

Troubleshooting Fundamentals – Phase 1.1

Objective

Host A is unable to reach Host B. Investigate and resolve the issue, if possible.

Topology

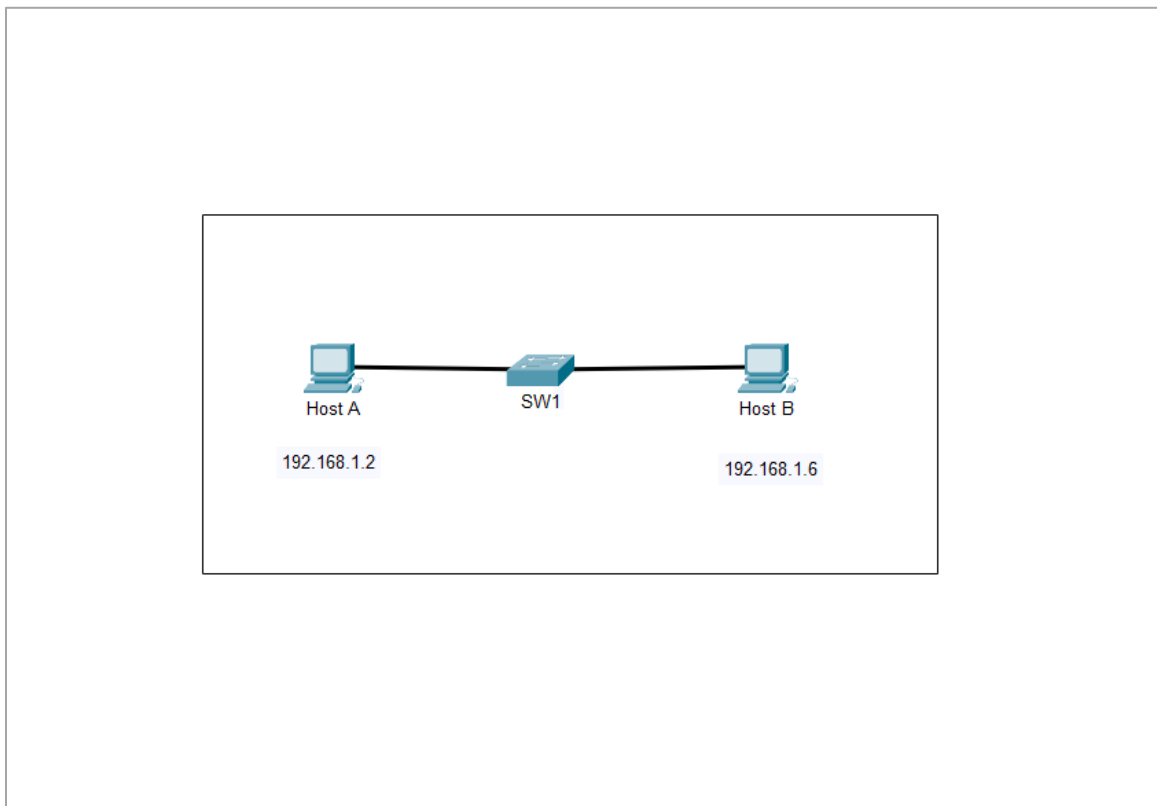


Figure 1 Topology

Step 1 – Verify the Problem

From **Host A**, ping **Host B**.

Result: Ping fails.

```
C:\>ping 192.168.1.3

Pinging 192.168.1.3 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.1.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

Figure 2 – Unsuccessful Ping from Host A to Host B

The issue is confirmed.

Step 2 – Decide Where to Start

A useful way to approach troubleshooting is to ask: *what must be true for communication to work?* Each requirement becomes something that can be verified. When first learning to troubleshoot, the most logical starting point is the lowest layer—Layer 1. As learners gain experience, they begin to develop a “feel” for network issues and can better determine the most efficient starting point based on the situation.

Ask:

- Are devices powered on?
- Are cables connected properly?
- Are interfaces administratively up?
- Do link lights exist?

The PCs are powered on and the correct cable, straight through, is used to connect to the switch. Next, check the switch.

Step 3 – Switch Verification

While a switch is a layer 2 device, it is a physical component like PCs. The same questions from Step 2 apply.

On the switch:

```
show interface status
```

Observation:

- Fa0/2 is **disabled**.

```
SW1#sh int status
Port      Name      Status      Vlan      Duplex  Speed Type
Fa0/1     Host_A    connected   1         a-full  a-100  10/100BaseTX
Fa0/2     Host_B    disabled 1         auto    auto   10/100BaseTX
Fa0/3     notconnect 1         auto    auto   10/100BaseTX
Fa0/4     notconnect 1         auto    auto   10/100BaseTX
```

Figure 3 – SW1 Show Interface Status Output

This condition prevents Host B from communicating with the network. When checking switchport status, the desired state is **connected**. A status of **disabled** or disabled (**err-disabled**) indicate the port has been shut down, either administratively or by a protocol such as port security. A port may also show **notconnect** even when a device is plugged in if there is a Layer 1 issue, such as a powered-off device or a faulty cable.

Step 4 – Correct and Validate

On the switch:

```
interface fa0/2
no shutdown
```

```
SW1#sh int status
Port      Name      Status      Vlan      Duplex  Speed Type
Fa0/1     Host_A    connected   1         a-full  a-100  10/100BaseTX
Fa0/2     Host_B    connected   1         a-full  a-100  10/100BaseTX
Fa0/3     notconnect 1         auto    auto   10/100BaseTX
```

Figure 4 – SW1 Show Interface Status Output

Re-test ping.

Result: Success.