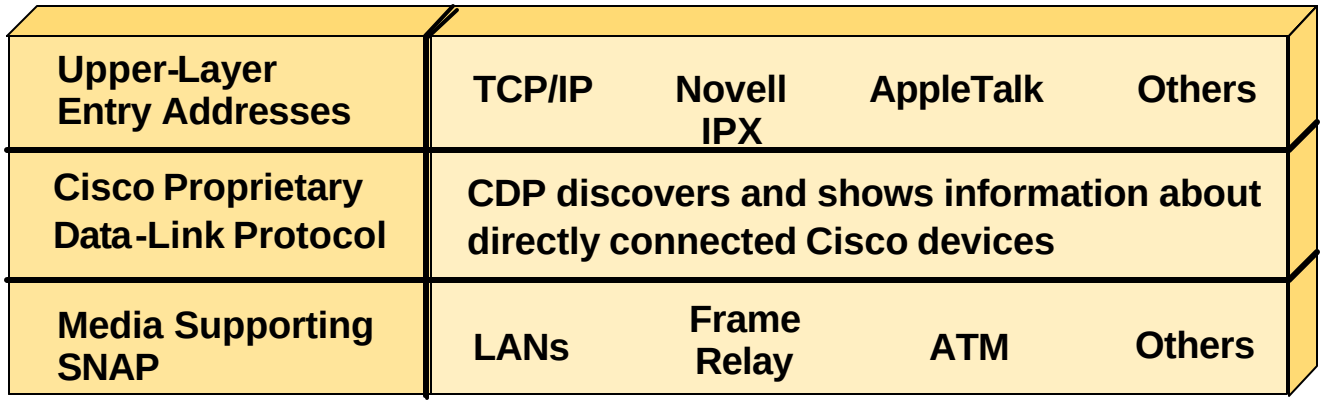
Managing Your Network Environment

Objectives

Upon completion of this chapter, you will be able to perform the following tasks:

- **Gather information about neighbor devices**
- **Gather information about remote devices**
- **Create a simple network diagram to document the network**
- **Determine the location from which a configuration and IOS image will be loaded**

Cisco Discovery Protocol



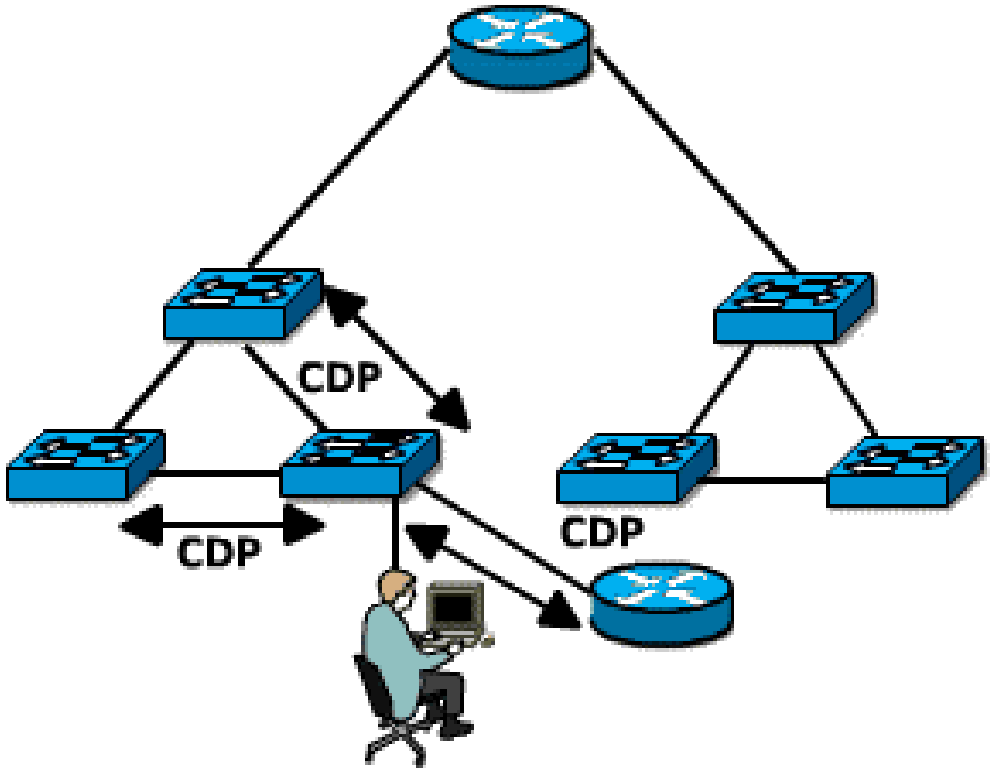
- A proprietary utility that gives you a summary of directly connected switches, routers, and other Cisco devices
- CDP discovers neighbor devices regardless of which protocol suite they are running
- Physical media must support the Subnetwork Access Protocol (SNAP) encapsulation

Discovering Neighbors with CDP

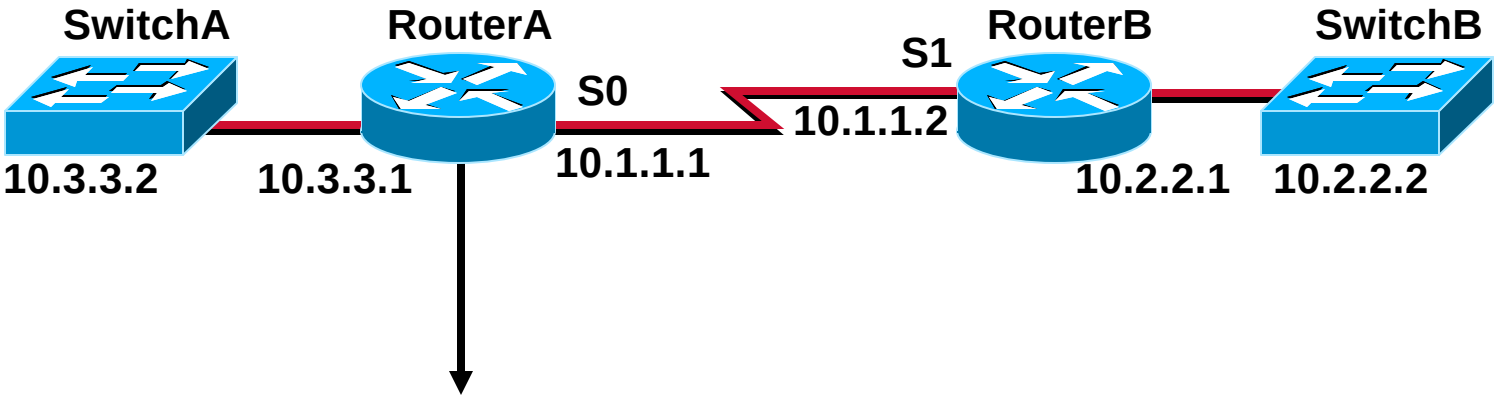
Runs on routers with Cisco IOS 10.3 or later and Cisco switches and hubs

Summary information includes:

- **Device identifiers**
- **Address list**
- **Port identifier**
- **Capabilities list**
- **Platform**

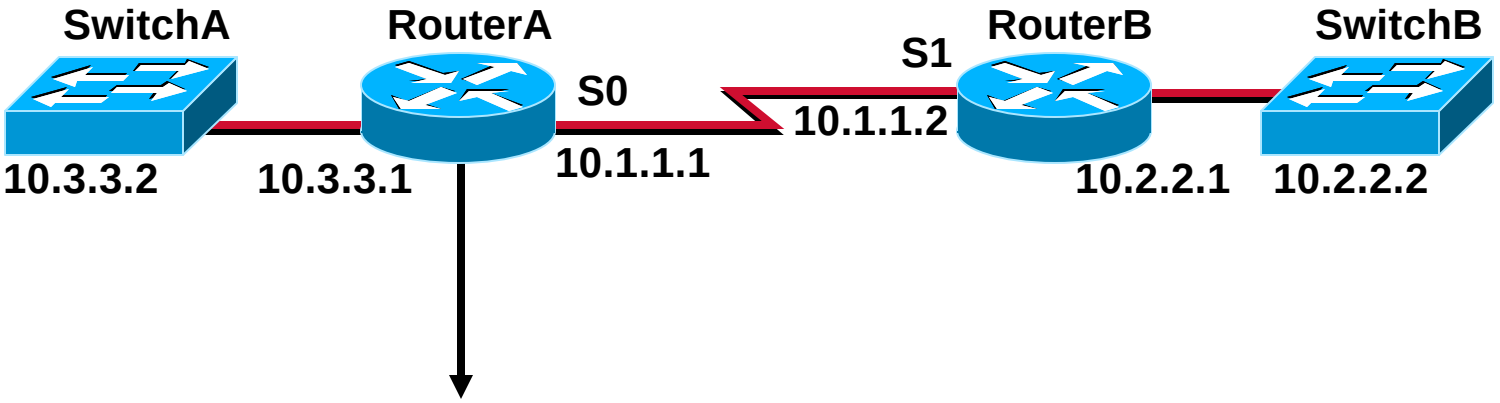


Using CDP




```
RouterA#sh cdp ?
  entry     Information for specific neighbor entry
  interface  CDP interface status and configuration
  neighbors  CDP neighbor entries
  traffic    CDP statistics
  <cr>
RouterA(config)#no cdp run
RouterA(config)#interface serial0
RouterA(config-if)#no cdp enable
```

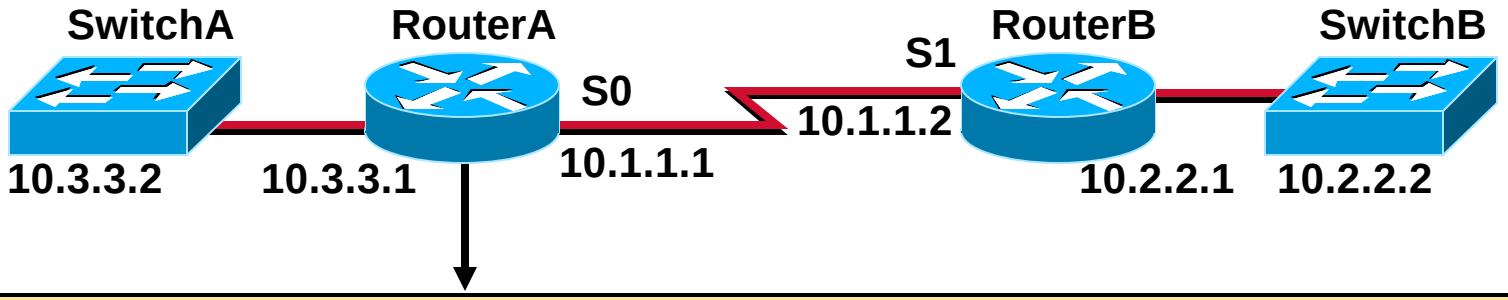
Using the *show cdp neighbor* Command




```
RouterA#sh cdp neighbors
Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater

Device ID        Local Intrfce     Holdtme    Capability  Platform  Port ID
RouterB          Ser 0             148           R          2522    Ser 1
SwitchA0050BD855780 Eth 0          167           T S        1900      2
```

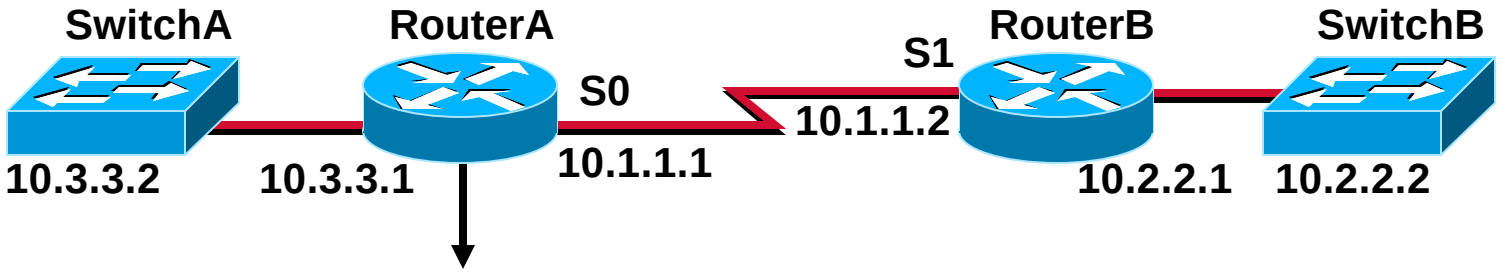
SwitchA also provides its Mac address

Using the *show cdp entry* Command



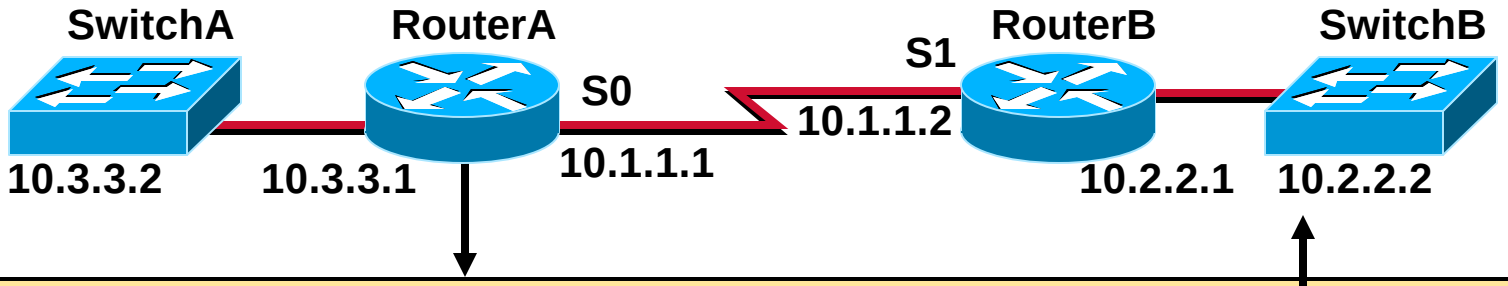

```
RouterA#sh cdp entry *
-----------------------
Device ID: RouterB
Entry address(es):
  IP address: 10.1.1.2
Platform: cisco 2522,  Capabilities: Router
Interface: Serial0,  Port ID (outgoing port): Serial1
Holdtime : 168 sec

Version :
Cisco Internetwork Operating System Software
IOS (tm) 2500 Software (C2500-JS-L), Version 12.0(3), RELEASE SOFTWARE (fci)
Copyright (c) 1986-1999 by cisco Systems, Inc.
Compiled Mon 08-Feb-99 18:18 by phanguye
```

Additional CDP Commands




```
RouterA#sh cdp traffic
CDP counters :
        Packets output: 56, Input: 38
        Hdr syntax: 0, Chksum error: 0, Encaps failed: 3
        No memory: 0, Invalid packet: 0, Fragmented: 0


RouterA#sh cdp interface
BRI0 is administratively down, line protocol is down
  Encapsulation HDLC
  Sending CDP packets every 60 seconds
  Holdtime is 180 seconds
```

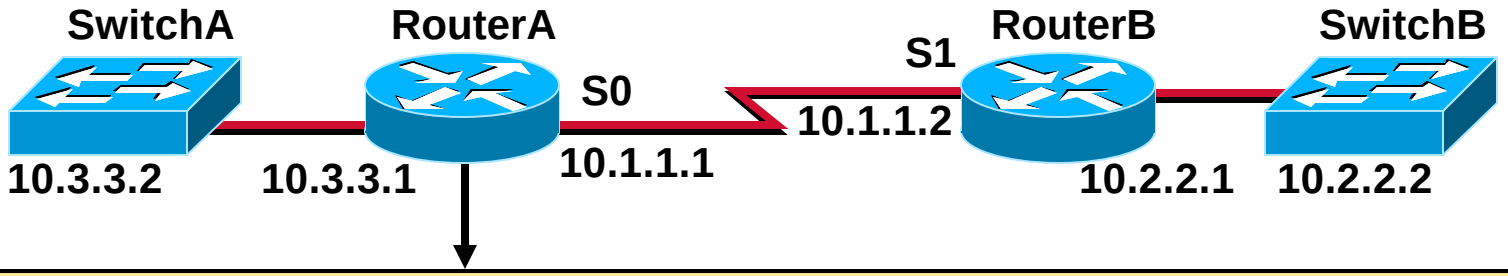
Using Telnet to Connect to Remote Devices




```
RouterA#telnet 10.2.2.2
Trying 10.2.2.2 ... Open
-----------------------------------------------
Catalyst 1900 Management Console
Copyright (c) Cisco Systems, Inc.  1993-1998
All rights reserved.
Enterprise Edition Software
Ethernet Address:      00-90-86-73-33-40
PCA Number:            73-2239-06
PCA Serial Number:     FAA02359H8K
Model Number:          WS-C1924-EN
System Serial Number:  FAA0237X0FQ
.
.
SwitchB>
```

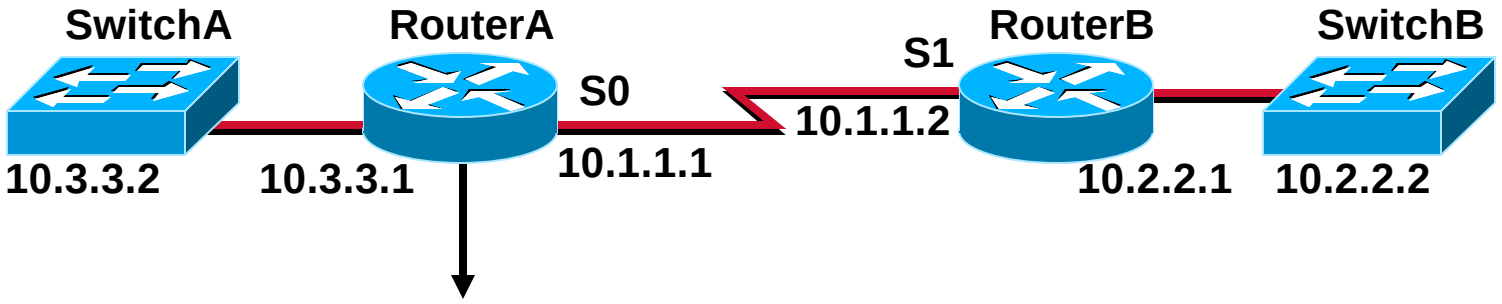
Remote device

Viewing Telnet Connections



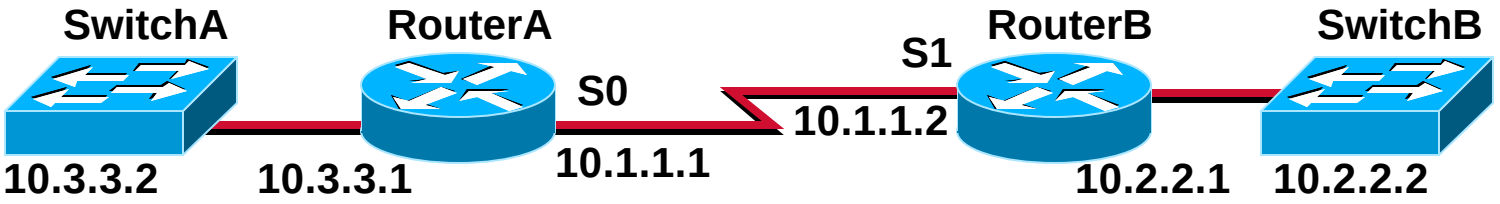

```
RouterA#sh session
Conn Host            Address          Byte  Idle Conn Name
   1 10.1.1.2        10.1.1.2            0     1 10.1.1.2
*  2 10.3.3.2        10.3.3.2            0     0 10.3.3.2


RouterA#sh user
    Line     User      Host(s)              Idle Location
*   0 con 0           10.1.1.2             3
                      10.3.3.2             2
   11 vty 0           idle                 1 10.1.1.2
```

Suspending a Telnet Session




```
RouterB#<Ctrl-Shift-6>x
RouterA#sh session
Conn Host            Address          Byte  Idle Conn Name
   1 10.1.1.2        10.1.1.2            0     1 10.1.1.2
RouterA#resume 1
RouterB#
```

Closing a Telnet Session



RouterA#disconnect
Closing connection to 10.3.3.2 [confirm]

Closing the current session opened by you

RouterA#clear line 11
[confirm]
[OK]

Closing a session opened by a remote device

Using the *ping* and *trace* Commands

```
Router##ping 10.1.1.10

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.1.10, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/4/4 ms

Router#trace 10.1.1.10

Type escape sequence to abort.
Tracing the route to 10.1.1.10

  1 10.1.1.10 4 msec 4 msec 4 msec
Router#
```

Test connectivity and path to a remote device