

5.3.5: The Internet, Intranets, and Extranets

The Internet

The Internet is a global network that allows computers and devices worldwide to connect and share information seamlessly. Have you ever wondered how your smartphone can function the way it does? Have you ever wondered how to search for information on the web and find it within milliseconds? The world's largest implementation of client/server computing and internetworking is the Internet. When you access a website, your device connects through a series of networking equipment that routes your request to the correct destination server. Complex technologies make this process fast and seamless – you type in a web address and the site appears in your browser within seconds! Advanced systems work behind the scenes to handle website address retrieval, connection establishment, data sending and receiving, and page display on your screen (Example 5.3.5.1).

No individual or group doesn't own the Internet. Guaranteeing compelling correspondence over this various framework requires the use of steady and generally perceived advances and norms, just as the collaboration of many network organization offices. Some associations have been produced to keep up the structure and normalization of Internet conventions and procedures. These organizations incorporate the [Internet Engineering Task Force \(IETF\)](#), Internet Corporation for Assigned Names and Numbers (ICANN), and the [Internet Architecture Board \(IAB\)](#), in addition to numerous others.

The world's largest implementation of client/server computing and internetworking is the Internet. The internet is also a system, which is the most extensive public way of communicating.

✓ Example 5.3.5.1

What happens behind the scene when you type a URL, www.wikipedia.com, in the browser and press enter?

Solution

Once you press Enter, the browser then checks the cache for a DNS record to find the website's corresponding IP address. If the URL is not in the cache, ISP's (Internet Service Provider) DNS server starts a DNS query to find the server's IP address that hosts the website.

The browser then starts a TCP/IP connection with the server.

Then, the browser sends an HTTP request to the webserver.

After that, the server handles the request and sends an HTTP response back. www.Wikipedia.org has an IP address, that specific IP address could be searched starting with <http://> on a browser/ The DNS contains a list of URLs, including their IP addresses. The DNS (Domain Name System) changes domain names into IP addresses. The domain name is the English name, and that has 32-bits which are unique and numeric to that English name. That is why people only need to specify the domain name.

Finally, the browser shows the HTML content.

Intranets and Extranets

Intranet and extranet are two types of private networks that share some similarities but also have distinct differences.

An **intranet** is a private network that belongs to a single organization. It enables employees to access internal information and applications within the organization. For example, a company's intranet may host HR policies, internal communications, project management tools, and other resources accessible only by employees.

An **extranet** is also a private network that extends to external users to selectively allow access for external users such as partners, vendors, or clients. For example,

- A delivery company uses extranet to give clients to see where their packages are in real time, same as their employees.
- An emergency clinic uses extranet to give a booking system to specialists so they can make arrangements for their patients.

The main difference between intranets and extranets is that extranets allow authorized external access to selected resources and tools.

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