**Lab 13: Discover Neighbors using CDP and LLDP**

**🧠 Real-World Scenario:**

You're a network engineer verifying connections between **routers and switches** in a new data center rack. You use **CDP** (Cisco Discovery Protocol) and **LLDP** (Link Layer Discovery Protocol) to find what devices are connected to which interfaces.

**🧪 Lab Topology:**

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[Router R1] ←→ [Switch SW1] ←→ [Switch SW2]

* Devices: 1 Router (R1), 2 Switches (SW1, SW2)
* Interfaces:
  + R1 G0/0 ↔ SW1 Fa0/1
  + SW1 Fa0/2 ↔ SW2 Fa0/1

**⚙️ Step-by-Step Configuration:**

**✅ 1. Enable CDP (Cisco-only)**

CDP is enabled by default, but verify and enable if needed:

On all devices:

bash

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enable

configure terminal

cdp run

To enable CDP on specific interfaces:

bash

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interface fa0/1

cdp enable

**✅ 2. Verify CDP Neighbors**

Run this on R1 or switches:

bash

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show cdp neighbors

show cdp neighbors detail

**✅ 3. Enable LLDP (vendor-neutral)**

LLDP is disabled by default on Cisco devices.

On all devices:

bash

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configure terminal

lldp run

To enable LLDP on interfaces:

bash

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interface fa0/1

lldp transmit

lldp receive

**✅ 4. Verify LLDP Neighbors**

bash

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show lldp neighbors

show lldp neighbors detail

**🔍 Expected Output:**

* On R1:
  + Sees SW1 connected on G0/0 via CDP and/or LLDP
* On SW1:
  + Sees R1 on Fa0/1 and SW2 on Fa0/2
* On SW2:
  + Sees SW1 on Fa0/1

**🛠️ Troubleshooting Tips:**

* Make sure interfaces are **up** (no shutdown)
* CDP works only between **Cisco devices**
* LLDP works between **multi-vendor devices**

**Output:**

Switch#sh cdp nei

Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge

S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone

Device ID Local Intrfce Holdtme Capability Platform Port ID

Switch Fas 0/1 127 S 2960 Fas 0/2

Switch>sh cdp nei

Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge

S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone

Device ID Local Intrfce Holdtme Capability Platform Port ID

Switch Fas 0/2 151 S 2960 Fas 0/1

Router Fas 0/1 122 R C2900 Gig 0/0

Switch>

Router#sh lldp nei

% LLDP is not enabled

Router#sh cdp nei

Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge

S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone

Device ID Local Intrfce Holdtme Capability Platform Port ID

Switch Gig 0/0 136 S 2960 Fas 0/1