HPC Wall Street Cloud & Trading Keynote Panel

Dave Weber, Director, Global Financial Services
April 6, 2015

Panel

- Lenovo – Dave Weber

- Options Technology – Ken Barnes

- Redline Trading – Lee Fisher

- Platform Computing – Yonggang Hu

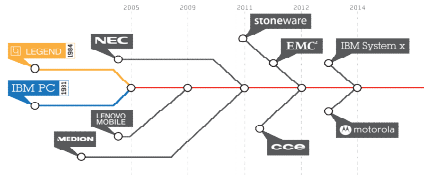# Who is Lenovo?

Yesterday	Today	Tomorrow

Fast growing innovator

- Company founded in 1980's

- Grew organically, through major acquisitions

- World renowned products

Leading end-to-end IT provider smartphones to supercomputers

- $39 Billion, Fortune 500 Company
  - 60K employees, 160+ countries
  - HQ: Beijing, China; Raleigh N.C

- Global R&D and supply chain

- Invests in Innovation
  - Ranked as Top 25 most innovative companies
  - **#1** in WW PC market share
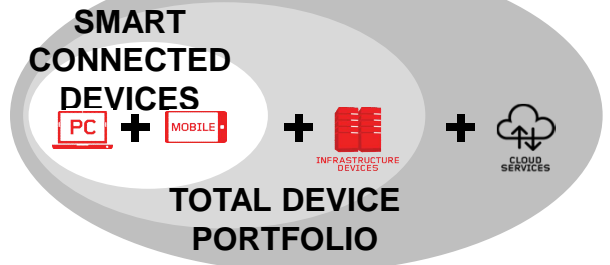 - **#2** in WW PC & Tablet market share
  - **#3** in WW Smart Connected Devices

Leader of consumer and enterprise IT solutions

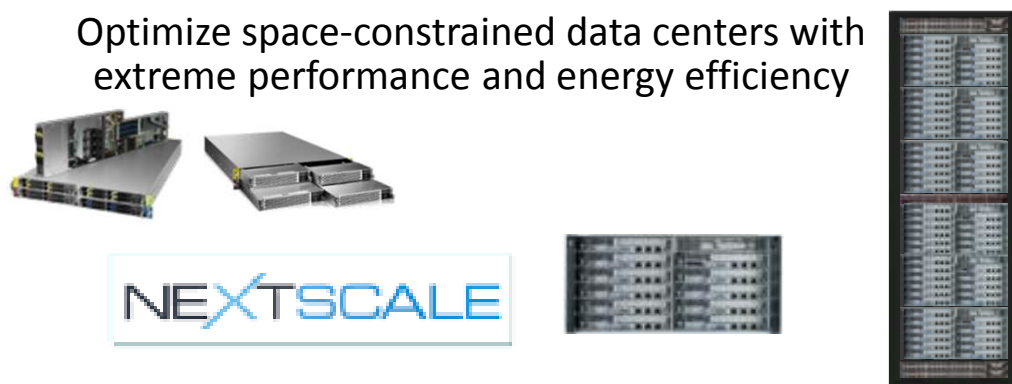- Driving to #1 in mobile, PC's, x86 servers, HPC

THE LENOVO EXPERIENCE.

SMART CONNECTED DEVICES

PC + MOBILE + INFRASTRUCTURE DEVICES + CLOUD SERVICES

TOTAL DEVICE PORTFOLIO

World Class Enterprise Portfolio

Scalable Enterprise Systems

4 socket+ enterprise-class x86 performance, resiliency, security

Blade & Integrated Systems

Integration across IBM assets in systems and SW for maximum client optimization and value

BladeCenter

PureSystems   Flex System

Dense Systems

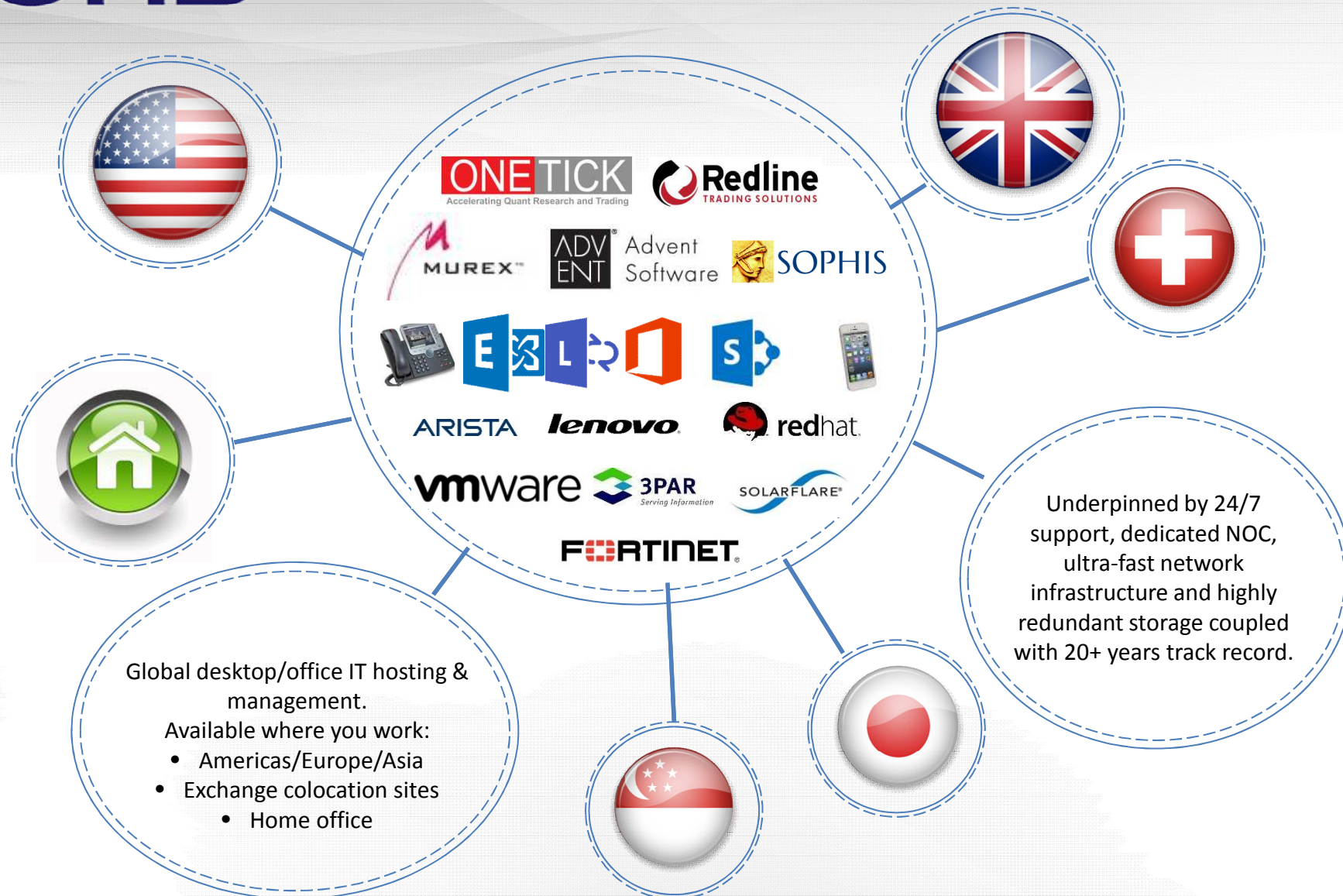Optimize space-constrained data centers with extreme performance and energy efficiency

NEXTSCALE

Rack & Tower Systems

Broad rack and tower portfolio to meet a wide range of client needs from infrastructure to technical computing

ThinkServer   **System x**

Storage Solutions

Network Systems

lenovo

Ken Barnes, SVP, Corporate Development, Options Technology

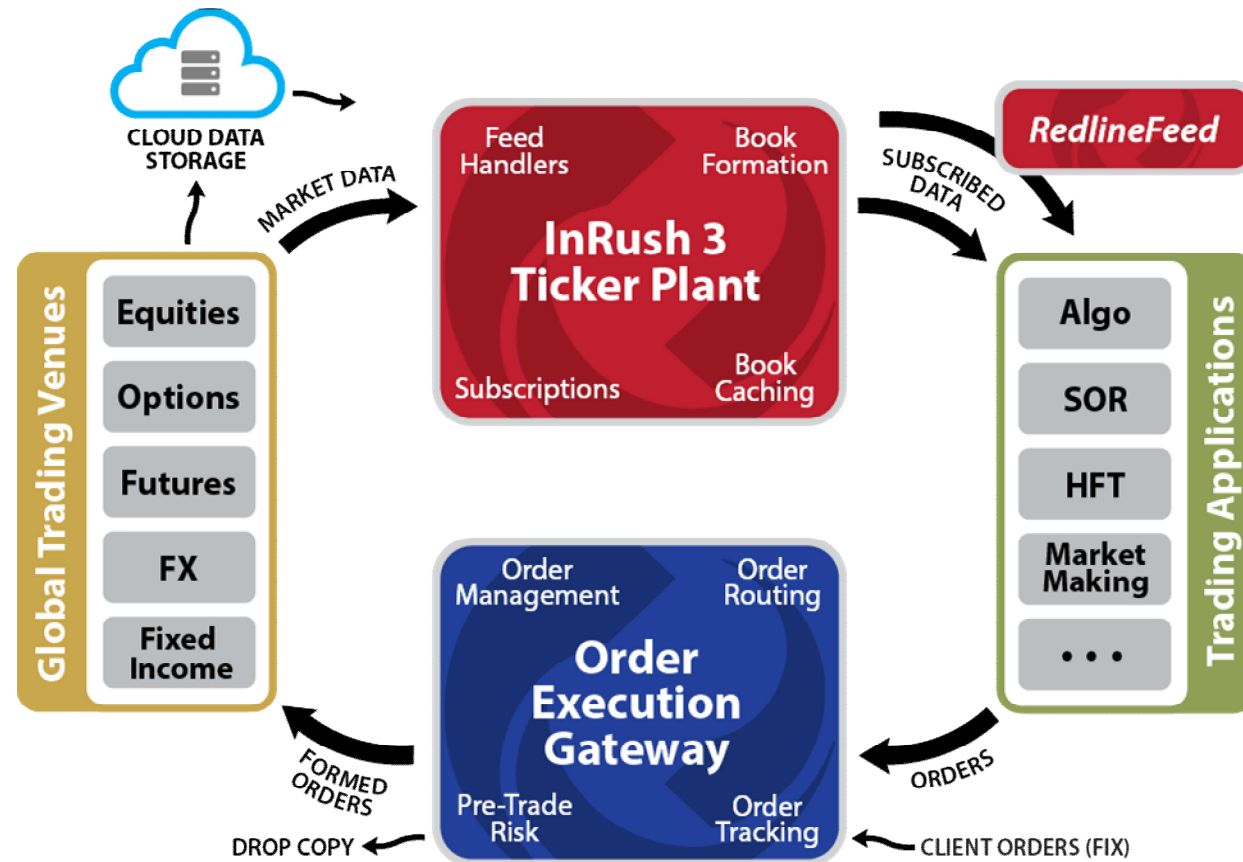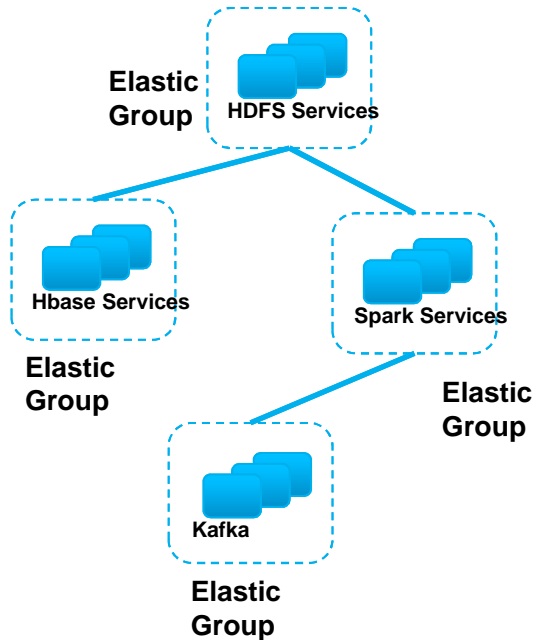Lee Fisher, VP of Marketing, Redline Trading Solutions

HPC Wall Street Cloud Panel

Yonggang Hu, Chief Architect, Platform Computing, IBM

Cloud Native Applications

Workloads are increasingly comprised of distributed, parallel services running in clusters

Elastic Group — HDFS Services

Hbase Services

Spark Services

Elastic Group

Elastic Group

Kafka

Elastic Group

Micro service architecture
Application broken into fine grain decoupled stateless and stateful services

New "middleware" to enable cloud native applications
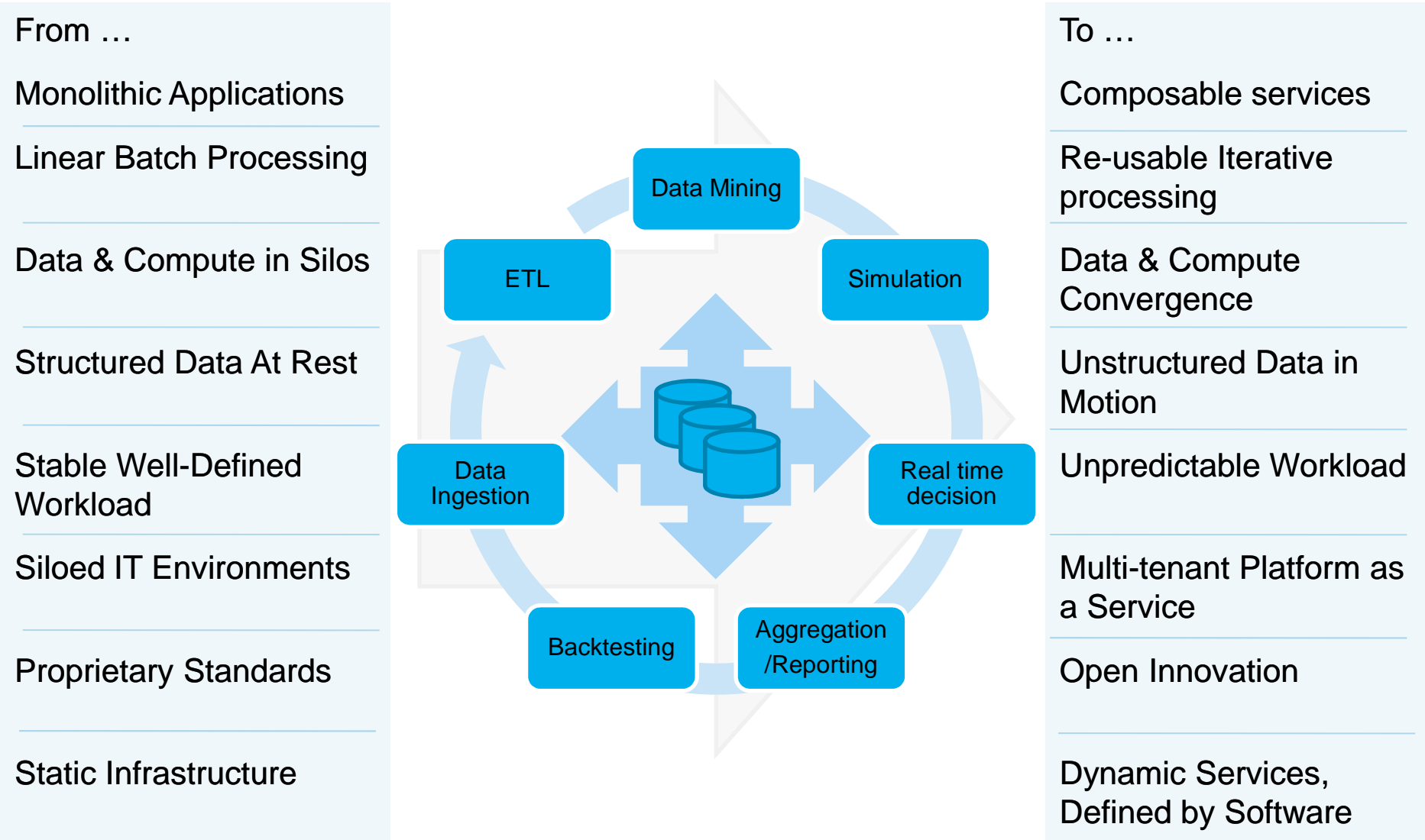Parallel, Scalable, Elastic, Mobile, Resilient, ……

Cloud Native applications require a new set of capabilities from the cloud platform
• Fine grained integration with application frameworks
• Multi-dimensional resource management
• Data locality – affinity, anti-affinity
• Compute & Data convergence
• Co-optimization for compute, storage, network
• Horizontal and vertical auto-scaling
• SLA management
• Life cycle management for distributed services
• Dependency management
• HA, Distributed state management
• Multi-tenancy, isolation, security
….

Algorithmics an IBM Company · MATLAB SIMULINK · GEMFIRE · Datameer · HIVE · MapReduce · mongoDB · cassandra · talend open data solutions

IBM · Datastage · R · accumulo · Jenkins · Apache Kafka *A high-throughput distributed messaging system.* · Spark · APACHE STORM *Distributed · Resilient · Real-time*

Application and Business Opportunities – Risk Management

From …

Monolithic Applications

Linear Batch Processing

Data & Compute in Silos

Structured Data At Rest

Stable Well-Defined Workload

Siloed IT Environments

Proprietary Standards

Static Infrastructure

To …

Composable services

Re-usable Iterative processing

Data & Compute Convergence

Unstructured Data in Motion

Unpredictable Workload

Multi-tenant Platform as a Service

Open Innovation

Dynamic Services, Defined by Software

Data Mining

Simulation

ETL

Data Ingestion

Real time decision

Backtesting

Aggregation /Reporting

Panel Q&A

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THANK YOU GRAZIE MERCI DANKE GRAZIAS 謝謝 СПАСИБО
GRACIAS OBRIGADO ありがとう DANK TAKK BEDANKT DAKUJEM