<https://ipwithease.com/ospf-timers/>

CREATE NOTES TO ADD TO REVISION TEST NOTES

<https://study-ccna.com/ospf-network-types/>

<https://packetlife.net/blog/2008/jun/19/ospf-network-types/>

<https://techhub.hpe.com/eginfolib/networking/docs/switches/5820x-5800/5998-7389r_l3-ip-rtng_cg/content/441756346.htm#:~:text=Broadcast%E2%80%94When%20the%20link%20layer,type%20as%20broadcast%20by%20default>.

<https://www.youtube.com/watch?v=43WnpwQMolo>

OSPF:

| TIMER NAME | BROADCAST | NON-BROADCAST | POINT-TO-POINT | POINT-TO-MULTIPOINT | POINT-TO-MULTIPOINT NON BROADCAST |
| --- | --- | --- | --- | --- | --- |
| HELLO INTERVAL | **10** | **30** | **10** | **30** | **30** |
| DEAD INTERVAL | **40** | **120** | **40** | **120** | **120** |
| POLL INTERVAL | **120** | **120** | **120** | **120** | **120** |
| RETRANSMIT INTERVAL | **5** | **5** | **5** | **5** | **5** |
| TRANSMIT-LINK-DELAY-INTERVAL | **1** | **1** | **1** | **1** | **1** |

A full connection between 2 DROTHERS is known as… **2way**

A complete connection between a DR and BDR is known as… **full**

Default LLPs - options: ethernet, FDDI, OSPF, X.25, PPP, HDLC, Frame Relay

Broadcast - **Ethernet, FDDI**

NMBA - **Frame Relay, X.25**

P2P - **PPP, HDLC**

If a router does not have an RID manually configured, then the RID is decided by… **highest loopback interface and then highest physical interface**

FHRPs:

HSRP - Host Standby Router Protocol

VRRP - Virtual Router Redundancy Protocol

GLBP - Gateway Load Balancing Protocol

FHRP:

* Protects default gateway by having 2 or more backup routers
* Virtual IP configured on both routers, only active router virtual MAC used
* Active router replies to ARP requests
* IP address: 224.0.0.2 or 224.0.0.102
* Virtual MAC: 0000.0c07.ac01, version 2: 0000.0c9f.f001
* Cisco propriety

VRRP:

* Open Standard
* Master, backup router
* IP: 224.0.0.18
* Virtual MAC: 0000.5e00.01c8 (xx)

GLBP:

* Load balances among multiple routers within a single subnet
* A single AVG (active Virtual Gateway) elected
* Up to 4 AVFs (Active Virtual Forwarders)
* Each AVF acts as default gateway
* IP address: 224.0.0.102
* Virtual MAC: 0007.b400.XXYY (0007.b400.0101)
* Cisco propriety

| FHRP | TERMINOLOGY | MULTICAST IP | VIRTUAL MAC | CISCO PRO? |
| --- | --- | --- | --- | --- |
| HSRP | **active/standby** | **224.0.0.2/102** | **0c07 / 0c9f** | **yes** |
| VRRP | **master/backup** | **224.0.0.18** | **5e00** | **no** |
| GLBP | **avg/avf** | **224.0.0.102** | **b400** | **yes** |