The Network Matters for IP Storage

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Fujitsu World Tour
Networking by Brocade

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Benedetta Piacentini
Legal Disclosure

PLEASE SEE RISK FACTORS ON FORM 10-Q AND FORM 10-K FILED WITH THE SEC

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Market Context - Storage Networking
The Trends Driving Storage

Virtualization Continues to Drive Change
Virtualization

Storage Will Continue to Grow
Storage

SSD Changes Everything
SSD

Is Your Storage Network Ready?
Is Your

Higher SLAs
Higher

TBs to PBs
TBs to PBs

Ultra Low-Latency
Ultra Low-Latency
Virtualization Is Driving Shared Storage

HIGH DENSITY VIRTUALIZATION DRIVES STORAGE GROWTH

100% of V-Mark Top 20 use Fibre Channel

Source: Gartner x86 Server Forecast CQ3’12
Enterprise Storage Capacity Continues Unabated

IDC’s FC SAN Storage Forecast = 40% CAGR (2014/2018)
Customer Pain Points
The network matters for storage

Manage Growth

Growth of storage and business-critical workloads is accelerating

Mitigate Risk

Requirements for 100% availability and reliability are increasing

Reduce Costs

Infrastructure complexity and management costs are growing
Market Context - The New IP
The New IP
The Foundation for the Digital Business

Our industry runs on 20 year innovation cycles, and we are on the forefront of the next wave, now is the time to embrace the new IP in order to improve business agility.

1/3rd of the world’s population is connected to the internet.

Can your Customer’s Old IP handle a New IP world?

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The New IP Accelerates Service Delivery, Data Access, and Innovation

From
- Proprietary
- Hardware Devices
- Manual
- Silo’d Ops
- High Cost
- Slow Innovation

To
- Open
- Software-enabled
- Automated
- True Democracy
- Optimized Costs
- Fast Innovation

New IP

Ecosystem Driven

Innovation-Centric, Software Enabled

Open with a purpose

On your terms

New Network Architecture

New Business Models

Content and Data

Cloud

Personalization

Digital Business

IoT
The Data Center is Everywhere & Anywhere

Pick where services are hosted based on business rules not vendor limits

The boundaries of the data center disappear with the New IP, enabling:

- Management and movement of data across public and private cloud resources
- Anytime, anywhere, any device access to your applications and data
- Consistent policy enforcement across federated environments
- User self-service=immediate time to value
- Centralized security control
- Optimized user experience
Brocade IP
Brocade ICX Portfolio
Portfolio of stackable switches

Function and Scalability

Price/Performance

Brocade ICX 7250
Entry-level+

Brocade ICX 7450
Midmarket

Brocade ICX 6430/6450
Entry-level+

Brocade ICX 6610
High-Performance

Brocade ICX 7750
Aggregation/Core

Switch Port Extender

Mixed Stacking
Lay New IP Foundation with Ethernet Fabrics

Begin New IP journey with confidence, cut costs, and increase agility

Revolutionary Results

- **Sunpower**:
  - Deploy apps 92% faster
  - Reduced Capital costs by 50%
- **Singing River Healthcare**:
  - Cut EHR login 50%
  - Improved EHR performance
  - Able to move VMs in minutes vs. days and w/out downtime
- Both:
  - Reduced Operational costs by 50%
  - Teams focus more on strategic projects

Deploy VDX SDN-ready switches alongside existing architecture

Enable VCS Fabric technology, and move low-priority virtualized workloads and gain confidence in:
- Native automation
- Zero-touch provisioning
- Virtual machine awareness
- Centralized management

Deploy all new workloads on VCS Fabrics
As legacy equipment retires, replace with VDX/VCS
Optional: Deploy Brocade Vyatta controller to begin testing SDN capabilities
VDX Product Positioning

COMPLETE BREADTH OF PORTFOLIO

SCALABILITY

LEAF

1G/10G/10GBase-T Optimized w/ 40G uplinks

SPINE

VDX 6740 Family

VDX 6740

VDX 6740T-1G

VDX 6940

VDX 6940-72Q

VDX 6940-36Q

VDX 6940-144S

VDX 8770 Family

10G/10GBase-T/40G/100G optimized modular system

10G/40G Optimized w/ 100G uplinks
The Road Ahead
Advancing the Fibre Channel Industry

Brocade technical leadership drives technology advancements

• Brocade announces commitment to develop new SAN solutions based on Gen 6 Fibre Channel industry standard
  – Gen 6 Fibre Channel standards well underway

• Brocade is leading an industry consortium within the OpenStack community to develop open source software
  – Simplifying the orchestration of Fibre Channel resources in cloud architectures
  – Leading the proposal committee for zone management
Software-defined Networking in the Data Center

NEW LEVELS OF AUTOMATION, AGILITY AND INNOVATION
# Data Center of the Future

**Brocade Strategy: Optimized to Lead the Transformation**

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<tr>
<th>Management and Orchestration</th>
<th>Management and Orchestration Platform</th>
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<td>OpenStack</td>
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<th>Applications</th>
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<td>Service Chaining, Network Analytics, Traffic Engineering, etc.</td>
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<th>Control</th>
<th>Network Controller</th>
<th>Server Controller</th>
<th>Storage Controller</th>
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<td>OpenDaylight</td>
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<th>Virtualization</th>
<th>Network Function Virtualization</th>
<th>Server Virtualization</th>
<th>Storage Virtualization</th>
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<td>NFV: vRouting, vADX</td>
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<td>VxLAN/NVGRE/STT</td>
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<th>Physical Infrastructure</th>
<th>Network</th>
<th>Compute</th>
<th>Storage</th>
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<td>Ethernet Fabric, L3 Router, Fibre Channel SAN</td>
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BREAK THE STATUS QUO:

THINK BIG. START NOW.

Brocade and the New IP.