January 16 Launch

Announcement Overview

IBM

In a business environment with constant change, your IT infrastructure decisions matter.

1. Remake Enterprise IT for the New Era of Cloud

- Quickly respond to business opportunities
- Confidently build and manage efficient infrastructures
- Significantly improve IT economics

2. Drive Business Transformation with Big Data & Analytics

- Optimize the speed of decision making in real-time
- Obtain new levels of customer intimacy and differentiation
- Empower employees with insights

January 16 Content News Overview

System x

- **New!** x3850 X6 *(RFA 2/18/13)*
- **New!** x3950 X6 *(RFA 2/18/13)*
- **New!** x3650 M4 BD
- **New!** IBM System x Solution for SAP HANA and VMware vSphere on X6 *(RA 2/18/13)*
- **New!** IBM System x Solution for DB2 with BLU Acceleration on X6 *(RA 2/18/13)*
- **Update!** IBM System x Solution for SAP HANA on X6 *(RFA 2/18/13)*
- **Update!** IBM System x Solution for Microsoft SQL Data Warehouse on X6 *(RA 2/18/13)*
- **Update!** IBM System x Solution for Microsoft Hyper-V on X6 *(RA 2/18/13)*
- **New!** IBM System x Solution for VMWare vCloud Suite on X6 *(RA 2/18/13)*
- **New!** IBM System x Reliability Solution for Stratus everRun Enterprise
- **Update!** IBM System x Solution for SAP Business Suite on X6 *(RA 2/18/13)*
- **Update!** x3630 M4 Ref (*RFA 1/9/13*)
- **Update!** x3530 M4 Ref (*RFA 1/9/13*)

PureSystems

- **New!** IBM Flex System x880 X6 compute node (2-, 4- and 8- socket) *(SOD X6 technology)*
- **New!** IBM Flex System Solution for SmartCloud Orchestrator
- **New!** IBM PureFlex Solution for VMware vCloud Suite
- **Update!** IBM Flex System Solution for Microsoft Exchange
- **Update!** IBM PureFlex System
- **Update!** IBM Flex System™ Solution for SAP NetWeaver® Business Warehouse Accelerator

Software Defined Environment (SDE)

- **New!** IBM Platform Resource Scheduler
  (announces Dec. 10, 2013)

Storage

- **New!** IBM FlashSystem™ 840
- **New!** IBM FlashSystem Enterprise Performance Solution
- **Update!** IBM® Network Advisor 12.1 and Fabric Vision Technology *(announces Dec. 3, 2013)*
- **Update!** Advanced FICON services for the Cisco MDS 9710 Multilayer Director for IBM® System Networking

System Networking
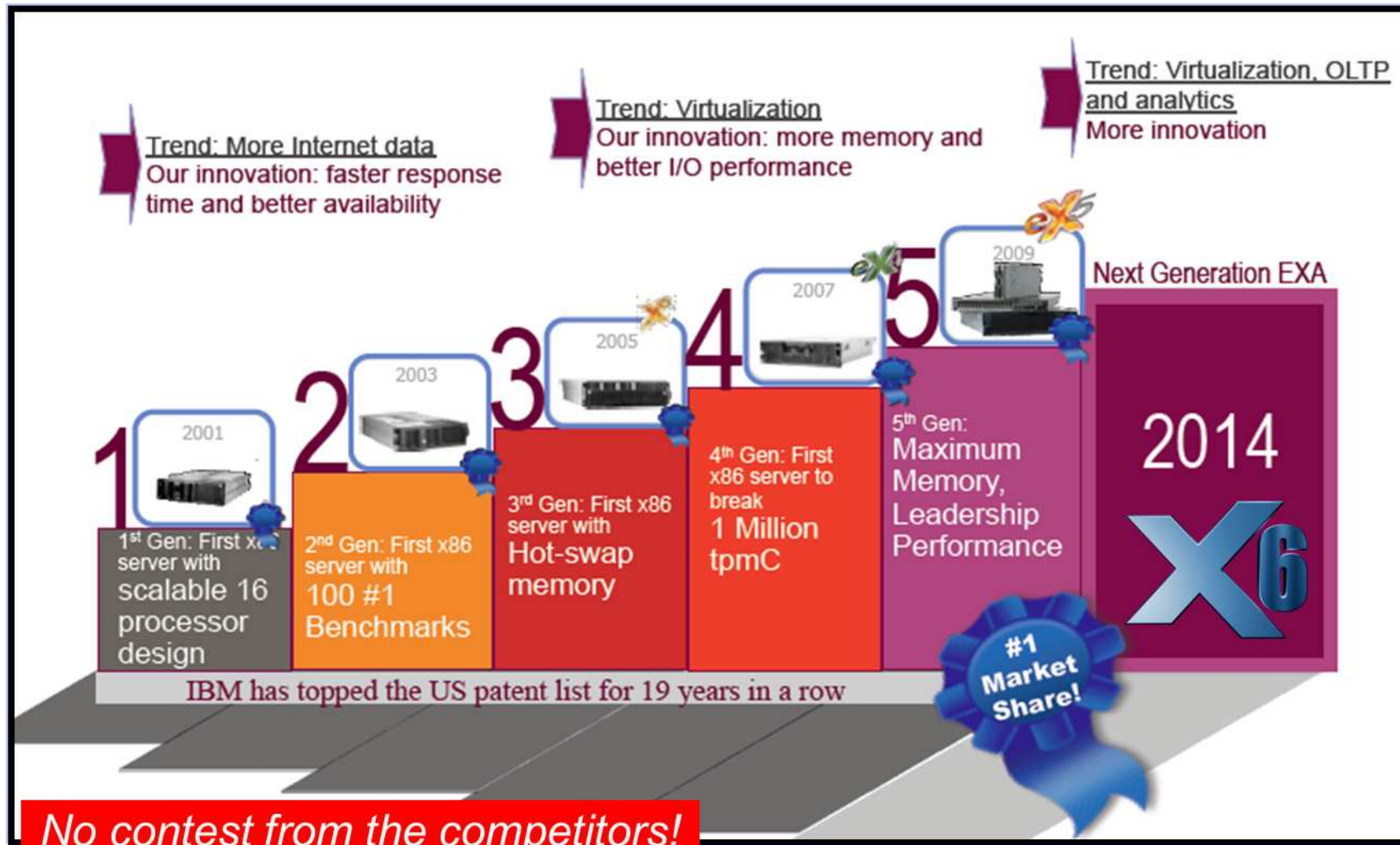
- **New!** IBM RackSwitch G7028

IGF

- **New!** Fair Market Value leasing for X6
- **Update!** 0% financing for Storage, Servers and IBM SW
- **New!** Rapid Financing mobile Web app

Platforms with no content in the January 16 announce:
- Technical Computing
- Power
- System z
- GTS

Focus Offerings: *IBM System x*

- **IBM System x x3850 X6**
- **IBM System x x3950 X6**
- **IBM System x Solution for SAP HANA on X6**
- **IBM System x Solution for SAP HANA and VMware vSphere on X6**
- **IBM System x Solution for DB2 with BLU Acceleration on X6**
- **IBM System x Solution for Microsoft SQL Data Warehouse on X6**
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- **IBM System x x3650 M4 BD**
- IBM System x Solution for VMware vCloud Suite on X6
- IBM System x Solution for SAP Business Suite on X6
- IBM System x Reliability Solution for Stratus everRun Enterprise
- IBM System x x3530 M4
- IBM System x x3630 M4

EXA Technology Generation 6

IBM

Next generation EXA technology ensures that your application environment is fast, agile and resilient

FAST

Flash technologies provide lower latencies, faster response times

- **PERFORMANCE FLASH INNOVATION**
- **LARGE MEMORY EXPANSION**
- **SOFTWARE CACHING**

- Write latency: up to 10X faster than SSDs
  - 3X faster than PCIe flash
- Read latency: 25% lower than SSDs
- Up to 2.7 times higher OLTP database performance

AGILE

Unique "pay-as-you-grow" capability and "fit-for-purpose" design points

- **FAST SET UP & CONFIG PATTERNS**
- **X6 MODULAR DESIGN**
- **X6 SCALABILITY**

- Reduce acquisition costs by up to 40%
- Deploy servers faster with automated provisioning
- Application tuned configs lower cost

RESILIENT

Gain more fault tolerance and better systems management capability

- **ADVANCED MEMORY RECOVERY**
- **ADVANCED CORE RECOVERY**
- **UPWARD INTEGRATION W ITH HYPERVISORS**

- Extremely high availability thanks to self healing
- Faster, easier maintenance and serviceability
- Reduces unscheduled events

IBM System x x3850 X6
Next generation EXA technology for fast, agile and resilient infrastructure

WHAT'S NEW:

- **A differentiated 4-way modular rack server offering that delivers ultra high resiliency, scalability and performance for mission-critical workloads.**
  - Innovative new integrated Flash storage solution
  - Revolutionary Modular design
  - Advanced memory, IO, and CPU RAS innovations
  - Revolutionary x86 scalability
    - 6TB of Memory, 300% generation to generation increase
    - 60 Cores, 50% generation to generation increase

IBM System x x3950 X6
Next generation EXA technology for fast, agile and resilient infrastructure

WHAT'S NEW:

- **A differentiated 8-way modular rack server offering that delivers ultra high highest resiliency, scalability and performance for mission-critical workloads.**
  - Innovative new integrated Flash storage solution
  - Revolutionary Modular design
  - Advanced memory, IO, and CPU RAS innovations
  - Revolutionary x86 scalability
    - 12TB of Memory, 300% generation to generation increase
    - 120 Cores, 50% generation to generation increase

Big Data storage server: The IBM System x3650 M4 BD provides an optimal blend of performance, uptime, and abundant, low cost storage -- purpose built for Big Data workloads.

WHAT'S NEW:

- **Purpose built for Big Data workloads**

- **Up to 56 TB storage for Big Data**

- **Choice of 12 Gb RAID with up to 4 GB flashed-back cache**

- **Intel Xeon E5-2600 v2 processors (up to 12 cores each)**

IBM System x Solution for SAP HANA™ on X6
Enabling real-time analytics for SAP operational data

- **WHAT'S NEW:**
  - SAP Hana on X6
  - 50% more cores and up to 100% more memory for SAP HANA customers
  - Continued unique GPFS scale out, high availability, and Disaster Recovery capabilities
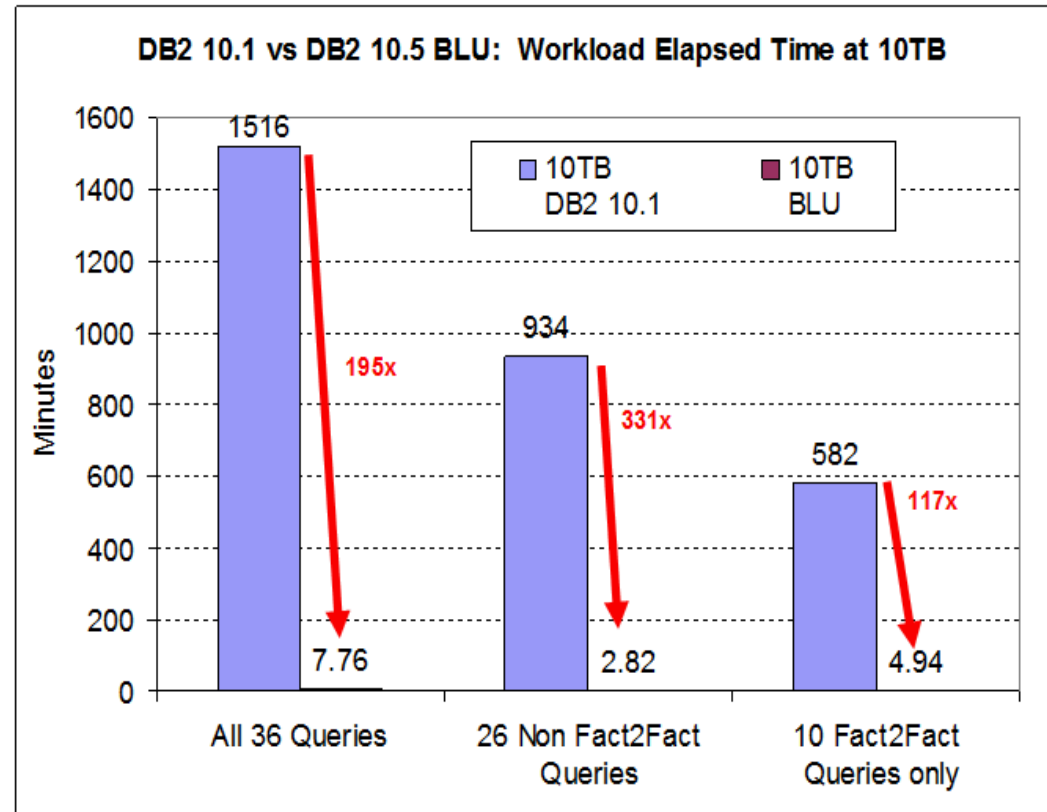 - Expanded RAS capability

Learn More: www.ibm-sap.com/hana

IBM System x Solution for DB2 with BLU Acceleration on X6
Extreme performance combining DB2 BLU & X6

■ **WHAT'S NEW:**

– **Enhancements from**
   • **DB2 10.1 to 10.5 (BLU)**
   • **X5 Server to X6 Server**

– **#1 TPC-E Benchmark***

– **RAM + Flash to be different/better from "just" in-memory databases.**

DB2 10.1 vs DB2 10.5 BLU: Workload Elapsed Time at 10TB

Legend: ■ 10TB DB2 10.1   ■ 10TB BLU

	All 36 Queries	26 Non Fact2Fact Queries	10 Fact2Fact Queries only
DB2 10.1	1516	934	582
BLU	7.76	2.82	4.94
Speedup	195x	331x	117x

Y-axis: Minutes (0–1600)

Focus Offerings: *IBM PureSystems*

- **IBM Flex System x880 X6 Compute Node (SoD)**

- **IBM Flex System Solution for SmartCloud Orchestrator**

- **IBM PureFlex Solution for VMware vCloud Suite**

- **IBM Flex System Solution for Microsoft Exchange**

- **IBM Flex System Solution for SAP NetWeaver® Business Warehouse Accelerator**

- **IBM PureFlex System**
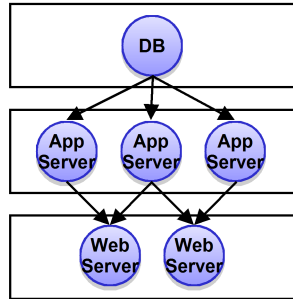
IBM Flex System x880 X6 Compute Node
Next generation EXA technology for faster, agile and resilient infrastructure

- ## WHAT'S NEW:

- ## New Flex System Compute Node offering that delivers the highest resiliency, scalability and performance for mission-critical workloads.
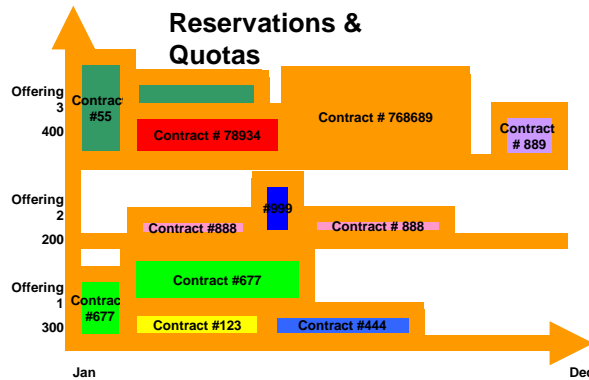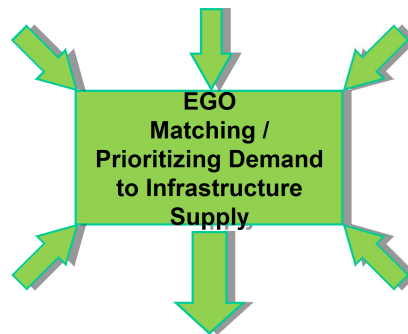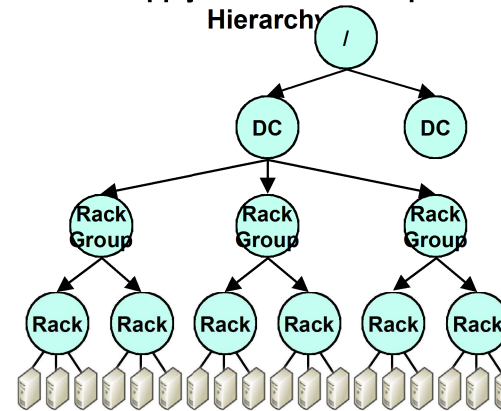
IBM Platform Resource Scheduler prioritizes resources to the most important applications, enables resource consolidation while preserving service level agreements, and increases operational efficiency by optimizing compute and memory utilization, power consumption while reducing administrator requirements.

Demand: Consumer Tree

DB

App Server / App Server / App Server

Web Server / Web Server

Resource Metrics Collection

- CPU utilization
- Number of cores
- Memory
- I/O
- Disk space
- Network
- User defined

EGO Matching / Prioritizing Demand to Infrastructure Supply

Supply: Resource Group Hierarchy

/

DC / DC

Rack Group / Rack Group / Rack Group

Rack / Rack / Rack / Rack / Rack / Rack

Reservations & Quotas

Offering 3 — 400
Contract #55
Contract # 78934
Contract # 768689
Contract # 889

Offering 2 — 200
#999
Contract #888
Contract # 888

Offering 1 — 300
Contract #677
Contract #677
Contract #123
Contract #444

Jan — Dec

Output
- Initial Placement
- Runtime Management
- Defragmentation & Migration

Network Costs

	DC 1	D C2	DC 3
D C 1			
D C 2			
D C 3			

	Rac k K1	Rac k 2	Ra ck k3
R 2			
R 2			
R 3			

IBM FlashSystem 840: Data center optimized to deliver extreme performance, flexible capacity and total system protection

WHAT'S NEW:

- **Performance for business critical applications**
  - 1M+ IOPS, 8GB/s Bandwidth, 130us/100us Read/Write Latency

- **Serviceability for better efficiency in the datacenter**
  - Hot swappable flash modules that scale from 4TB to 48TB

- **Data security**
  - AES-XTS 256 Encryption

- **Connectivity interfaces to fit enterprise datacenter interfaces**
  - 16Gb/8Gb FC interface, 10Gb FcoE, 40Gb QDR IB

IBM System Networking RackSwitch G7028: Enterprise-class 1Gb Ethernet data center switch with ability to easily transition to 10Gb Ethernet.

WHAT'S NEW:

- **Low cost 1Gb Ethernet Data Center Switch**

- **Twenty-four 1Gb Ethernet connections**

- **Up to four 10Gb SFP+ connections**

- **Optional Redundant Power Supply**

- **Low power consumption of 47 watts**

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