Switched SDH/SONET

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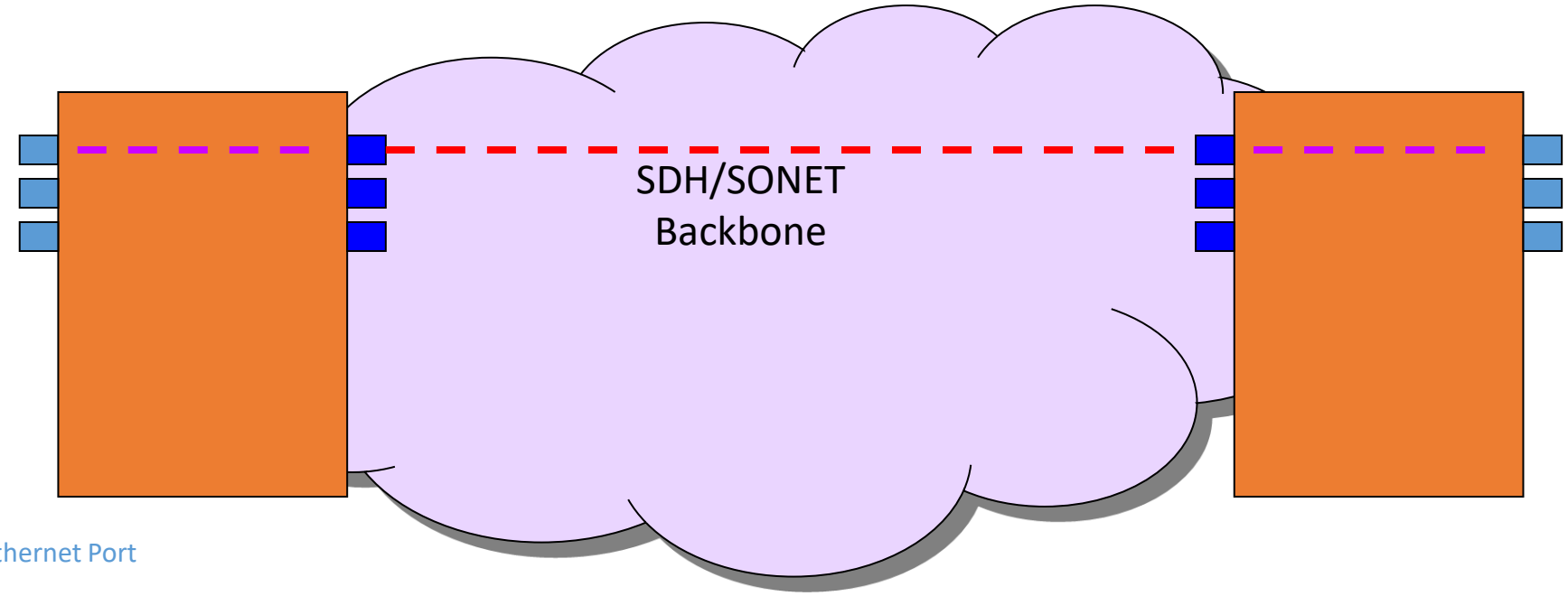
Transport Ethernet



Ethernet Port

GFP

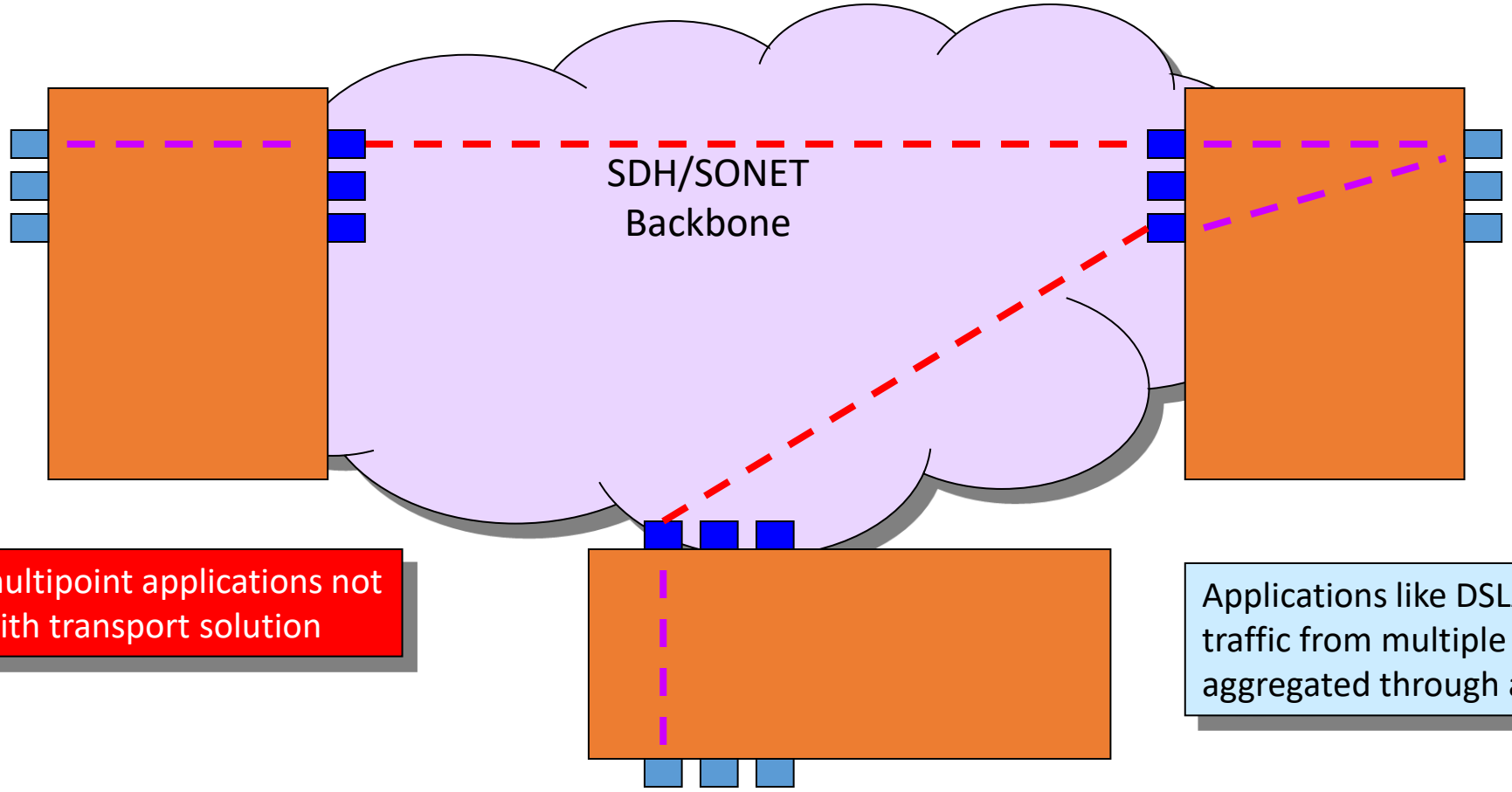
VCG (WAN) Port

VCAT/LCAS

Main application:

Point-to-point Ethernet (EPL)

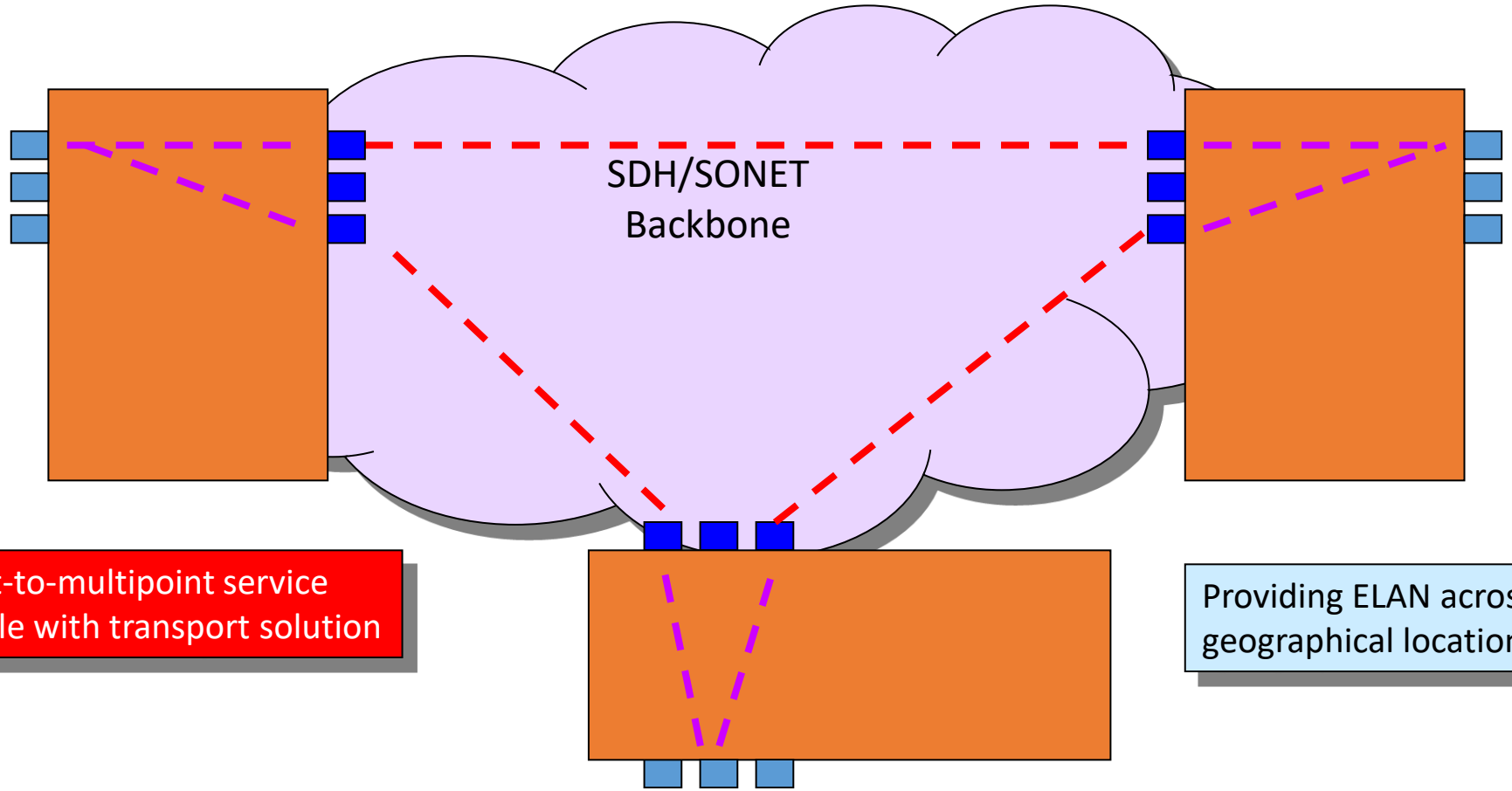
Aggregation application



Point-to-multipoint applications not possible with transport solution

Applications like DSLAM/3G/EVPL requires traffic from multiple locations to be aggregated through a single physical node

WAN application



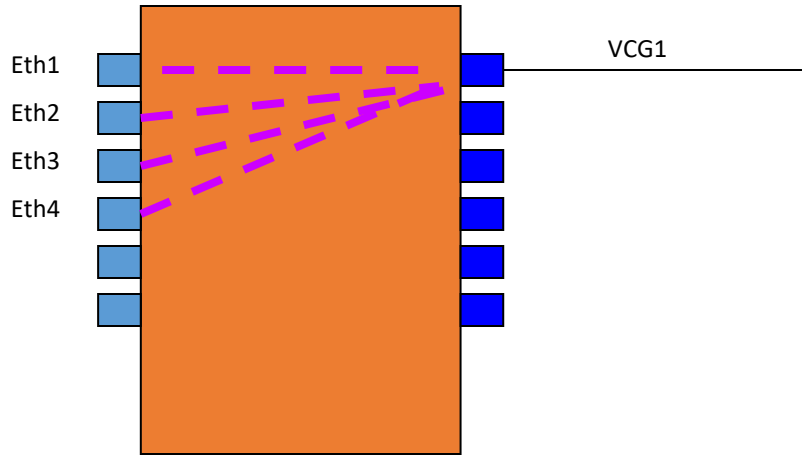
Multipoint-to-multipoint service not possible with transport solution

Providing ELAN across multiple geographical locations

Statistical Multiplexing

There is no allocation of bandwidth till total client bandwidth is more than service bandwidth.

Every client can use the same bandwidth at the same time.



Statistical Gain not possible with transport solution.

Also, Different clients cannot be separated.

Total bandwidth on the Ethernet ports is more than VCG bandwidth.

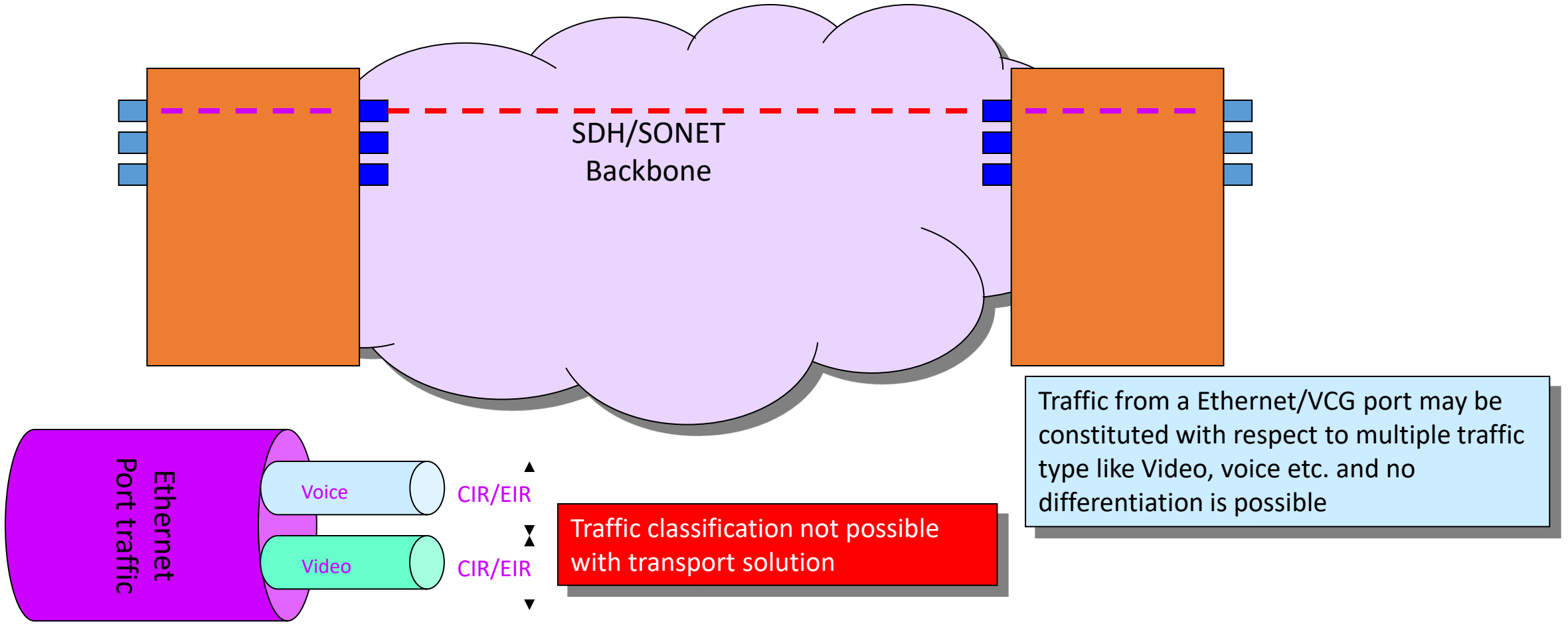
Bandwidth profiling is possible for Diffserv and CoS.

Also, minimum bandwidth requirements for different clients can be served by using WFQ.

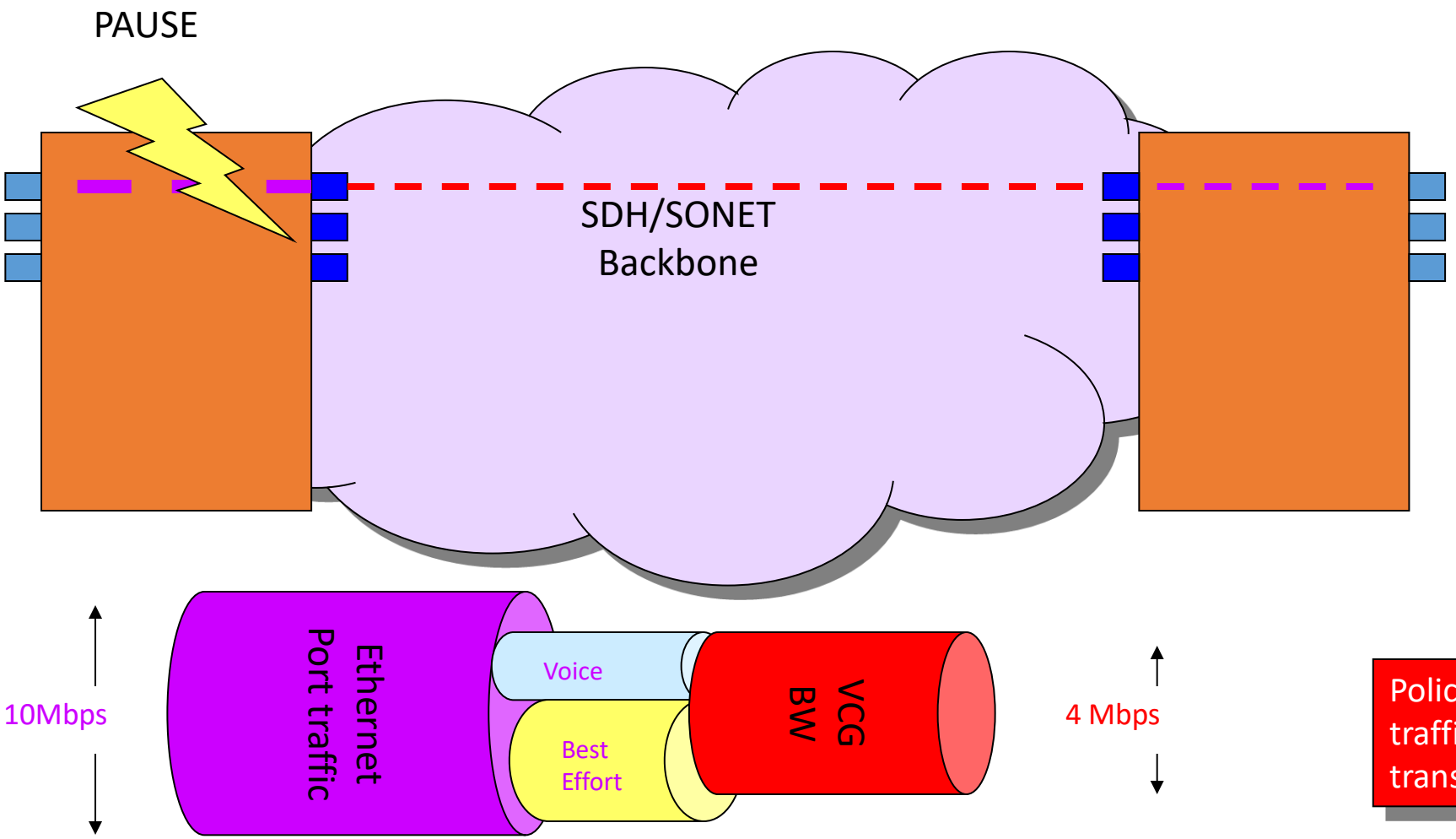
With Statistical multiplexing, one can oversubscribe under the assumption,not all the clients will be active simultaneously. (Statistical Multiplexing gain)

The link sharing is adapted to the instantaneous traffic demands of the data streams that are transferred over each channel.

Service definition



PAUSE mechanism in Transport

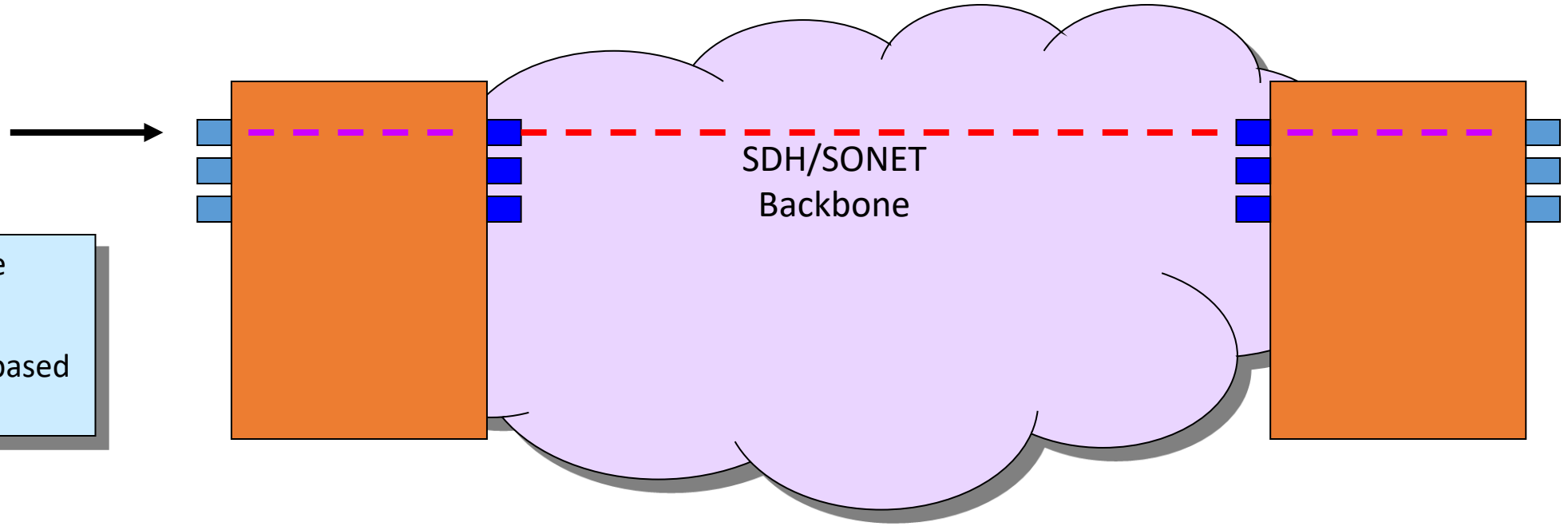


If VCG bandwidth is less than Port bandwidth in transport, PAUSE Frames as per 802.3x are generated and all the traffic is chocked

No preference for high priority voice traffic which can easily squeeze through the allowed VCG bandwidth

Policing, congestion control and traffic shaping not possible with transport solution

Security in transport



All Ethernet traffic are allowed

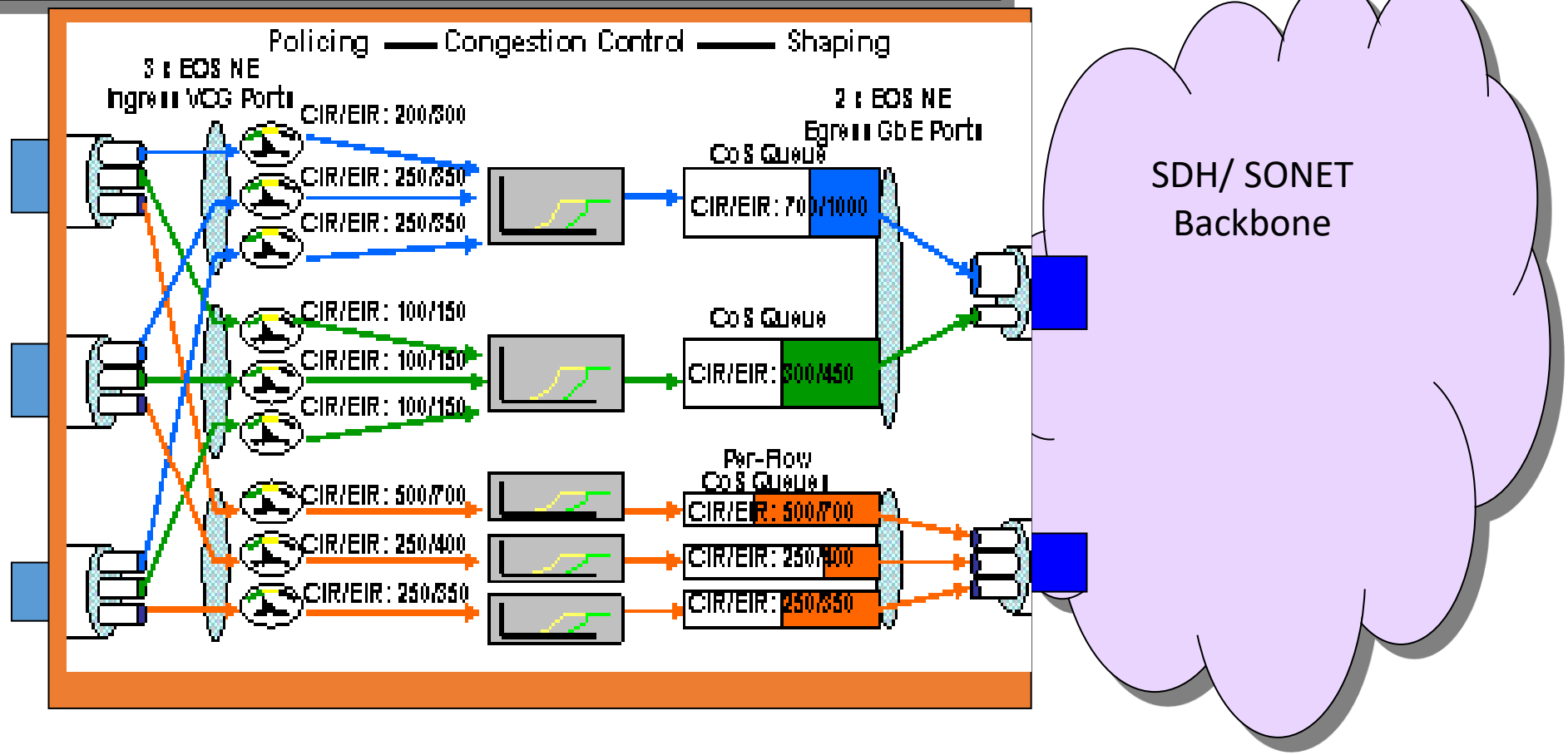
No distinction made based on MAC/IP address

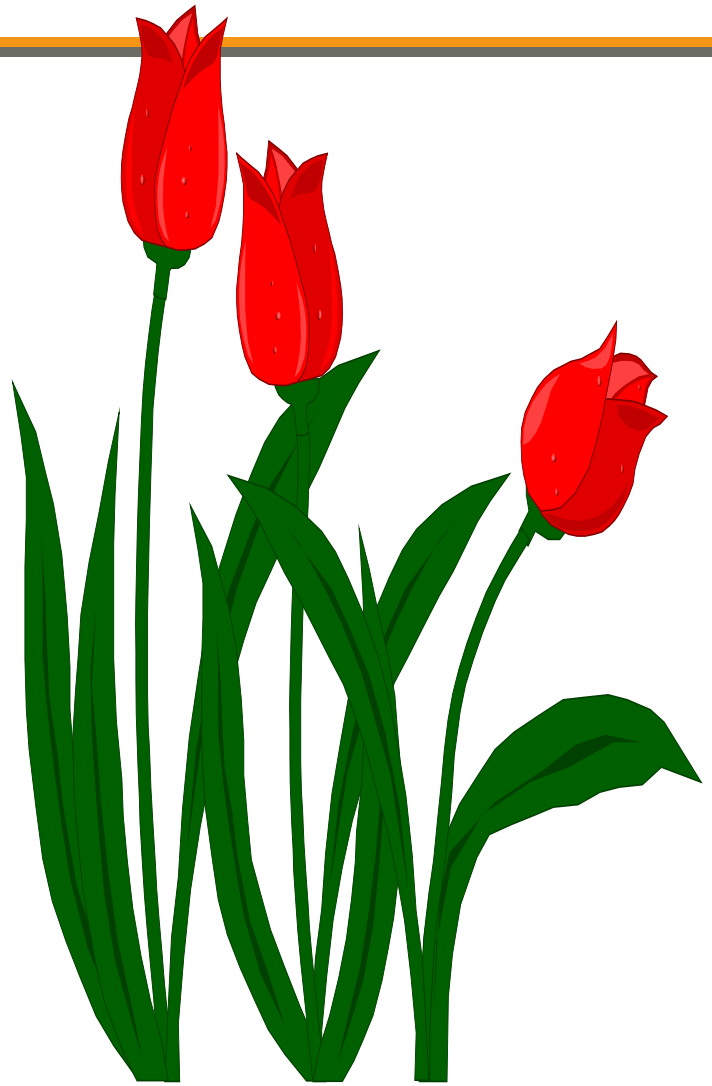
Access control mechanism not possible with transport solution

Conclusion

So what we need is a mechanism which can do the following

- **Traffic classification**
- **Policing**
- **Congestion control**
- **Traffic shaping**
- **Access control list (ACLs)**





Thank You. . .