

Computer Networking Interview Topics

Computer networking is a very important topic to learn if you want to make a career in the IT industry. You will find computer networking questions being asked in many of the technical roles like SDE, SRE, DevOps, Cloud engineer, System admin, Support engineer etc. The level of questions being asked will vary depending on the requirements of the company. SDE interviews may focus on understanding the basics of networking whereas SRE/DevOps/Cloud/System engineering roles may test in depth understanding of networking.

Below is a list of topics that are important in computer networking. I have also provided references at the end which can help you in preparing for the computer networking interview.

TCP/IP protocol and OSI model

- Layers in TCP/IP and OSI model
- Function of each layers
- Examples of protocols in each layer
- Encapsulation and decapsulation in TCP/IP protocol - Explain the flow of a packet through different layers

Application layer protocols

- For each protocol, you should be able to explain the following:
 - What is the use of the protocol ?
 - How does the protocol work ?
 - Which port numbers are used by the protocol ?
 - Does the protocol use TCP or UDP and why ?
- List of important application layer protocols
 - HTTP
 - Understand request and response cycle
 - HTTP status codes
 - HTTP methods
 - HTTP 1 vs HTTP 2 vs HTTP3
 - HTTPS
 - Working of TLS handshake
 - Symmetric vs asymmetric encryption
 - Public and private key
 - SSL certificates
 - HTTP vs HTTPS
 - DNS
 - How does DNS work ? (Understand both iterative and recursive working of DNS)
 - Different types of DNS servers
 - DNS records - A, NS, MX, CNAME

- DHCP
 - Understand how DHCP works
 - DORA process in DHCP
- Mail access protocols
 - What does SMTP do ?
 - How does the SMTP protocol help in delivering email ?
 - IMAP vs POP3 vs SMTP protocol
- SSH
 - Understand why we use SSH
 - How does SSH work ?
 - Understand about ssh public and private keys and how they help in a secure connection
- FTP

Transport layer protocols

- Socket programming
 - What is socket programming ?
 - Difference in TCP vs UDP socket program
- Understand important headers in TCP and UDP packet
- Difference between TCP and UDP. When will you prefer UDP over TCP ?
- TCP protocol
 - TCP 3-way handshake
 - TCP 4-way connection termination process
 - Different states in TCP connection
 - SYN flooding

Network layer protocols

- Understand important headers in each network layer protocol
- IP protocol
 - IP addresses
 - IPv4 vs IPv6 addresses
 - Subnetting - CIDR vs classless routing, subnet mask, broadcast address, network address
- ICMP protocol
 - Why do we use the ICMP protocol ?
 - How does the ping command work ?
 - How does the traceroute command work ?
- Routing protocols
 - BGP, OSPF, RIP
- Understand what is NAT and how it works
- What is a router ? How does the router work ?
- What is a gateway ?

Data link layer protocols

- ARP
 - Understand what it does and how it works
 - ARP poisoning
- MAC protocol
 - MAC address
 - NIC
- What is a switch ? Difference between switch and router ?

Physical layer

- LAN vs MAN vs WAN

Linux networking commands

- Application layer - telnet, curl, wget, ssh, sftp, scp, dig, nslookup
- Transport layer - nc, tcpdump, netstat(ss)
- Network layer - ping, traceroute, route, ip addr, iptables, nmap
- Data link layer - arp

Miscellaneous

- What happens when you enter www.google.com on your browser and press enter ?
- Difference between switch, router and hub
- Unicast vs multicast vs anycast vs broadcast messaging
- What is a firewall ? Examples
- What is VPN? How does it work ?
- What is DDos attack ? Examples.
 - TCP SYN flooding

References

- [Computer networking tutorial](#) by letusdevops(my channel) - Videos in this playlist contain in depth discussion about computer networking topics.
- [PowerCert Animated Videos](#) has done a wonderful job in explaining computer networking topics through some powerful visualisation.
- [Videos by Ben Eater](#) helps in understanding the low level basics of computer networking from cables to important networking protocols.
- [Eli The Computer Guy](#) tutorial is another great series explaining bits and pieces of the networking infrastructure.
- [Computer Networking: A top down approach book](#)