering</li> <li>• Information Technology</li> <li>• Math</li> </ul>	
	<b>Degrees</b>		
	<ul style="list-style-type: none"> <li>• AS Computer Network Engineering</li> <li>• AS Information Technology</li> <li>• AS Network Technology</li> <li>• AAS Computer Specialist</li> <li>• AAS Information Technology</li> <li>• AAS Network Engineering</li> <li>• AAS Technology Network Support</li> </ul>	<ul style="list-style-type: none"> <li>• BS Engineering</li> <li>• BS Computer Science</li> <li>• BS Info Management Systems</li> <li>• BS Networking</li> <li>• BApp Technology in Information Systems-Network Engineering</li> <li>• BA Networking and Communications Management</li> </ul>	<ul style="list-style-type: none"> <li>• MS Computer Information Technology</li> <li>• MS Computer Science</li> <li>• MS Information Systems</li> <li>• MA Industrial and Technical Studies</li> </ul>
<b>Certifications</b>			
<ul style="list-style-type: none"> <li>• <b>CompTIA:</b> A+</li> <li>• <b>CCENT:</b> Cisco Certified Entry Networking Technician</li> <li>• <b>CCNA:</b> Cisco Certified Networking Associate</li> </ul>	<ul style="list-style-type: none"> <li>• <b>CompTIA:</b> A+</li> <li>• <b>CCENT:</b> Cisco Certified Entry Networking Technician</li> <li>• <b>CCNA:</b> Cisco Certified Networking Associate</li> <li>• <b>CCNA Security</b></li> <li>• <b>CCNP:</b> Cisco Certified Networking Professional</li> </ul>	<ul style="list-style-type: none"> <li>• <b>CompTIA:</b> A+</li> <li>• <b>CCENT:</b> Cisco Certified Entry Networking Technician</li> <li>• <b>CCNA:</b> Cisco Certified Networking Associate</li> <li>• <b>CCNA Security</b></li> <li>• <b>CCNP:</b> Cisco Certified Networking Professional</li> </ul>	<ul style="list-style-type: none"> <li>• <b>CCNA:</b> Cisco Certified Networking Associate</li> <li>• <b>CCNA Security</b></li> <li>• <b>CCNP:</b> Cisco Certified Networking Professional</li> </ul>
<b>Careers</b>			
<ul style="list-style-type: none"> <li>• Help Desk Technician</li> <li>• System Administrator</li> <li>• Desktop Support Technician</li> <li>• PC and Network Support Technician</li> </ul>	<ul style="list-style-type: none"> <li>• Computer Support Specialists</li> <li>• Computer Systems Analysts</li> <li>• Network and Computer Systems Administrators</li> <li>• Network Systems and Data Communications Analysts</li> <li>• Computer and Information Systems Managers</li> </ul>	<ul style="list-style-type: none"> <li>• Network Engineer</li> <li>• Systems Engineer</li> <li>• IT Engineer</li> <li>• Voice over IP Engineer/Architect</li> </ul>	



# Key Benefits

Cisco Networking Academy provides:

- a pipeline of IT and networking talent needed for economic recovery
- basic and advanced IT/networking curricula
- preparation for industry-recognized certifications
- skills required for high-demand, high-wage jobs in virtually every industry



# Top ARRA Grants for Networking Academy



- Broadband Technology Opportunities Program: Public Computer Centers



- Worker Training and Placement in High Growth and Emerging Industry Sectors



- Grants to States for Youth Activities



- Grants to States for Adult Employment and Training Activities



- Grants to States for Dislocated Worker Employment Training

## Learn more...

For more information on ARRA grant opportunities and best practices, view the Networking Academy webinar:

[Leveraging Cisco Networking Academy for Economic Stimulus Funding](#)

(60 minutes)

# Visit the Economic Stimulus Tools Page

<http://www.cisco.com/go/netacad/us/econ>

- National, state and federal profiles of Networking Academy implementations
- Federal and state grant information
- Data sheets and presentations on Networking Academy and economic stimulus
- Data sheets for the top ARRA 5 grant opportunities

The screenshot shows a webpage titled "Broadband Technology Opportunities Program Public Computer Centers" from Cisco Networking Academy. It includes sections for "Purpose of the Grant", "What Funds Are Available?", "Who is Eligible to Receive the Funds?", "When to Apply", "How Does Cisco Networking Academy Fit In?", and "Networking Academy delivers:". The "Networking Academy delivers:" section lists: "IT and networking skills mapped to high-skill, high-demand, high-wage jobs in virtually every industry", "Sustainable partnerships with high schools and community colleges at the forefront of workforce development", and "Education and career pathways".

## Cisco Networking Academy Economic Stimulus (ARRA)

### A Tool for Economic Recovery

Networking Academy delivers critical IT and networking skills through academies located in high schools, community colleges, four-year colleges, and nontraditional settings. Academy courses prepare students for industry-recognized certifications, and develop the talent required to design, build and maintain the infrastructure needed for economic recovery. Academy students gain in-demand technical skills and are empowered to quickly find stable, high-paying jobs.



### Economic Stimulus Tools

These resources will be updated frequently. We welcome your [feedback](#).

[Networking Academy: A Tool for Economic Recovery](#) (PDF 49KB)



President Obama's stimulus plan focuses on helping American workers obtain sustainable employment, and on upgrading our education infrastructure to deliver the skills required.

"In a global economy, where the most valuable skill you can sell is your knowledge, a good

## Also: Cisco Grants Office Webinars

View recordings of 11 webinars on ARRA grant topics:

[https://grantsofficeevents.webex.com/ec06051/eventcenter/program/programDetail.do?siteurl=grantsofficeevents&theAction=detail&path=listevents\\_program&progID=169592](https://grantsofficeevents.webex.com/ec06051/eventcenter/program/programDetail.do?siteurl=grantsofficeevents&theAction=detail&path=listevents_program&progID=169592)

For more information, contact [netacad\\_econstim@cisco.com](mailto:netacad_econstim@cisco.com)

# 21<sup>st</sup> Century Education Model

Preparing students to be career and college ready

- Interactive teaching and learning, with embedded simulations and virtual tools
- Web-delivered curricula providing 24/7 student access
- Hands-on labs
- Online assessments and grade book
- Instructor professional development tools and resources
- Curricula licensed at no cost (for nonprofit institutions); equipment discounts

**In a global economy where the most valuable skill you can sell is your knowledge, a good education is no longer just a pathway to opportunity – it is a prerequisite.**

– President Obama, Address to Joint Session of Congress, [2/24/09](#)

21<sup>st</sup> Century Teaching



21<sup>st</sup> Century Learning



21<sup>st</sup> Century Careers

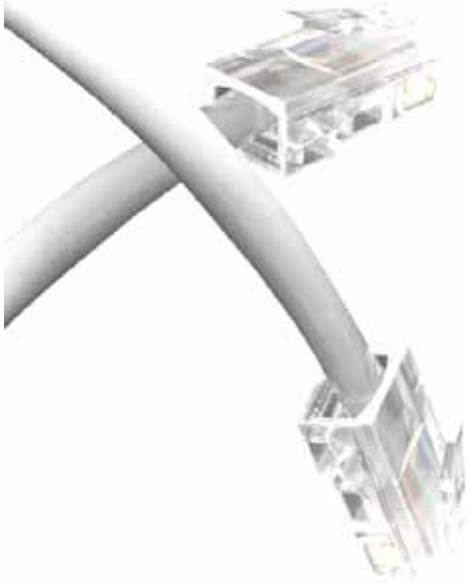




# Cisco Networking Academy

## We Make Connections!

**Nancy Null, Academy Instructor**  
**Sollers Point Technical High School, Baltimore, Maryland**



## Academic Connections


Curricula integrating:

- Language arts standards
- Mathematics standards
- Industry standards



lab - Microsoft Internet Explorer

1 / 11 78.8% Find



CCNA Discovery  
Working at a Small-to-Medium Business or ISP

Cisco | Networking Academy®  
Mind Wide Open™

## Lab 8.3.1 Interpreting a Service Level Agreement

### Objectives

- Describe the purpose of a Service Level Agreement (SLA).
- Review general customer SLA requirements.
- Analyze a sample SLA and answer question regarding content and suitability based on customer needs.

### Background / Preparation

An SLA is a formal agreement between a customer and a service provider. The SLA defines the types and levels of service that the customer can expect to receive, as well as any penalties that may exist for non-conformance. In this lab, you will review the purpose of an SLA and the types of customer requirements it can cover. You will then analyze a sample SLA between an ISP and a Customer of a medium-size business and answer questions regarding the provisions of the SLA. You may work alone or in small groups.

The following resource is required:

- Sample SLA (in this lab)

### Step 1: Review typical customer needs

A Typical customer will have the following requirements regarding an SLA. These requirements should be included in the SLA with the service provider:

- **Service description** – Describes the service volume and the times when the service is needed. It also describes the times when the service does not need to be covered by the SLA. The services described could be those typically found in a small- to medium-size manufacturing company: e-mail service, electronic data interchange, online accounting, secure remote worker support, remote instrumentation and control systems, and backup and recovery services.



C:\CISCO\_CCNA\Discovery2\_English\theme\cheetah.html - Microsoft Internet Explorer

4 Planning the Addressing Structure  
 4.1 IP Addressing in the LAN  
 4.1.3 Custom Subnet Masks

CCNA Discovery  
 Working at a Small-to-Medium Business or ISP

1 2 3 4 5

### Activity

Determine the network ID of each IP address.  
 Enter the binary and decimal values of each octet in the spaces provided.

Host Address	10	0	11	84
Subnet Mask	255	255	255	224
Host Address in binary	00001010	00000000	00001011	01010100
Subnet Mask in binary	11111111	11111111	11111111	11100000
Network Address in binary				
Network Address in decimal				

Check    Reset    New Number

start    Microsoft PowerPoint ...    Discovery Index - Mic...    C:\CISCO\_CCNA\Disc...

10:50 AM

lab - Microsoft Internet Explorer

1 / 12 78.8% Find

**CISCO**

CCNA Discovery  
Working at a Small-to-Medium Business or ISP

Cisco | Networking Academy®  
Mind Wide Open™

### Lab 5.3.7 Configuring DHCP with SDM and the Cisco IOS CLI

Legend:

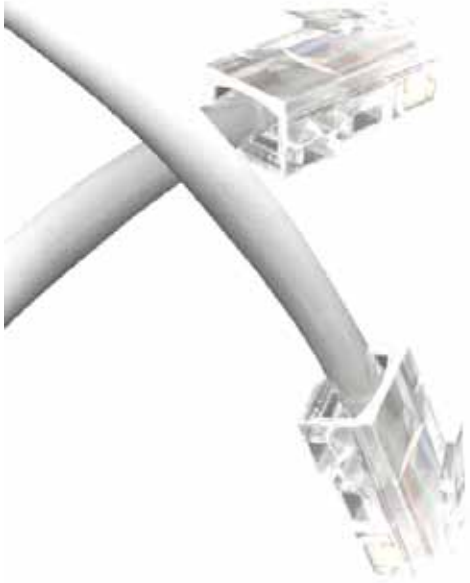
- Straight-through cable: —————
- Serial cable: ———— / ————
- Console (rollover): ..... (dotted)
- Crossover cable: - - - - - (dashed)

Device	Host Name	Interface	IP Address	Subnet Mask
R1	Customer	Serial 0/0/1 (DTE)	209.165.200.225	255.255.255.224
		Fast Ethernet 0/0	192.168.1.1	255.255.255.0

- “Today's technical education programs must be designed to meet the criteria set by both higher education institutions and the labor market...
- This means programs must provide learning experiences that enable students to meet both academic standards in various disciplines and also meet skill standards for particular industries or occupation clusters.”

## **Cisco Networking Academy Makes the Connections!**

BioScience Education Connections (BEC) Working Group, National Science Foundation:  
<http://www2.edc.org/bec/partnerships/mssw/textlink3.htm>



# Industry Connections

Engaging, hands-on activities that connect with students!

- Wireless skills



- Security skills



- Design skills

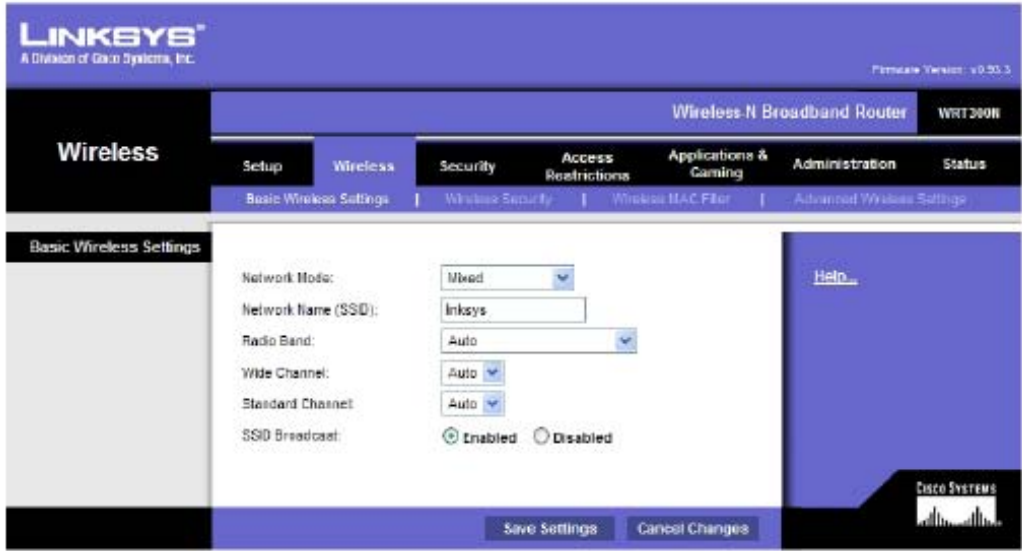


lab - Microsoft Internet Explorer

CCNA Discovery  
Networking for Home and Small Businesses

**Step 2: Log in to the multi-function device and configure the wireless network**

- Open a web browser. In the address line, type [http://ip\\_address](http://ip_address), where *ip\_address* is the IP address of the wireless router (default is 192.168.1.1). At the prompt, leave the user name textbox empty, but type the password assigned to the router. The default password is **admin**. Click **OK**.
- In the main menu, click on the **Wireless** option.



- In the **Basic Wireless Settings** window, the **Network Mode** shows mixed by default, because the AP supports 802.11b, g, and n wireless devices. You can use any of these standards to connect to the AP. If the wireless portion of the multi-function device is **NOT** being used, the network mode would be set to **Disabled**. Leave the default of **Mixed** selected.
- Delete the default SSID (linksys) in the **Network Name (SSID)** textbox. Enter a new SSID using your last name or name chosen by your instructor. SSIDs are case-sensitive.
- Write down the exact SSID name that you are using. \_\_\_\_\_



lab - Microsoft Internet Explorer

1 / 4 78.8% Find

**CISCO**

CCNA Discovery  
Designing and Supporting Computer Networks



Cisco Networking Academy®  
Mind Wide Open™

### Lab 5.2.3.3 Designing the Core Layer

Proposed FilmCompany Physical Layout

Building F

# Tools That Connect with Students

- Online 24/7 content 
- Packet Tracer 
- A community of learners!

<http://www.cisco.com/web/learning/netacad/index.html>

<https://www.academynetspace.com/>



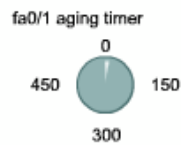
Clear & Concise Content

The switch deletes entries from the MAC address table if they are not used within a certain period of time. The name given to this period of time is the aging timer; removal of an entry is called aging out.

As a unicast frame enters a port, the switch finds the source MAC address in the frame. It then searches the MAC table, looking for an entry that matches the address.

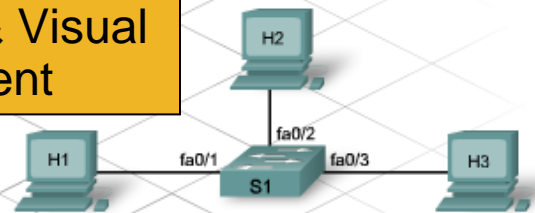
If the source MAC address is not in the table, the switch adds a MAC address and port number entry and sets the aging timer. If the source MAC address already exists, the switch resets the aging timer.

Next, the switch checks the table for the destination MAC address. If an entry exists, the switch forwards the frame out the appropriate port number. If the entry does not exist, the switch floods the frame out every active port except the port upon which it was received.



MAC Address Table	
Port	MAC
fa0/1	260d.8c01.0000
fa0/2	260d.8c01.1111
fa0/3	260d.8c01.2222

Interactivity & Visual Enrichment



Click Play to view the MAC table and the aging process on one port.

Tools: Search, Glossary



C:\CISCO\_CCNA\Discovery3\_English\theme\cheetah.html - Microsoft Internet Explorer

3 Switching in an Enterprise Network  
3.3 Configuring VLANs

CCNA Discovery  
Introducing Routing and Switching in the Enterprise

3.3.1 Virtual LAN 1 2 3 4 5

**Activity**

Decide the problems solved by implementing VLANs.

Select the scenarios where VLANs help to solve the problem stated.

	Yes	No
1. Users in the warehouse are accessing records in the payroll department. Management has asked you to isolate the payroll department from the rest of the network.	<input type="checkbox"/>	<input type="checkbox"/>
2. Staff in the sales department continually join the network and then leave. This causes quite a bit of broadcast traffic as machines try to discover each other. These broadcasts slow down network performance in the graphics department.	<input type="checkbox"/>	<input type="checkbox"/>
3. During the execution of a large project, members of the Marketing, Sales and Public relations departments collaborate on different parts of the project. The Network administrator is concerned about response time on the collaboration server.	<input type="checkbox"/>	<input type="checkbox"/>
4. The company plans on installing a VoIP system but worries that voice traffic will be unusable due to the large amount of data on the network.	<input type="checkbox"/>	<input type="checkbox"/>

Check Reset

**Frequent extension and application activities**

3.3.1.5

All contents copyright © 2007-2008 Cisco Systems, Inc. All | Translated by the Cisco Networking Academy. | [About](#)



C:\CISCO\_CCNA\Discovery3\_English\theme\cheetah.html - Microsoft Internet Explorer

3 Switching in an Enterprise Network

3.5 Maintaining VLANs on an Enterprise Network


**3.5.3 VLAN Support for IP Telephony and Wireless** 1 2 3

CCNA Discovery  
Introducing Routing and Switching in the Enterprise

**Packet Tracer Activity**

Build an enterprise-class LAN with voice, wireless, and wired clients. Create separate VLANs that would isolate voice and wireless traffic.

Click the Packet Tracer icon to begin.

 **Packet Tracer Exploration:**  
Configuring Wireless and Voice VLANs



C:\CISCO\_CCNA\Discovery3\_English\theme\cheetah.html - Microsoft Internet Explorer

3 Switching in an Enterprise Network

3.4 Trunking and Inter-VLAN Routing

**3.4.1 Trunk Ports** 1 2 3 4 5

CCNA Discovery  
Introducing Routing and Switching in the Enterprise

**Lab Activity**

Create VLANs and assign them individual ports.

Click the lab icon to begin.

 **Hands-on Lab:**  
Creating VLANs and Assigning Ports

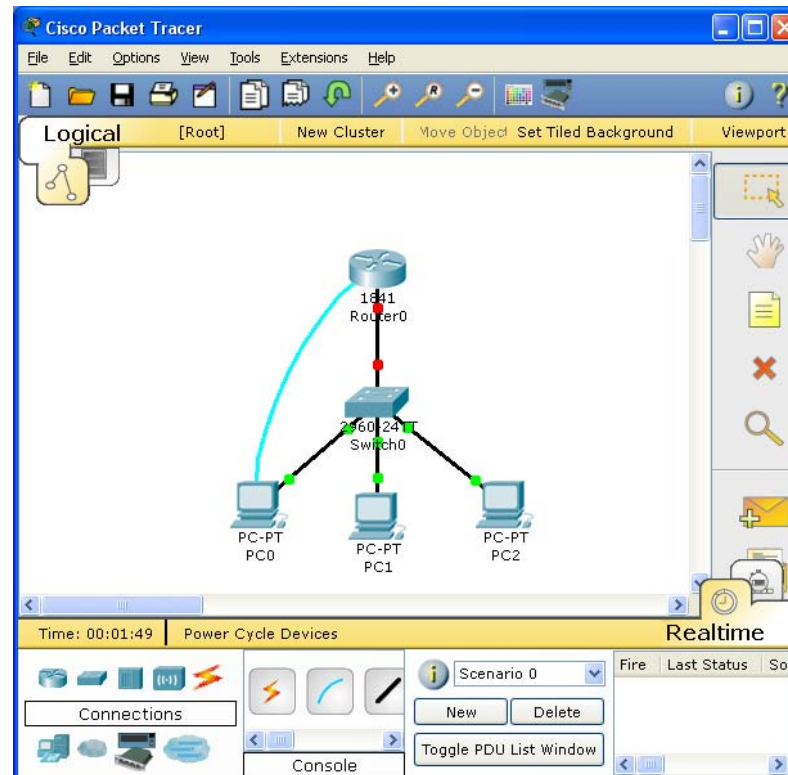
Lab Activities  
Simulation / Hands-On

3.4.1.5

All contents copyright © 2007-2008 Cisco Systems, Inc. All | Translated by the Cisco Networking Academy | About

# Delivering Diversified Instruction

- Multi-sensory content
- Available anywhere, anytime



# About Sollers Point Technical High School



## Cisco Networking Academy

**sollers point tech**

**ISO 9001:2000**

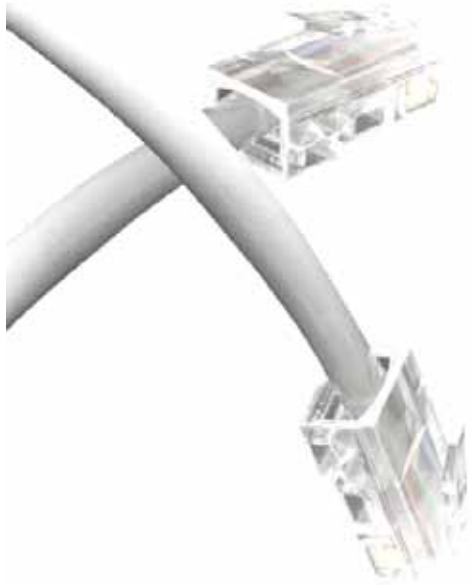
**An ISO-Registered Premier Gold Seal  
Technical High School  
Baltimore, Maryland**

**allied health | auto collision  
repair technology | auto services  
technology | carpentry careers |  
cosmetology | culinary arts |  
electrical careers | graphic print  
communications | engineering  
technician | industrial technician |  
information systems management |  
network academy(cisco)**

# A Community Facing Change...



...a program preparing students for the future.



# Work and Learning Connections

- Partnerships
- Internships
- Articulation





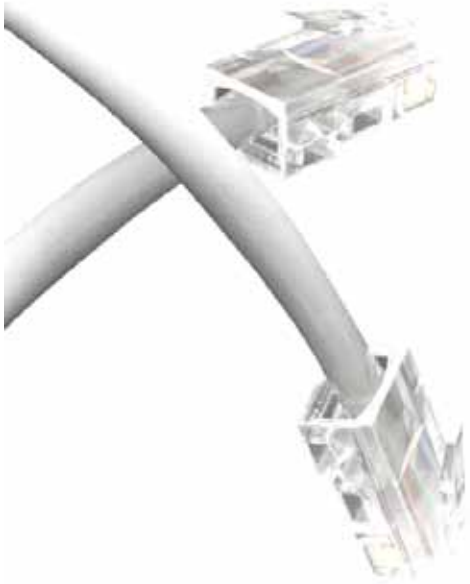
## Where Do We Connect?

- College
  - Parallel enrollment, articulated credits
- Industry
  - 43% of current class: internships next year!

**I am so jealous of these future Cisco engineers... you can't beat the education they're getting and it's free! I am happy to see the curriculum progressing at the same rate as job requirements that are coming.**

– Brandon Dixon, 2006 graduate, currently completing a B.S. degree and working in the computer security industry



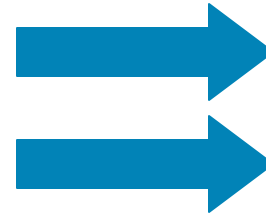


# Academy Connections Work!

- For Instructors
  - Quality content
  - Instructional support

- For Students

- Skillset
- Knowledge



Employment  
College



# Grants to States for Youth Activities: DOL

**Grant Description:** \$1.18 billion in formula grants will be provided to state and local employment and training service providers to enhance programs that prepare youth for employment and/or post-secondary education through linkages between academic and occupational learning.

**Program Priorities:** Expanded summer youth employment opportunities during 2009. 30% of funding must be used to serve out of school youth. Intended to include youth who are disconnected from education and the workforce. Priority for serving veterans and spouses.

## Applicants

### Eligibility

Local Workforce Investment Boards and One-Stop Career Centers will receive funding from State Departments of Labor

More specific eligibility criteria and timelines will vary by state

## Award Info

### Federal to State Allocations

[www.dol.gov/opa/media/press/eta/eta20090249-chart.pdf](http://www.dol.gov/opa/media/press/eta/eta20090249-chart.pdf)

A list of State WIB contacts is available at [www.doleta.gov/usworkforce/statecon.cfm](http://www.doleta.gov/usworkforce/statecon.cfm)

A searchable database of current One-Stop Career Centers is at [www.servicelocator.org](http://www.servicelocator.org) and [www.careeronestop.org](http://www.careeronestop.org)

## Timeline

### Federal to State Timeline

State allocations made available on March 6

### State to Local Timeline

SDOLs will distribute funds to LWIBs and OSCCs based on priorities and timelines established by each state

Funds must be obligated to local agencies by September 30, 2010; however ETA encourages states to obligate funds to by mid-April

## Some Allowable Expenses

### Guidance Letter for DOL

[http://wdr.doleta.gov/directives/corr\\_doc.cfm?DOCN=2728](http://wdr.doleta.gov/directives/corr_doc.cfm?DOCN=2728)

Youth activities under WIA are allowable with 2 changes: increase in age eligibility to 24 max; work readiness will determine effectiveness of summer employment

Work experiences and other activities that expose youth to opportunities in 'green' educational and career pathways

Integrate work and classroom learning

Academic and occupational linkages

Summer employment = any set of allowable youth services from May 1–Sept 30, if it includes work experience

# Grants to States for Dislocated Worker Training

**Grant Description:** \$1.43 billion in WIA Dislocated Worker formula grants for states to provide employment and training services to dislocated workers through the One-Stop system, to support reentry into the recovering job market

**Program Priorities:** Agencies that provide eligible services to recipients of public assistance and other low-income individuals for intensive services and training services (for substantially increased numbers of dislocated workers).

## Applicants

### Eligibility

Local WIBs and OSCCs will receive funding from State Departments of Labor

## Award Info

### Federal to State Allocations

[www.dol.gov/opa/media/press/eta/eta20090249-chart.pdf](http://www.dol.gov/opa/media/press/eta/eta20090249-chart.pdf)

### State to Local Awards

Specific eligibility criteria/timelines vary by state

Searchable database of OSCCs is available at [www.servicelocator.org](http://www.servicelocator.org) and [www.careeronestop.org](http://www.careeronestop.org)

## Timeline

### Federal to State

Allocations made March 6, SDOLs will begin receiving funds immediately

### State to Local

State departments will distribute funds to LWIBs and OSCCs on priorities and timelines established by each state

Funds must be obligated to local agencies by September 30, 2010

Local agencies must expend funds by June 30, 2011

## Some Allowable Expenses

### Guidance Letter for DOL

<http://wdr.doleta.gov/directives/attach/TEGL/TEGL14-08.pdf>

Training activities can include:

Occupational skills training

On-the-job training

Programs that combine workplace training and related instruction

Skill upgrade and retraining

