Bonding
HA and MT

Bonding

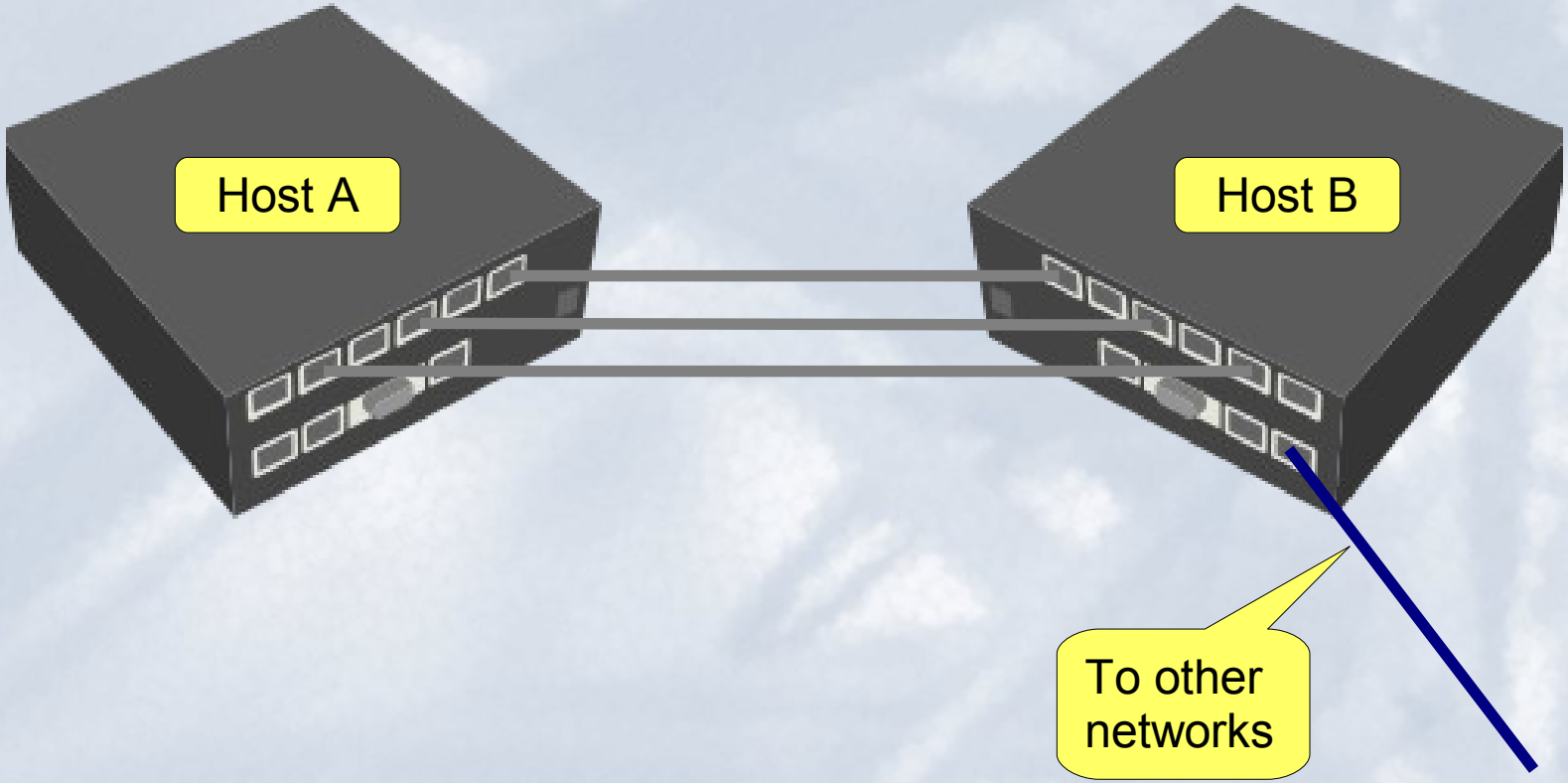
- High Availability
- Maximum Throughput

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

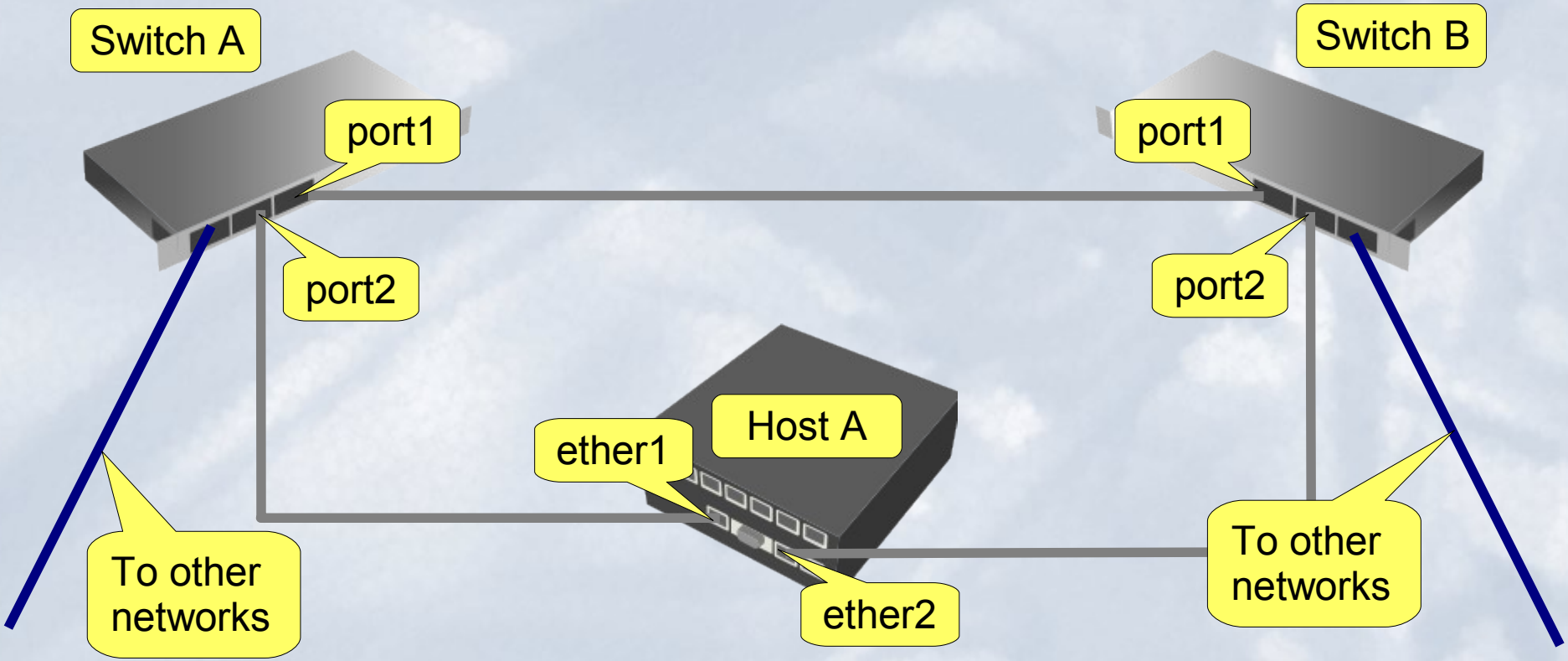
HA Single Switch Topology

- No availability penalty to optimizing for maximum bandwidth



HA Multiple Switch Topology

- A trade off between network speed and availability



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

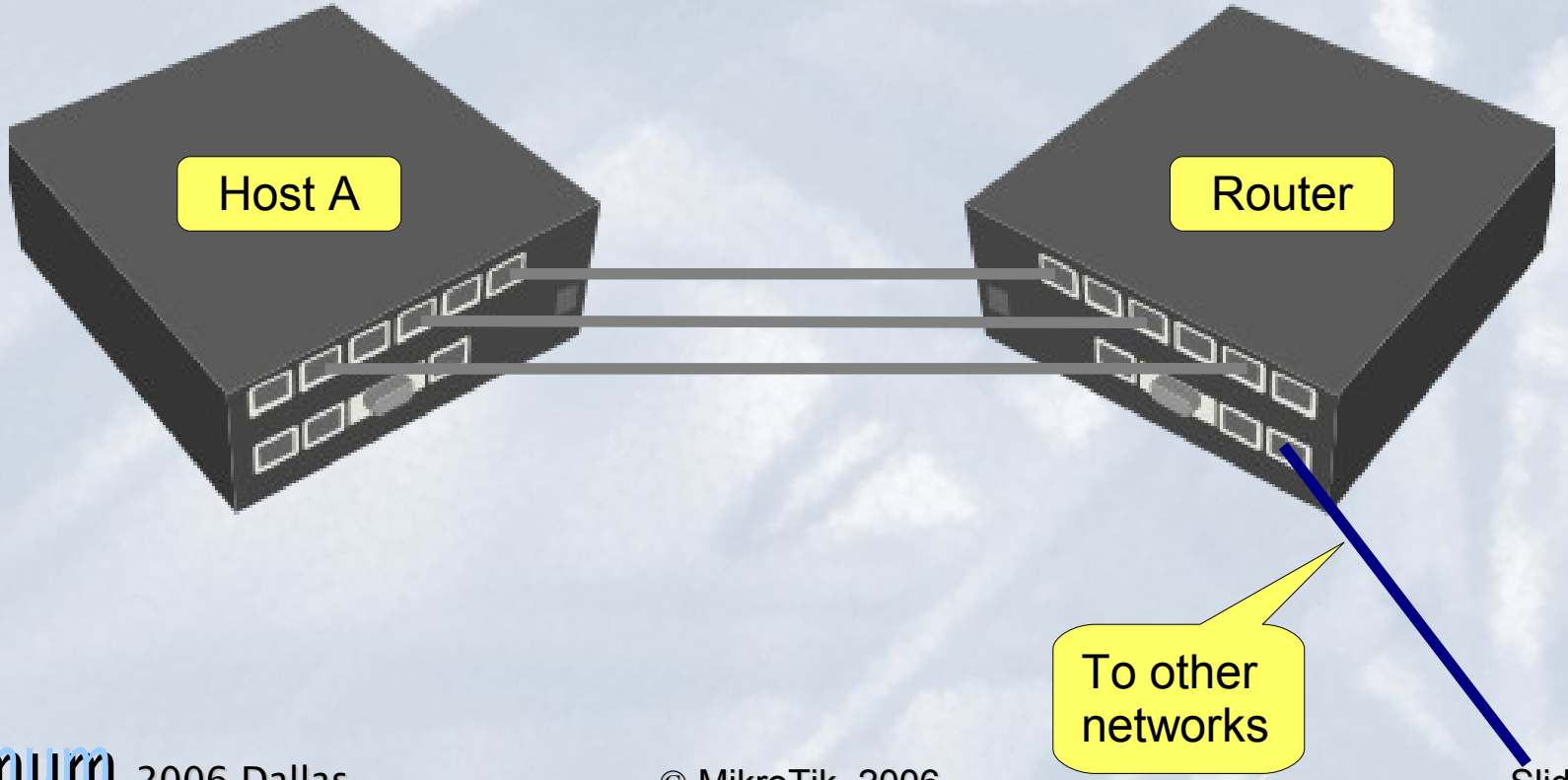
Maximum Throughput

It means nothing more than

THROUGHTPUT

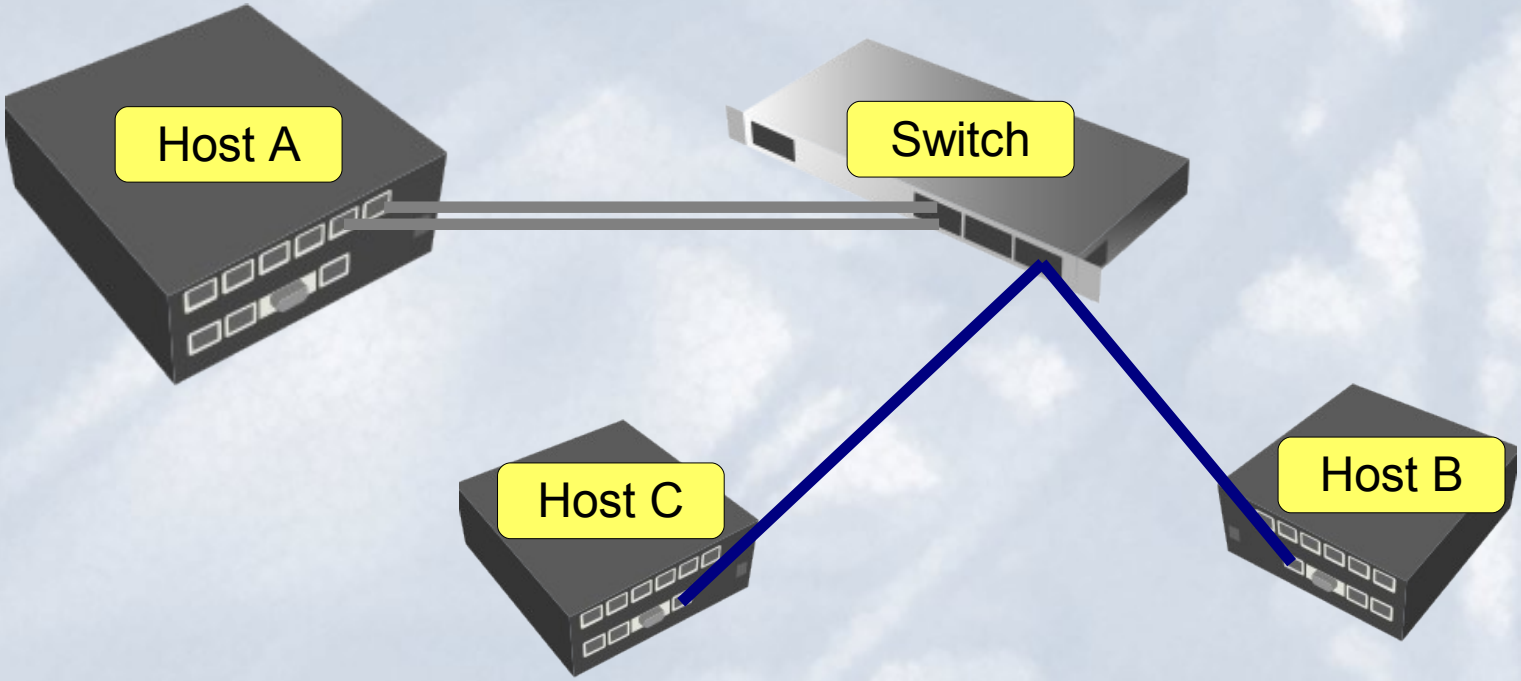
MT Single Switch Topology: Gatewayed

- 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 — all slaves
- active-backup, balance-tlb and balance-alb — active slave