
LAB-1

(a) Static address assignment of the IPv6 network and perform address assignment to nodes.

(b) Now, build a dynamic assignment through the DHCP server using the IPv6 address.

An IPv6 address consists of 8 sets of 16-bit hexadecimal values separated by colons (:), totaling 128 bits in length. As with IPv4, IPv6 addresses are assigned to interfaces. However, unlike IPv4, an IPv6 interface is expected to have multiple addresses. There are several types: unicast, multicast, anycast. In this practical, we used unicast addressing. Unicast addressing identifies a single node or interface. Traffic destined for a unicast address is forwarded to a single interface. For this practical, we used link-local unicast routing. Link-local unicast addresses are mandatory addresses that are used exclusively for communication between two IPv6 devices on the same link. These addresses are automatically assigned by the device when IPv6 is enabled. Their scope is link-specific only.

One of the easiest ways to assign IP addresses is to set up IPv6 Stateless address auto-configuration (SLAAC) on an IPv6 router. IPv6 devices use multicast to acquire IP addresses and to find DHCPv6 servers. The basic DHCPv6 client-server concept is similar to DHCP for IPv4. If a client wants to receive configuration parameters, it sends out a request on the attached local network to detect available DHCPv6 servers. Apart from assigning IPs by DHCP servers we also assigned addresses statically in order to get a new perspective for meeting our purpose.

