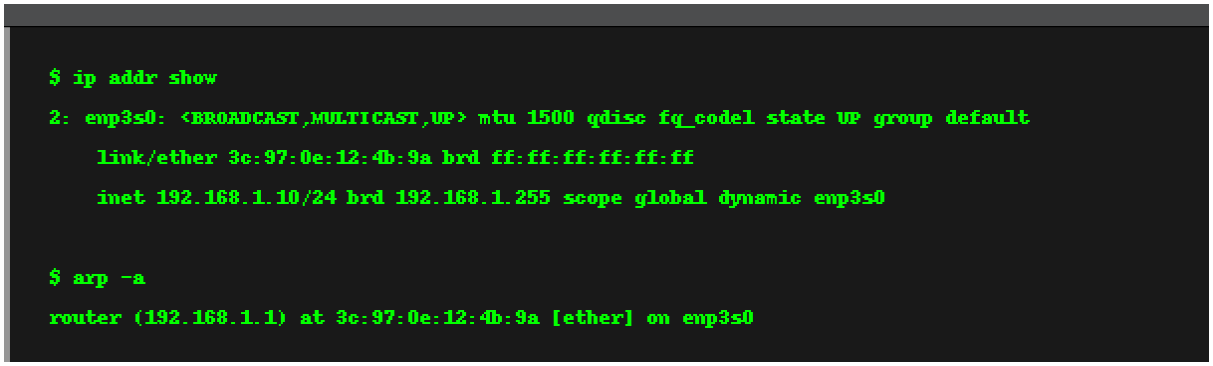
Core Network Terms – NAT, ARP, MAC, IPv4, IPv6

Methodology

I studied each network term separately, focusing on simple definitions, real-world examples, and practical commands. I referred to basic Linux commands like `ip addr show` and `arp -a` to see IP/MAC addresses and ARP tables.

Screenshots



Findings

- NAT translates private IPs to public IPs.
- ARP resolves IP to MAC in local networks.
- MAC is a unique hardware ID for devices.
- IPv4 uses 32-bit addresses (limited).
- IPv6 uses 128-bit addresses (huge space, better security).

Conclusions

These five terms are fundamental to networking. Understanding them helps in troubleshooting, ethical hacking, and security testing. IPv6 will reduce NAT dependency in the future.

Code/Commands

```
graphql
Copy code
ip addr show     # View IP and MAC
arp -a           # View ARP table
ping google.com # Test NAT in action
```