

How We Improved The #1 Scale-Out NAS Solution In The Market

GLOBAL SPONSORS



Microsoft

Internal Use - Confidential

DELL EMC / Forum

The Largest and Most Significant Launch in the History of Isilon



ISILON
NEXT
Generation

The #1 Scale-Out NAS
Just Got Better!

Isilon Business Momentum

>3.2 Exabytes Shipped
Calendar 2016

#1 In Scale-Out NAS
Now in All-Flash



>8000 Customers

>17% YoY Customer
Growth

Gartner Recognized Leader  **IDC**

Isilon - The Recognized Leader



Gartner

DELL EMC

Isilon the #1 Scale-Out NAS

Performance & Scale

Flash, Hybrid, Archive

Seamless Cloud

Public, Private, Hosted

Enterprise Grade

Protection, Security,
Compliance



Analytics

Deliver New Insights

Lowest TCO

Automated Tiering

Isilon Workload Consolidation



ISILON



Edge to Core to Cloud



EDGE

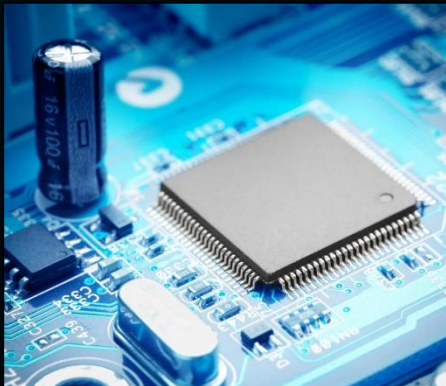


OneFS CORE



CLOUD

Unstructured Data: Industry Challenges



EDA
Storage Doubling
Every 2 Years



Life Sciences
2X Capacity Growth
Every 12 Months



M+E
Ever Increasing
Resolutions



Enterprise
Faster Outcomes
Lower Costs

Unstructured Data Requires

Unconstrained
Scale



Optimized TCO/ROI
Longevity



Flash to Cloud
Flexibility



Massive
Performance



Enterprise
Features



SIMPLICITY
At Any Scale

The Challenge to Engineering

DRAMATICALLY IMPROVE THE #1 SCALE-OUT NAS PLATFORM

Isilon's Next Gen Revolutionary Architecture

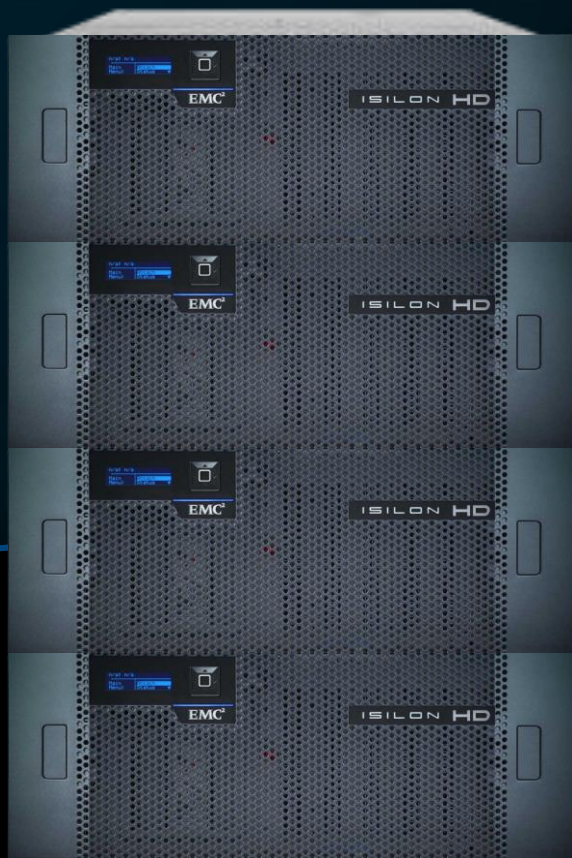
NEXT GENERATION ISILON

THE #1 SCALE-OUT NAS PLATFORM JUST GOT BETTER!



Modular, In-Chassis Flexibility

ALL FLASH, HYBRID AND ARCHIVE NODES



ISILON



NEW MODULAR
FUTURE-PROOF
ARCHITECTURE

ISILON All Flash



6X
File IOPS

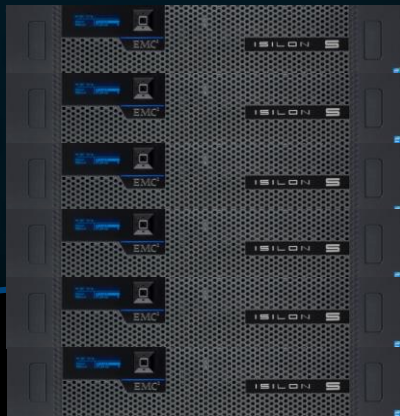
11X
Throughput

2X
Capacity

Compared to Previous Generation

ISILON

250K File IOPS
12x S210 Previous Gen Nodes



250K File IOPS With Isilon All Flash

ISILON All Flash



9X
File IOPS

18X
Throughput

20X
Capacity

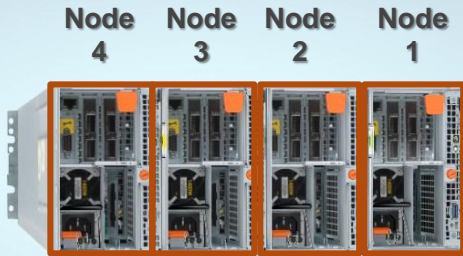
Compared to Closest All-Flash Competitor



Isilon Next Generation Architecture

75% Reduction
in Floor Space

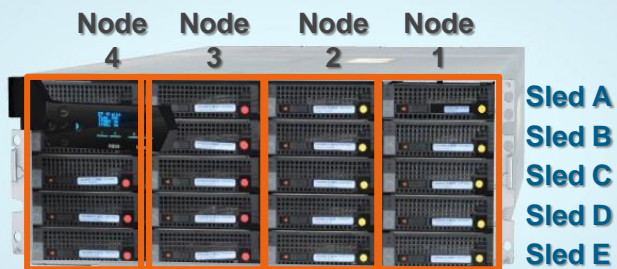
Isilon Next Gen Platform: Compute



Features

- 4 Nodes in 4U Chassis
- Intel Broadwell CPU:
Optimized Compute to Drive Ratios
- Up to 6 TB Cache per Node
- No Single Points of Failure
- Networking Flexibility:
Infiniband, 10GbE/40GbE

Isilon Next Gen Platform: Storage



Features

- From 72TBs to 924TBs in 4U
- 5 Drive Sleds per Node. 3 to 6 Drives per Sled
- Front Aisle, Hot Swap Sleds and Drives
- Media Flexibility: Flash, SAS and SATA Media

Isilon Next Gen Benefits



No
Compromises



Investment
Protection



Dramatic OPEX
Reduction



Unmatched
RAS

Unconstrained Scale and Performance

Meet the New Isilon Family

All-Flash Nodes	High Performance Computing, EDA, M&E 4K, Analytics		Extreme Performance and Scalability
Hybrid Nodes	Enterprise Workloads, File Shares, Home Directories		Performance, Capacity and Value
Archive Nodes	Nearline and Deep Archive		Capacity & Economics

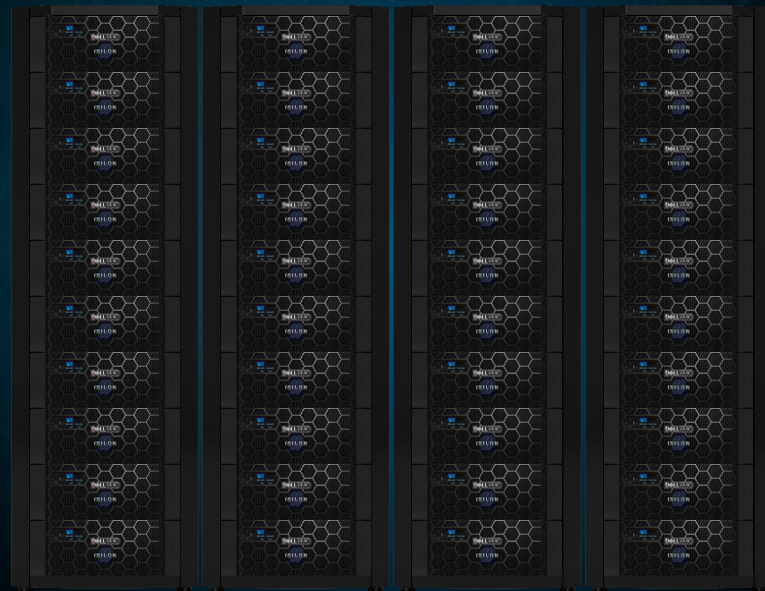
Meet the New Isilon Family

		Performance (Per Chassis)	Capacity Range (Per Chassis)	
All-Flash Nodes	F800	<div>250K ops/s, <1ms</div> <div>15 GB/s read</div>	96 TB <div>924 TB</div>	Extreme Performance and Scalability
Hybrid Nodes	H600	<div>120K ops/s</div> <div>12 GB/s read</div>	72 TB <div>144 TB</div>	Performance, Capacity and Value
	H500	<div>5 GB/s read</div>	120 TB <div>480 TB</div>	
	H400	<div>3 GB/s read</div>	120 TB <div>480 TB</div>	
Archive Nodes	A200		120 TB <div>480 TB</div>	Capacity & Economics
	A2000		<div>800 TB</div>	

Start Small and Scale



72TBs to
924TBs in 4U

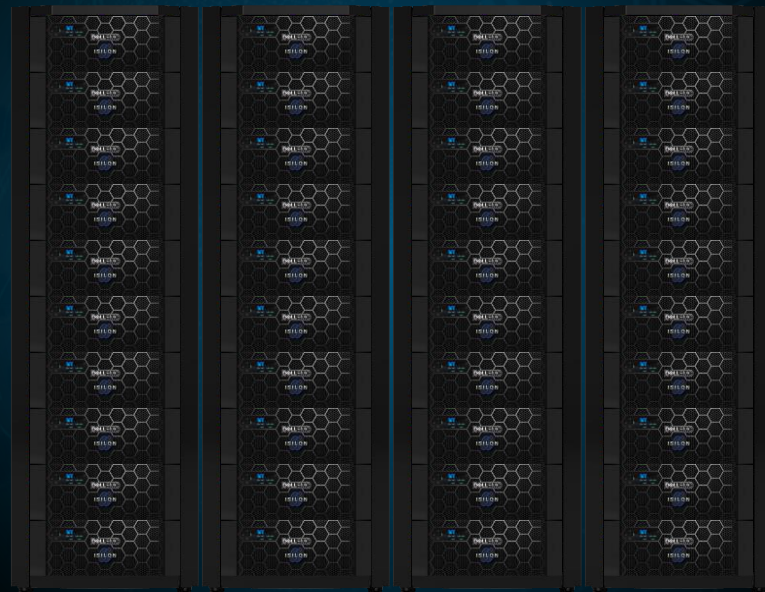


Scale to Over 33PBs
In a Single File System

Massive All-Flash Performance



250K IOPS
15GB/s
In Just 4U



Scale to 9M IOPS,
540GB/s

F800 All Flash – Massive Performance



- 1.6 TB, 3.2 TB and 15.4 TB Flash
- 60 drives. Up to 924 TB per chassis
- 250K IOPs per chassis
- 15 GB/s throughput



Faster Time to Results
Enable New Workloads

Hybrid Nodes – Performance, Capacity and Value

H600

- 600 GB and 1.2 TB SAS drives
- 120 2.5" drives - up to 144 TB per chassis
- 6.4TB - 25.6 TB flash cache per chassis
- 117K IOPs per chassis

H500, H400

- 2, 4, 8 TB SATA drives
- 60 3.5" drives - up to 480 TB per chassis
- 3.2TB – 25.6TB flash cache per chassis



Cost-Optimized Workload Consolidation

Archive Nodes – Massive Capacity, High Density

A200

- 2, 4, 8 TB SATA drives
- 60 3.5" drives per chassis
- 480 TB per chassis
- 1.6TB – 3.2TB flash cache per chassis

A2000

- 10 TB SATA drives
- 80 3.5" drives per chassis
- 800 TB per chassis
- 1.6TB – 3.2TB flash cache per chassis



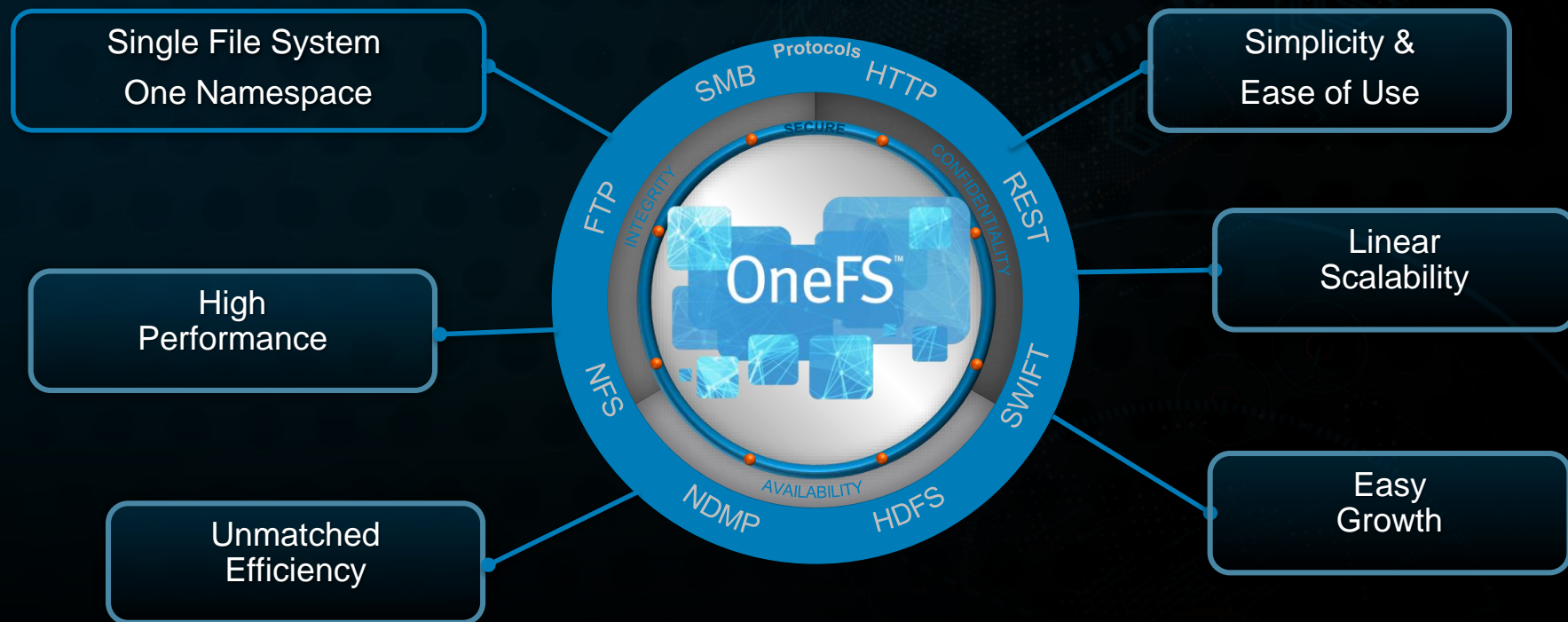
Data Center Efficiency
Economical, Long-Term Retention

No Node Left Behind



- Seamlessly add Next Gen Nodes to existing Isilon Clusters
- Turbo-charge existing Isilon clusters with Isilon All-Flash nodes
- No data migration required
- Consolidate datacenter footprint by retiring older nodes

Next Gen Isilon and OneFS



OneFS Optimized for Flash

Key Features

- Isilon F800 Engineered for All Flash
- Flash-Optimized OneFS
- Reduced latencies and write optimizations



Benefits

- Combines Benefits of Flash and OneFS
- Flash wear is yesterday's problem
- F800 can sustain more writes per day than its total capacity everyday for over 5 years before approaching limits

Enterprise Grade Features

Data Protection & Efficiency

SnapshotIQ

Fast, Efficient Data Backup And Recovery

SyncIQ

Fast And Flexible Asynchronous Replication For DR

SmartConnect

Policy-based Client Failover With Load Balancing

SmartLock

Policy-based Compliance and WORM Data Protection

SmartDedupe

Data Deduplication to reduce storage costs

Data Management

Search

Fast, Heuristic Queries on Files and Metadata

SmartPools

Policy-Based Automated Tiering

SmartQuotas

Quota Management And Thin Provisioning

InsightIQ

Performance Monitoring And Reporting

CloudPools

Cloud-scale Capacity

New Cloudera Navigator Support

Key Features

- Data Management: Lineage, Metadata Management
- Metadata search and tagging to enrich Hadoop datasets



cloudera

Benefits

- Powerful tool for improved governance especially for complex environments
- Simplicity of use
- Seamless integration of Cloudera and Isilon

ISILON

From Edge to Core to Cloud



EDGE FLEXIBILITY



NEXT GEN CORE
Flash, Hybrid, Archive



SEAMLESS CLOUD

Software Defined Solution for Remote Offices and SMB

IsilonSD
Edge

IsilonSD
Edge

IsilonSD
Edge

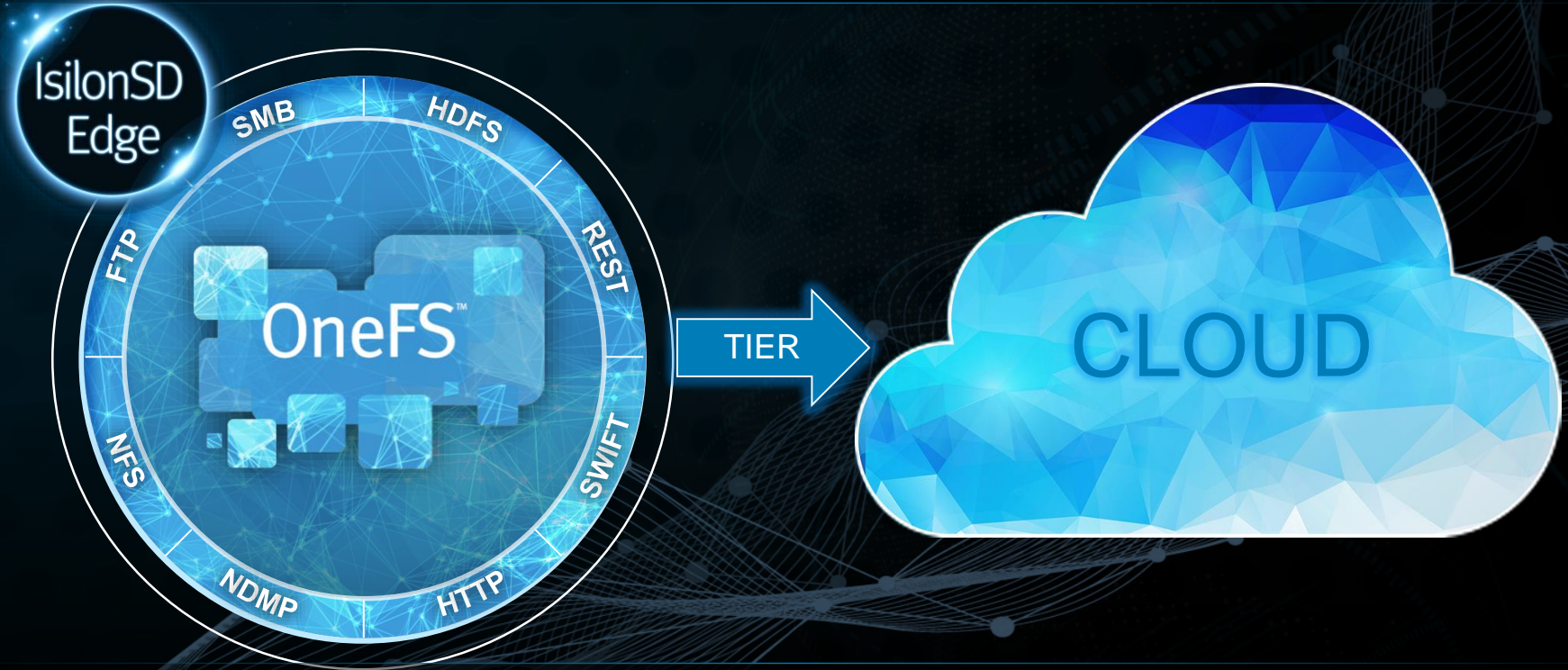
IsilonSD
Edge

All OneFS Data Services & Protocols

Redefining the Edge

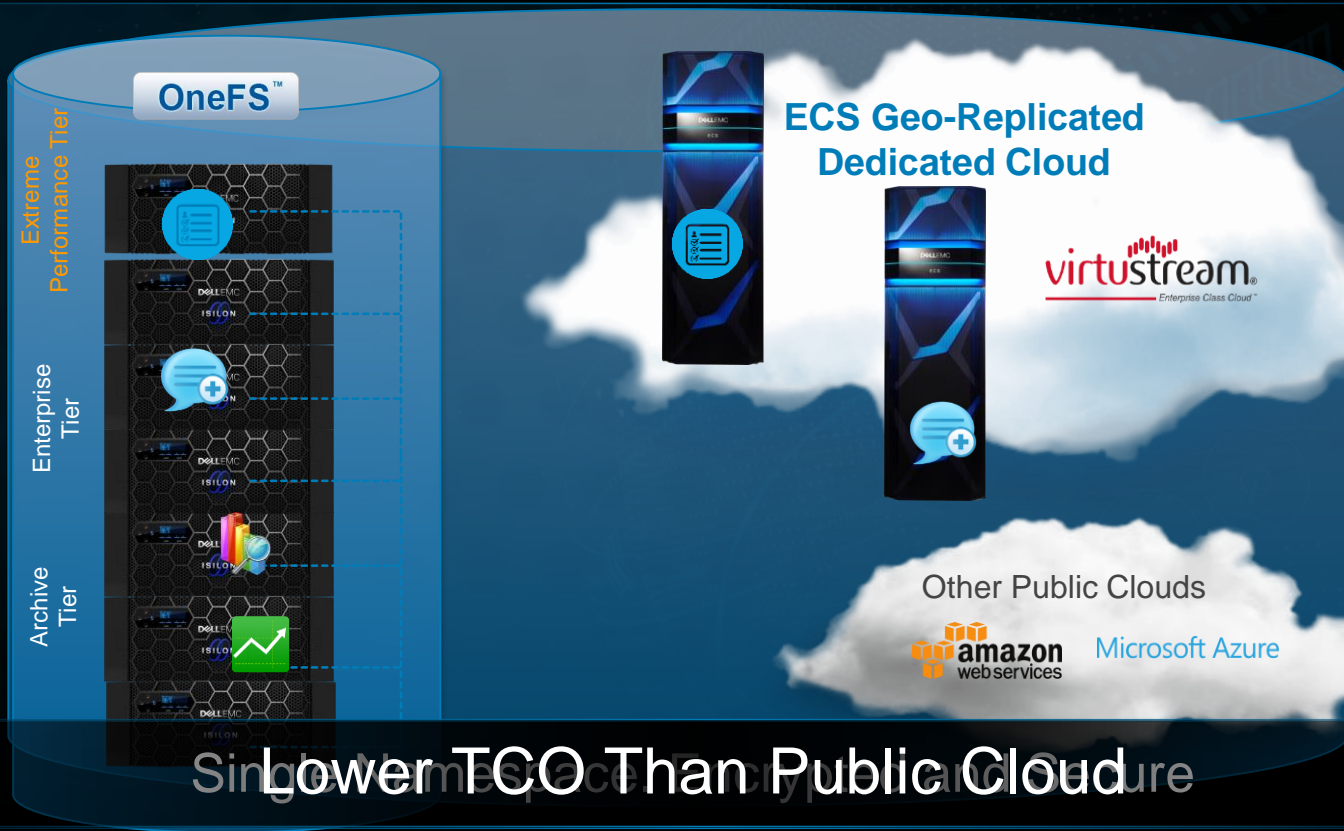
- VMware ESX Hypervisor
- Full vCenter Integration
- Scale up to 36TB
- Single Server Deployment
- Backend Virtual SAN:
 - ScaleIO, VSAN and VxRAIL
- Dell PowerEdge 14G Support

CloudPools: Extending Isilon OneFS to the Cloud



Private Cloud. Dedicated Cloud. Public Cloud.

Policies Control When, Where, How You Move to Cloud



Isilon and ECS



Highest Performance
Lowest TCO



Transparent Tiering
Built-In Security



Policy-Driven
Seamless Cloud
Integration

Scale-Out NAS + Integrated Cloud

Next Gen Isilon Early Adopter Insights

Gene Sequencing Center

"The modular hardware is amazing!"
"All of that storage in 4U is awesome!"

Leading M+E Firm

After Seeing Full Resolution SXR Format for the First Time: "We've been waiting to see this material like this since shooting began! ... We can use this! This is how we want to work going forward!"

Gov. Agency

"When can we get another unit?"



Large Animation Studio

"Nitro just blew away all other competitors I've ever tested and I still don't know where it tops out. I'm having to add more clients now to find out. ..."

National Mortgage Co.

"Super dense all-flash Isilon...
what's not to love?"

WHATS NEXT

Isilon



Push Performance Limits. Again



Data Visibility, Insight and Optimization



Unified File and Object Framework



OneFS in the Cloud



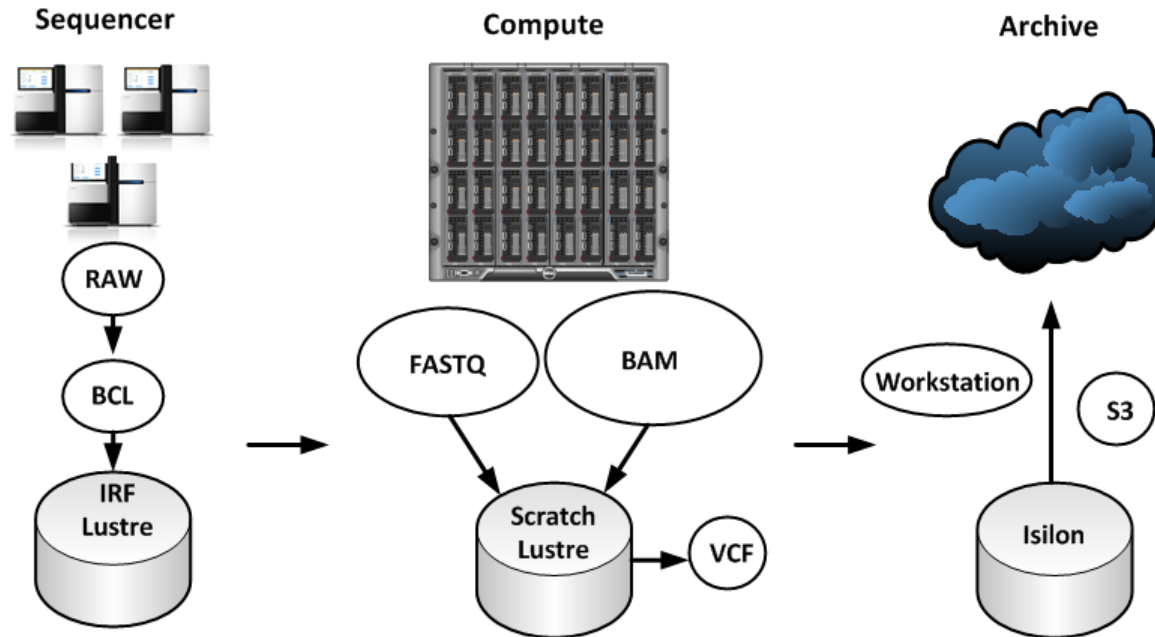
Enterprise Grade Hadoop

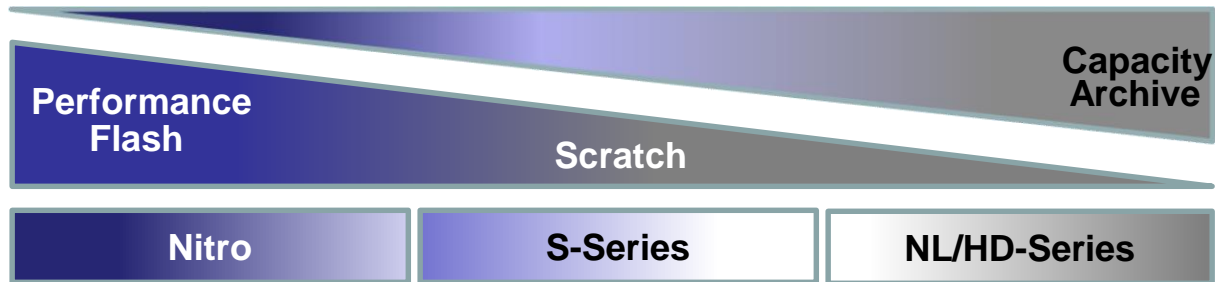
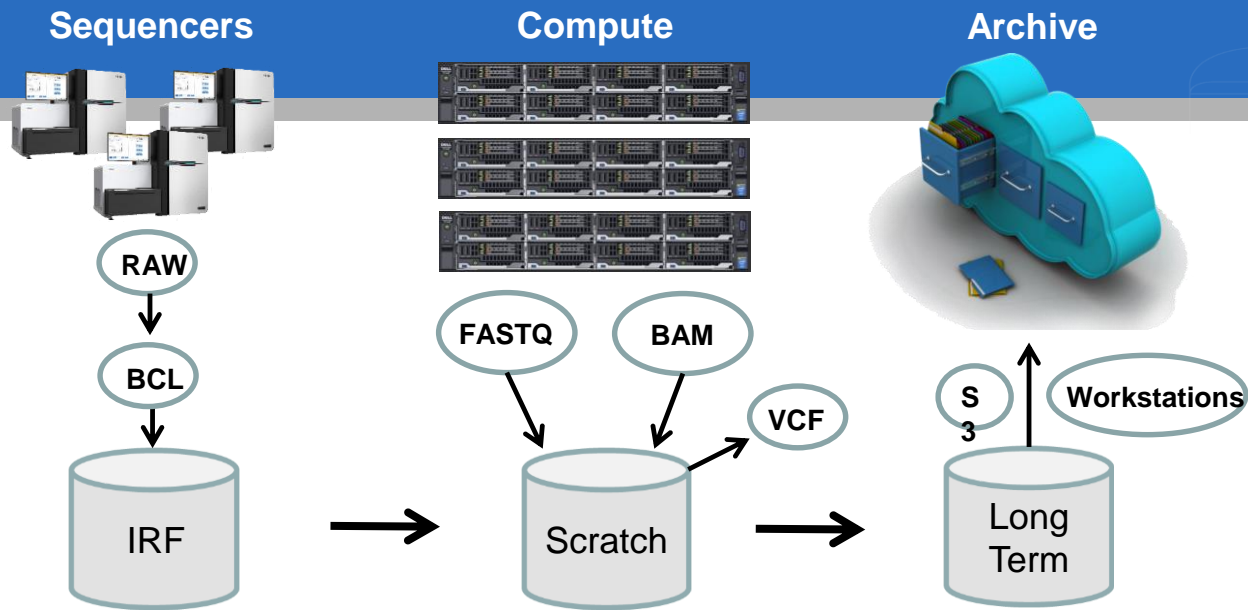
Translational Genomics Research Institute (TGen)

- ❖ A non-profit 501 (c)(3) research institute focused on
 - Discovering genetic changes & mechanisms that underlie a variety of human diseases
 - translating discoveries into new diagnostic tests and therapeutics.



Existing HPC Storage Architecture





D~~EL~~LEMC