

Lecture 7 - 2/14/26

Papers: DC TCP, ML for Throughput

Recap → key points

ECN ECN or Afterblast?

Why reflect/echo? Why reflect/echo?

Threshold → CE fixed or no? Threshold → CE fixed or no?

Mandatory Mandatory

How react? How react?

L45 Differ from ECN?

TCP Prague TCP Prague

Reason small queue? Reason small queue?

→ Do to CWN?

Relationship of Queue Size and Th?

DC TCP SIGCOMM 2010

Where? Microsoft

Data Centers

DC for Microsoft?

BG Datacenter Cluster

Datacenter Cluster Topology

14, 24, 44 14, 24, 44 → bps

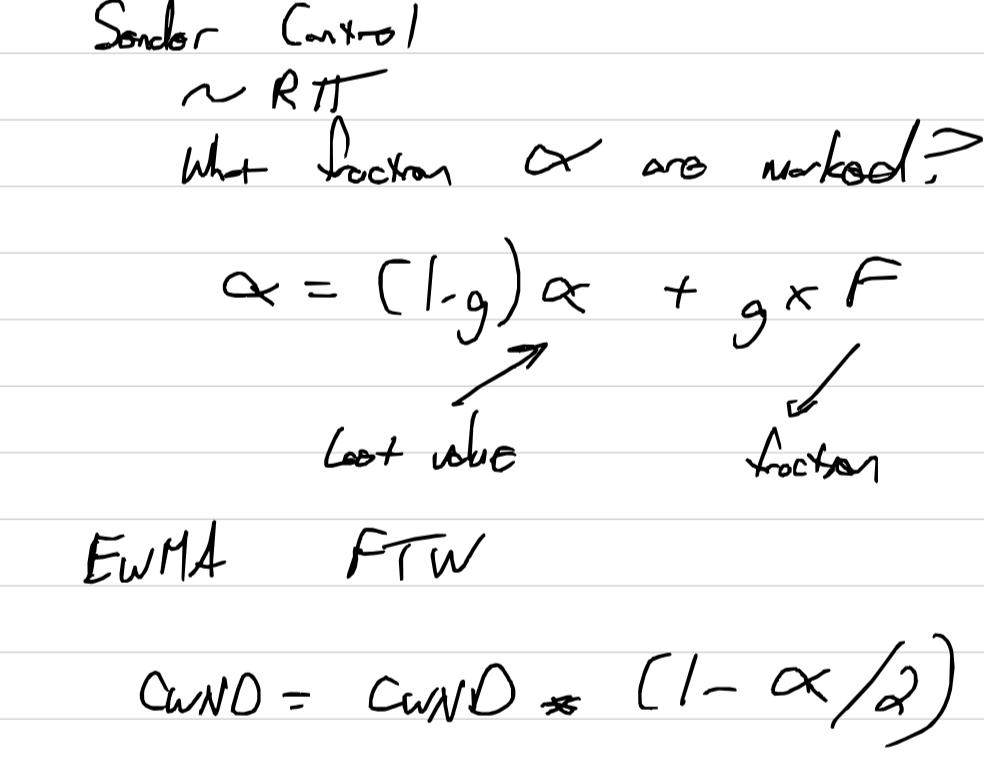
Switch → Discard Switch → Discard → bps

Crossbar Crossbar Limitations

Switch vs. Router

Aim: Modern DC → SDN

Modern Cloud View



Issue: BG flows dominate

FG flows suffer

What are those?

Switches / etc. ECN

Switch has queue? Yes

Portion / Aggregate Request

Aggregate Looks TxD

Worker Worker

Microservices Good response

Lambda Lambda

Monolithic (?) Monolithic (?)

Key points DC TCP

Multi-bit feedback

Fraction of marked packets

Flow lifetime? Client flow or operational flow?

RTT very low

250 μsec → Unloaded

High B/W 1 Gb/s

10 Gb/s

DC → Single admin

Homogeneous

Cross traffic → what is it?

SRV Pst + Pth

Path properties

Sufficient coverage history

File sizes / x-factors

Properties AT

AT vs. RTT

Q vs. delay

L vs. loss

Cross Traffic → what is it?

Path length

ATM for ATB

Q for delay

L for loss

ATB vs. actual

ATB vs. actual