

## HSRP (Hot Standby Router Protocol):

- o HSRP stands for Hot Standby Router Protocol & Cisco proprietary protocol.
- o There are two versions of Hot Standby Router Protocol (**HSRPv1 & HSRPv2**).
- o Two or more Cisco Routers or Switches on LAN segment form an HSRP group.
- o In HSRP, one Cisco Router or Switch assumes the function of “**Active**” Device.
- o In HSRP, other Routers or Switches is known as “**Standby**” Router or Switch.
- o In HSRP, the highest priority gateway is elected as active gateway of group.
- o In HSRP the active gateway is the owner of **Virtual MAC & Virtual IP address**.
- o In HSRP, the default priority is set to **100** but it can be easily modifying (**0-255**).
- o Highest interface IP as the tiebreaker and preempt option is disabled by default.
- o HSRP Version 1 uses Multicast Address **224.0.0.2** for sending the Hello traffic.
- o HSRP Version 2 uses Multicast Address **224.0.0.102** for sending the Hello traffic.
- o In HSRP, the messages can be authenticated using the clear text or the MD5.
- o HSRP Version 1 allows for group numbers ranging from **0 – 255** not more then.
- o HSRP Version 2 allows for group numbers ranging from **0 – 4095** which is more.
- o HSRP Version 1 virtual **MAC 0000.0c07.acXX**. (XX is group no. {0-255}).
- o HSRP Version 2 virtual **MAC 0000.0c9f.fXXX**. (XXX is group no. {0-4095}).
- o HSRP Version 2 support IPv6 address but HSRP version 1 doesn't support IPV6.
- o HSRP Version 1 and HSRP Version 2 are not compatible with each other.
- o Load sharing using multiple groups and virtual IP with priority modification.
- o In HSRP Version 1 & 2 Default Hello time is 3 seconds, Hold time is 10 seconds.
- o On Cisco Router or Switches by default, version 1 is enable until version 2 enabled.
- o By default, in all Cisco Routers or Cisco Switches have priority 100.

State	Explanation
<b>Initial</b>	This is the first state when HSRP starts. You'll see this just after you configured HSRP or when the interface just got enabled.
<b>Listen</b>	The router knows the virtual IP address and will listen for hello messages from other HSRP routers.
<b>Speak</b>	The router will send hello messages and will join the election to see which router will become active or standby.
<b>Standby</b>	The router didn't become the active router but will keep sending hello messages. If the active router fails it will take over.
<b>Active</b>	The router will actively forward packets from clients and sends hello messages.





