

IBM System i5 Update & Direction System i Premier User Group



IBM System i™



Compucenter

CREDIT SUISSE

Cargill

edexcel

EXEL

Fidelity.co.uk

gsk
GlaxoSmithKline

Getronics
ICT SOLUTIONS AND SERVICES

HSBC

HBOS plc

IFDS

Newell Rubbermaid
Brands That Matter

PORTMAN
BUILDING SOCIETY

Legal &
General

RBS
The Royal Bank of Scotland

tyco
a vital part of your world

UBS

*i want stress free IT.
i want control.
i want an i.*

© 2007 IBM Corporation

IBM System i

About this presentation

The information in this presentation is provided AS IS, without warranty of any kind. While the content is based on information available at the time of publishing, details may have changed due to the dynamic nature of technology and changing market conditions.

Reference to unannounced products, future plans or directions are provided for informational purposes only and are not commitments by IBM to make available such products or to carry out such plans or directions.

2

i want an i.

© 2007 IBM Corporation

IBM System i

Complexity is accelerating

The complexity of your infrastructure may be holding you back

3 *i want an .i* © 2007 IBM Corporation

IBM System i

IBM Strategy

An enterprise whose business processes – **integrated end-to-end** across the company and with key partners, suppliers and customers – can **respond with speed** to any customer demand, market opportunity or external threat

Customers

Enterprise

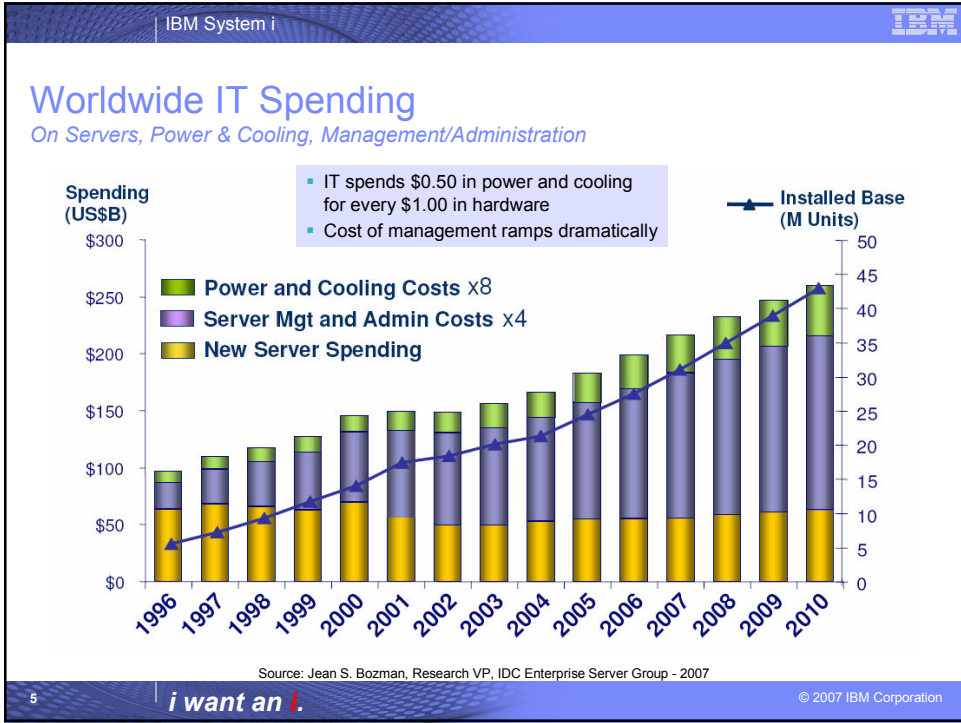
Suppliers

Offerings

Business Processes

Parts & Services

4 *i want an .i* © 2007 IBM Corporation



IBM System i

Openness drives Power Everywhere

Pervasive use of POWER builds out ecosystem

Used across the industry as embedded technology

Pervasive in high volume products

Power in Core Systems

IBM Systems

System p5-595
System i5-595
DS8000
System i5-520
System p5-520
System p5 & System i5 Express

6 *i want an i.* © 2007 IBM Corporation

IBM System i

IBM POWER Processor Strategy

- 10th generation 64-bit processor
- 6th generation POWER processor

- Based on a “holistic” or system view
- Not just a processor, but a solution
- Balancing numerous aspects of performance (processor cores, clock speed, memory, cache, communication buses, virtualization, etc.) to achieve a better result

7 *i want an i.* © 2007 IBM Corporation

IBM System i

The POWER6™ Chip

- 64 bit, dual core processor
- Up to 4.7 GHz
- 790 million transistors
- 8 MB on-chip L2 cache
- 300 GB/sec processor bandwidth
- Energy efficient
- Built using IBM’s state-of-the-art 65 nanometer process

The IBM System p 570, announced May 21, 2007, holds 25 benchmark records across a broad range of business and technical applications.

8 *i want an i.* © 2007 IBM Corporation

IBM System i

“If performance per watt of the average data center doesn’t drastically improve in the near future, the cost of Powering your system could far outweigh the cost of acquiring it”

The most important way to boost energy efficiency is to fully utilize the systems you have rather than running several underutilized systems – as is often the case in Windows, Linux, and Unix environments.

power consumption below standard, single threaded level

9 *i want an i.* © 2007 IBM Corporation

IBM System i

POWER™ Processor Roadmap

2001-4	2004-6	2007-9	2010
POWER4 / 4+	POWER5 / 5+	POWER6 / 6+	POWER7
180 nm	130 nm	90 nm	65 nm
1.5+ GHz Core	1.65+ GHz Core	1.9GHz Core	High Frequency Cores
Shared L2	Shared L2	L2 Cache	Cache
Distributed Switch	Distributed Switch	Advanced System Features	Advanced System Features
Chip Multi Processing - Distributed Switch - Shared L2 Dynamic LPARs (32)	Enhanced Scaling Simultaneous Multi-Threading (SMT) Enhanced Distributed Switch Enhanced Core Parallelism Improved FP Performance Increased memory bandwidth Reduced memory latencies Virtualization	Enhanced Virtualization Advanced Memory Subsystem Enhanced architecture for higher frequencies	Advanced Multi Core Design Cache Advanced System Features Concept phase Requirements definitions

BINARY COMPATIBLE

10 *i want an i.* © 2007 IBM Corporation

IBM System i

IBM Systems : Innovative Technology

System z™ System p™ System i™ System x™ Enterprise Storage Server™

Autonomic Computing

Series Unique Technologies

Shared Components

Workload Manager, Virtualization, Partitioning, Security, Systems Management

z/OS, AIX 5L, i5/OS, Linux Operating System

Processors, I/O Power, Adapters, Hardware Console, Switches, Power/Mechanical frames

What this means:

- IBM's Best Technology
- Shared Innovation
- Faster Servers
- Improved Availability
- Faster to Market
- Investment Protection

11 *i want an i.* © 2007 IBM Corporation

IBM System i

IBM Systems Operating Environment

System i5 System p5 System Storage

i5/OS Linux AIX 5L Windows Linux

System i System i System i System i System i

Virtual I/O

Virtual Ethernet

POWER Hypervisor

System x

System i5

HMC

12 *i want an i.* © 2007 IBM Corporation

IBM System i

The choices needed for today's Enterprise

Core products

IBM Systems

- Mainframe servers
- UNIX® servers
- Midrange servers
- Blade servers
- Intel® processor-based servers
- AMD processor-based servers
- Clusters

Core technologies

Operating Systems

z/OS, AIX5L, i5/OS

Processors

- IBM z/Architecture™
- Power Architecture
- X-Architecture

IBM TotalStorage

- TotalStorage DS family
- TotalStorage Tape Family
- TotalStorage Resiliency Family
- TotalStorage Open Software family

Core on demand technologies

- Capacity on Demand
- Systems Consolidation
- Micro-Partitioning
- Infrastructure Simplification
- Business Resilience
- Grid Computing

IBM Virtualization Solutions

Autonomic Computing

13 *i want an i.* © 2007 IBM Corporation

IBM System i

The System i5 Product Line Roadmap

V5R3 & V5R4 **i5OS™**

515
520
525
1-2 way

550
1-4 way

570
2-16 way

595
8-64 way

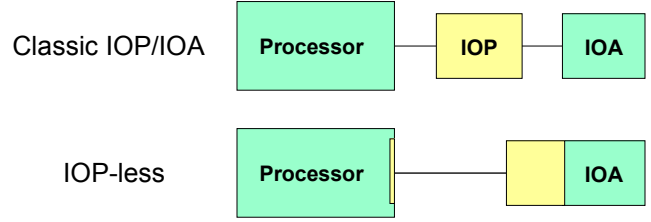
Small to Mid-sized Enterprises

Mid-sized to Large Enterprises

14 *i want an i.* © 2007 IBM Corporation

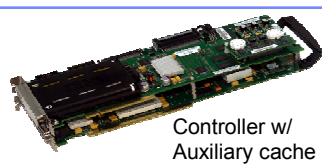
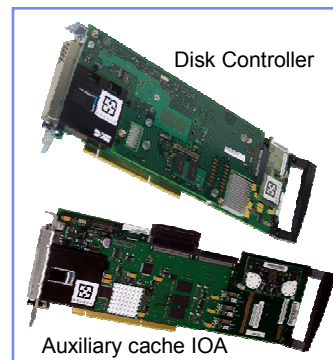
Direction: Intelligent I/O Adapters

- IOA technology has evolved to the point where an IOA can take over the IOP as well as the IOA functionality
- Prerequisite: POWER5 or Later System
- Benefits include
 - Avoiding cost of IOP and associated PCI slot
 - Configuration flexibility (e.g. simpler LPAR I/O)



Announcement Summary

- Disk Drive Enclosure
- High Performance Disk Controllers
 - Companion Auxiliary Write Cache IOA
- I/O Tower for PCI-X Card



IBM TotalStorage EXP24 Disk Enclosure

- **Key Benefits**

- 24 disk bays in just 4U of space
- Saves floor space
 - Up to 3.36 TB per enclosure
 - Up to 33.6 TB per rack
- SCSI attached for more flexible placement



- **Requires i5/OS V5R3 or later**

- AIX 5L and Linux also provide support

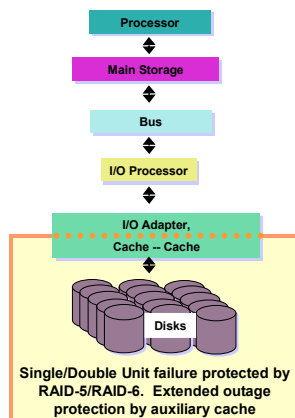
- **Uses same 15k rpm disk drives as used today**

- **Supported by POWER4 and POWER5 systems**

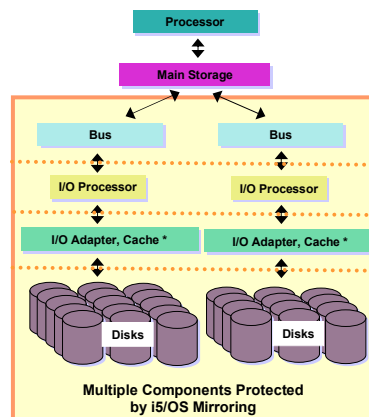
- 800/810/825/870/890
- 520/550/570/595

1.5GB Disk Controller Data Protection Options

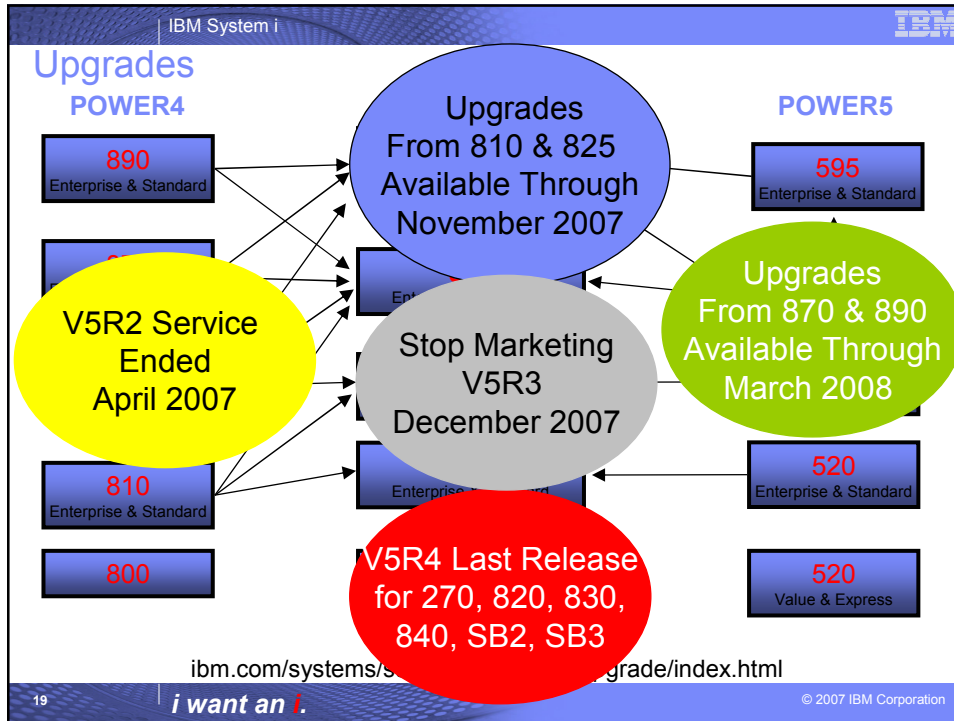
RAID-5 / RAID-6 plus write cache protection



Mirroring



* Auxiliary write cache is optional, though highly recommended.



IBM System i

i5/OS – Integrated and Optimized for Business

- **DB2 for i5/OS**
- **Multiple file systems – database and non-database (stream) files**
- **e-business and network infrastructure**
 - WebSphere Application Server – Express
 - Web server (powered by Apache) and related Internet protocols
 - Broad range of communications protocols and security methods
- **Security administration & enforcement**
- **Systems management**
 - Work management
 - Performance tools
 - Clustering
- **Online transaction processing**
- **Windows® & Linux file and print sharing**
- **Printing functions and services**

Integrated, Tested, Supported

WebSphere. software


DB2. Information Management Software

<http://publib.boulder.ibm.com/infocenter/iseries/v5r4/index.jsp>

20 *i want an i.* © 2007 IBM Corporation

IBM System i

i5/OS Support Roadmap*



i5/OS Release	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
V5R3	→									
V5R4	→									
V5R5		→								
V5R6			→							

*The projected date for V5R6 are current IBM planning assumptions, based on the delivery of V5R5 in 1H2008. Note that it is IBM's current practice to support an i5/OS release until the next two releases have been made available, plus twelve months. So, for example, it is projected that i5/OS V5R3 will be supported for twelve months after V5R5 is available. Exact dates vary according to a variety of factors, including development schedules and IBM's broader software lifecycle support cycles. For example, to simplify customers' software lifecycle management, IBM currently coordinates end of support dates for i5/OS and other IBM software products in April or September. This presentation contains information about IBM's plans and directions. Such plans are subject to change without notice.

21 *i want an i.* © 2007 IBM Corporation

IBM System i

i5/OS Application Server

- New option designed for application serving and infrastructure workloads in partitions
- Offers a reduced i5/OS entitlement charge for additional processors on 550, 570, 595
- Designed for applications that don't require DB2 or which access DB2 in other LPARs
- Enables clients to exploit i5/OS reliability, security, scalability and work management features more affordably


WebSphere software

php

Lotus software

MySQL

Apache



ERP OLTP DB2	WebSphere Application Server
i5/OS	i5/OS Application Server
LPAR1	LPAR2
570	

22 *i want an i.* © 2007 IBM Corporation

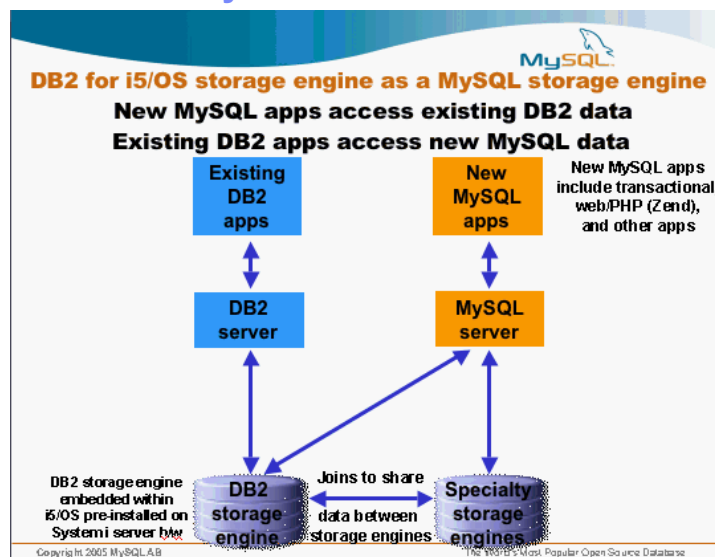
MySQL for i5/OS and DB2*

- **MySQL is ...**
 - the leading open source database with over 11 million installations
 - the most popular database to use with PHP applications
- **Step 1: MySQL database to be supported on i5/OS**
- **Step 2: Integrate MySQL with DB2 for i5/OS**
 - DB2 for i5/OS to become a certified MySQL storage engine
 - Implement online and transactional MySQL applications while storing data in DB2



* Announced at the MySQL Conference & Expo – April 25, 2007

i5/OS DB2 & MySQL



Zend Products for i5/OS

Customers can order **Zend for i5/OS** products from IBM (*Order fulfillment by Zend*)



Zend Core for i5/OS* No Charge

PHP runtime environment in i5/OS providing connections to DB2 for i5/OS and RPG / COBOL applications



Zend Studio Professional for i5/OS* No Charge

Integrated Development Environment on Windows or Linux



Zend Platform for i5/OS \$3,000/processor

Offers high performance and scalability for the best possible Web experience and response time when businesses require industrial strength applications in highly reliable production environments

Announced 2/6
Available 2/16

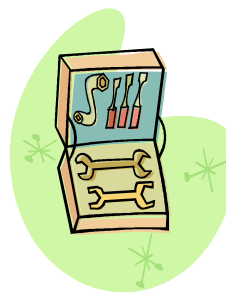
Zend Core for i5/OS supports both V5R4 and V5R3

* Includes 3 years Standard support. *Gold and Platinum support levels available for a fee.*

PHP Integration with i5/OS



- **Zend Core for i5/OS includes Extensions and Toolkit so PHP applications can access:**
 - DB2 for i5/OS – SQL and Native
 - Program call
 - Procedure call
 - Data Area
 - Data Queue
 - Message Queue
 - Commands
 - System values
 - Spool files



IBM System i

Opensource Applications: PHP and MySQL



SUGARCRM
COMMERCIAL OPEN SOURCE

Customer Relationship Management



MANTIS

Help Desk



XOOPS
powered by you

Portal



Joomla!
because open source matters

Portal



mambo
power in simplicity

Portal



moodle

Course Management System



zen cart
the art of e-commerce

e-Commerce



MediaWiki

Wiki



phpbb
creating communities

Bulletin Board



Dragonfly



Content Management System

27 *i want an i.* © 2007 IBM Corporation

IBM System i

New 32-bit JVM Improves Development Options

- **32-bit JVM (supporting JDK 1.5) for i5/OS V5R4**
 - Benefit smaller systems by reducing the memory footprint for Java applications
 - Note: New JVM will be supported with WebSphere Application Server 6.1
- **Standard IBM JVM with consistent tooling and tuning options**
- **Simple to implement without code changes for the majority of applications**
- **The classic 64-bit JVM (supporting JDK 1.3, 1.4 & 1.5) continues to offer best scalability and performance for large enterprises**

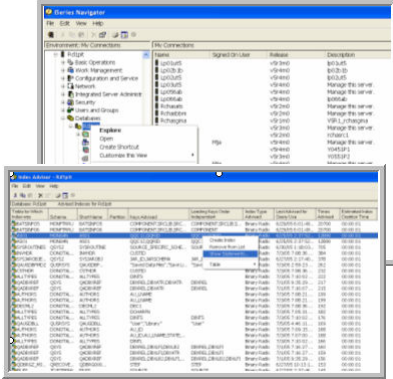




28 *i want an i.* © 2007 IBM Corporation

IBM System i

New Tools Help Simplify Database Management

- Broad enhancements to database tools help simplify administration**
 - Real time index advisor and tools to manage index rebuilds
 - Wizards to import/export data
- Enhanced tools to start and analyze detailed SQL Performance monitors**
- Predictive Query Governor allows resource limits to be set**
 - Runtime
 - Temporary storage consumed
- New health center advises on use of database**

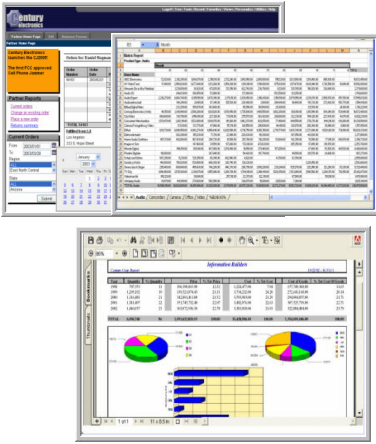



29 *i want an i.* © 2007 IBM Corporation

IBM System i

Product Preview: Web Based Query and Reporting

- IBM plans to deliver a Web-based query and report writing product that replaces IBM Query for System i
- Web based, query and reports**
 - Report and graphing tools
 - Spreadsheet integration
 - Web-enable Query/400 reports
- Advanced query capability**
 - Dashboards
 - DB2 Federated Queries
 - On Line Analytical Processing
- Data Integration Options**
 - ERP System Integration
 - Database/Cube/Mining Connectors




For more details, refer to: <http://www.ibm.com/systems/i/db2>

30 *i want an i.* © 2007 IBM Corporation

IBM System i

Introducing IBM Secure Perspective for System i

- **Create enforceable security policies**
 - Natural language tool
 - Policy is understandable and meaningful to all parties
- **Facilitate mapping of policy to digital assets**
 - Implement the dictates of regulation
 - The tool configures the system to policy after identifying and informing you of potential problems
 - Instantly apply an auditor's request for change
- **Check compliance with the click of a button**
- **Requires i5/OS V5R3 or V5R4**



Available May 4, 2007

For more information see <http://www-03.ibm.com/systems/i/security>

31 *i want an i.* © 2007 IBM Corporation

IBM System i

System i IP Telephony & Integrated Collaboration

Collaboration Applications

Telephony Applications

Business Applications

NORTEL
IBM

Administrative & Management

Enterprise Management: Web Provisioning & CDR Reporting

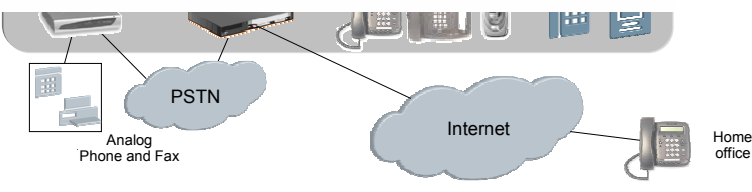
Contacts:

Dean E. Mundy, Nortel
919-997-7938
deanmu@nortel.com

Joanna Brewer, IBM
415-545-2270
jmbrewer@us.ibm.com

Nortel and IBM Team to Deliver Simple and Cost-effective Unified Communications for SMBs

Offering Integrates Nortel VoIP and Multimedia Applications with IBM "All-in-One" System i Platform



32 *i want an i.* © 2007 IBM Corporation

IBM System i

IBM System i5 Operating Environment

System i solutions provide reliable and secure ways to simplify your IT so you can invest the savings in business innovation

Today... System i5 should be viewed as a consolidation platform... When five boxes turn into one, support and maintenance costs go down. The technologist in me does not get really excited by that alone, but the entrepreneur does.

Ismael Ghalimi, CEO, Intalio

33 *i want an i.* © 2007 IBM Corporation

IBM System i

The Possibilities are Endless


CONSIDER THE SAVINGS IN:

- Floor Space
- Electricity
- Cooling
- Hardware & Software Maintenance
- Reduced Network Load
- Backups
- Redundant Hardware

34 *i want an i.* © 2007 IBM Corporation

IBM System i

e-business Infrastructure Typical Components




























<p>Line of Business</p> <ul style="list-style-type: none"> Application and Data 	<p>Web Application Server</p> <ul style="list-style-type: none"> Extending Reach of Line of Business Applications Java programs 	<p>Firewall</p> <ul style="list-style-type: none"> Protects Applications and Data 	<p>Web Server</p> <ul style="list-style-type: none"> Serves Web Pages 	<p>External Firewall</p> <ul style="list-style-type: none"> Protects Web Server
---	--	---	---	---

Can be complex to design, install, and implement

35 *i want an i.* © 2007 IBM Corporation

IBM System i

Configuration Alternatives (there are many more)

	Line of Business	WebSphere	Firewall	Web Server	Firewall
Common Infrastructure	i5/OS 	Intel 	Intel 	Intel 	External 
Multiple i5/OS Partitions	i5/OS 	i5/OS 	Intel 	Intel 	External 
AIX Partition	i5/OS 	AIX 	Intel 	Intel 	External 
Multiple Partitions i5/OS, AIX, Linux, & Intel	i5/OS 	AIX 	Windows - IXS 	Linux 	External 
All Power5 Multiple Partitions i5/OS, AIX, Linux	i5/OS 	AIX 	Linux 	Linux 	External 

Integrated Platform is designed to simplify a complex process: design, order, install, config, test
 • Can cut implementation time by 75%

36 *i want an i.* © 2007 IBM Corporation

IBM System i

System based Virtualization Technologies

The diagram illustrates System based Virtualization Technologies. On the left, a server rack is connected to an iSeries Disk array and a Windows Server Storage Space. The storage space is divided into C:, D:, E:, and F: Volume Sets. A Windows Server is connected to the storage space. On the right, a server rack is shown with various OS partitions: i5/OS (DB), Windows Business Intelligence (Data), i5/OS (DB), AIX (Application), i5/OS- (Data), Linux (Application), Windows (DB), and Windows (Application). Green arrows indicate data flow between these partitions.

37 *i want an i.* © 2007 IBM Corporation

IBM System i

i5/OS Storage Virtualization

- Storage spaces created from i5/OS
 - 1 MB to 1TB each
 - Up to 32 per Integrated xSeries Solution
 - Up to 64 per Linux partition & AIX
 - Can be dynamically added
- Enables other OSs to Leverage Advanced System i5 Storage Architecture
 - Data automatically spread and protected
 - More disk arms for better performance
 - Automatic balancing of storage across drives
 - Consolidated Backup
 - Flexible Storage Management
 - Easy setup of multiple environments

The diagram illustrates i5/OS Storage Virtualization. On the left, a server rack is connected to an iSeries Disk array and a Windows Server Storage Space. The storage space is divided into C:, D:, E:, and F: Volume Sets. A Windows Server is connected to the storage space. On the right, a server rack is shown with various OS partitions: Windows Server, Linux, and AIX. Green arrows indicate data flow between these partitions.

38 *i want an i.* © 2007 IBM Corporation

IBM System i

Virtual Storage Enhancements with V5R4

- Enhancements to i5/OS virtual storage support can improve performance and reduce configuration complexity
- V5R4**
 - Re-architected design to improve handling of multiple I/O requests from a partition
 - Net: One NWSD can support more I/O requests
 - Multiple NWSDs can provide additional I/O performance

The diagram illustrates the architecture for virtual storage enhancements. At the top is a box labeled 'AIX 5L or Linux Partition'. Below it, two 'Virtual SCSI Connection' arrows point down to two separate 'NWSD' (Network Workstation) boxes. Each NWSD box is connected to a set of 'Storage Space(s)' represented by three cylinders. A dotted line indicates that there can be more than two NWSDs.

39 Preliminary performance results. Individual customer results will vary. © 2007 IBM Corporation

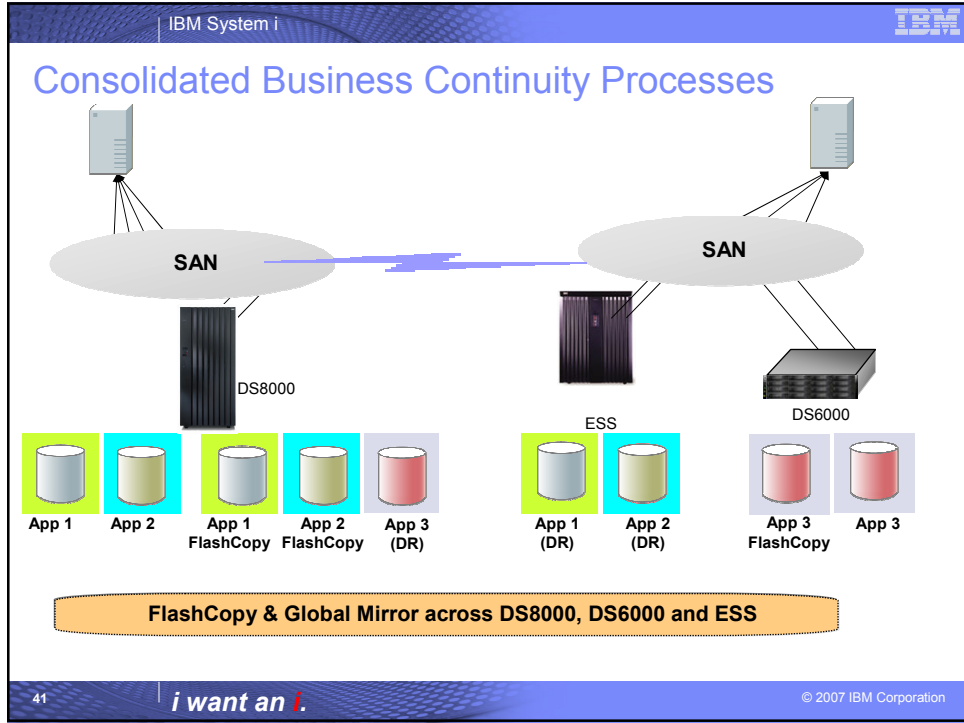
IBM System i

Disaster Recovery

- Problem**
 - Recovery is complex, prone to error and time consuming in a multi-tier application environment
- System i5 Solution**
 - System i5's architecture and integration enables customers to build a complete infrastructure that is easily backed up and rapidly restored
- Benefit**
 - Can reduce the time and complexity of an infrastructure restore
 - Can reduce the impact a disaster or other unplanned outages

The diagram depicts a disaster recovery scenario. On the left, a system with 'Windows' and 'AIX' is shown being destroyed by a fire, with a large yellow starburst labeled 'Bang!' below it. On the right, a restored system is shown with 'DB2', 'Linux', 'Windows', and 'AIX' components. Below the restored system are two server racks. At the bottom, two boxes represent the underlying infrastructure: 'IASP CrossSite Mirror' on the left and 'IBM Storage FlashCopy PPRC' on the right. Arrows point from these boxes up towards the restored system, indicating the restoration process.

40 *i want an i.* © 2007 IBM Corporation



IBM System i

Integration yields ease of operations

iSeries Navigator

- Manage multiple systems
- Monitor performance, jobs, messages, B2B activity, files and more
- Collect & display hardware/software inventories
- Manage software fixes
- Perform basic operations
- Extensive work management and scheduling
- Configuration & resource management
- Database administration
- User administration, security & auditing
- Network configuration & management

Systems Management

Wireless Access

Server Management

42 *i want an i.* © 2007 IBM Corporation

IBM System i

IBM Systems Director family

Virtualize more, manage less

- IBM's unified family of platform management offerings
- Common toolset for managing:
 - Physical and virtual resources together
 - Servers, storage, and networking
 - IBM and compatible non-IBM resources
- Modular, industry standards based approach
- Leverages existing client investments in IBM platform management offerings
- Seamless integration with IBM Service Management offerings from Tivoli®
- IBM and 3rd party value added extensions



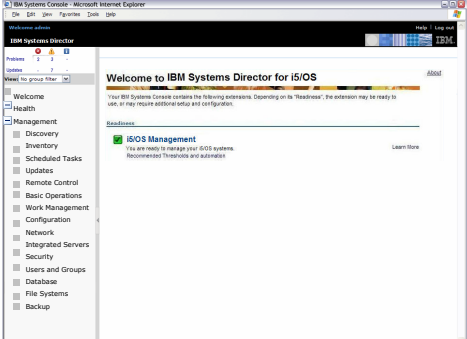
43 *i want an i.* © 2007 IBM Corporation

IBM System i

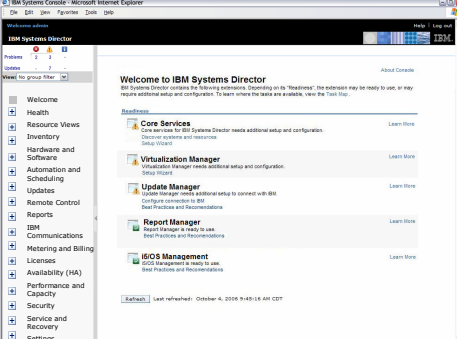
Requirements and Plans

- **Virtual Management Requirement**
 - Minimize cost of administering diverse, virtualized systems through a modular,web-based interface
- **IBM plans to introduce IBM Systems Director offerings**

“IBM Systems Director for i5/OS”
Simple Web-based solution for i5/OS management



“IBM Systems Director”
Modular Web-based console for multi-system management



44 *i want an i.* * This is a planning statement. Plans can change without notice. © 2007 IBM Corporation

IBM System i

I5/OS Capabilities

- IBM Virtualization
 - 3rd Generation of Logical Partitioning
 - Up to 254 Partitions
 - Uncapped partitions
 - Hardware Management Console
 - IBM Director
- AIX 5L
 - Supported Across System i5
 - AIX 5L v5.2 & v5.3
 - Enterprise Edition
- Linux on POWER
 - Storage Management via iSeries Navigator
 - Backup Automation through BRMS
 - New Distribution for System i5
 - Red Hat Enterprise Linux AS 3
 - SUSE LINUX Enterprise Server
- Integrated System x Solutions
 - 1 TB Storage Spaces
 - Enhanced User Integration with EIM
 - Single Sign-on support
 - Password management from Windows
 - Linux support

45 *i want an i.* © 2007 IBM Corporation

IBM System i

Uncapped Processors

Allow a logical partition to utilize processor capacity in excess of the configured processor capacity, if there is unused capacity in the shared processor pool.

Shared Processor Pool

LPAR 1 LPAR 2

Configured capacity: 1.5 1.0

Current capacity used: 2.5 (167% of configured) 1.5 (150% of configured)

Example with 2 partitions sharing 4 processors

In V5R2, the processing capacity of a shared processor logical partition was limited (capped) by the number of virtual processor units (VPs) configured

46 *i want an i.* © 2007 IBM Corporation

IBM System i

Intel Server Management

System i5

System x

www.ibm.com/systems/i/integratedxseries

47 *i want an i.* © 2007 IBM Corporation

IBM System i

Requirements and Plans

- ### 1. Virtualization Requirement

Enable the reduction of the number of physical servers through virtualization by supporting VMWare ESX – the industry's leading virtualization solution for Intel servers.

 - **IBM intends to enhance System i integration with BladeCenter and System x via iSCSI by enabling virtual storage support for running VMWare ESX 3.x on selected IBM BladeCenter and System x servers***

*Product Preview February 2007
 **This is a planning statement. Plans can change without notice

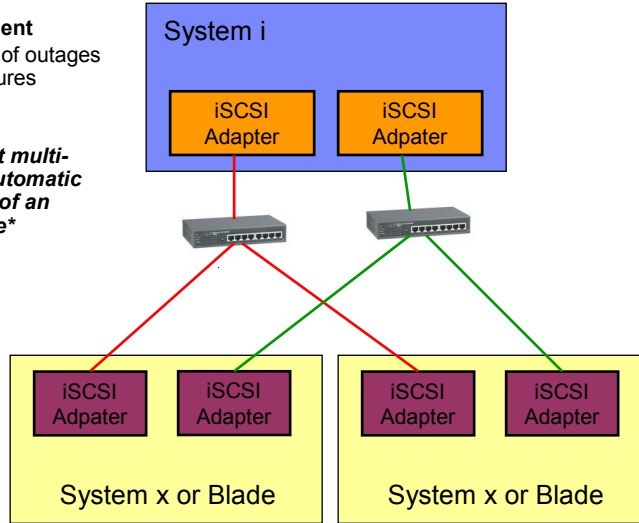
48 *i want an i.* © 2007 IBM Corporation

Requirements and Plans

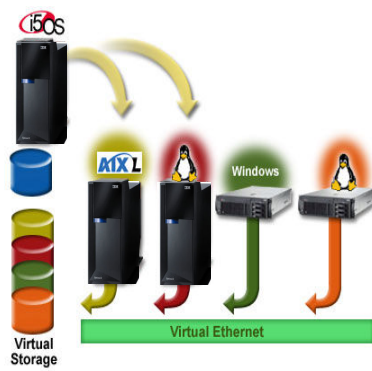
- 2. **Availability Requirement**
 Reduce the number of outages due to hardware failures

➤ *IBM plans to support multi-path I/O providing automatic failover in the event of an iSCSI adapter outage**

- Redundancy
- Load Balancing



Linux and IBM Systemi5

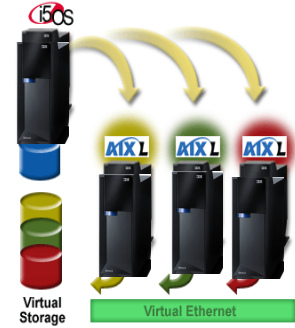


- **Common Linux distribution for POWER5 processor – based servers**
 - Up to 254 Logical Partitions
 - Automatic processor balancing with uncapped partitions
- **Extended SAN and enterprise storage connectivity options**
 - IBM LTO, FASTT, 3592 offerings
- **iSeries Navigator V5R3 enhancements**
 - Start up, shut down Linux servers
 - Create/manage virtual storage spaces
- **IBM Director Multiplatform provides management & monitoring tools**

IBM System i

AIX 5L on System i5

- Simplify your Infrastructure
 - Consolidate UNIX servers
 - Extend with complementary AIX 5L applications
- Optimize your Investments
 - Share processor and memory resource
 - Move resources to where they are needed
 - Exploit i5/OS storage subsystem
 - Leverage skills and best practices
- Across System i5 servers
 - AIX 5L 5.3*
 - Micro-partitioning, up to 10 per processor
 - Virtual Storage and Virtual Ethernet
 - AIX 5L v5.2*
 - 1 processor per partition
 - Supports variety of direct I/O devices

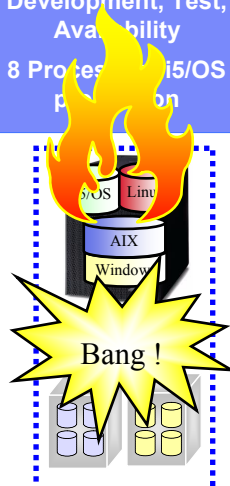


51 *i want an i.* © 2007 IBM Corporation

IBM System i

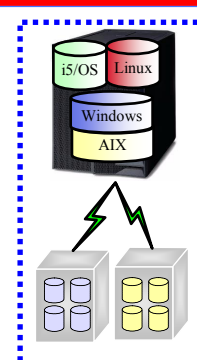
System i5

- 4 Processors AIX Development, Test, Availability
- 8 Processors i5/OS Production



System i5

- 6 Processors i5/OS Production
- 6 Processors AIX Production



52 *i want an i.* © 2007 IBM Corporation

IBM System i

i5/OS and AIX on System p

- Available on System p5-570, p5-595
 - Only on 1.65 GHz processors
- Limited i5/OS per processor license configurations available
 - 1 processor on p5-570,
 - 2 processors on p5-595

System p Without i5/OS

Linux AIX 5L

Virtual I/O

Virtual Ethernet

POWER Hypervisor

System i5

System p

520 550 570 595

53 *i want an i.* © 2007 IBM Corporation

IBM System i

IndusInd Bank

- Background
 - IndusInd Bank is one of the fastest growing private-sector banks in India. \$10B bank focused on offering world-class global capabilities, low TCO, and best of breed technology.
- Objectives
 - Integrate and consolidate:
 - Multiple HP Unix, i5/OS, Linux, & Windows servers
 - Provide simplified network & system management and respond On Demand
- Solution
 - Two i5 570s running 13 partitions & uncapped processing
 - i5/OS: 4 LPARs- Development Misys Equation, Websphere Testing, Production: Internet Payment Gateway (IPG), Virtualization of SAN & ethernet network
 - AIX 5L: 7 LPARs- Production (Actuate, workflow, IBM DB2 Connect Cash Mgmt System, TSM), Test (http for S1 Enterprise Teller/Sales/Service, S1 Websphere, IBM DB2 Connect)
 - Linux: 2 LPARs- HTTP production & test environments for IPG application
 - Windows: IXA attached Servers
 - One Backup device & Single Console for managing storage & devices
 - 2nd server for DR using Mimix

IndusInd Bank

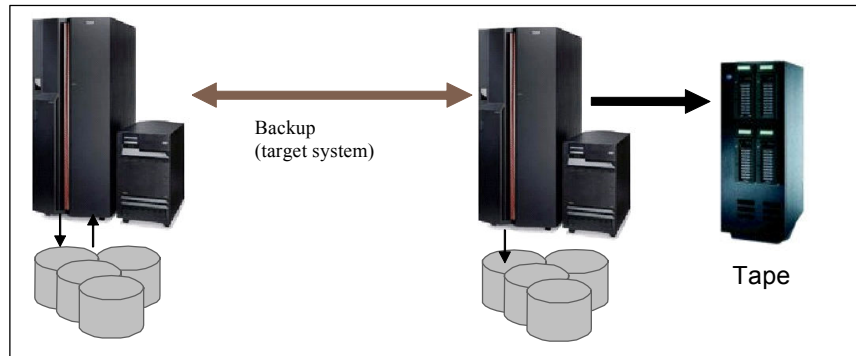
Services

- Personal Banking >
- Corporate Banking >
- International Banking >
- Investment Banking >
- Treasury >
- Capital / Commodities >
- NRI Services >
- Online Banking >

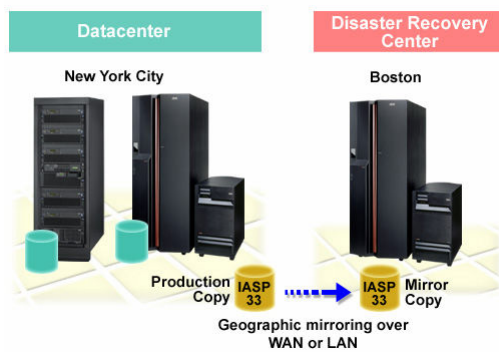
54 *i want an i.* © 2007 IBM Corporation

Logical Replication

- Second copy of data is generated logically identical to first
- Replication done on object basis (file, member, data area, program, etc.) near real-time
- Normally done via a business partner software product



Cross Site Mirroring (XSM)



- Create a simple disaster recovery or high availability solution
 - Should be combined with a high availability Business Partner solution for added flexibility
- Mirrors all objects in an Independent Auxiliary Storage Pool (IASP)
- IASP now supports spool files



IBM System i

IASP Object Support

Supported		
*ALRTBL	*IGCDCT	*QMFORM
*BLKSF	*JOBDD	*QMQR
*BNDDIR	*JRN	*QRYDFN
*CHTFMT	*JRNRCV	*SBSD
*CHRSF	*LIB	*SCHIDX
*CLD	*LOCALE	*SPADCT
*CLS	*MEDDFN	*SPLF new
*CMD	*MENU	*SQLPKG
*CRQD	*MGTCOL	*SQLUDT
*CSI	*MODULE	*SRVPGM
*DIR	*MSGF	*STMF
*DTAARA	*MSGQ	*SVRSTG
*DTADCT	*NODGRP	*SYMLNK
*DTAQ	*NODL	*TBL
*FCT	*OUTQ new	*USRIDX
*FIFO	*OVL	*USRQ
*FILE	*PAGDFN	*USRSPC
*FNTRSC	*PAGSEG	*VLDL
*FNTTBL	*PDG	*WSCST
*FORMDF	*PGM	
*FTR	*PNLGRP	
*GSS	*PSFCFG	

Not Supported	
*AUTL	*IPXD
*CFGL	*JOBQ
*CNNL	*JOBSCD
*COSD	*LIND
*CRG	*MODD
*CSPMAP	*M36
*CSPTBL	*M36CFG
*CTLD	*NTBD
*DDIR	*NWD
*DEVD	*NWS
*DOC	*PRDAVL
*DSTMF alert	*PRDDFN
*EDTD	*PRDL
*EXITRG	*RCT
*FLR	*SOCKET
*IGCSRT	*SSND
*IGCTBL	*S36
*IMGCLG	*USRPRF

57 *i want an i.* © 2007 IBM Corporation

IBM System i

i5/OS V5R4 Security & Compliance

- System integrity is enhanced with i5/OS hardware storage protection, helping to protect company data
- Additional auditing features help improve access control
 - Meet Common Criteria requirement to hide system audit settings
 - Improved auditing of special authority violations
- Network security is strengthened
 - TCP/IP intrusion detection helps prevent network attacks
 - Create a policy to audit suspicious intrusion events
 - Identify problems such as port scans and denial of service attacks
 - VPN support is extended with server side Network Address Translation (NAT) traversal

58 *i want an i.* © 2007 IBM Corporation

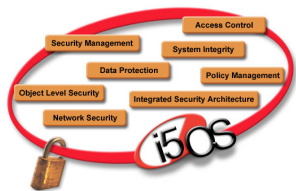
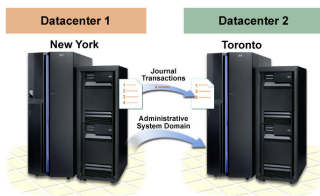
Backup Options Promote Continuous Operations

- **Virtual tape support improves backup capability**
 - Multiple libraries or entire system can be saved
 - Integrated with BRMS
 - Duplicate volumes to media or send via FTP
- **Save/restore of spool data assists companies with record retention**
- **New non-dedicated option to save key system object changes between full SAVSYS operations**
- **Parallel save/restore for IFS files**



Business Resilience & Compliance Directions

- **High availability initiative**
 - Cross site mirroring & administrative system domain enhancements extend clustering options
- **Safe computing initiative**
 - Includes encryption of data at rest and backups
 - Intrusion prevention
- **Storage virtualization**
 - Extend integration with virtual tape devices and SANs




This presentation contains information about IBM's plans and directions. Such plans are subject to change without notice.


IBM System i

System i5 – “The” Flexible Server


Solutions




BI/CRM



Lotus Domino




Web Enabled e-business




System i5 Business Solutions


Application Porting Consolidation / ASP




Integrated System x Server



PASE (UNIX) Runtime



Linux



AIX 5L v5.2 & v5.3

Interconnected for application enhancement

Enablers

Security

- Kerberos
- Passphrase
- Certificates
- Virtual Private Networks
- Integrated SSL
- Hardware Cryptography

Database

- DB2 UDB
- JDBC
- Interoperability
- ODBC
- Interoperability
- XML and Text Extenders
- Net Server

Sys Mgmt

- Single System, Multi workload
- Multi system Management Central
- Wireless Access

Java

- Java Virtual Machine
- WebSphere
- Just In Time Compiler
- Integrated Memory Management

Cluster Support

- Independent ASPs
- Switchable Disk
- Replication
- HA with Clusters

Across a scalable, secure and reliable platform

61 *i want an i.* © 2007 IBM Corporation

IBM System i

What is the cost of a system fully “Clothed”?

Storage Management


DB

\$

Virtualization

Security, Virus Protection

¥



£

File System

– Scatter/Stripe/SAN

Availability

€

Transaction Management

– Multiple desktop support

System Management

62 *i want an i.* Example © 2007 IBM Corporation

31

IBM System i

Versatility = On Demand Operating Environment

- Align information technology with business priorities
- Enable business flexibility and responsiveness
- Reduce cost
- Improve asset utilization
- Address new business opportunities

Integration / Virtualization / Automation

63 *i want an i.* © 2007 IBM Corporation

IBM System i

Trademarks and Disclaimers

© IBM Corporation 1994-2006. All rights reserved.
References in this document to IBM products or services do not imply that IBM intends to make them available in every country.

The following terms are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both:
Advanced Function Printing, Advanced Micro-Partitioning, AFP, AIX, AIX/L, AIX 5L, alphaWorks, Application System/400, AS/400, AS/400e, BladeCenter, C/400, Chipkill, CICS, CICS/400, ClusterProven, ClusterProven (Design), COBOL/400, Common User Access, Crossworlds, Crossworlds (circular logo), Crossworlds Software, CUA, DataJoiner, DataPropagator, DB2, DB2 Connect, DB2 Extenders, DB2 OLAP Server, DB2 Universal Database, DEEP BLUE, DeveloperWorks, Distributed Application Environment, Distributed Relational Database Architecture, DRDA, e business (logo), e (logo) business, e (logo) Server, e-business (logo), e-business on demand, Electronic Service Agent, eLiza, Enterprise Storage Server, eserver (logo & font), eServer, Everyplace, FICON, FlashCopy, i5/OS, i5/OS (logo), IBM, IBM (logo), IBM.COM, IBM TotalStorage Proven, ILS/400, Infoprint, Intelligent Miner, Intelligent Printer Data Stream, IPDS, iSeries, i5/OS, Micro-Partitioning, MQIntegrator, MQSeries, Net.Data, Netfinity, OfficeVision/400, OpenPower, Operating System/400, OS/400, Parallel Sysplex, PartnerWorld, POWER5, PowerPC, PowerPC Architecture, pSeries, QMF, Redbooks, RPG/400, RS/6000, S/390, SecureWay, SQL/400, Solution Connection, System i, System i5, System p, System p5, System z, System z9, System/36, System/38, Tivoli, Tivoli (logo), VisualAge, VisualGen, VisualInfo, Visual Warehouse, WebSphere, X-Architecture, xSeries, z/OS, zSeries, 400.

Lotus, Domino, Domino Designer, Domino.Doc, iNotes, K-station, LearningSpace, Lotus Discovery Server, Lotus Enterprise Integrator, Lotus Notes, Lotus Workflow, Lotusphere, Mobile Notes, Notes, Quickplace and Sametime are trademarks of International Business Machines Corporation and Lotus Development Corporation in the United States, other countries, or both.

MMX, Pentium, and ProShare are trademarks or registered trademarks of Intel Corporation in the United States, other countries, or both.
Microsoft and Windows NT are registered trademarks of Microsoft Corporation in the United States, other countries, or both.
Java and all Java-based trademarks and logos are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.
Linux is a trademark of Linus Torvalds in the United States, other countries, or both.
Red Hat, the Red Hat "Shadow Man" logo, and all Red Hat-based trademarks and logos are trademarks or registered trademarks of Red Hat, Inc., in the United States and other countries.
Cell Broadband Engine is a trademark of Sony Computer Entertainment Inc.
UNIX is a registered trademark of The Open Group in the United States and other countries.
Other company, product or service names may be trademarks or service marks of others.

Information is provided "AS IS" without warranty of any kind.

All customer examples described are presented as illustrations of how those customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics may vary by customer.

Information in this presentation concerning non-IBM products was obtained from a supplier of these products, published announcement material, or other publicly available sources and does not constitute an endorsement of such products by IBM. Sources for non-IBM list prices and performance numbers are taken from publicly available information, including vendor announcements and vendor worldwide homepages. IBM has not tested these products and cannot confirm the accuracy of performance, capability, or any other claims related to non-IBM products. Questions on the capability of non-IBM products should be addressed to the supplier of those products.

All statements regarding IBM future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only. Contact your local IBM office or IBM authorized reseller for the full text of the specific Statement of Direction.

Some information in this presentation addresses anticipated future capabilities. Such information is not intended as a definitive statement of a commitment to specific levels of performance, function or delivery schedules with respect to any future products. Such commitments are only made in IBM product announcements. The information is presented here to communicate IBM's current investment and development activities as a good faith effort to help with our customers' future planning.

Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput or performance improvements equivalent to the ratios stated here.

Photographs shown are of engineering prototypes. Changes may be incorporated in production models.

64 *i want an i.* © 2007 IBM Corporation