WHAT IS THE DEMO ABOUT?

- Long wait times in accessing the cloud
- TCP inefficiencies:
  - RTTs
  - losses
  - load
DEMO MOTIVATION:
PAINFULLY LONG UPLOAD TIMES

- Proliferating user generated content
- Uploads take a long time
- End user wants: Share the content at the soonest possible
DEMO SET UP: LOGICAL TOPOLOGY

User 1: Uploading Video
User 2: Viewing Video
Part of “Oracle” Solution
Other users: Cross Traffic
The Data Center Cloud
Access Link
DC Link
DEMO SCENARIO I: UPLOADS ON HIGH BDP LOSSY LINKS

- 100 ms RTT between user and server; 0.1% packet loss
- Access Link is 45Mbps; DC Link is GE; No cross-traffic
THE PSEUDO-IDEAL SOLUTION

User 1: Uploading Video

Part of “Oracle” Solution

The Data Center Cloud

Access Link

Video File

User 2: Viewing Video

DC Link
THE PSEUDO-IDEAL SOLUTION

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The Pseudo-Ideal Solution

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The Data Center Cloud
TCP Performance

Upload to the Server. Average: 5.31 Mbps

Upload to the Service Node. Average: 30 Mbps
100 ms RTT between user and server; No packet loss
Access Link is 45Mbps; DC Link is 45Mbps; Heavy cross-traffic
TCP Performance

DC link average: 39 Mbps; User 1: 4.39 Mbps

Upload to the Service Node. Average: 43.3 Mbps
EXAMPLE OF OTHER SCENARIOS: UPLOADING TO MULTIPLE SITES

User 1: Uploading Pictures

User 2: Viewing Pictures

Flickr

facebook

amazon.com web services
CONCLUSION

• TCP in a world of cloud computing will not be a train wreck in the sense that things come to a grinding halt
• But... It will be agonizingly slow in common scenarios
• Lost opportunities in not exploring alternatives?