



EMC Solutions for Oil & Gas

Rune Olsen – Senior Systems Engineer

Challenges in the Energy Value Chain



Survey Data & Analysis
Land Management
Environmental & Safety
Regulatory Compliance
Well File Management

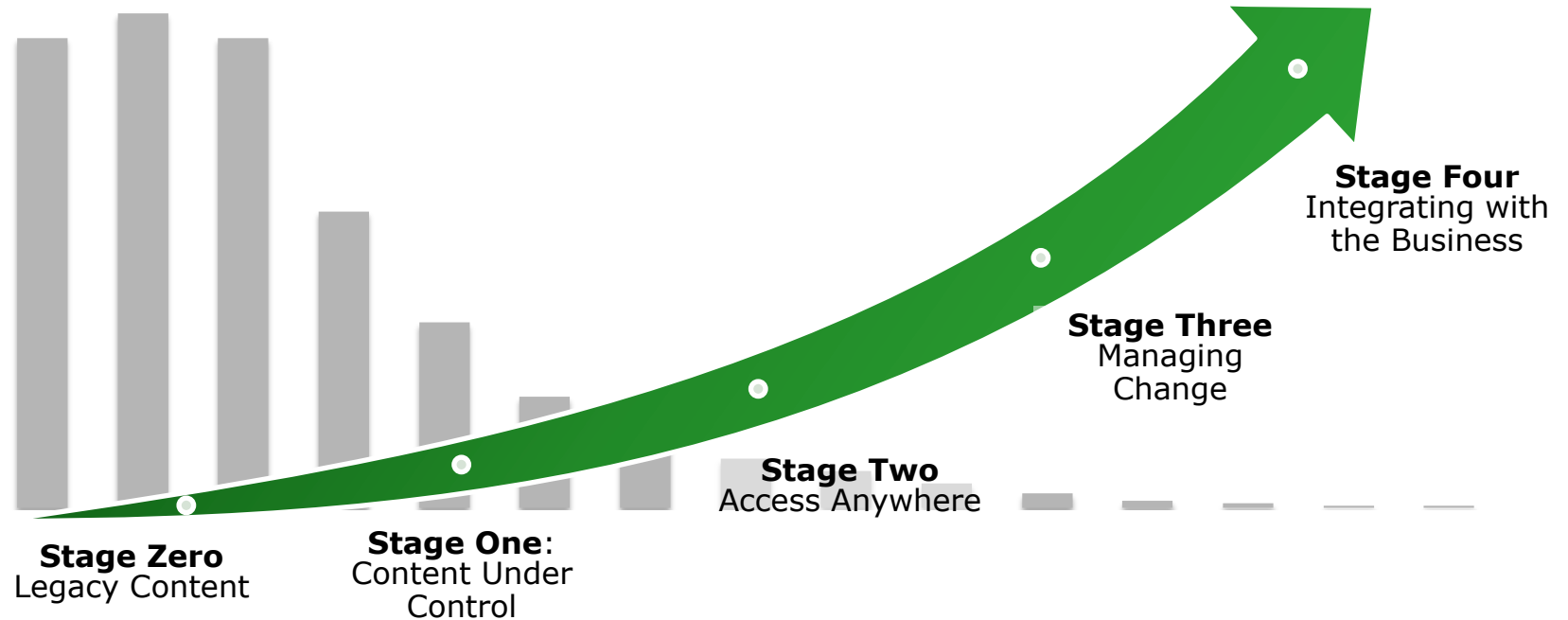
Interdisciplinary Approvals
Progress Reporting
Supplier Interaction
Health & Safety
Drawing Management
Contracts Management

Data Transformation
Data Extraction
Data Packaging
Data Transmission
Data Quality

'As Built' Management
SOPs and Guidelines
Operator training
Data Security
Regulatory Submissions
Change Control
Data Longevity

System Maintenance
Regulatory Compliance
Geographic Information Management
Standards & Procedures

Information Management Maturity



But How Do You Get There?

Stage Zero
Legacy Content

- Paper & Electronic Documents
- Multiple Repositories
- Challenges finding and managing content

Stage One
Content Under Control

- Managed Electronic Documents
- Single Content Management Repository
- Enterprise-wide Search

Stage Two
Access Anywhere

- Project and role based controls
- Ensure access to approved versions
- Content accessible through web and mobile devices

Stage Three
Managing Change

- Adherence to PAS55, Iso-55000, and other industry standards
- Built-in change management: approval and publishing workflows

Stage Four
Integrating with the Business

- Access content directly from business systems
- Author and distribute content with existing tools
- Support for mobility

Solution Suite Positioning

**CAPITAL PROJECTS
AS A SERVICE**



**SUPPLIER
EXCHANGE**



- Management of Plant Documentation from Design through to Plant Operation and Decommissioning
- As much cloud as you need – solutions built to run On Premise or in the cloud
- EMC industry leading hosting and security
- Enterprise scalability

**EXPLORATION DOC MNG
eWELLFILE**



**CAPITAL PROJECTS
ENTERPRISE**



**HANDOVER &
COMMISSIONING**



ASSET OPERATIONS



EXPLORATION

**DESIGN/
CONSTRUCTION**

HANDOVER

**OPERATION/
MAINTENANCE**

**TRANSMISSION/
DISTRIBUTION**

EMC Energy & Engineering Architecture

Full asset lifecycle ●

External collaboration ●

Industry-specific domain packs ●

Purpose-built solutions ●

Proven information architecture ●

Industry standards ●

Modern, configurable UI ●

Trusted platform ●

Flexible deployment options ●

Design > Construction > Handover > Operations > Modifications > Decommission

SUPPLIER EXCHANGE

OIL & GAS

UTILITIES

CAPITAL PROJECTS

HANDOVER &
COMMISSIONING

ASSET OPERATIONS

Pre-defined
Templates

Role-based
Security

Distribution
Interfaces

Change
Management

Enterprise
Integration

BS1192, ISO9001, ISO55000

Documentum



ON-PREMISE



ONDEMAND



CLOUD



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Industry standards ●

Modern, configurable UI ●

Trusted platform ●

IIG value-added solutions ●

Design > Construction > Handover > Operations > Modifications > Decommission

SUPPLIER EXCHANGE

OIL & GAS

UTILITIES

CAPITAL PROJECTS

HANDOVER &
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ASSET OPERATIONS

Pre-defined
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BS1192, ISO9001, ISO55000

Documentum

Syncplicity

Info Archive

Captiva

Kazeon
eDiscovery

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Industry-specific domain packs ●

Purpose-built solutions ●

Proven information architecture ●

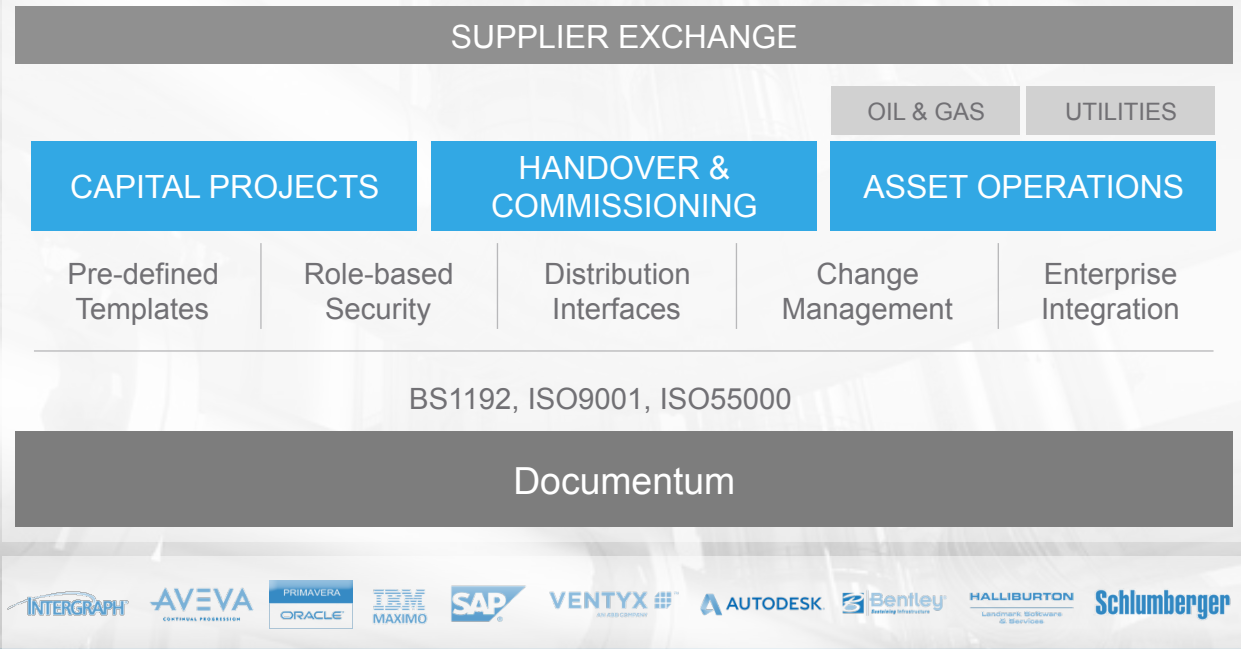
Industry standards ●

Modern, configurable UI ●

Trusted platform ●

Proven integration with industry-leading technologies ●

Design > Construction > Handover > Operations > Modifications > Decommission



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CAPITAL PROJECTS SOLUTION FOR OIL & GAS

Pre-defined system for rapid deployment and reuse of projects and processes

Secure enterprise-class information architecture supports distributed infrastructure

Reduce the time & expertise required to manage, securely share & transmit complete and up-to-date engineering content

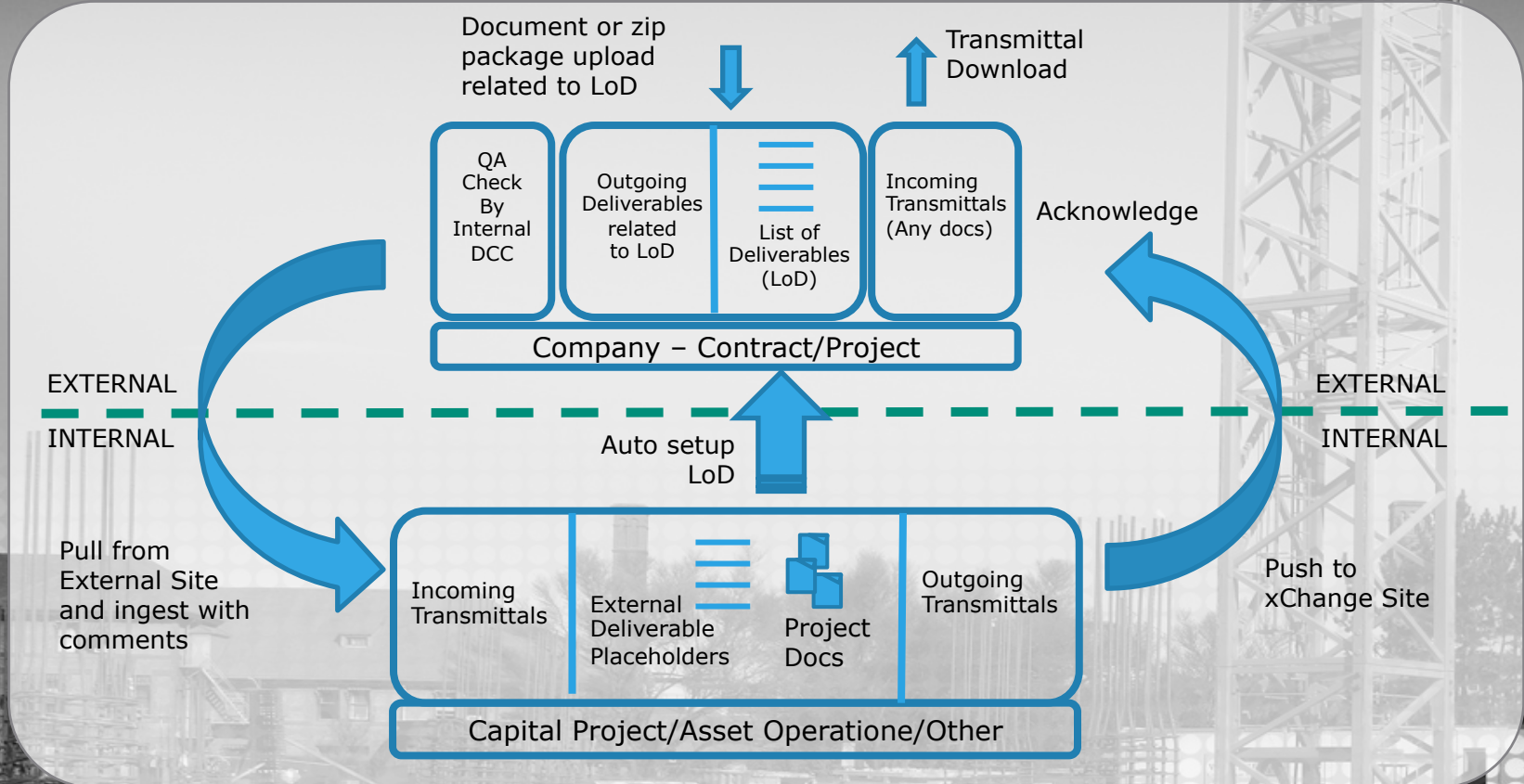
Access the right information, prevent documentation errors, and accurately predict project cost

Facilitate role-based collaboration & knowledge sharing by standardizing how data is captured, managed & found



SOLUTION

Supplier ExChange Schematic



EMC Documentum Asset Operations



INFORMATION MANAGEMENT

Centralized Management, Access Controls, Version Management



CHANGE MANAGEMENT

Pre-built Workflows, Submissions, Incident Reports, Transmittals



COMPLIANCE

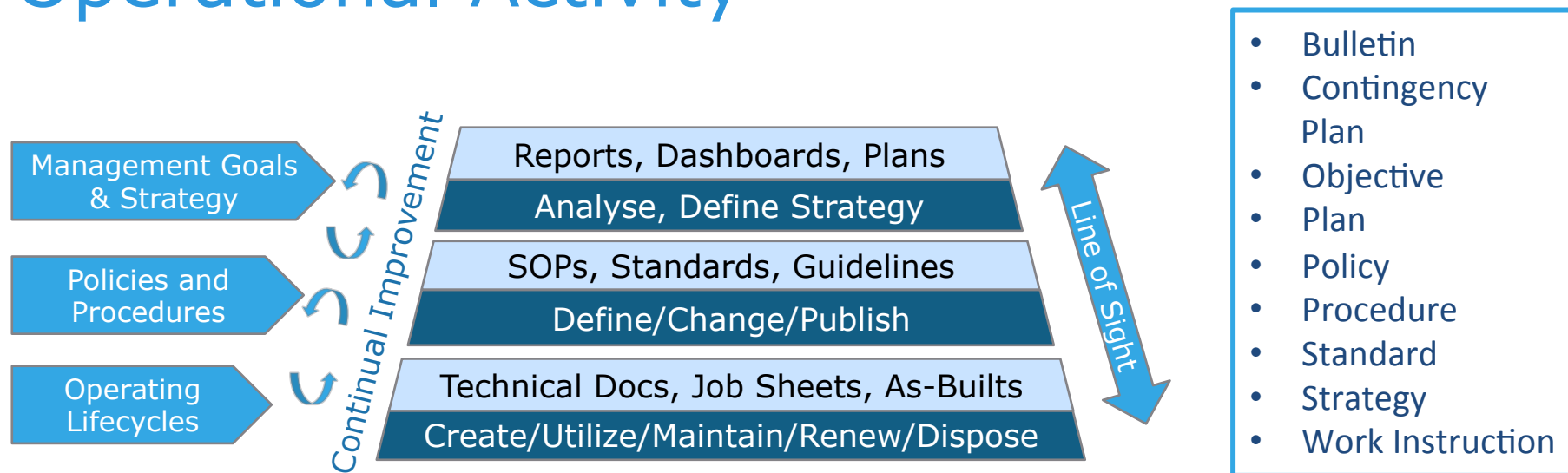
Support for ISO9001, PAS-55, OSHA, and EH&S standards



INTEGRATION

With Plant Maintenance, ERP, GIS, and other Business Systems

Line of Sight from Strategy to Operational Activity



PRE-CONFIGURED AND READY TO RUN

EMC²®

EMC ISILON

Global Oil and Gas Solutions For Upstream



Nicolai Imset

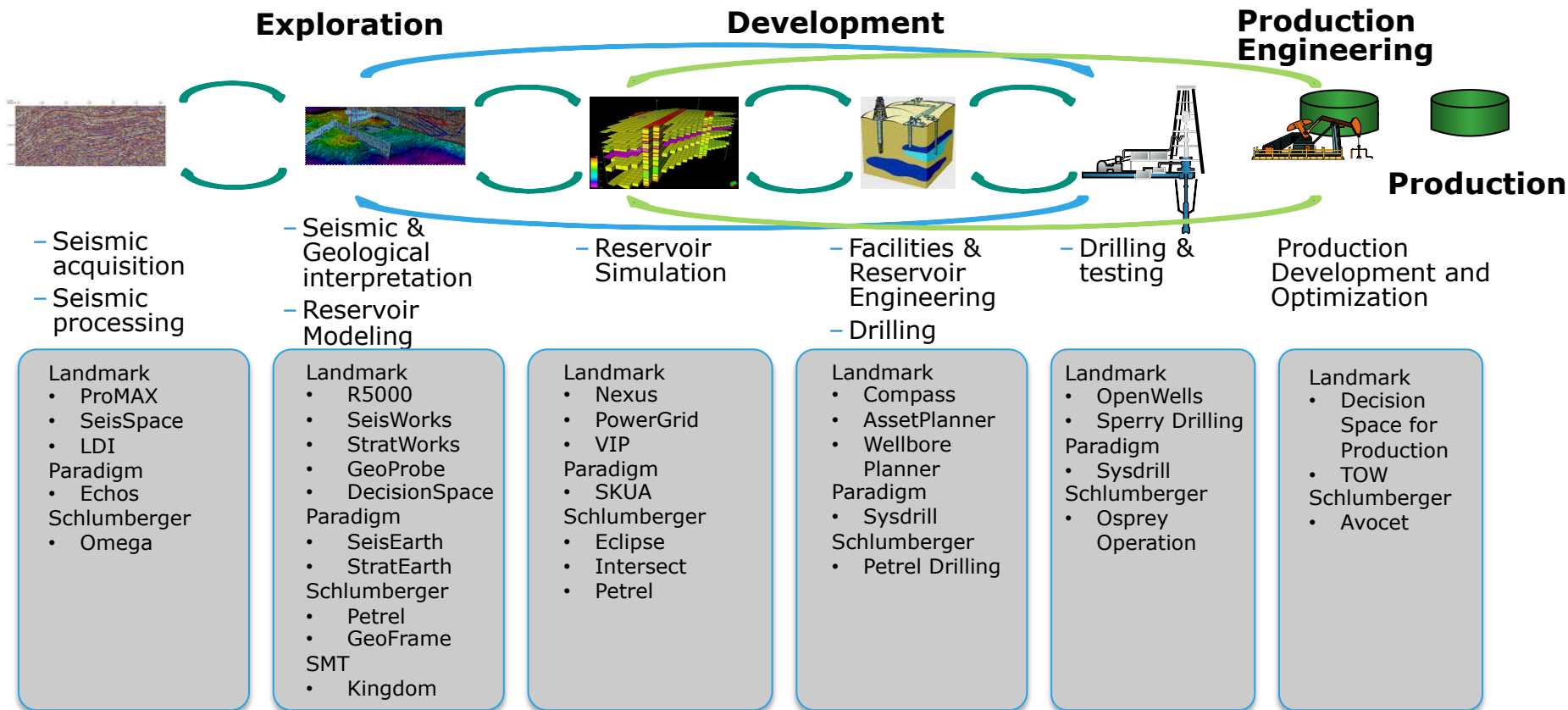
Sr. System Engineer – Isilon Nordics

EMC Isilon

Scale-Out NAS Product Family



Upstream Processes and Industry Application Partners



EMC Isilon Core Innovation

OneFS Scale-Out Operating System



Single Filesystem

Single volume for management simplicity

High Performance

Over 100 GB aggregate throughput

Multi-Tier

Auto-tiering and AutoBalance

80%+ Efficiency

Industry-leading raw storage utilization

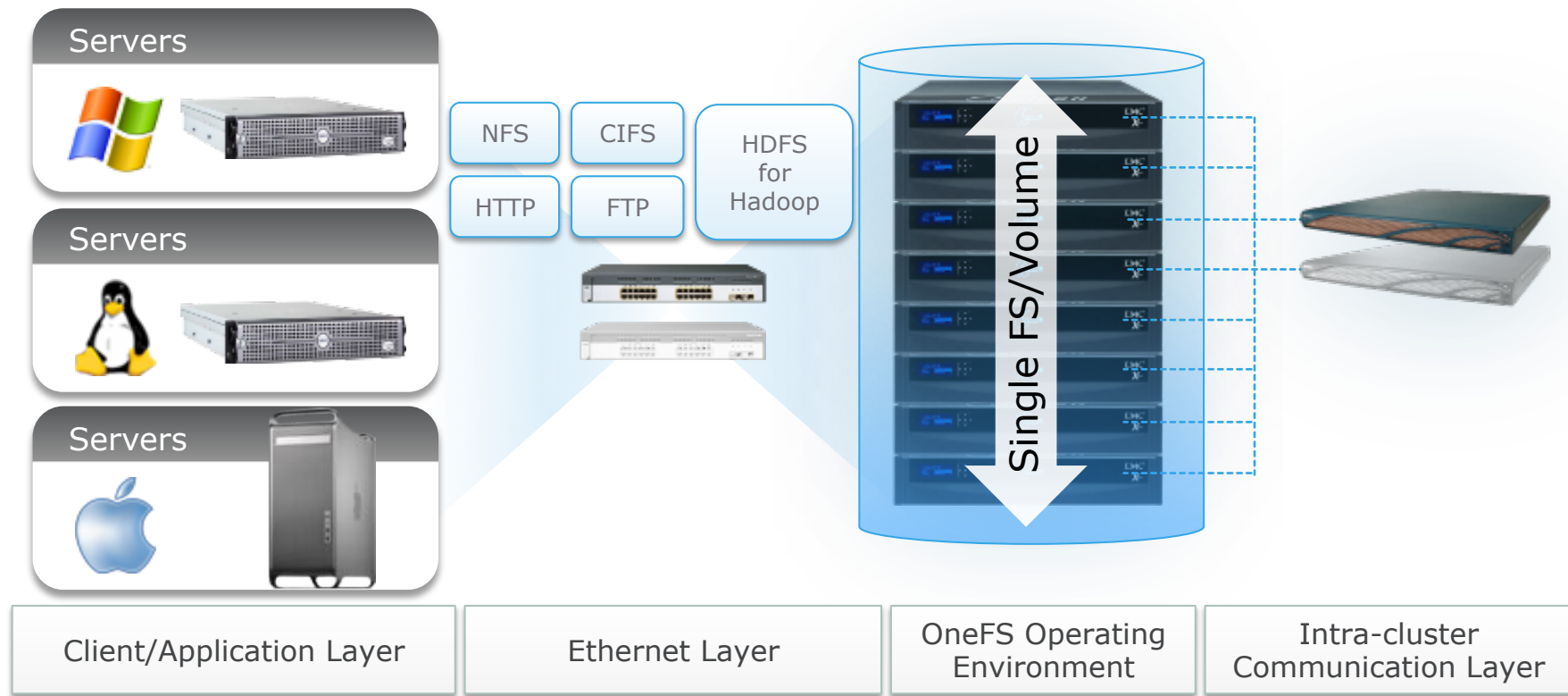
Easy Growth

Scale in <60 Seconds with no downtime

Linear Scalability

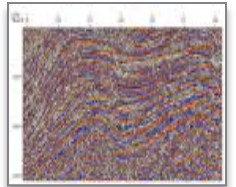
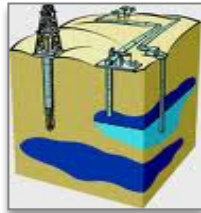
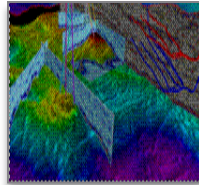
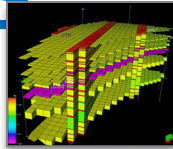
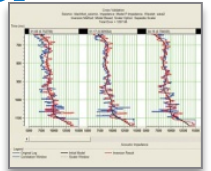
Scale performance and capacity up to 40 PBs

EMC Isilon Scale-Out NAS Architecture



Isilon Interpretation and Modeling Bundles

- Isilon Scale-Out Storage is qualified with Landmark and Schlumberger amongst others.
- EMC Isilon has created storage bundles with Landmark and Schlumberger for:
 - Landmark R5000/Decision Space
 - Landmark ProMAX/SeisSpace
 - Schlumberger Petrel
 - Schlumberger Eclipse Reservoir Simulation

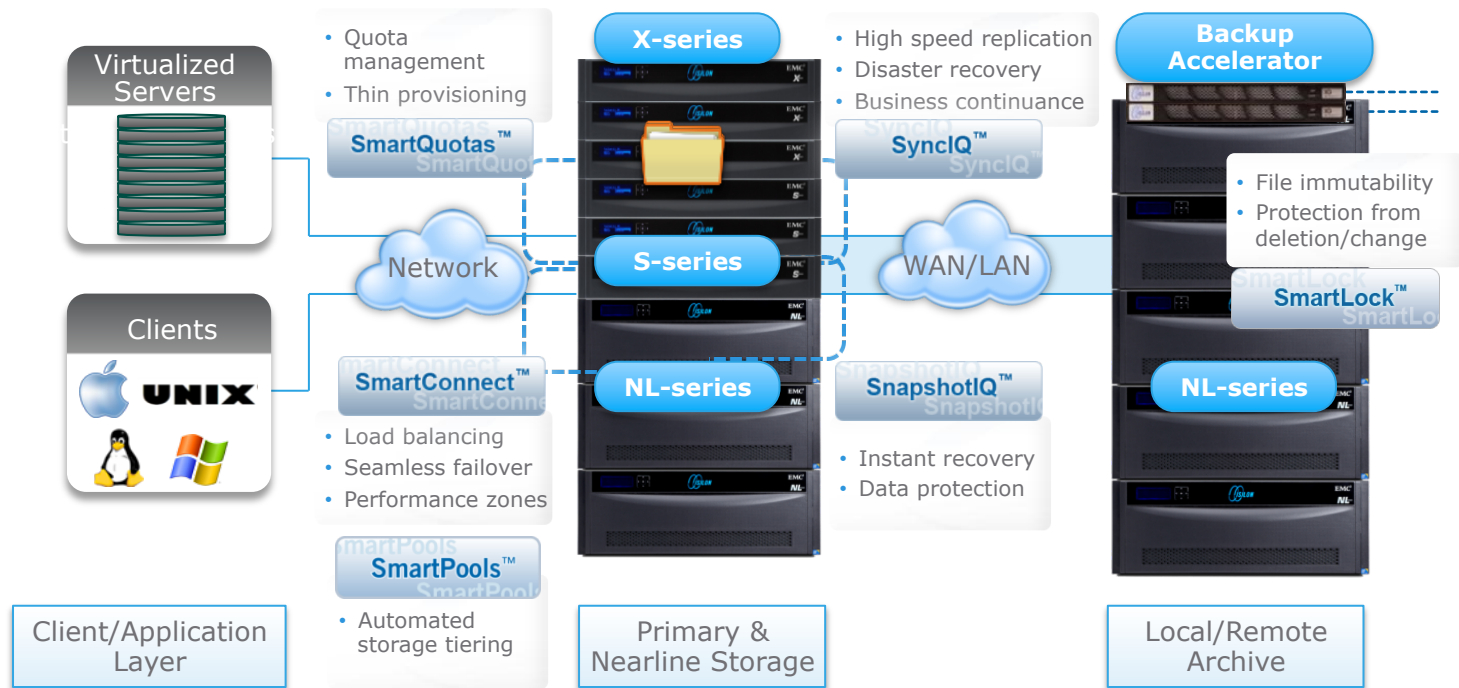


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Isilon Backup slides

Isilon, Scale-Out NAS for Big Data

Single File System, Single Volume Simplicity For Active, Persistent, And Archive Data



Arcis Corporation

A Breakthrough In Oil and Gas Exploration



ROB HOWEY
Senior Vice President



Challenge

- Existing storage systems were not able to meet data requirements
- Timely and valuable analysis was severely compromised

“Our ability to quickly collect, organize, and analyze seismic data is a critical business enabler that our customers rely on to make accurate exploration decisions. Without Isilon, we simply would not be able to perform and deliver such rich analysis to our growing customer base. Isilon not only worked as advertised, but delivered a wealth of value beyond what we expected.”

Results

- Unified 40 disconnected data silos into a single file system
- Reduced sample analysis iteration cycle from eight weeks to three weeks

Brigham Exploration

Isilon Reduces Costs and Increases Access to Massive Amounts of Data



**DAVE
KIRCHHOFF**
Manager of IT



Challenge

- Brigham had deployed a number of SAN systems to handle their ever-increasing amounts of data. These systems proved difficult to manage and scale

"Isilon clustered storage has dramatically reduced the time and resources required to manage our data and has allowed us to refocus vital resources towards interpreting the data and delivering results to our management and partners."

RESULTS

- Increased productivity at a lower cost
- Instant access to massive amounts of data
- Single, shared storage resource simplifies data management
- Seamless data replication for disaster recovery



Cypress E&P

Bringing Optimization And Scalability To High-Performing Applications



ERIC BASS
Director of Information
Technology
EMC²

Challenge

- Needed scalability, redundancy, and high-fault tolerance with high-performance environment
- Vast amounts of seismic and well data to manage and analyze

"Isilon offers great redundancy; the SnapshotIQ™ technology gives us point-in-time snapshots to step back to on-the-fly updates if needed."

Results

- Consolidated all business-critical applications on single solution and point of management
- Unified data to centralized network storage with single namespace

