FHRP (First Hop Redundancy Protocols)

1. HSRP (Hot Standby Router Protocol)

What it does: Provides gateway redundancy by making one router active and another standby.

Why it matters: Keeps the network running even if a router crashes.

Key Features:

- Uses a virtual IP and MAC.
- Active and Standby roles (optionally load shared in HSRP v2).

Example: Router 1 is active, Router 2 standby. If 1 fails, 2 takes over.

Commands:

```
enable
configure terminal
interface GigabitEthernet0/0
standby 1 ip 192.168.1.1
standby 1 priority 110
standby 1 preempt
no shutdown
exit
```

(Standby Router)

```
interface GigabitEthernet0/0
standby 1 ip 192.168.1.1
standby 1 priority 100
standby 1 preempt
no shutdown
exit
```

Check Status:

```
show standby
```

2. VRRP (Virtual Router Redundancy Protocol)

What it does: Like HSRP, with master and backup routers.

Why it matters: Works across different vendors.

Key Features:

- Uses a virtual IP shared among routers.
- Master and backup roles.

Commands:

FHRP (First Hop Redundancy Protocols)

enable

configure terminal

interface GigabitEthernet0/0

vrrp 1 ip 192.168.1.1

vrrp 1 priority 110

vrrp 1 preempt

no shutdown

exit

(Backup Router)

interface GigabitEthernet0/0

vrrp 1 ip 192.168.1.1

vrrp 1 priority 100

vrrp 1 preempt

no shutdown

exit

Check Status:

show vrrp

3. GLBP (Gateway Load Balancing Protocol)

What it does: Ensures redundancy and load balancing among routers.

Why it matters: Allows traffic distribution across multiple routers.
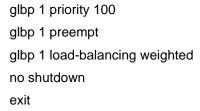

Key Features:

- One AVG and multiple AVFs.

- Shares a virtual IP with multiple MACs.

Commands:

enable

configure terminal

interface GigabitEthernet0/0

glbp 1 ip 192.168.1.1

glbp 1 priority 110

glbp 1 preempt

no shutdown

exit

(AVF Setup)

interface GigabitEthernet0/0

glbp 1 ip 192.168.1.1

FHRP (First Hop Redundancy Protocols)

glbp 1 priority 100

glbp 1 preempt

glbp 1 load-balancing weighted

no shutdown

exit

Check Status:

show glbp

Usage Tips

- Use HSRP for Cisco-only networks with simple redundancy.

- Use VRRP in multi-vendor setups.

- Use GLBP when you want load balancing.

Practice in Packet Tracer for hands-on skills.