Bonding
HA and MT
Bonding

- High Availability
- Maximum Throughput
High Availability

✔ HA goal is to provide the maximum availability of network connectivity

✔ HA configurations have redundant or backup network devices or (and) links between the host and the rest of the world
HA Single Switch Topology

✔ No availability penalty to optimizing for maximum bandwidth

Host A

Host B

To other networks
HA Multiple Switch Topology

✔ A trade off between network speed and availability

Switch A

port1

port2

ether1

To other networks

Host A

ether2

Switch B

port1

port2

To other networks
Bonding and LM Modes

- **active-backup** is the preferred mode
- **broadcast** is a special purpose mode

- Depends upon capabilities of the switch
- ARP monitoring provides better level of reliability
Maximum Throughput

It means nothing more than

THROUGHPUT
MT Single Switch Topology: Gatewayed

Traffic to and from the bonded device will be to the same MAC level peer on the network
MT Single Switch Topology: Local

- Each destination (Host B, Host C) will be addressed directly by their individual MAC addresses.
Bonding Modes: balance-rr

- The only mode that permit a single TCP/IP connection to stripe traffic across multiple interfaces
- Packets may arrive out of order
- This mode requires the switch to have the appropriate ports configured for "etherchannel" or "trunking"
Bonding Modes: balance-xor

✔ Packets destined for specific peers will always be sent over the same interface
✔ Works best in a "local" network configuration
✔ Switch ports need to be configured for "etherchannel" or "trunking."
Bonding Modes: 802.3ad

- Standard
- Almost no switch configuration
- Distributes traffic by peer
- Same speed and duplex
- ARP monitor is not available in this mode
Bonding Modes: balance-tlb

- Balances outgoing traffic by peer
- All incoming traffic arrives over a single interface
- ARP monitor is not available
Bonding Modes: balance-alb

✔ Almost the same as balance-tlb
✔ balances incoming traffic from local network peers
✔ device driver must support changing the hardware address while the device is open
Promiscuous Mode

✔ balance-rr, balance-xor, broadcast and 802.3ad

✔ active-backup, balance-tlb and balance-alb

all slaves
active slave