ScaleIO Overview

(selected slides)

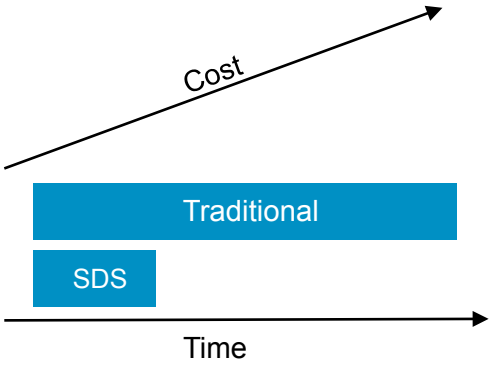
DELL EMC

Problem: Traditional Storage Arrays

The *old* way

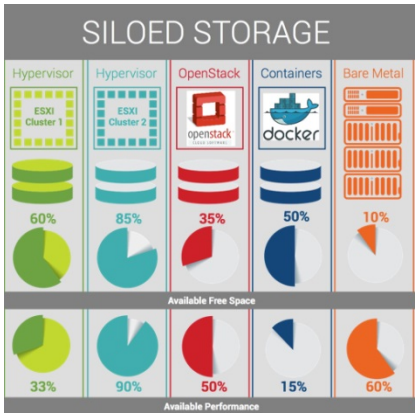
Deployment

- Takes up to months to procure, deploy and provision storage
- Overprovisioning
- High CAPEX



Management

- Siloes of unused storage
- Multiple arrays to manage
- Performance hotspots



Refresh

- Need forklift upgrades every 3-5 years
- Large data migrations

Solution: ScaleIO Software-Defined Storage

Combining storage virtualization with web-scale efficiencies

Deployment

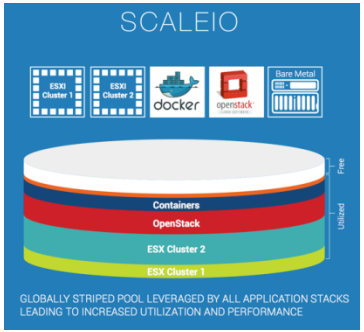
- Deploy in minutes!
- Start small, no overprovisioning
- Standard x86 servers and Ethernet

Management

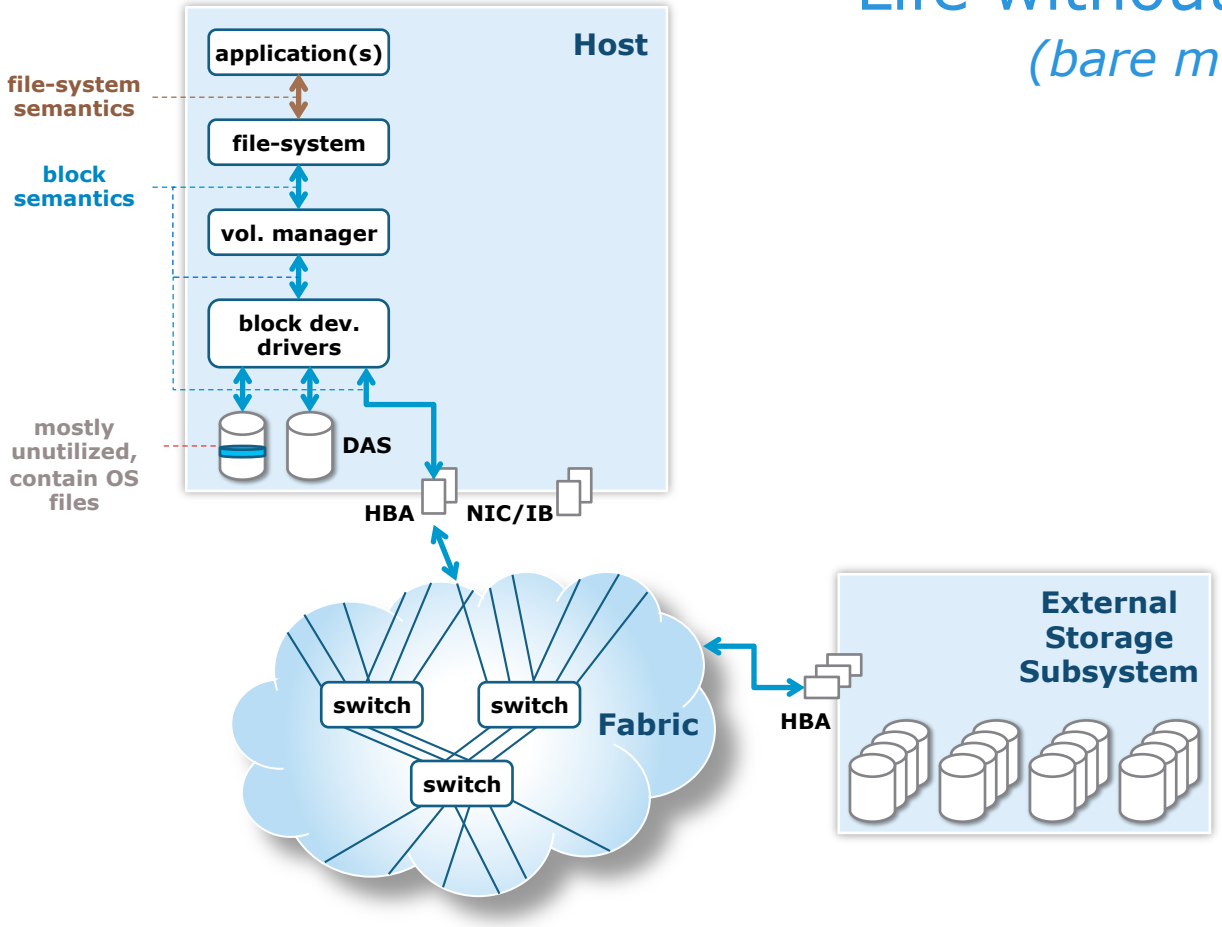
- “Abstract, Pool, Automate” - for Storage!
- Data center scale, no silos
- HCI or traditional SAN

Refresh

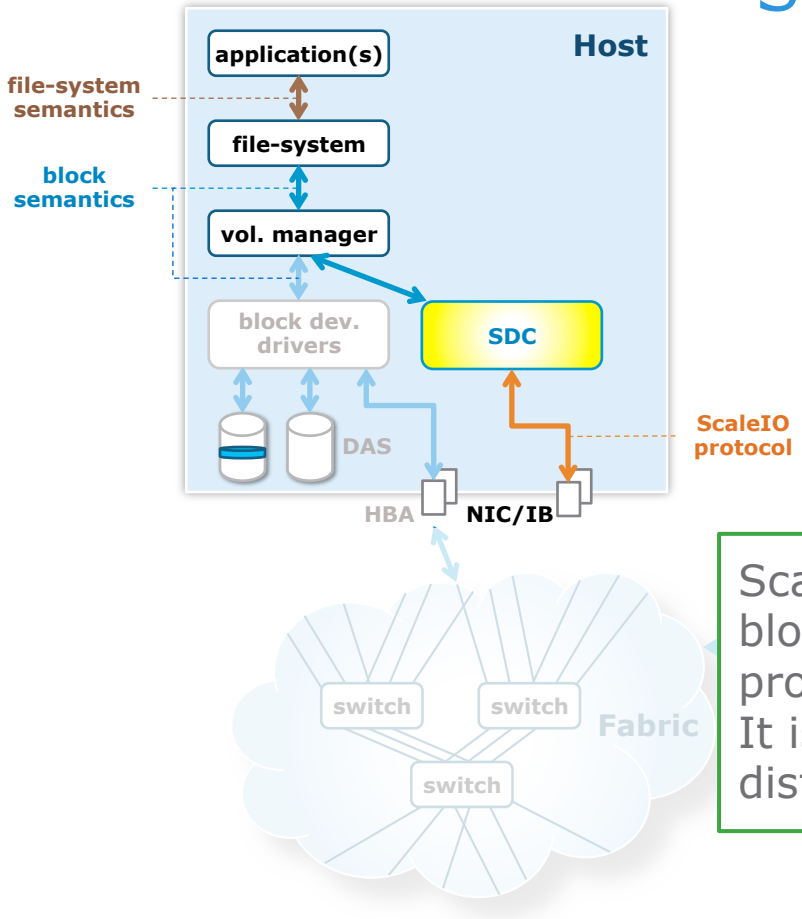
- Rolling server upgrades
- No large data migrations. Ever!
- Superior TCO



Life without ScaleIO
(bare metal)



ScaleIO Data Client (SDC)



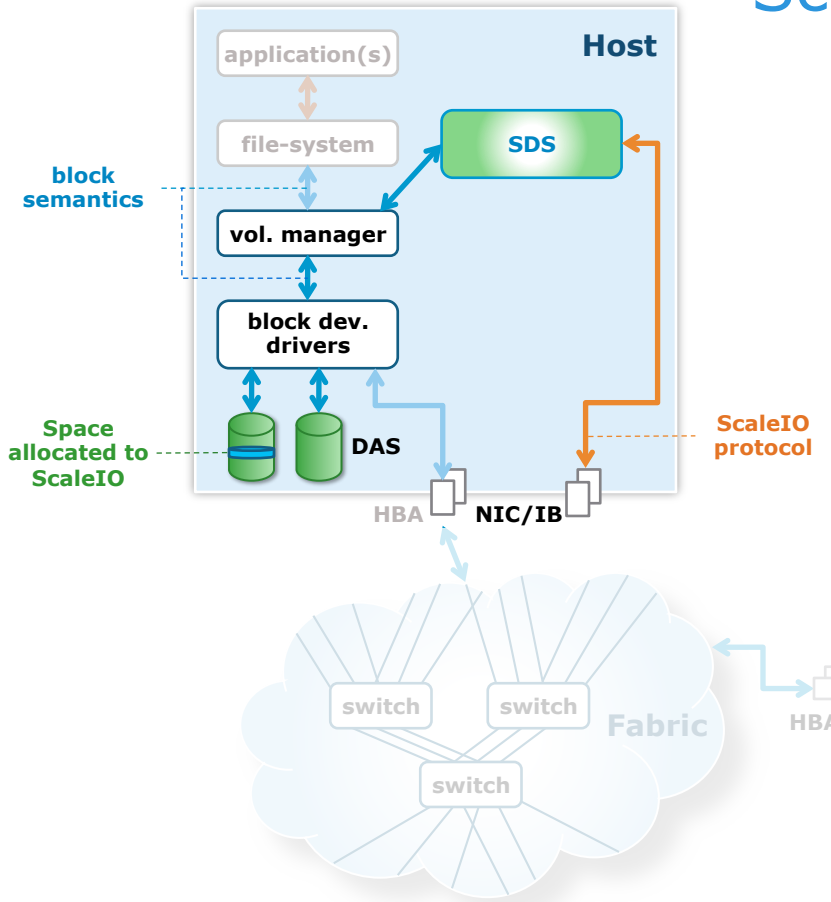
Exposes ScaleIO shared block volumes to the application

Access to OS partition may still be done "regularly"

ScaleIO data client (SDC) is a block device driver

ScaleIO protocol: proprietary block storage and metadata protocol over TCP/IP.
It is NOT iSCSI due to ScaleIO's distributed nature.

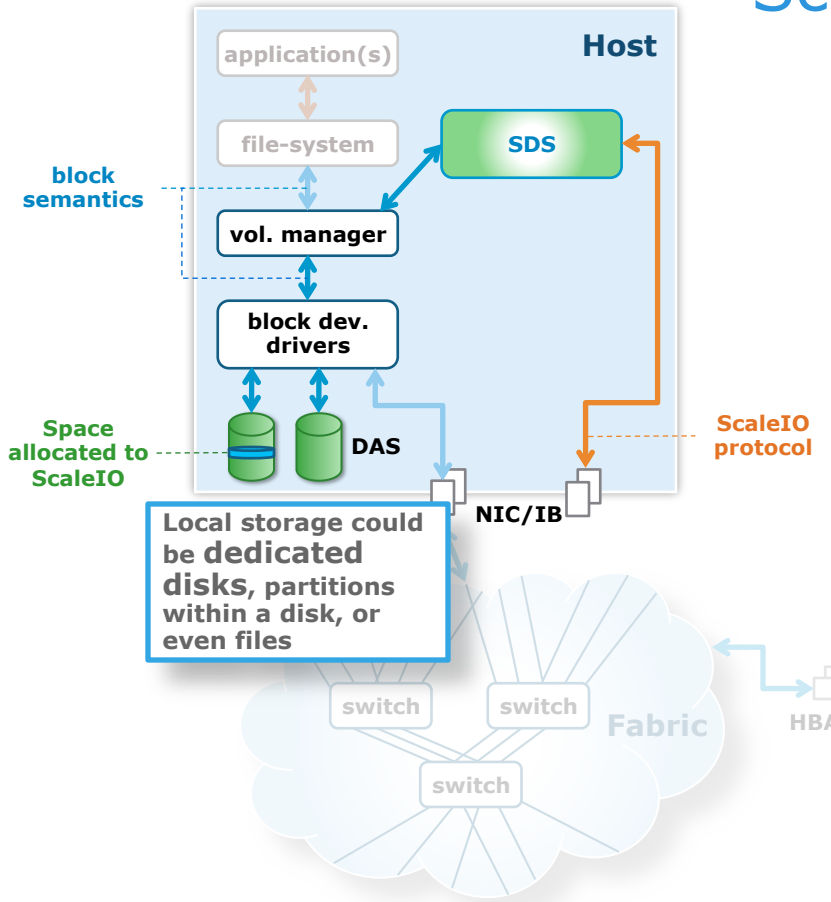
ScaleIO Data Server (SDS)



Owns local storage that contributes to the ScaleIO storage pool

ScaleIO data server (SDS) is a daemon / service

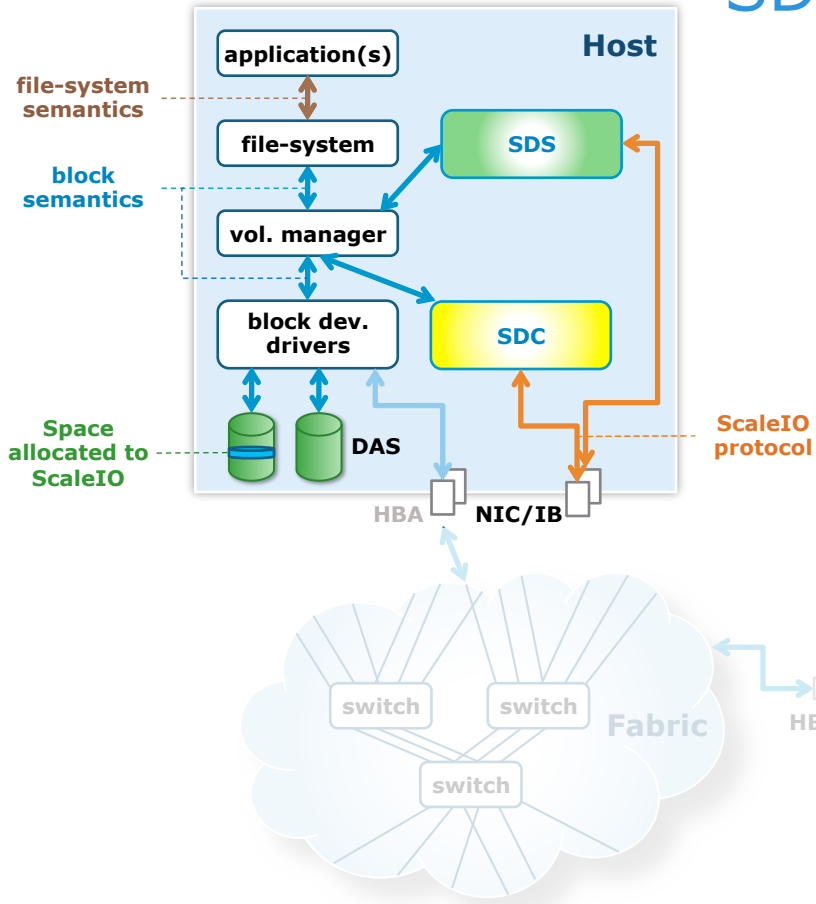
ScaleIO Data Server (SDS)



Owns local storage that contributes to the ScaleIO storage pool

ScaleIO data server (SDS) is a daemon / service

SDC & SDS in the same host



An SDC and an SDS can live together.

SDC serves the I/O requests of the resident host applications.

SDS serves the I/O requests of various SDCs.

ScaleIO Building Blocks

ScaleIO Data Client (SDC)
- Manages connection to ScaleIO's pool of storage

ScaleIO Data Server (SDS)
- Consumes local storage and presents it to SDCs

Metadata Manager (MDM)
- Coordinates and monitors storage

Deployed on…

x86

Operating Systems
- Microsoft Windows
- Linux

Hypervisors
- VMware ESX
- HyperV
- Xen

Platforms
- OpenStack
- Mesos
- Docker

And more…

ScaleIO Building Blocks (2)

Deployment and management components

- ScaleIO Gateway
  - Performs installation and configuration checks; acts as an endpoint for API calls and passes them to MDM
- ScaleIO Lightweight Installation Agent
  - Receives packages from gateway, installs them on its local host
- ScaleIO Graphical User Interface (GUI)
- ScaleIO Command Line Interface (CLI)
- All of these components do coexist along with SDS, SDC, MDM

Orchestration and deployment

- ScaleIO Advanced Management Services (AMS)
  - Extended interface for ScaleIO GUI
  - Manages and installs ScaleIO; must exist outside of ScaleIO system

Three ways to consume

ScaleIO Software

ScaleIO Ready Node

VCE VxRack System with FLEX

Software-defined maximum flexibility

Lowest risk, highest value, lowest TCO

Ultra Scale-Out SDS

- Software only
- Complete flexibility
- End user supplies server
- End user supplies switch
- End user supplies rack

Scale-Out Block Storage

- Dell PowerEdge servers tuned, optimized and validated for ScaleIO
- Hyper-converged or Storage only
- All-flash configurations

Turnkey Software-Defined IaaS

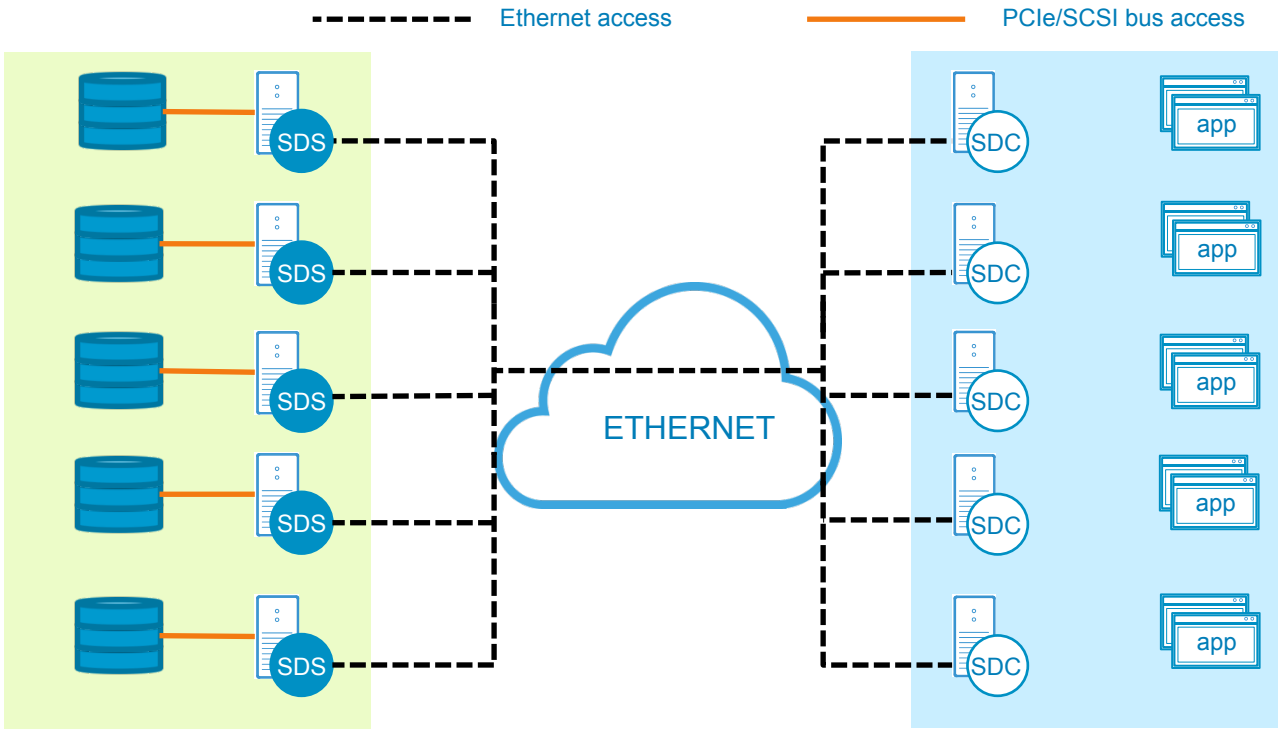
- Fully productized platform
- VCE factory integrated and logically configured
- VCE support and lifecycle assurance

Build — Buy

Maintain — Consume

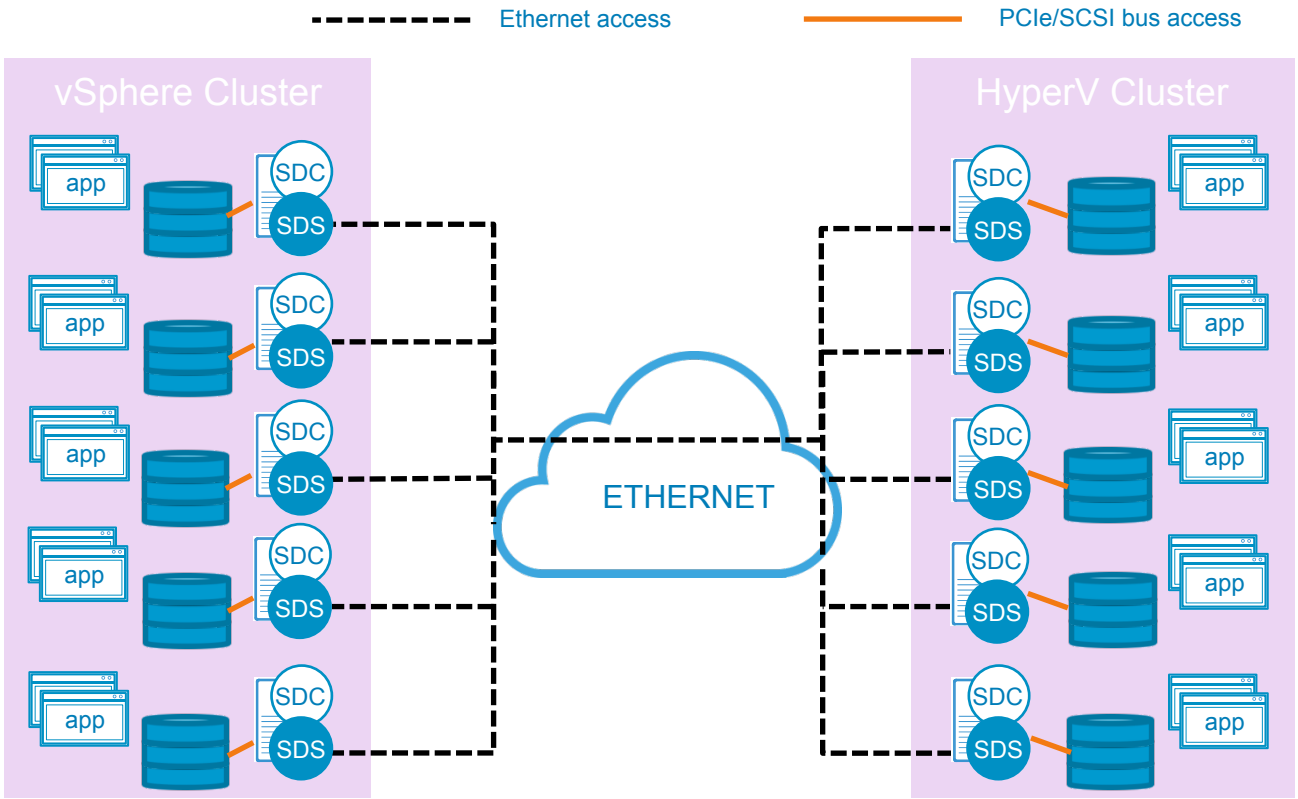
ScaleIO Deployment Configurations

ScaleIO Configurations: 2-Layer Server SAN



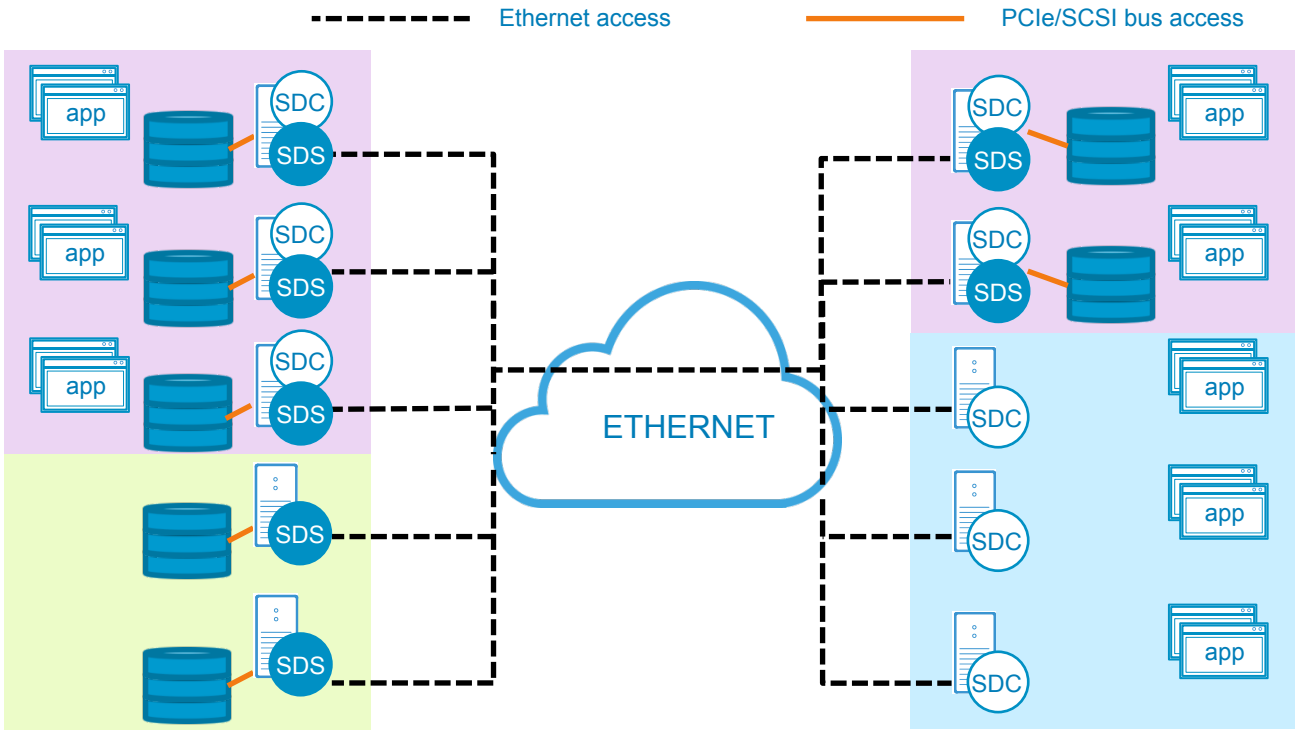
- SDS nodes dedicated to serving storage
- Operationally separated
- Drop-in replacement for block storage
- Any x86 OS, any combination of operating systems and hypervisors is possible

ScaleIO Configurations: Converged



- Both SDS and SDC on the same node
- CPU and memory efficient; more resources for compute
- Can serve different hypervisor clusters with one storage cluster

ScaleIO Configurations: Hybrid



- One ScaleIO cluster
- SDS-only, SDC-only, and SDS +SDC nodes all possible
- Scale storage and compute independently