

# Why IBM i?

IBM i  
Designed for Business

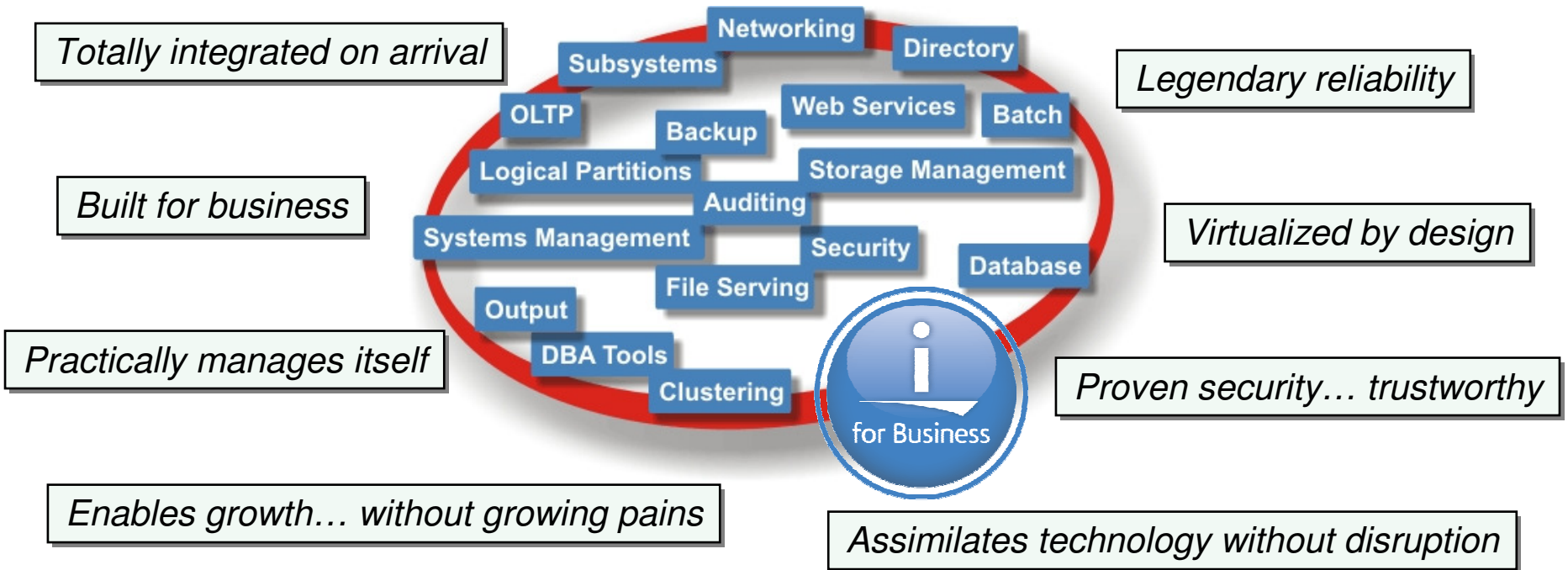


# IBM Power Systems Portfolio



# IBM i – Not Just An Operating System, But So Much More

Why clients value IBM i...



Comprehensive, efficient and cost-effective... optimized for business

# The IBM i Business

***More clients run IBM i than any other IBM system platform***

- 100,000's of systems in 100,000+ enterprises
- 115+ countries
  - 40 language translations
  - 51 national language versions
- Cross industry



*Wholesale Distribution      Computer Services*

*Finance      Retail      Insurance*

*Consumer Package Goods      Travel & Transportation*

*Agribusiness      Automotive      Construction*

*Manufacturing      Lodging      Healthcare*

*Education      Associations      Local Government*

*Legal Services      Accounting Services*

## G.A.F. Seelig, Inc. transitions IT, mitigates risk, and improves employee productivity, without interrupting the business



*"I would not bet my business on anything but an i."*

- Gary Lavery Exec. Vice President CIO G.A.F. Seelig, Inc.

- Family owned company distributing fine food products since 1871
- Ever expanding array of food service items
- Providing high quality customized client service

- Improved IT performance -- backup time reduced by 98%
- Invoice creation took 20 minutes, now completes before operator can enter command to check job status
- Improved communications capability and connectivity software
- Increased availability of support expertise because of solution currency

# IBM i – Maximize business benefits while minimizing IT costs




Oculus Suite




*“Our SMB clients get good value for the money and Pantheon can concentrate on its strongest added value: our ability to understand the business needs of our clients.”*

- Pantheon Automation
  - Web-based solutions for wholesale distribution and production companies
  - ERP, CRM, WMS, Document Management, e-Commerce
- Serving Belgium and the Netherlands

- Meeting the needs of small to mid-sized businesses
  - From <50 employees up to 500
  - IBM i Solution Editions: deploy in-house
  - Hosting option: cloud delivery
- Robust, fully integrated solutions
  - Reliable, flexible platform at minimal cost
  - Focus on satisfying business needs

*“For more than 25 years Pantheon and its clients have been dedicated to IBM i for its reliability and its flexibility.”*  
 Erik Versloot, Managing Director

# IBM i – Delivering Competitive Advantage



*“Its stability, TCO and speed of development convinced us we should not only maintain our mid-range environment, but expand it to keep it at the center of our operations for the long term. IBM i has enabled us to grow the scale of our environment, while at the same time become more nimble and resilient.”*

Ken Spangler, VP of IT

- FedEx Ground
  - Nearly 3 million packages picked up daily
  - 7 to 8 million packages in the delivery pipeline at any one time
  - Average daily transactions exceed 1 billion
- Systems provide package rating and invoicing; optimized delivery routing; and timely, accurate tracking data
- IBM i is the foundation of operations
  - Virtualization for flexible resource allocation and nimble growth in capacity
  - High system availability to meet customer expectations for near-perfect reliability
  - Rapid application development supports new function, faster
- Low TCO helps keep overall cost structure down, improving competitiveness

## Why i?

*Setting a higher standard for business computing*

- Business computing is its purpose
  - Conceived for business
  - Designed for business
  - Functionally integrated for business
- It is the paragon for integration
  - Embodied in its design
  - Measurable in its value
  - Unequaled in the industry
- It is trusted
  - Exhibits data and operational integrity
  - Is reliable, dependable and stable
  - Is less vulnerable to malware
- It is price and cost competitive for the purpose it serves





# IBM i – Its Design Reflects Its Purpose: Business Computing

When purpose is known,  
it is incorporated into design.

When purpose is not clear,  
accommodations are made.



Same application, different levels of risk, efficiency, security and stability

# The Business Case for IBM i on IBM Power Systems

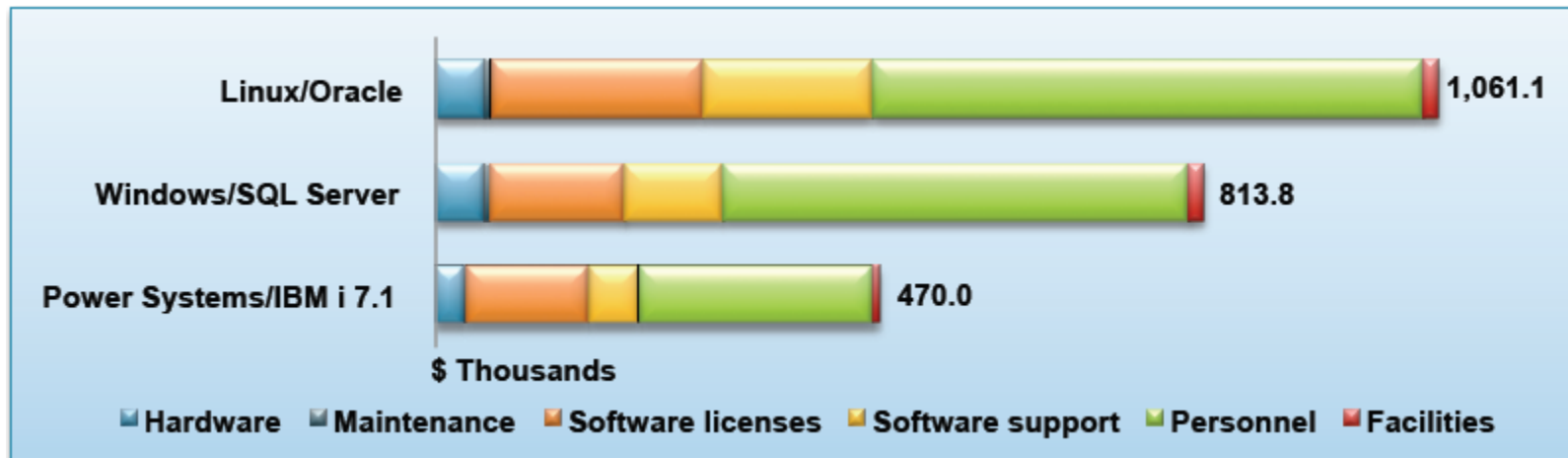


**“More than any other platform available today, IBM i and Power Systems offer users the benefits of advanced technology while minimizing costs, complexities and risks<sup>1</sup>.”**

1. ITG Management Brief: Value Proposition for IBM Power Systems Servers and IBM i - Minimizing Costs and Risks for Midsize Businesses; January 2011

# Lower Overall Three-year Costs

*An advantage sustained throughout the life of the platform*

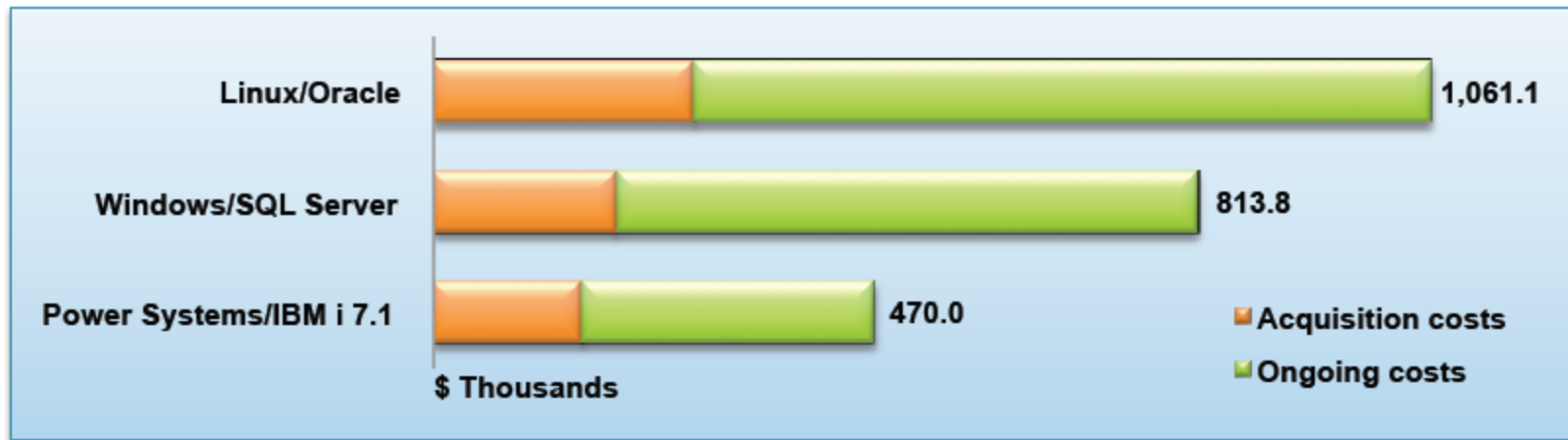


ITG Management Brief: Value Proposition for IBM Power Systems Servers and IBM i - Minimizing Costs and Risks for Midsize Businesses; January 2011

**42% less** than x86, Microsoft Windows Server and Microsoft SQL Server

**56% less** than x86, Linux and Oracle DB

## Lower Acquisition and Ongoing Costs



ITG Management Brief: Value Proposition for IBM Power Systems Servers and IBM i - Minimizing Costs and Risks for Midsize Businesses; January 2011

- Acquisition costs
  - **18% less** than x86 servers with Windows Server and SQL Server databases
  - **43% less** than x86 servers with Linux and Oracle databases
- Three-year ongoing costs – full time equivalent administrators
  - **55% less** than Windows / SQL Server
  - **60% less** than Linux / Oracle

## Acquisition Costs – Consider All the Variables

Suppose you want to travel from California to New York... should you drive or fly?



... Will your decision criteria be limited to the cost of gas vs. the cost of an airplane ticket? *Of course not!*

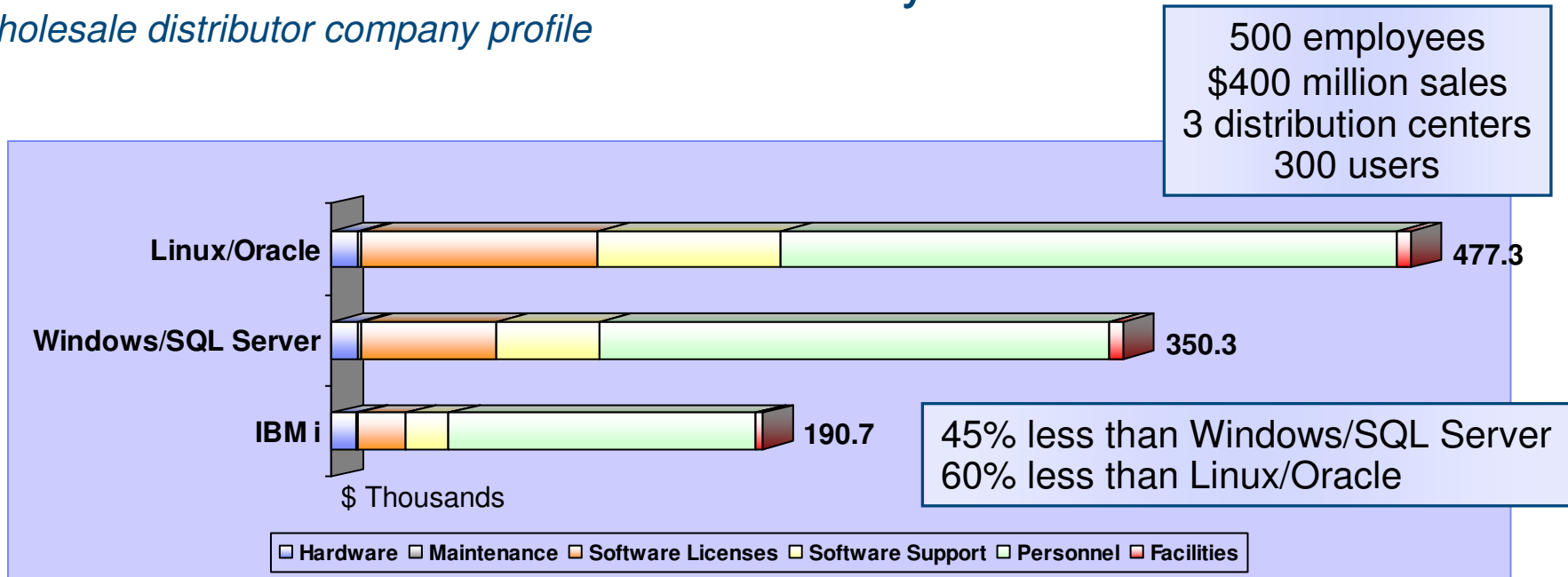
## Acquisition Costs – Consider All the Variables

- Individually, x86 systems are less expensive than POWER7 systems
- **However** ... there's more to the story ... the multiplier effect
  - Multiplication of x86 servers to handle database, application and Web serving
  - Multiplication of x86 servers to support development, test and production instances
  - Multiplication of x86 servers inflates software licensing costs
  - Multiplication of x86 servers inflates support costs
- Costs escalate further with high-end versions of software
- Costs escalate further when incorporating other necessities
  - Tools for systems management, security and clustering
  - Client Access Licenses (CALs) for Windows servers
- VMware, in practice, has been relegated to comparatively light-duty applications, limiting its effectiveness

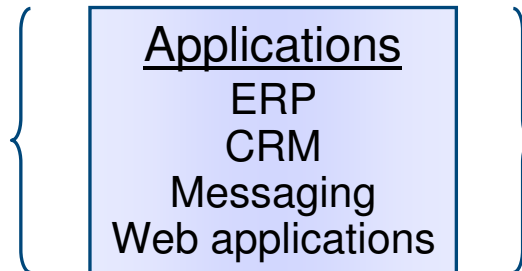


# Same Destination ... Different Journey

*Wholesale distributor company profile*



## x86 infrastructure



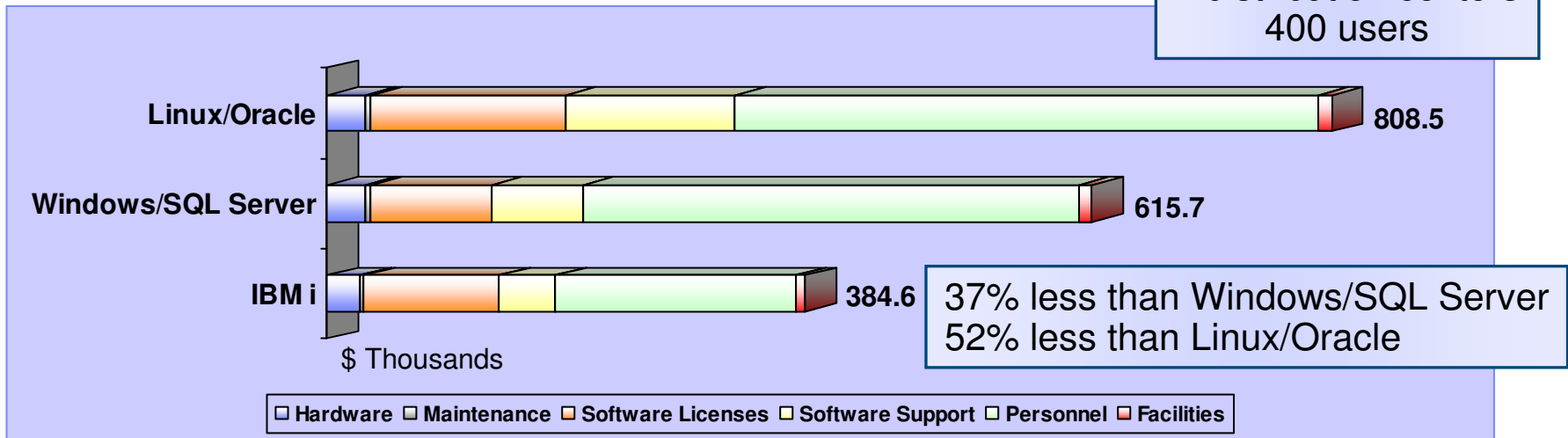
## IBM i infrastructure



# Same Destination ... Different Journey

*Specialty retailer company profile*

1,500 employees  
 \$200 million+ sales  
 250 stores  
 2 distribution centers  
 400 users



## x86 infrastructure



## Applications

Core retail  
 Merchandising  
 Supply chain  
 Finance  
 HR  
 Web & wireless

## IBM i infrastructure

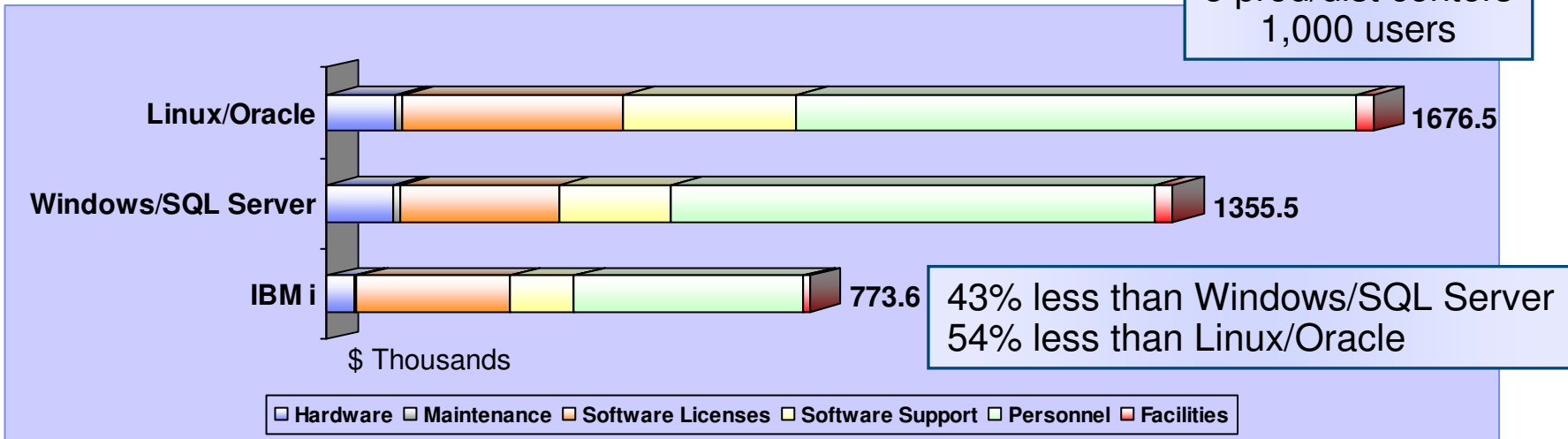




# Same Destination ... Different Journey

*Agribusiness company profile*

4,500 employees  
\$1.3 billion sales  
8 prod/dist centers  
1,000 users



## x86 infrastructure



Applications  
ERP  
Procurement / EDI  
Business Intelligence  
E-commerce  
Compliance  
Departmental

## IBM i infrastructure



ITG Management Brief: Value Proposition for IBM Power Systems Servers and IBM i - Minimizing Costs and Risks for Midsize Businesses; January 2011

## Is IBM i Price and Cost Competitive?

- A mountain of evidence says “yes!”
  - Consultant reports
  - Technology briefs
  - White papers
  - Case studies
  - References
- Researched, reported, updated and refreshed routinely for more than 20 years
- For business computing, no platform has proven more suitable



## IBM i – Value that Stands the Test of Time



*“Our choice of the IBM i and Power Systems infrastructure for our SAP application environment has met the needs of our business and delivered a rapid return on investment. Every time we have reassessed our IT architecture, IBM i has made a stronger business case than any other platform.”*

Dennis Lewis, CIO

- 7-Eleven is the market leader in convenience retailing in Australia, operating over 650 stores
- SAP ERP 6.0 and SAP NetWeaver 7.0 business application platform
- Legendary reliability (down < 2 hours/year)
- Integrated DB2
- Easier to manage, ongoing TCO savings
- Sophisticated integration with Microsoft Windows Server
  - Simpler disk management
  - Better reliability and availability of Windows applications, easier recovery
- Immense scalability

# The Technology Behind the Business Case

*Distinguishing IBM i from everything else*



**“More than any other platform in existence today, POWER7-based systems and IBM i 7.1 are designed to minimize complexities<sup>1</sup>.”**

1. ITG Management Brief: Value Proposition for IBM Power Systems Servers and IBM i - Minimizing Costs and Risks for Midsize Businesses; January 2011

# IBM i Architecture

## DB2 for i & Single Level Store

Automate & optimize storage management

## Object Based Architecture

Enables integrity, security, virus-resistance

## Integration

Integrates business components: DB, Web, Security

## Work Management

Provides built-in application virtualization

## Technology Independent Machine Interface

Ensures application compatibility across multiple technology generation.

An **Architecture** Devoted to Business Stability, Simplicity, Security, Scalability

# Total Integration

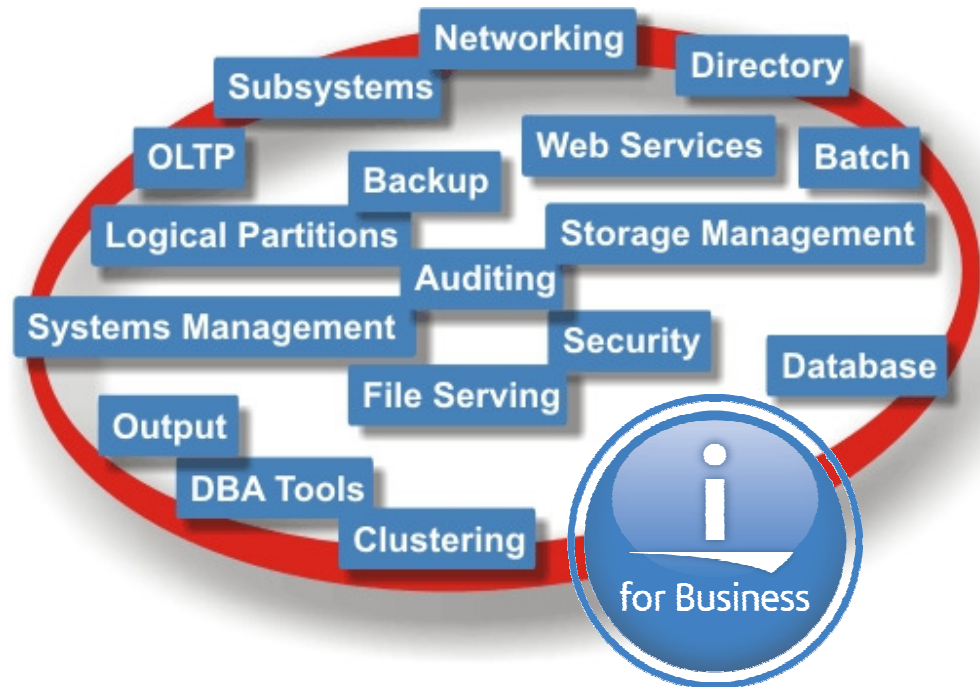


# Integration – Real, Serious Integration

*As contrasted with the simple pre-packaging of shrink-wrapped components*

More ...

- ... comprehensively designed
- ... built-in functionality
- ... thoroughly tested
- ... easily managed
- ... platform stability
- ... IT staff productivity
- ... ROI



The IBM i operating environment includes operating system and middleware components that are designed, developed, built, tested, delivered and supported as one

# Integration = Faster Time to Value

When you order a piece of carrot cake, what do you expect?



Recipe & ingredients



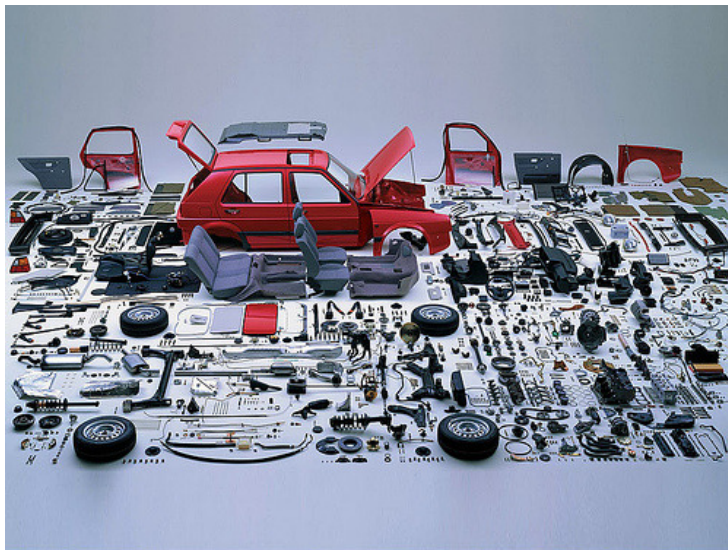
Integration

Why should you expect any less from your IT than you do from your bakery?

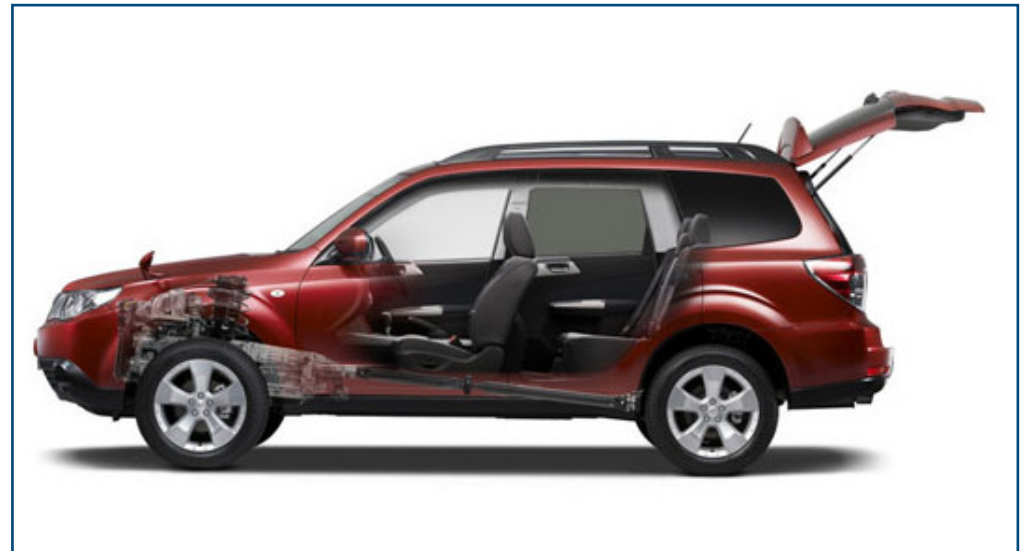


# Integration = Faster Time to Value

When it's time for a new car, what do you look for?



Piece parts



Integration

Why should you expect any less from your IT than you do from your car dealer?

# Integration = Faster Time to Value

When you deploy a new solution, where do you begin?



Components

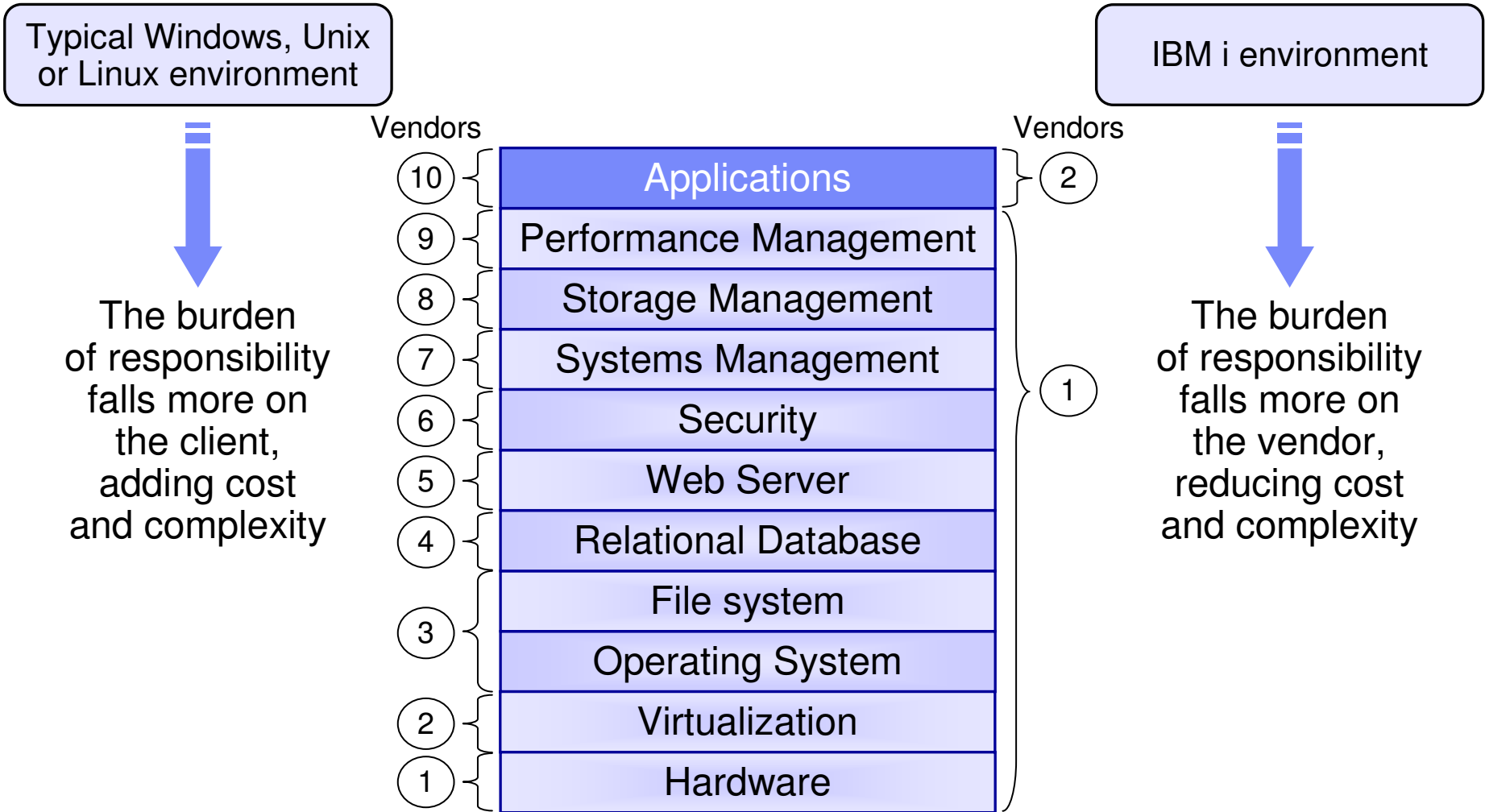


Integration

Why should you expect any less than total integration from your IT vendor?

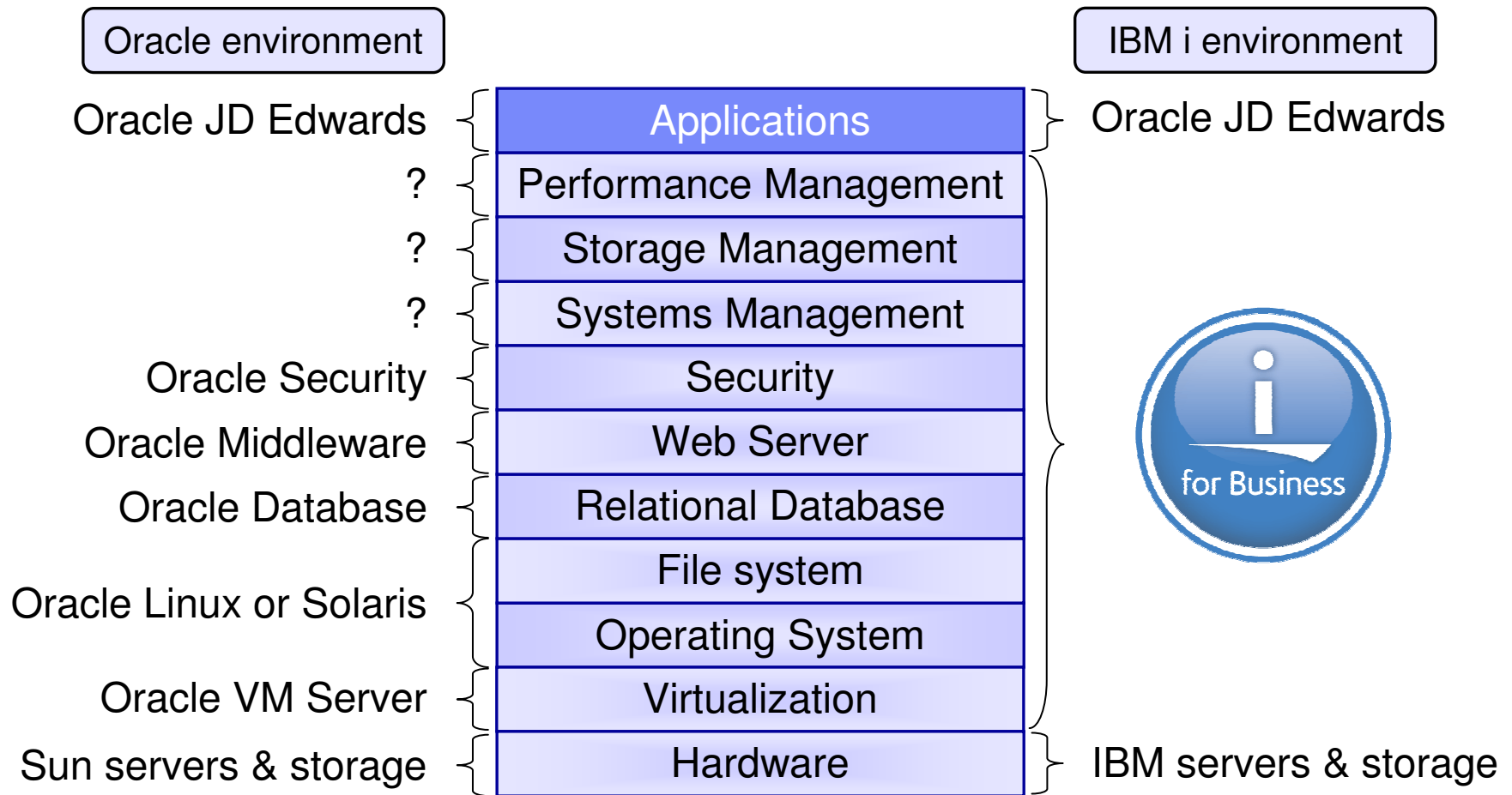
# The Solution Stack – Who's Responsibility Is It?

*Installation, integration, test, change management, support ...*



# Is the Oracle Stack Truly Integrated?

*How much of it is designed, integrated, tested and supported as one?*



Integration by acquisition... not even close to integration by design

# True Integration Occurs Earlier in the Development Process

*Separately ordered components might work together, but that doesn't mean they're integrated*

## The Oracle Stack



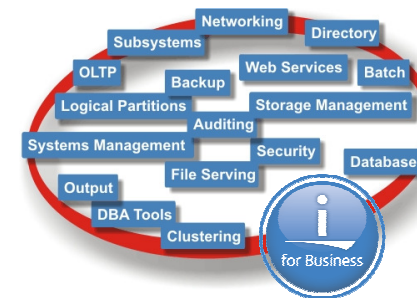
Integration by patchwork

- Oracle OS
- + Oracle VM Server
- + Oracle DB
- + Oracle Middleware
- + Oracle Security
- + more....

## The IBM i Environment



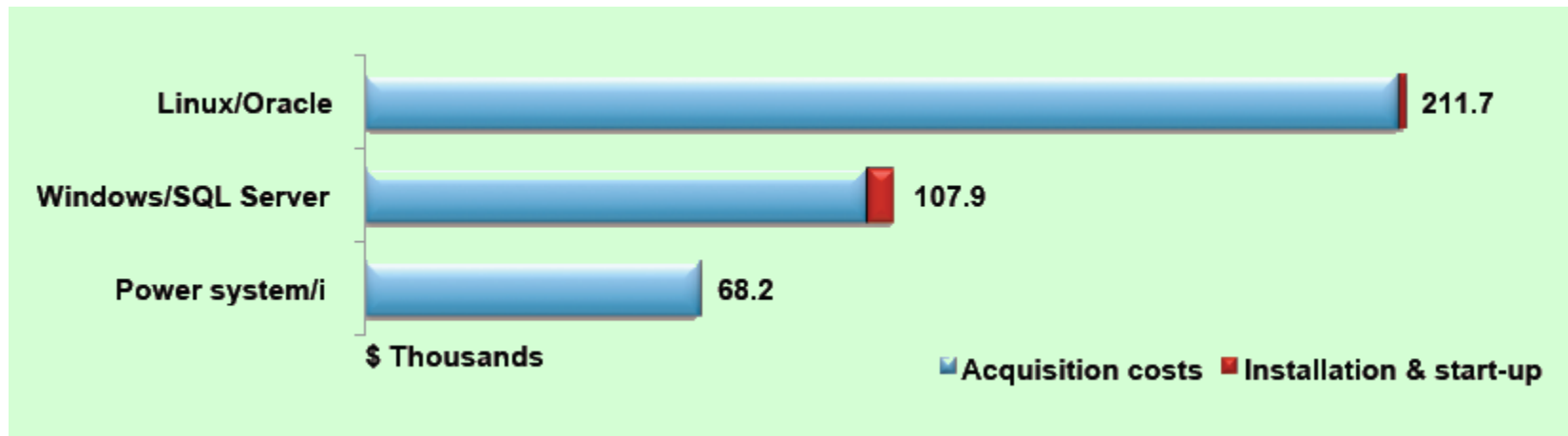
Integration by design



# Platform Choice Matters

*IBM i Solution Editions simplify and reduce costs for installation and start-up*

Average initial costs for JD Edwards EnterpriseOne deployment



IBM i is...

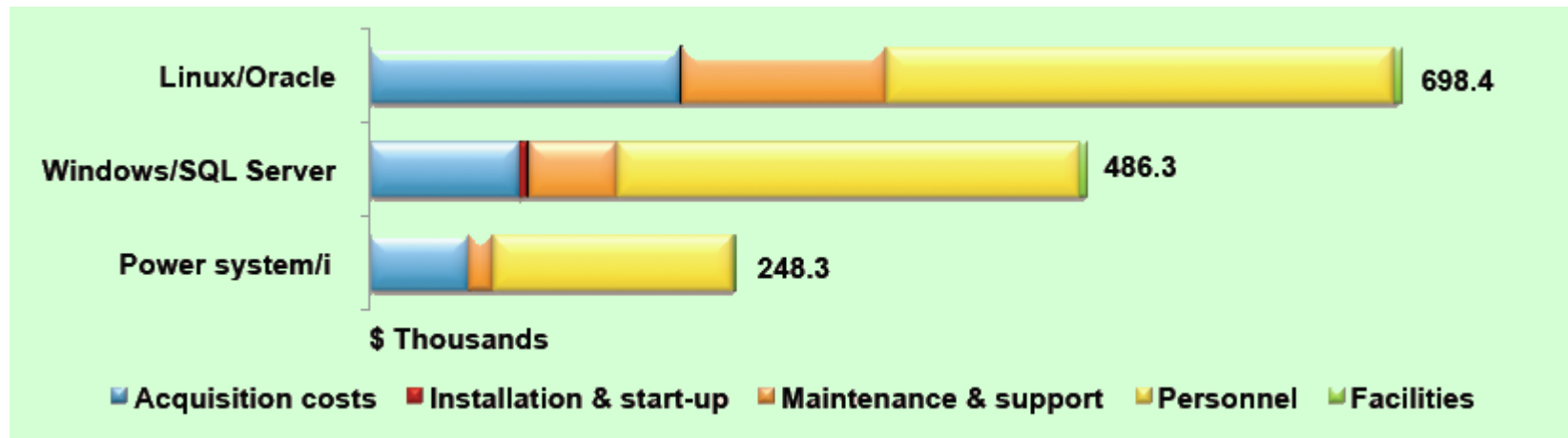
- 37% less than Windows servers with SQL Server DB
- 68% less than x86 Linux servers with Oracle DB

*(Average costs are derived from configurations supporting 50, 150 and 500 users)*

# Platform Choice Matters

*Lower overall 3-year costs reflect the underlying strengths of the IBM i platform*

Average 3-year IT costs for JD Edwards EnterpriseOne deployment



IBM i is...

- 49% less than Windows servers with SQL Server DB
- 64% less than x86 Linux servers with Oracle DB

*(Average costs are derived from configurations supporting 50, 150 and 500 users)*

# ITG Status Report – Key Observations

*IBM i and Power Systems combine to reduce cost and risk*

## Regarding personnel:

*Staffing levels for equivalent E1 environments are routinely two to three times lower (for IBM i) than for Windows and Linux servers.*

*Because of the highly integrated IBM i design, dedicated DBAs are not required in most midsize installations.*

## Regarding availability risks:

*Experience among E1 users has shown that Power systems with i availability levels are typically higher – by wide margins – than for Windows and Linux servers.*

## Regarding security and malware risks:

*In this area, differences between IBM i, Windows and Linux environments are not merely significant – they are dramatic. IBM i is one of the most secure operating systems in existence. Security violations are rare, and malware incidents are virtually unknown.*



# IBM i – Platform Choice Matters



*“IT costs were escalating without producing the positive results we hoped for. We wanted to repair the poor perception of IT held by the rest of the company, and ensure that it made the life of our workforce easier, rather than representing a daily annoyance.”*  
David Booth, CIO

- The leading provider of mining, heavy construction, industrial, piling and pipeline services in Canada
- JD Edwards EnterpriseOne solution

- Platform instability with Microsoft Windows Server & SQL Server was a serious issue
  - Users dissatisfied with IT
  - Costs escalated
  - Business growth hampered
- Migration to IBM i provided the resolution
  - Eliminated recurring outages
  - Improved performance and responsiveness
  - **Reduced IT costs 52% year over year**
  - Restored faith in IT
- Focus now on new opportunities, growth

# Object-based Architecture

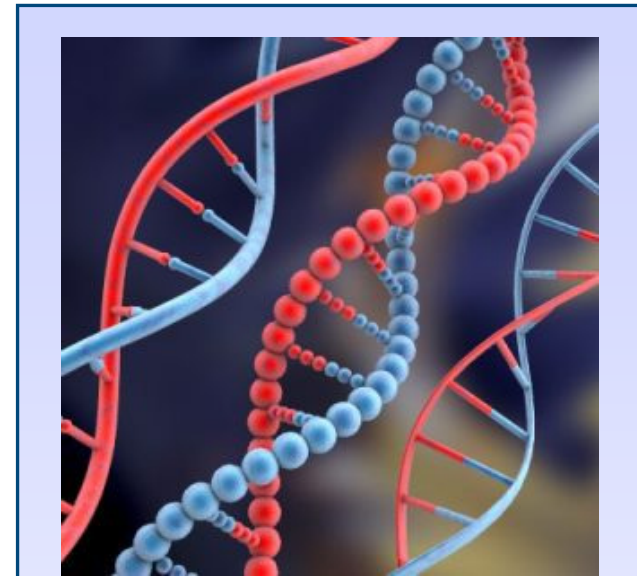
Integrity by design



## IBM i – an Object-based Architecture

*A design decision which brings data security and operational integrity to the platform*

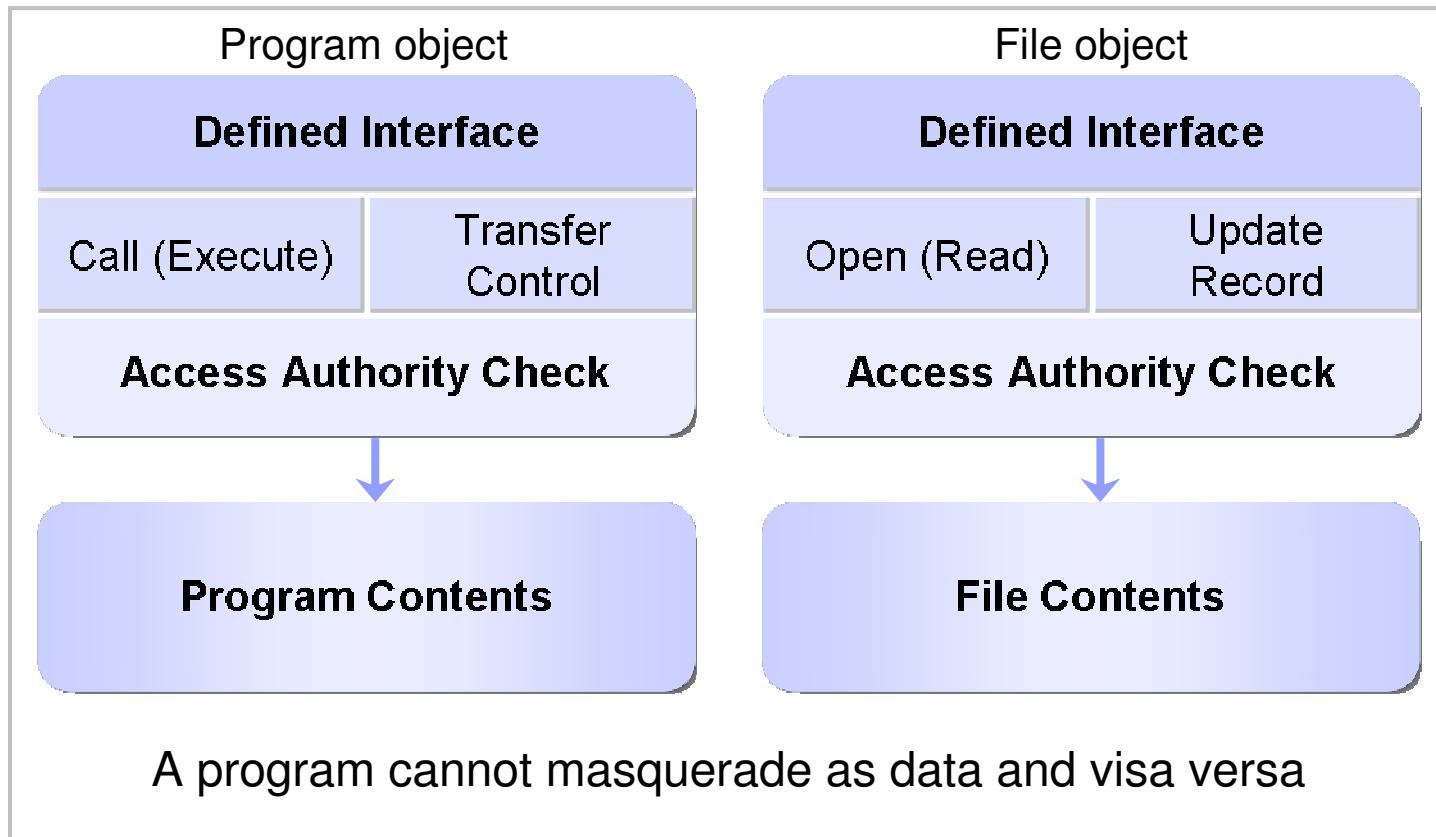
- There are 100's of unique object types
- Every object has two inseparable parts
  - Object attributes
    - Type (e.g. program, file, command)
    - Behavior (operational characteristics)
    - Access authority
  - Object contents
- Object attributes are governed by the OS
  - Predictable behavior - always
  - Appropriate authority easily managed
  - Thorough auditing/tracking built in
- Natural defense against the malware that plagues other operating systems



Much like DNA governs the development of all living things, each IBM i object contains instructions which govern how it functions in the system.

# IBM i Object-based Architecture

*Object attributes (behavior, authority) enforced before contents are accessed*



# Do You Know What You're Putting in YOUR System?

*IBM i objects have more integrity than content defined by file extensions*

## IBM i

<b>Nutrition Facts</b>	Amount/serving	%DV*	Amount/serving	%DV*
Serv. Size 1 cup (249g)	<b>Total Fat</b> 12g	<b>18%</b>	<b>Sodium</b> 940mg	<b>39%</b>
Servings About 2	Sat. Fat 6g	<b>30%</b>	<b>Total Carb.</b> 24g	<b>8%</b>
<b>Calories</b> 250	Polyunsat. Fat 1.5g		Dietary Fiber 1g	<b>4%</b>
Fat Cal. 110	Monounsat. Fat 2.5g		Sugars 1g	
*Percent Daily Values (DV) are based on a 2,000 calorie diet.	<b>Cholest.</b> 60mg	<b>20%</b>	<b>Protein</b> 10g	<b>20%</b>
	Vitamin A 0% • Vitamin C 0% • Calcium 6% • Iron 8%			

**INGREDIENTS:** WATER, CHICKEN STOCK, ENRICHED PASTA (SEMOLINA WHEAT FLOUR, EGG WHITE SOLIDS, NIACIN, IRON, THIAMINE MONONITRATE [VITAMIN B1], RIBOFLAVIN [VITAMIN B2] AND FOLIC ACID), CREAM (DERIVED FROM MILK), CHICKEN, CONTAINS LESS THAN 2% OF: CHEESES (GRANULAR, PARMESAN AND ROMANO PASTE [PASTEURIZED COW'S MILK, CULTURES, SALT, ENZYMES], WATER, SALT, LACTIC ACID, CITRIC ACID AND DISODIUM PHOSPHATE), BUTTER (PASTEURIZED SWEET CREAM [DERIVED FROM MILK] AND SALT), MODIFIED CORN STARCH, SALT, WHOLE EGG SOLIDS, SUGAR, DATEM, RICE STARCH, GARLIC, SPICE, XANTHAN GUM, CHEESE FLAVOR (PARTIALLY HYDROGENATED SOYBEAN OIL, FLAVORINGS AND SMOKE FLAVORING), MUSTARD FLOUR, ISOLATED SOY PROTEIN AND SODIUM PHOSPHATE.

It is always what it says it is!

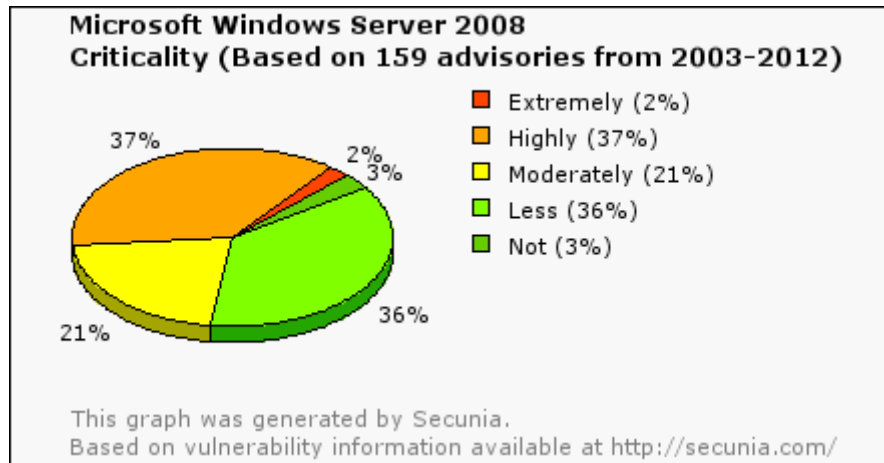
## Other operating systems



Is it always what it says it is?

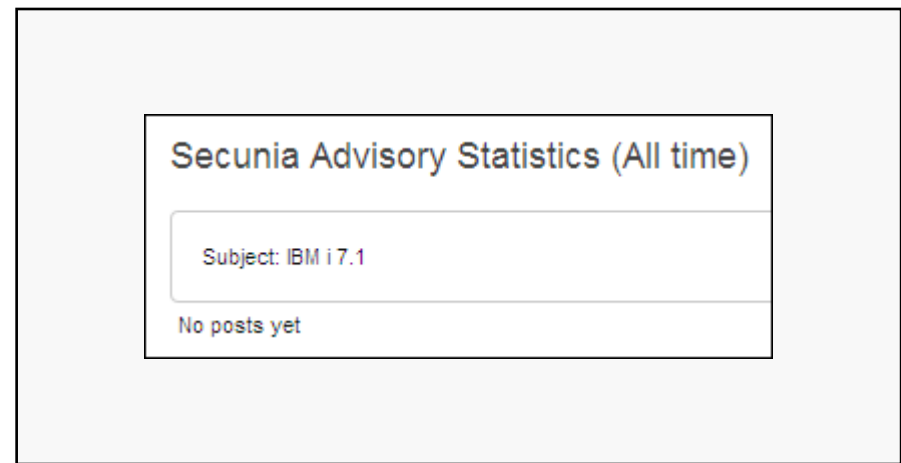
# IBM i Security – More Confidence, Less Cost

## Microsoft® Windows Server® 2008



- 159 advisories (all time)\*
- 39% highly/extremely critical
- 2% remain unpatched

## IBM i 7.1

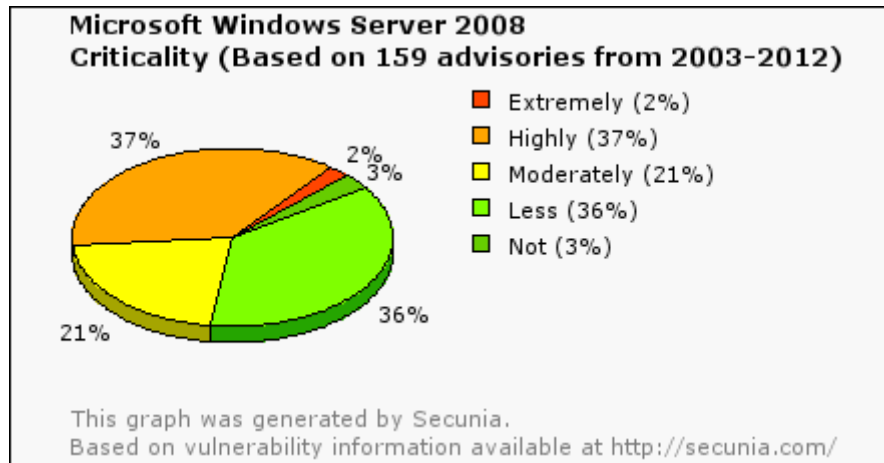


- No advisories (all time)

\* Vulnerabilities reported through Feb 15, 2012: <http://secunia.com/advisories/product/>

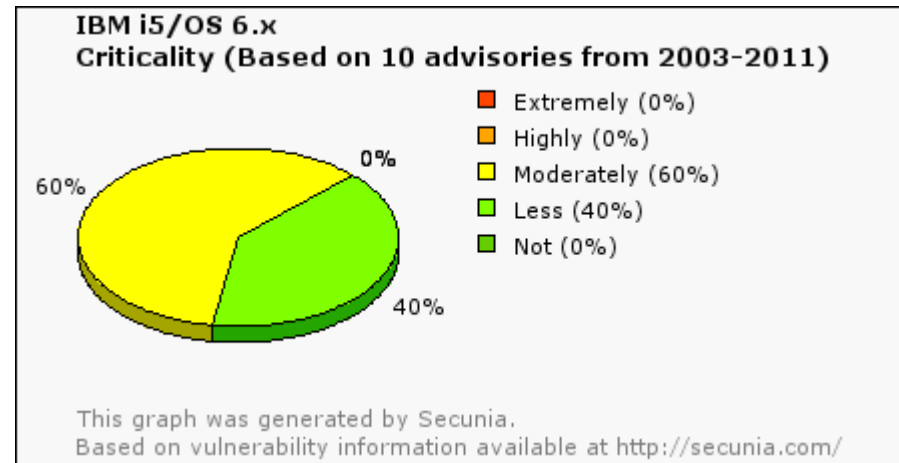
# IBM i Security – More Confidence, Less Cost

## Microsoft® Windows Server® 2008



- 159 advisories (all time)\*
- 39% highly/extremely critical
- 2% remain unpatched

## IBM i 6.1 *(no advisories for i 7.1)*



- 10 advisories (all time)\*
- None highly/extremely critical
- None remain unpatched

\* Vulnerabilities reported through Feb 15, 2012: <http://secunia.com/advisories/product/>

# Single Level Storage

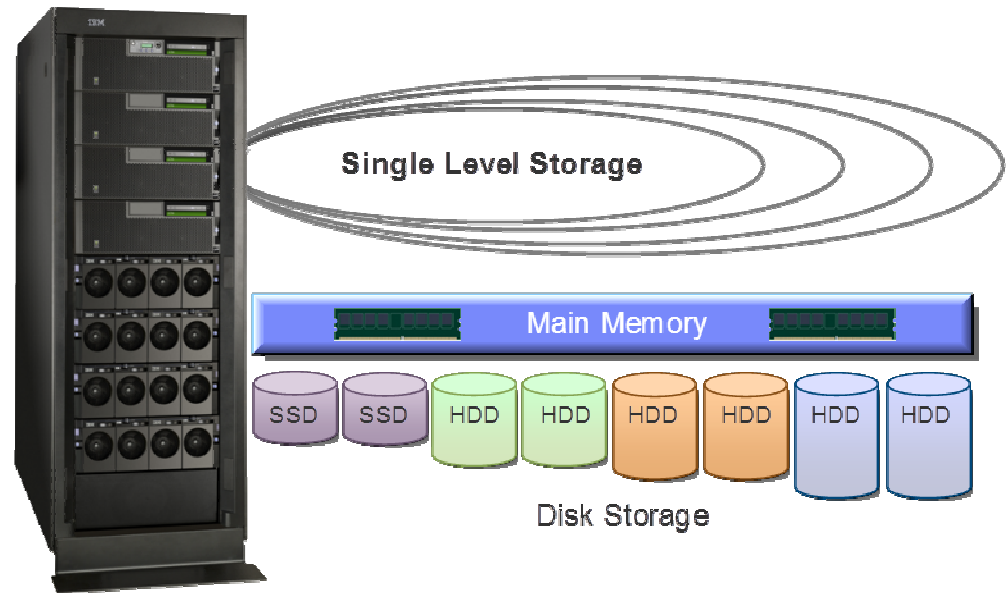
Integrated, automated storage management





## Single Level Storage = Built-in Storage Management

- In IBM i, all storage is viewed as one large, contiguous, addressable space
- Storage management is integrated
  - Object/data placement is balanced based on the performance, capacity and type of storage devices
  - Storage may be dynamically and automatically rebalanced based on usage patterns
  - Support for storage innovations, such as Solid State Drives, can be integrated into storage management algorithms quickly
- IBM i clients typically do not require storage administrators
- Automated storage management simplifies operations and reduces costs



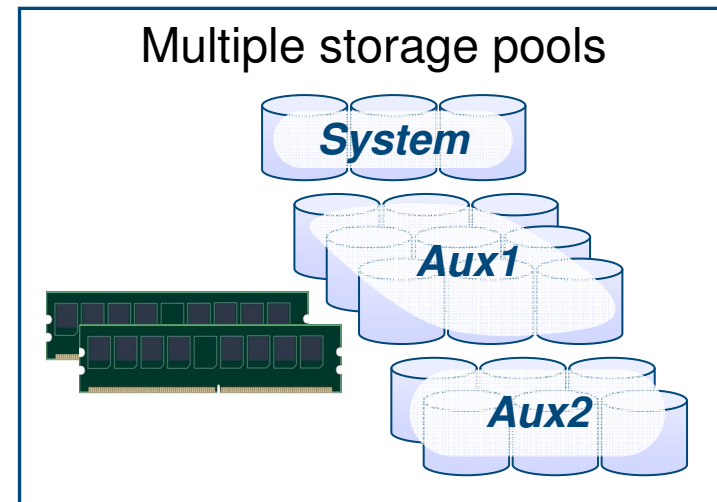
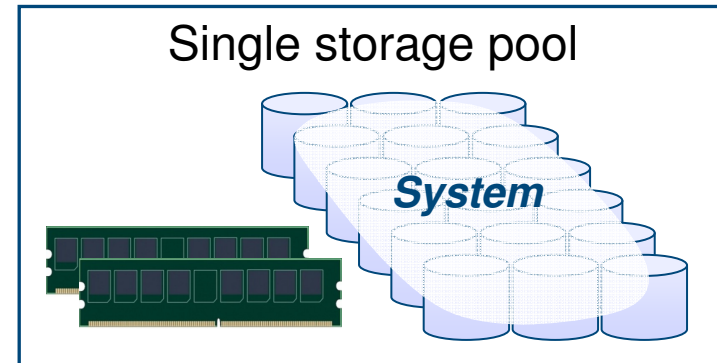
Objects are stored/retrieved by name without regard to physical location, minimizing the need for administrators to manage storage infrastructure.

# Single Level Storage – Configuration Flexibility

*Business requirements should determine storage requirements*

- Flexible storage attachment
  - Internal (SCSI-attached SAS drives)
  - External (SAN)
  - Virtual I/O Server
- Storage devices may be grouped into a single pool or multiple pools
  - Single pool is simplest, most automated
  - There are advantages to multiple pools
    - Program/data isolation (e.g. Company 1, Company 2) in a single system image
    - High availability solutions (PowerHA)
  - Integrated storage management operates on each pool

Automated storage management and configuration flexibility blend well in IBM i



# Integrated Storage Management

Leading support for leveraging Solid State Drives to improve application performance



*“By adding SSDs to SAS drives, the time required to run our end-of-month batch processing workload could be reduced by 40 percent.”*  
 - Associated Bank-Corp

- A diversified bank holding company with HQ in Green Bay, Wisconsin
  - More than 1 million customers
  - 300 banking offices in WI, MN and IL
- Requirement to speed up I/O-intensive end-of-day and end-of-month processing workloads

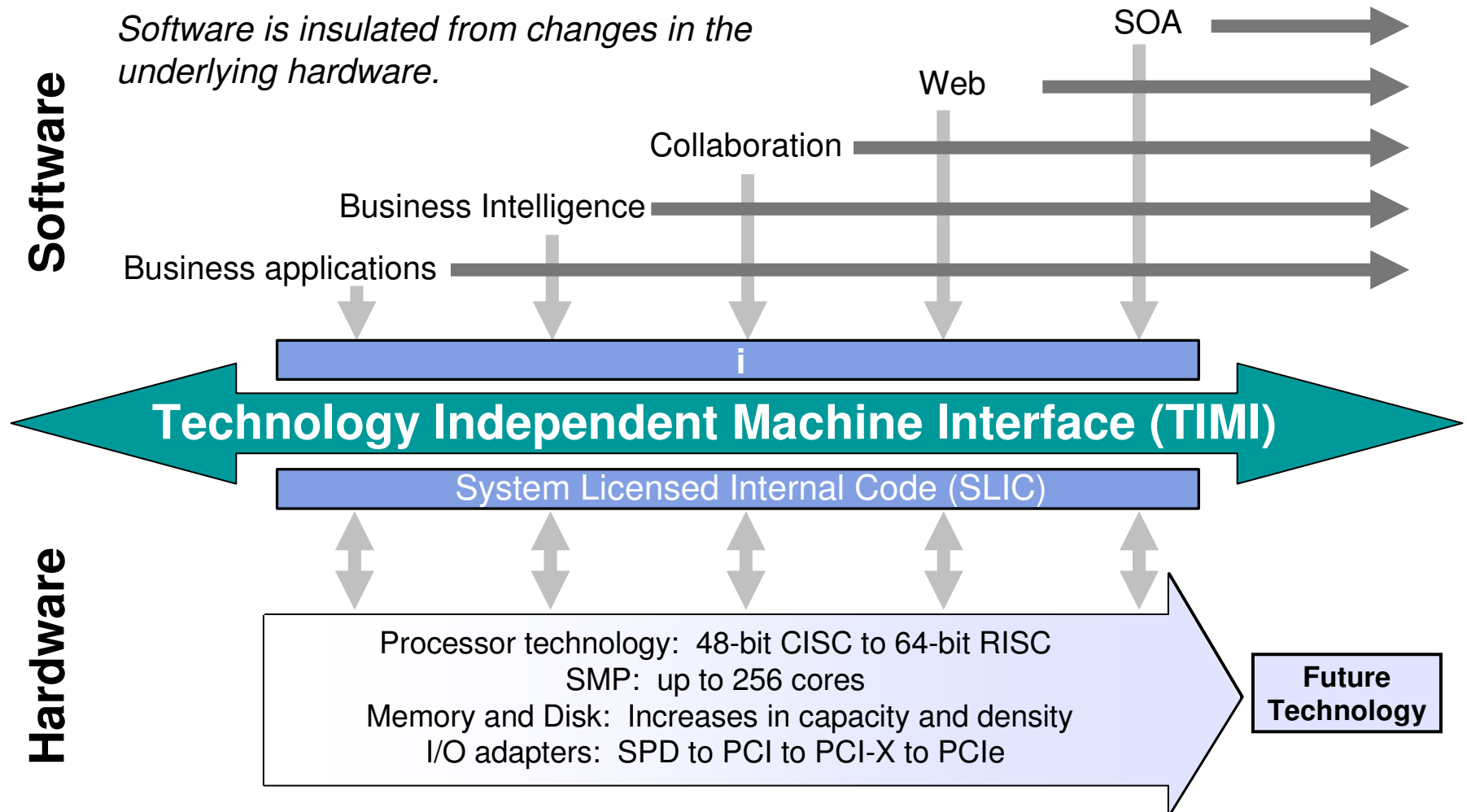
- SSD support is built into IBM i
  - Frequently accessed data – ***auto move!***
  - High priority objects – ***auto place!***
  - Easily place DB2 tables on SSDs
- Associated Bank moved eight DB2 tables to SSDs and reduced runtime by 40%

# of SAS Drives	# of SSDs	Batch Run Time
72	0	4:22
72	8	2:43
60	4	2:48

# Technology Independence



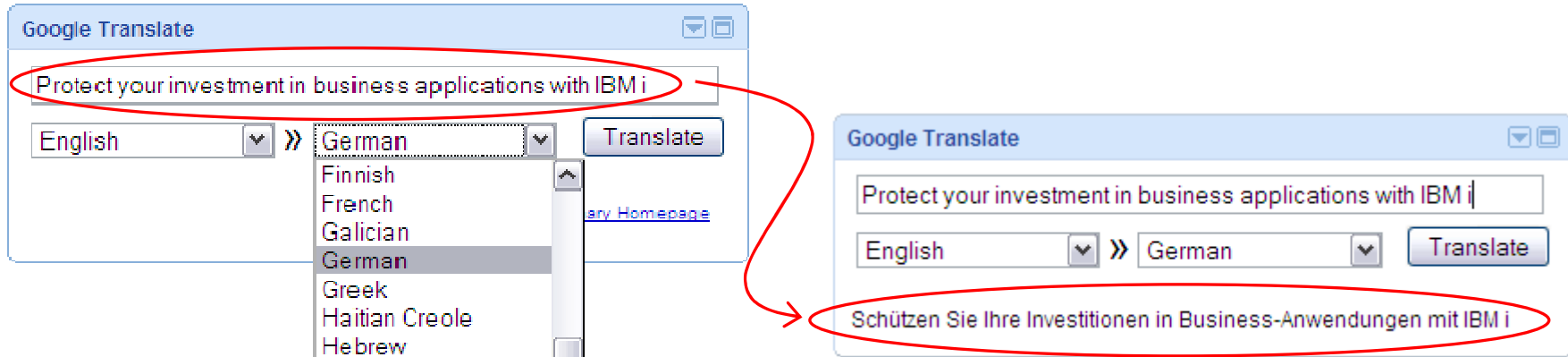
# IBM i Architecture – Responsive to Change



*Those who truly understand this don't want anything else.*

# Change Need Not Be Disruptive

*Architecturally, IBM i is designed to anticipate and accommodate changing technology*

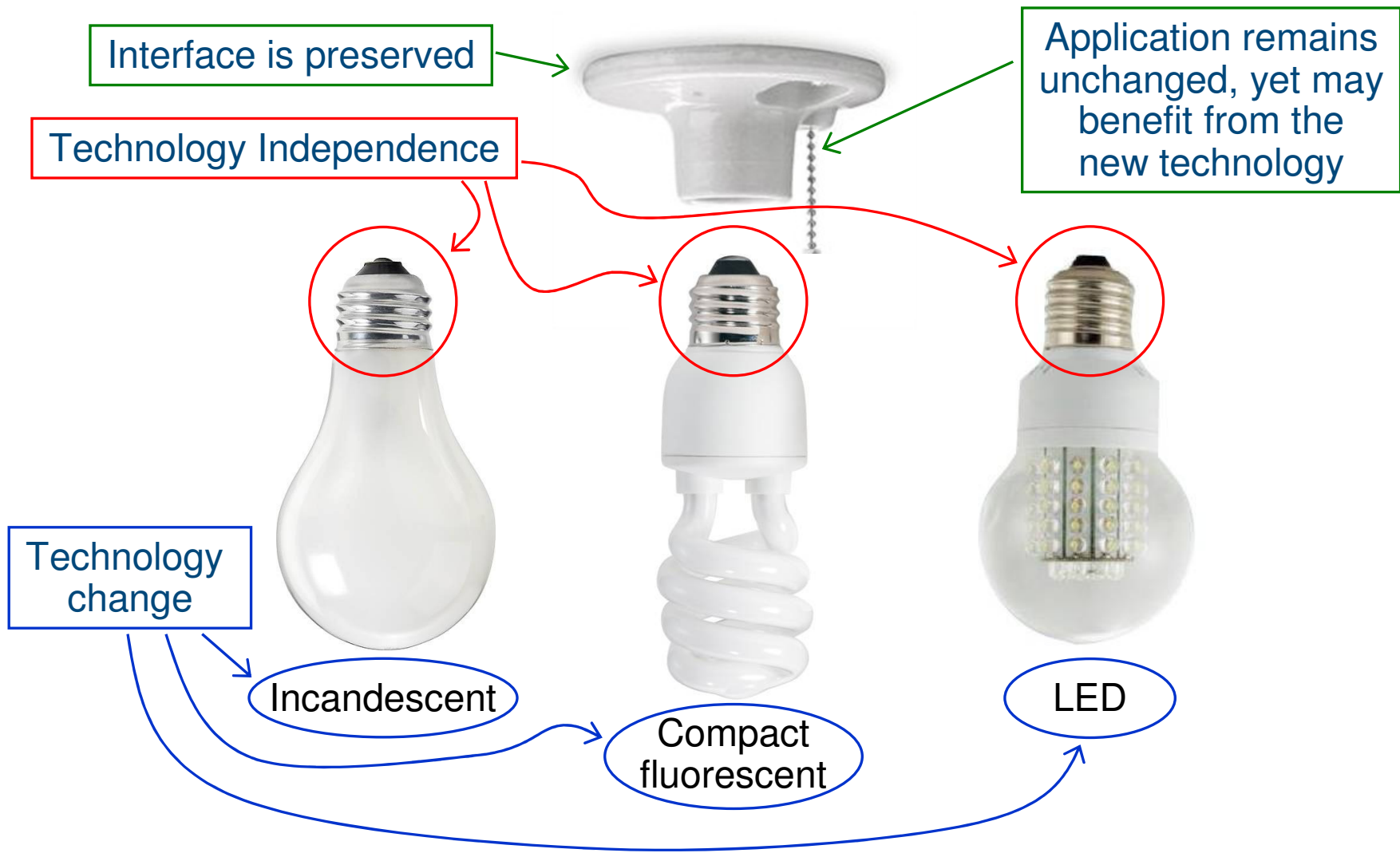


**Technology Independence**

- Conceptually like dynamic language translation
  - Record first in one language
  - Translate dynamically to target language
- IBM i application/OS interfaces are preserved as the underlying technologies change
  - Deploy on one technology generation
  - Run unchanged on the next
  - IBM i handles the hardware differences

# Change Need Not Be Disruptive

*No need to "rewire" applications to exploit new technology*



# Virtualization – By Design

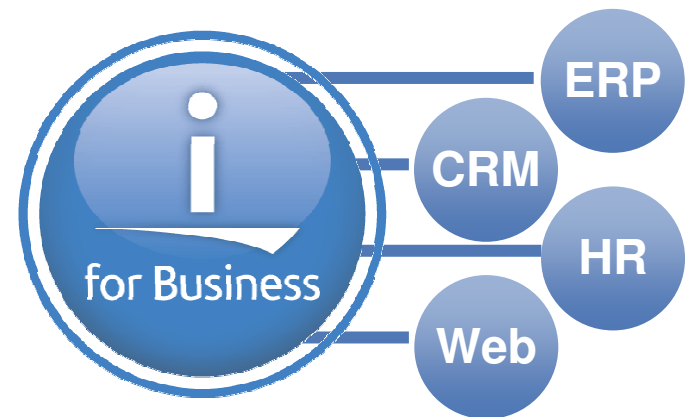
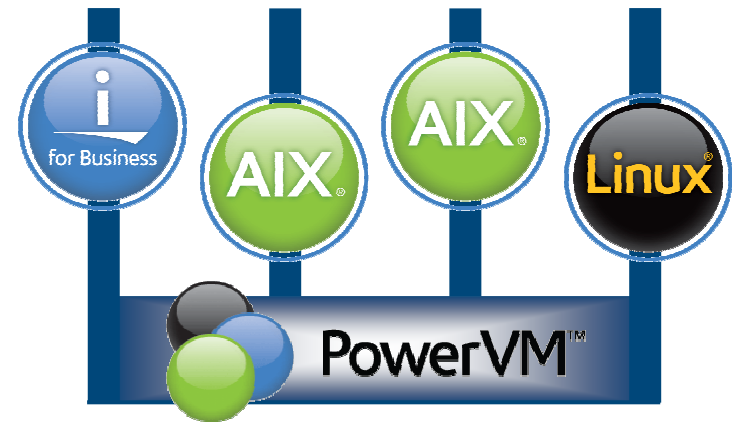




## How Do You Define Virtualization?

*Hint – With IBM i, it's about more than just virtual machines*

- Typically, virtualization is associated with virtual machines
  - PowerVM or VMware, for example
  - Multiple virtual machines on one physical server
  - System resources are allocated to meet the needs of each virtual machine environment
  - Consolidate servers, more fully utilize systems
  
- IBM i has virtualization technology built in
  - Subsystem architecture
  - Efficiently coordinates work and resources in a single system image
  - Promotes *workload* consolidation, which offers benefits beyond mere server consolidation
  - More fully utilizes a system, minimizing the requirement for virtual machines

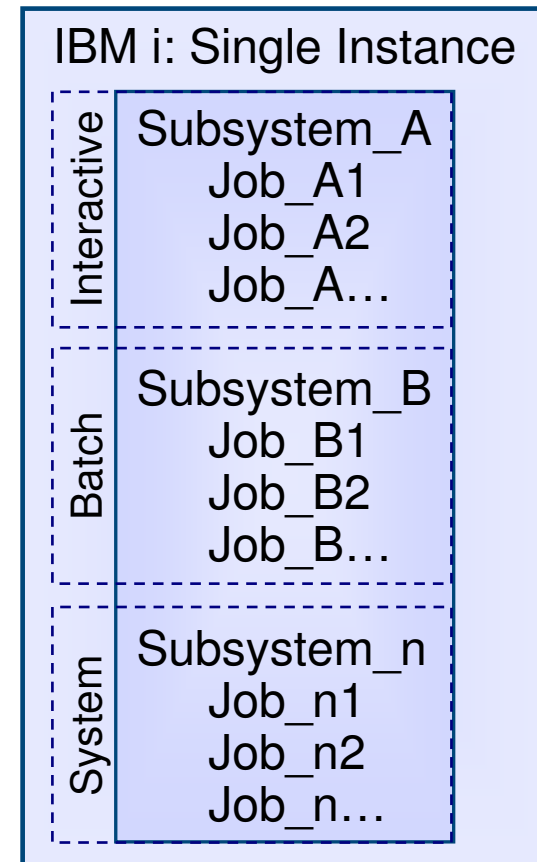


# IBM i Work Management – Virtual by Design

*The system coordinates work and resources through subsystems*



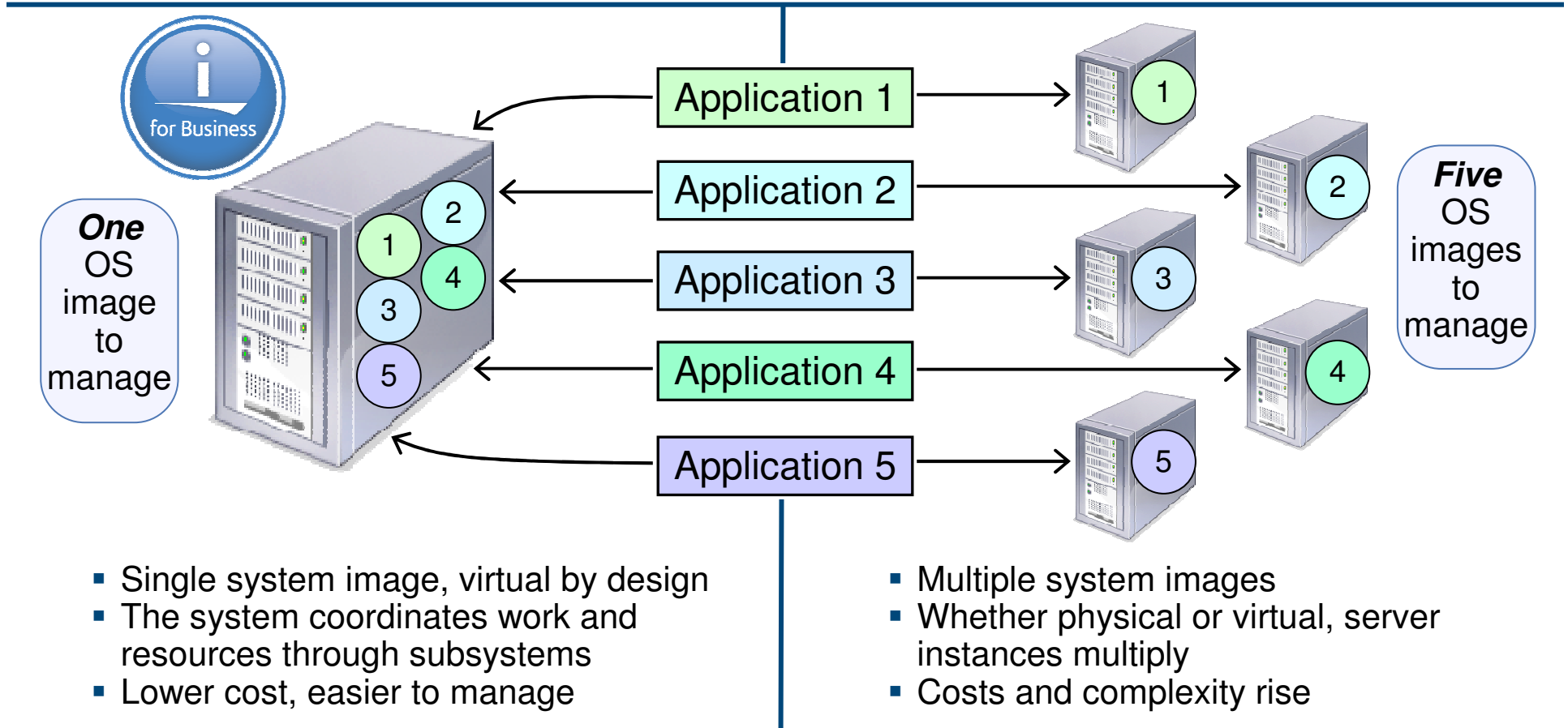
- Subsystems
  - Pre-defined operating environments
    - Memory pools are allocated
    - Job/thread limits are defined
  - Each operates independently
  - Self-tuned and/or user-managed
  - System-supplied and/or user-defined
- Advantages over Linux / Unix / Windows
  - Always there... not something to be added
  - Better vertical scalability with less effort
  - Higher system utilization by default
  - Fewer system images to manage
  - Less complexity
  - Lower cost



# Common Industry Practice for Adding Business Solutions

When deployed to IBM i

When deployed to Linux / Unix / Windows



- Single system image, virtual by design
- The system coordinates work and resources through subsystems
- Lower cost, easier to manage

- Multiple system images
- Whether physical or virtual, server instances multiply
- Costs and complexity rise

## IBM i – Virtual by Design



*“We estimate that we will achieve cost reductions of approximately 40 percent, and the other Gemeentes should be making similar savings.”*

Wilko Fokke, Gemeente Noord-Beveland

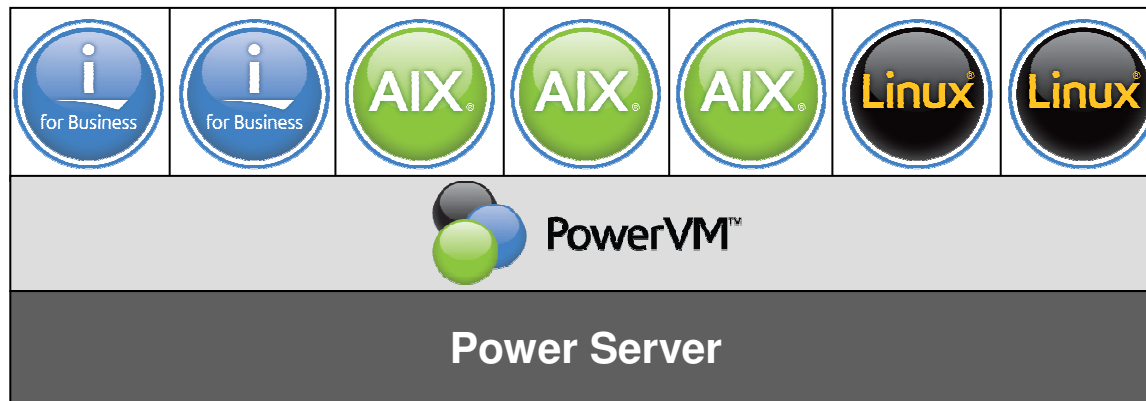


- Six Dutch municipalities cooperate to implement a shared services model
  - IT centralized in Gemeente Goes
  - Collectively, some 1200 employees serving around 110,000 citizens
  - Education, health, police & social services
- Originally, each managed its own IT
  - Three ran SAP on Windows
  - Three on Linux or Unix
- Today, all six municipalities operate SAP independently on a single, shared platform
- Multiple servers consolidated to a single Power Systems server running IBM i
  - One partition
  - Municipalities isolated in subsystems
- IBM i provides operational advantages
  - High utilization, around 90%
  - Stable operations
  - Very fast system response times
- Lower maintenance, administration and software license costs
- Future growth without disruption

# PowerVM – Virtualization Without Limits



<u>Feature</u>	<u>Benefit</u>
<ul style="list-style-type: none"> <li>Up to 10 virtual machines per core</li> </ul>	<ul style="list-style-type: none"> <li>→ Increase system utilization, reduce infrastructure costs</li> </ul>
<ul style="list-style-type: none"> <li>Supports IBM i, AIX &amp; Linux side-by-side</li> </ul>	<ul style="list-style-type: none"> <li>→ Deploy business-driven solutions</li> </ul>
<ul style="list-style-type: none"> <li>Automatic movement of processor and memory resources</li> </ul>	<ul style="list-style-type: none"> <li>→ Dynamically respond to changing business needs and workload demands</li> </ul>
<ul style="list-style-type: none"> <li>Virtualize I/O</li> </ul>	<ul style="list-style-type: none"> <li>→ More flexibility, less cost for storage and network resources / administration</li> </ul>



## PowerVM – Virtualization Without Limits



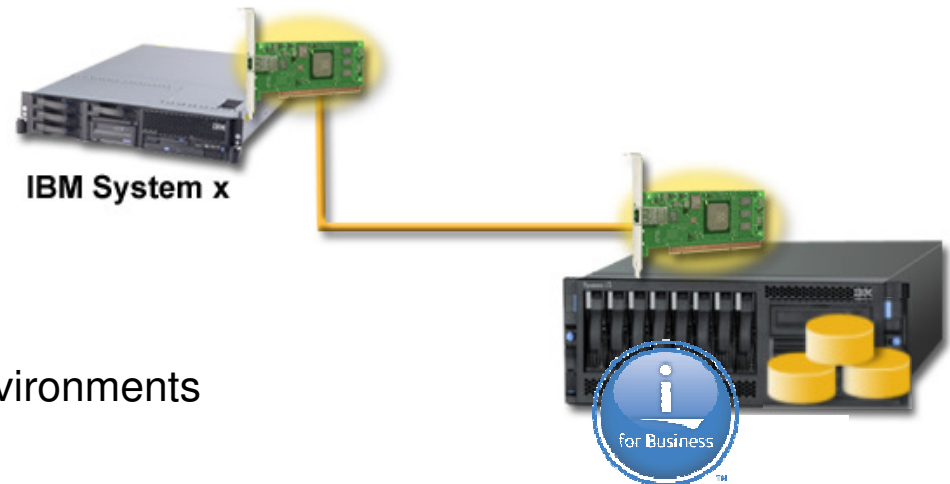
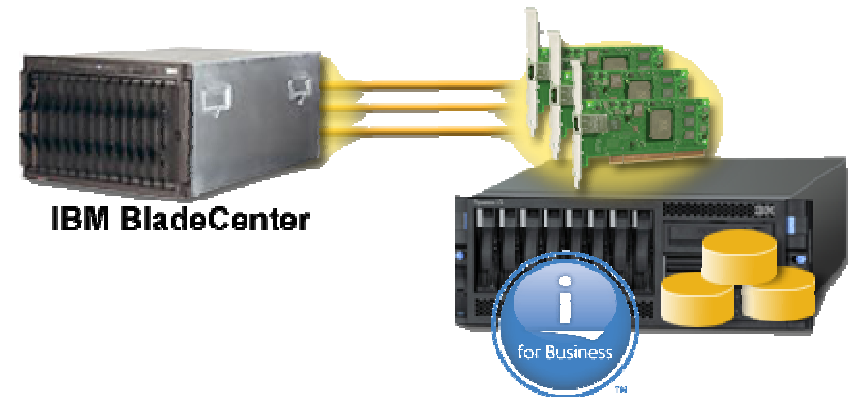
*“The new IBM infrastructure has given us the robustness and scalability that we needed to handle the massive shift in business focus and the rapid growth in user numbers. The more compact and efficient virtualized servers ... gave us plenty of data center capacity for future expansion.”*

Brad Harvey, Infrastructure Manager

- Co-Operative Bulk Handling Group Ltd. stores, markets and exports grain on behalf of its Western Australian clients
  - 5,500 grower-shareholders
  - 10 million tons average annual grain harvest
  - 820 full time employees
- Require **both IBM i and AIX** applications
- Competitive pressures due to deregulation
- Utilized PowerVM to consolidate separate IBM i and AIX environments
  - Enabled **400% increase in volumes**
  - **Cut costs**, reduced power and cooling
  - Centralized their backup process
  - Plenty of capacity for future expansion
- Avoided a costly data center expansion
- Can rapidly respond to new requirements

# IBM i Integration with BladeCenter and System x

- iSCSI connection between servers
  - x86 servers with Windows or VMware
  - Power System with IBM i
- IBM i provides...
  - Virtual storage
  - Storage management
  - Virtual Ethernet
  - Server administration GUI
- Client benefits
  - Simplified, lower cost operations
    - Consolidated backup
    - Synchronized security
    - Streamlined communications
  - Improved reliability and uptime of x86 environments
  - Cost effective options for high availability



## Why IBM i Integration with BladeCenter and System x?

It's more productive than reading and cataloging articles like these!



Servers and Storage

Backdoor ways to reboot a Windows server

Network Administrator

Tips to tier storage without system-controlled storage tiering

IT Consultant

Pros and cons of working evenings and weekends



# IBM i – Extending the Value



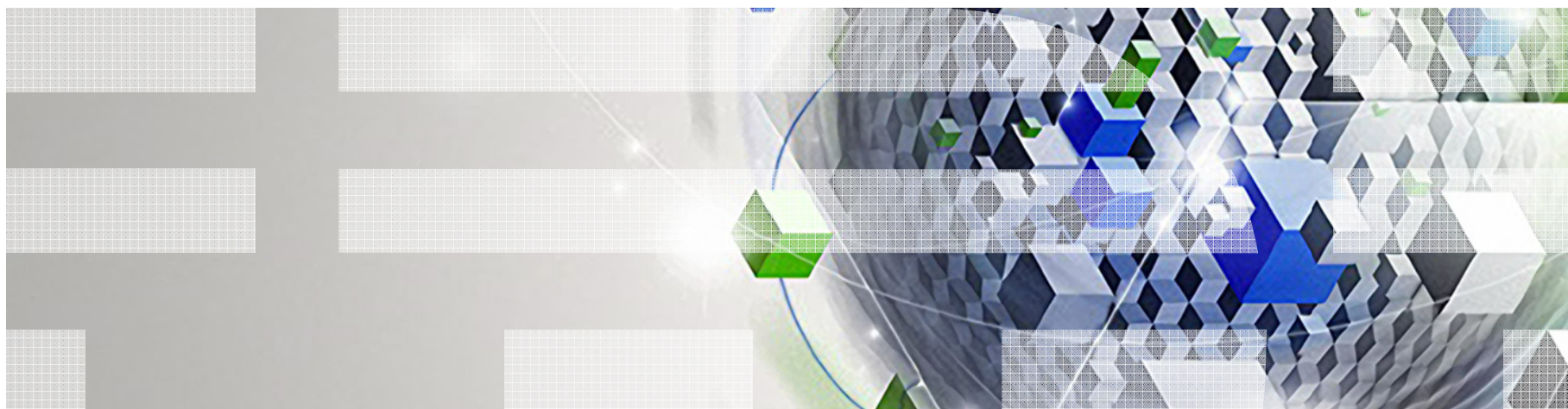
*“For years we had added a new server for each new application. Maintaining the patches and upgrades for numerous versions of operating systems was a huge challenge for our relatively small staff.”*

- Independent food service distributor
  - Based in Salt Lake City, Utah
  - 500 employees, \$400 million in sales
  - Delivering to restaurants, schools, hospitals and more across seven states
- Technology use is pervasive
  - Stock checks, price quotes, order entry and fulfillment
  - Warehousing and delivery optimization

- IBM i provides the reliability, scalability and simplified administration they need
  - High availability solution enables rapid switching between systems
  - Integration with BladeCenter
    - **17 Windows servers to 7 blades**
    - **IBM i provides storage management**
    - **Reduced server administration by 25%**
- Shift IT resources to new services, growth

*“We would much rather invest our resources in innovation than in keeping systems running.”*  
 Joe Wood, CIO

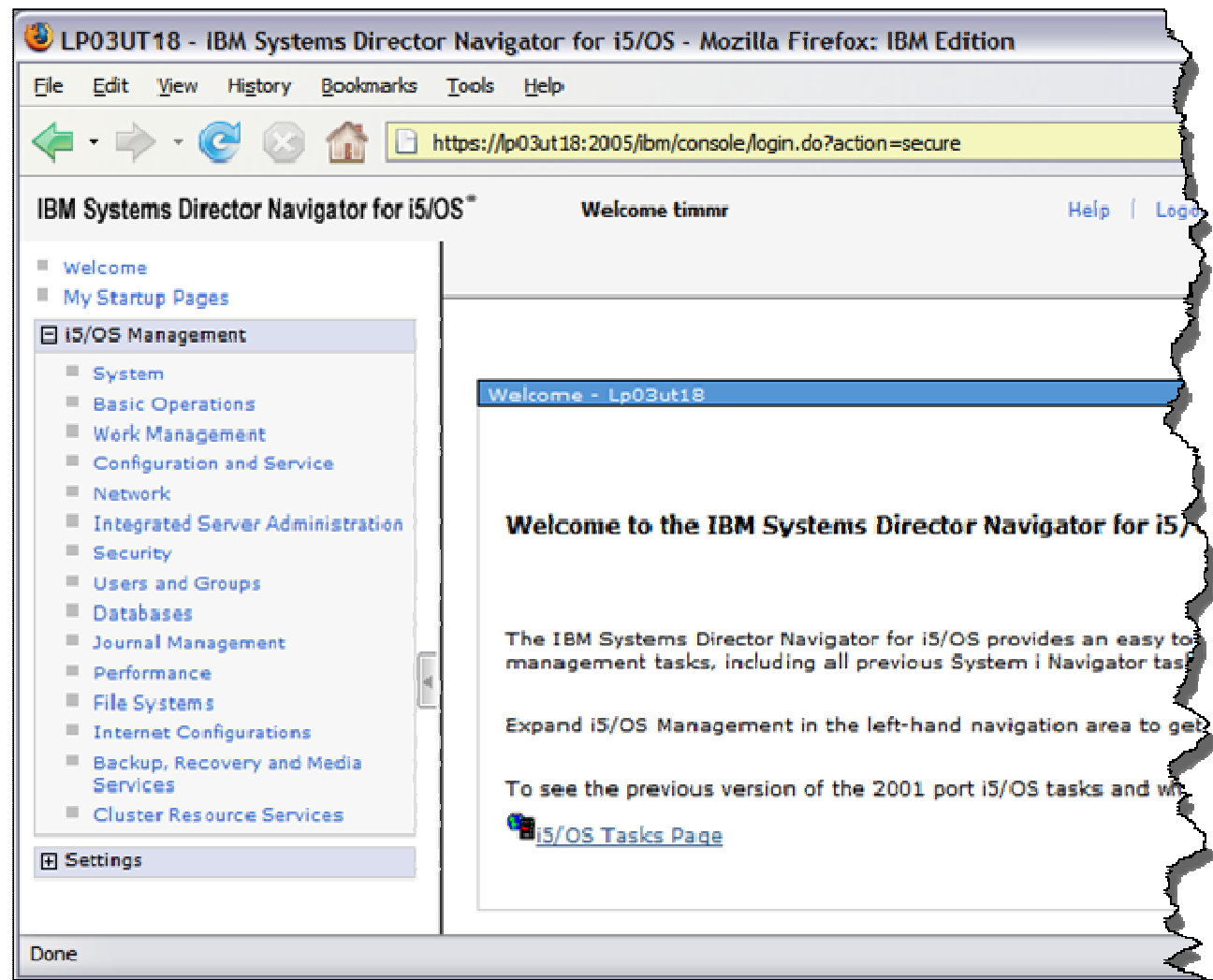
# A Fresh Look at IBM i



# Systems Director Navigator for IBM i

*Easily manage IBM i without having to purchase or install anything*

- Robust, embedded Web console
- 15 high level task categories provide the gateway to over 300 management tasks
- Manages a single, target IBM i system
- Plugs into IBM Systems Director for multi-system, heterogeneous, cross-platform management



# DB2 for i and the DB2 Family

## Information Management

- Three platform offerings
  - DB2 for z/OS
  - DB2 for Linux/Unix/Windows (LUW)
  - IBM i, in which DB2 is fully integrated
- Family compatibility is managed across offerings
  - Information Management Architecture Board
  - SQL Language Council
- Designs, algorithms and code are selectively shared



developerWorks®

DB2

SQL Reference  
for Cross-Platform Development

# DB2 for i – Integrated and optimized for business computing

*Efficiently and effectively manage a critical business asset - data*

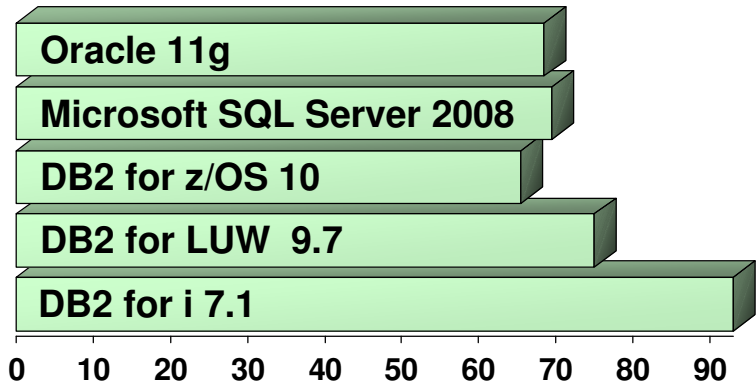
## Information Management

- Integration yields operational advantages
  - Easier to use
  - Easier to maintain
  - Autonomic
- Open... for data access and interchange
  - SQL compliant
  - XML integration
  - Easily accessible across applications/platforms
- Protected with a trusted security model
- Advanced
  - High performance transaction processing
  - Sophisticated enablers for Business Intelligence
  - Parallelism for near linear scalability
  - Adaptive query processing



# DB2 for i – Standards and Interoperability

ISO/ANSI SQL Standard – Core  
*Claims of minimum conformance*



- Core SQL contains 93 items
- 100% are implemented in DB2 for i

Access DB2 for i data from anywhere

Ways to Access DB2 for i	Typical application interfaces by platform			
	AIX	Linux	Windows	IBM i
DRDA	✓	✓	✓	✓
JDBC	✓	✓	✓	✓
ODBC		✓	✓	
.NET			✓	
OLE DB			✓	
DDM				✓
CLI				✓

In addition to SQL, there are interfaces for RPG, COBOL, C and C++

## Why Clients Value DB2 for i

*Total integration makes it easier to use and maintain, lowering the cost of operations*

### Information Management

- It's always there
  - The OS leverages the database
  - The database leverages the OS
- There's nothing to install
- Many typical DBA tasks are fully automated
  - Manage disk storage space allocation
  - Monitor table space allocations and extents
  - Review and balance indexes
  - Application rebinding
  - Maintain database integrity
  - Update database statistics
  - Synchronize OS and database security
  - Reload data following hardware/software upgrades



So... which came first?



Focus more on business innovation and growth, less on technology

## DB2 Integration Contributes to IT Efficiency

### BORDER STATES



- Large, independent electrical distributor
  - 51 locations across the U.S. and Mexico
  - Supplies the construction, industrial and utility industries
  - Provides extensive logistics and supply chain management services
- Runs ERP applications from SAP on Power Systems with IBM i

- Fully virtualized environment
  - Optimal utilization of processors, memory
  - Rapidly provision new environments
  - Minimize hardware costs
- Benefit from OS integration of DB2
  - Limited need for database administration
  - IT costs kept low
- Nearly 100% uptime

*“Another advantage of Power Systems with IBM i is that DB2 is built into the operating system. The integration is so good that the machine practically runs itself.”*

Greg Thrall, Senior VP for Operations and IT



# DB2 Web Query – Intuitive, Insightful, Extensible

*Fast, easy access to business information assets for query, reporting and analysis*

Authoring Tool  
"Intuitive"

Reports & Graphs  
"Flexible delivery"

QUARTER	QUARTER	Product Category	Quantity	Gross Profit	Revenue
1	2	Amplifiers/Preamps/Tuners	14947	\$2,431,943.00	\$6,009,873.00
		Audio Systems	14705	\$7,597,045.00	\$22,954,795.00
		CD Players and Recorders	13903	\$3,075,997.00	\$10,202,957.00
		Digital Cameras	547382	\$8,044,698.00	\$29,315,978.00
		Digital Camcorders	56543	\$844,047.00	\$1,925,717.00
		DVD Camcorders	549144	\$14,196,556.00	\$37,571,056.00
		Handheld and 2D	55407	\$794,584.00	\$36,878,114.00

Store Name	Cur Yr Revenue	Prsd Yr Revenue	Y/Y Rev
EMail	176,860,543.00	176,420,357.00	9%
Audio Export	132,446,966.00	132,616,626.00	7%
TV City	83,225,538.00	86,893,213.00	7%
TV City	75,475,526.00	89,464,727.00	19%
Video Town	63,457,243.00	67,326,844.00	17%
Electronics (Total)	26,136,163.00	31,644,443.00	16%
Comcast	64,428,679.00	35,611,497.00	179%

Dashboards  
"Insightful"

OLAP  
"Extensible"

Product Name	Quantity	Revenue	Profit	Margin
Product 1	807	\$1,017,319	\$564,219	55.6%
Product 2	272	\$1,597,443	\$225,343	14.1%
Product 3	126	\$1,817,850	\$159,995	8.8%
Product 4	1,073	\$8,484,398	\$499,328	5.9%
Product 5	890	\$1,173,310	\$419,310	35.8%
Product 6	588	\$394,202	\$178,802	45.3%
Product 7	193	\$346,687	\$39,767	11.5%
Product 8	72	\$215,118	\$11,528	5.4%
Product 9	580	\$1,308,160	\$251,160	19.2%
Product 10	109	\$63,129	\$65,291	103.4%
Product 11	178	\$1,819,682	\$349,262	19.2%
Product 12	589	\$1,476,811	\$179,121	12.2%
Product 13	177	\$8,096,433	\$69,877	0.9%
Product 14	787	\$1,619,413	\$473,433	29.3%
Product 15	376	\$296,221	\$151,421	51.1%
Product 16	370	\$1,975,280	\$227,240	11.5%
Product 17	79	\$234,391	\$227,240	97.0%
Product 18	368	\$1,835,041	\$23,421	1.3%
Product 19	114	\$1,444,086	\$266,741	18.5%
Product 20	6,003	\$11,826,772	\$189,400	1.6%
Product 21	1,427	\$1,826,772	\$4,159,120	227.7%
Product 22	3,265	\$12,880,435	\$1,323,473	10.3%
Product 23	10,789	\$61,134,816	\$1,865,136	3.0%
Product 24			\$4,719,715	7.4%



## DB2 for i – A Workhorse for Data, Reporting and Analytics



*“When you look at what DB2 Web Query can do in presenting absolute and relative metrics visually, it’s a much more powerful presentation. And these metrics are affecting our departments’ decisions every day.”*

Tom Dunnigan, CIO

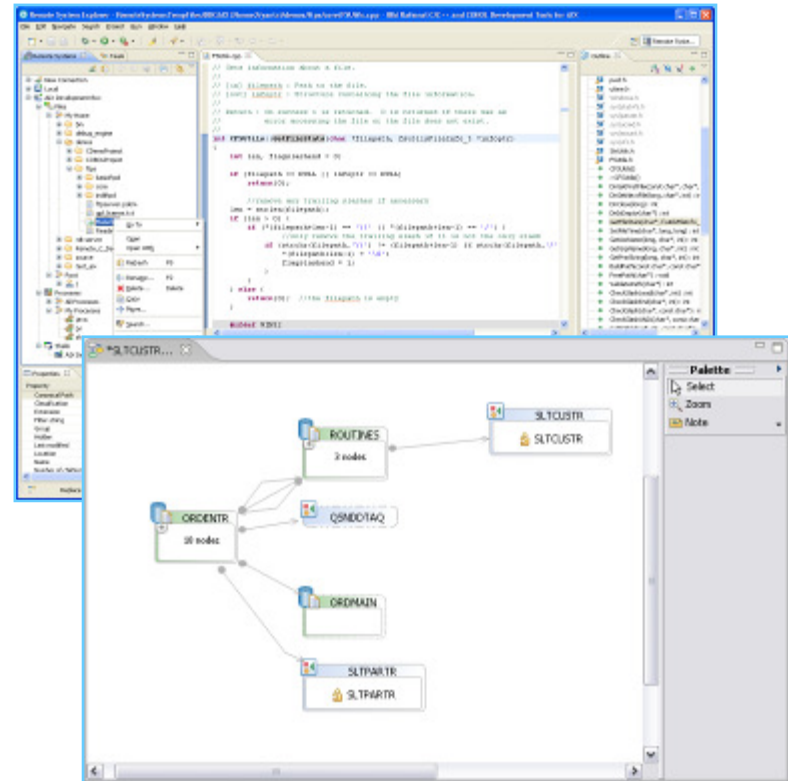
- Originates and services post secondary educational loans in South Carolina
    - Over \$7 billion in federal and private loans
    - More than 400,000 borrowers
  - IBM DB2 Web Query for i offered the right balance of compatibility and new function
- Objectives
    - Improve ability to monitor goals against federal requirements
    - Leverage existing data & reporting capability
  - Results
    - Users generate reports and obtain real-time feedback through easy-to-use dashboards
    - Better maintain government compliance
    - Improved query performance
    - Enable IT personnel to focus on critical needs rather than ad hoc reporting requests
    - Introduced new forecasting capabilities

# IBM Rational Developer for Power Systems

*Accelerate software innovation*

**Rational** software

- Extend, enhance and reuse IBM i application investments
- Familiar, Eclipse-based interface
  - Rich source editing features
  - Visual design and analysis
  - Design, develop, test and deploy collaboratively
- Easier and faster than traditional host-based tools



# Develop Traditional, Web, SOA and Web 2.0 Applications

*Low risk, high value and flexible – for sustained innovation in business*

... rich client or browser ...

Traditional in-house ...

... mobile

Host Terminal | Host Screen Preview

```

Width . . . . : 213
Column . . . . : 1
Control . . . . :
Line . . . . . :
PART_NUMBER PART_NAME SAL
-----
000001 101 Game Top - Men
000002 102 Game Shorts - Men
000003 103 Neck Top - Men
000004 104 Game Top - Women
000005 105 Game Shorts - Women
000006 106 V-Neck Top - Women
000007 107 Game Top - Kids
000008 108 Game Shorts - Kids
000009 109 V-Neck Top - Kids
000010 110 Short Sleeve Polo
000011 111 Short Sleeve Striped
000012 112 4-in Shorts - Men 20.00 Apparel - Runnin
000013 113 4-in Shorts - Women 20.00 Apparel - Runnin
000014 114 Baggy Shorts - Men 20.00 Apparel - Runnin
  
```

F3=Exit F12=Cancel F19=Left F20=Right F21=Split

MA\* a 04/021

PF1	PF2	PF3	PF4	PF5	PF6	Enter	PA1	Attn	Insert	Backtab	NewLine
PF7	PF8	PF9	PF10	PF11	PF12	Clear	PA2	SysReq	Delete	FldExit	NextPad

JK Enterprises

Products Company Links

Inventory Table Inventory Graph Part Number

Type of Stuffed Animal Available	Price
Bear, Teddy	55.0
Bear, Panda	30.0
Bear, Koala	25.0
Dog, Beagle	27.0
Dog, Dachshund	24.0
Dog, Pug	20.0
Cat, Manx	26.0
Cat, Persian	29.0
Cat, Siamese	23.0
Kangaroo	30.0
Monkey	35.0
Wallaby	34.0
Manatee	44.0
Wombat	40.0

Submit Order

Product description:

Quantity needed:

Date required:

March 2010

Sun	Mon	Tue	Wed	Thu	Fri	Sat
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

04/021

Reset Default Refresh Disconnect Turn Keyboard Off

Rational software

9:42 AM

Product Catalog Report

Part Number	Description	Price
101	Game Top - Men	30.00
102	Game Shorts - Men	30.00
103	Neck Top - Men	25.00
Category: Apparel - Men		
104	Game Top - Women	30.00
105	Game Shorts - Women	30.00
106	V-Neck Top - Women	25.00
Category: Apparel - Basket		
107	Game Top - Kids	30.00
108	Game Shorts - Kids	30.00
109	V-Neck Top - Kids	25.00
110	Short Sleeve Polo	35.00
111	Short Sleeve Striped	38.00
112	4-in Shorts - Men	20.00
113	4-in Shorts - Women	20.00
114	Baggy Shorts - Men	20.00

ENTER Submit

# Modernize Apps, Protect Knowledge Assets



*“Because Rational Application Developer is based on Eclipse, the learning curve for new development resources is greatly reduced. ...Many are already familiar with the Eclipse environment.”*

Alan Jack, Director of Technology

- IBM Business Partner
- Experienced practitioners with Rational application lifecycle management tools
- Modernized the vehicle management system software for a leading European automaker

**Rational** software

- Protected complex business rules for legal and regulatory requirements by reusing, rather than replacing, knowledge assets
- Project completed in 3 months, at less than 20% the cost of rewrite/replace
- Visually configure and order vehicles for an improved customer experience

*“What matters is the customer experience, and we have helped bring the entire system out of the back office, much closer to the customer.”*

Anthony Chadwick, CEO

# i to i

*iPhone, iPad, (or any smartphone, tablet) to IBM i*

Rational® software

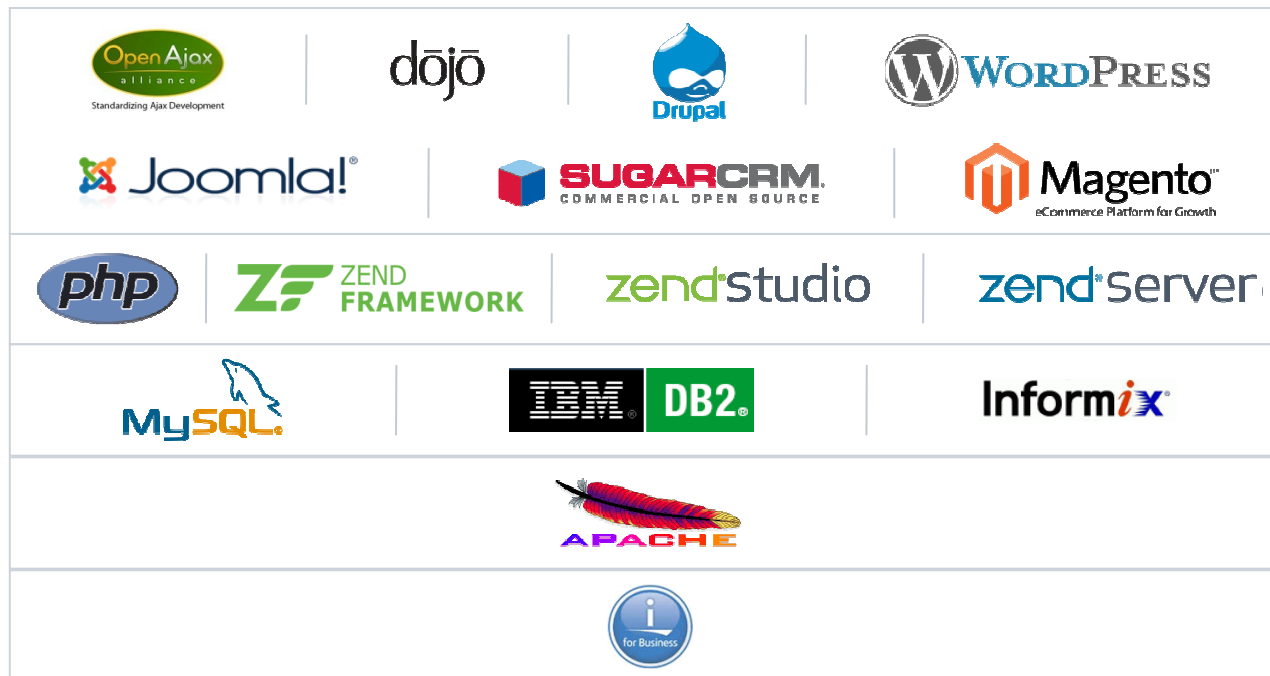
- Executive dashboards (e.g. key metrics)
- Business reporting
- Lookup (e.g. item inquiry)
- Data entry (e.g. order entry)
- Geolocation (e.g. travel/logistics)
- Systems management



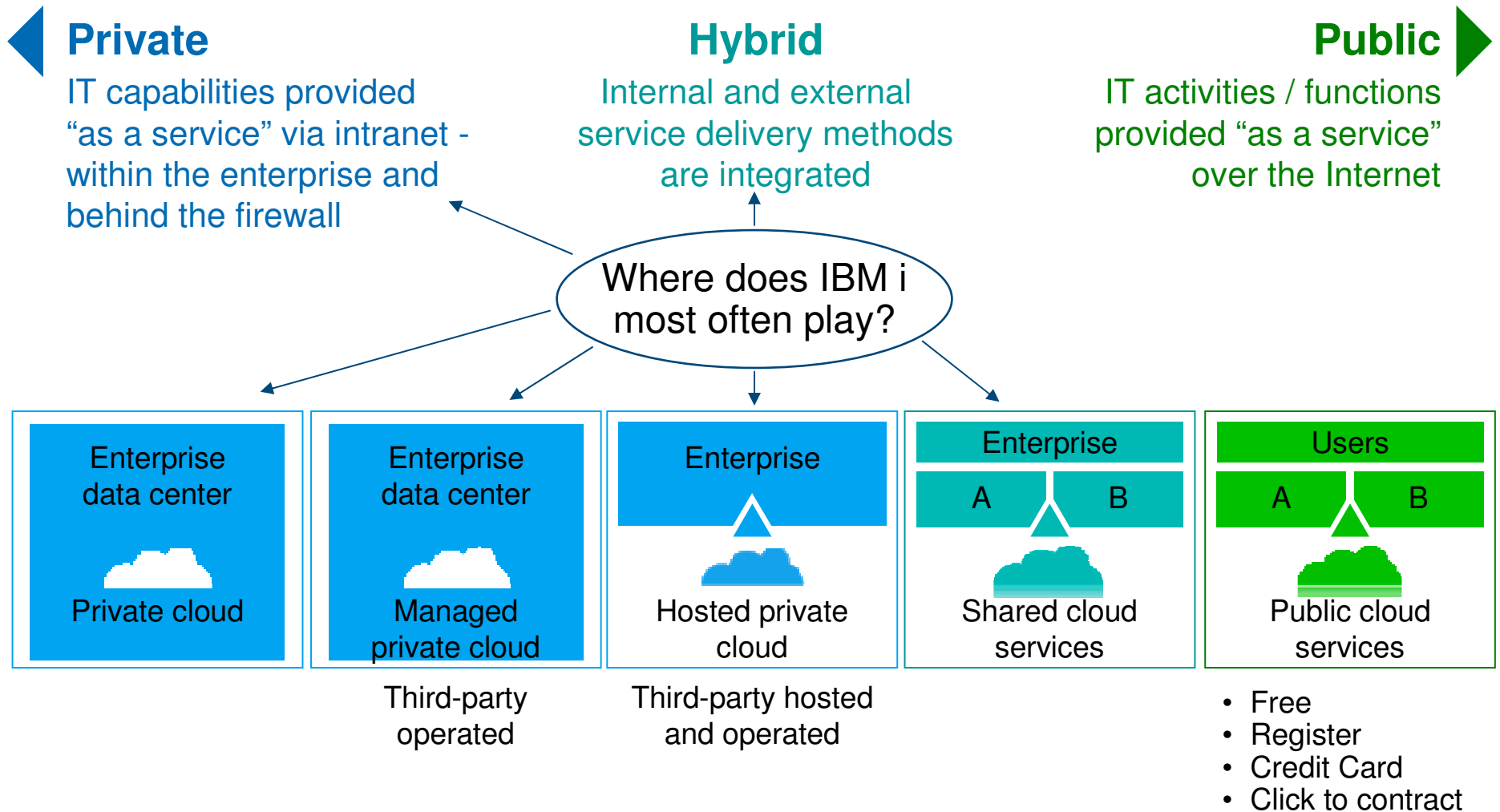
Companies can mobilize around IBM i

## IBM i Open Source Strategy

- Encourage open source vendors to port to and support IBM i (PASE)
- PHP and MySQL run on IBM i
- PASE development team is testing more open source products

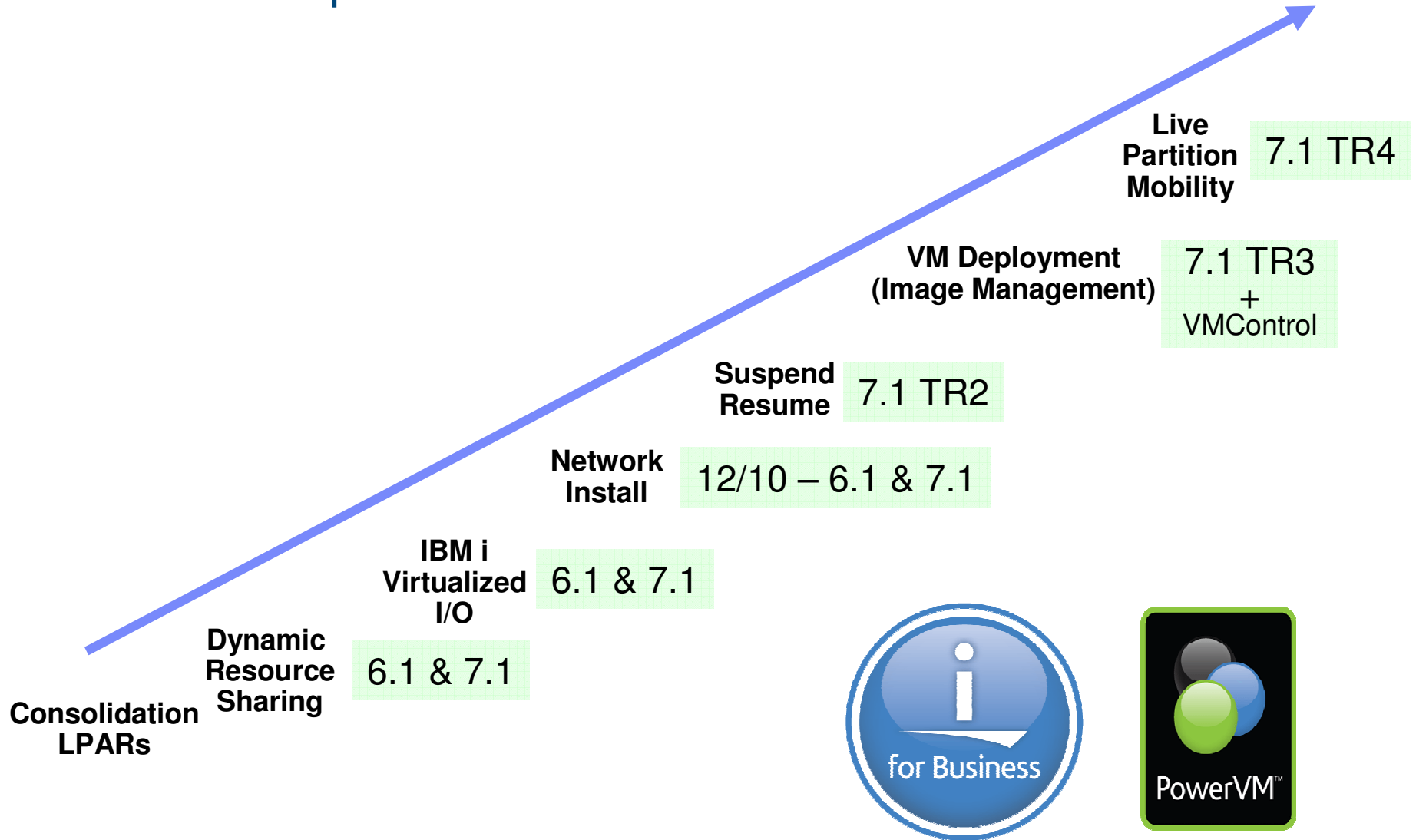


# The Spectrum of Deployment Options for Cloud Computing





# IBM i Cloud Capabilities

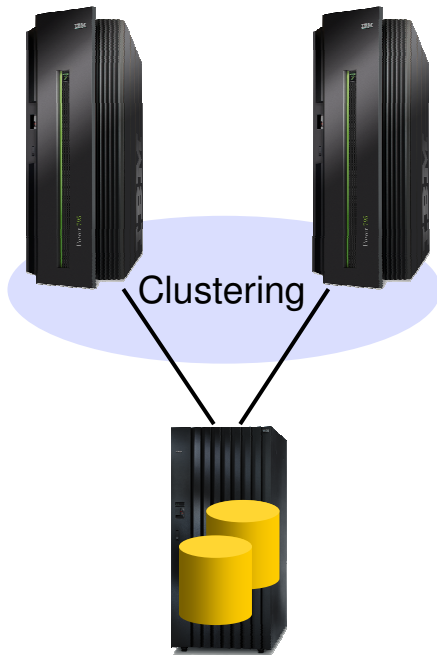


# PowerHA SystemMirror for i – Storage-based Clustering

*For when platform reliability alone is not sufficient*

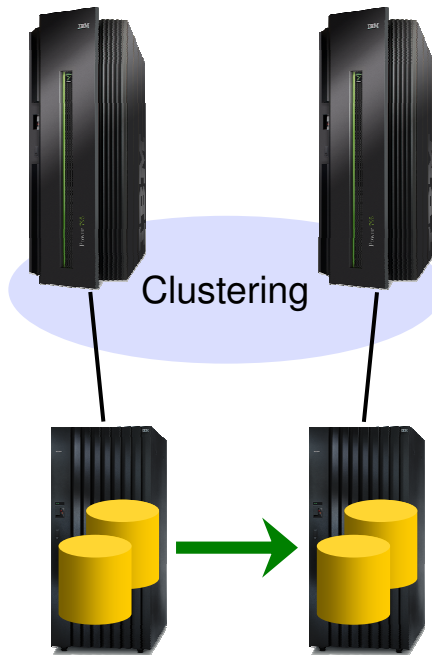


## Data Center



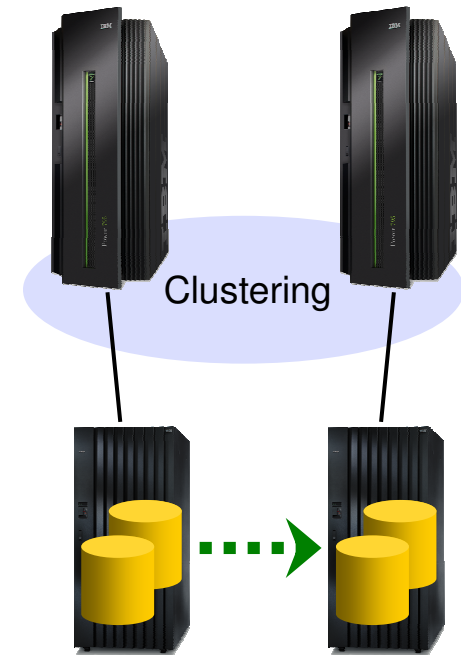
LUN level switching

## Multi-site: Campus/Metro Less than 25 mi (40 km)



Synchronous

## Multi-site: Regional



Asynchronous

Designed and intended for on-demand role swap operations

# PowerHA – Insuring Against the Cost of Downtime



*“With PowerHA on IBM i, we’ve achieved 100 percent uptime availability that can scale with our environment as we grow – without adding the cost of extra staff to maintain it.”*

- Providing solutions to the U.S. heavy-duty trucking industry
  - 18 retail locations across five states
  - 300+ employees, \$58 million sales
- Critical business systems on IBM i
  - Retail / mobile sales, order entry
  - Business Intelligence, powerful metrics
  - Inventory management

- Projected cost of downtime: \$20,000/hr
  - Lost sales, excess inventory
  - Damage to customer loyalty
- PowerHA provides synchronous mirroring
  - Available: 20 minute switch, no data loss
  - Trusted: automated test conducted weekly
  - Easy: 10 minutes/week to monitor/maintain

*“A text message is sent out to the IT team every Saturday morning when the switch is made, and a second text is sent in the afternoon once it switches back to our primary system. CATCO has a hands-off method of regularly testing availability using PowerHA for IBM i, and that’s invaluable.”*  
Jim Horn, Consultant to CATCO

# IBM i Solution Editions – Worldwide

*In partnership with industry-leading ISVs*

- Complete, integrated solutions for mid-sized businesses
- Rapid deployment
- Simplified, flexible and highly secure infrastructure for core business applications
- Minimize risk
- Maximize ROI



# IBM i Solution Editions – North America

*In partnership with industry-leading ISVs*



# IBM i Strategy and Roadmap

*Published February 1, 2011*



## IBM i

*An executive guide to IBM's strategy and roadmap for its integrated operating environment for Power Systems*

You will find that our commitment to our IBM i clients, ISVs and business partners is solid and unchanged. With our clearly defined processor and software roadmap, we are making substantial investments in the future of IBM i as an important, strategic element in the IBM systems portfolio.

Colin Parris  
Vice President, IBM Power Systems



<http://www-03.ibm.com/systems/power/software/i/powerofi/index.html>

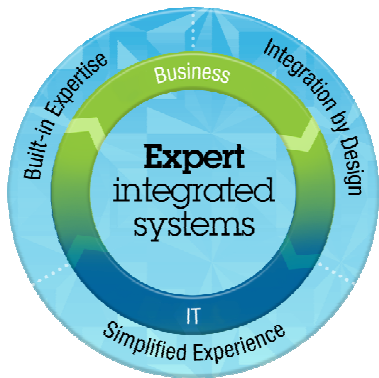
# Conversation Starters



[bit.ly/IBMiBigData](http://bit.ly/IBMiBigData)



[bit.ly/IBMiDesignedForBusiness11](http://bit.ly/IBMiDesignedForBusiness11)



[ibm.com/PureSystems](http://ibm.com/PureSystems)

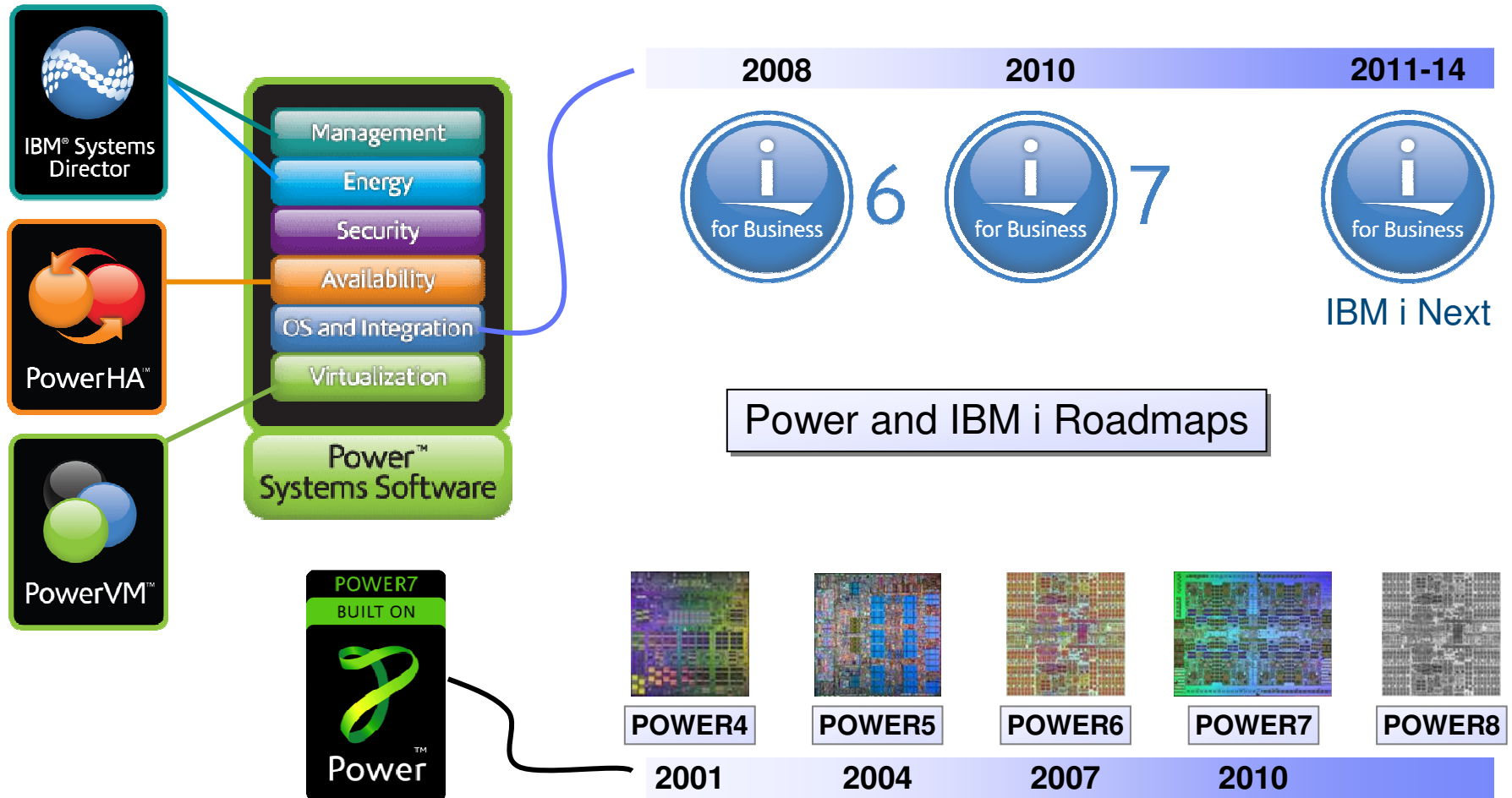


[ibm.com/Watson](http://ibm.com/Watson)



[bit.ly/IBMiWorkloadOptimized](http://bit.ly/IBMiWorkloadOptimized)

# The Future of IBM i





## Why i?

*Setting a higher standard for business computing*

- Business computing is its purpose
- It is the paragon for integration
- It is trusted
- It is price and cost competitive for the purpose it serves
- It is well equipped to handle the fast pace of change in business and technology



## Information Sources

### Consultant Reports

- ITG Management Brief: Value Proposition for IBM Power Systems Servers and IBM i - Minimizing Costs and Risks for Midsize Businesses; January 2011
  - Executive summary: <http://www-03.ibm.com/systems/power/software/i/strategy.html>
  - Full report: <http://public.dhe.ibm.com/common/ssi/ecm/en/pol03062usen/POL03062USEN.PDF>
- ITG Status Report: Value Proposition for IBM i Solution Edition for JD Edwards for EnterpriseOne Deployment: <http://www-03.ibm.com/support/techdocs/atmastr.nsf/WebIndex/WP101732>

### Case Studies

- FedEx Ground: [http://www-01.ibm.com/software/success/cssdb.nsf/CS/JSTS-6ZJP8D?OpenDocument&Site=powersystems&cty=en\\_us](http://www-01.ibm.com/software/success/cssdb.nsf/CS/JSTS-6ZJP8D?OpenDocument&Site=powersystems&cty=en_us)
- Svendsen: <http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=PM&subtype=AB&htmlfid=SPC03087DEEN>
- 7-Eleven: [http://www-01.ibm.com/software/success/cssdb.nsf/CS/STRD-7M9J7A?OpenDocument&Site=gicss67sap&cty=en\\_us](http://www-01.ibm.com/software/success/cssdb.nsf/CS/STRD-7M9J7A?OpenDocument&Site=gicss67sap&cty=en_us)
- North American Construction Group: <http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=PM&subtype=AB&htmlfid=ISC03060CAEN>
- Associated Bank: [http://www-01.ibm.com/software/success/cssdb.nsf/cs/DLAS-7X9R7Y?OpenDocument&Site=eservermain&cty=en\\_us](http://www-01.ibm.com/software/success/cssdb.nsf/cs/DLAS-7X9R7Y?OpenDocument&Site=eservermain&cty=en_us)
- Geemente Goes: [http://www-01.ibm.com/software/success/cssdb.nsf/cs/STRD-7TJMDN?OpenDocument&Site=gicss67sap&cty=en\\_us](http://www-01.ibm.com/software/success/cssdb.nsf/cs/STRD-7TJMDN?OpenDocument&Site=gicss67sap&cty=en_us)
- CBH Group: <http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=PM&subtype=AB&htmlfid=DIC03002USEN>
- Nicholas & Co.: [http://www-01.ibm.com/software/success/cssdb.nsf/CS/LMCM-7JUP5V?OpenDocument&Site=default&cty=en\\_us](http://www-01.ibm.com/software/success/cssdb.nsf/CS/LMCM-7JUP5V?OpenDocument&Site=default&cty=en_us)
- Border States: [http://www-01.ibm.com/software/success/cssdb.nsf/CS/STRD-7KUMV2?OpenDocument&Site=dmmain&cty=en\\_us](http://www-01.ibm.com/software/success/cssdb.nsf/CS/STRD-7KUMV2?OpenDocument&Site=dmmain&cty=en_us)
- South Carolina Student Loan: [http://www-01.ibm.com/software/success/cssdb.nsf/CS/ARBN-7UEK94?OpenDocument&Site=default&cty=en\\_us](http://www-01.ibm.com/software/success/cssdb.nsf/CS/ARBN-7UEK94?OpenDocument&Site=default&cty=en_us)
- Oxford International: [http://www-01.ibm.com/software/success/cssdb.nsf/CS/WJBN-7ANPAA?OpenDocument&Site=default&cty=en\\_us](http://www-01.ibm.com/software/success/cssdb.nsf/CS/WJBN-7ANPAA?OpenDocument&Site=default&cty=en_us)
- CATCO Parts & Service: <http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=PM&subtype=AB&htmlfid=POC03008USEN>
- Ostonor: [http://www-01.ibm.com/software/success/cssdb.nsf/CS/DLAS-7SAHAK?OpenDocument&Site=powersystems&cty=en\\_us](http://www-01.ibm.com/software/success/cssdb.nsf/CS/DLAS-7SAHAK?OpenDocument&Site=powersystems&cty=en_us)

### IBM sites

- IBM i Strategy and Roadmap: <http://www-03.ibm.com/systems/power/software/i/strategy.html>
- IBM i Solution Editions: <http://www-03.ibm.com/systems/power/hardware/editions/solutions.html>
- Enterprise Modernization Sandbox: [http://www.ibm.com/developerworks/downloads/emsandbox\\_power/index.html](http://www.ibm.com/developerworks/downloads/emsandbox_power/index.html)