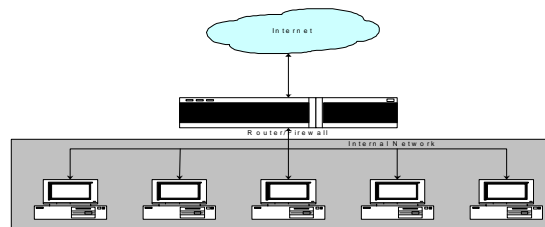


FIREWALL

IXP Vs Cosmic Cube

DDOS Shields (Manoj Singla)

ACL-Based Firewall (Girish P. Das)



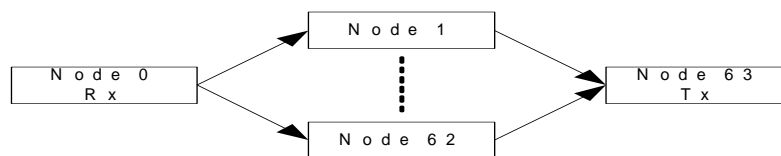
What if we used Cosmic Cube

- **Harder, Slower and Worse**
 - No libraries available
 - No shared memory
 - No MSF
 - No hardware based context switch
 - OS overhead (message processing)
 - No signaling
 - No CAM
 - Explicit thread synchronization required
 - No fast path between neighbor node (IXP uses NN registers)

Implementation of Firewall on Cosmic Cube

All nodes run firewall and up to 64 packets can be processed in parallel

- Need synchronization to maintain packet order
- Receive and transmit will be bottleneck
- No need to transfer packet from one node to another



Implementation of Firewall on Cosmic Cube

All nodes run unique part of firewall

- No synchronization required to maintain packet order
- Receive and transmit will be bottleneck
- Need to transfer packet from one node to another

