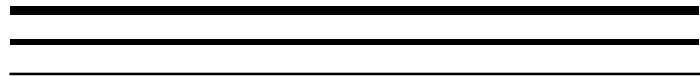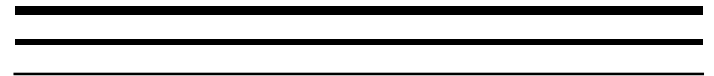# In Search Of...

Fragmentation

Denton Gentry
Sun Microsystems
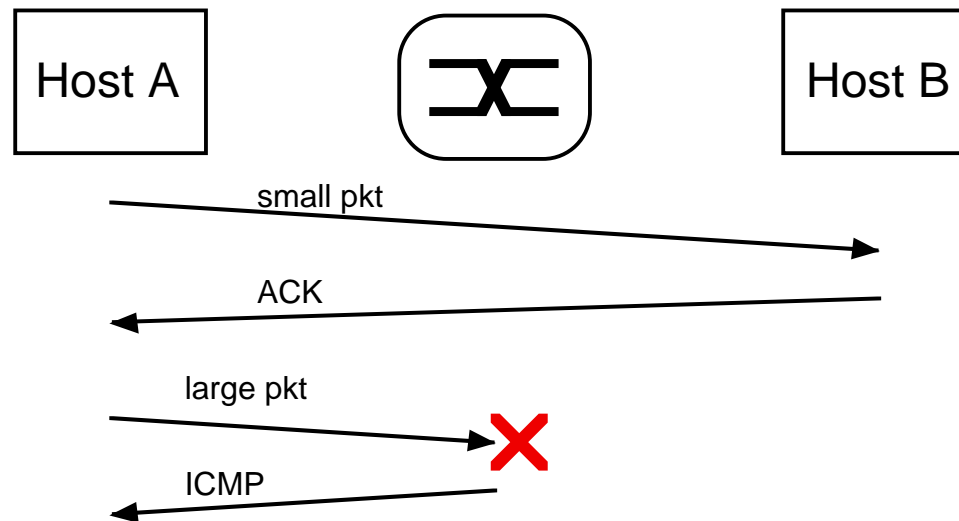
Mechanism #1:
TCP mss option

- TCP option sent in SYN & SYN+ACK
- Not a negotiation. Minimum mss wins.

source port	dest port
sequence number	
acknowledgement number	
hlen	code bits	window
checksum	urgent
mss	

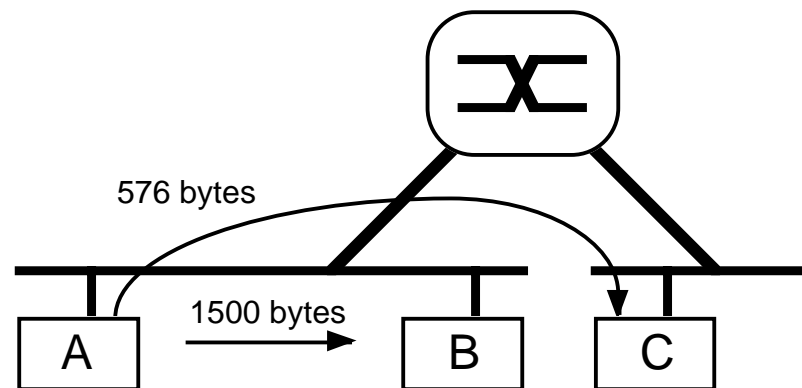# Mechanism #2:
IP Path MTU Discovery

- mss only knows the leaf networks
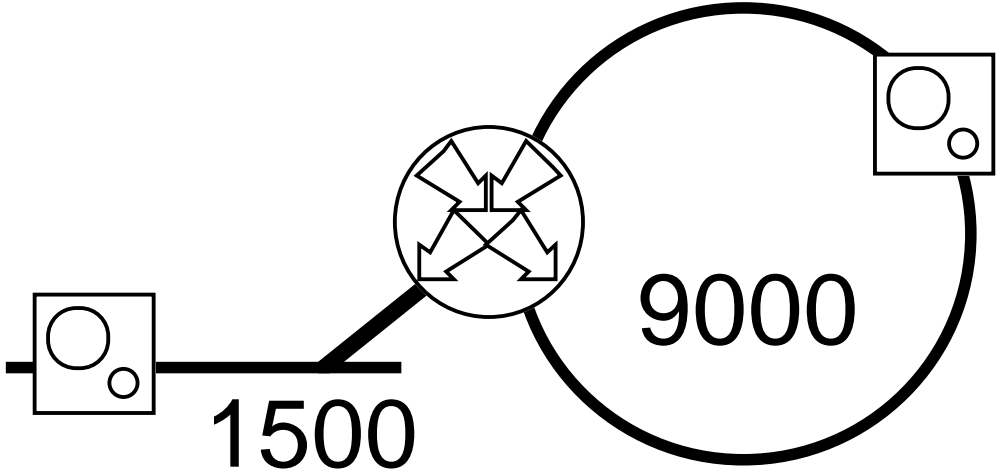- Solution: send large packets with DF
  - Expect ICMP error

Mechanism #3:

send small packets

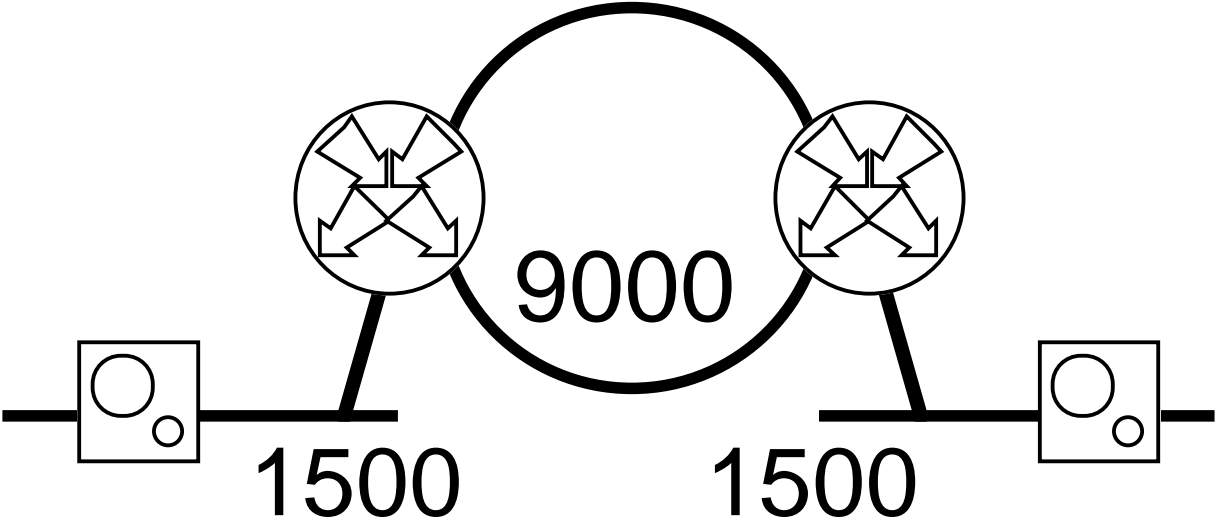- On subnet, use MTU size
- Off subnet, use 576 bytes
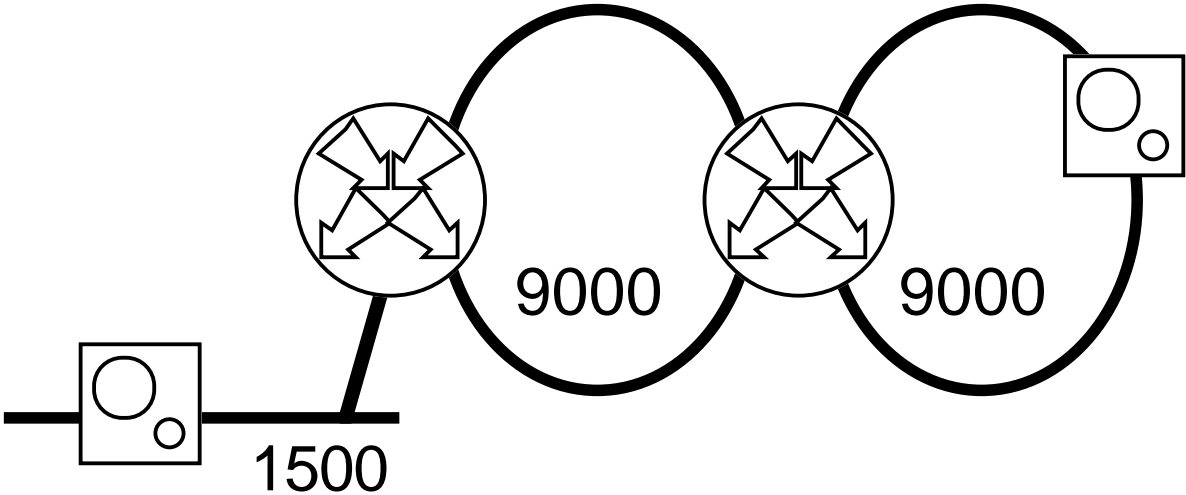
Ether->RPR, routed
Handled: mss

9000

1500

Ether->RPR->Ether, routed
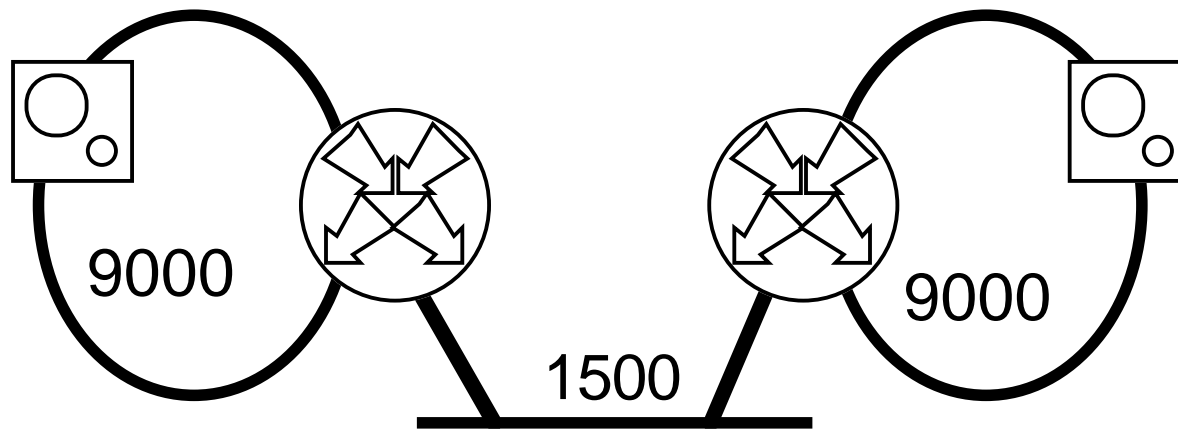Handled: mss

9000

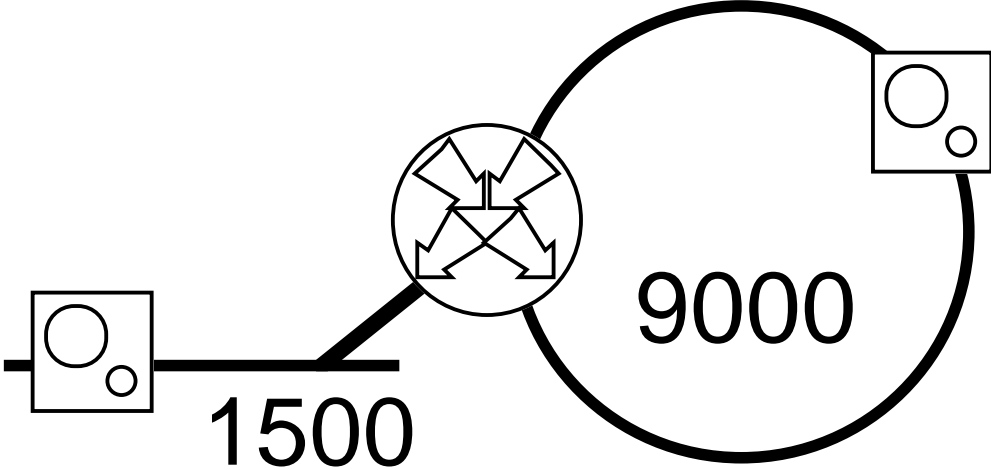1500   1500

Ether->RPR->RPR, routed
Handled: mss

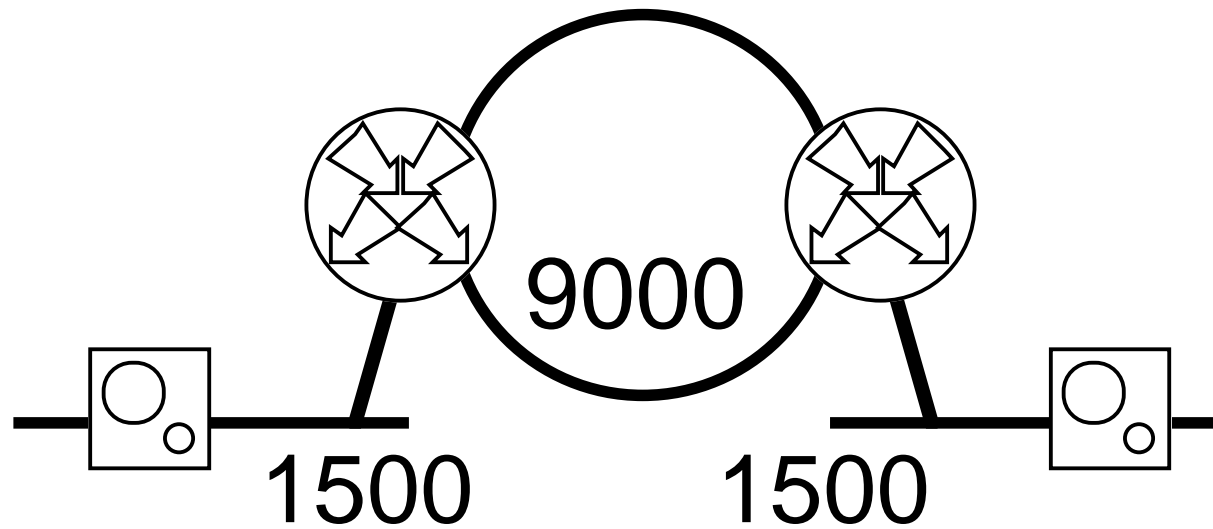# RPR->Ether->RPR, routed
Handled: Path MTU Discovery

Ether->RPR, bridged
Handled: mss

9000

1500
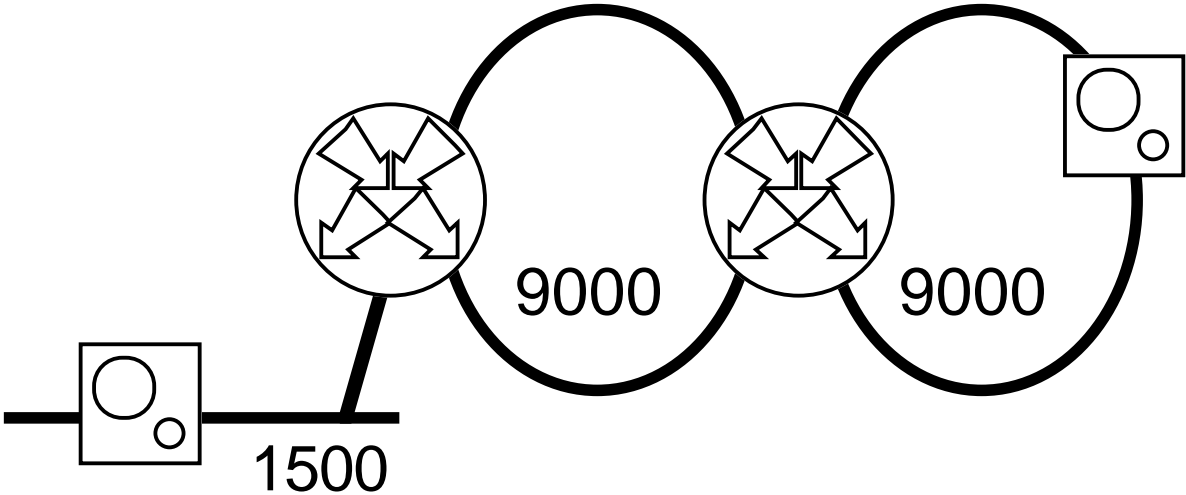
Ether->RPR->Ether, bridged
Handled: mss

9000

1500   1500

Ether->RPR->RPR, bridged
Handled: mss

9000

9000

1500

RPR->Ether->RPR, bridged
Not handled.

9000

1500

9000