A proxy server is used to facilitate security, administrative control or caching service, among other possibilities. In a personal computing context, proxy servers are used to enable user privacy and anonymous surfing. Proxy servers are used for both legal and illegal purposes.

On corporate networks, a proxy server is associated with -- or is part of -- a gateway server that separates the network from external networks (typically the Internet) and a firewall that protects the network from outside intrusion. A proxy server may exist in the same machine with a firewall server or it may be on a separate server and forward requests through the firewall. Proxy servers are used for both legal and illegal purposes.

When a proxy server receives a request for an Internet service (such as a Web page request), it looks in its local cache of previously downloaded Web pages. If it finds the page, it returns it to the user without needing to forward the request to the Internet. If the page is not in the cache, the proxy server, acting as a client on behalf of the user, uses one of its own IP addresses to request the page from the server out on the Internet. When the page is returned, the proxy server relates it to the original request and forwards it on to the user.

To the user, the proxy server is invisible; all Internet requests and returned responses appear to be directly with the addressed Internet server. (The proxy is not quite invisible; its IP address has to be specified as a configuration option to the browser or other protocol program.)

An advantage of a proxy server is that its cache can serve all users. If one or more Internet sites are frequently requested, these are likely to be in the proxy's cache, which will improve user response time. A proxy can also log its interactions, which can be helpful for troubleshooting.

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