

Study Guide

CompTIA A+ Certification, Domain 2 Networking

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Introduction to CSR Domain - 2 (220-801)

The CompTIA A+ 220-801 Domain 2 Networking has expanded a lot since the last set of certification objective. Domain 2 Networking looks more like a mini course in the CompTIA Network+ certification. Many of the objectives in the A+ certification match the Network+ certification. The Networking portion of 220-801 makes up 27 % or the total exam or approximately 27 question. The network portion requires a more in-depth knowledge about networking than previous versions as you will see when you look at the list of objectives. I have provided some website links to help you prepare your study guide with in addition to our textbook and lab manual. After completing your study guide you can go on to take the latest new practice test for A+ Domain 2 Networking.

To see pictures of various type of fiber optic, Ethernet, BNC, coaxial cable connectors as well as standard network connectors that relate directly to the test objects, check the L-com website.

<http://www.l-com.com/content/Fiber-Optic-Connector-Chart.html>

This link will provide basic networking information critical for the certification test.

[http://technet.microsoft.com/en-us/library/dd379547\(v=ws.10\)](http://technet.microsoft.com/en-us/library/dd379547(v=ws.10))

Here is short article from Microsoft about how to setup a wireless network.

<http://windows.microsoft.com/en-us/windows7/Setting-up-a-wireless-network>

Link below to learn how to setup a security key for Windows 7.

<http://windows.microsoft.com/en-us/windows7/Set-up-a-security-key-for-a-wireless-network>

Here is a general overview of Wireless networking including “Homegroup,” and making a connection to a domain.

<http://windows.microsoft.com/en-US/windows7/products/features/networking>

2.0 Networking

2.1 Identify types of network cables and connectors.

Be able to identify all connectors when presented in picture form.

- Fiber

Connectors: SC, ST and LC

- Twisted Pair

Connectors: RJ-11, RJ-45

Wiring standards: T568A, T568B

Memorize the color sequence matched to pin number of the connector for 568A and 568B.

- Coaxial

Connectors: BNC, F-connector

2.2 Categorize , of connectors and cabling.

Whenever see the term” characteristics” in a list of objectives, think about data rates, range or length of cable, and any special applications such as special locations.

- Fiber

Types (single-mode vs. multi-mode)

Speed and transmission limitations

- Twisted pair

Types: STP, UTP, CAT3, CAT5, CAT5e, CAT6, plenum, PVC

The data rates and frequencies are not the same thing. Be sure you know the difference between the terms. Also when you are doing your research that there may be two different ratings for each cable type. You must look at the application the article is talking about. Is it for electronic communications such as analog signaling system or is

the rate for a network application. They can be quite different. Also some manufacturers data rates and frequencies are higher than the data rate and frequencies as stated in the network standard.

What is a plenum and what does it have to do with PVC?

What is the difference between STP AND utp?

Identify the data rates and frequencies of the following.

CAT3

CAT5

CAT5e

CAT6

Speed and transmission limitations

- Coaxial

Types: RG-6, RG-59

Speed and transmission limitations

RG-6

RG-58

2.3 Explain properties and characteristics of TCP/IP.

Explain the properties and characteristics of TCP/IP is a very ambiguous statement at best. There have been entire textbooks written on TCP/IP. For the CompTIA A+, simply stick to the basics. Memorize you IP address classes. A helpful hint, the IPv4 classes are separated by the first octet of the address. Look for 127 and 192 in the first octet to determine which class an IPv4 address belongs to.

- IP class

Class A

Class B

Class C

- IPv4 vs. IPv6

- Public vs. private vs. APIPA

I guarantee at least one question relating to APIPA on the exam. It is a must know objective.

- Static vs. dynamic

- Client-side DNS

- DHCP

- Subnet mask

- Gateway

2.4 Explain common TCP and UDP ports, protocols, and their purpose.

For the CompTIA A+, port numbers must be memorized. Write out what each acronym represents for both ports and protocol. Writing out the terms for each acronym will also help you understand and remember the use or application of the port or protocol.

- Ports

21 – FTP

23 – TELNET

25 – SMTP

53 – DNS

80 – HTTP

110 – POP3

143 – IMAP

443 – HTTPS

3389 – RDP

- Protocols

For protocols, be able to explain what the protocol is most likely used for.

DHCP

DNS

LDAP

SNMP

SMB

SSH

SFTP

- TCP vs. UDP

2.5 Compare and contrast wireless networking standards and encryption types.

- Standards

802.11 a/b/g/n

Provide the operating frequency, data rates and approximate distances for each wireless standard.

802.11a

802.11b

802.11g

802.11n

Speeds, distances and frequencies

- Encryption types

WEP, WPA, WPA2, TKIP, AES

2.6 Install, configure, and deploy a SOHO wireless/wired router using appropriate settings.

- MAC filtering
- Channels (1 – 11)
- Port forwarding, port triggering
- SSID broadcast (on/off)
- Wireless encryption
- Firewall
- DHCP (on/off)
- DMZ

- NAT
- WPS
- Basic QoS

2.7 Compare and contrast Internet connection types and features.

Provide a data rate range for the following and a brief description of what is required to configure each of the following. Also include any general advantages and disadvantages of an item as it relates to others in the list.

- Cable
- DSL
- Dial-up
- Fiber
- Satellite

- ISDN
- Cellular (mobile hotspot)
- Line of sight wireless internet service
- WiMAX

2.8 Identify various types of networks.

Convert the acronym for each and provide a short description of the area each is associated with.

- LAN
- WAN
- PAN
- MAN

- Topologies

Describe and draw each topology.

Mesh

Ring

Bus

Star

Hybrid

2.9 Compare and contrast network devices their functions and features.

What is the purpose of each device in the list below.

- Hub

- Switch
- Router
- Access point
- Bridge
- Modem
- NAS
- Firewall
- VoIP phones

- Internet appliance

2.10 Given a scenario, use appropriate networking tools.

Where and or when would you use the following tools.

- Crimper
- Multimeter
- Toner probe
- Cable tester
- Loopback plug
- Punch down tool