Create a bash script to gather information about network settings.

Creating a comprehensive bash script to gather detailed information about network settings involves using several command-line tools to extract various aspects of the network configuration. The script will collect details such as IP addresses, routing tables, network interfaces, DNS settings, and more.

Given below is the bash script

```
#!/bin/bash

# Script to gather detailed network settings

# Define the output file
OUTPUT_FILE="network_info_$(date +%F_%T).log"

# Start logging
echo "Network Information Gathering Script" > "$OUTPUT_FILE"
echo "Date and Time: $(date)" >> "$OUTPUT_FILE"
echo "————————————————————————————————" >> "$OUTPUT_FILE"

# Collect IP addresses and interfaces
echo "### IP Addresses and Interfaces ###" >> "$OUTPUT_FILE"
ip addr show >> "$OUTPUT_FILE"
echo "" >> "$OUTPUT_FILE"

# Collect network routes
echo "### Network Routes ###" >> "$OUTPUT_FILE"
ip route show >> "$OUTPUT_FILE"
echo "" >> "$OUTPUT_FILE"

# Collect DNS settings
echo "### DNS Settings ###" >> "$OUTPUT_FILE"
cat /etc/resolv.conf >> "$OUTPUT_FILE"
echo "" >> "$OUTPUT_FILE"

# Collect network statistics
echo "### Network Statistics ###" >> "$OUTPUT_FILE"
netstat -i >> "$OUTPUT_FILE"
echo "" >> "$OUTPUT_FILE"

# Collect network interfaces information
echo "### Network Interfaces Information ###" >> "$OUTPUT_FILE"
lshw -C network >> "$OUTPUT_FILE"
```

Explanation

• Header Information:

- Writes the script title, current date, and time into the output file.

 IP Addresses and Interfaces:

- `ip addr show` provides detailed information about IP addresses and network interfaces.

 Network Routes:

- `ip route show` displays routing table information.

 DNS Settings:

- `cat /etc/resolv.conf` shows DNS server configurations.

 Network Statistics:

- `netstat -i` lists network interface statistics.

 Network Interfaces Information:

- `lshw -C network` provides detailed hardware information about network interfaces. This command requires root privileges, so it might need to be run with `sudo`.

 Firewall Rules:

- `iptables -L -v -n` lists current firewall rules if `iptables` is available.

 Network Services:

- `ss -tuln` displays listening network services and their ports.

 Connected Network Devices:

- `arp -a` shows the ARP table, which lists connected devices.

 Routing Table:

- `route -n` displays the routing table in numeric format.