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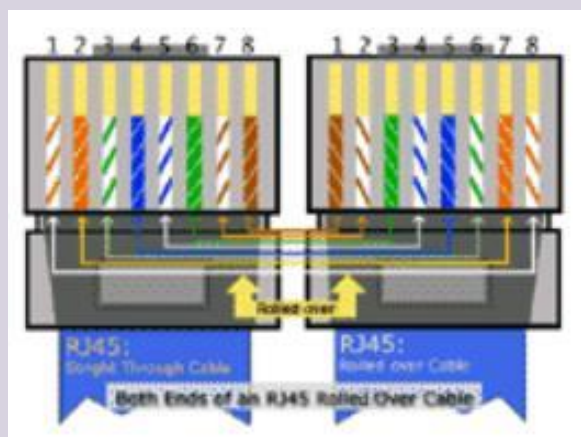
CCNA: ROUTER INTERFACES, CABLES & CONNECTORS

Console Interface and Roll-Over Cable

Console interfaces are primarily used to configure routers. Console Interfaces uses a Roll-Over Cable (special null-modem cable configuration), (usually) with an RJ-45 on one side and a RS-232 (DB-9) interface on other side. The cable configuration is also very simple; each pin connects to the other side in reverse order, that is, pin-1 connected to pin-8 and so forth. The following depicts a roll-over cable configuration:

Basic Configuration:

1. configure terminal
2. line console 0
3. password <password>
4. login



AUX Port

The AUX port is usually used for Dial-In services on the router. A Null-Modem cable is used to connect the AUX port with modem. Before the modem is configured, TTY line must be initialized to:

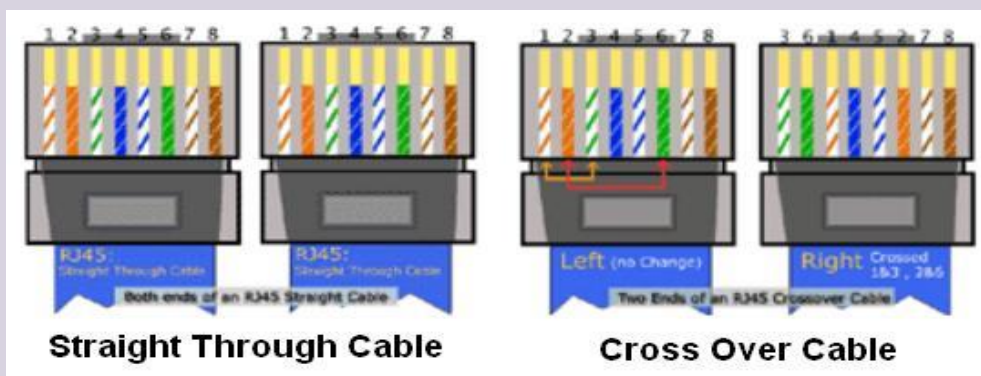
1. allows reverse telnet to the router
2. line speed must be configured for the router to communicate with the modem

Basic Configuration:

1. configure terminal
2. line 1 ← AUX port is (usually) line 1
3. speed <value> ← ranges from 9600 to 115200 in bits per seconds
4. stopbit <value> usually 1, improves throughput by reducing async framing overhead
5. flowcontrol hardware ← enable the hardware based flow control
6. transport input <all | telnet>

Ethernet Interface

Also called the LAN interface. Types: Straight or Cross Over Cable. Straight Cable is used for communication between different devices (e.g., switch and workstation). Cross Over cable is used to connect similar devices (e.g., routers and workstation or two workstations). The following depicts the straight and cross over cables:



Basic Configuration:

1. configure terminal
2. interface <Ethernet/FastEthernet/GigabitEthernet><interface-id>
3. media type <type> ← this command is only available on interface with dual media type capability
4. speed <10 | 100 | 1000 | auto>
5. duplex <full | half | auto>
6. ip address <ip-address + netmask>

Serial Interface

Also called the WAN interfaces. They provide versatile speed ranges from T1 to OC-786. The OC series interfaces are only supported in higher platforms like 7600 series. The low end model (2600/3700/3800/2900/3900 series) usually support interfaces speed up to T3/E3.

Basic Configuration:

1. configure terminal
2. interface serial <id>
3. encapsulation <hdlc | ppp | frame-relay> ← default is HDLC
4. clock rate <value> ← required on DCE end only
5. ip address <ip-address + metmask>

Virtual Terminal Lines (VTY)

Usually used for remote management of routers or switches.

Basic Configuration:

1. configure terminal
2. line vty <number or range> ← the range depends on the hardware platform
3. transport input <telnet | ssh | all | none>
4. password <password>
5. login