

Exercise 1 (Network Components)

For the given network components, mark the corresponding layers of the **hybrid reference model**.

In other words: Which layers (functionalities) do the single components implement?

| | Hybrid reference model layer | | | | |
|--------------|------------------------------|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Component 1 | | | | | |
| Component 2 | | | | | |
| Component 3 | | | | | |
| Component 4 | | | | | |
| Component 5 | | | | | |
| Component 6 | | | | | |
| Component 7 | | | | | |
| Component 8 | | | | | |
| Component 9 | | | | | |
| Component 10 | | | | | |
| Component 11 | | | | | |
| Component 12 | | | | | |
| Component 13 | | | | | |
| Component 14 | | | | | |
| Component 15 | | | | | |
| Component 16 | | | | | |
| Component 17 | | | | | |
| Component 18 | | | | | |
| Component 19 | | | | | |
| Component 20 | | | | | |
| Component 21 | | | | | |
| Component 22 | | | | | |

Exercise 2 (Warm-up...)

For the network devices, protocols, transmission units, line codes and addressing schemes in the table, mark the corresponding layer of the **hybrid reference model**.

| | Hybrid reference model layer | | | | |
|--|------------------------------|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| 4B5B | | | | | |
| Address Resolution Protocol (ARP) | | | | | |
| Bridge | | | | | |
| Congestion control | | | | | |
| CSMA/CA and CSMA/CD | | | | | |
| Cyclic Redundancy Check (CRC) | | | | | |
| Distance vector routing protocols | | | | | |
| Dynamic Host Configuration Protocol (DHCP) | | | | | |
| Ethernet | | | | | |
| File Transfer Protocol (FTP) | | | | | |
| Flow control | | | | | |
| Gateway | | | | | |
| Hub | | | | | |
| Hypertext Transfer Protocol (HTTP) | | | | | |
| ICMP | | | | | |
| Internet Protocol (IP) | | | | | |
| Link state routing protocols | | | | | |
| Logical addresses | | | | | |
| Manchester-Code | | | | | |
| Media access control | | | | | |
| Modem | | | | | |
| Secure Shell (SSH) | | | | | |
| Multiport Bridge | | | | | |
| Non-Return to Zero | | | | | |
| Open Shortest Path First (OSPF) | | | | | |
| Physical addresses | | | | | |
| Port numbers | | | | | |
| Reliable end-to-end data connection | | | | | |
| Repeater | | | | | |
| Router | | | | | |
| Routing Information Protocol (RIP) | | | | | |
| Spanning Tree Protocol (STP) | | | | | |
| Switch | | | | | |
| Telnet | | | | | |
| Transmission Control Protocol (TCP) | | | | | |
| User Datagram Protocol (UDP) | | | | | |
| Wireless LAN | | | | | |