Worksheet: Networking and TCP/IP for beginners

This material is prepared for use in *Networking and TCP/IP for beginners BornHack 2025* and was prepared by Henrik Kramselund, `hlk@zencurity.dk`. https://codeberg.org/kramse/security-courses/tree/master/courses/networking/basic-tcpip

Device	**Address family**	**Address and Prefixes**	**Default gateway**
Laptop	IPv4		
Laptop	IPv6		
Phone / Tablet	IPv4		
Phone / Tablet	IPv6		
Examplev6	IPv6	2001:DB8:ABCD:0053::/64	2001:DB8:ABCD:0053::1
Examplev4	IPv4	192.0.2.0/24	192.0.2.1

DNS server	**Address family**	**Description**
	IPv4	
	IPv6	
9.9.9.9 149.112.112.112	IPv4	Example quad9 `https://quad9.net/`
2620:fe::fe 2620:fe::9	IPv6	Example quad9 `https://quad9.net/`

Special Addresses `https://datatracker.ietf.org/doc/html/rfc5735` and `https://www.rfc-editor.org/rfc/rfc5156.html`:

Prefix	**Description**
10.0.0.0/8, 192.168.0.0/16, 172.16.0.0/12	These blocks are set aside for use in private networks. Its intended use is documented in [RFC1918]
127.0.0.1 from 127.0.0.0/8	This block is assigned for use as the Internet host loopback address.
169.254.0.0/16	The ”link local” block. As described in [RFC3927], it is allocated for communication between hosts on a single link. Hosts obtain these addresses by auto-configuration, such as when a DHCP server cannot be found.
192.0.2.0/24	This block is assigned as ”TEST-NET-1” for use in documentation and example code. It is often used in conjunction with domain names example.com or example.net in vendor and protocol documentation.
::1/128	IPv6 loopback address [RFC4291]
fe80::/10	IPv6 link-local unicast [RFC4291] addresses. Addresses within this block should not appear on the public Internet.
fc00::/7	unique-local addresses [RFC4193]. Addresses within this block should not appear by default on the public Internet. Procedures for advertising these addresses are further described in [RFC4193].
2001:db8::/32	IPv6 documentation addresses [RFC3849]. They are used for documentation purposes such as user manuals, RFCs, etc.