12.6 Summary

An IPv6 server on a dual-stack host can service both IPv4 clients and IPv6 clients. An IPv4 client still sends IPv4 datagrams to the server, but the server's protocol stack converts the client's address into an IPv4-mapped IPv6 address since the IPv6 server is dealing with IPv6 socket address structures.

Similarly, an IPv6 client on a dual-stack host can communicate with an IPv4 server. The client's resolver will return IPv4-mapped IPv6 addresses for all the server's A records, and calling `connect` for one of these addresses results in the dual stack sending an IPv4 SYN segment. Only a few special clients and servers need to know the protocol being used by the peer (e.g., FTP) and the `IN6_IS_ADDR_V4MAPPED` macro can be used to see if the peer is using IPv4.