

Basic network technology, structure, and protocols



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Presently, computer networking has become the basis of communicating, collaborating and sharing files or resources between businesses established around the world. Keeping this fact in mind, the two tutorials selected were the ones that shed light on the basic technical details of this client server interaction. Tutorial 1 (Gal, Ilan & Shreiber, 2005) provided an insight into how by entering a website's address into a browser, all the content of website gets loaded, while Tutorial 2 (Podolsky & Margolis, 2005) provided slightly advanced detail of the steps in-between request placement and content delivery. In Tutorial 1 described that every networked computer is connected to a DNS and a router that it has the physical (MAC) address of. In case of unknown MAC, ARP request can be broadcasted to which only the targeted devices respond with their MACs. On entering a website address in browser, the computer contacts the DNS, which responds with the logical (IP) address of the website. In case, a DNS doesn't have it, it forwards the request to another DNS server higher in the hierarchy. The IP address is passed down to the requesting computer. Once IP is known, a TCP segment destined for port 80 containing HTTP_GET request is formed. The website's IP address is appended to it forming an IP packet. This IP packet is forwarded to the router's MAC to be delivered to the website server. On receiving, the server removes IP tags, extracts the HTTP_GET request from the TCP segment and replies with a new TCP segment containing requested content e. g. text, audio, video, etc. After attaching IP of requesting computer, it forwards the IP packet to local router's MAC. Routers have routing tables that indicate where to forward next. When packet arrives at destination, IP headers are removed and requested content is extracted from the TCP segment. It is forwarded to port 80, and displayed in the browser. Tutorial 2 <https://assignbuster.com/basic-network-technology-structure-and-protocols-research-paper-samples/>

shows a network diagram comprising of local and remote servers. It demonstrates how the ARP, ICMP, DNS, and IP packets travel from within different networks to get a request processed over the Internet. It shows how the IP packets travel from local router to some remote router, and eventually to the destination address's local router before being delivered at the target. It shows how the ARP request packets are broadcasted in a network by the router in order to learn the MAC to deliver the IP packets next to. It shows how the DNS request packets travel between DNS servers (local and remote) to trace an IP address of a website. And it shows, how the ICMP error message comes back to the sender in case the request times out. The tutorials give an insight into the requirements for setting up an online collaboration business. It helps understand the fact that instead of a brick and mortar company, a dot-com company can be established too by setting up a website on the Internet. The employees and managing staff can connect to one another and share information globally. A dot-company could save a lot of investment e. g. building charges, travelling costs, communication and availability issues, etc. Having a high level technical knowledge of how information travels within a client server arrangement of a network, knowing the protocols and various network jargons e. g. topology, routers, switches, etc., a better understanding of the solution designs presented by developers can be achieved. Understanding the basic working of Internet would inspire possibilities of networking existing businesses locally or remotely, increasing the business productivity and support. Understanding about the flow of traffics, optimization strategies can be devised, etc. Both the tutorials were animations so the teaching method was visual. Tutorial 1 presented a simple slide show while Tutorial 2 provided flexibility to user to define the scenarios. <https://assignbuster.com/basic-network-technology-structure-and-protocols-research-paper-samples/>

The flow of information could be seen afterwards. The language of the tutorials was kept simple and precise. In Tutorial 1, every new term was explained briefly as it came along in the presented Internet scenario. The tutorials highlighted the main aspects of how information travels on the Internet without going into extensive details and confusing the beginners. By visually seeing the working of routers, DNS servers, ARP, etc. the intended high level idea of networking was achieved. References Gal, N., Ilan, N. & Shreiber, D. (2005). Internet Communications Flash Animation. Retrieved from <http://www2.rad.com/networks/2005/internet/main.htm> Podolsky, S. & Margolis, R. (2005). Client-Server Flash Interactive Animation. Retrieved from <http://www2.rad.com/networks/2005/clieserv/main.htm>