

Step 1 – SL1 Server Installation

Machine Information

Item	Value
Machine Name	SL1
Operating System	Linux (Debian 13)
Machine Type	Linux Server
Purpose	File server / Linux server used in the network

Objective

Install Debian 13 and configure the Linux server so it can communicate with the Windows servers and client computers on the network.

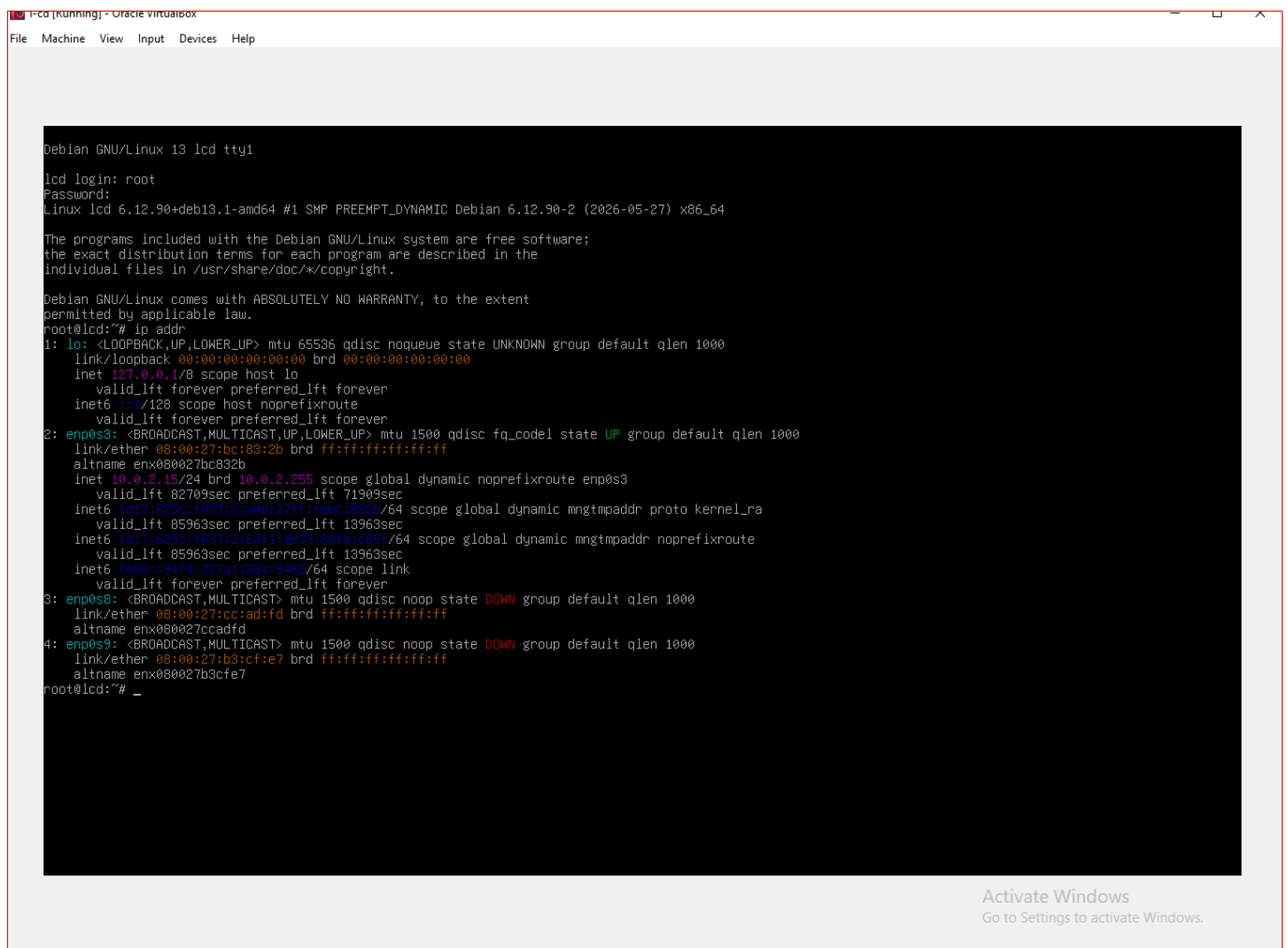
What We Did

- Installed Debian 13.
- Used **Guided – Use Entire Disk** partitioning.
- Finished partitioning and wrote the changes to disk.
- Installed the operating system.
- Logged in as **root**.
- Configured the network interface.
- Assigned a **static IP address**.
- Restarted the networking service.
- Tested connectivity with other machines.

Network Settings

Example:

Hostname:



Activate Windows
Go to Settings to activate Windows.

SL1

Interface:

enp0s3

IP Address:

172.16.1.10

Subnet Mask:

255.255.255.0

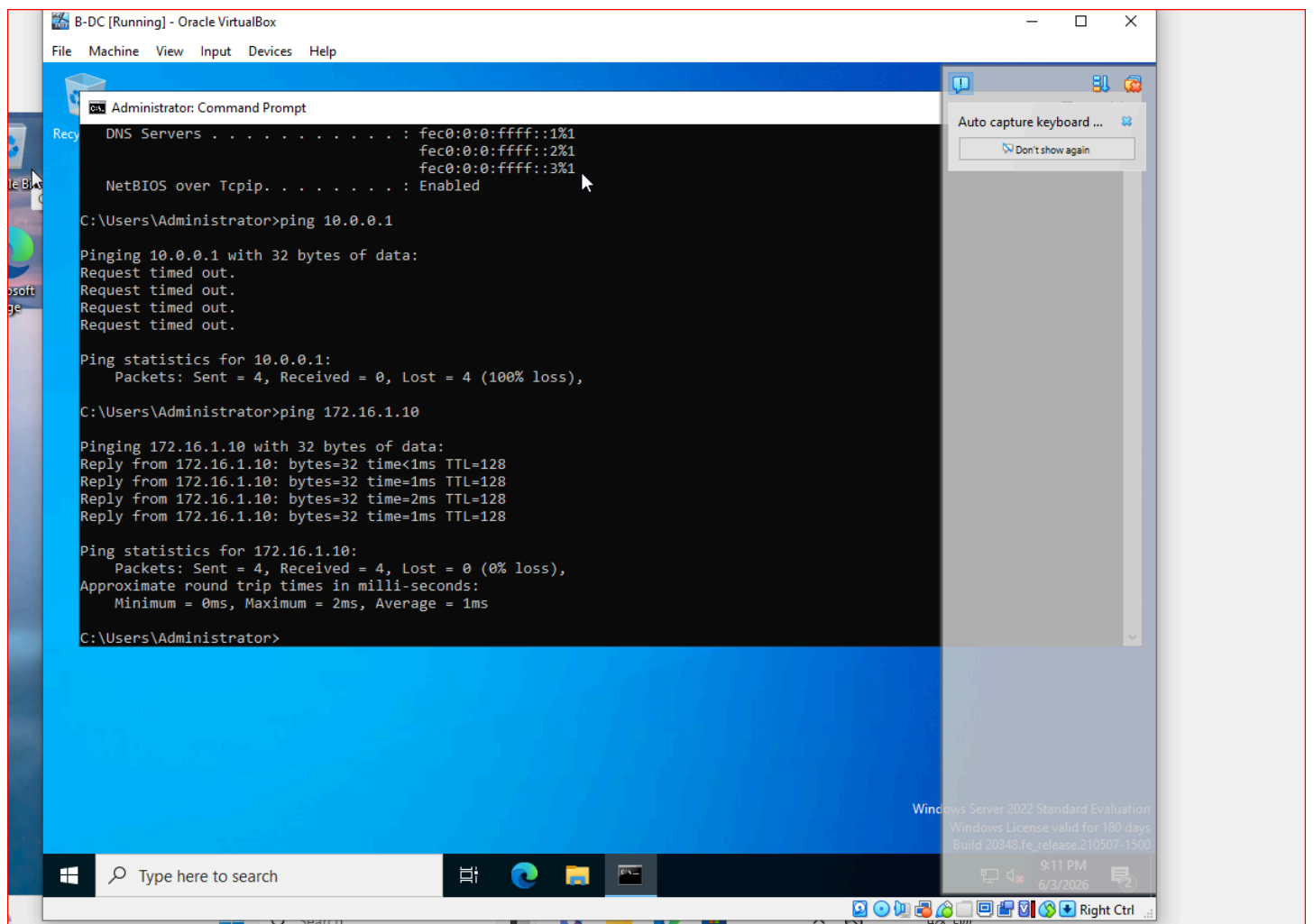
Gateway:

172.16.1.1

DNS Server:

172.16.1.1

Configuration File



File edited:

```
nano /etc/network/interfaces
```

Configuration:

```
auto enp0s3
```

```
iface enp0s3 inet static
```

```
    address 172.16.1.10
```

```
    netmask 255.255.255.0
```

```
    gateway 172.16.1.1
```

Save:

```
Ctrl + O
```

```
Enter
```

```
Ctrl + X
```

Restart networking

```
systemctl restart networking
```

Verify IP

```
ip addr
```

Why We Used a Static IP

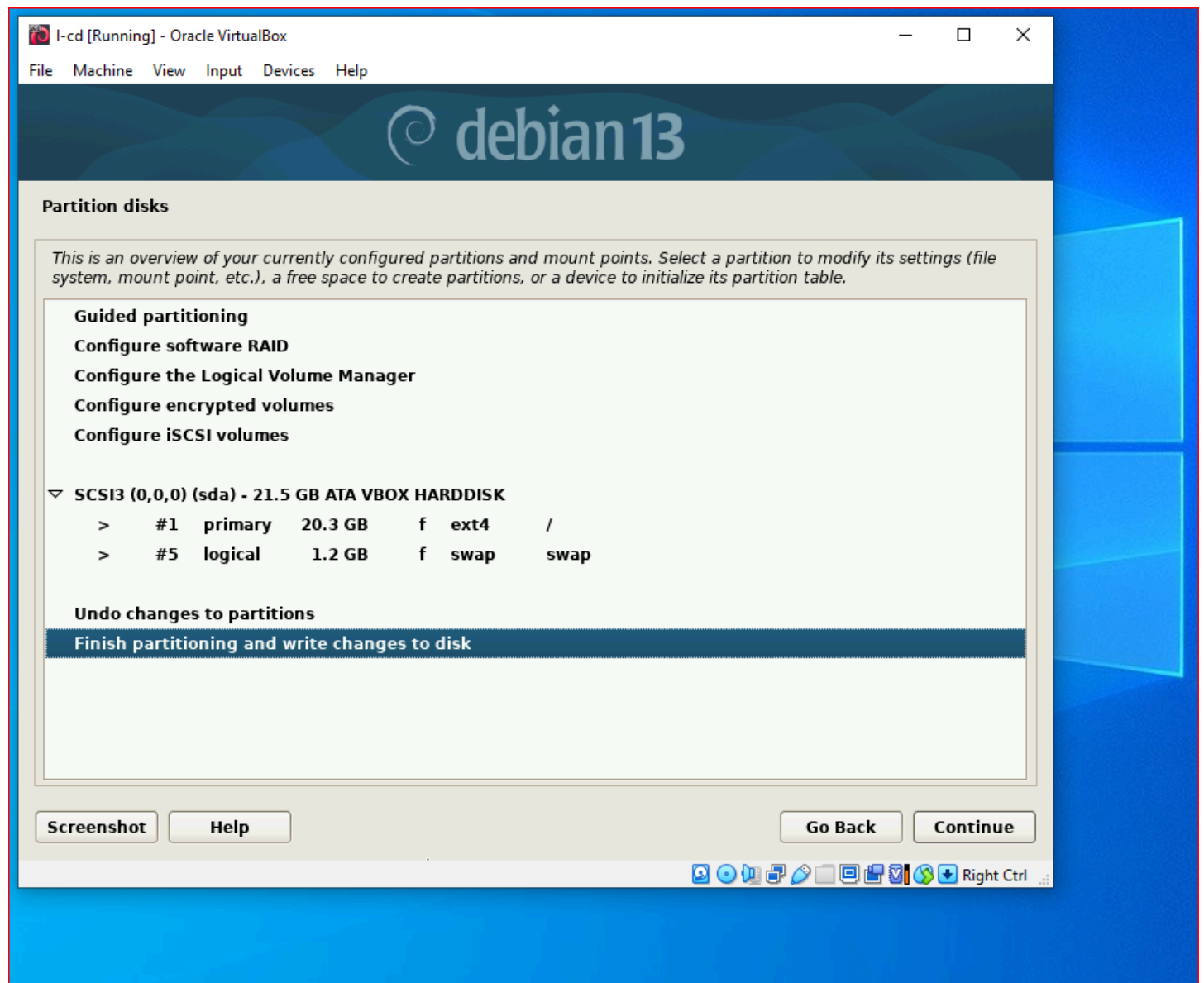
A server should always keep the same IP address.

This allows:

- Windows Server to always find SL1.
- Clients to connect without the IP changing.
- DNS records to remain correct.
- Reliable communication across the network.

Result

After restarting networking:



172.16.1.10

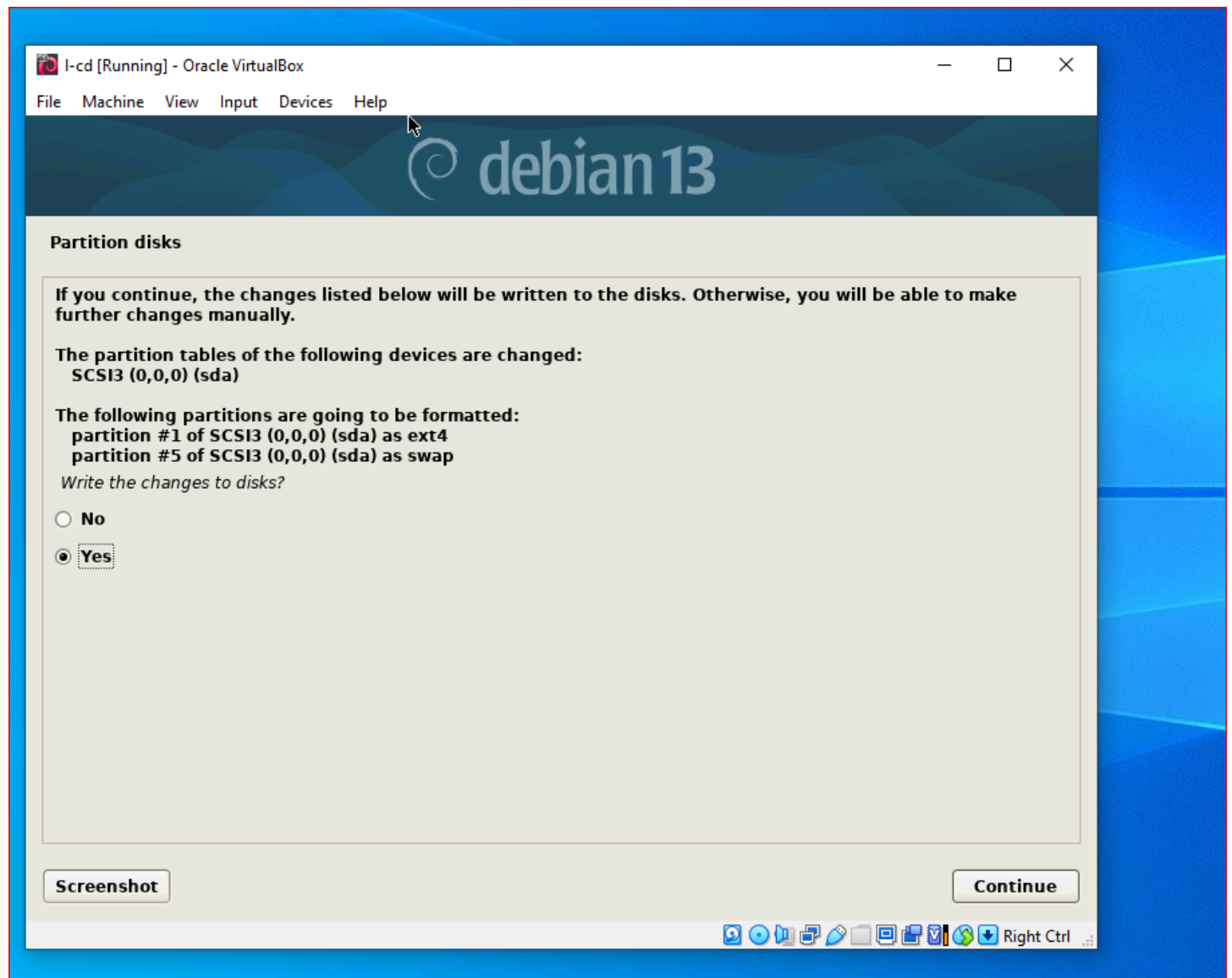
was assigned successfully.

The interface status became

UP

Connectivity Test

Command



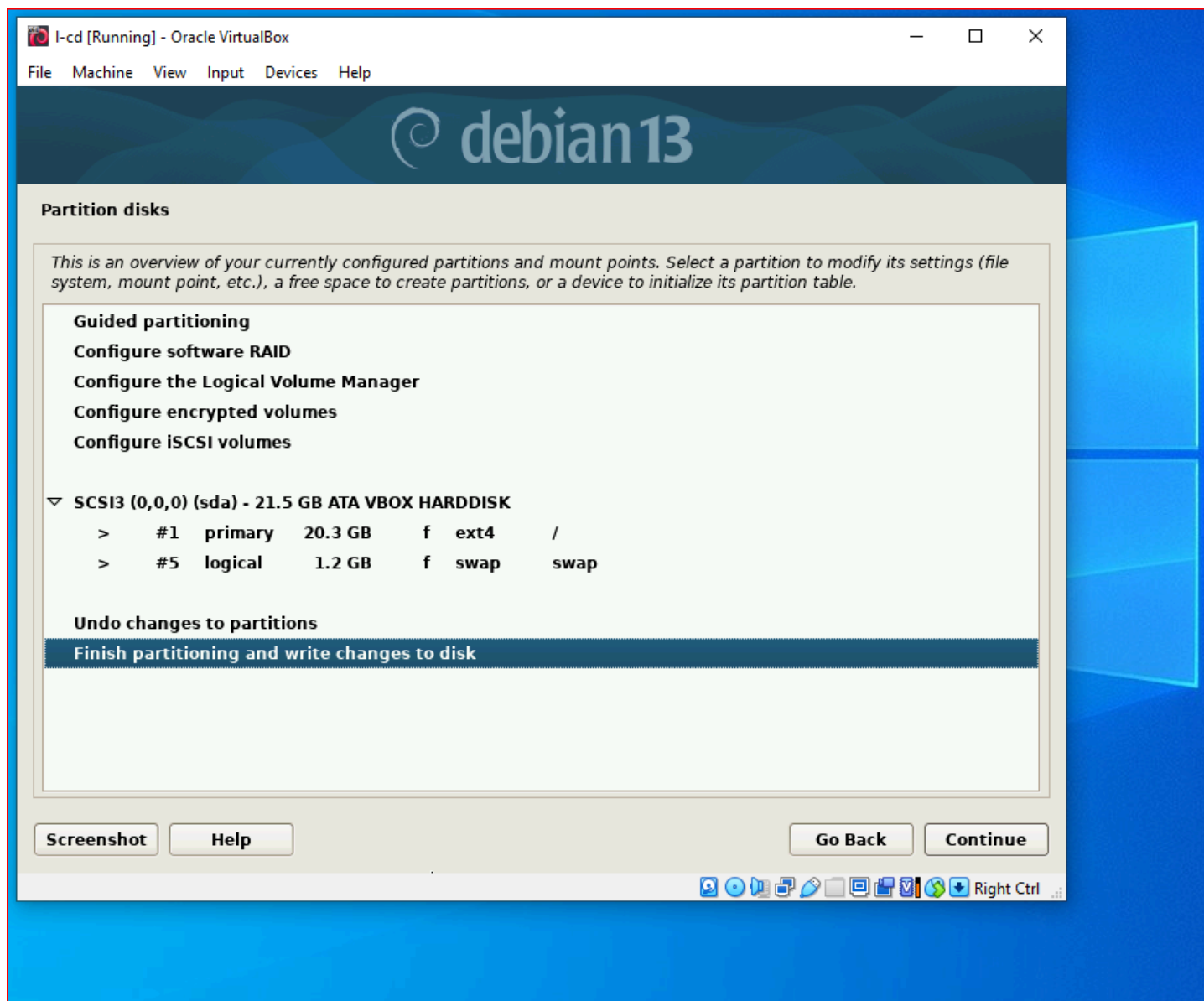
```
ping 172.16.1.1
```

Result

```
Reply received
```

```
0% packet loss
```

Command



```
ping SR1
```

or

```
ping 172.16.1.x
```

Result

```
Reply received
```

Why Communication Works

All devices use:

- Same subnet (172.16.1.0/24)
- Correct subnet mask
- Correct gateway
- Correct DNS server
- Network adapter connected to the same VirtualBox Internal Network

Because these settings match, Linux and Windows can communicate successfully.

Exam Answer

SL1 was installed with Debian 13 and configured with a static IPv4 address (172.16.1.10/24), gateway 172.16.1.1, and DNS server 172.16.1.1. The network service was restarted and connectivity was verified using the `ping` command. Communication between SL1, the Windows servers, and the client computers was successful with 0% packet loss.

This is the level of detail I recommend for **every machine** in your lab:

1. **SR1 (Microsoft Windows Server 2022)** – installation, IP configuration, roles, connectivity tests.
2. **B-DC (Microsoft Windows Server 2022 Domain Controller)** – Active Directory, DNS, static IP, domain setup.
3. **SL1 (Linux Debian 13)** – installation, static IP, networking, connectivity.
4. **Client 1 (Linux Debian 13)** – installation, desktop login, static IP, testing.
5. **Client 2 (Windows 11)** – IP configuration, domain/workgroup, connectivity testing.

This will read like a complete university networking practical manual and is ideal for revision before your exam.