

## IT Support

This is a certification for entry-level help desk technicians, end user desktop support technicians, IT students, interns, etc. The exam targets entry-level IT professionals, and secondary and immediate post-secondary students. The successful candidates are qualified entry-level help desk technicians and customer support technicians, students, and interns with at least 150 hours of instruction and hands-on experience.

Prerequisites: Candidates are expected to have reading and writing competencies of at least the 8th grade level. They should also have two-years of experience using a desktop computer, laptop computer, or tablet as an end user. In addition, they should have familiarity using productivity applications, such as Microsoft Office or Google Docs.

## Interpersonal skills

Although not specifically tested as discrete objectives, this certification expects candidates to perform their jobs using the following interpersonal best practices:

- Demonstrate professional communication skills when interacting with users.
- Demonstrate active listening.
- Express technical concepts to a non-technical audience.
- Communicate effectively using vocabulary appropriate to the situation.

Some scenarios on the test require understanding these best practices.

## Objective Domains: CCST IT Support

### 1. IT Support Job Tasks and Responsibilities

#### 1.1 Define key help desk concepts.

- Queue management, time management, ticketing systems, service level agreement (SLA), key performance indicators (KPIs)

#### 1.2 Prepare documentation to summarize a customer interaction.

- Creating a clear, concise, factual, and comprehensive description of the problem, the troubleshooting steps, and the results obtained.
- Documenting in such a way that the documentation is useful for future interactions.

#### 1.3 Describe the problem solving process.

- Define the problem.
- Gather detailed information.
- Identify a probable cause of the failure.
- Devise a plan to resolve the problem.
- Make necessary changes to implement the plan.
- Observe the results of the changes.
- If the problem is not resolved, repeat the process.
- Document the changes made to resolve the problem.

# Cisco Certified Support Technician Exam Objectives

## 2. Hardware Issues

### 2.1 Demonstrate how to follow basic safety procedures.

- Electrical shock, ESD, fire, personal safety

### 2.2 Assist end users in using tools to locate information about their device.

- **Information:** Host name, Hardware (processor, memory, disk space), operating system version, IPv4 address, IPv6 address, MAC address
- **Windows tools:** Task Manager, System Information, Event Viewer, ipconfig
- **MacOS tools:** Activity Monitor, About This Mac, System Settings, Console, ifconfig

### 2.3 Assist end users in locating, identifying, and understanding the characteristics of various ports and cables.

- **Video ports:** HDMI, USB-C, DVI, DisplayPort, VGA
- USB-A, USB-B, USB-C, Micro USB
- Serial ports
- RJ-45, UTP, STP
- Common types of power cables (desktop, laptop, mobile)
- Thunderbolt 3/4 (USB-C)
- Converters

### 2.4 Identify, install, and upgrade various components in a desktop computer.

- Identifying the processor and motherboard
- Identifying, installing, and upgrading RAM, peripherals (graphics cards, wireless cards, Bluetooth cards), and internal storage devices (SATA, SSD, NVMe, M2)
- Interfaces and expansion card compatibility
- Using Device Manager to manage drivers
- E-waste best practices for disposing of components

### 2.5 Investigate commonly encountered hardware issues.

- **Basic troubleshooting:** plug in, connected to power, powered on
- **Application compatibility requirements:** Processor architecture, RAM requirements, GPU requirements, disk space
- Using Device Manager to identify issues with hardware
- Device status indicators
- Awareness of firmware updates (benefits and dangers)

## 3. Connectivity and Resource Access Issues

### 3.1 Assist users with establishing access to network-based resources.

- Basic knowledge of common directory services: Active Directory, Cloud-based access management (Entra ID and AWS IAM)
- Multifactor Authentication (authenticator apps and other methods)
- Mapping a shared drive, including SMB and cloud drive (S3 bucket, OneDrive, GoogleDrive, Dropbox, Box, etc.)

# Cisco Certified Support Technician Exam Objectives

- Using Gpupdate/adgpupdate to force a group policy update
- Resetting passwords
- Checking membership in security and distribution groups to determine whether there is an issue.
- Verifying permissions

## 3.2 Troubleshoot commonly encountered connectivity issues with peripherals.

- **Printers:** Connectivity to printer, assisting a user in using a multifunction device, loading paper, fixing a paper jam, clearing print queue, swapping toner
- Fax
- Headphones
- Microphones
- External drives
- Scanners
- Webcams
- Keyboard, mouse, pointing devices (wired and wireless)
- Tactile/interactive input devices (flat panels)
- Teleconferencing devices (Webex Desk Pro screens)

## 3.3 Examine basic end-device connectivity to the network.

- LAN (wired) access vs. WLAN
- Purpose of DNS
- Purpose of DHCP (recognizing self-assigned IP addresses (APIPA))
- Purpose of DHCPv6 (recognizing a link-local address instead of a global address)
- IP address ranges (is it in the right subnet, public and private)
- Default gateway
- WLAN SSID
- Using the following commands to verify connectivity
  - ◊ Ipconfig/Iffconfig
  - ◊ Traceroute/tracert
  - ◊ Ping
  - ◊ Nslookup
  - ◊ Netstat
  - ◊ Ping6
  - ◊ Traceroute6
  - ◊ Iproute2 (ip add, ss)
- Purpose of a firewall and how it might impact connectivity

## 4. Operating System and Application Issues

### 4.1 Assist users in resolving Windows operating system issues.

- Display settings, multiple displays, brightness
- BitLocker codes
- Windows and application updates
- Clearing the browser cache

- Terminating processes with Task Manager
- Assisting the customer in backing up and restoring personal data with cloud-based tools (OneDrive)
- Boot sequence, booting to safe mode
- Power management
- Accessibility features

#### 4.2 Assist users in resolving MacOS operating system issues.

- Display settings, multiple displays, brightness
- Allowing applications the necessary permissions
- Mounting external drives
- Clearing the browser cache
- AirDrop
- Terminating processes with Activity Monitor
- Assisting the customer in backing up and restoring personal data with cloud-based tools (iCloud and Time Machine)
- Power management
- Accessibility features

#### 4.3 Assist users in resolving mobile device issues.

- Restarting the phone, phone not charging, connectivity, email setup, mobile apps, collaboration software, basic understanding of MDM
- **Device OS:** iOS, Android

#### 4.4 Describe virtualization and cloud terminology.

- Cloud providers (Amazon Web Services (AWS), Microsoft Azure and Google Cloud Platform (GCP))
- Virtual machines and hypervisors
- Recognizing cloud models in order to direct the incident to the right team

#### 4.5 Assist users in resolving common application issues.

- Marketplace or approved application installation
  - ◊ Untrusted/unknown sources
- Email, collaboration, productivity applications

## 5. Common Threats and Preventions

#### 5.1 Describe security threats to the end user, perform basic investigation, and escalate to the appropriate team.

- **Threats:** Phishing, malware, spam, unauthorized access attempts, spoofing
- Helping the user run a malware scan
- Strong passwords and good password practices

#### 5.2 Recognize how to avoid becoming a victim of social engineering attacks.

- Awareness that a help desk technician is a prime target for social engineering attacks
- Phishing, impersonation, etc.

#### 5.3 Recognize how company policies and confidentiality guidelines protect user data.

- Identifying confidential, propriety, and personally identifiable information (PII) data

## 6. Job Tools

### 6.1 Use remote access software to connect to end-user devices and perform remote support tasks.

- Remote Desktop, Remote Assistance, Cisco WebEx, Remote Management, TeamViewer , Virtual Network Computing (VNC)

### 6.2 Use appropriate troubleshooting tools to research an issue and update internal documentation with findings.

- **AI:** Query AI to research an issue, limitations of AI, ethical considerations for AI, privacy and security risks, difference between predictive and generative AI
- Using search engine results
- Technical forums
- Knowledge base articles (industry and internal)