

# DataDirect<sup>TM</sup>

## NETWORKS

INFORMATION IN MOTION<sup>TM</sup>

# TER@TEC 2013

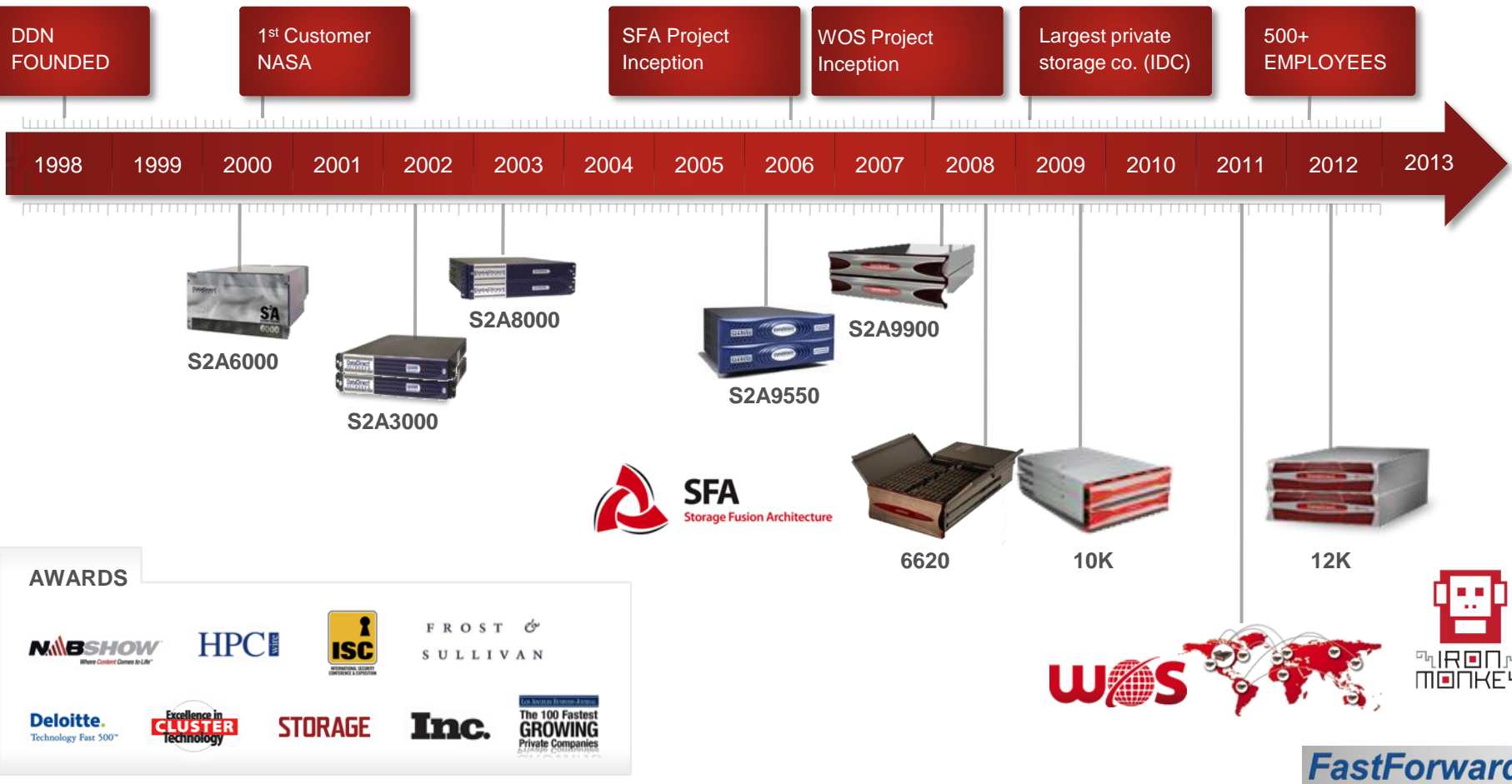
ECOLE POLYTECHNIQUE

**Laurent Thiers**

EMEA Director Sales, Strategic Accounts

# The Right investment & partnerships for Exascale development

**DataDirect**  
NETWORKS



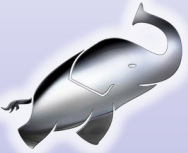
# HPC & Cloud Infrastructure Portfolio

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## Big Data Platform Management



**Enterprise Hadoop Appliance**



**hScaler™**  
50-2000 Nodes  
200+ Data Sources  
High Speed ETL  
*Up to 500% Faster Results*

**Petascade Lustre® Storage**



**EXAScaler™**  
10Ks of Clients  
1TB/s+, HSM  
Linux/Windows Clients  
NFS & CIFS

**Enterprise Scale-Out File Storage**



**GRIDScaler™**  
1Ks of Clients  
1TB/s+, HSM  
Linux/Windows Clients  
NFS & CIFS

**Storage Fusion Architecture™ Core Storage Platforms**




**SFA12K**  
40GB/s/1.7M IOPS  
1,680 Drives:  
16U-2 Racks  
Embedded Computing



**SFA7700**  
10GB/s, 600K IOPS  
60 Drives in 4U;  
396 Drives in 20U


**Flexible Drive Configuration**

SATA SAS SSD




**SFX Automated Flash Caching**

- Read
- Context Commit
- Write
- Instant Commit



**Cloud Foundation**



**WOS® 2.5**  
256 Billion Objects  
GeoReplicated  
8 Million Objects/Second  
Self-Healing  
**Mobile Cloud Access**

# Application-Defined Storage Intelligence

## DDN's Big Data Storage Access

**DataDirect**  
NETWORKS

### Application Defined Flash Caching

### User Defined Metadata & Protection Policy

Highest Performance Data Access & Scale

#### Parallel File System Namespace

DDN GridScaler | Lustre® | Hadoop

#### SFA Appliance

#### SFA Appliance

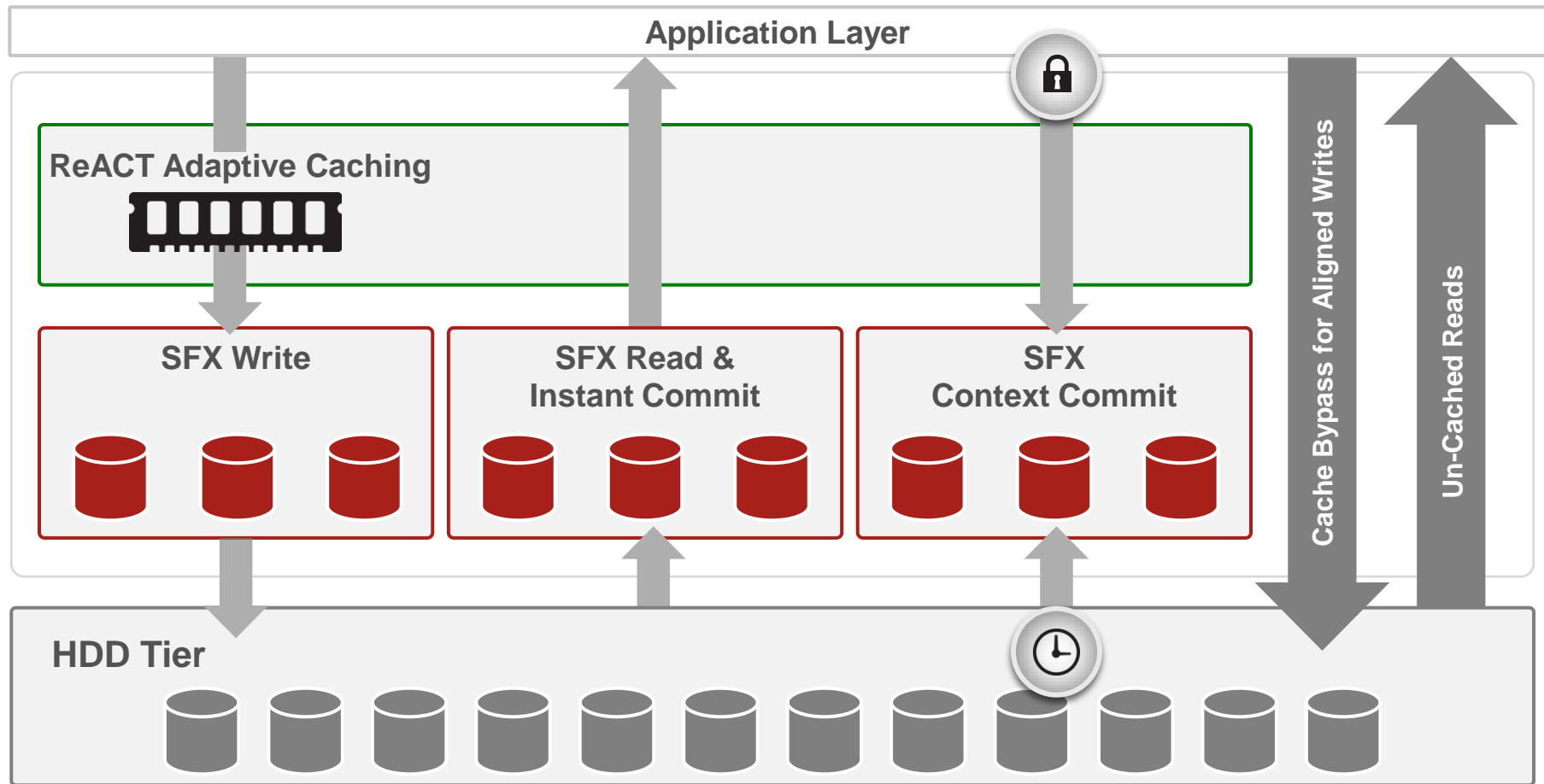
Storage  
Defined  
Flash  
Caching

#### Hyperscale Object Storage

REST APIs | NAS NFS CIFS | S3 | CDN

HSM

# The Many Dimensions of **SFA** Acceleration



**SFA ReACT:** Adaptive Cache Mirroring  
**SFX Read:** Automated Read Caching  
**SFX Instant Commit:** Automated Cache Warming

**SFA Context Commit:** API to Lock Data in Cache  
**SFX Write:** Automated Write Caching (pending)

# DDN & ORNL – Titan & Spider II

## *The World's Fastest Storage System*

**DataDirect**<sup>™</sup>  
NETWORKS

# SPIDER II



**3X**  
MORE CAPACITY



**20K**  
DISK DRIVES



**= TO 40 PB**  
THAT'S LIKE STACKING  
BOOKS 227,000 MILES HIGH



**6x**  
FASTER

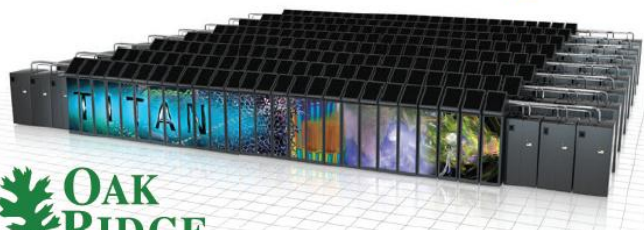


**1.4 TB/s**  
OF PEAK PERFORMANCE



**= TO 500x**  
MAX NUMBER OF TWEETS  
TWITTER CAN PROCESS  
AT ONCE

**OLCF**  
OAK RIDGE LEADERSHIP COMPUTING FACILITY



**OAK  
RIDGE**  
National Laboratory

**DataDirect**<sup>™</sup>  
NETWORKS

**SFA12K**



## Intel & DoE/NNSA have now selected DDN to drive innovation in their I/O R&D Program for Exascale

- Co-Development of Exascale I/O Layers
- Lustre®, Burst Buffer, Object Store
- \$M Long-Range Development Effort
- 100% Open Source Contribution
- Complete Alignment with DDN Exascale Strategy





To our Customers, Partners, the HPC  
Community...



... and to you  
the audience 😊

Merci