An Optimal Multipath Assignment Technique for OpenFlow Network

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Background

- The large scaleness of data utilisation in scientific research
 - A platform service for the high-speed large-scale data transfer between sites is necessary

globus online

GridFTP

GridFTP sopports parrallel data transfer by using multiple TCP streams
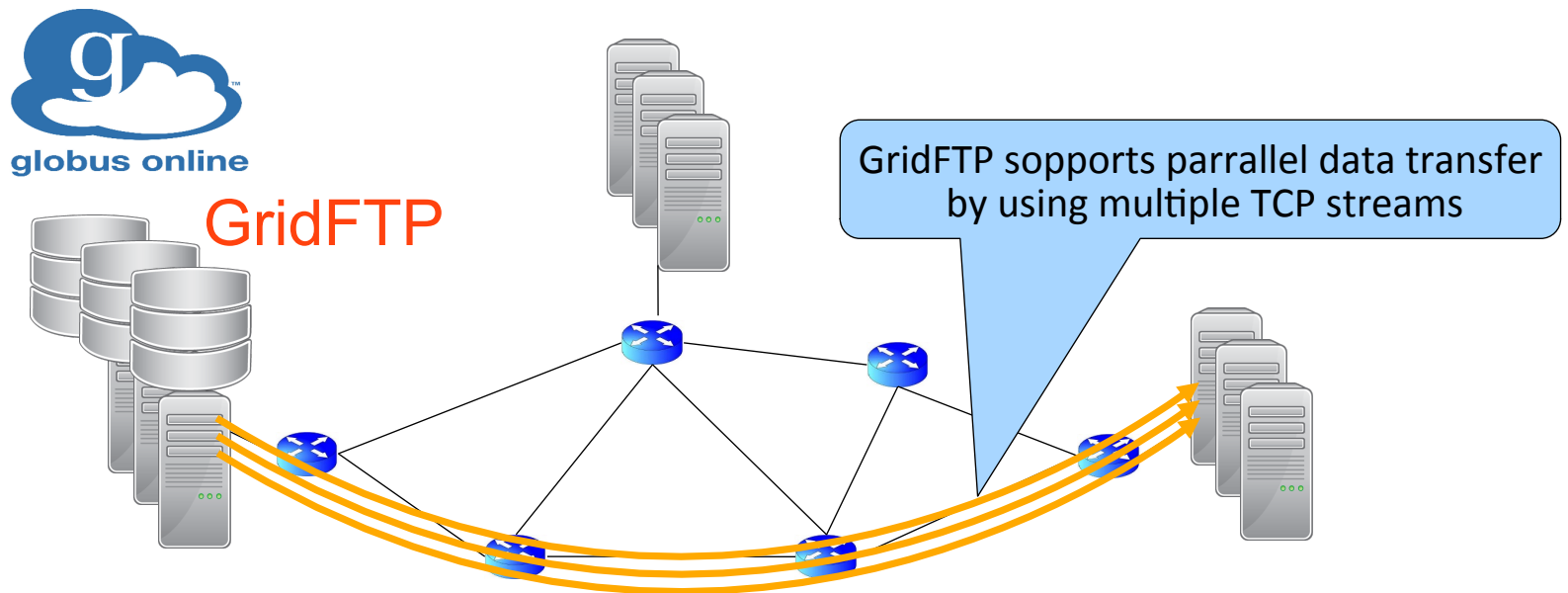
Problem

- ## GridFTP's high-speed transfer
  - Generally, only use the allocated route as per default IP routing
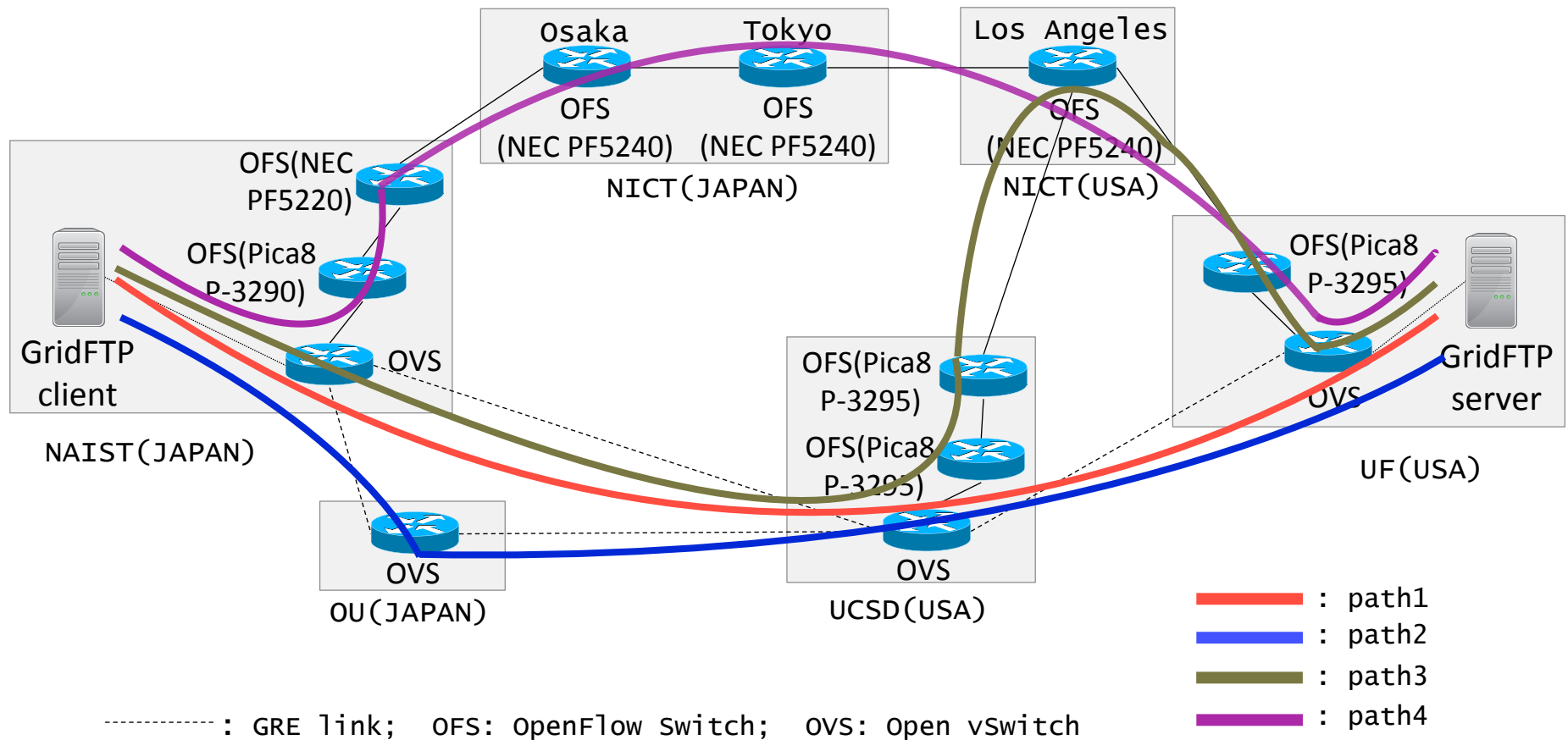

GridFTP

There are unused paths
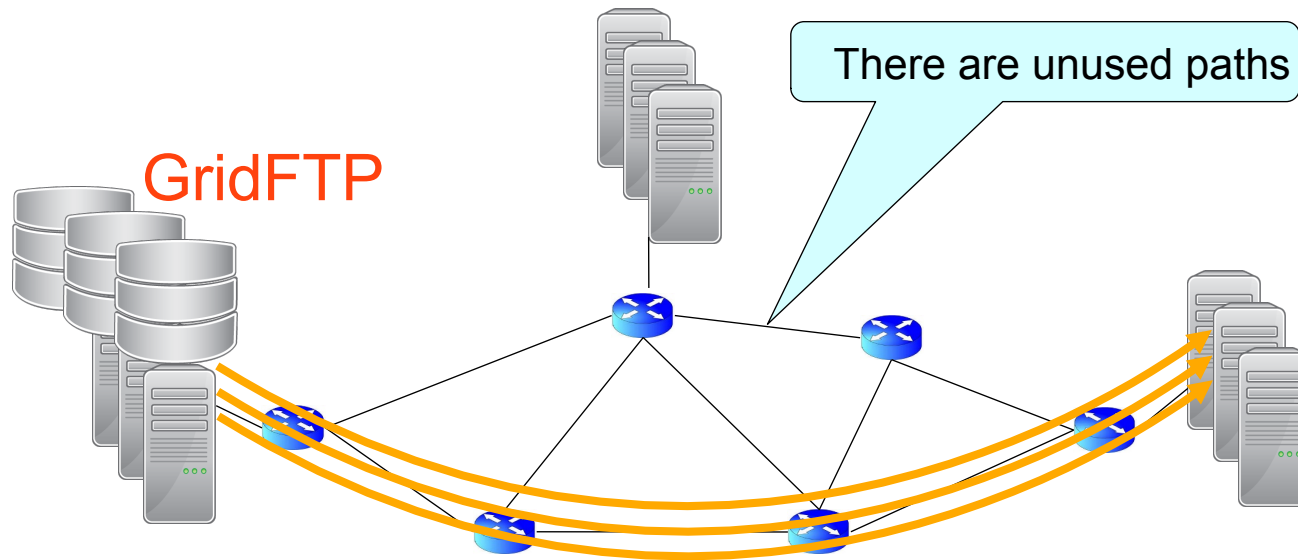
Traffic engineering would allow GridFTP to use
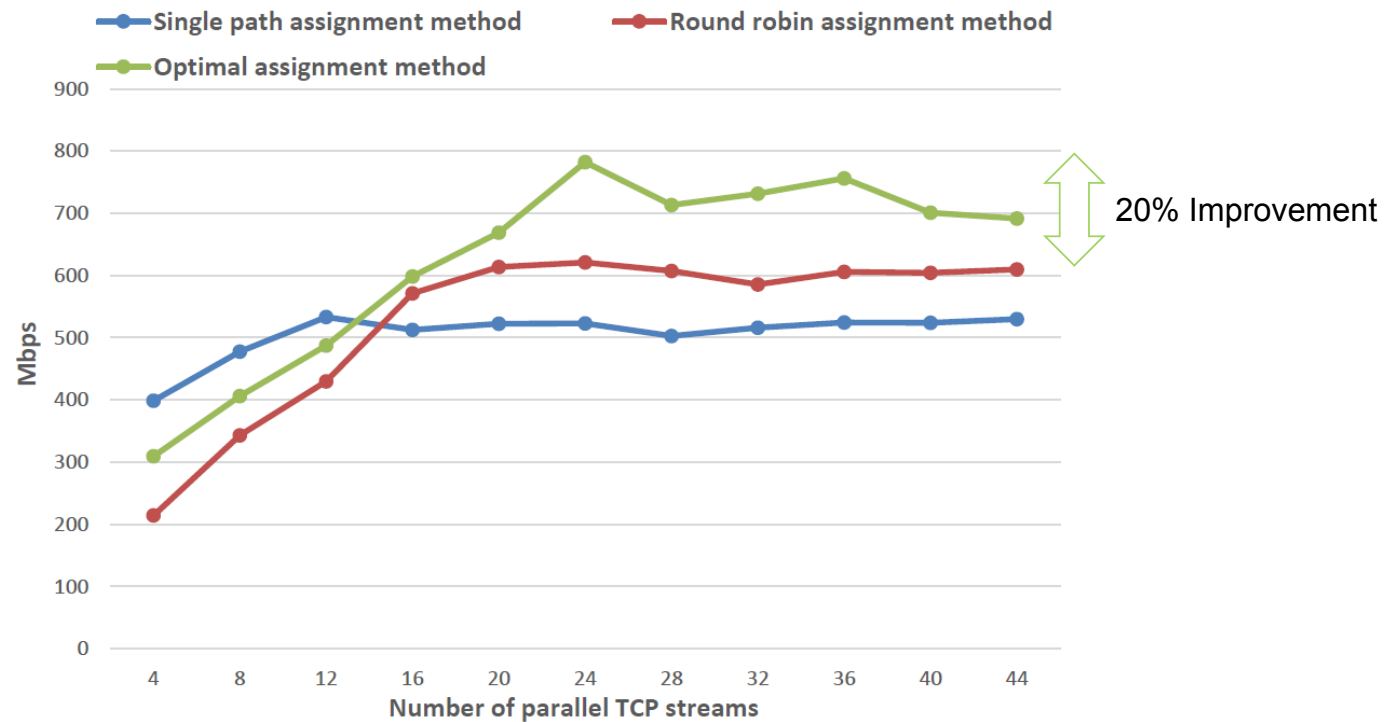multiple paths improving its performance.

Approach

- Parallel GridFTP transfer using SDN
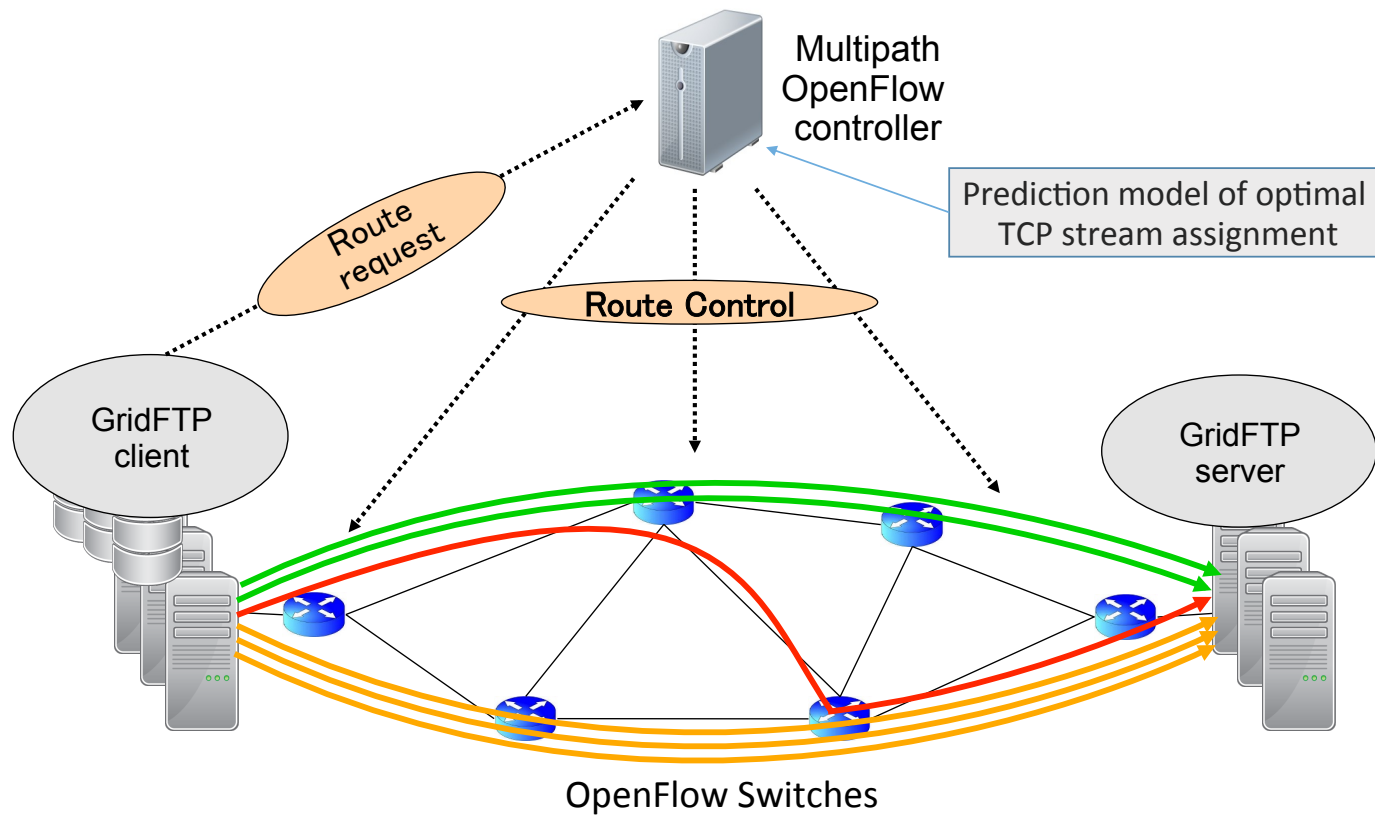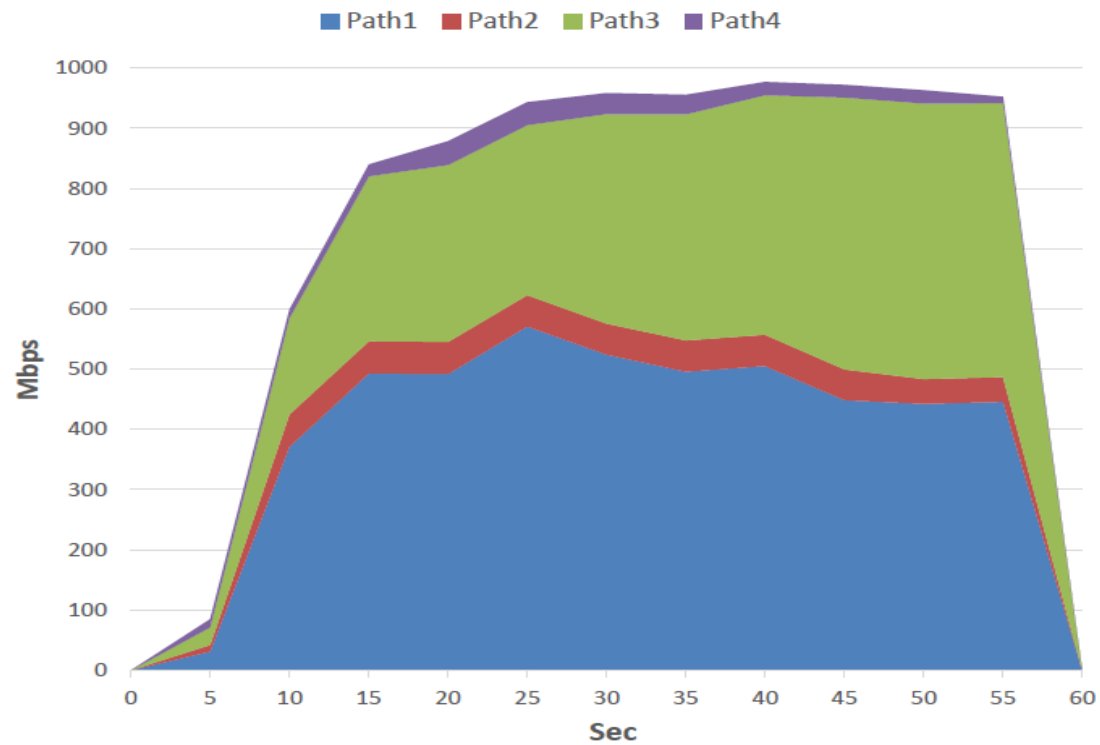
Test on PRAGMA-ENT

Average Speed of Data Transfer

Result1: Comparison of the average data transfer speed between the single path assignment, the round robin assignment and the optimal assignment

Used Bandwidth of Each Path

Result2: Used bandwidth for optimal assignment method in case of using 22 parallel
TCP streams (TCP streams are assigned for each path with a ratio of 4:1:5:1 in order)

THE END &
THANK YOU !