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# Design a High-Performance SAS Grid Infrastructure

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## Introduction

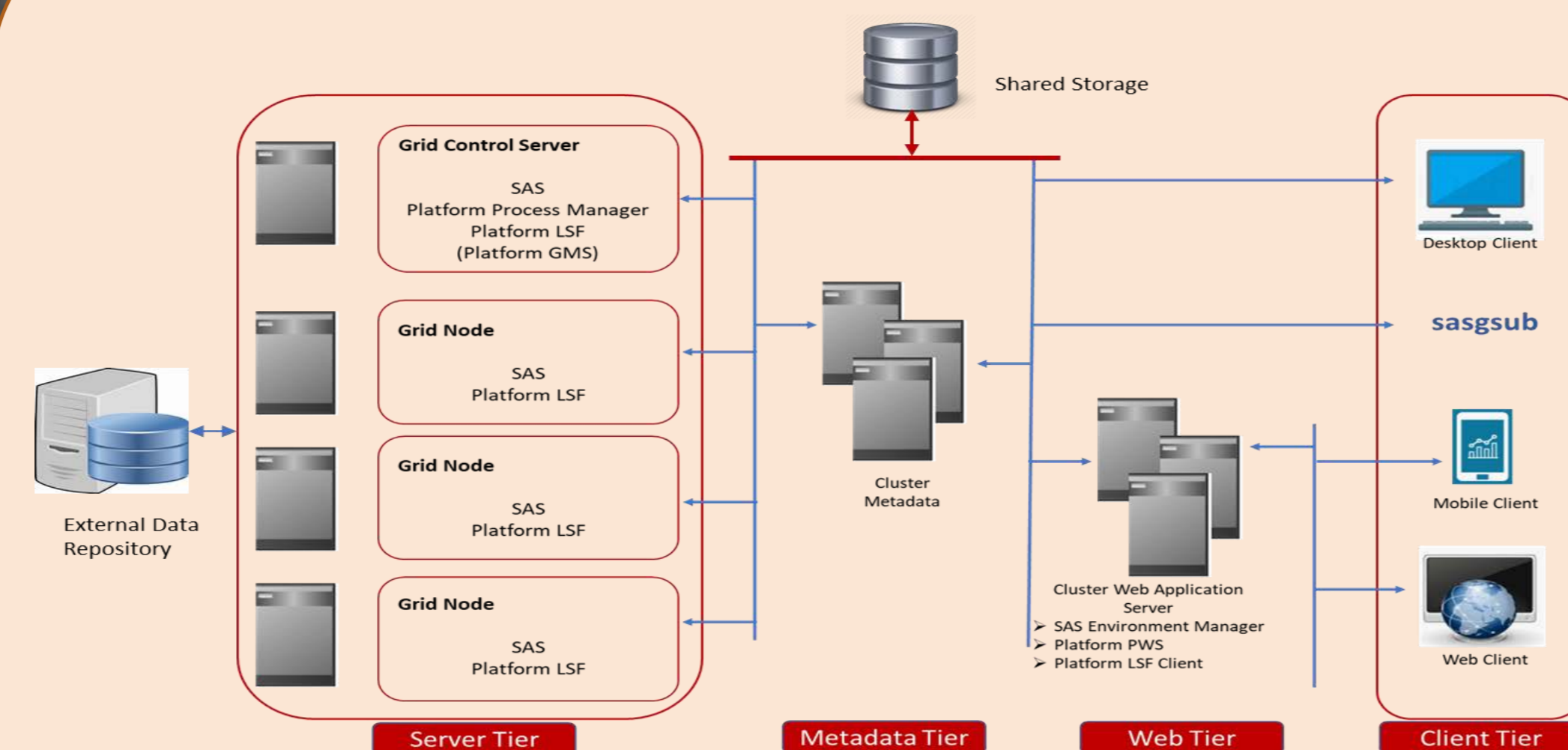
Considering the fact that SAS® Grid has become more and more popular among financial institute to run their regulatory runs, it is important to have a GRID which can meet the needs. This E-poster focuses on key Design requirements a High-Performance and reliable SAS GRID Platform.

Here we will focus on few key factors which will impact the performance aswell as the resiliency of system.

## Design Factors

When Designing a New Architecture for a platform, few key consideration needs to be considered:

- Performance
- Reliability & Availability
- Scalability
- Cost



## Things to consider

### Storage Disk

What storage needs to be used

- HDD(Spinning disk)
- SSD
- Flash
- Hybrid

### Storage Share

- Network Appliance (NFS)
- Sun StorageTek QFS
- Veritas Clustered File System (CFS)
- Redhat GFS2
- Lustre Filesystem
- IBM Spectrum Scale (GPFS)

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- Global File System (GFS)
- Lustre Filesystem
- IBM Global Parallel File System (GPFS)

### Server Resource

- Bare Metal vs Virtual Machine
- Number & type of CPU
- How much Memory
- Network card

### S/W tuning

Custom SAS Configuration which can significantly improve the performance for the jobs running on it.

- sasv9.cfg
- Isf resources

## Design Recommended- Financial Client

- Flash storage for persistence current data along with low level storage for historical information.
- BM for all compute servers and VM for supporting servers.
- High Availability using Metadata clustering, Horizontal midtier clustering and F5 load balanced jump/batch servers.
- 2 X 40GB network card for BM computer servers.
- IBM Spectrum Scale for File share
- IBM Spectrum AFM for data replication for DR system.
- Custom SAS configuration for each user group
- Setting up queues based on user categories.

## References

- SAS® Grid – What They Didn't Tell You
- Manuel Nitschinger, Analyst / Risk Solutions Manager, sIT Solutions Phillip Manschek, Technical Architect, SAS Institute Austria
- Tuning Shared/clustered file systems :SAS Usage Note 53875