

Cisco News - Neue Lernangebote IT Essentials + CCNA



Beitrag zum 1. Mitteldeutschen Akademie Tag 2007

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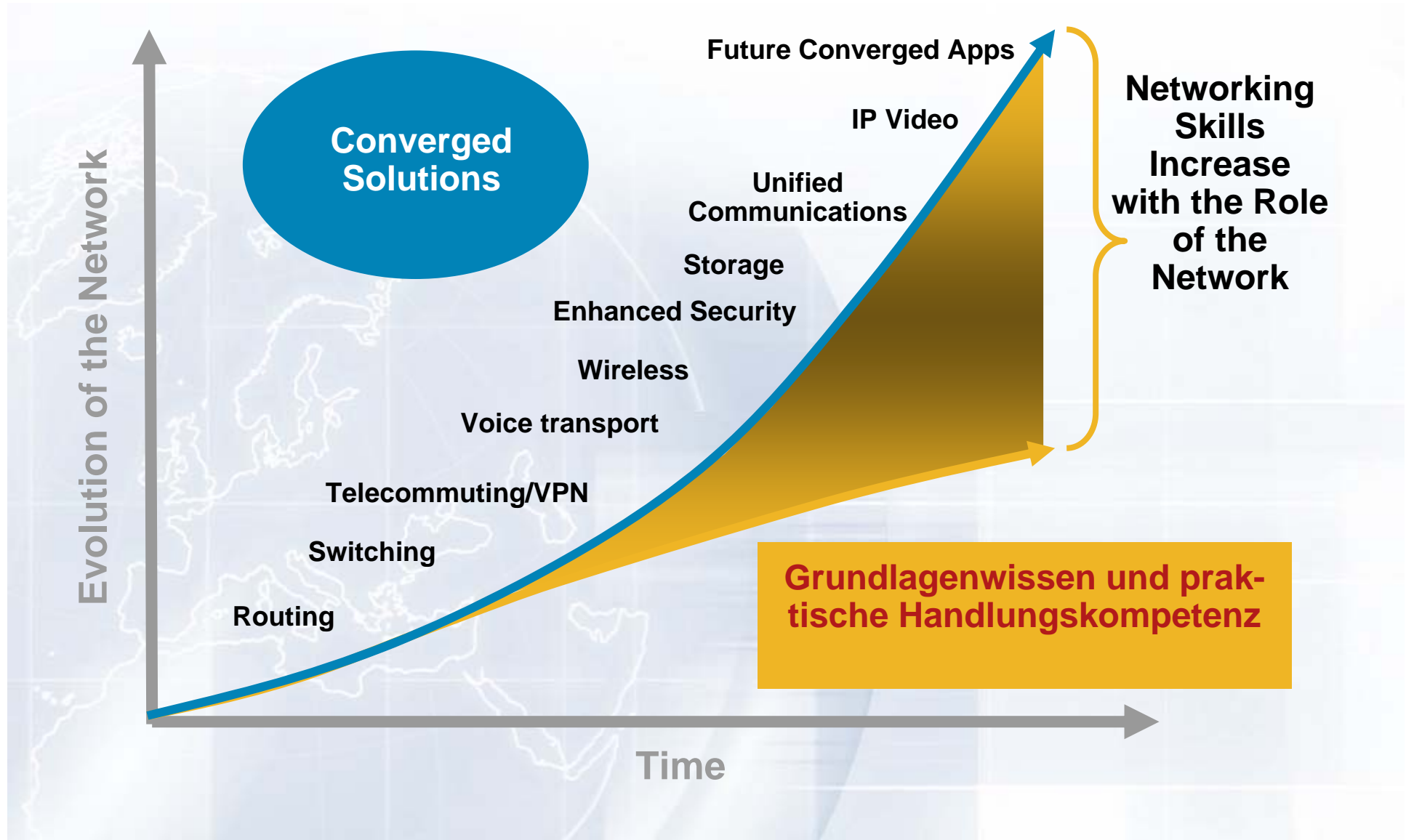
- Entwicklung des Bedarfs
- Evolutionäre Entwicklung
- Die neuen IT Essentials und CCNA Kurse: Positionierung, Inhalte, Zertifizierungen
- Instruktorentraining und Equipement



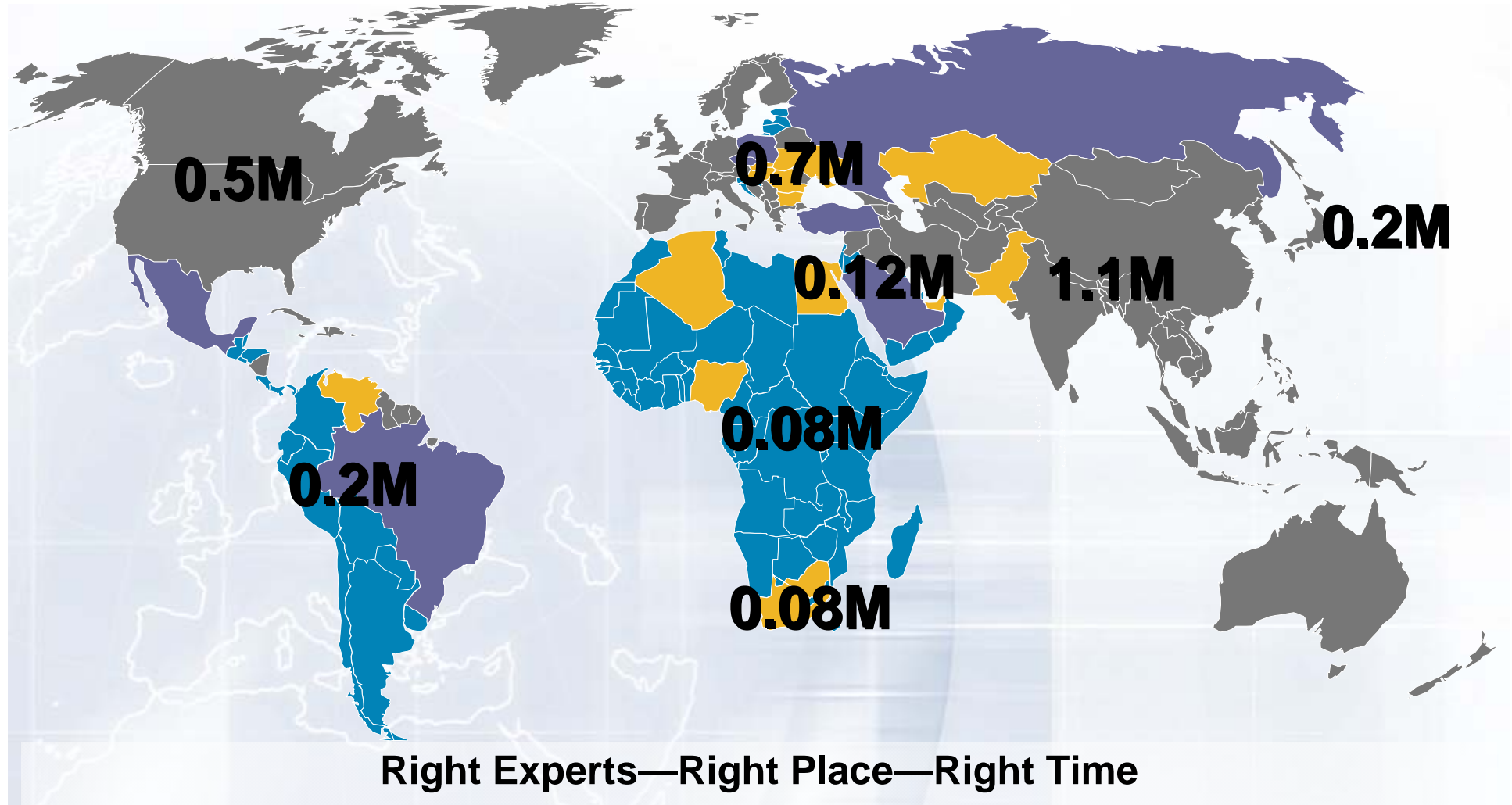
Entwicklung des Bedarfs



Die Bedeutung des Netzwerks wächst



Nachfrage nach Fachkräften mit Netzwerkkompetenz wächst um 3M bis 2012

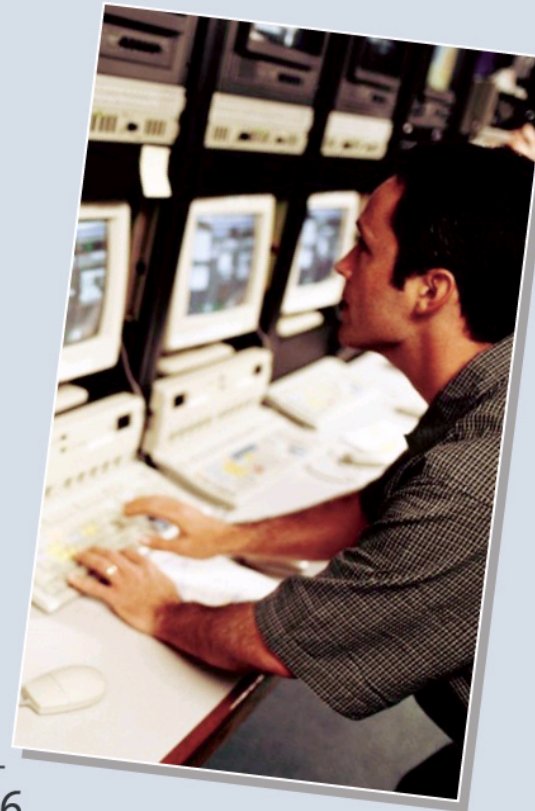
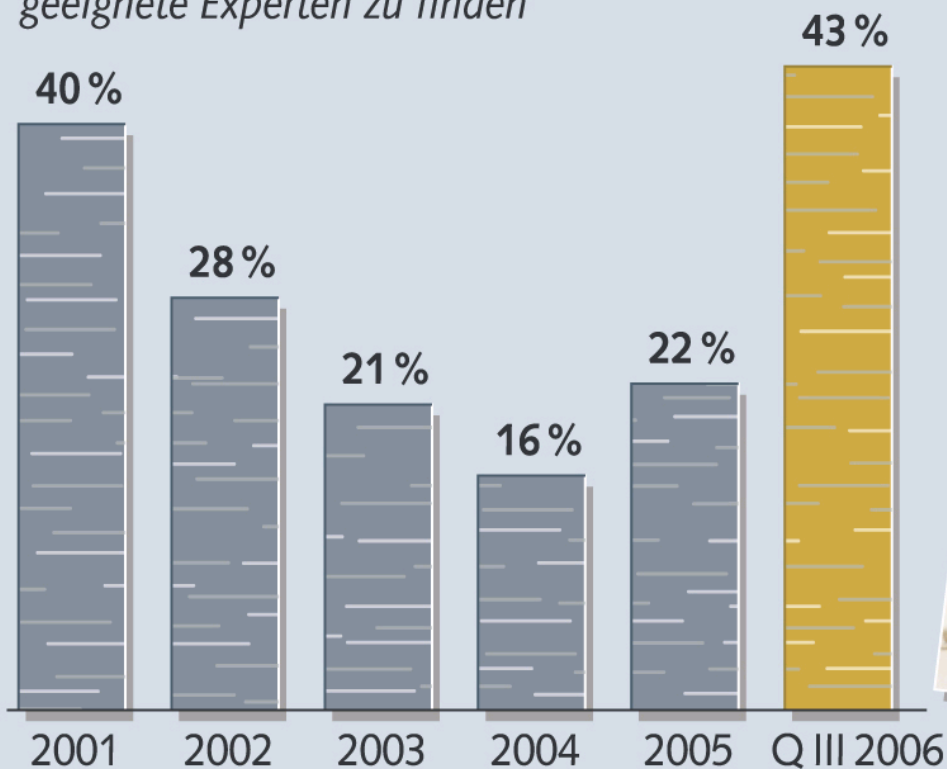


Source: IDC White Papers on Networking Skills Gaps for – Europe (Sep 2005), Middle East and Pakistan (May 2006), APAC (Nov 2006), Israel (May 2006), South Africa (May 2006); Bain Analysis

Ende des IT - Wachstums wg. Fachkräftemangel?

Fachkräftemangel verschärft sich

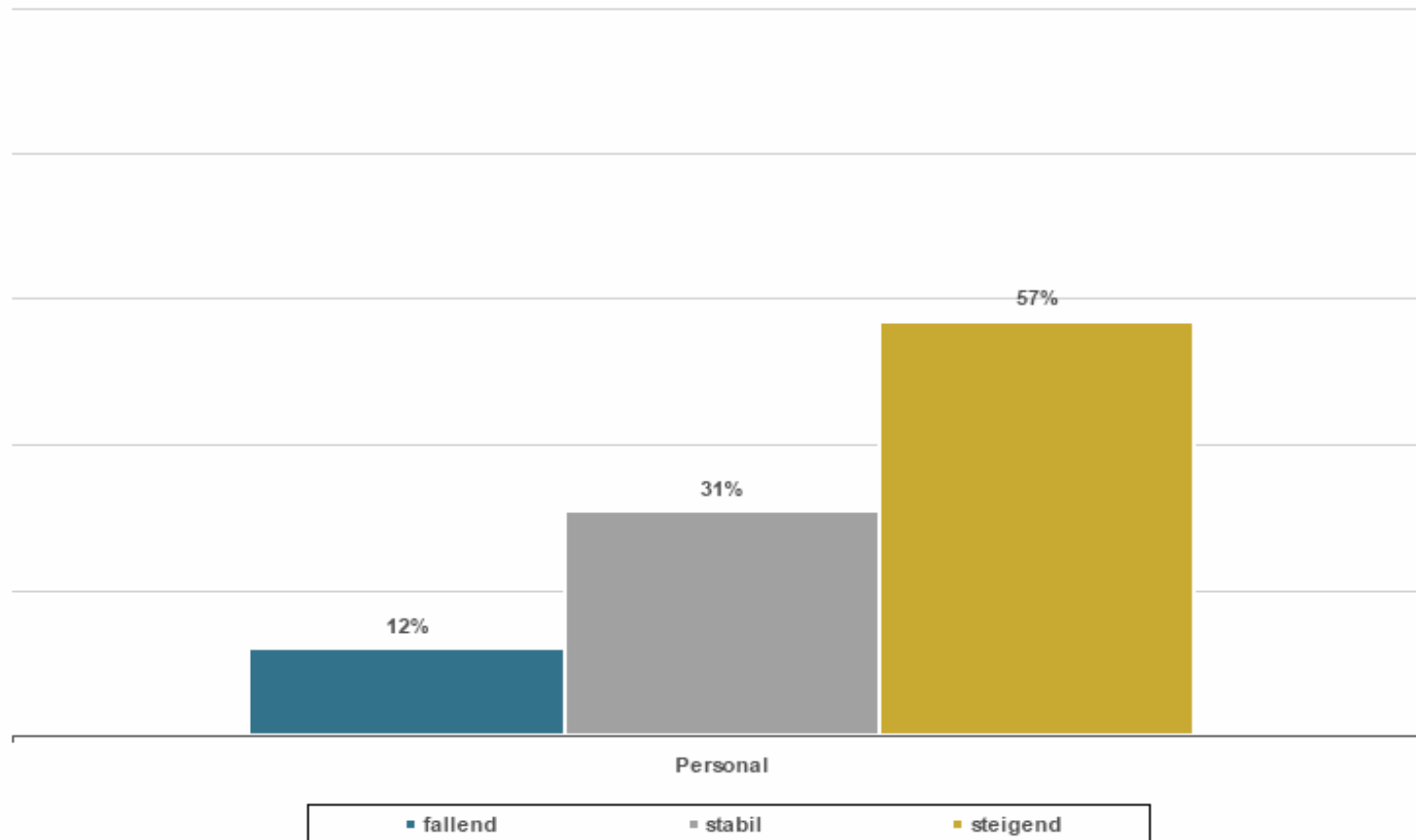
Anteil ITK-Unternehmen mit Problemen, geeignete Experten zu finden



Quelle: BITKOM, 2001-2005 Durchschnittswerte der Branchenbefragungen



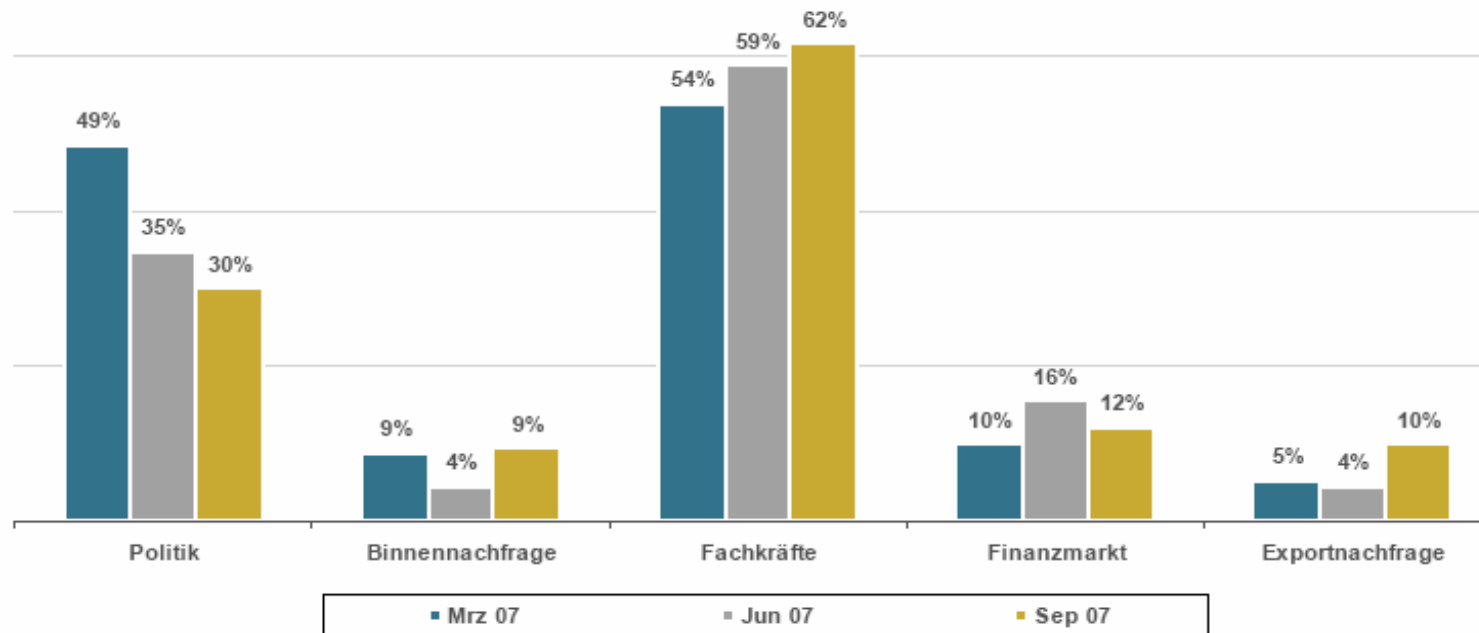
Anbieter von Software und IT-Services stellen ein Personalplanung der Unternehmen für 2007



Quelle: BITKOM

Fachkräftemangel verschärft sich weiter

Beurteilung aktueller Markthemmnisse



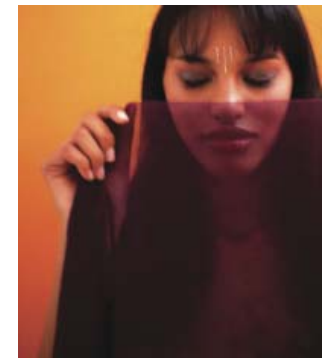
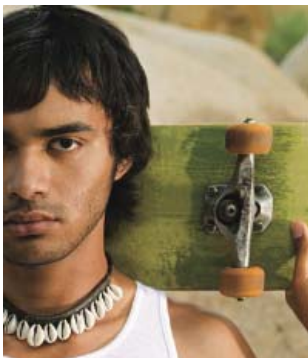
Quelle: BITKOM

Evolutionäre Entwicklung



Entwicklungsgrundsätze

- Verschieben des Schwerpunktes von Wachstum im Programm zu Teilnehmernutzen
- Zielgenauere Ausrichtung der Produkte für verschiedene Zielgruppen
- Anpassung an Entwicklung der Anforderungsprofile auf dem Arbeitsmarkt



IT Essentials das Basis- angebot der NetAcads



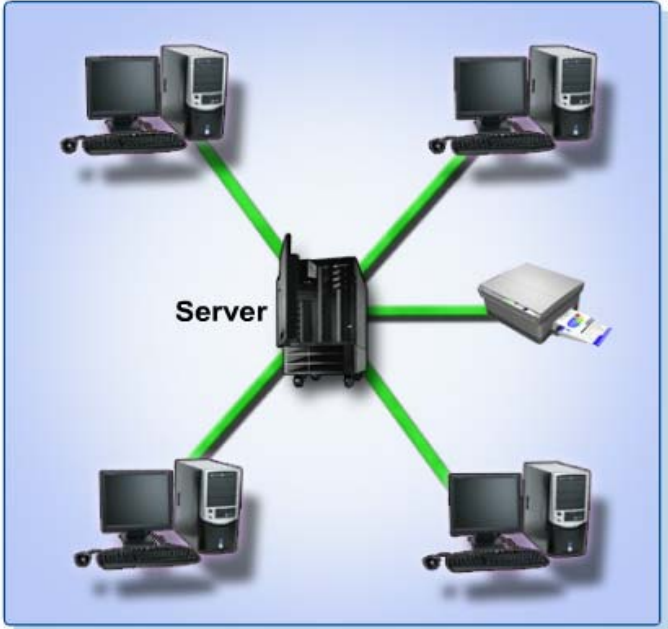
IT Essentials: PC Hardware and Software Course Outline

| Ch | PC Hardware and Software |
|----|--|
| 1 | Fundamentals: Introduction to the Personal Computer |
| 2 | Fundamentals: Safe Lab Procedure and Tool Use |
| 3 | Fundamentals: Computer Assembly Step by Step |
| 4 | Fundamentals: Basics of Preventive Maintenance and Troubleshooting |
| 5 | Fundamentals: Operating Systems |
| 6 | Fundamentals: Laptops and Portable Devices |
| 7 | Fundamentals: Printers and Scanners |
| 8 | Fundamentals: Networks |
| 9 | Fundamentals: Security |
| 10 | Fundamentals: Communication Skills |
| 11 | Advanced: Personal Computers |
| 12 | Advanced: Operating Systems |
| 13 | Advanced: Laptops and Portable Devices |
| 14 | Advanced: Printers and Scanners |
| 15 | Advanced: Networks |
| 16 | Advanced: Security |

Installing Components



1 Client/Server Network



8.2 Describe types of networks

8.2.5 Explain client/server networks

In a client/server network, the client requests information or services from the server. The server provides the requested information or service to the client. Servers on a client/server network commonly perform some of the processing work for client machines; for example, sorting through a database before delivering only the records requested by the client.

One example of a client/server network is a corporate environment in which employees use a company e-mail server to send, receive, and store e-mail. The e-mail client on an employee computer issues a request to the e-mail server for any unread e-mail. The server responds by sending the requested e-mail to the client.

In a client/server model, the servers are maintained by network administrators. Data backups and security measures are implemented by the network administrator. The network administrator also controls user access to the network resources. All of the data on the network is stored on a centralized file server. Shared printers on the network are managed by a centralized print server. Network users with the proper permissions can access both the data and shared printers. Each user must provide an authorized username and password to gain access to network resources that they are permitted to use.

For data protection, an administrator performs a routine backup of all the files on the servers. If a computer crashes, or data is lost, the administrator can easily recover the data from a recent backup.

1 IP Address Classes

| Class A | Network | | Host | |
|---------|---------|---|------|---|
| Octet | 1 | 2 | 3 | 4 |

| Class B | Network | | Host | |
|---------|---------|---|------|---|
| Octet | 1 | 2 | 3 | 4 |

| Class C | Network | | | Host |
|---------|---------|---|---|------|
| Octet | 1 | 2 | 3 | 4 |

Class D addresses are used for multicast groups. There is no need to allocate octet or bits to separate network and host addresses. Class E addresses are reserved for research use only.

8.3 Describe basic networking concepts and technologies

8.3.2 Describe IP addressing

An IP address is a number that is used to identify a device on the network. Each device on a network must have a unique IP address to communicate with other network devices. As noted earlier, a host is a device which sends or receives information on the network. Network devices are devices that move data across the network including hubs, switches, and routers. On a LAN, each host and network device must have an IP address within the same network to be able to communicate with each other.

A person's name and fingerprints usually do not change. They provide a label or address for the physical aspect of the person – the body. A person's mailing address, on the other hand, relates to where the person lives or picks up mail. This address can change. On a host, the Media Access Control (MAC) address (explained below) is assigned to the host NIC and is known as the physical address. The physical address remains the same regardless of where the host is placed on the network in the same way that fingerprints remain with the person regardless of where the person goes.

The IP address is similar to the mailing address of a person. It is known as a logical address because it is logically assigned based on the host location. The IP address, or network address, is based on the local network and is assigned to each host by a network administrator. This process is similar to the local government assigning a street address based on the logical description of the city or village and neighborhood.

An IP address consists of a series of 32 binary bits (ones and zeros). It is very difficult for humans to read a binary IP address. For this reason, the 32 bits are grouped into four 8-bit bytes called octets. An IP

IT Essentials: PC Hardware and Software v4.0 Chapter 8 – Worksheet\Student

8.3.2 Worksheet: Identify IP Address Classes

Print and complete this worksheet.

In this worksheet, your instructor will write several IP addresses with their appropriate subnet masks on the board. You will copy the IP address and Subnet Mask. You will write which IP Address Class is appropriate in the IP Address Class column in the chart below. An example has been provided for you.

Be prepared to discuss the IP Address Class you select.

| IP Address | Subnet Mask | IP Address Class |
|------------|-------------|------------------|
| 10.0.0.0 | 255.0.0.0 | A |
| | | |
| | | |
| | | |
| | | |
| | | |

Übersetzung und Lokalisierung

- Übersetzung des **IT-Essentials Inhalts bis Frühjahr 2008**
- Mithilfe eines Wiki tools durch die Instruktoeren Gemeinschaft – NCTT = NetAcad Curriculum Tranlation Tool
- Zum **Sommer 2008 ist eine deutsche Zertifizierung** in Zusammenarbeit mit der ECDL Foundation geplant
- Auf Englisch sind der Inhalt und passende Zertifikate sofort verfügbar (CompTIA A+)
- Inhalt und Zertifizierung – das Komplettpaket für Lerner in Deutschland steht zum Schuljahr 2008 bereit

Anwendungs- empfehlungen



IT Essentials Lernmaterial im Schulunterricht und der Erwachsenenbildung

- Die Inhalte können im Informatikunterricht verwendet werden und sind mit mehreren Lernfeldern des Lehrplans in Deckung zu bringen (ab Klasse 9)
- Passend zu Umschulungen im Bereich Betriebswirtschaft, für alle Anwender in SOHO Umgebungen, Telearbeiter
- Zeitaufwand für das vollständige Curriculum IT Essentials: 70-100 Stunden, Verteilung auf mehrere Schuljahre möglich (max. 24 Monate)
- IT Skills verbessern die Ausbildungs- und Berufschancen der Teilnehmer/innen
- Auch als IT-Kurs während der beruflichen Erstausbildung anwendbar
- Kombination mit anwendungsorientierten Lernangeboten wie ECDL, XPert, IC3 und anderen runden Medienkompetenz ab

Die neuen CCNA Kurse Positionierung, Inhalte, Vorteile



Zwei neue CCNA Curricula

Beide können mit dem CCNA Zertifikat abgeschlossen werden

CCNA Discovery Foundational Learning



- **Eigenständiges Lernangebot oder Integration in Ausbildungsgänge an Sekundarschulen mit technischem Profil und Berufsausbildung**
- **Voraussetzung: Computer Basiskenntnisse**

CCNA Exploration Advanced Learning



- **Bestandteil einer technik-orientierten Ausbildung an einer profilierten Berufsschule, Technikerschule oder Hochschule**
- **Teilnehmer sollten technische Probleme lösen können und überdurchschnittliche analytische Fähigkeiten haben; vertiefte Kenntnisse in Mathematik und Technik**

Neue CCNA Curricula

Grundbestandteile and Vorteile

- **Gesteigerte Motivation und Engagement der Lernenden durch Inhalte und Methoden, die den Erwartungen, Zielen und Interessen der Teilnehmer entsprechen**
- **Features:**
 - **E-doing**
 - **eModernisierte graphische Oberfläche und Design**
 - **Schnelle und flexible Übersetzung**
 - **Heranführen an weiterführende Technologie und konvergente Netze**

CCNA Discovery

- **Ermöglicht den praxisorientierten Umgang mit Netzwerk-Lerninhalten**
- **Praxisübungen werden Schritt für Schritt entwickelt und theoretische Grundlagen vermittelt, die für den Aufbau von Netzwerken notwendig sind**
- **Aktiviert die Teilnehmer und führt zu schnellen Erfolgserlebnissen durch Anwendung des Gelernten**
- **Teilnehmer werden für weiterführende Bildungs- und Karrierepfade im IT-Bereich motiviert**

CCNA Exploration

- **Vermittelt Teilnehmern Kompetenzen in einer systematischen Struktur; verknüpft theoretischen Wissenserwerb mit praktischen Aufgaben; orientiert an berufsfachlicher Bildung und Studiengängen**
- **Bietet komplexe und anspruchsvolle Praxisaufgaben, die für technisch versierte Lerner eine Herausforderung sind**
- **Entwickelt für Teilnehmer, die eine technische Ausbildung oder ingenieurwissenschaftliche Studiengänge durchlaufen und eine Karriere in der IT anstreben**

Auswahlkriterien

Wie soll das CCNA curriculum in das Bildungsangebot integriert werden?

CCNA Discovery

- Eigenständiges Lernangebot an Sekundarschulen und in der beruflichen Bildung

CCNA Exploration

- Integriert in technische Ausbildungs- und Studiengänge an technisch profilierten Berufs- und Technikerschulen, Hochschulen

Auswahlkriterien

Ist das gegenwärtige CCNA v3.1 curriculum für Ihre Teilnehmer schwierig, vor allem bzgl. der Theorie?

CCNA Discovery

- Ja, das gegenwärtige CCNA Curriculum ist schwierig für die Teilnehmer

CCNA Exploration

- Nein, das gegenwärtige CCNA Curriculum ist gerade richtig oder sogar teilweise nicht anspruchsvoll genug für die Teilnehmer

Feature Comparison

| | CCNA v3.1 | CCNA Discovery | CCNA Exploration |
|--------------------------------------|---|--|--|
| Expected Student Capabilities | Basic PC usage skills | Basic PC usage skills | Advanced problem-solving and analytical skills typically associated with students in engineering, math, or science degree programs |
| Content | Four courses – structured by protocols and technology | Four courses – structured by practical network environments PLUS: <ul style="list-style-type: none"> • E-doing • Introduction to advanced technologies • Helps prepare students for entry-level IT careers by teaching applied skills early in the curriculum | Four courses – structured by protocols and technologies within various topologies PLUS: <ul style="list-style-type: none"> • E-doing • Introduction to advanced technologies • Extra theory and more challenging labs |
| Business Rules | Required minimum of six months to complete all four courses | Required minimum of one year to complete all four courses | <ul style="list-style-type: none"> • Goal is to offer more relaxed business rules to reduce teaching time • Courses structured to increase flexibility and efficiency in course sequence |
| Time to Learn | 70 hours per course | | |

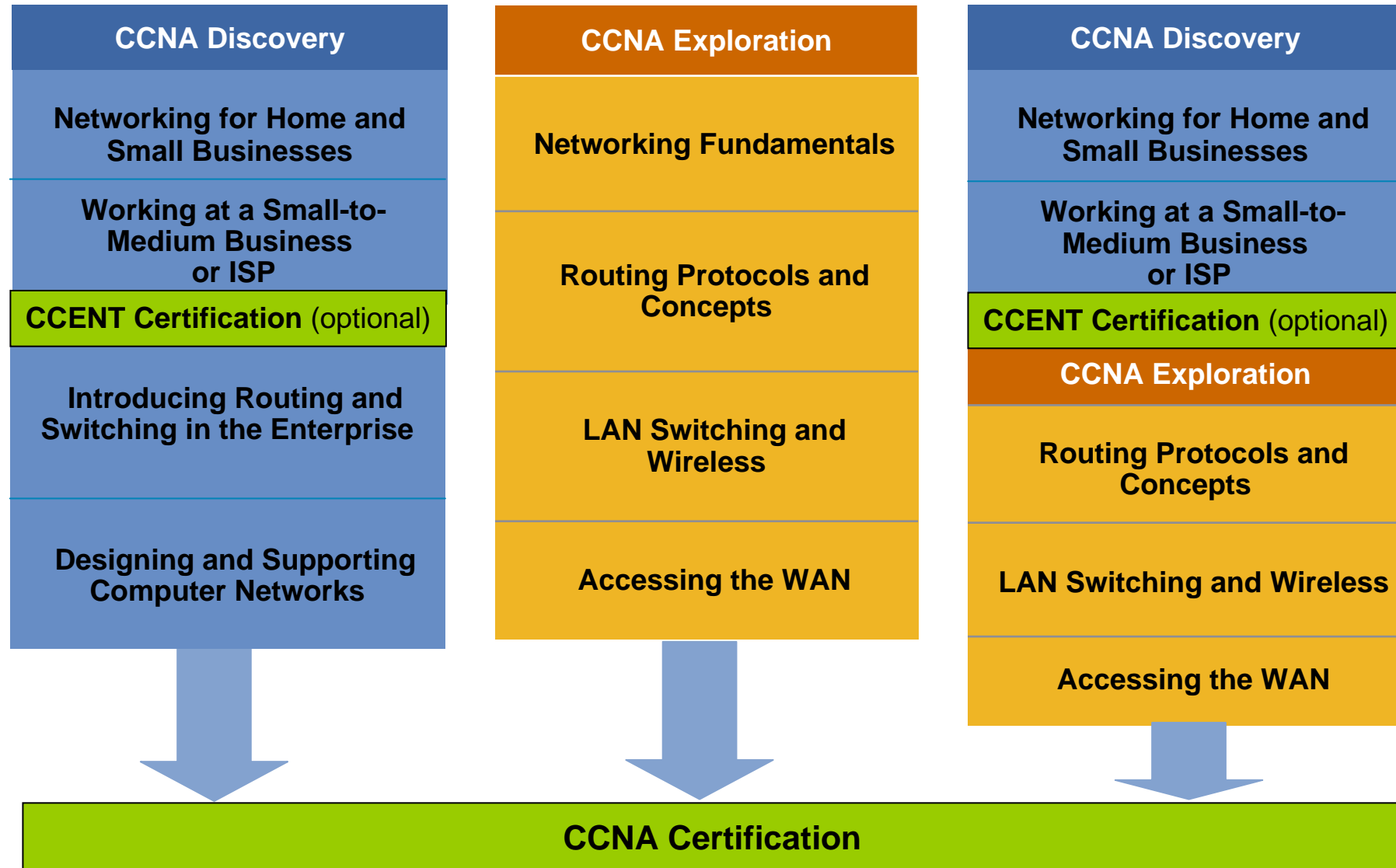
CCNA Discovery Kursinhalte

| Ch | Networking for Home and Small Businesses | Working at a Small-to-Medium Business or ISP | Introducing Routing and Switching in the Enterprise | Designing and Supporting Computer Networks |
|----|---|--|---|--|
| 1 | Introduction to Computers and Applications | The Internet and Its Uses | Networking in the Enterprise | Concepts of Network Design |
| 2 | Personal Computer Software | ISP Support | Enterprise Network Infrastructure | Gathering Information from Clients |
| 3 | Connecting to the Network | Planning a Network Upgrade | Addressing in an Enterprise Network | Impact of Various Applications on a Network Design |
| 4 | Connecting to the Internet Using an Internet Service Provider | Planning the Address Structure | Routing in an Enterprise Network | IP Address Design Considerations |
| 5 | Network Addressing | Configuring the ISR | Implementing WAN Links | Creating the Network Design |
| 6 | Network Services | Routing | Switching in an Enterprise Network | Building and Testing a Prototype Network |
| 7 | Wireless Technology | ISP Services | Filtering Traffic Using Access Control Lists | Selecting Equipment and Planning for Installation |
| 8 | Basic Security | ISP Responsibility | Troubleshooting an Enterprise Network | Upgrading and Integrating an Existing Network |
| 9 | Troubleshooting Your Network | | | |

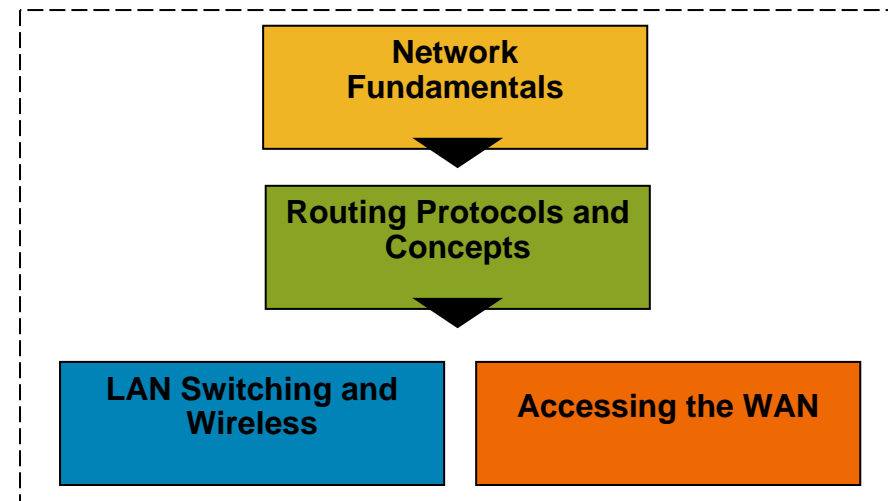
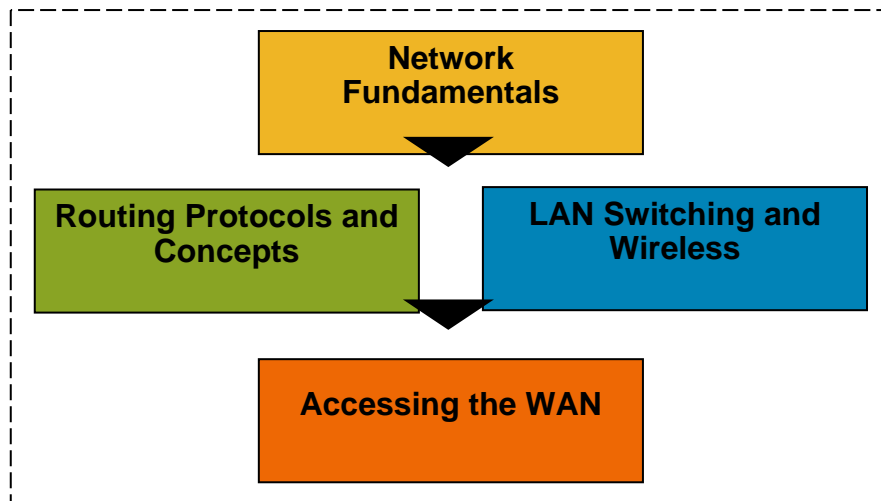
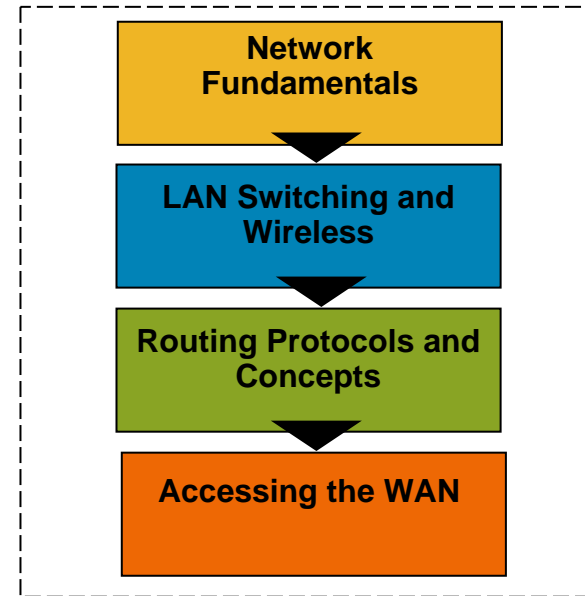
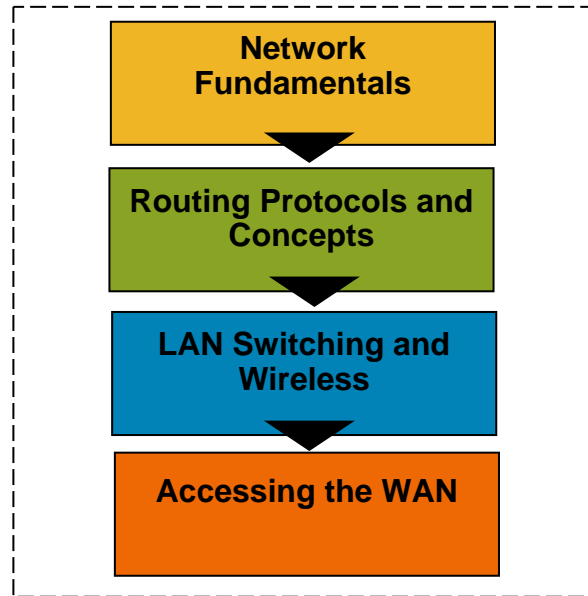
CCNA Exploration Kursinhalte

| Ch | Network Fundamentals | Routing Protocols and Concepts | LAN Switching and Wireless | Accessing the WAN |
|----|---|--|---------------------------------|--|
| 1 | Living, Learning, Working, and Playing in a Network-Centric World | Introduction to Routing and Packet Forwarding | Ethernet Revisited | Managing Traffic: Access Control Lists (ACLs) |
| 2 | Communications with Computer Networks and the Internet | Static Routes | Switching Concepts: IOS and CDP | Addressing Hosts: NAT, DHCP, and IPv6 Basics |
| 3 | OSI Application Layer | Introduction to Dynamic Routing Protocols | Inside the Switch | Security |
| 4 | OSI Transport Layer | Distance Vector Routing Protocols | Campus Network Design | Introduction to WAN Technologies |
| 5 | OSI Network Layer and Routing | RIP v1: A Distance Vector, Classful Routing Protocol | Basic Switch Configuration | WAN Devices and Connections: CSU, Cable Modem, and DSL Modem |
| 6 | Addressing the Network - IPv4 | Classless Routing: VLSM and CIDR | VLANs & IP Telephony Basics | Connecting to the WAN: Leased Lines, Cable, and DSL |
| 7 | OSI Data Link Layer | Classless Routing Using RIPv2 | Rapid Spanning Tree Protocol | PPP, PPPoE |
| 8 | OSI Physical Layer | The Routing Table: A Closer Look | Trunking and VTP | Frame Relay |
| 9 | Ethernet | EIGRP: A Distance Vector, Classless Routing Protocol | Inter-VLAN Routing | QoS Considerations |
| 10 | Planning and Cabling Your Network | Link-State Routing Protocols | Wireless Networks and Mobility | Tunneling Concepts & VPN Basics |
| 11 | Configuring and Testing Your Network | Single Area OSPF: A Link State, Classless Routing Protocol | Campus LANs | Capstone: Converged Networks |

Lernpfade zur CCNA Zertifizierung



CCNA Exploration: Flexibilität der Kursplanung



Neuerungen bei CCNA Zertifikaten

- Es wird die Kompetenz bescheinigt, Netzwerke für KMU zu installieren, in Betrieb zu nehmen, Fehlersuche und Sicherungsmaßnahmen vorzunehmen
- Grundlagen von drahtlosen Netzen und IP Telephony sind enthalten
- Mehr Betonung auf die Sicherung von Netzwerken gegenüber Angriffen von außen
- Fehlersuche enthält Inhalte der Netzwerkwartung

| Current Exams | Revised Exams |
|---------------|--------------------------|
| INTRO 640-821 | ICND1 640-822 |
| ICND 640-811 | ICND2 640-816 |
| CCNA 640-801 | CCNA 640-802 (composite) |

CCNA v3.1 End-of-Life Milestones and Dates (English version)

| Milestone | Definition | Date |
|-----------------------------|--|------------------|
| End of Offering | Last date to create new <u>instructor</u> classes: courses 1–4 | January 31, 2008 |
| Course 1 | | |
| End of Offering | Last date to create new <u>student</u> classes | March 31, 2008 |
| End of Support | Last date to receive Help Desk support for course maintenance | July 31, 2008 |
| End of Availability | Last date to access content on Academy Connection | July 31, 2008 |
| Courses 2–4 | | |
| End of Offering | Last date to create new <u>student</u> classes | January 31, 2009 |
| End of Support | Last date to receive Help Desk support for curriculum maintenance | July 31, 2009 |
| End of Availability | Last date to access content and receive curriculum operational support on Academy Connection | July 31, 2009 |
| Certification Exams | | |
| Certification Exams Retired | Last date for students to take INTRO (640-821), ICND (640-811), and CCNA (640-801) exams | July 31, 2009 |

CCNA v3.1 End-of-Life for Other Languages

- Milestones and dates included in this presentation pertain to CCNA v3.1 English version only
- Other language versions of CCNA v3.1 curriculum and certification exams will continue to remain available
- We will notify the Networking Academy community when end-of-life dates have been determined for other language versions of the curriculum and certification exams

Instruktoren- training



Instruktoren Training

| | CCNA Discovery | CCNA Exploration |
|----------------------|--|------------------------------|
| aktive Instruktoeren | <ul style="list-style-type: none">▪ Dringend empfohlen▪ Zusätzliches Material für Lehrer-Vorbereitung und Übungsaufgaben für Teilnehmer auf Academy Connection verfügbar | |
| | (min. 8-10 h pro Kurs) | (min. 4-8 h pro Kurs) |
| Neue Instruktoeren | <ul style="list-style-type: none">▪ Präsenztraining notwendig. Ca. 40 Stunden Präsenztraining je Kurs; vergleichbar CCNA v3.1▪ Kosten in einem Rahmen von 50-100 EUR je Tag | |

Übersetzung und Lokalisierung

- Übersetzung der **CCNA Inhalte Discovery und Exploration bis Sommer 2008** Software: WorldServer und vermutlich NCTT
- Mithilfe zweier Wiki tools durch die Instruktoren Gemeinschaft – NCTT = NetAcad Curriculum Translation Tool
- Zum **SommerHerbst 2008 ist eine deutsche Zertifizierung** geplant
- Auf Englisch sind der Inhalt und passende Zertifikate sofort verfügbar, Dezember 2007 werden die Semester 3+4 von CCNA Discovery und Exploration veröffentlicht
- Inhalt und Zertifizierung – das Komplettpaket für Lerner in Deutschland steht vermutlich zum Schuljahr 2008 bereit

Equipment



CCNA Discovery and CCNA Exploration Equipment

- The minimum required equipment bundle is the same for CCNA Discovery and CCNA Exploration.

The equipment list has been reduced from current CCNA requirements due to the enhanced simulation tools and flexibility that are built into the new curricula

A best practice guide on utilizing different equipment and classroom management scenarios will be published prior to product availability

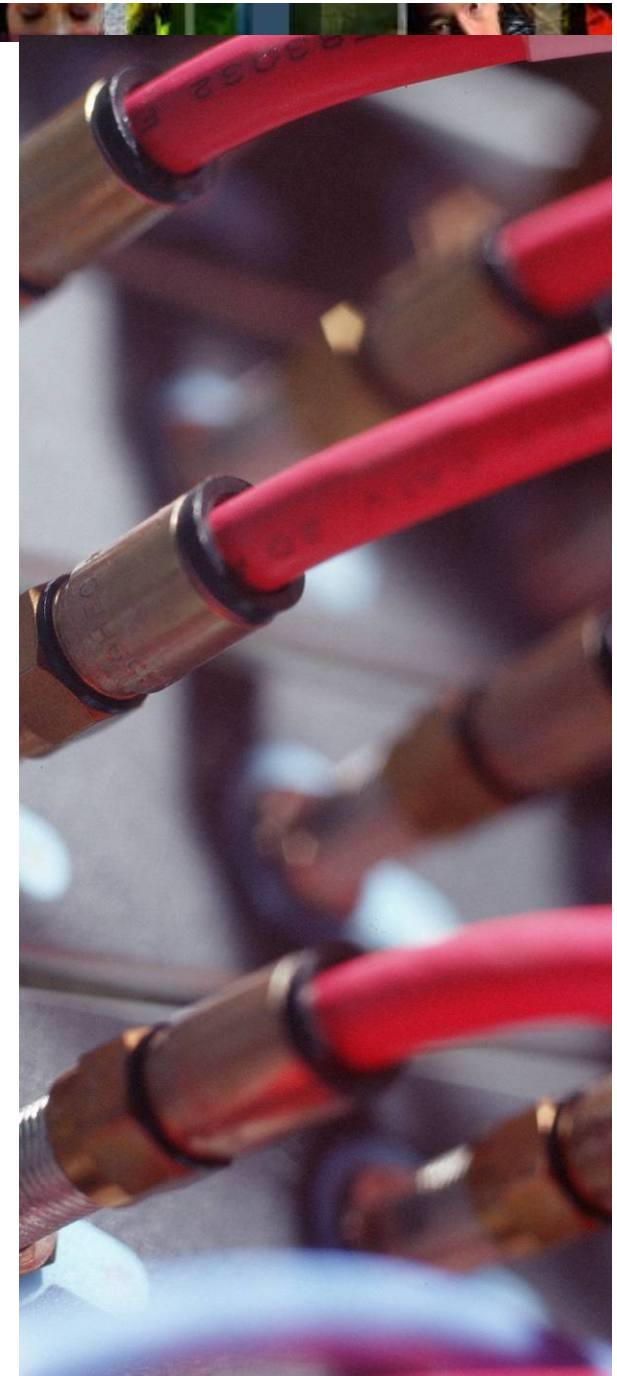
- **Equipment required for current Academies migrating to new curricula:**

2 Linksys wireless routers (Linksys 300N is preferred; 54G is an alternative) or SOHO equivalent

New Academy Equipment

New Academy adopting CCNA-Exploration 1-4 or CCNA-Discovery 1-4:

- Minimum required equipment bundle:
 - 3 Cisco 1841 routers with Base IP IOS, 128 MB DRAM, 32 MB Flash
 - 3 2960 switches
 - 2 Linksys wireless routers (Linksys WRT300N is preferred but WRT54G is alternative) or SOHO equivalent
 - Serial cables
- In addition, a typical lab configuration includes:
 - 1 Local Web Server to host curriculum
 - Desktop PCs
 - Ethernet cables
 - Cable-making and -testing equipment



PC Requirements

- 1 Lab PC with Microsoft Windows 2000 server
- 2 Lab PCs or laptops (Win 2000 or Windows XP)



PC Requirements - Recommended

| | Current | New |
|--------------------------|--|--|
| CPU | Intel Pentium III or higher processor | Intel Pentium III 500 MHz or equivalent/higher processor |
| Operating System* | Windows 2000 or Windows XP | Microsoft Windows XP |
| RAM | 128 MB Installed RAM | 256 MB or better |
| Storage | | 100 MB of free disk space |
| Screen Resolution | 1024 x 768 Resolution | 1024x768 |
| Browsers | Netscape 7.0x and 7.1, Internet Explorer 6.0 or 5.5 SP 2 | |
| Flash | Macromedia Flash Player 7.0 or higher | Macromedia Flash Player 7.0 or higher |
| Drivers | | Language fonts supporting Unicode encoding (for languages other than English) |
| Other | Mouse, speakers, headphones, and sound card | Latest video card drivers and operating system updates Sound Card and Speakers Wireless Network Adapters |

Note: Current version of Packet Tracer does not run in Native mode in MacOS or Linux. Windows Emulators are required

Was braucht eine Cisco Networking Academy?

- Eine juristische Person, die non-profit Status hat
- Zwei ausgebildete Instruktoren/innen
- Ein Labor mit PC Grundausstattung für Praxisübungen IT Essentials, ein Netzwerklabor für CCNA
- Einen Vertrag mit einer Regional Academy für die Qualifizierung der Instruktoren/innen
 - Thüringen: Andreas-Gordon-Schule/ThILLM
 - Sachsen-Anhalt: CCNA: Hochschule Harz, ITE: N.N.
 - Sachsen: CCNA und ITE: N.N.

Fragen und Antworten



