Network Administration/System Administration Homework #1

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Network Administration

1 Internet Model

1.1

DHCP is in the Application Layer of 5-layer model and IP is in the Network Layer of 5-layer model, for DHCP is in the Application Layer of OSI model and IP is in the Network Layer of OSI model.

REFERENCE:

(1) [https://zh.wikipedia.org/wiki/OSI模型]

1.2

After URL is entered in the search bar, http/https and DNS will be used. The communications between the client side and the server side will be under the rules regulated by http protocol.(https is http with the SSL encryption on packets) And DNS will transform the URL into IP address for the underlying layer.

REFERENCE:

(1) [http://sls.weco.net/blog/wally/03-jan-2009/12113]
(2) [cu.nkfust.edu.tw/1000112774/slides/CH11.ppt]
(3) [http://linux.vbird.org/linux_server/0350dns.php]

1.3

QUIC is used to replace TCP and built over UDP, which is in the transport layer. As the result, QUIC is in the transport layer.

REFERENCE:

(1) [https://en.wikipedia.org/wiki/QUIC]

(2) [http://technews.tw/2015/04/20/google-quic-tcp-udp/]

2 IP

2.1

There're three classes of private IP. Class A is at the range of 10.0.0.0 ~ 10.255.255.255; Class B is at the range of 172.16.0.0 ~ 172.31.255.255; Class C is at the range of 192.168.0.0 ~ 192.168.255.255. Other than these range, the IP is public IP.

REFERENCE:
(1) [http://bravo6608.pixnet.net/blog/post/3536022-public-ip-與-private-ip]

2.2

Compared with IPv4, IPv6 has different packet header that can be more efficient by simplifying the processing by routers even if the header size is longer than counterparts in IPv4. And IPv6 doesn't allow routers to perform fragmentation, which performs in the IPv4 routers to transmit fragmented data to a network with a smaller maximum transmit unit.

REFERENCE:
(1) [https://en.wikipedia.org/wiki/IPv6]
(2) [https://en.wikipedia.org/wiki/IPv4]

2.3

No, I cannot connect to IPv6 websites with my browser.
(1)router
(2)DHCP server
(3)NAT server

REFERENCE:
(1) [http://ipv6.tc.edu.tw]

3 Wireshark

I used the filter "http && ip.src == 140.112.8.116" to get the specified packets.

REFERENCE:
(1) [http://lincyi.pixnet.net/blog/post/30989507-使用-wireshark-，輕輕鬆鬆擷取網路論壇的使用]