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A screenshot of a computer

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After clearing the DNS Resolver Cache for this client PC (mac address ending in 0408), I loaded the webpage server1.nuggetlab.com in Chrome, where on Wireshark I captured this UDP traffic stream of the DNS Server sending an A record (ipv4 address record) from its address of 10.40.0.100 through the router (default gateway) with a MAC address ending in 0038 to the client PC 10.10.0.50 which requested it so it knows what IP address to use to request the website. It even more complicated than that- to UDP port 53 on the application layer of the DNS sever, the client PC sent 2 packets, one for the A record and one for the https record, which is used for the domain’s operation and security. Here is a picture of the traffic I read, fully understood, and screenshotted:A screenshot of a computer

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Notice how the router’s MAC on this network was rightfully changed from its default for security reasons- or otherwise, a possible VRRP/HRSP high availability/redundancy network. Also worth noting is that TCP port 80/443 is used for http/https at the application layer. Wireshark really is amazing at monitoring the security of a network. Eventually, in later labs, DSCP bits and other complex concepts will be delved into… this Lab is a great reference model for seeing the TCP/IP and OSI models together in the unified ‘Suite’.

Additional Details: The router will be used to forward any application layer traffic/services at whichever ports through whichever assigned/configured interfaces through the switch between them on the Network Map:

A diagram of a computer network

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…while this lab isn’t as internet facing, and more ostensibly a internalized subnetwork provided on a paid subscription for learning purposes- it very much simulates what an internal organization network would look like in the real world- enough.