



# Solve Market Risk Model File IO Bottlenecks

Pieter Fountain, Avere Systems

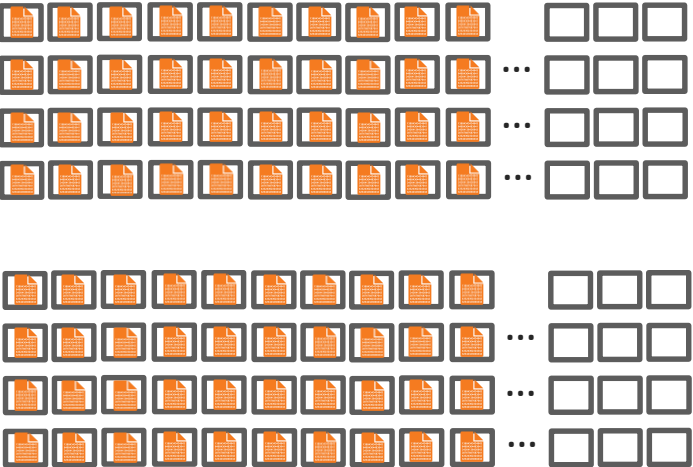


# Data Management Challenges

- Exponential growth of unstructured data
  - More relevant live data feeds
- Random, Bursty, I/O intensive workloads
  - Distilling results – map reduce workload is intensive
  - Latency to clients is painful and costly
- Need to run models, analytics, back tests more often and faster
  - Compliance, Governance, Production

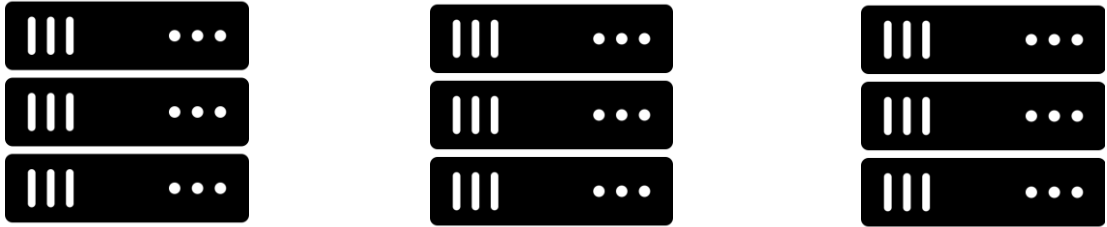
# Challenges...

Add more compute cores  
Change file system  
Change network



Add more nodes to the NAS  
Add Flash to the nodes  
Add more memory to the nodes

Until the system can no longer scale

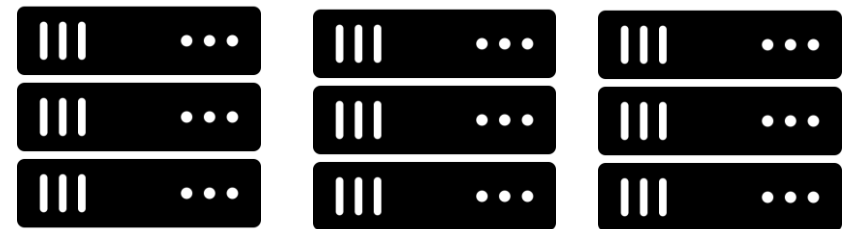
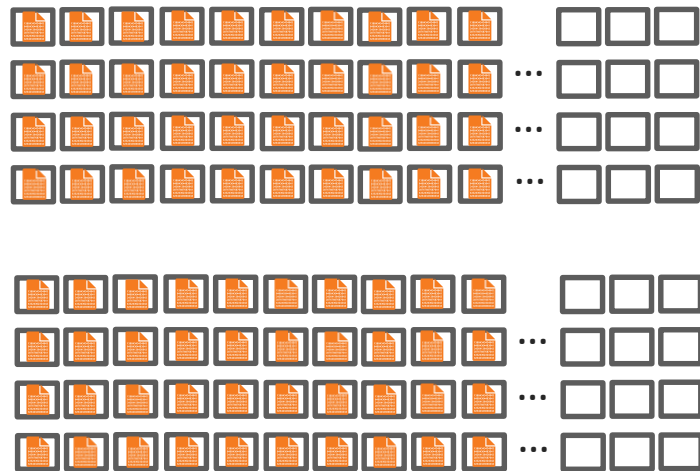


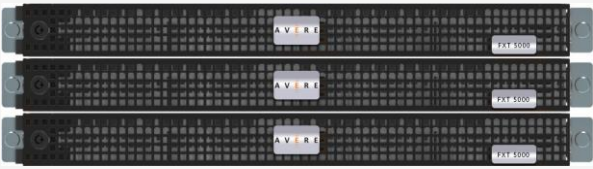
# Drop-in Alternative

Leverage NFS

Leverage 10GbE

Use DRAM and SSD as cache





# Averre FXT 5600 – Fastest and Most Efficient NAS

## High performance

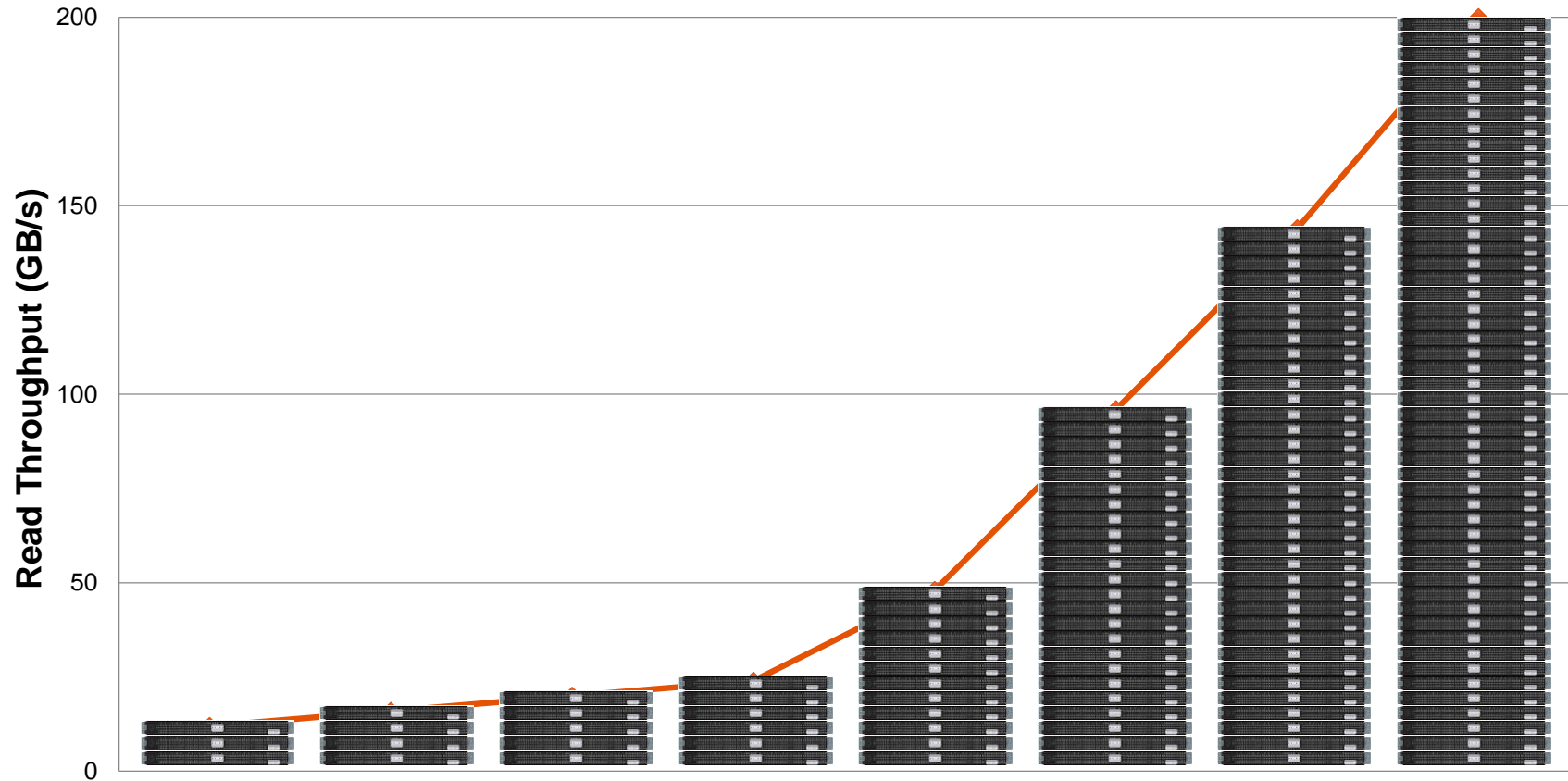
- 200GB/s max
- 20M Getattr IOPS max
- 5M Read IOPS max

## All-Flash tier

- High density
- 1RU per FXT

## Highly efficient

- NAS and public/private object storage support
- Better economics



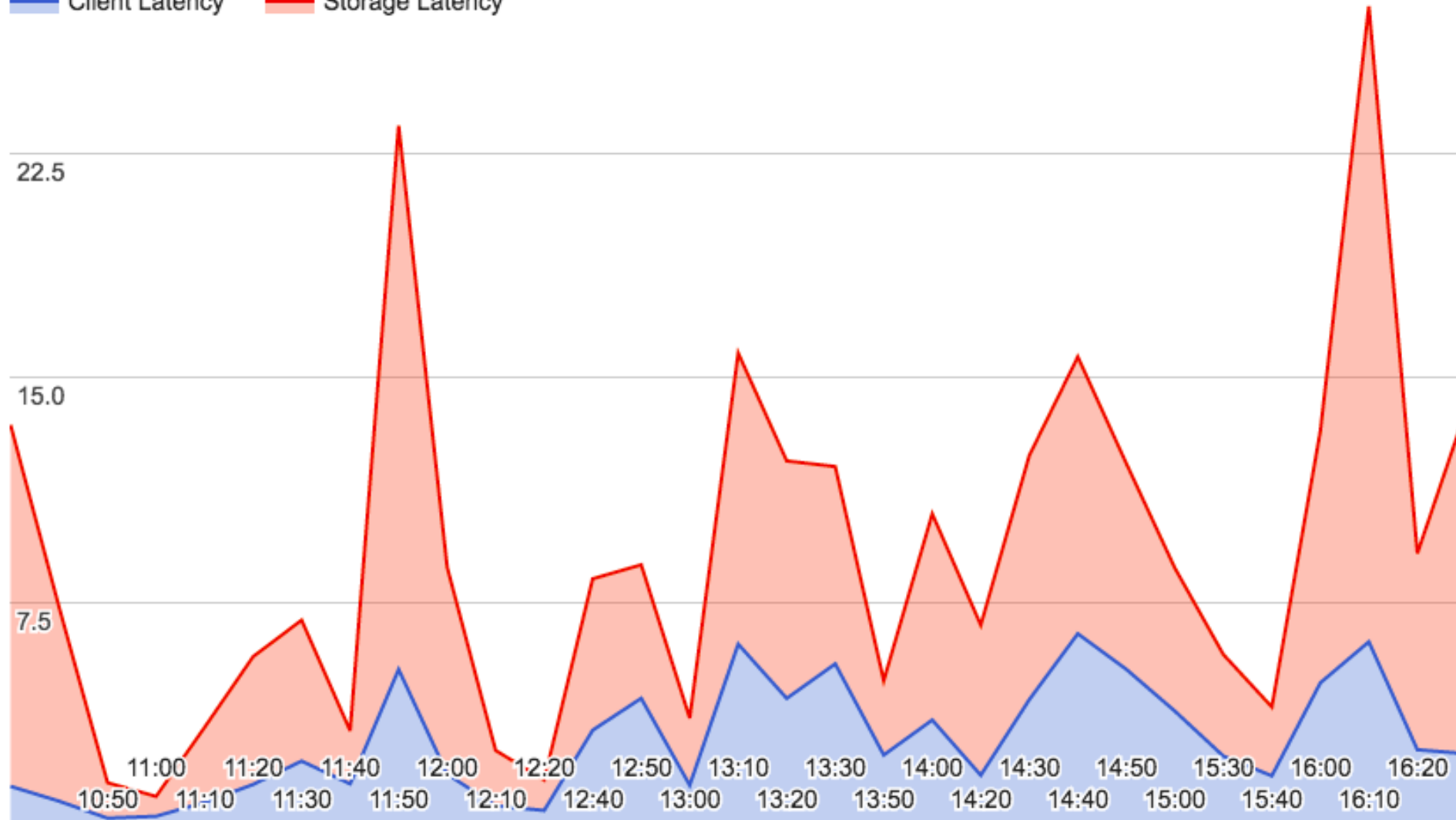
| FXT Nodes                            | 3    | 4    | 5    | 6    | 12   | 24   | 36    | 50    |
|--------------------------------------|------|------|------|------|------|------|-------|-------|
| Throughput (GB/s)                    | 12   | 16   | 20   | 24   | 48   | 96   | 144   | 200   |
| Getattr Performance (IOPS, in 1000s) | 1200 | 1600 | 2000 | 2400 | 4800 | 9600 | 14400 | 20000 |
| Read Performance (IOPS, in 1000s)    | 300  | 400  | 500  | 600  | 1200 | 2400 | 3600  | 5000  |
| SSD, in FXT cluster (TB)             | 29   | 38   | 48   | 58   | 115  | 230  | 346   | 480   |



# Pay-off of a full read/write cache

Client Latency and Storage Latency

Client Latency Storage Latency



# Remove IO Barriers



**Simple:** Improve the velocity of your data with a high-performance scalable caching layer.



**Agile:** Maintain investments in your existing file system and network.



**Economical:** 30TB of usable SSD cache for less than a typical NAS upgrade.



# Learn More

**Pieter Fountain,** Regional Manager

[pfountain@averesystems.com](mailto:pfountain@averesystems.com)

**Gi DiPasquale,** Technologist

[gdipasquale@averesystems.com](mailto:gdipasquale@averesystems.com)



Check, **AVERE** on your Response card

## FOLLOW Avere



<https://twitter.com/AvereSystems>



<https://www.facebook.com/Avere-Systems-157288840733/>



<https://www.linkedin.com/company/avere-systems>



<https://www.youtube.com/user/AvereSystems>

