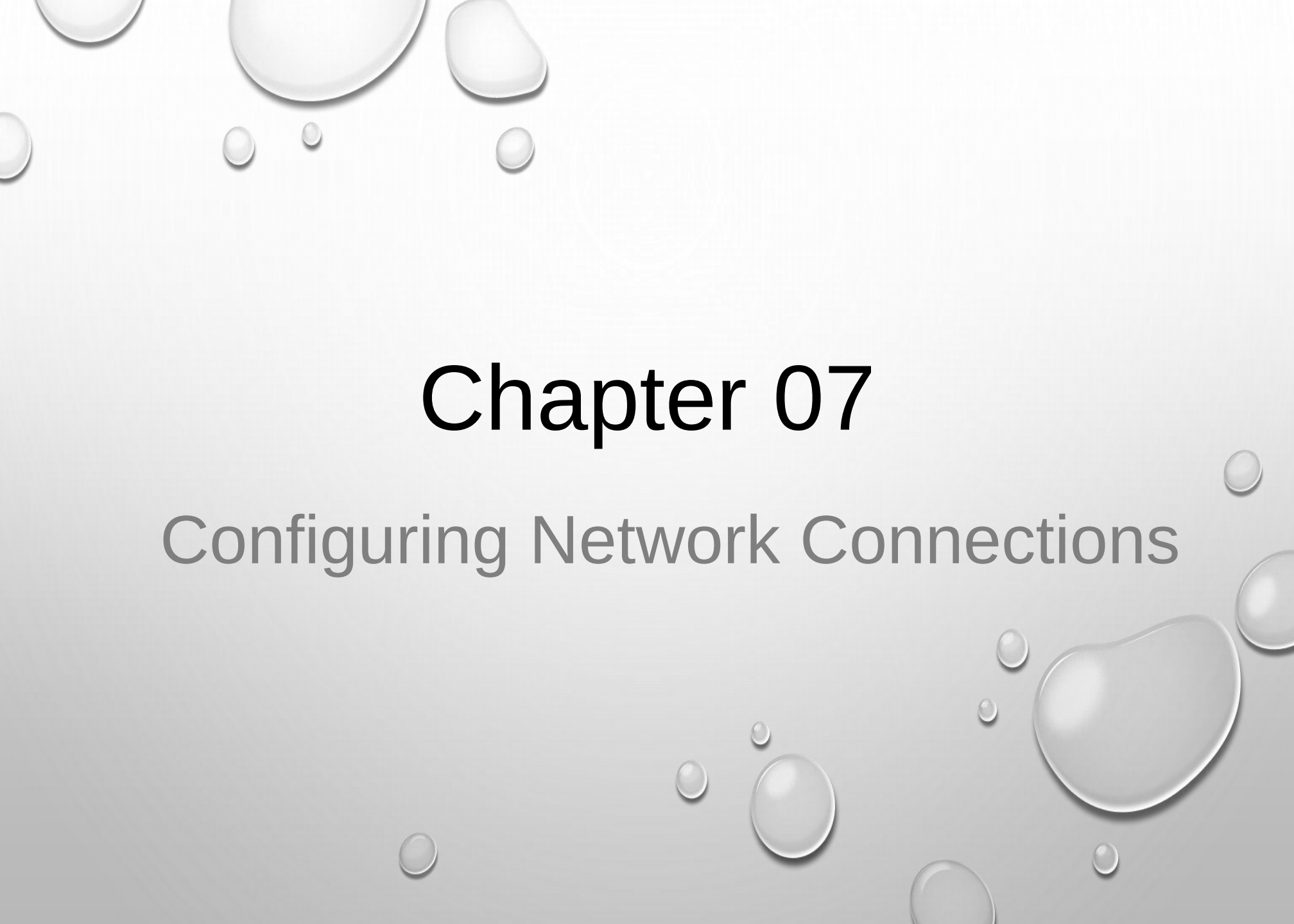


The background of the slide features a light gray gradient. In the top-left corner, there are several realistic water droplets of varying sizes. A faint, circular logo is centered in the upper half of the slide. The main title 'Chapter 07' is displayed in a large, bold, black sans-serif font. Below it, the subtitle 'Configuring Network Connections' is written in a smaller, gray sans-serif font. In the bottom-right corner, there are more water droplets, including a large, prominent one.

Chapter 07

Configuring Network Connections

Configuring Network Features

There are three different ways to configure Network in Linux systems:

1. Manually editing network configuration files

`/etc/netplan ; sudo nano xxxx.yaml →`

`sudo netplan apply`

`/etc/network`

`/etc/hostname`

`/etc/resolv.conf`

network:

version: 2

renderer: NetworkManager

ethernets:

enp0s3:

dhcp4: no

addresses:

- 10.0.2.22/24

routes:

- to: default

via: 10.0.2.2

nameservers:

addresses: [8.8.8.8]

Configuring Network Features | Cont.

2. Using a graphical tool included with your Linux distribution

Network Manager tool

3. Using command-line tools

nmtui: a simple text-based menu tool

nmcli: a text-only command-line tool

```
nmcli con add type ethernet con-name eth1 ifname enp0s3 ip4 10.0.2.10/24  
gw4 192.168.1.254
```

4 main command-line Legacy tools | net-tools package

- **ethtool** displays Ethernet settings for a network interface
`ethtool enp0s3`
- **ifconfig** displays or sets the IP address and netmask values
`sudo ifconfig enp0s3 down 10.0.2.10 netmask 255.255.255.0`
- **iwconfig** sets the SSID and encryption key for a wireless interface
`sudo iwlist wlp6s0 scan`
`iwconfig wlp6s0 essid "MyNetwork" key s:mypassword`
- **route** sets the default router address
`route add default gw 192.168.1.254`

3 DHCP Client for Linux Systems

- dhcpcd :the most popular
- dhclient
- pump

Basic Network Troubleshooting

- ping 8.8.8.8
- traceroute / tracepath 8.8.8.8
- mtr 8.8.8.8
- host www.linux.org
- dig www.linux.org
- nslookup
- whois tool

Monitoring the Network

- tcpdump
- wireshark
- tshark

More References

- iproute2 package is a newer open source project that contains a set of command-line utilities

TABLE 7.2 The ip utility command options

- netcat program may be available as either netcat, or just nc

TABLE 7.4 The netcat command options