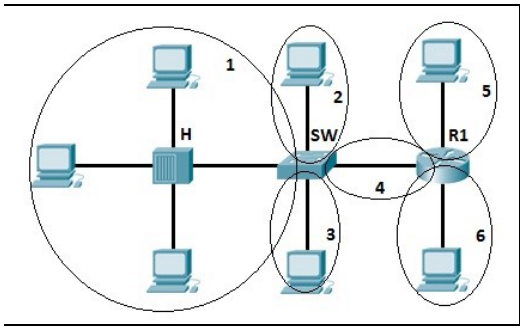
Collision & broadcast domain

Collision domain

A collision domain is, as the name implies, the part of a network where packet collisions can occur. A collision occurs when two devices send a packet at the same time on the shared network segment. The packets collide both devices must send the packets again, which reduces network efficiency. Collisions are often in a hub environment, because each port on a bridge, switch or a router is in a separate collision domain.

The following example illustrates collision domains:



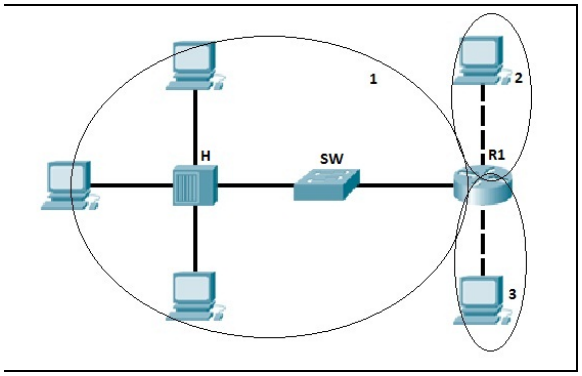
We have 6 collision domains in the example above.

NOTE
Remember, each port on a hub is in the same collision domain. Each port on a bridge, a switch or router is in seperate collision domain.

Broadcast domain

A broadcast domain is the domain in which a broadcast is forwarded. A broadcast domain contains all devices that can reach each other at the data link layer (OSI layer 2) by using broadcast. All ports on a hub or a switch by default in the same broadcast domain. All ports on a router are in the different broadcast domains and rou don't forward broadcasts from one broadcast domain to another.

The following example clarifies the concept:



In the picture above we have three broadcast domains, since all ports on a hub or a switch are in the same broadcast domain, and all ports on a router are in a different broadcast domain.

Layer 2 switching CSMA/