

# Testing the limits of HTTPS single point

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XRootD

## Motivation

LHC experiments move several PB of data a year from site to site. We explored the use of XRootD Third Party Copy protocol over HTTP as a replacement of GridFTP

## Expected Parameters

Parameter	Value
# Parallel files	300
Output file	2GB
Total transferred	4800 Gbits
Link Capacity	100Gbps

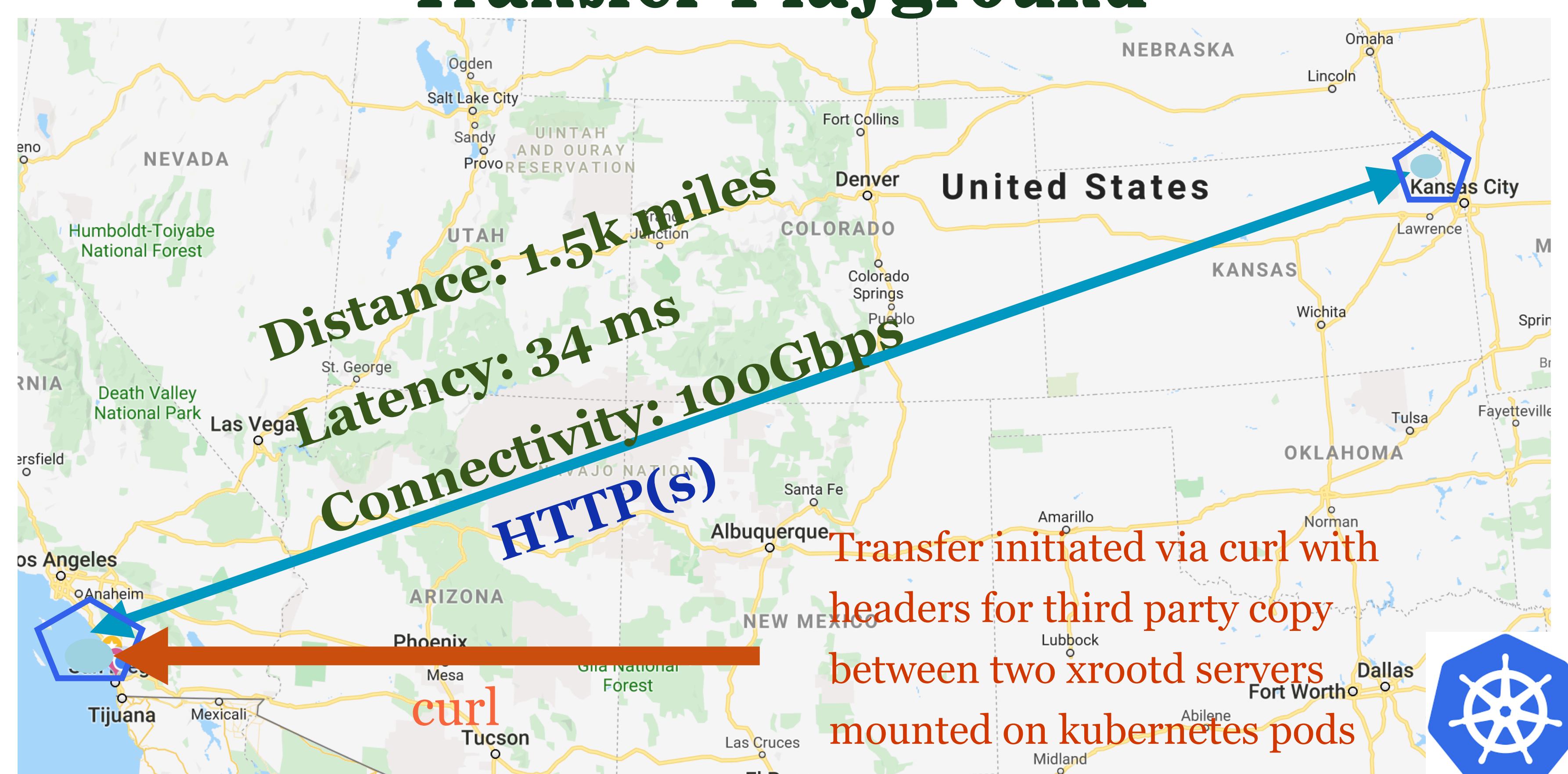
**Maximum transfer speed:**  
**44 Gbps**

LHC

## Hardware Test Specs

Hardware	UCSD	KC I2
Memory	128 GB	128 GB
Network Card	100 Gbit Full duplex	100 Gbit Full duplex
Core count	40	36
NVME Setup	8 JBOD NVME	4 TB raid setup

## Transfer Playground



## Conclusions

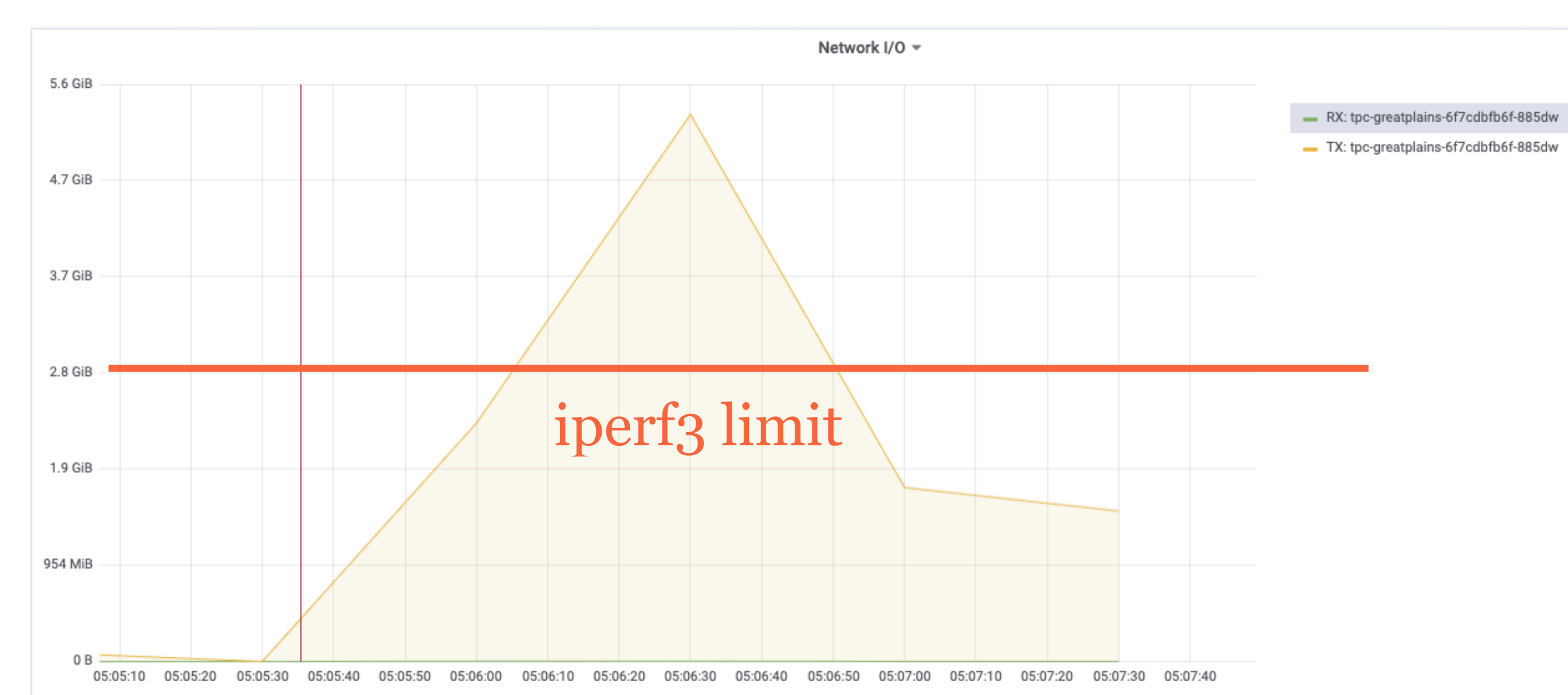
- Xrootd third party copy over HTTP(s) can outperform on single node to node disk transfers than GridFTP over the wired area network.
- Xrootd does not seem to be the limit on why the link limits are not reached.
- More work needs to be done to understand the impacts of containers on high performant services.

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## Xrootd Third Party copy over HTTP can outperform iperf



Transferring 300 1GB files over the WAN using 5 streams per file

