Closed-loop provisioning

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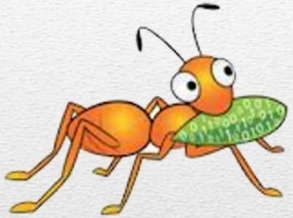
GlusterFS synergy between



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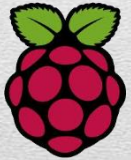

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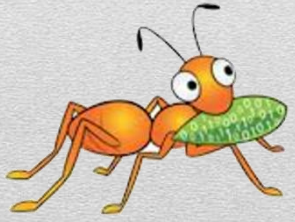
Turn-key GlusterFS solutions

100 TB – 4 PB

together with:



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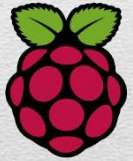

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Closed Loop Provisioning powered by:

- Red Hat Storage Server (GlusterFS)
- SuperMicro Servers
- KRATZ RedHat Storage Appliance

  (available on Raspberry Pi and VM)

Why Closed-Loop provisioning?

- built on years of deployment know-how
- it helps you to consistently deploy large GlusterFS clusters
- it keeps you from human mistakes while installing a lot of nodes
- safely upgrade software versions

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how does it do that?

KRATZ RedHat Storage Appliance

- deploys Red Hat Storage Server (GlusterFS) via PXE and Kickstart templates
- configures all system settings
- verifies all system parameters using Nagios templates after deployment
- monitors individual nodes

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what do I need to run it?

- KRATZ RedHat Storage Appliance
  (Can run on RHEL VM or Raspberry Pi)
- Red Hat Storage Server ISO
- at least one node to deploy Red Hat Storage Server

how do I deploy?

- for four nodes it is as simple as:

```
sh ./configure -h rhss01 -f rhss01.gl.nl -m 00:25:90:2F:5F:A0 -g 10.245.160.1  -p 192.168.252.1 -n 10.245.161.1
sh ./configure -h rhss02 -f rhss02.gl.nl -m 00:25:90:4f:46:90 -g 10.245.160.128 -p 192.168.252.2 -n 10.245.161.128
sh ./configure -h rhss03 -f rhss03.gl.nl -m 00:25:90:2f:6d:08 -g 10.245.160.2 -p 192.168.252.3 -n 10.245.161.2
sh ./configure -h rhss04 -f rhss04.gl.nl -m 00:25:90:2f:67:d4 -g 10.245.160.129 -p 192.168.252.4 -n 10.245.161.129
```

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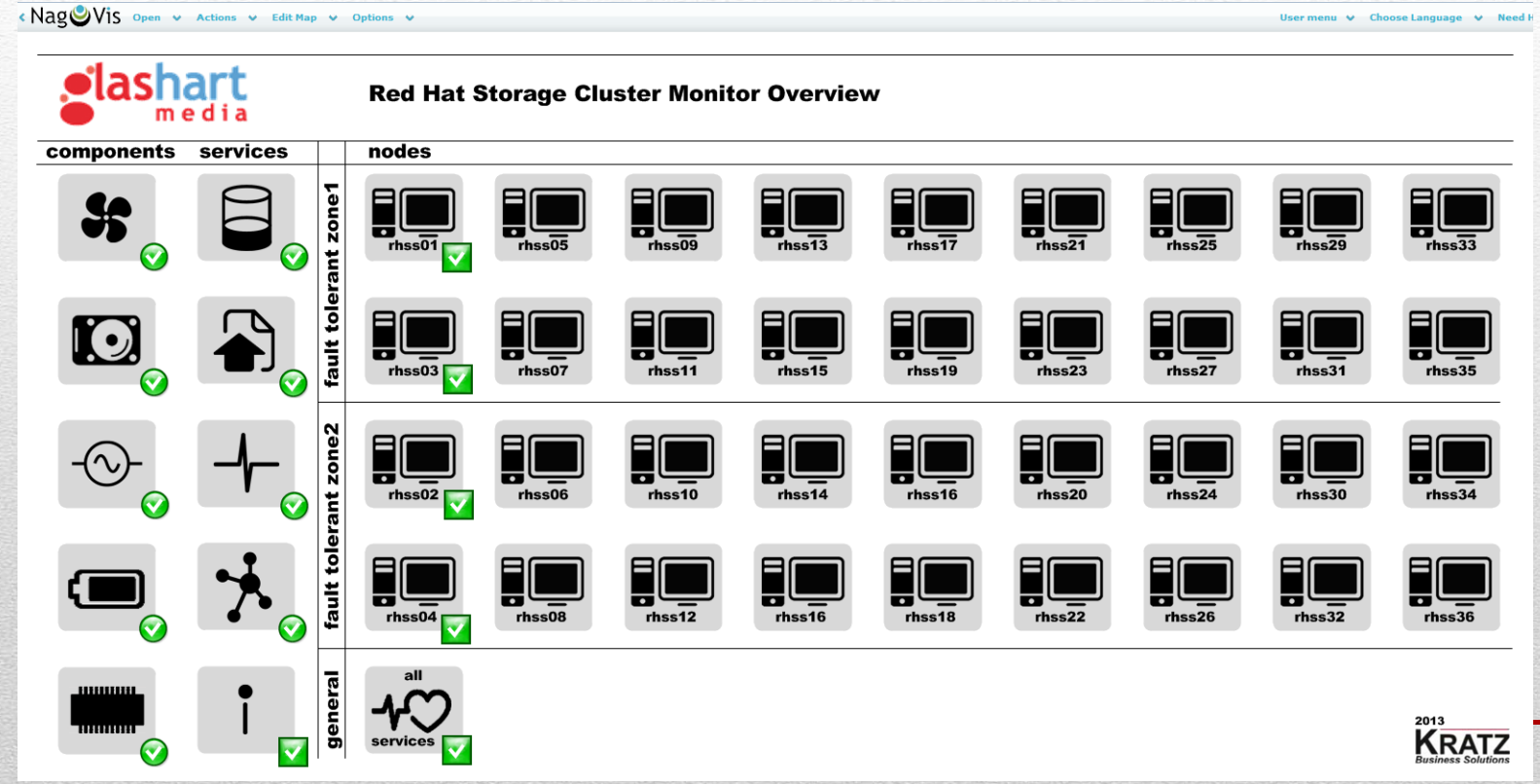
How do I monitor?



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use case:

- 1 petabyte fault tolerant storage backend for network Personal Video Recorder (nPVR)
- streaming nPVR Video On Demand to one million households
- current volume size: 100 TB, soon scaled-out to 1 PB with Closed-Loop deployment

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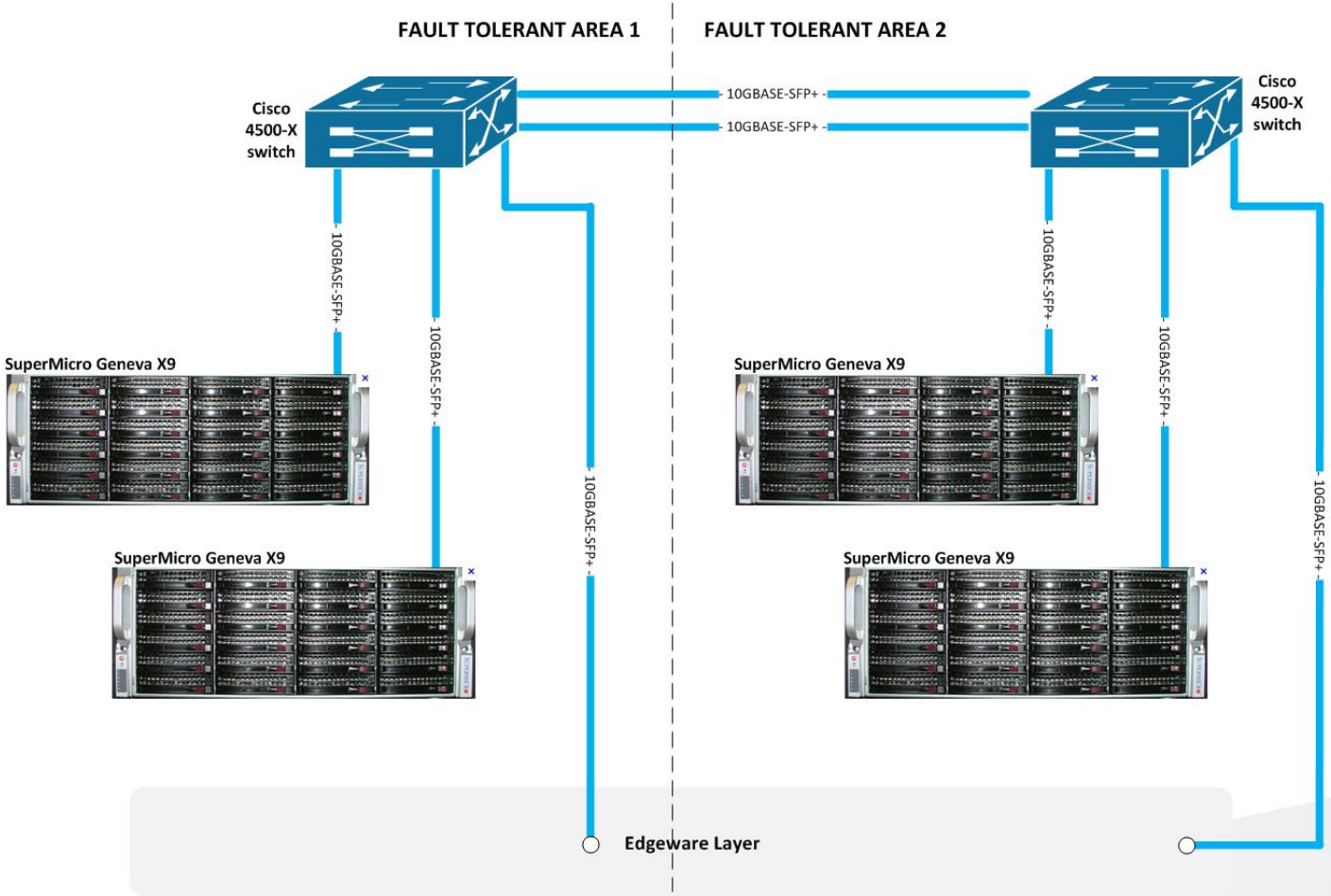
hardware setup

- 4 nodes (SuperMicro) with 24x 7.2k RPM disks each
- distributed-replicated (two fault tolerant areas)
- connected by 10 Gbe



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performance tests (4 nodes):

- sustained load during 12 hours :

- at any time 1 - 16 concurrent FTP reads of random files with sizes of 1 - 10 GB
- at any time 1 - 16 concurrent FTP writes of random files with sizes of 1 - 10 GB

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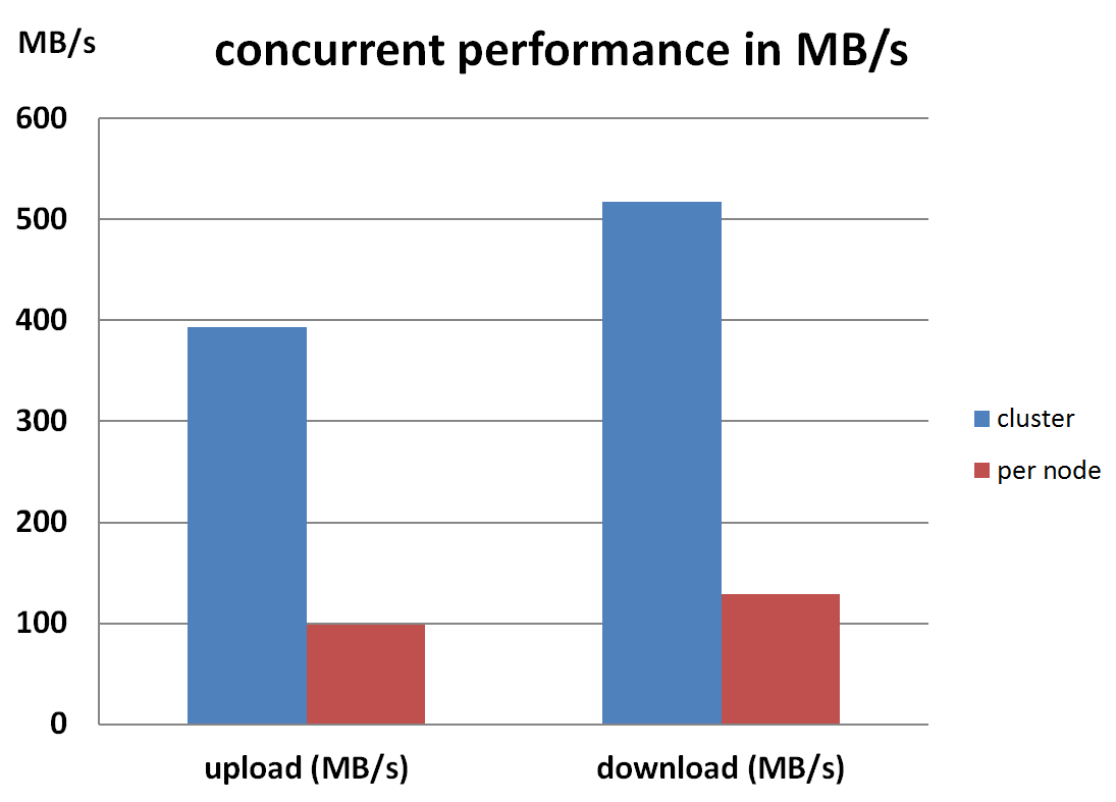
performance results (4 nodes):

- 910 MB/s (sequential IOPs) sustained during 12 hours
- 55/45 read/write ratio

throughput per node (4 nodes):



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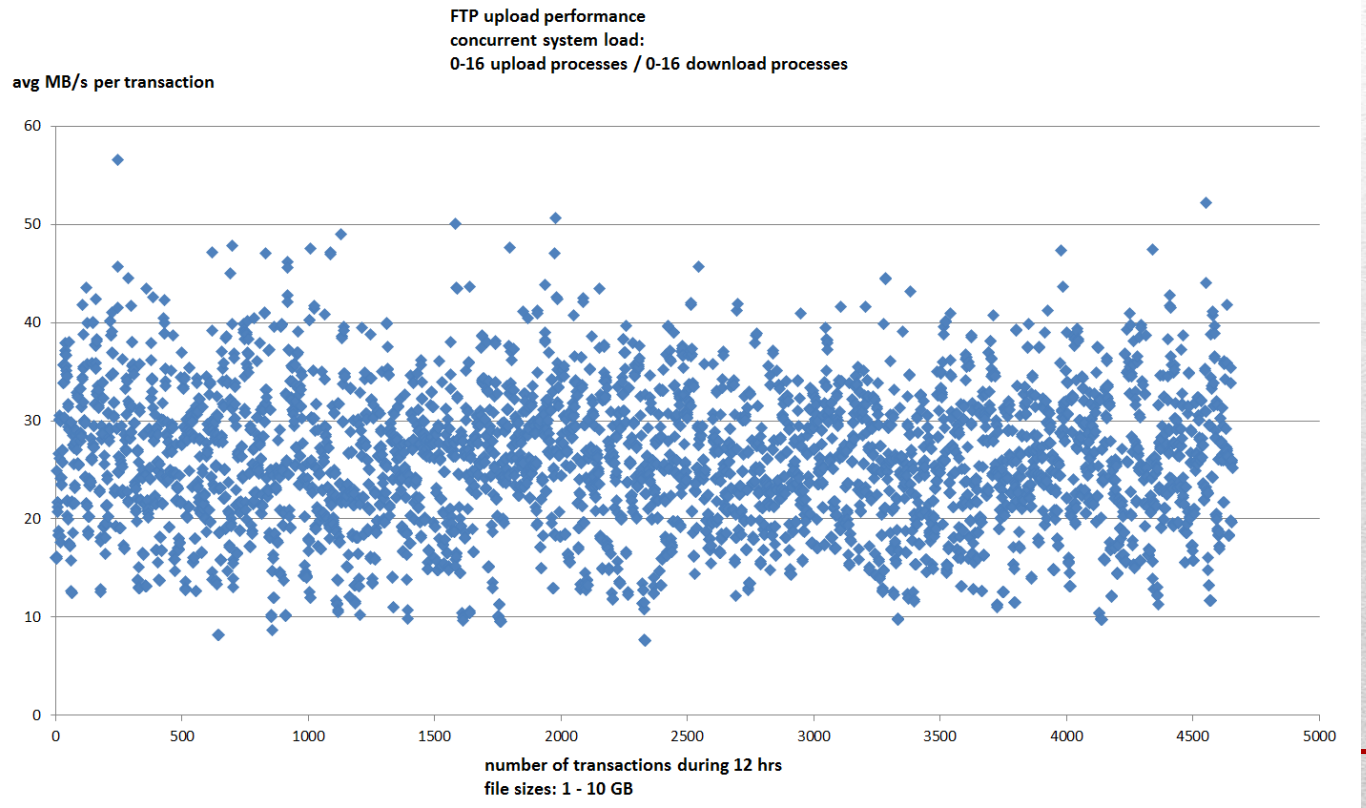
FTP upload performance: (4600 sessions in 12 hrs)



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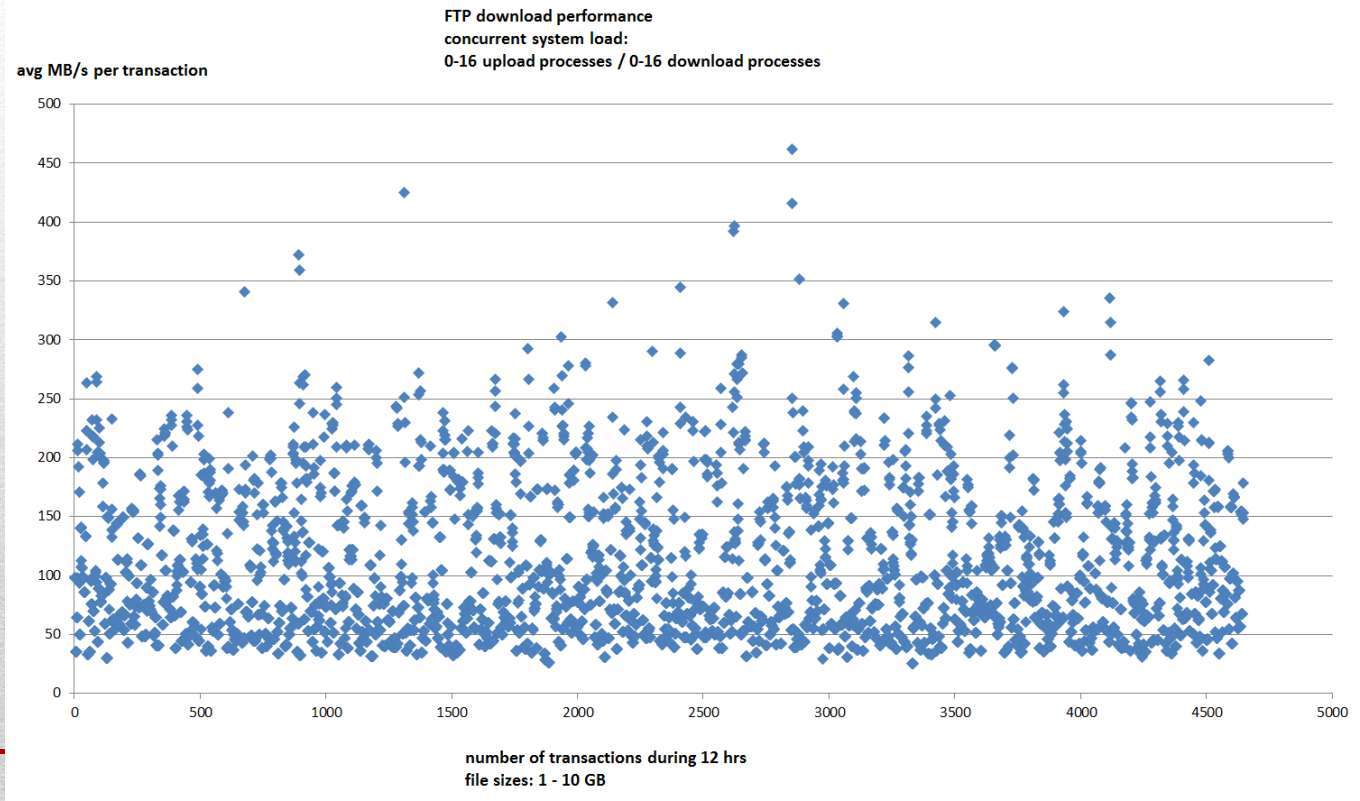
FTP download performance: (4600 sessions in 12 hrs)



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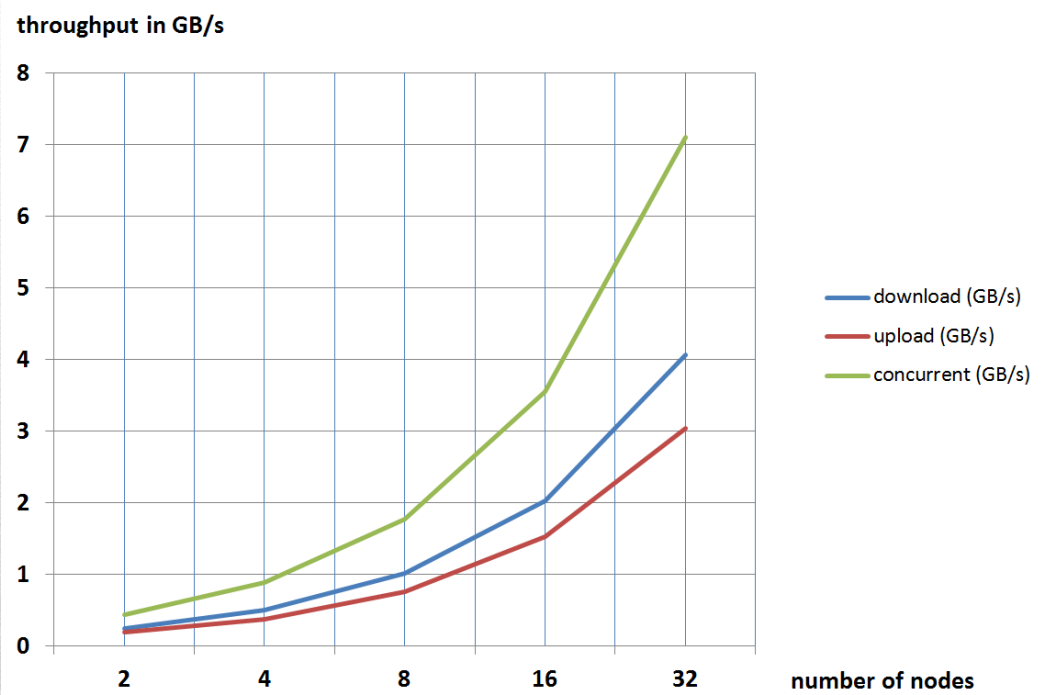
Scale-out performance growing to 32 nodes:



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