

# Overview of Cisco Networking Academy Course offerings

# Operating Systems & Information Technology

## Why OS & IT?

A basic understanding of computer operating systems and information technologies provides the foundational knowledge needed for students to connect to the Internet and understand how systems and processes work together to power the Internet of Everything.

In partnership with NDG, we offer several courses on Linux, which is increasingly regarded as an essential platform for application development. These courses teach the skills needed to fill a growing number of jobs in the information and communication technology (ICT) field.

## Career Prep

Courses range from Internet connectivity and social networking basics to teaching the skills needed to gain career certifications as a support technician, system administrator, network technician, or Linux professional.



Get Connected



IT Essentials

PT



NDG Linux  
Essentials



NDG  
Introduction to  
Linux I

NDG  
Introduction to  
Linux II

# Get Connected

## Course Overview

Get Connected teaches the basic information technology skills needed to compete in the global workforce, with a focus on basic communication and collaboration technologies.

Students are introduced to the Internet and experiment with various social networking sites.

**Prerequisites:** None

**Languages:** English & Portuguese-Brazilian

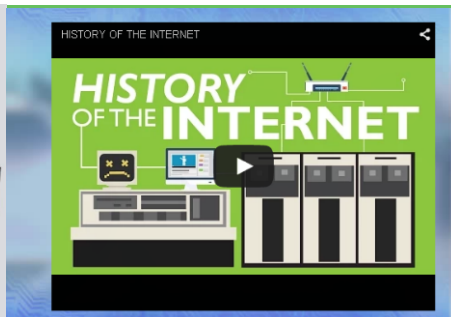
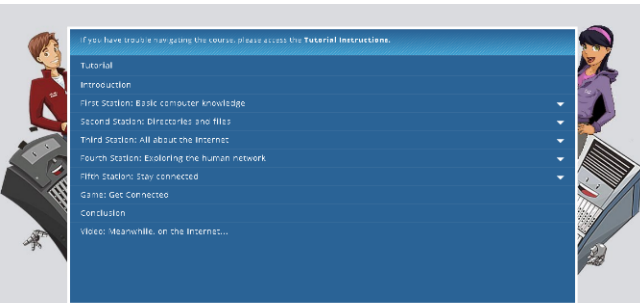
**Course Delivery:** Instructor led or self paced

**Estimated Time to Complete:** 30 hours

**Recommended Next Course:** IT Essentials

## Career Prep

Anyone seeking to develop basic ICT and social networking skills, which are essential for career advancement.



## Learning Components

- 5 chapters
- Illustrations and narrations guide students through topics
- Videos and activities
- Quizzes

# IT Essentials

## Course Overview

IT Essentials covers the fundamentals of computer hardware and software and introduces advanced security and networking concepts.

Students learn how to assemble computers and troubleshoot hardware and software issues.

## Career Prep

Upper secondary and junior college students seeking career-oriented, entry-level hardware and software skills to prepare for technical support roles. Aligns with the CompTIA A+ certification for IT support technicians, administrators, and specialists.

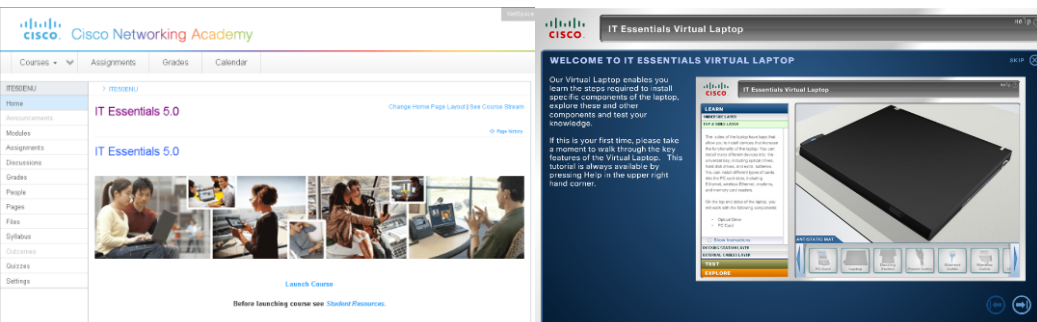
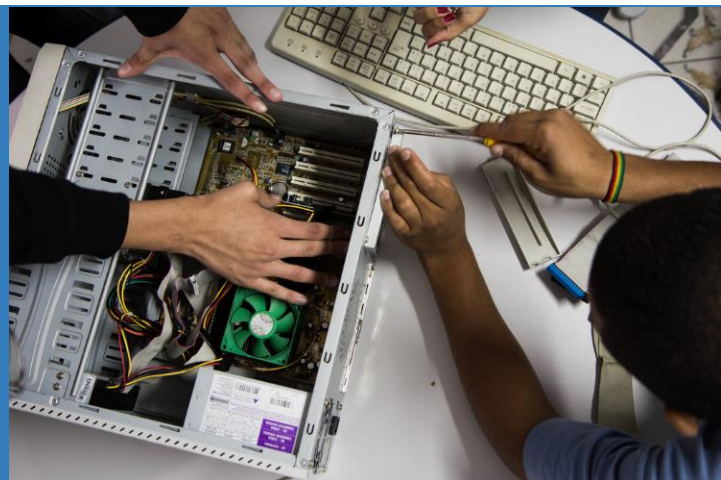
**Prerequisites:** None

**Languages:** Arabic, Chinese-Simplified, Chinese-Traditional, Croatian, English, French, German, Hebrew, Hungarian, Italian, Japanese, Portuguese-Brazilian, Romanian, Russian, Spanish, Turkish, Ukrainian

**Course Delivery:** Instructor led

**Estimated Time to Complete:** 70 hours

**Recommended Next Course:** CCNA R&S Intro to Networks



## Learning Components

- 12 chapters
- 180 hands-on labs and learning activities
- Packet Tracer, virtual laptop, and virtual desktop learning tools
- 12 chapter exams, 1 checkpoint exam, 1 skills review exam, 1 practice final exam, 1 final exam, 1 skills-based assessment, and 2 practice exams for CompTIA A+ certification

# NDG Linux Essentials

## Course Overview

The Linux Essentials course, developed by NetAcad partner NDG, teaches students the fundamentals of the Linux operating system and command line and open source concepts.

The Linux virtual machine is embedded in the course; allowing students to experiment with Linux commands.

## Career Prep

Upper secondary school and junior college students interested in learning Linux OS, open source programming, and IoT skills to expand IT knowledge beyond networking. Aligns with the Linux Professional Institute (LPI) Linux Essentials Professional Development Certificate.

**Prerequisites:** None

**Language:** English

**Course Delivery:** Instructor led

**Estimated Time to Complete:** 70 hours

**Recommended Next Course:** CCNA R&S  
Introduction to Networks



Network Development Group

Overview

## Linux Essentials Course



Why is knowing the command line important?

Flexibility and mobility!

By understanding the foundation of Linux, you have the ability to work on ANY Linux distribution. This could mean one company with a mixed environment or a new company with a different Linux distribution.

## Learning Components

- 16 chapters
- Built-in virtual machine to experiment with Linux commands
- 13 lab exercises
- Learner-directed activities
- Chapter exams, mid-term, and final exam

# Networking

## Why Networking?

As our world becomes increasingly reliant on computer networks and networking technologies, there's a growing need for professionals who can design, build, manage, and secure networks.

Our networking courses introduce students to a range of topics, from routing protocols and network applications to network services and configurations. The courses emphasize hands-on learning and troubleshooting.

## Career Prep

Our networking courses align with globally recognized career certifications including Cisco CCENT, CCNA R&S, and CCNP R&S.

Students learn how to become network administrators and network managers.



CCNA Routing  
& Switching  
(1-4)



CCNP Routing  
& Switching  
(1-3)



Coming  
Soon

Networking  
Essentials

PT

# CCNA Routing and Switching Curriculum

## Curriculum Overview

The 4 courses in the CCNA R&S curriculum help students develop a comprehensive understanding of how networks operate, from protocols and services to network management, with an emphasis on hands-on learning and essential career skills like problem solving and collaboration.

## Career Prep

Courses 1-2 align with the Cisco CCENT certification and courses 3-4 align with the Cisco CCNA R&S certification. Students gain the skills needed to become network administrators, technicians, or managers.

**Prerequisites:** IT Essentials or equivalent knowledge

**Languages:** Arabic, Chinese-Simplified, English, French, Japanese, Portuguese-Brazilian, Russian, Spanish (courses 1 and 2 also available in German, Hungarian, and Turkish; course 1 also available in Romanian)

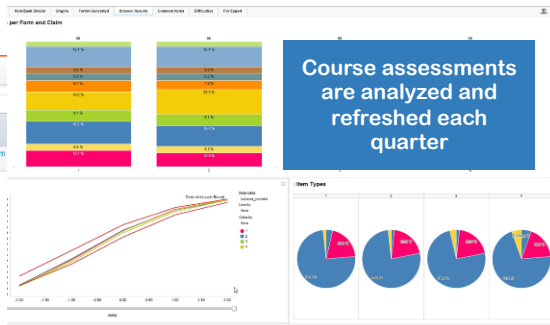
**Course Delivery:** Instructor led

**Estimated Time to Complete:** 280 hours

**Recommended Next Course:** CCNA Security or CCNP



**Assessments are automatically scored and recorded in the Gradebook**



## Learning Components

- 4 courses: Introduction to Networks, Routing and Switching Essentials, Scaling Networks, Connecting Network
- Hands-on labs and Cisco Packet Tracer network simulation activities
- Videos and activities to reinforce learning
- Quizzes and exams to measure learning outcomes

# CCNA R&S: Introduction to Networks

## Course Overview

The first course in the Cisco CCNA Routing and Switching curriculum teaches students about the architecture, structure, functions and components of the Internet and other computer networks.

Students gain an essential foundational understanding of how networks operate.

## Career Prep

Secondary school through university students seeking skills for entry-level networking jobs or more specialized ICT training.

**Prerequisites:** IT Essentials or equivalent knowledge

**Languages:** Arabic, Chinese-Simplified, English, French, German, Hungarian, Japanese, Portuguese-Brazilian, Romanian, Russian, Spanish, Turkish

**Course Delivery:** Instructor led

**Estimated Time to Complete:** 70 hours

**Recommended Next Course:** CCNA R&S Routing & Switching Essentials



Chapter 8: IP Addressing 8.2.4.2 Static Configuration of a Global Unicast Address

**IP Address**  
- 8.2.4 IP Unicast Address

**IP Network Address**  
- 8.2.4.1 Features of an IP Unicast Address

**Router Configuration**  
- 8.2.4.2 Static Configuration of a Global Unicast Address  
- 8.2.4.3 Dynamic Configuration of a Global Unicast Address using DHCP

**Host Configuration**  
- 8.2.4.4 Static Configuration of a Global Unicast Address  
- 8.2.4.5 Dynamic Configuration of a Global Unicast Address using DHCP

**Activity – Unicast, Broadcast, or Multicast?**  
Click Start to view the Destination IP Address. Next, click the host(s) which will receive a packet based on the address type (Unicast, Broadcast or Multicast).  
This is a timed activity.

**Time Remaining**  
10

**Destination IP Address =**

**Source Host**

**192.168.100.1**  
225.5.77.126 group

**192.168.100.2**  
237.192.126.17 group

**192.168.100.3**

**192.168.100.4**  
237.192.126.17 group

**192.168.100.5**  
225.5.77.126 group

**Router Configuration**

```
Router Configuration
!
interface GigabitEthernet0/0
 ip address 2001:DB8:ACAD:1::64
!
interface GigabitEthernet0/1
 ip address 2001:DB8:ACAD:2::64
!
!
end

Host Configuration
!
ip address 2001:DB8:ACAD:1::64
!
end
```

## Learning Components

- 11 chapters
- 33 hands-on labs and 1 hands-on skills assessment
- Pre-test, 11 chapter quizzes, 2 sectional quizzes, 11 chapter exams, and 1 final exam
- 2 Cisco Packet Tracer Skills Based Assessments

# CCNA R&S: Routing and Switching

## Course Overview

The second course in the CCNA Routing and Switching curriculum describes the architecture, components, and operations of routers and switches in a small network.

Students learn how to configure a router and a switch for basic functionality

## Career Prep

Secondary school through university students seeking Cisco CCENT certification and skills for entry-level network technician jobs.

**Prerequisites:** CCNA R&S: Introduction to Networks

**Languages:** Arabic, Chinese-Simplified, English, French, German, Hungarian, Japanese, Portuguese-Brazilian, Russian, Spanish, Turkish

**Course Delivery:** Instructor led

**Estimated Time to Complete:** 70 hours

**Recommended Next Course:** CCNA R&S Scaling Networks or CCNA Security



**Chapter 2: VLANs** - 2.2.1.2 Double Tagging Attack

**VLAN Security and Design**

Analysis on this slide:

Consider the use of VLANs. A double tagging attack is a security threat that involves a malicious user inserting a double-tagged frame into a network. The frame is tagged with the source VLAN ID and the destination VLAN ID. The frame is then sent to the destination VLAN, where it is processed as if it were a legitimate frame. This attack can be used to bypass security measures that are in place to protect the network.

Double Tagging Attack

1. The attacker sends a frame with a source VLAN ID of 10 and a destination VLAN ID of 20. The frame is tagged with the source VLAN ID and the destination VLAN ID.

2. The frame is received by the switch. The switch checks the source VLAN ID and the destination VLAN ID. The switch finds that the source VLAN ID is 10 and the destination VLAN ID is 20. The switch then forwards the frame to the destination VLAN.

3. The frame is received by the destination host. The host processes the frame as if it were a legitimate frame. The attacker has successfully bypassed the security measures that are in place to protect the network.

**Chapter 7: Routing Dynamics** - 7.5.4.1 IPv6 Routing Table Entry

**The Routing Table**

Analysis on this slide:

The routing table is a data structure that stores information about the network topology. It is used by the router to determine the best path to a destination. The routing table contains entries for each destination network. Each entry contains the destination network address, the next hop address, and the metric. The router uses the routing table to forward packets to the destination network.

Reference IPv6 Topology

The figure shows a network topology with several routers and hosts. The routers are labeled with their IPv6 addresses. The hosts are labeled with their IPv6 addresses. The topology shows the connections between the routers and hosts.

## Learning Components

- 11 chapters
- 33 hands-on labs and 1 hands-on skills assessment
- Pre-test, 11 chapter quizzes, 11 chapter exams, 2 sectional quizzes, and 1 final exam
- 3 Cisco Packet Tracer Skills Based Assessments

# Course Overview

Students learn how to configure and troubleshoot routing and switching technologies and protocols.

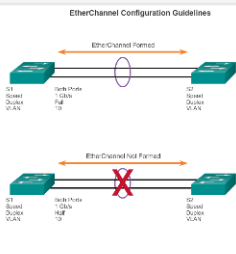
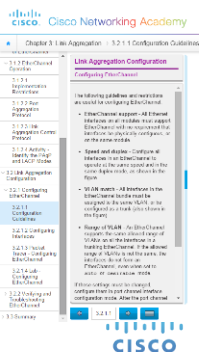
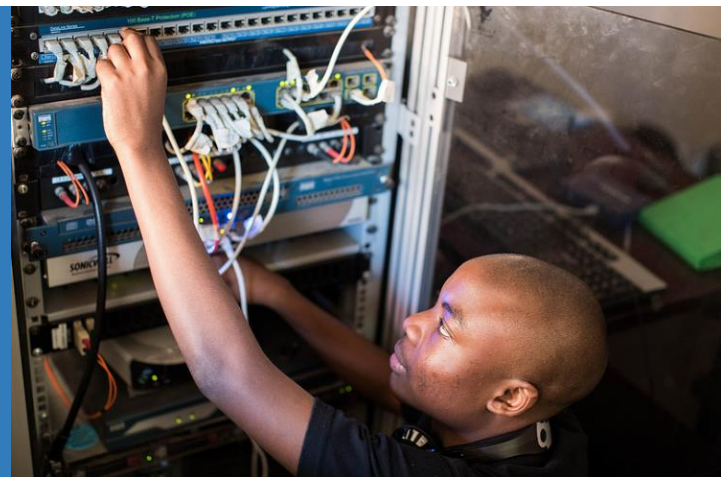
**Languages:** Arabic, Chinese-Simplified, English, French, Japanese, Portuguese-Brazilian, Russian, Spanish

**Estimated Time to Complete:** 70 hours

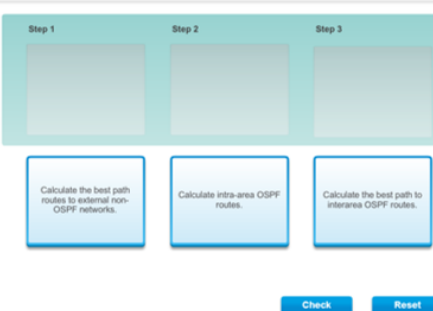
**Recommended Next Course:** CCNA R&S Connecting Networks

## Career Prep

Junior college and university students seeking skills for entry-level network administration jobs or more specialized ICT training



OSPF routers use the criteria listed below to select the best route to be installed in the routing table. Put these criteria in order by dragging each statement to its appropriate numbered field.



# Learning Components

- 9 chapters
- 19 hands-on labs and 2 hands-on skills assessments
- Pre-test, 9 chapter quizzes, 9 chapter exams, 2 sectional quizzes, and 1 final exam
- 2 Cisco Packet Tracer Skills Based Assessments

# CCNA R&S: Connecting Networks

## Course Overview

The fourth and final course in the CCNA Routing and Switching curriculum covers the WAN technologies and network services employed by converged applications in a complex network.

Students learn how to configure and troubleshoot network devices and implement virtual private networks.

## Career Prep

Junior college and university students seeking Cisco CCNA R&S certification and skills for entry-level network administration jobs

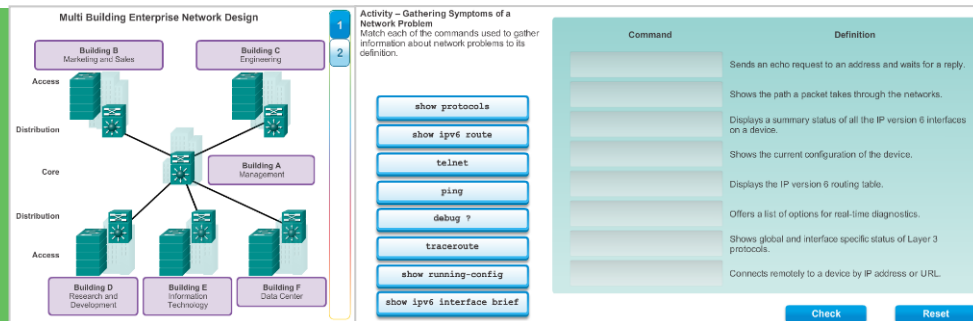
**Prerequisites:** CCNA R&S: Scaling Networks

**Languages:** Arabic, Chinese-Simplified, English, French, Japanese, Portuguese-Brazilian, Russian, Spanish

**Course Delivery:** Instructor led

**Estimated Time to Complete:** 70 hours

**Recommended Next Course:** CCNA Security or CCNP R&S ROUTE



## Learning Components

- 9 chapters
- 12 hands-on labs and 1 hands-on skills assessment
- Pre-test, 9 chapter quizzes, 9 chapter exams, 2 sectional quizzes, and 1 final exam
- 2 Cisco Packet Tracer Skills Based Assessments

# CCNP Routing & Switching

## Course Overview

The three CCNP Routing & Switching courses provide a comprehensive overview of enterprise-level networking concepts, including advanced routing, switching, and troubleshooting.

The curriculum integrates industry-relevant instructional approaches to help students prepare for career opportunities.

## Career Prep

College students seeking hands-on practical experience, Cisco CCNP R&S certification, and career skills in advanced routing, switching, and troubleshooting.

**Prerequisites:** CCNA R&S courses 1 and 2

**Languages:** English

**Course Delivery:** Instructor led, textbook based

**Estimated Time to Complete:** 210 hours



## Learning Components

- 3 courses: CCNP R&S ROUTE: Implementing IP Routing, CCNP R&S SWITCH: Implementing IP Switched Networks, and CCNP R&S TSHOOT: Troubleshooting and Maintaining IP Networks
- Hands-on labs
- Cisco Press textbooks
- Chapter exams and final exams

# Security

## Why Security?

The demand for security experts has grown three times faster than the demand for other information and communication technology professionals.

Our security courses equip students with the skills needed to protect networks from those with malicious intent to help ensure the integrity and availability of data and services.

## Career Prep

Our security courses teach the core concepts and skills needed to secure and protect computer networks and explore career opportunities.

CCNA Security aligns with the Cisco CCNA Security certification.



Intro to  
Cybersecurity



CCNA Security

PT

# Introduction to Cybersecurity

## Course Overview

Introduction to Cybersecurity covers trends and career opportunities in the growing field of computer network security

It features presentations and panel discussions delivered by cybersecurity professionals and industry experts.

## Career Prep

Upper secondary and junior college students interested in learning about trends, certifications, and career opportunities in the cybersecurity field.

**Prerequisites:** None

**Languages:** English

**Course Delivery:** Instructor led or self paced

**Estimated Time to Complete:** 15 hours

**Recommended Next Course:** CCNA R&S Introduction to Networks

## Introduction to Cybersecurity



 CISCO

## Delete doesn't mean deleted

Over 3 years later, "deleted" Facebook photos are still online - CNN.com  
By Jacques Chénay, Ars Technica  
10/2/14 @ 10:27 / 159-242



## Learning Components

- 8 modules
- Video presentations and panel discussions
- Activities that reinforce learning
- Pre-test, 8 quizzes, and final exam
- Links to related resources

# CCNA Security

## Course Overview

CCNA Security introduces the core security concepts and skills needed to troubleshoot and monitor computer networks and help ensure the integrity of devices and data.

It emphasizes the practical application of the skills needed to design, implement, and manage network security systems

## Career Prep

CCNA R&S students interested building security and data protection expertise for the Cisco CCNA Security career certification and jobs as network security specialists.

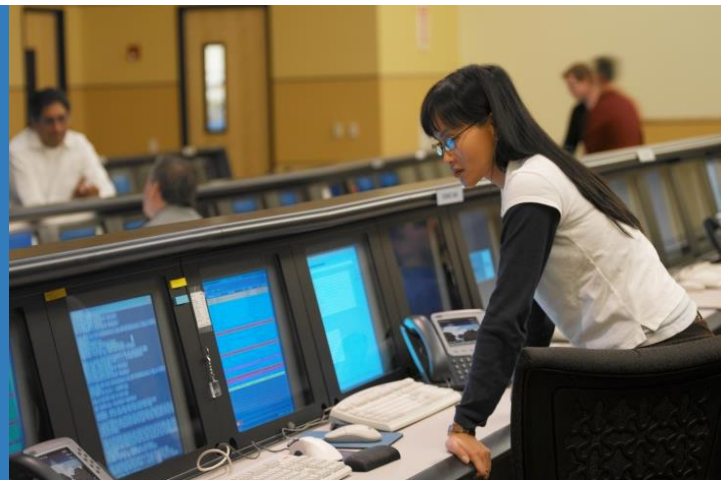
**Prerequisites:** CCNA R&S: Routing and Switching Essentials or equivalent knowledge

**Languages:** English

**Course Delivery:** Instructor led

**Estimated Time to Complete:** 70 hours

**Recommended Next Course:** CCNP



CCNA Security



Part 1: Lab Setup



## Learning Components

- 10 chapters and 10 chapter exams
- 10 Cisco Packet Tracer network simulation activities
- 16 hands-on labs
- 1 practice Cisco CCENT certification exam, 1 practice Cisco Packet Tracer Skills Assessment, 1 practice final exam, 1 hands-on skills exam, and 1 final exam



# Advanced Technology

## Why Advanced Technology?

Our Technology content is developed by a community of NetAcad instructors and covers concepts related to computer networks, such as cloud computing and wireless technologies.

Instructors may use these learning materials to create courses for students.

## Career Prep

These learning resources are designed to expand knowledge of networking-related technologies and provide an overview of technologies students may encounter in their careers.



Voice Primer

Cloud Primer

Collaboration  
Primer

Mobility Series:  
Wireless Tech  
Standards

# Cisco Packet Tracer

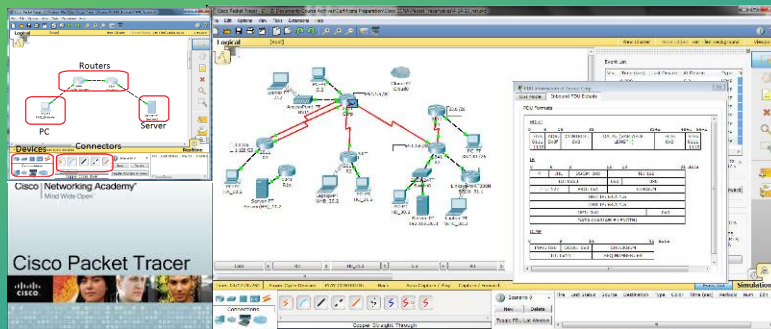
## Why Packet Tracer?

The Cisco Packet Tracer simulation tool allows students to experiment with network behavior in a virtual environment. It supplements physical networking equipment by allowing students to create virtual networks with unlimited devices; encouraging practice, discovery, and troubleshooting.

As an integral part of the NetAcad learning experience, Packet Tracer provides simulation, visualization, authoring, assessment, and collaboration capabilities and facilitates the teaching and learning of complex technology concepts.

## Career Prep

The Packet Tracer simulation-based learning environment promotes the development of essential career skills ranging from teamwork and critical thinking to creative problem solving.



Cisco Packet Tracer (PT)



Packet Tracer Know How



PT Mobile iOS

PT Mobile Android

# Internet of Everything

## Why IoE?

As the number of networked connections between people, processes, data, and things grows exponentially, it's essential to understand the technologies that enable the Internet of Everything (IoE), and how increased connectivity creates new opportunities to excel and improve business processes, and address some of the world's greatest challenges.

These courses broaden students' thinking beyond core networking and technology concepts.

## Career Prep

Students explore the technologies that underpin the Internet of Everything and learn about millions of career opportunities that are emerging from data centers and cloud, big data and Internet of Things.



# Intro to the Internet of Everything Summary

## Series Overview

This podcast series provides an introduction to the future of the Internet, where a network foundation connects billions of things and trillions of gigabytes of data, enhancing our decision making and daily interactions.

It can be used to prepare for the Introduction to the Internet of Everything course.

**Prerequisites:** None

**Languages:** English

**Delivery Method:** mp3 files

**Estimated Time to Complete:** 2.5 hours

**Recommended Next Course:** Introduction to the Internet of Everything

## Career Prep

Anyone seeking to develop a broad understanding of trends, technologies, and career opportunities in the Internet of Everything.



## Learning Components

- 5 modules featuring a panel of IoE experts
- Links to related resources
- Downloadable mp3 files



# Introduction to the Internet of Everything

## Course Overview

The Introduction to the Internet of Everything (Intro2IoE) course introduces learners to the technologies that support the IoE, and the career and social opportunities created by the growing number of networked connections between people, processes, data, and things.

## Career Prep

Secondary school through university students seeking an overview of trends, technologies, and career opportunities in the Internet of Everything.

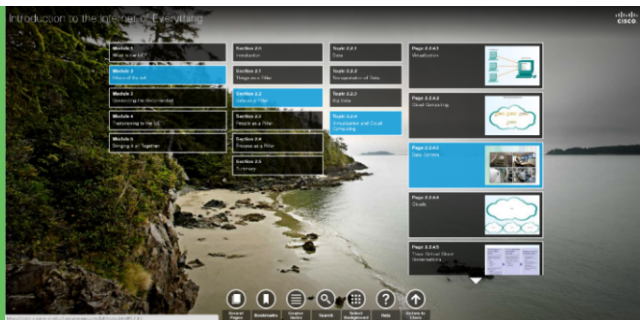
**Prerequisites:** None

**Languages:** Chinese-Simplified, English, French, Japanese, Portuguese-BR, Russian, Spanish

**Course Delivery:** Instructor led or self paced

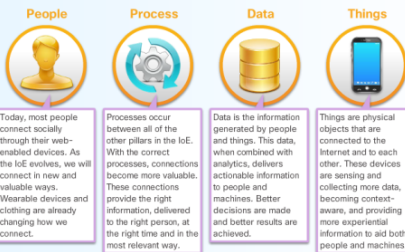
**Estimated Time to Complete:** 20 hours

**Recommended Next Course:** IT Essentials or CCNA R&S Introduction to Networks



### What is the IoE?

The Internet of Everything is the networked connection of people, process, data, and things.



## Learning Components

- 5 modules of interactive content featuring IoE experts
- Activities, videos, and simulations to enhance the learning experience
- Pre-test, module quizzes, and a final exam

# Entrepreneurship

## Why Entrepreneurship?

In addition to technology skills, business owners and professionals need entrepreneurial skills such as creative thinking, communication, business management, and problem solving skills.

Our Entrepreneurship offerings help students develop essential skills to successfully launch new ventures or excel within team environments.

They broaden students' thinking beyond core networking and technology concepts.

## Career Prep

Our Entrepreneurship courses help students develop an entrepreneurial mindset and cultivate the habits and skills needed for success in the Internet of Everything.



Entrepreneurship



Be Your  
Own Boss

# Entrepreneurship

## Course Overview

Entrepreneurship supplements the ICT skills gained in CCNA R&S curriculum by teaching business and financial skills, behaviors, and attitudes, to help students develop an entrepreneurial mindset.

Students learn by completing a series of interactive case studies.

## Career Prep

High school through college students seeking to supplement ICT expertise with entrepreneurial thinking, business development, and financial management skills.

**Prerequisites:** None

**Languages:** Arabic, Chinese-Traditional, English, and Spanish

**Course Delivery:** Self paced

**Estimated Time to Complete:** 15 hours

**Recommended Next Course:** CCNA R&S ITN



### Entrepreneurship

#### Course Introduction

The Aspire game is an interactive game where you must use the skills and knowledge learned in other Cisco Networking Academy courses, as well as the business and soft skills you learned in Entrepreneurship. You will not only be asked to set up and configure computers, you will also have to make timely business decisions.

Click the buttons to learn more about Aspire to see the business challenges and the technical challenges that this game offers. You can go as far along in the game as you like. If the technical challenges are beyond your current expertise, you may still want to give them a try. You might surprise yourself!

#### The Aspire Game



Business Challenges

Technical Challenges

#### 2 Starting on the net case 3 From the net to the router 2.1 Recognizing a Problem

The router in this case study is a Cisco 2800 series router. It is a multi-service router that can be configured to provide a variety of services. In this case study, the router is configured to provide a variety of services.

The router is configured to provide a variety of services. In this case study, the router is configured to provide a variety of services.

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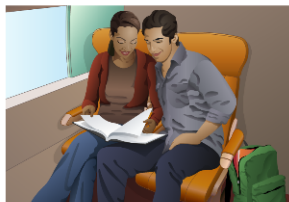
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The router is configured to provide a variety of services. In this case study, the router is configured to provide a variety of services.



Click Play to hear the audio.

## Learning Components

- 7 modules
- Modules feature interactive case studies and videos that reinforce business management skills
- Quizzes for each module
- Discussion board

# Be Your Own Boss

## Course Overview

The Be Your Own Boss Technopreneur Series provides the guidelines, insights, and advice needed to launch successful tech ventures.

The series features video presentations by entrepreneurs from around the world who share lessons learned along their journeys to success.

**Prerequisites:** None

**Languages:** English

**Course Delivery:** Self paced

**Estimated Time to Complete:** 8 hours

**Recommended Next Course:** Entrepreneurship

## Career Prep

Technology students interested in developing the entrepreneurial skills and habits needed to launch and grow a successful technology business.



## Learning Components

- 8 modules
- Technopreneurs sharing personal success stories in video format
- Quizzes and surveys for each module