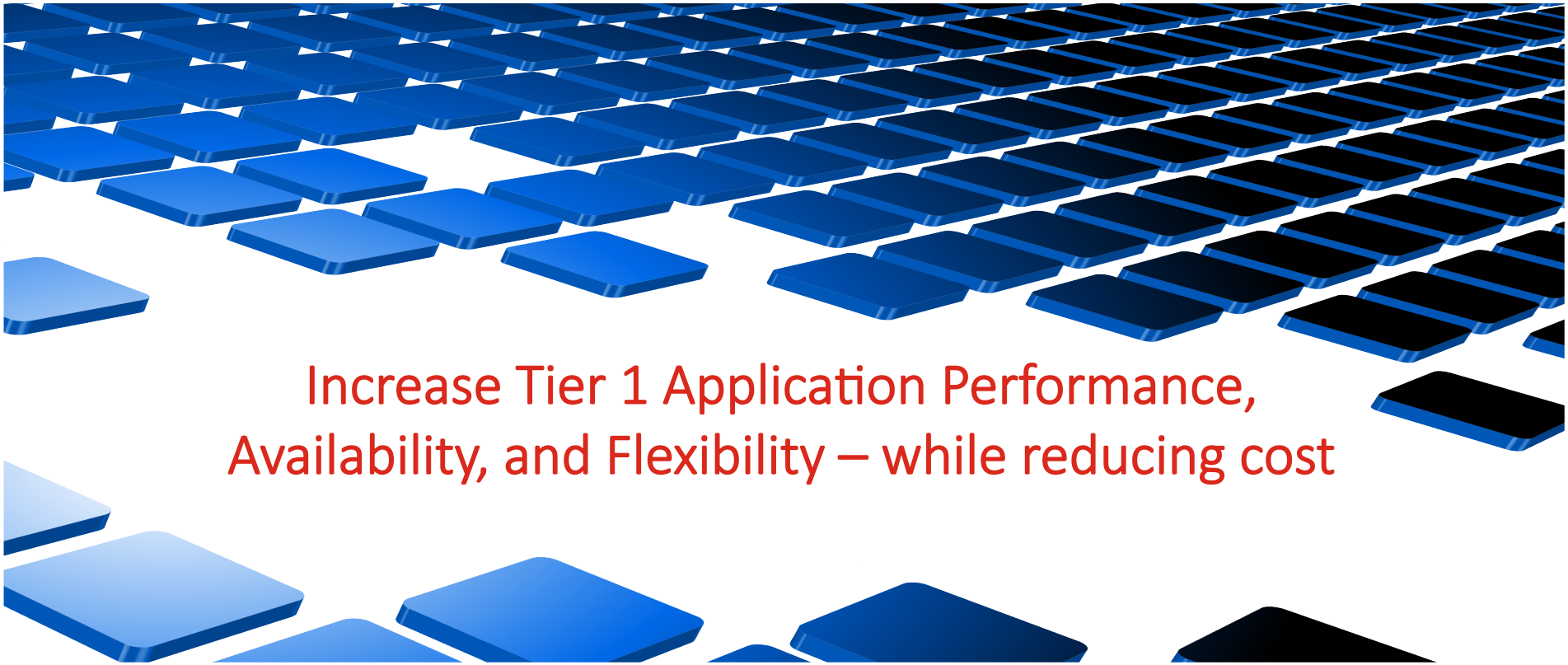
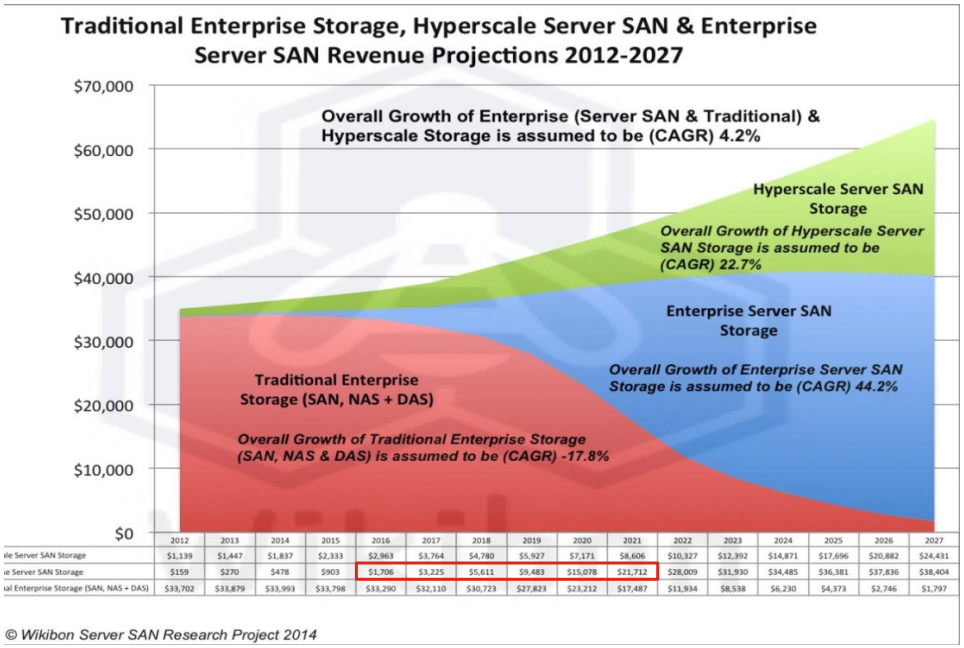


Increase Tier 1 Application Performance, Availability, and Flexibility – while reducing cost

Storage landscape is changing

- Strong market forecasts for Integrated Systems (converged & hyper-converged)
  - 50% yearly by Gartner
  - 33% yearly by IDC
- 45% of respondents are evaluating the deployment of hyper-converged systems
- Market is rapidly moving away from traditional storage arrays



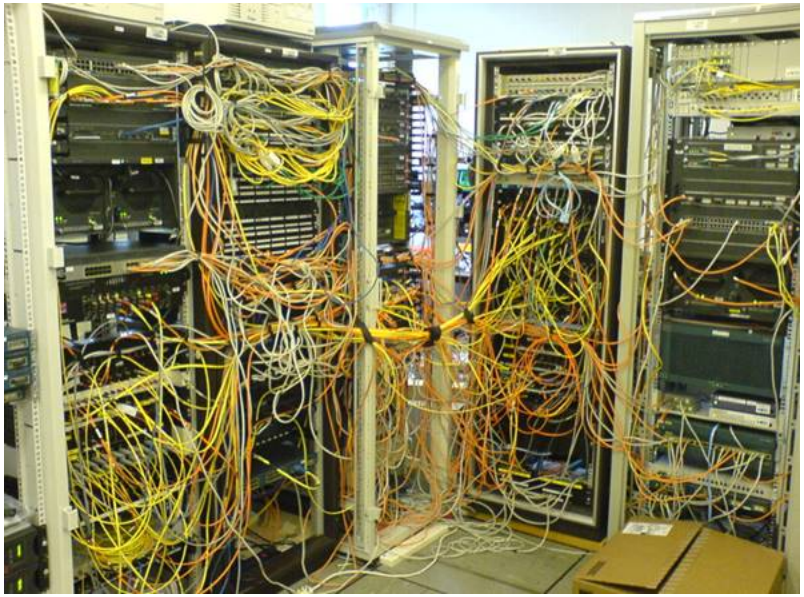
Hyper-converged Use Cases

Infrastructure Efficiency & Consolidation

Latency-sensitive, Virtualized Databases / Applications

Remote Office / Branch Office (ROBO)

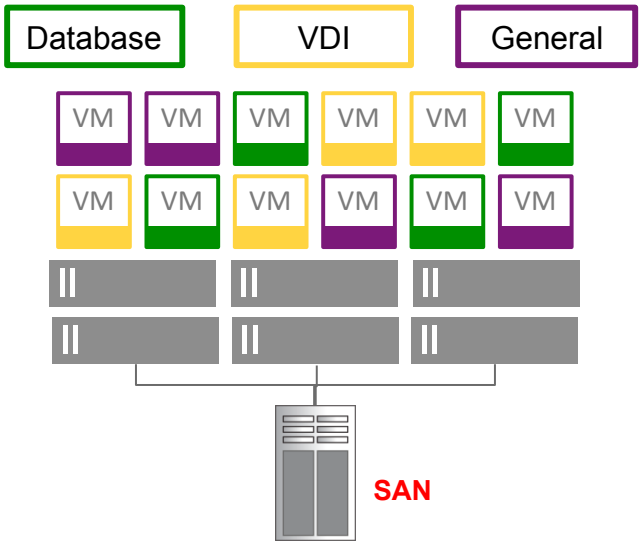
Infrastructure Efficiency & Consolidation



Challenges

- **Inadequate performance**
- **Inefficient usage**
- **Difficult to manage heterogeneous infrastructure**
  - **Multiple fabrics (FC, FCoE, iSCSI, Ethernet)**
  - **Variety of vendors, models and management consoles**
  - **Multiples "silos" to manage**

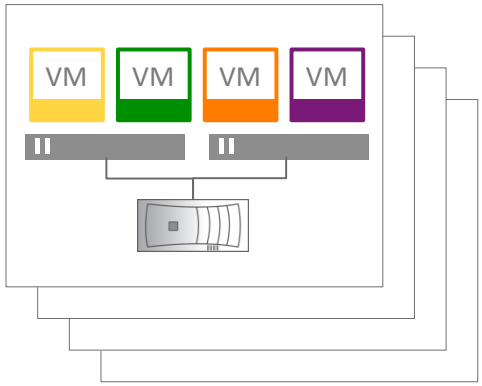
Virtualized Applications Clusters



Challenges

- **Inconsistent performance due to mixed workloads**
- **Inability to scale I/O performance**
- **Storage is a single point of failure**

ROBO Sites



Site 1

Site n

Challenges

- Costs need to remain low
- Availability is a challenge
- Storage is typically low-end; single point of failure

Criteria for a Hyper-converged Solution

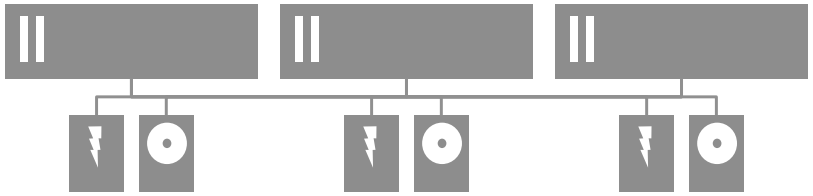
- Fix the I/O problem
  - Latency is the right measure
  - Key application is Databases
- Lowest TCO
  - Leverage existing infrastructure

Not all Hyper-converged is Enterprise-class

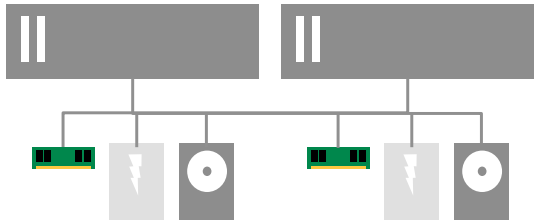
- Performance
  - Performance and response times not suitable for critical applications
  - Fibre Channel flexibility not supported by hyper-converged
- Availability
  - More and more “boxes” needed
- Total Cost of Ownership
  - Limited options for scaling
  - Restricted Choice
  - Silo’ed Infrastructure

Performance: I/O Acceleration

Cluster Architecture*



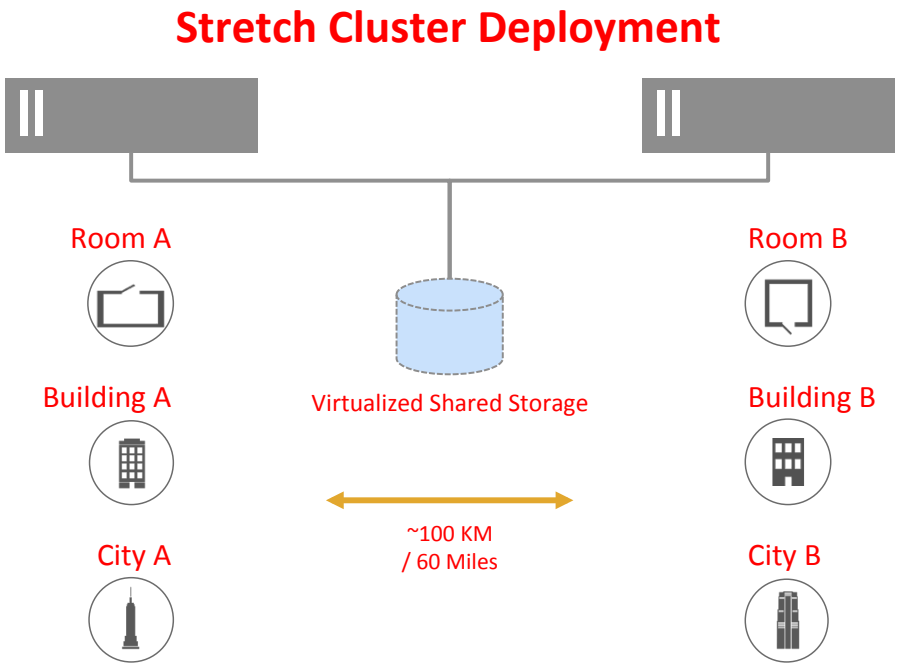
Grid Architecture



Better Performance: RAM 10x faster vs Flash
Lower Hardware Costs: Flash is optional

* Consider impact on performance when a node fails

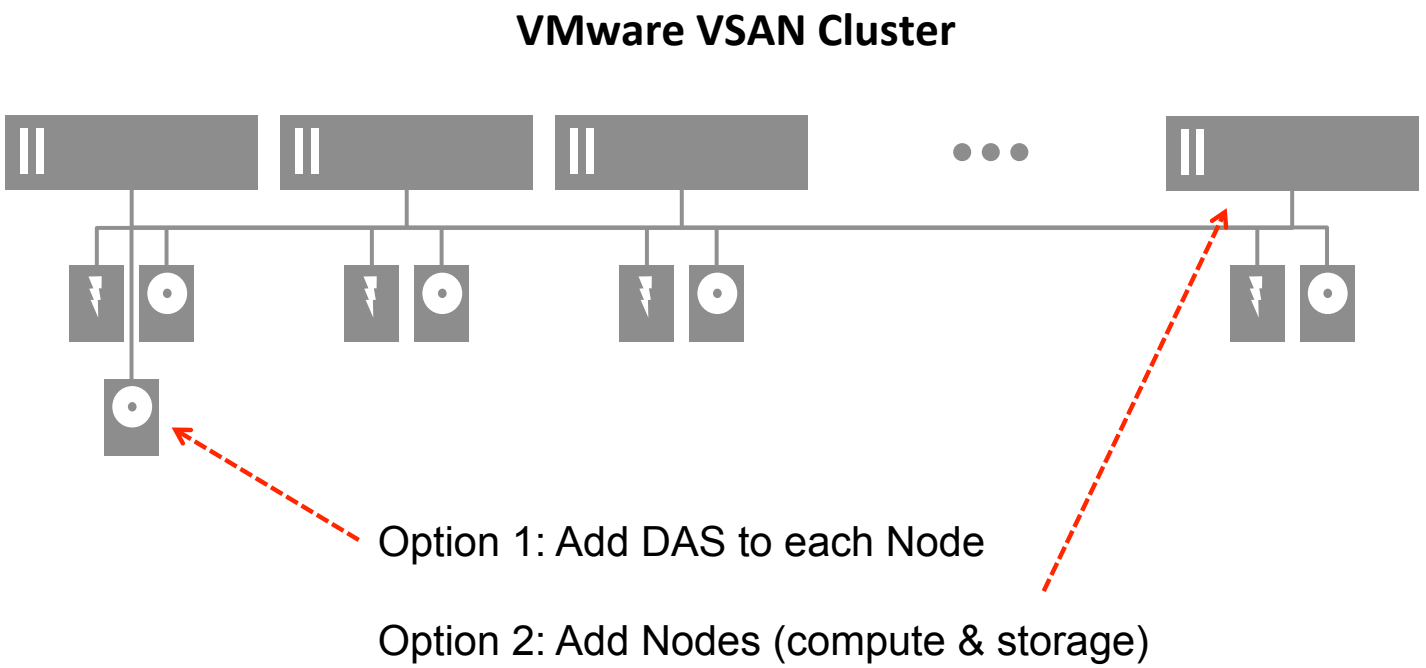
High Availability: Stretch Clusters



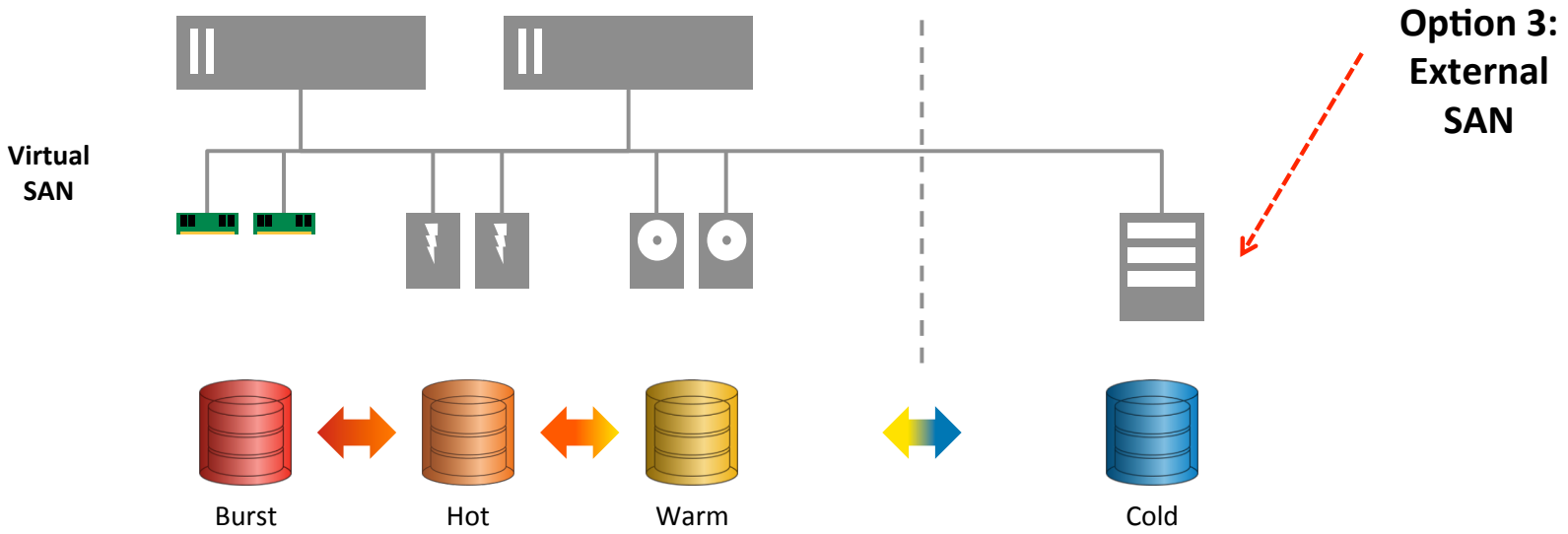
Lower Hardware Investment

Better Availability & Resiliency

TCO: Growth of Storage Capacity:



TCO: Growth of Storage Capacity



Lower Hardware Costs; Capacity added as needed

Performance Benchmark:
SPC is a Database I/O Workload

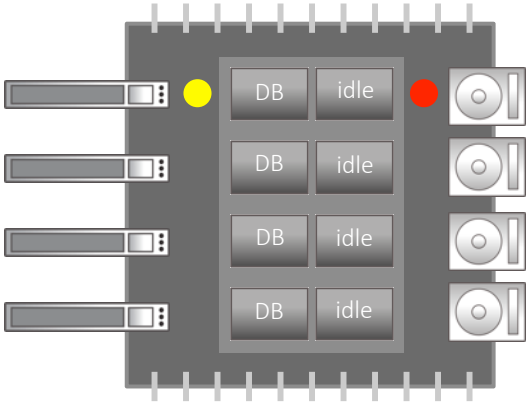
Criteria	SPC Benchmark
Industry Standard	✓
Independently Verified & Audited	✓
Peer Reviewed	✓
Covers different types & generations of technology	✓
Maps to “real world” performance (OLTP databases)	✓
Shows cost for achieving performance level	✓

Enterprise Vendors run SPC Benchmarks

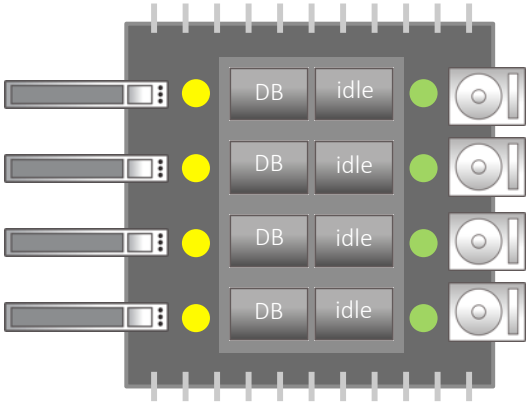
1st Hyper-converged product to run SPC 3X or better on price performance!

DATACORE PARALLEL I/O TECHNOLOGY

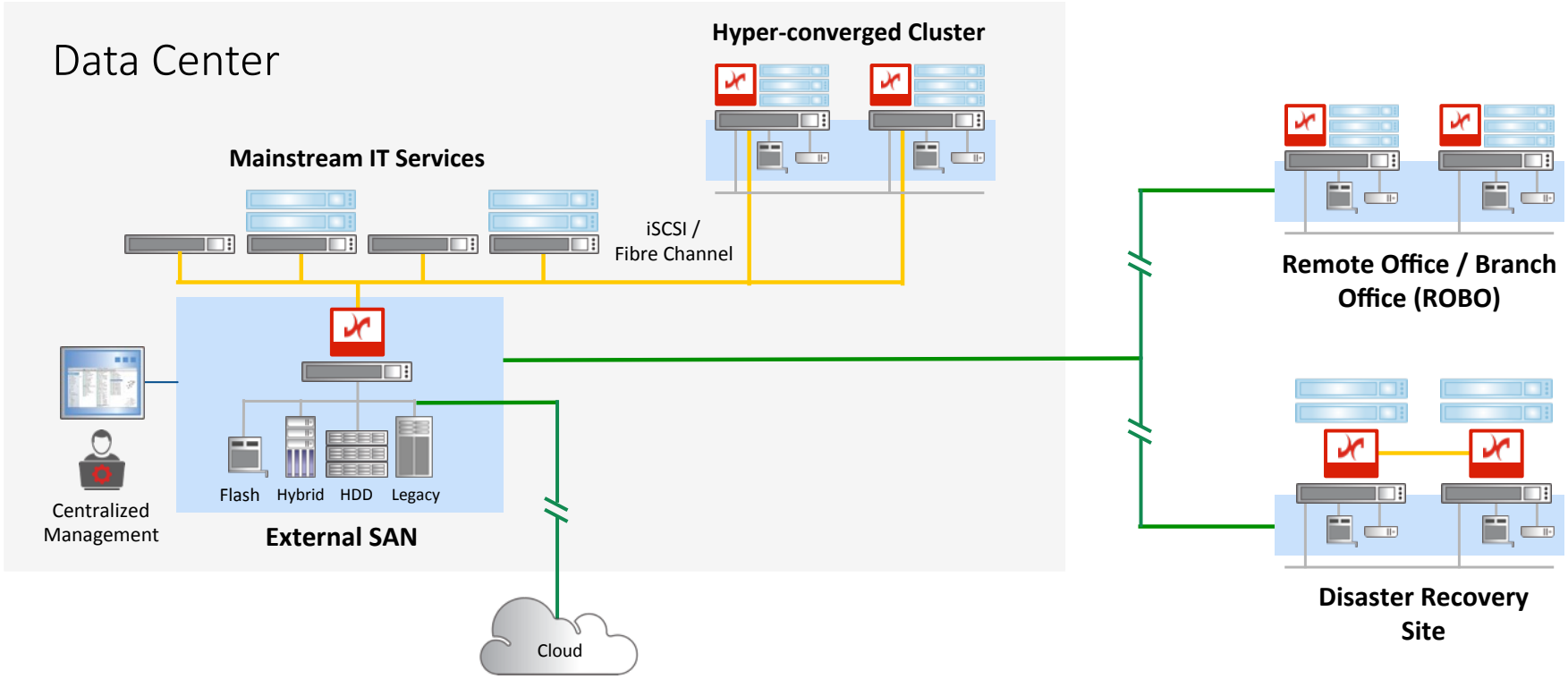
WITHOUT PARALLEL I/O
I/O processed sequentially…



WITH PARALLEL I/O
I/O processed in parallel…



TCO: Integrated Enterprise-wide Solution



DataCore TCO Summary

Key Criteria	DataCore Virtual SAN
RAM for I/O Acceleration	✓
2 nodes for High Availability	✓
2 nodes for Stretch Cluster	✓
Scale out storage capacity independent of compute	✓
One management platform across storage infrastructure	✓
One set of services across all storage devices	✓
Support for Multi-hypervisor & Non-virtual environments	✓
Hardware independent	✓

TCO: Deployment Options

	DataCore Virtual SAN	Nutanix	Simplivity	VMware VSAN
Flexible hardware model	✓			✓
Multi-hypervisor Support	✓	✓		
Non-virtualized Support	✓			

Case Study 1:
Infrastructure Efficiency & Consolidation

Background

- Government Agency
- Latency for key applications was too high; Storage refresh coming

Requirements

- Performance to meet needs of their critical applications (SQL databases)
- Reduce costs

Case Study 2 – Application Cluster

Background

- Mid-sized Hospital
- Virtualizing PBX (voice communications)
  - 12 physical servers -> 12 VMs

Requirements

- Reliable performance, as voice communication is a Tier 1 application
- Physical storage and compute footprint across 2 separate buildings (geographically separated) for high availability

Case Study 3 – ROBO

Background

- Large restaurant chain with over 1,000 locations
- All key applications run locally
  - Point of sale, order scheduling, etc
- Application downtime meant temporary site closure
  - Loss of revenue and poor customer satisfaction

Requirement

- Lowest cost infrastructure for high availability

Reasons for Selecting DataCore Virtual SAN

Lowest TCO

- Only 2 servers for HA per location
- RAM provides I/O acceleration so Flash is optional
- Runs natively in Windows Hyper-V, requiring one less Windows license

Easy Management

- Automated deployment with software deployment wizards
- Integrates with Microsoft System Center
- Extensive instrumentation for centralized monitoring

Proven. Globally.

30,000+ Deployments Worldwide

10,000+ Customers

10th Gen Product

Companies in all Industries & Sizes

Market: Software-defined Storage

Technology: Storage Virtualization & Parallel I/O

Main Offices

- Australia
- Germany
- France
- Japan
- UK
- USA

Thank You