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# Linux Enhancements for DiffServ over MPLS (Demo 22/11/2000)

Pim Van Heuven

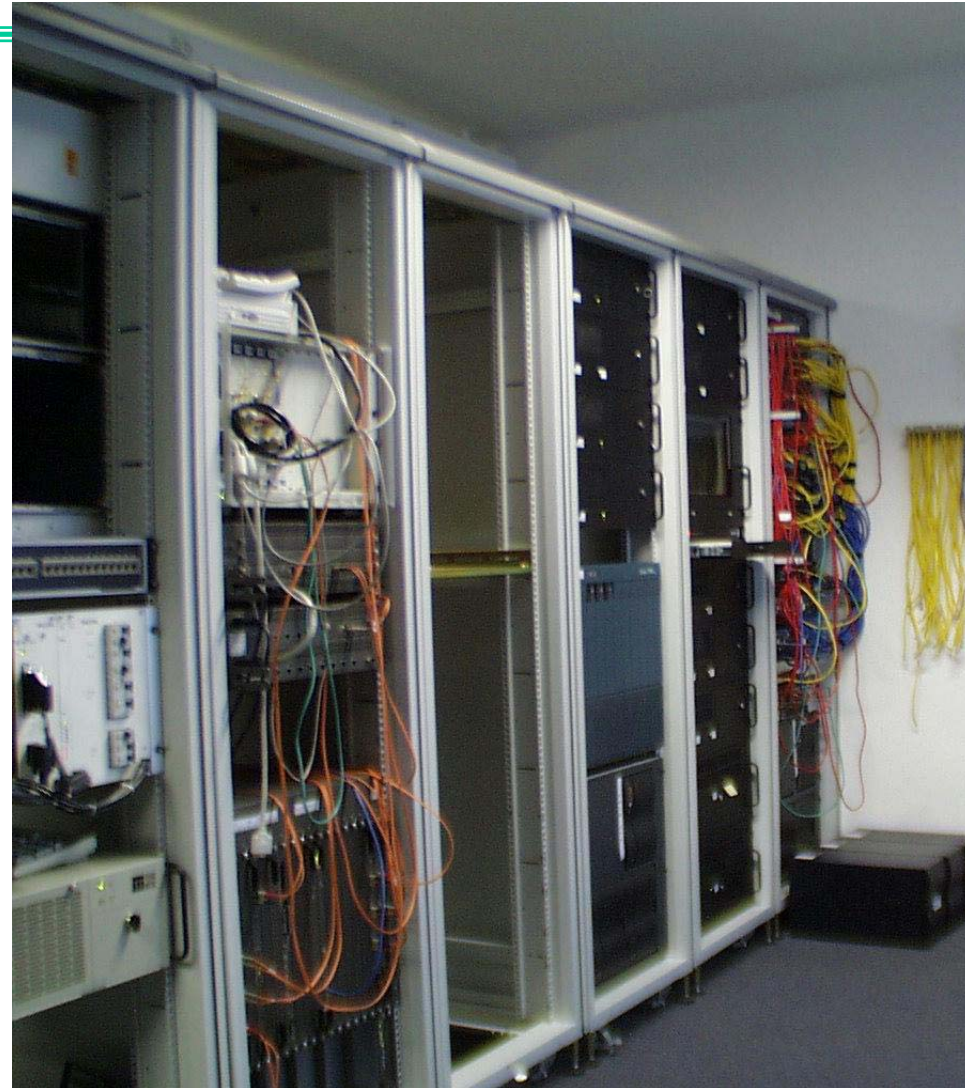
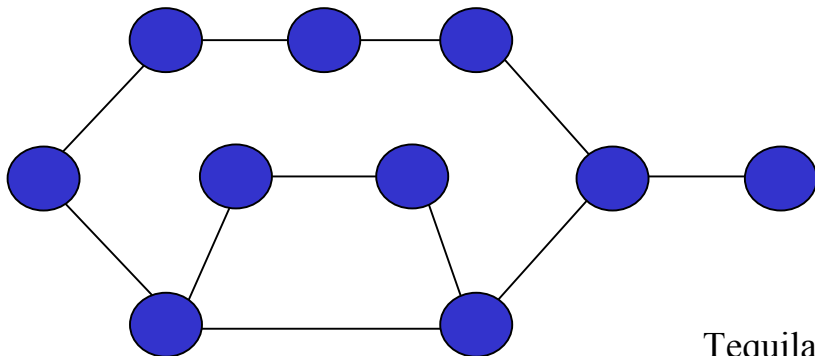
Steven Van den Berghe, Tom Aernoudt

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IMEC



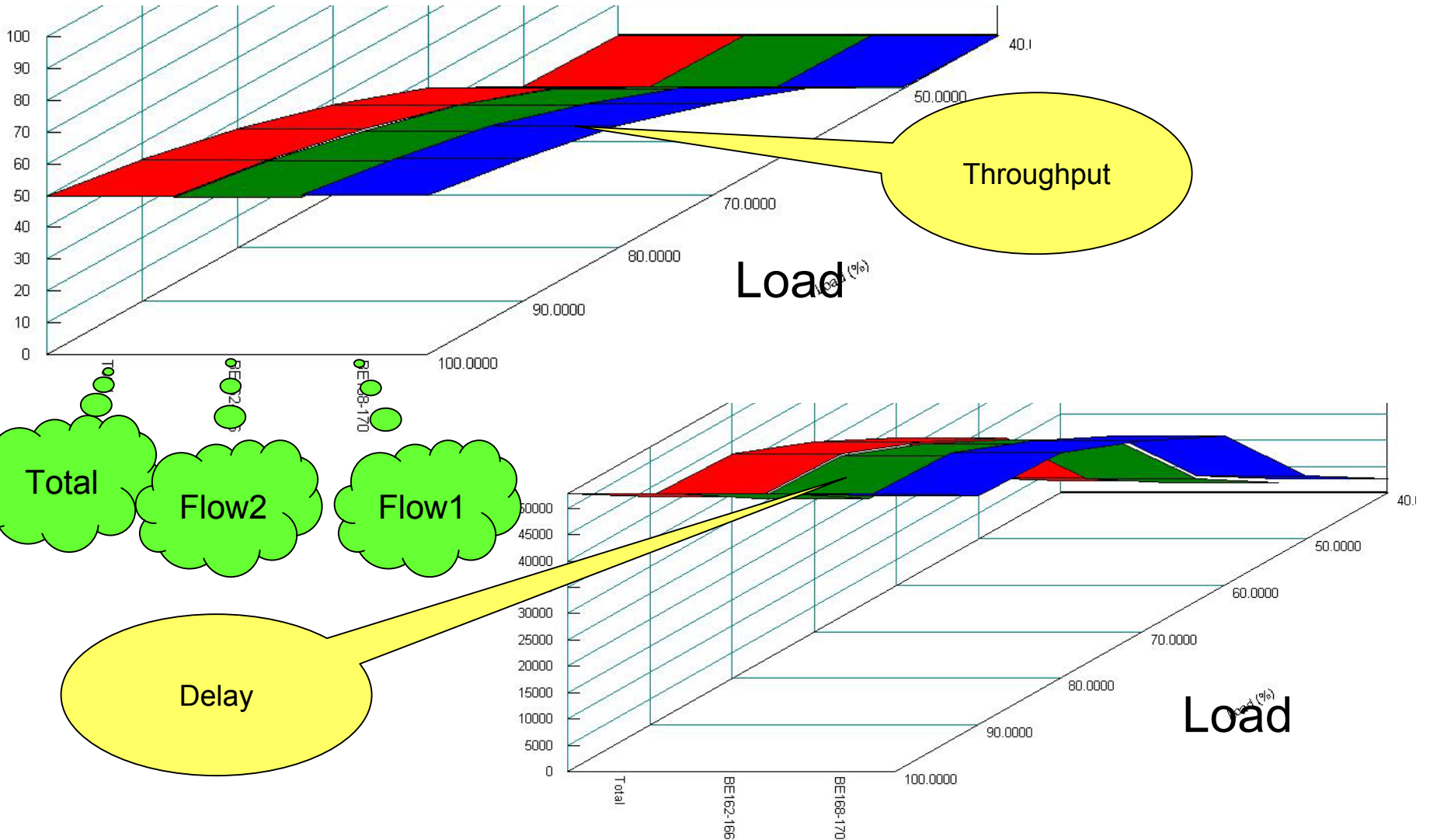
## Development network

- Diffserv over MPLS
- Linux nodes
- Test-equipment
  - Packet analyser (SW+HW)
  - Smartbits
  - PAMS



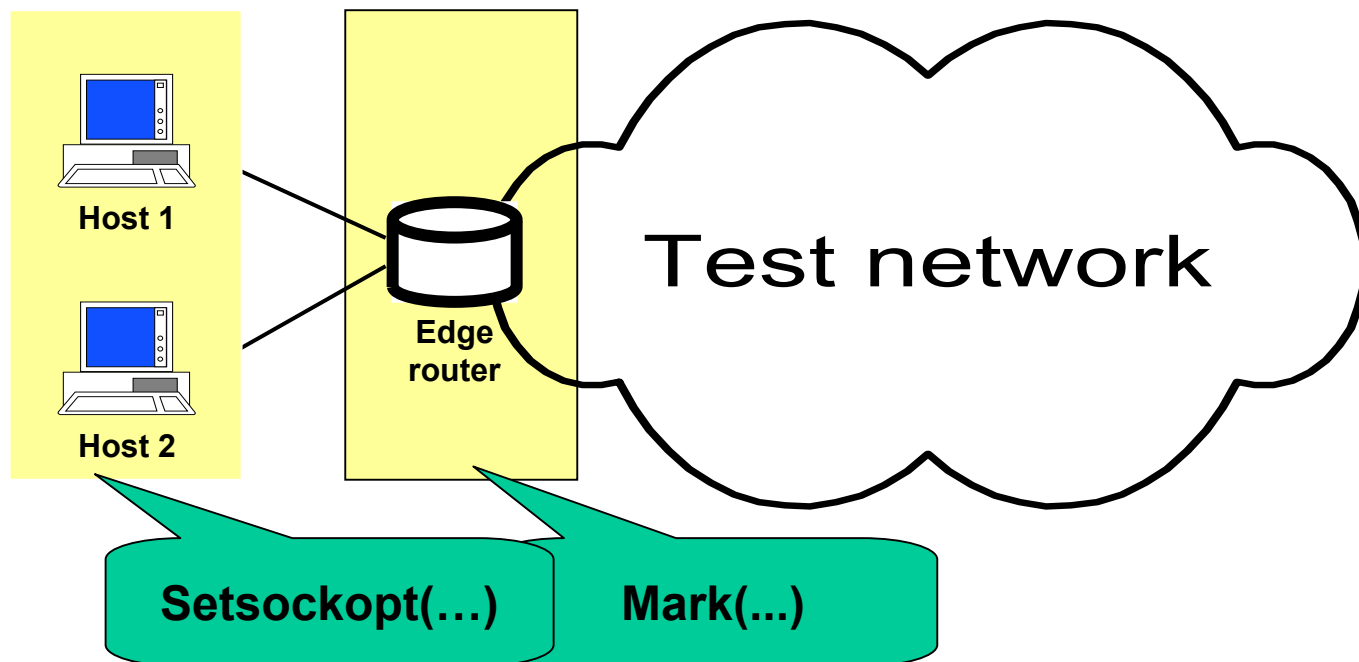


# Smartbits Best Effort Results



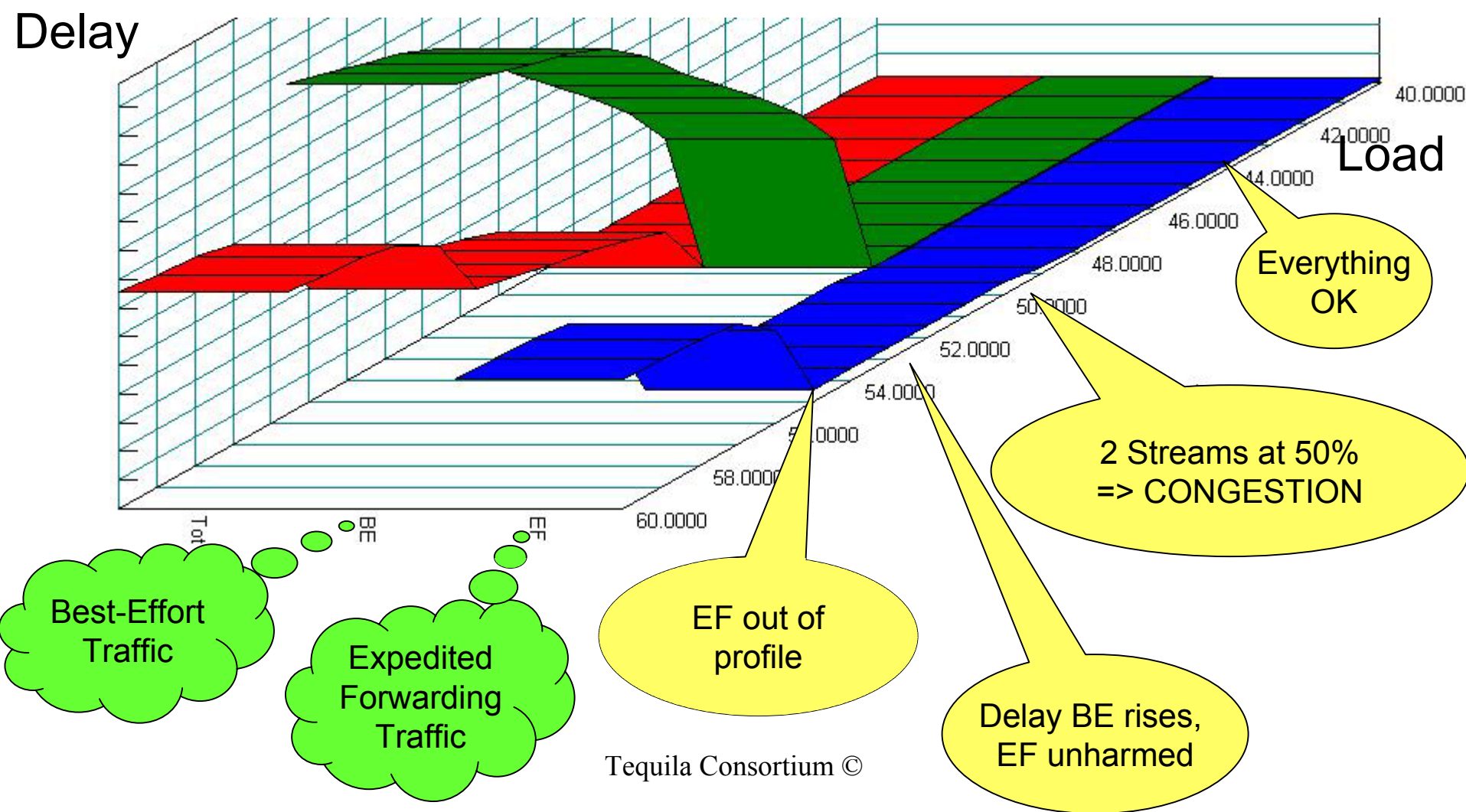


- Marking (DSCP field):
  - Adapt existing applications: `setsockopt()`
  - Marker in edge router



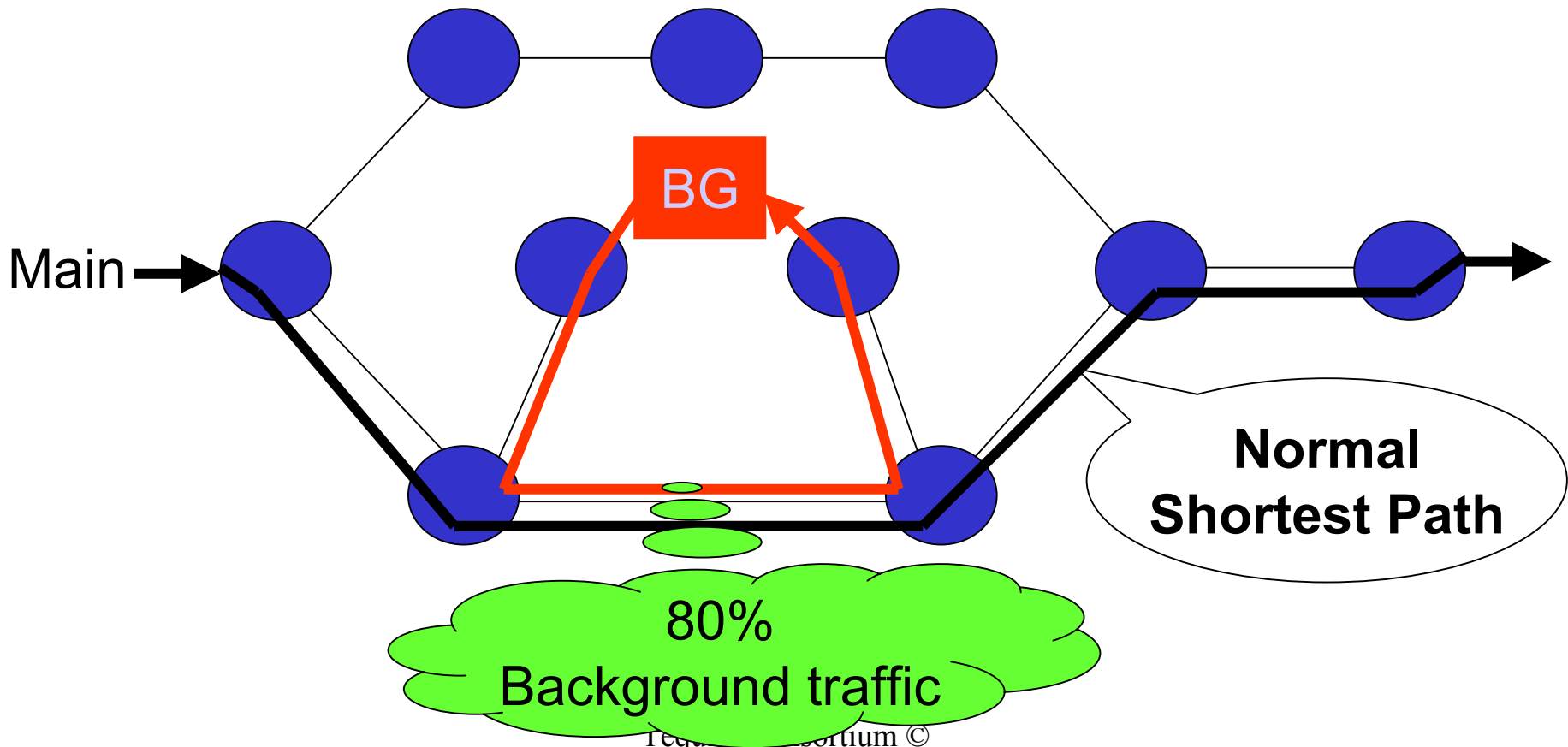


# Smartbits DiffServ Results

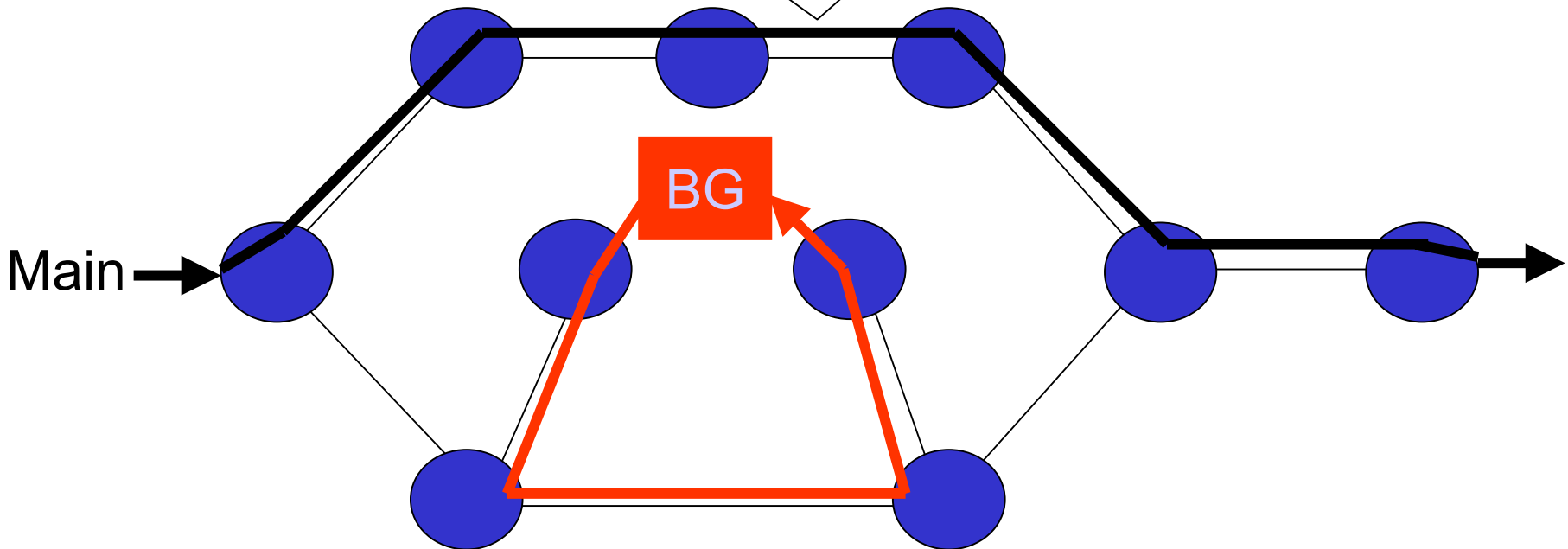




- MPLS signaling: RSVP for Traffic Engineering
  - **Interoperability** Linux and Cisco NE's
  - Based on **existing** daemons for Linux and BSD
  - Bringing **MPLS** and **Explicit Route** support to Linux version
  - Enhancements to support **DiffServ** signaling
- MPLS forwarding
  - Based on **existing** Linux MPLS best effort only code
  - Added **DiffServ** support
  - Added **multiple routing table** support
  - Added packet and byte **counters** at LSP level



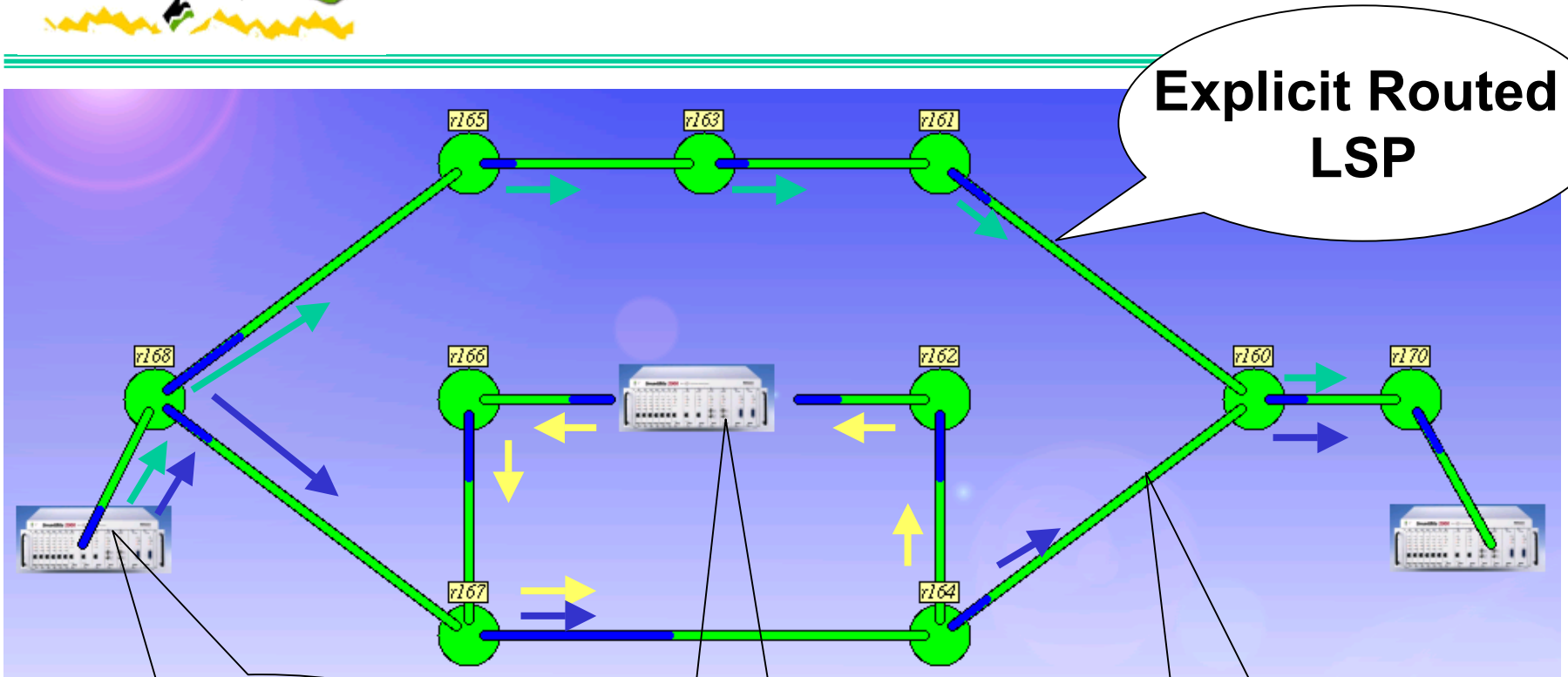
**Congestion bypassed by  
sending traffic through MPLS-  
tunnel**







# MPLS experiment



**Explicit Routed LSP**

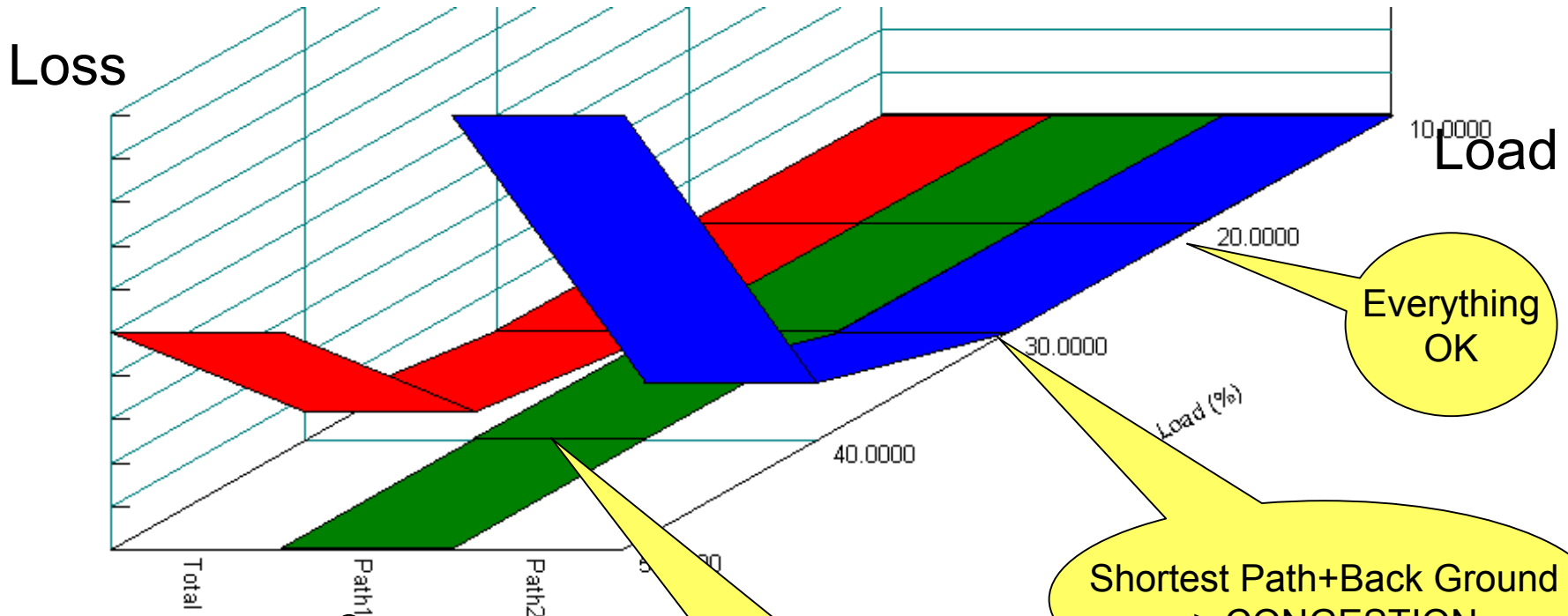
**Generate 2 flows**

**Background traffic**

**Shortest Path**



# MPLS experiment



Everything OK

Shortest Path+Back Ground => CONGESTION

Traffic on LSP not affected

LSP Traffic

Shortest Path