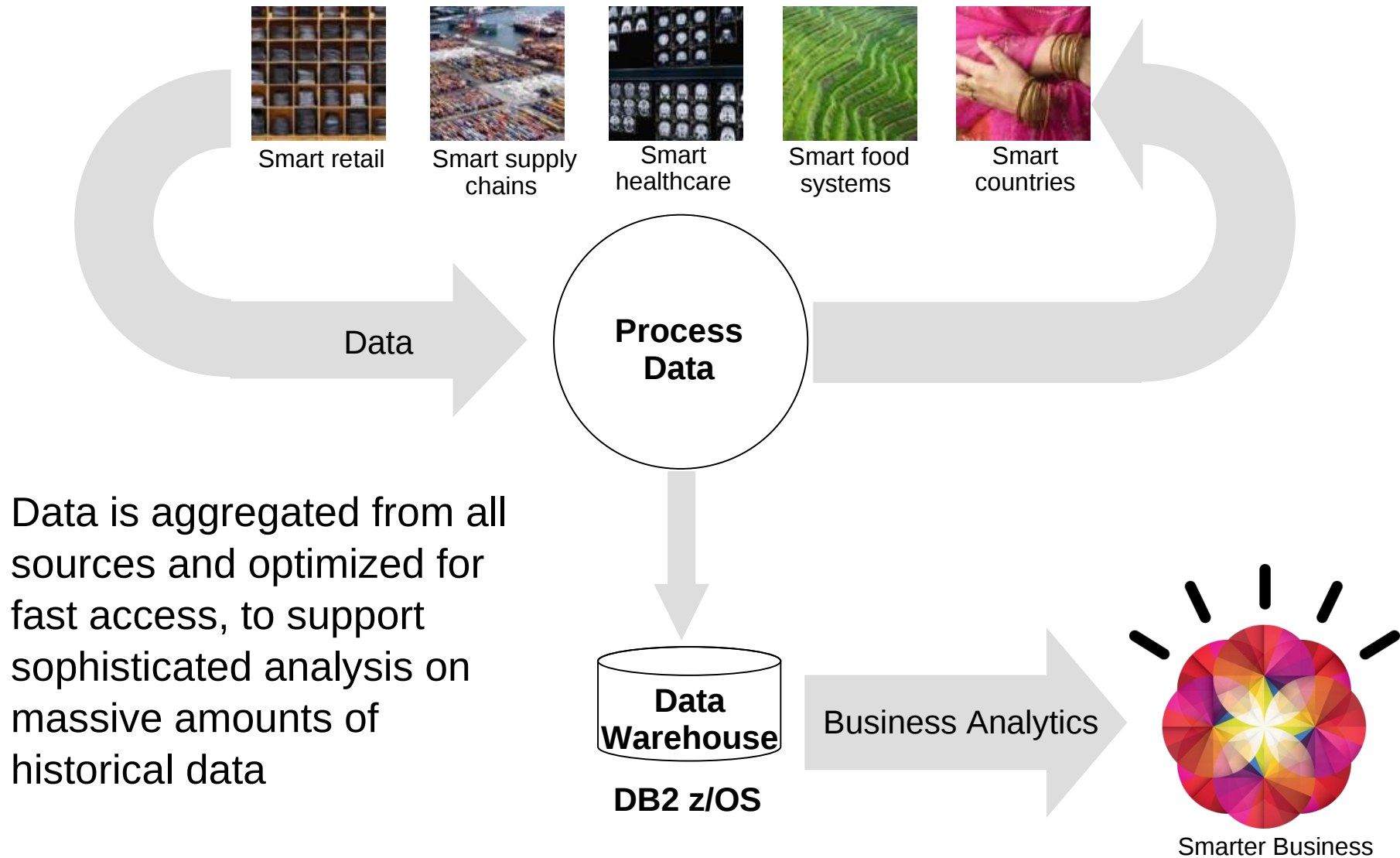




zEnterprise – The Ideal Platform For Smarter Computing

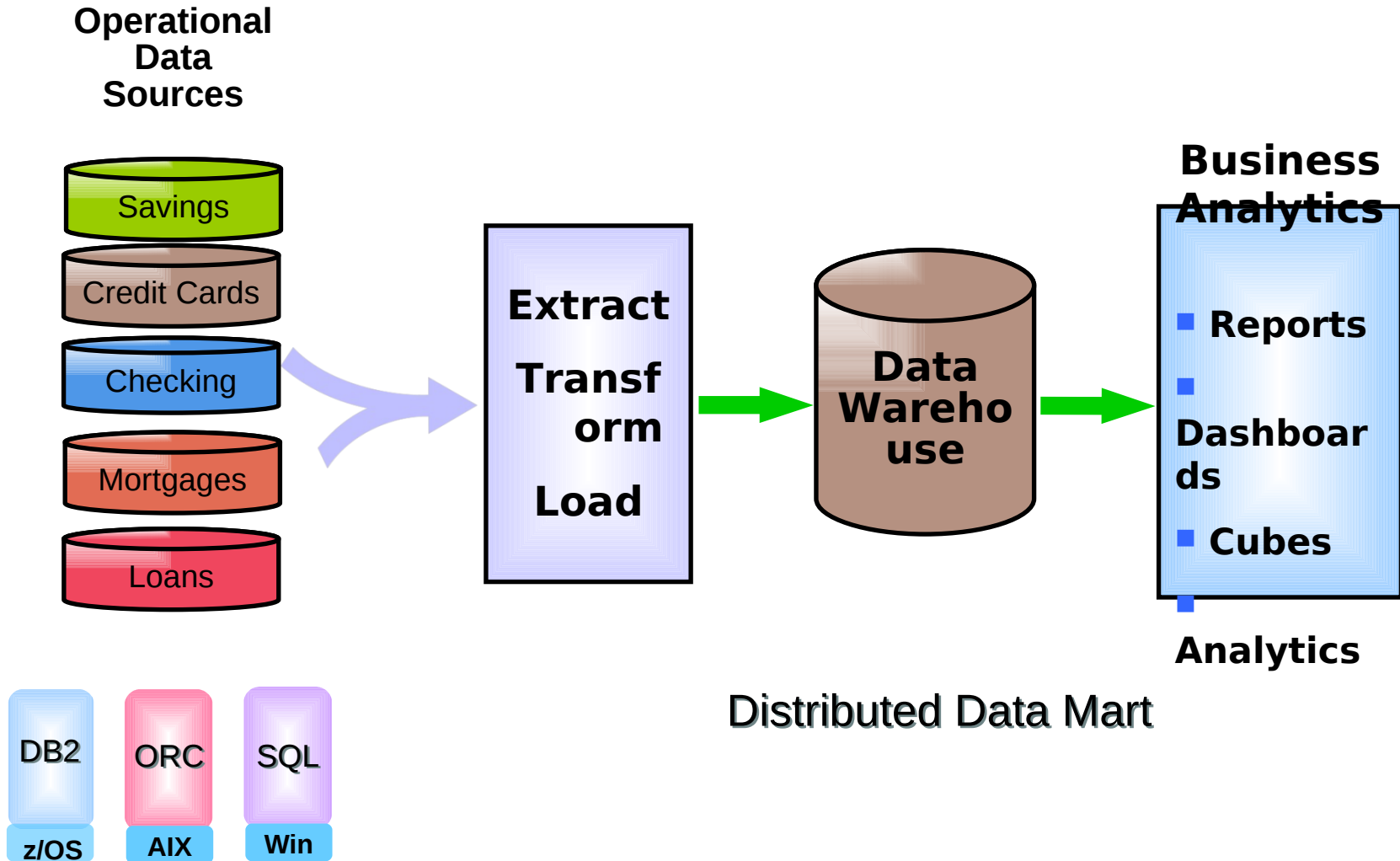
Leveraging Data To
Optimize Business

Business Analytics Are A Source Of New Business Intelligence



Data is aggregated from all sources and optimized for fast access, to support sophisticated analysis on massive amounts of historical data

Typical Business Analytics Data Flow



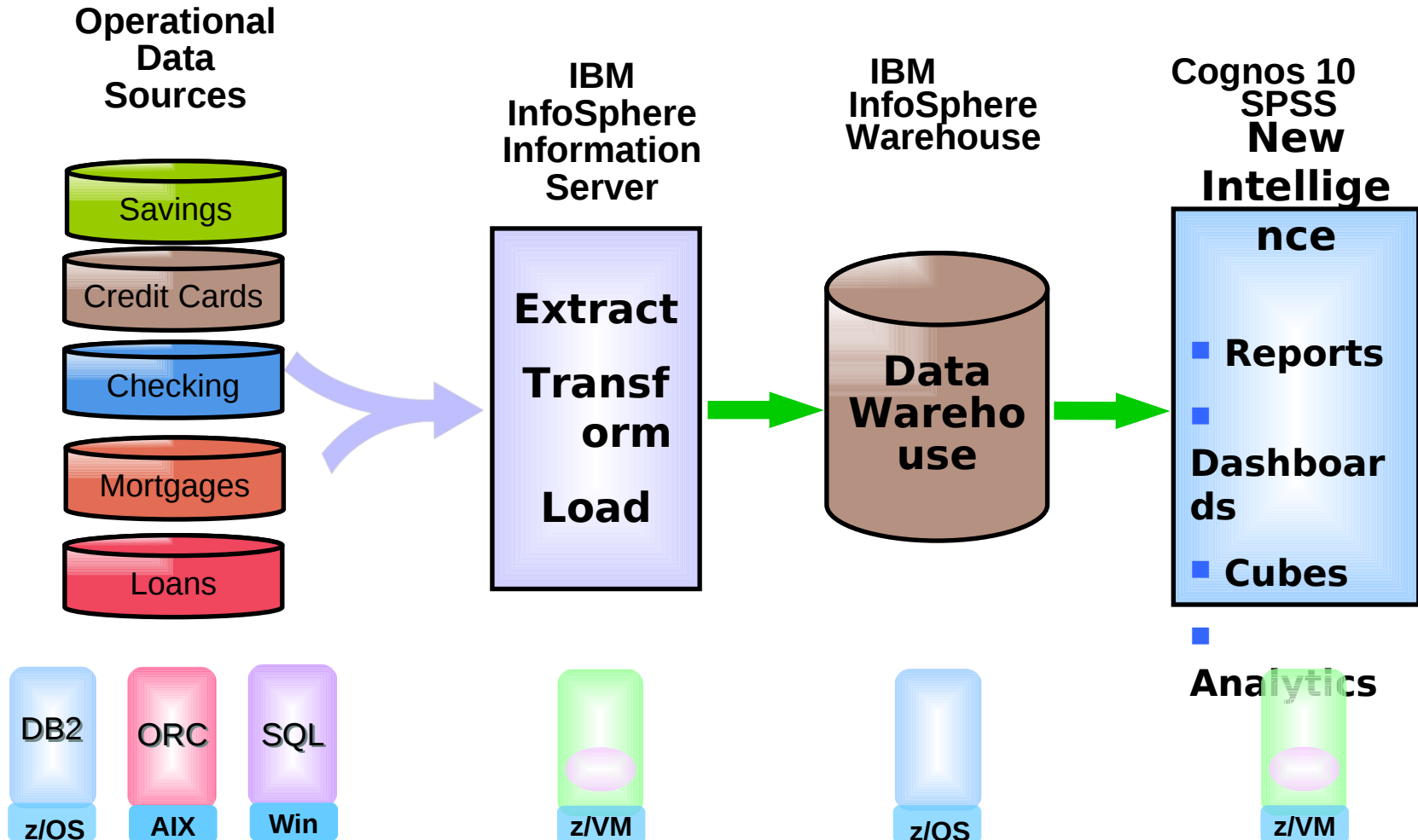
System z Is The Foundation For Data

- 60-70% of corporate information resides on System z*
- Copying data from System z to another platform for data warehouses or data marts
 - ▶ Is costly
 - ▶ Can be inefficient
 - ▶ Takes longer to update
 - ▶ May create data disparities
 - ▶ Introduces security concerns
- System z offers a fully integrated, holistic solution from operational data to business analytics



* Source <http://www.ibmssystemsmag.com/mainframe/trends/whatsnew/The-Mainframe-at-a-Crossroads/>

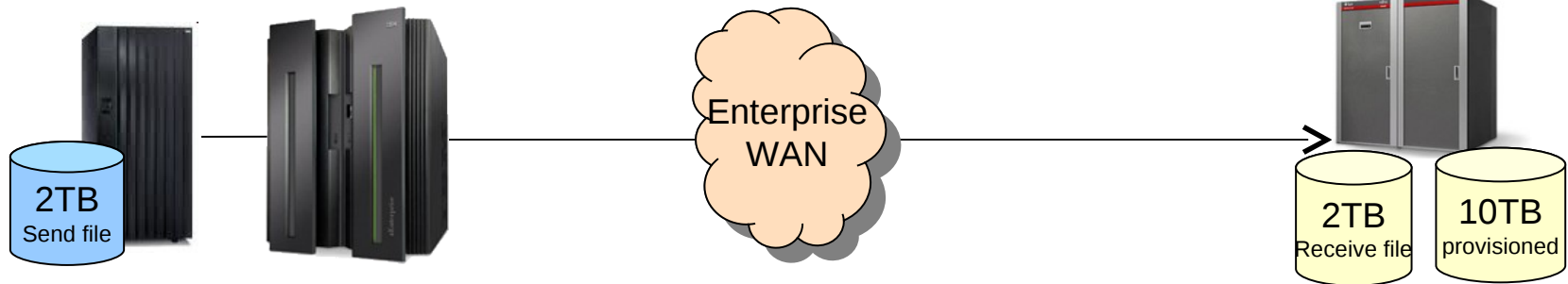
zEnterprise Holistic Solution For Business Analytics



Duplicating Data Off The Mainframe Is Costly

The Cost Of Duplicating A 2TB Data Mart

Data Mart Server



Cost of storage - send file \$12.33/GB x 2048 GB	\$25,252
---	----------

Storage acquisition cost **\$246,436**

Cost of storage - receive file \$18/GB x 2048 GB	\$36,864
Cost of storage - data mart \$18/GB x 10,240 GB	\$184,320

System z Storage Admin \$5.88/GB/yr x 2048 GB	\$12,042
--	----------

Annual storage admin cost **\$122,511**

Distributed Storage Admin \$8.99/GB/yr x 12,288 GB	\$110,469
---	-----------

System z CPU extract \$1.38/GB x 2048 GB	\$2,826
System z CPU cost FTP \$0.58/GB x 2048 GB	\$1,188
System z extract labor \$9.33/job	\$9
System z FTP labor \$5.88/job	\$6

On Premises Network \$0.0024/GB x 2048 GB x 4 hops	\$20
Off Premises Network \$0.29/GB x 2048 GB x 2 hops	\$1,188

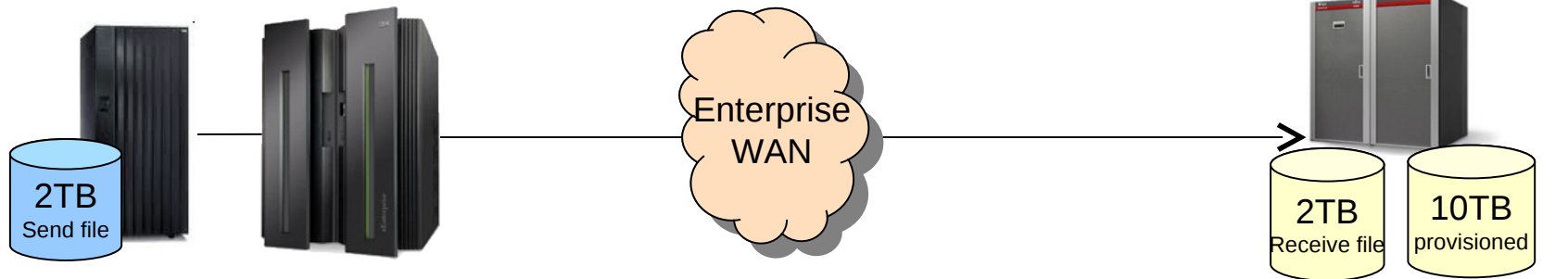
Cost per Transfer **\$6,146**

Distributed CPU cost load \$0.39/GB x 2048 GB	\$799
Distributed CPU cost FTP \$0.05/GB x 2048 GB	\$96
Distributed load labor \$14.00/job	\$14

Data Mart analysis costs not included
Based on IBM internal study

Transfer Costs Add Up Over One Year

The Cost Of Duplicating A 2TB Data Mart



Cost of storage - send file \$12.33/GB x 2048 GB	\$25,252
---	----------

Storage acquisition cost **\$246,436**

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Annual storage admin cost **\$122,511**

Distributed Storage Admin \$8.99/GB/yr x 12,288 GB	\$110,469
---	-----------

System z CPU extract \$1.38/GB x 2048 GB x 365	\$1.03M
System z CPU cost FTP \$0.58/GB x 2048 GB x 365	\$434K
System z extract labor \$9.33/job x 365	\$3.3K
System z FTP labor \$5.88/job x 365	\$2.2K

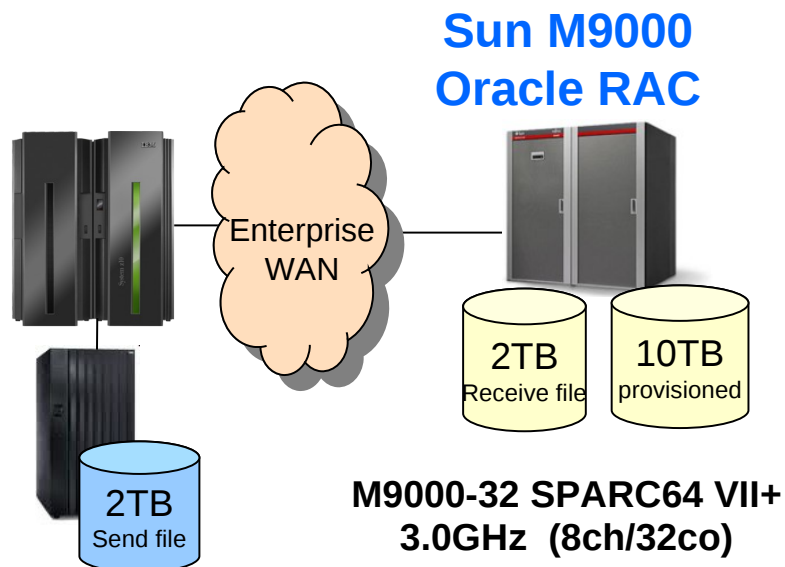
On Premises Network \$0.0024/GB x 2048 GB x 4 hops x 365	\$7.1K
Off Premises Network \$0.29/GB x 2048 GB x 2 hops x 365	\$434K

Annual Transfer Costs **\$2,243,290**

Distributed CPU cost load \$0.39/GB x 2048 GB x 365	\$292K
Distributed CPU cost FTP \$0.05/GB x 2048 GB x 365	\$35K
Distributed load labor \$14.00/job x 365	\$5.1K

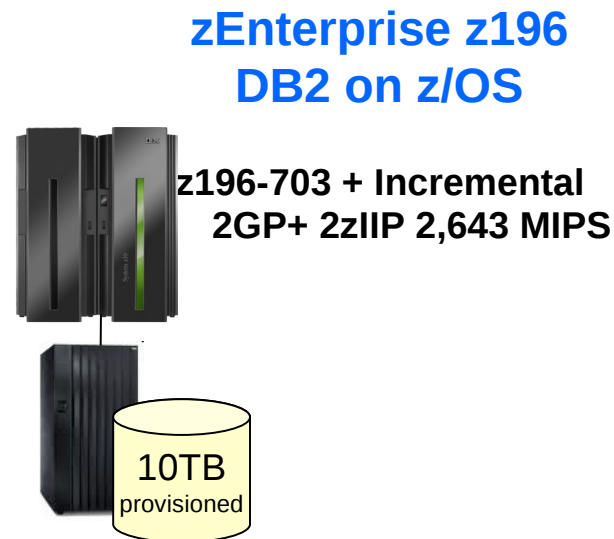
Data Mart analysis costs not included
Based on IBM internal study

Co-locating Data Mart On z196 Is A More Cost Effective Solution



Total (3yr TCA) \$11.65M

Hardware	\$1,784,776
Software	\$2,522,720
Storage	\$184,320
FTP File Storage	\$62,116
Storage Admin	\$367,533
Transfer Cost	\$6,729,870



Total (3yr TCA) \$1.98M

Hardware	\$352,405
Software	\$1,325,713
Storage	\$117,505
Storage Admin	\$180,630

Equivalent Performance = 59,782 QpH
Source: IBM Internal Study. Results may vary based on customer workload profiles/characteristics.

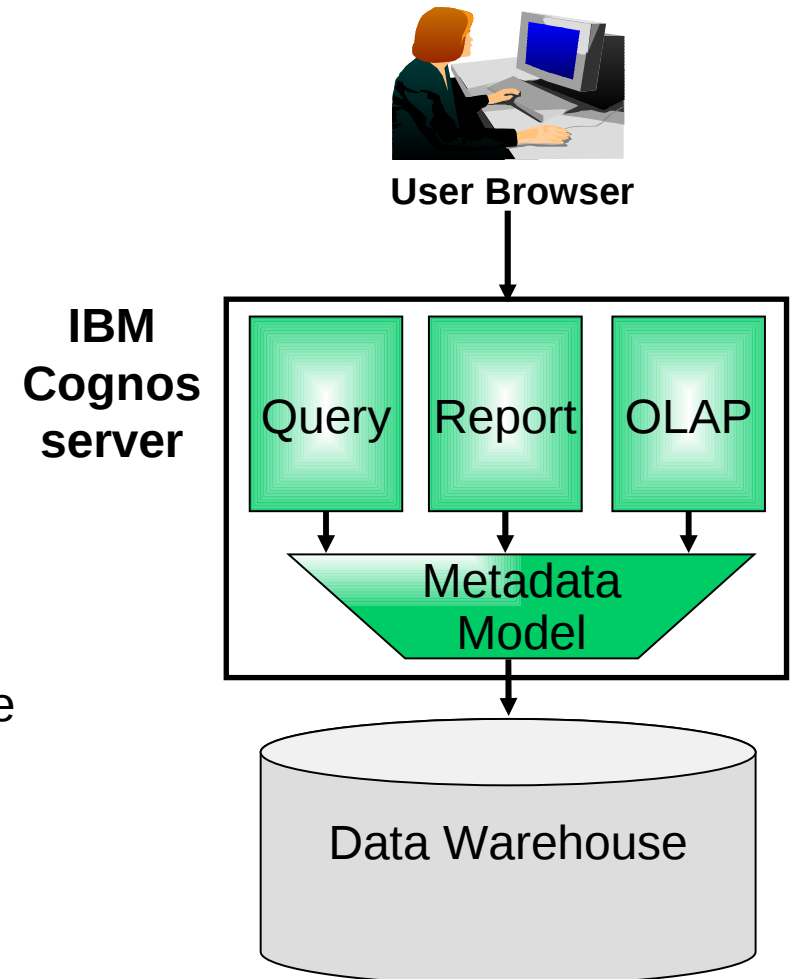
IBM Cognos Is An Integrated Platform For Smart Analytics

■ People-centric

- ▶ Server based business analytics accessed via browser
- ▶ Consistent user interface for different analytic activities
- ▶ Reuse new intelligence assets
- ▶ Built-in collaboration and social networking
- ▶ Threaded discussions, activities, and notifications

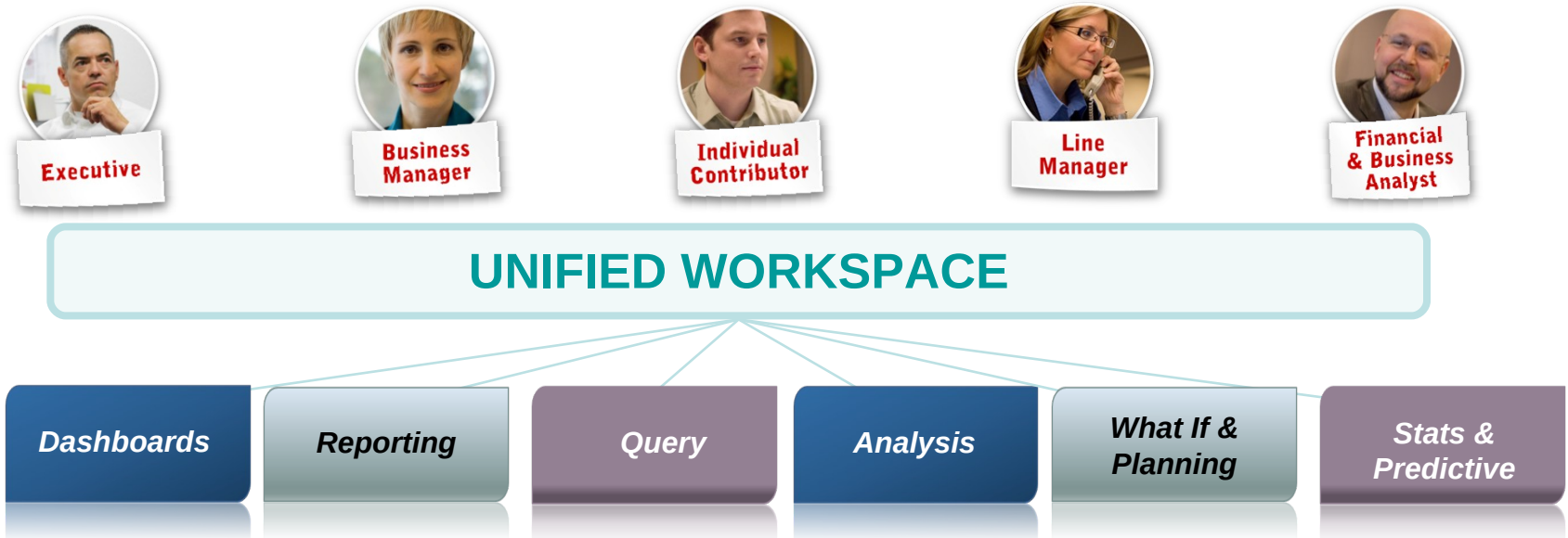
■ Easy to deploy and manage

- ▶ Implemented in Java, runs on WebSphere
- ▶ Scales up and out across heterogeneous hardware and operating systems
- ▶ Runs on Linux on System z

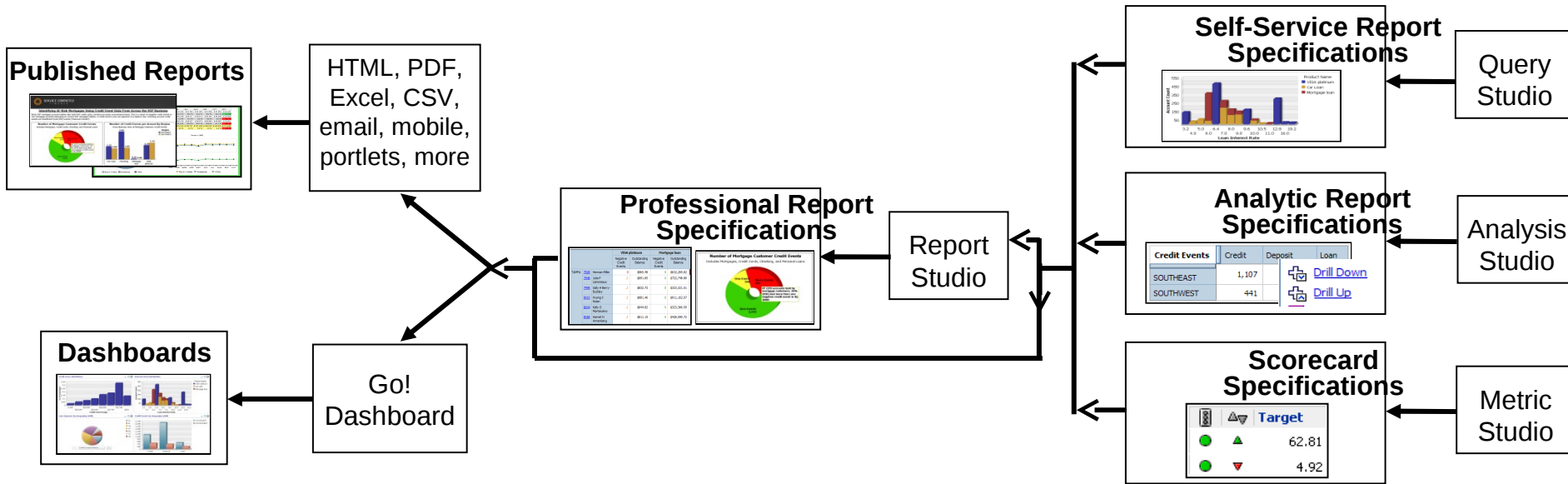


IBM Cognos Provides A Unified Workspace

- All activities from one place, without jumping to different interfaces
 - ▶ Dashboards for summary overview
 - ▶ Reports for tracking progress
 - ▶ Ad hoc queries and drill down for analysis and what if scenarios
 - ▶ Statistics and predictive analysis
- Progressive interaction – Interact and analyze information based on role
- Form decision networks for collaborative business analytics



Reuse Prior Assets In New Deliverables



- Author once, consume anywhere
- All analytic assets share a common metadata model and a common multilingual report specification
- Ensures consistent information and enables reuse across platform functions

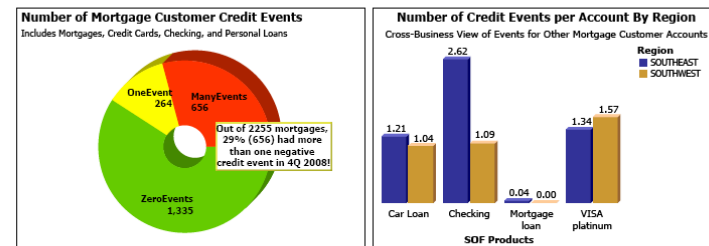
DEMO: Use Cognos To Identify New Business Insights From The Data Warehouse

1. Show report generated in Cognos Report Studio in PDF format
2. Report identifies high-risk mortgages by looking at negative credit events in other customer accounts (CC, Checking, etc...)
3. Report uses both structured and unstructured data (link to mortgage data stored in FileNet)
4. Use Go! Dashboard to monitor the business operations



Identifying At-Risk Mortgages Using Credit Event Data from Across the SOF Business

Many SOF mortgage account holders also hold SOF credit cards, checking accounts, and personal loans. This is a report of negative credit events in non-mortgage accounts belonging to current SOF mortgage holders. A credit event is any non-payment of a balance due. Checking account credit events are Insufficient Fund (ISF) events ("bounced checks").



4Q 2008 Mortgage Customer Detail by Region and State

Colors: Credit events numbers are color coded. Accounts with greater than 8 events are shown in **block red**

Links: Customer ID link opens customer's mortgage document folder using FileNet Workplace XT. Authentication required.

Region: SOUTHEAST

State: FL

		Checking		VISA platinum		Car Loan		Mortgage loan		Summary	
		Negative Credit Events	Current Balance	Negative Credit Events	Current Balance	Negative Credit Events	Current Balance	Negative Credit Events	Current Balance	Negative Credit Events	Current Balance
TAMPA	7202 Herman Miller	11	\$1,433.86	3	\$865.46	3	\$24,465.55	0	\$232,285.82	17	\$259,050.71
	7928	11	\$1,433.86	3	\$865.46	3	\$24,465.55	0	\$232,285.82	17	\$259,050.71
	7202 Julia P Lamoreaux	4	\$1,251.57	2	\$891.85	2	\$52,120.40	0	\$722,748.89	8	\$777,012.71
	7948	4	\$1,251.57	2	\$891.85	2	\$52,120.40	0	\$722,748.89	8	\$777,012.71
	8044 Kelly O Montecalvo	4	\$1,127.24	2	\$844.82	2	\$74,670.00	0	\$323,366.59	8	\$400,008.65
	8044	4	\$1,127.24	2	\$844.82	2	\$74,670.00	0	\$323,366.59	8	\$400,008.65
8008	Shad I Davis	4	\$780.11	2	\$830.11	2	\$43,230.00	0	\$919,073.43	8	\$963,913.65

At risk customers are identified

IBM SPSS Enables Customers To Realize Data-Driven Events And Drive Better Business Outcomes

Capture

Data Collection delivers an accurate view of customer attitudes and opinions

IBM SPSS Data Collection

Predict

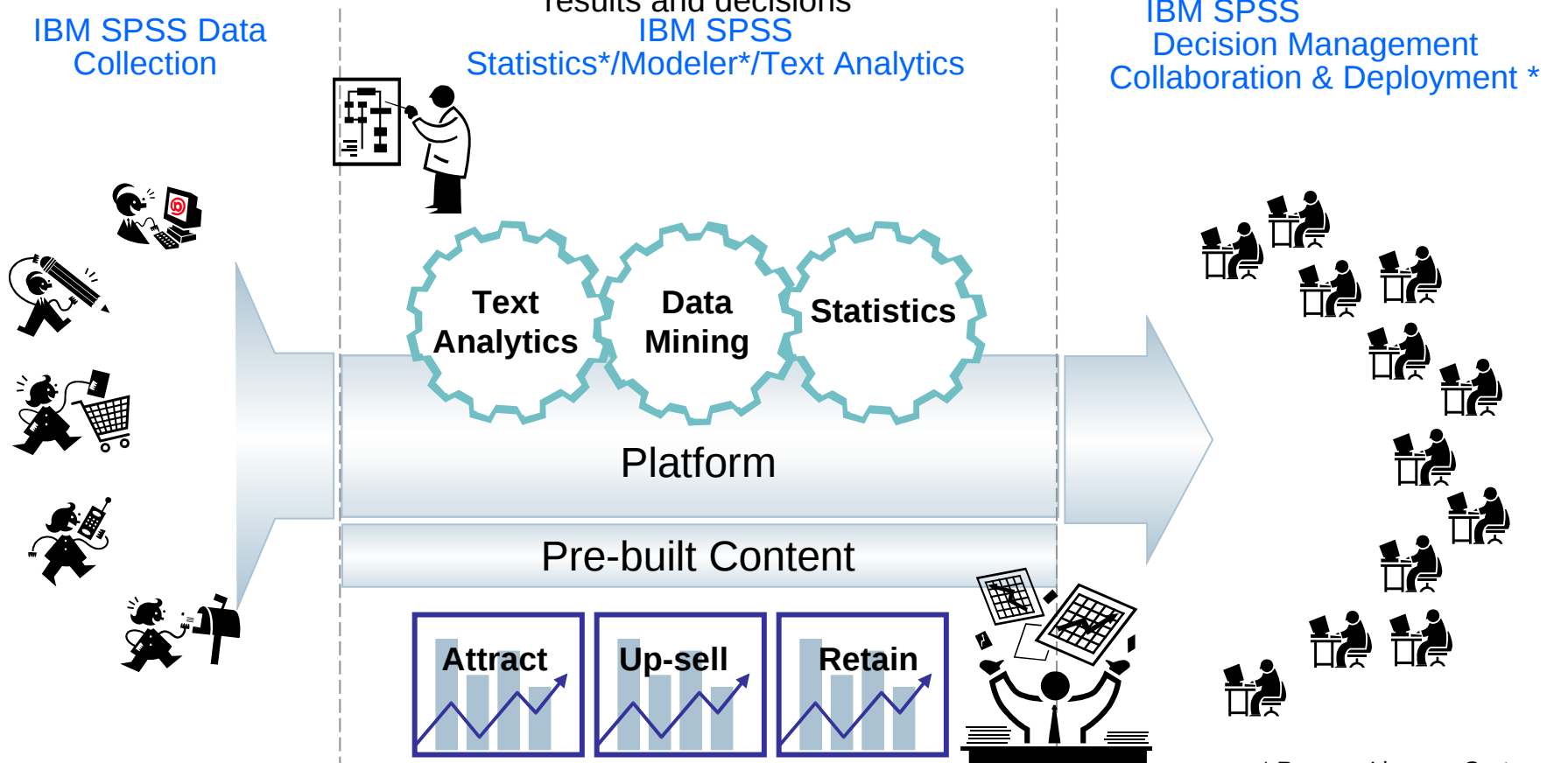
Predictive capabilities bring repeatability to ongoing decision making, and drive confidence in your results and decisions

IBM SPSS Statistics*/Modeler*/Text Analytics

Act

Unique deployment technologies and methodologies maximize the impact of analytics in your operation

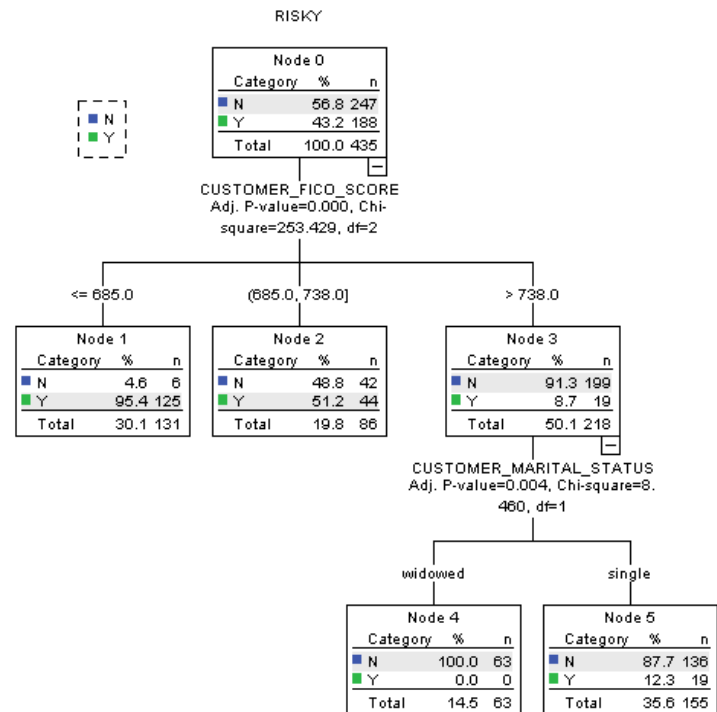
IBM SPSS Decision Management Collaboration & Deployment *



* Runs on Linux on System z

DEMO: Discover Rules For Identifying Risky Customers Using SPSS Statistics

1. Load data from Data Warehouse on DB2 for z/OS into SPSS Statistics
2. Pre-process the data to create new attributes for quantifying negative credit events across different product lines and create a risk flag for mortgage
3. Run Comparison of Means and Decision Tree to discover rules for characterizing risky customers



- Credit Limits identified for characterizing risky customers
- Use these credit limits for automated loan approval process

IBM Smart Analytics System 9600 – A Complete Package With A Discounted Price

- **Extend the qualities of service, inherent in the z/OS environment to ensure the availability and security of data.**
- **Hardware/OS**
 - ▶ IBM zEnterprise technology
 - ▶ IBM System Storage DS8700 Intelligent Disk controller
 - Large controller cache and 3 Tier disk offering
 - ▶ z/OS 1.12
- **Unique Software**
 - ▶ DB2 for z/OS
 - ▶ Cognos included in base offering (Linux on System z)
 - ▶ InfoSphere Warehouse (Linux on System z)
- **Optional Components**
 - ▶ Solid State drives, integrated within DS8700
 - Easy Tier to identify and migrate “hot data” to SSD
 - ▶ SPSS For Linux on z



Extremely competitive
price per TB

Next Generation Smart Analytics Optimizer To Capitalize On Netezza Technology

What is a Smart Analytics Optimizer?

*A workload-optimized, blade-based appliance add-on
Deeply integrated with DB2 for z/OS and transparent
to applications*

*Significantly speeds up the response time for a wide
variety of complex queries*

*Drives down the costs of data warehousing and
business analytics*

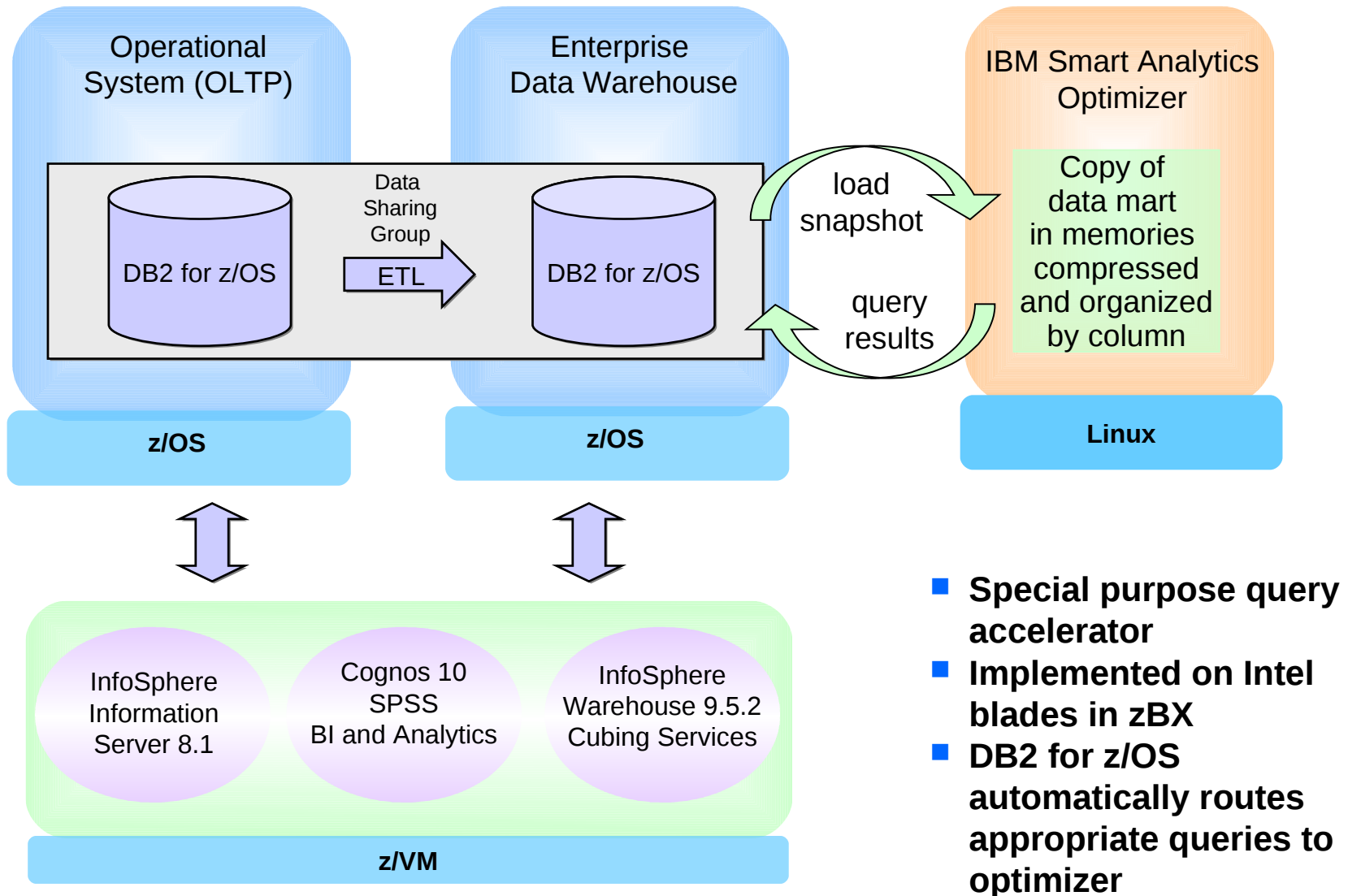


What's new with V2?

- System x blade customized with Netezza Technology
- Incorporates streaming architecture based on Netezza's patented data filtering using Field Programmable Gate Arrays (FPGAs)
- Tuned for delivering fast query response times for a wide variety of decision workloads
- Uses efficient data filtering by early SQL projections
- Storage integrated into the hardware rack
- Supported on DB2 for z/OS v9 or DB2 for z/OS v10 running on a z/196

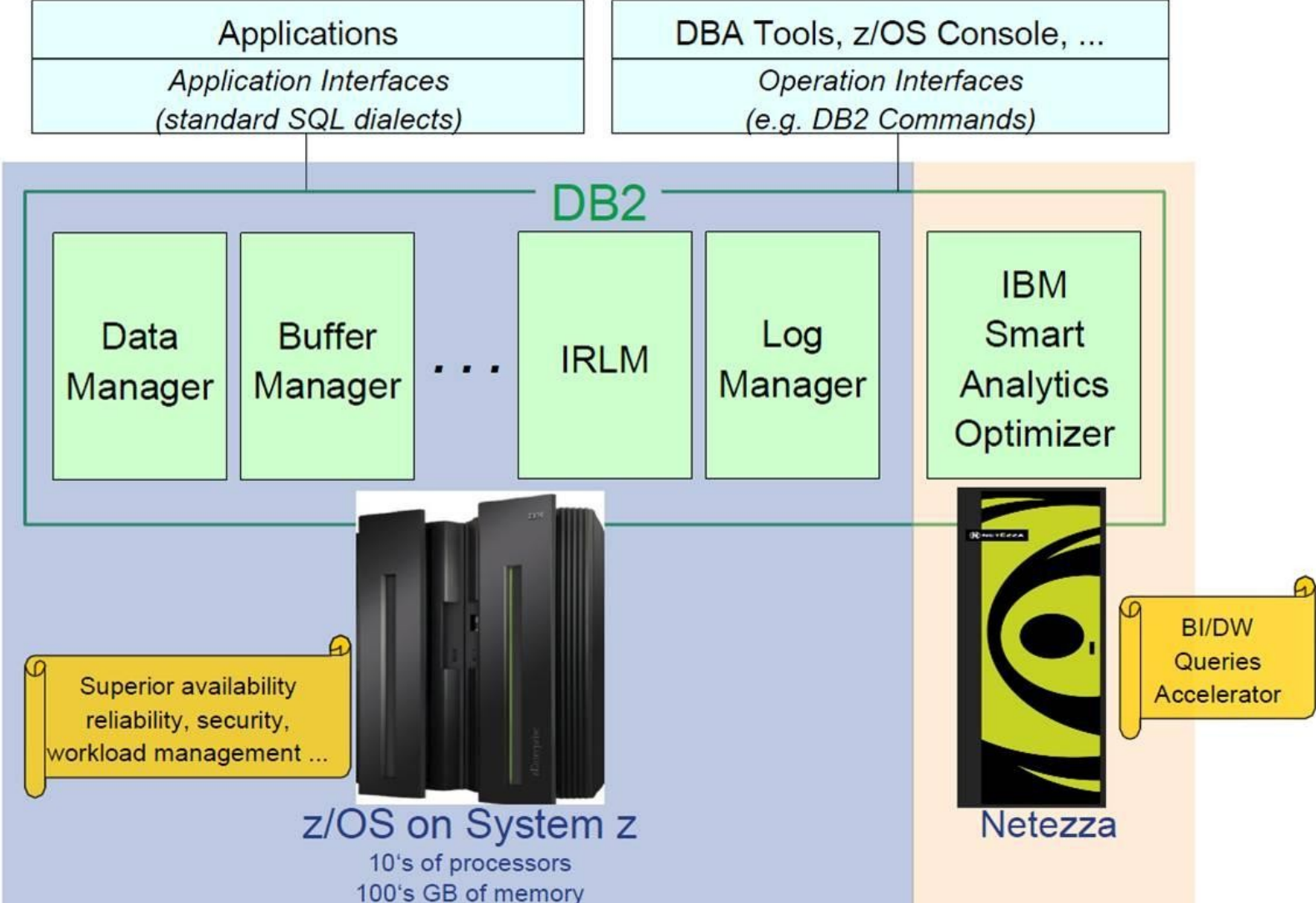
Breakthrough Technology Enabling New Opportunities

IBM Smart Analytics Optimizer Accelerates Complex Queries



- Special purpose query accelerator
- Implemented on Intel blades in zBX
- DB2 for z/OS automatically routes appropriate queries to optimizer

Deep DB2 Integration



Extending Smart Analytics Optimizer With Netezza Technology

- Still is a Smart Analytics Optimizer
- Uses Netezza technology to perform high speed query
- Access to data in terms of authorization and privileges (security aspects) is controlled by DB2 and z/OS (Security Server).
- Uses DB2 for z/OS for updates, logging, fast single record look-ups
- DB2 for z/OS does backup and recovery and
- DB2 for z/OS remains the system of record
- There is no external communication to the Smart Analytics Optimizer beyond DB2 for z/OS

A Longer List Of Business Analytic Software Available On z196

Information Management

- [DB2](#)
- Informix
- FileNet Business Process Manager
- FileNet Content Manager
- FileNet Records Manager
- FileNet Rendition Engine
- InfoSphere – totally 30 products, incl:
 - InfoSphere DataStage
 - InfoSphere Federation Server
 - InfoSphere Information Analyzer
 - InfoSphere Information Server
 - InfoSphere Master Data Mgmt Server
 - InfoSphere Warehouse for DB2 for z/OS
 - InfoSphere FastTrack
- ... many more

Business Analytics

- [Cognos Business Intelligence](#)
- [SPSS Collaboration and Deployment Services](#)
- SPSS Modeler
- SPSS Statistics

zEnterprise Is An Excellent Base For Your Data Warehouse And Business Analytics

- Operational and warehouse data co-located on z196 for optimal performance
- Exploits System z Parallel Sysplex for availability and scale
- Cognos supports a common metadata model and report specification, and provides 100% browser-based access
- SPSS predictive analytics provides actionable insights versus hindsight
- Systematic disaster recovery and backup strategies
- Qualities of Service
- Competitive Price

