Scale-out File Sync & Share with Red Hat Storage and ownCloud

Performance Results: Top Benchmark to Date on HP SL4540

Enterprise File Sync and Share Solution Benefits:

- Scale to 25K users and beyond on standard HP Proliant SL4540s

- Collapse the compute and storage layers for cost and operational efficiencies

- Secure enterprise files in a solution you control

ownCloud and Red Hat Storage have teamed up to provide enterprises a solution for solving their Enterprise file sync and share problem – one that is installed on site and managed by the enterprise. With ownCloud and Red Hat Storage, enterprises can scale their private file sync and share solution like a public cloud, growing to meet the most strenuous enterprise demands. Further, by deploying ownCloud and Red Hat Storage converged on standard hardware, enterprises can reduce the total cost of ownership of a file sync and share solution by as much as 50%. The bottom line? Enterprises can cost effectively retake control of their files with on-site app servers and storage, while providing end users the simple, easy to use file sync and share experience that they demand.

The Benchmark

HP provided Red Hat and ownCloud 2 ProLiant SL4540 Gen8 2 node servers, and 4 ProLiant DL380 G5s for the performance tests. ownCloud and Red Hat Storage were installed together (converged) on both ProLiant SL4540s, providing two duplicate storage and application server nodes. In addition, a MySQL NDB cluster was installed on two of the DL380s, storing user and file meta data. One DL380 was used as a load balancer out front, balancing client loads between the two ProLiant SL4540s. The final ProLiant DL380 was used as a load generator. Scripts were executed on the load generator to simulate client activity. The load generator saturated this installation with an estimated 50,000 active users, simulating steady state ownCloud in operation.
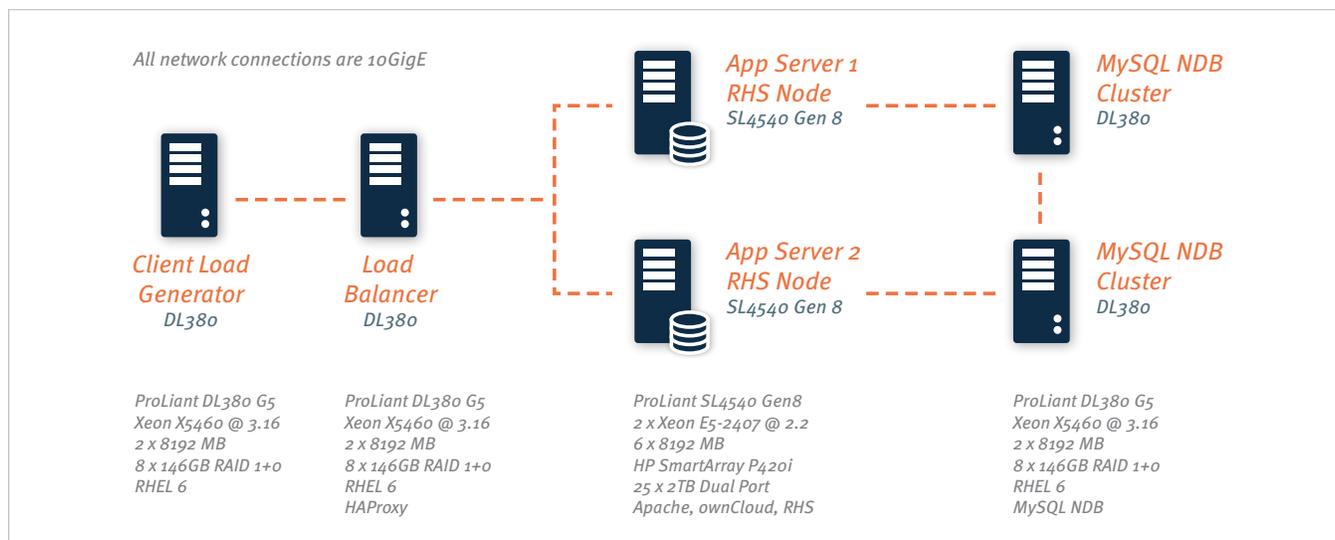
User Behavior

This benchmark is based on the average ownCloud user model, the results of several years of working with ownCloud customers in production. As per this model, each user was assumed to have 1.2 desktop clients syncing actively with the server at any time - in other words, for every 5 users on ownCloud, 4 were syncing with 1 desktop client, and 1 was syncing with 2 desktop clients. In addition, it is assumed that each user accessed the server once every hour with a mobile app to browse the file list, and the user also downloaded 1 new file and uploaded 2 new files every hour.

Results

Based on the user assumptions outlined above and the performance of the hardware and software configured in this test, this environment can support up to 950 end user mixed transactions per second. Converting this to user load, this equals up to 25,000[1] active end users in steady state. Further, this architecture can easily scale to hundreds of thousands of users with the addition of database, storage and app server nodes, making it possible to deliver your enterprise cloud scale file sync and share from within your data center.

All network connections are 10GigE

Client Load Generator
DL380

ProLiant DL380 G5
Xeon X5460 @ 3.16
2 x 8192 MB
8 x 146GB RAID 1+0
RHEL 6

Load Balancer
DL380

ProLiant DL380 G5
Xeon X5460 @ 3.16
2 x 8192 MB
8 x 146GB RAID 1+0
RHEL 6
HAProxy

App Server 1 RHS Node
SL4540 Gen 8

App Server 2 RHS Node
SL4540 Gen 8

ProLiant SL4540 Gen8
2 x Xeon E5-2407 @ 2.2
6 x 8192 MB
HP SmartArray P420i
25 x 2TB Dual Port
Apache, ownCloud, RHS

MySQL NDB Cluster
DL380

MySQL NDB Cluster
DL380

ProLiant DL380 G5
Xeon X5460 @ 3.16
2 x 8192 MB
8 x 146GB RAID 1+0
RHEL 6
MySQL NDB

[1] Results are based on simulated user behavior in a steady state.