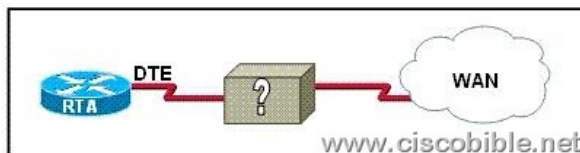


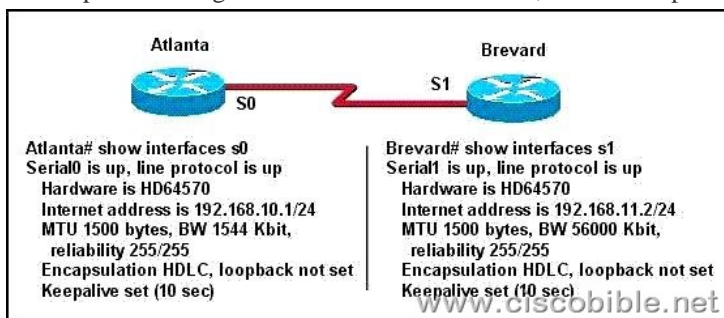
## CCNA 640-802 Bible - Configure and Verify a Basic WAN Serial Connection

1. Refer to the exhibit. The network administrator must complete the connection between the RTA of the XYZ Company and the service provider. To accomplish this task, which two devices could be installed at the customer site to provide a connection through the local loop to the central office of the provider? (Choose two.)

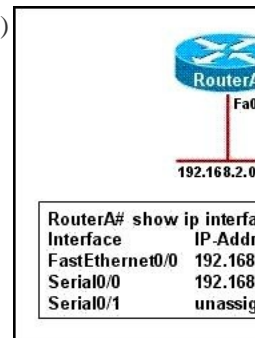


A:WAN switch B:PVC C:ATM switch D:multiplexer E:CSU/DSU F:modem **Correct Answers: E, F** Explanation: DTE is an abbreviation for Data Terminal Equipment, and refers to an end instrument that converts user information into signals for transmission, or reconverts the received signals into user information. A DTE device communicates with the Data Circuit-terminating Equipment (DCE), such as a modem or CSU/DSU. A DTE is the functional unit of a data station that serves as a data source or a data sink and provides for the data communication control function to be performed in accordance with link protocol. The data terminal equipment (DTE) may be a single piece of equipment or an interconnected subsystem of multiple pieces of equipment that perform all the required functions necessary to permit users to communicate. A user interacts with the DTE (e.g. through a Human-Machine Interface), or the DTE may be the user. Usually, the DTE device is the terminal (or a computer emulating a terminal), and the DCE is a modem. A CSU/DSU (Channel Service Unit/Data Service Unit) is a hardware device about the size of an external modem that converts a digital data frame from the communications technology used on a local area network (LAN) into a frame appropriate to a wide-area network (WAN) and vice versa. The DSU provides an interface to the data terminal equipment (DTE) using a standard (EIA/CCITT) interface. It also provides testing capabilities.

2. Which three Layer 2 encapsulation types would be used on a WAN rather than a LAN? (Choose three.) A:HDLC B:Ethernet C:Token Ring D:PPP E:FDDI F:Frame Relay **Correct Answers: A, D, F** Explanation: HDLC, Frame Relay, and PPP are the most common encapsulation types set for serial interfaces in a Cisco router. HDLC is often used in point to point circuits with Cisco routers on each end. HDLC is Cisco proprietary and offers an alternative to PPP. 3. Two routers named Atlanta and Brevard are connected by their serial interfaces as shown in the exhibit, but there is no data connectivity between them. The Atlanta router is known to have a correct configuration. Given the partial configurations shown in the exhibit, what is the problem on the Brevard router that is causing the lack of connectivity?

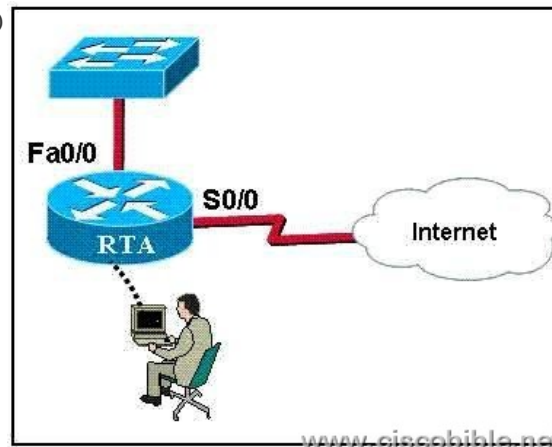


A: A loopback is not set. B: The IP address is incorrect. C: The subnet mask is incorrect. D: The serial line encapsulations are incompatible. E: The maximum transmission unit (MTU) size is too large. F: The bandwidth setting is incompatible with the connected interface. **Correct Answers: B** 4. Refer to the exhibit. Hosts in network 192.168.2.0 are unable to reach hosts in network 192.168.3.0. Based on the output from RouterA, what are two possible reasons for the failure? (Choose two.)



A: The cable that is connected to S0/0 on RouterA is faulty. B: Interface S0/0 on RouterB is administratively down. C: Interface S0/0 on RouterA is configured with an incorrect subnet mask. D: The IP address that is configured on S0/0 of RouterB is not in the correct subnet. E: Interface S0/0 on RouterA is not receiving a clock signal from the CSU/DSU. F: The encapsulation that is configured on S0/0 of RouterB does not match the encapsulation that is configured on S0/0 of RouterA. **Correct Answers: E, F**

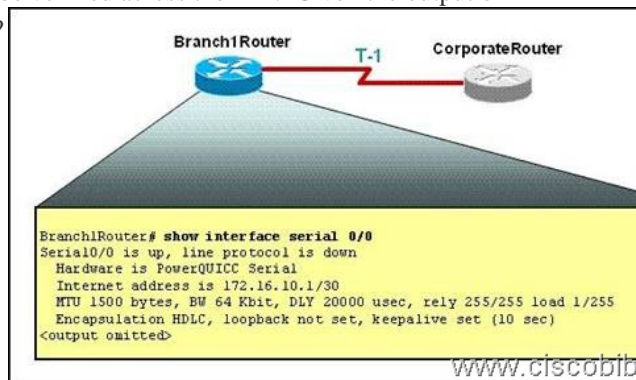
5. Refer to the exhibit. The network administrator is configuring RTA to connect to a non-Cisco network. Which two commands would be applied to the S0/0 WAN interface, but not to the Fa0/0 LAN interface? (Choose two.)



A: speed B: no shutdown C: ip address D: authentication pap E: encapsulation ppp **Correct Answers: D, E**

Explanation: Since we are connecting to a non-Cisco device, we must use PPP on the serial interface. PAP authentication is an optional parameter that can also be used on this interface.

6. Refer to the exhibit. The corporate office and branch location have been attached through two non-Cisco routers over a highly reliable WAN connection for over a year. A new Cisco router has been installed to replace the hardware at the branch location. Since the installation, IP communication cannot be verified across the link. Given the output on Branch1Router, what would be a logical first step to take to resolve this problem?



A: Change the encapsulation on CorporateRouter to HDLC. B: Verify successful DCE communication between the two sites. C: Change the encapsulation on Branch1Router to match CorporateRouter. D: Verify Layer 1 communication on the Branch1Router Serial 0/0 interface. E: Change the bandwidth setting on Branch1Router to match the actual line speed. F: Ensure an exact match between the bandwidth setting on CorporateRouter and Branch1Router. **Correct Answer: C**

Encapsulation: The High Level Data Link Control protocol (HDLC) is the default encapsulation used on the synchronous serial interfaces of a Cisco router. Because of the proprietary nature of vendor HDLC implementations, you should only use HDLC framing on point-to-point links when the router at each end of a link is from the same vendor. In cases where you want to connect equipment from different vendors over a leased line, the Point-to-Point Protocol (PPP) should be used. Always remember that the router on both sides of a point-to-point link must be using the same data framing method in order to communicate.

7. Refer to the exhibit. What is the reason that the interface status is "administratively down, line protocol down"?

```
Router# show interface s0/0/0
Serial 0/0/0 is administratively down, line protocol is down
www.ciscobible.net
```

A: There is no encapsulation type configured. B: There is a mismatch in encapsulation types. C: The interface is not receiving any keepalives. D: The interface has been configured with the shutdown command. E: The interface needs to be configured as a DTE

device. F: The wrong type of cable is connected to the interface. **Correct Answers: D** Explanation: To be an effective troubleshooter, you have to know how things look when all is well, not just when something is broken! When an interface is functioning correctly, this is what we see at the top of the show interface output. I'll use Serial0 for all examples in this section. Example1: Normal operational status: Router1#show int serial0 Serial0 is up, line protocol is up Example2: Interface is administratively down: P4S#show int serial0 **Serial0 is administratively down, line protocol is down** Administratively down means the interface is indeed shut down using the "shutdown" interface command. Open the interface with no shutdown. P4S(config)#int serial0 Router1(config-if)#no shutdown Always wait a minute or so to come up after enabling a serial interface. P4S#show interface serial0 Serial0 is up, line protocol is up