



Building Mainframe Data Web Services with IBM Information Server for System z

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TAKE BACK CONTROL

Abstract

- ✍ This session will focus on techniques for service enabling mainframe data using various components of the IBM Information Server platform. WebSphere DataStage, WebSphere Classic Federation and the WebSphere Services Director will all be discussed in the context of creating data services.

Presentation Goals:

- ✍ Learn how mainframe data integration Web services can be used to address your business and IT challenges as well as how components of IBM's Information Server technologies can be used to dramatically simplify and accelerate the construction of these Web services.



Agenda

Introduction:

- SOA Basics
- Information as a Service

WebSphere Information Services Director for Linux on System z

- What is it
- What can it do for you

WISD and System z

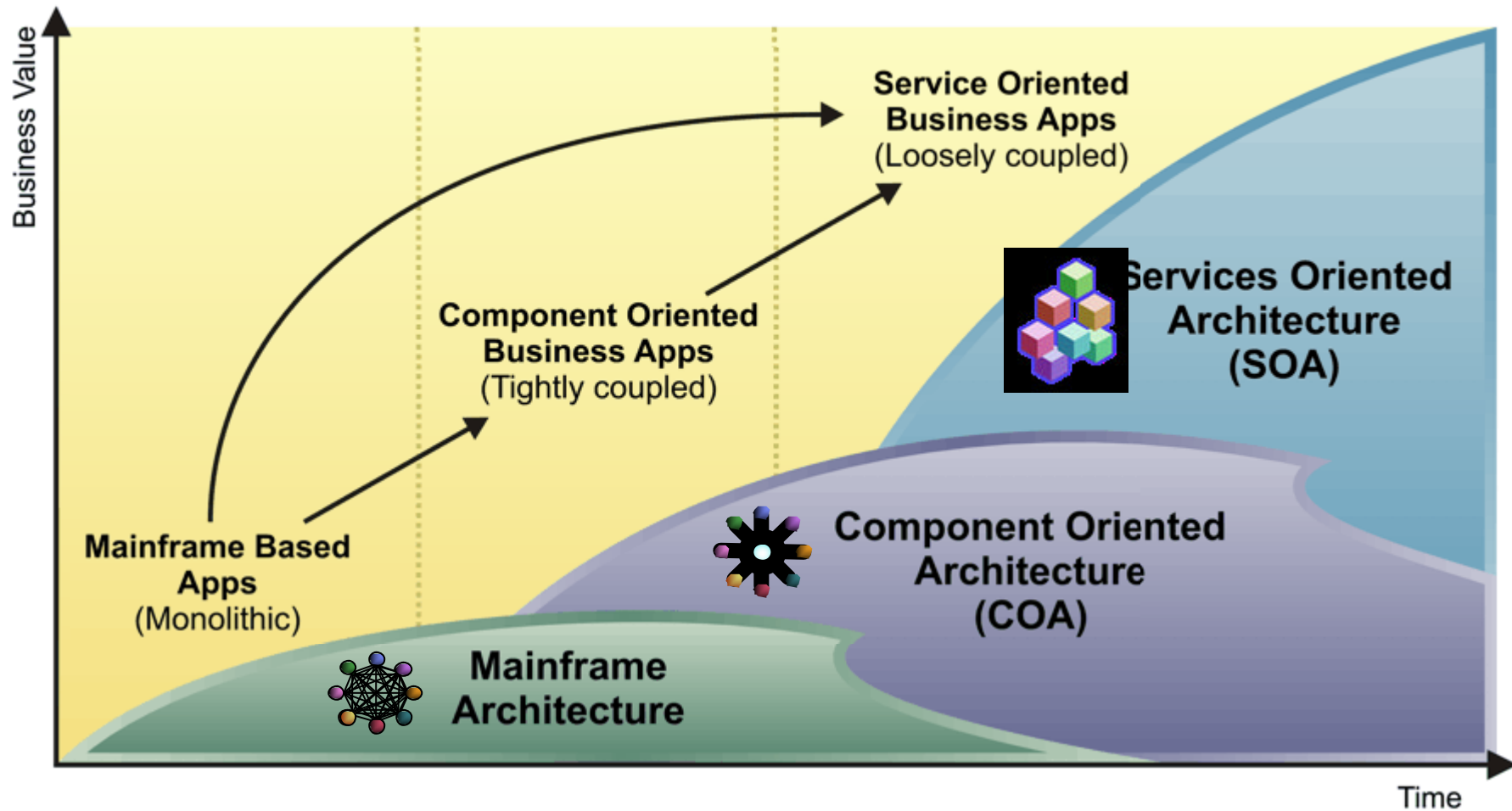
- The Implementations
- Samples of Integration with System z Data

Wrap-Up

- IBM's Information Server for System z



SOA Represents the Next Evolutionary Step to Improve Business Agility and Flexibility



Source: Gartner

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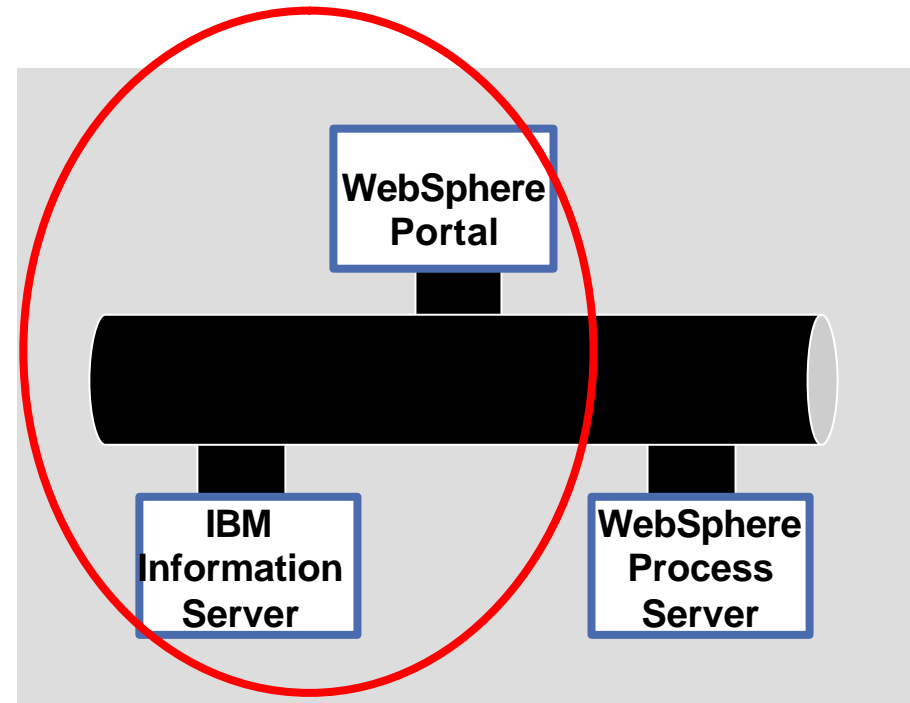
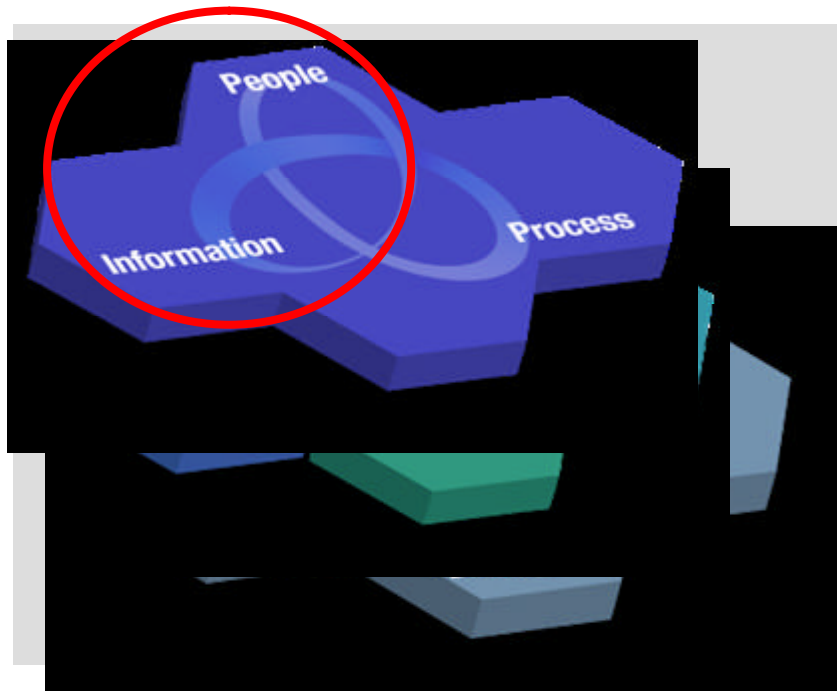


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Information as a Service is key to your SOA

Getting the right data quickly and consistently for all applications continues to be a key challenge for many enterprises. **Forrester, January 2006**

You will waste your investment in SOA unless you have enterprise information that SOA can exploit. **Gartner, March 2005**



How Does Information Fit into an SOA?



Information as a service makes information more accessible, consistent, and flexible

Publishing consistent, reusable services for information that make it easier for processes to get the information they need from across a heterogeneous landscape.



Information Services

- ✦ Select data from source 1
- ✦ Select data from source 2
- ✦ Match and link records
- ✦ Transform data to target



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Rapid SOA Deployment: IBM WebSphere Information Services Director for Linux on z

- ✍ Packages information integration logic as services that insulate developers from underlying sources
- ✍ Allows these services to be invoked as Enterprise Java Beans or Web services
- ✍ Provides load balancing & fault tolerance for requests across multiple Information Servers
- ✍ Provides foundation infrastructure for Information Services



Developers



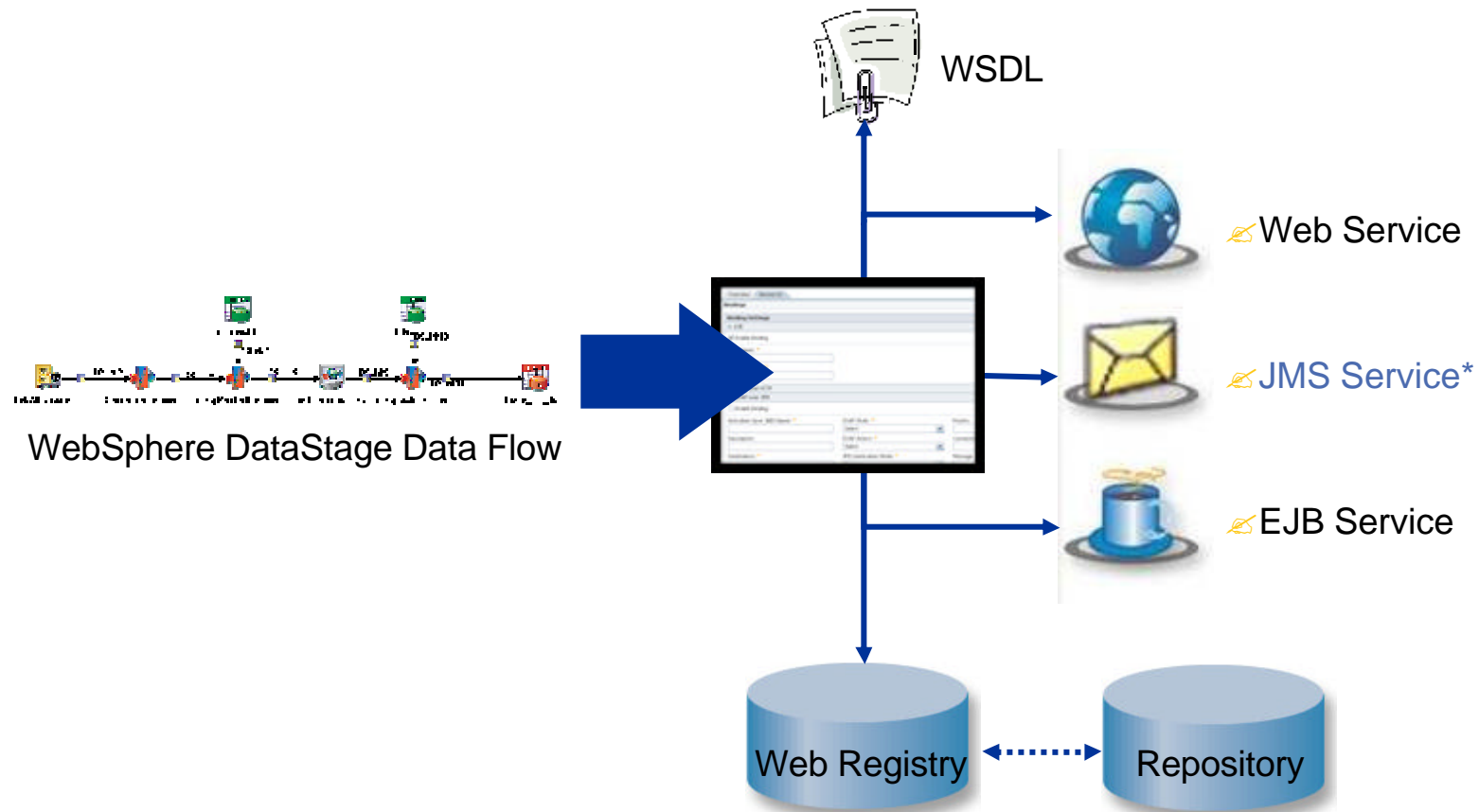
Architects

WebSphere Information Services Director
for Linux on System z

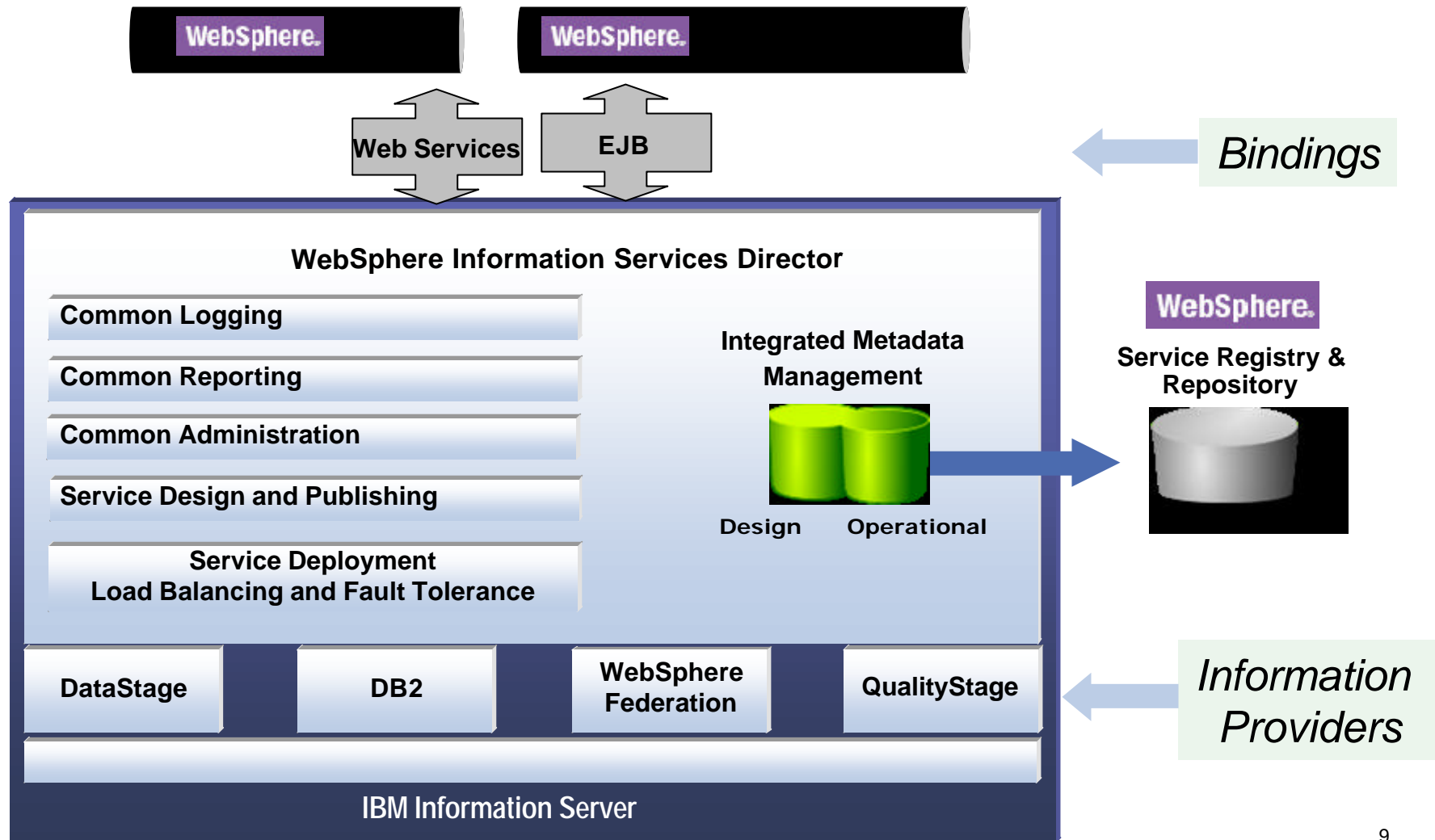
Flexibly deploy and manage reusable
information services without hand
coding



Easy, Visual Service Deployment

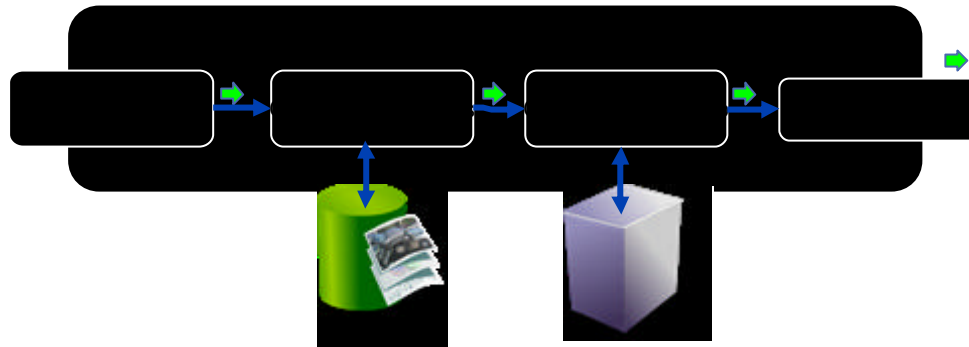


Information Services Director 8.01

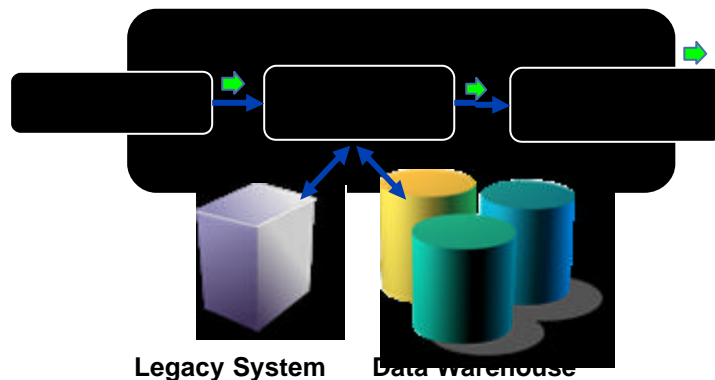


WISD Service Providers

Data Access Services – DB2

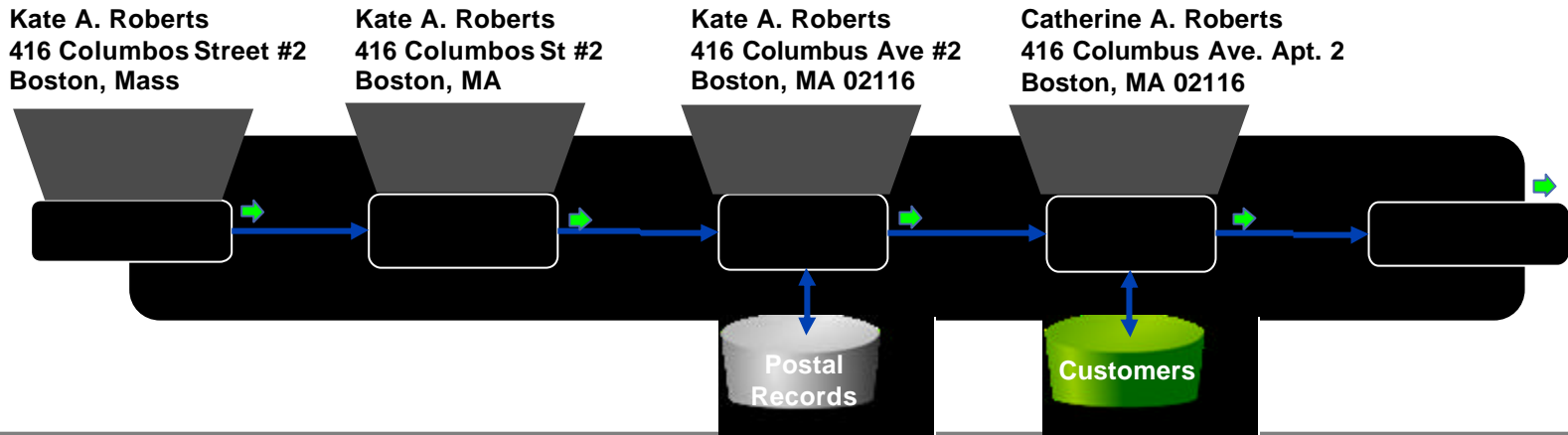


Federation Services - WebSphere Federation Server WebSphere Classic Federation Server

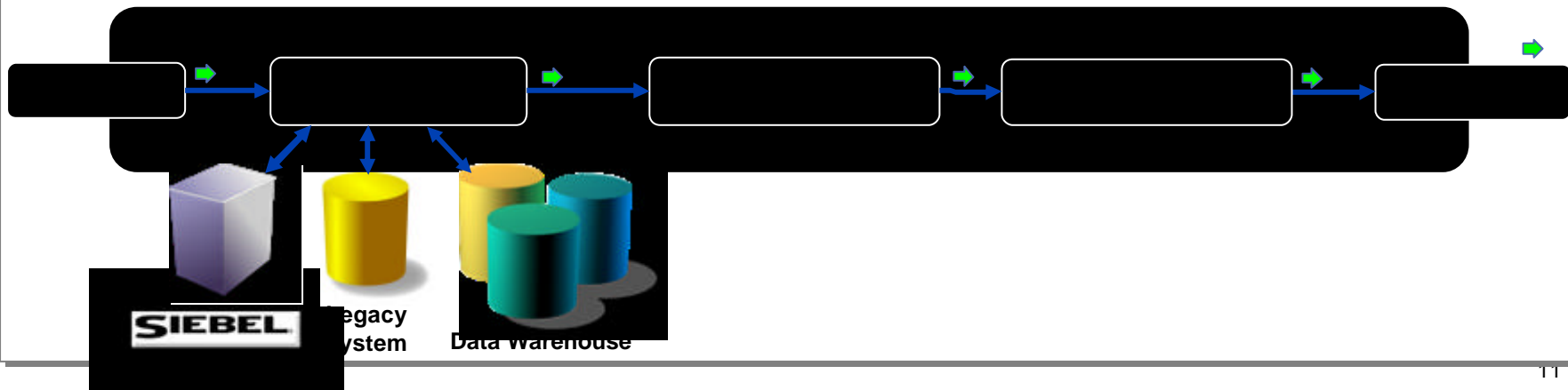


WISD Service Providers

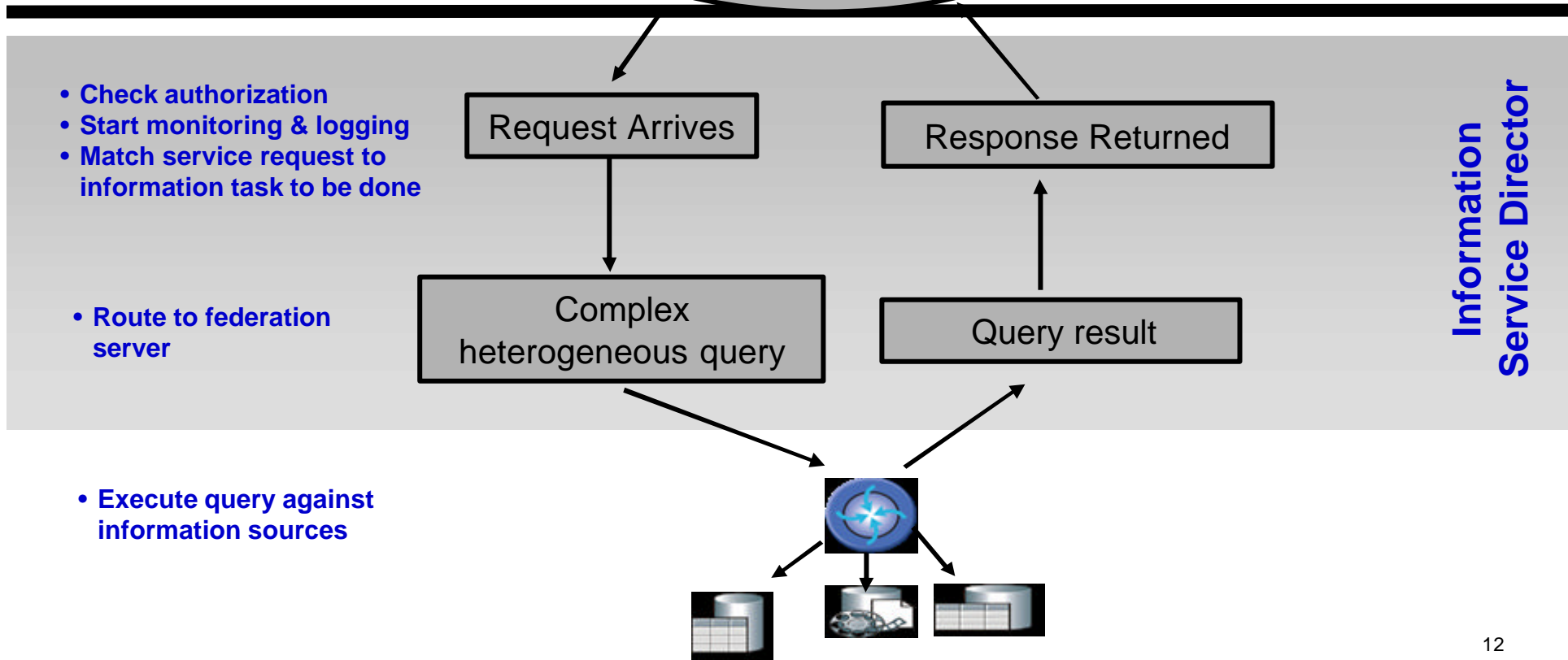
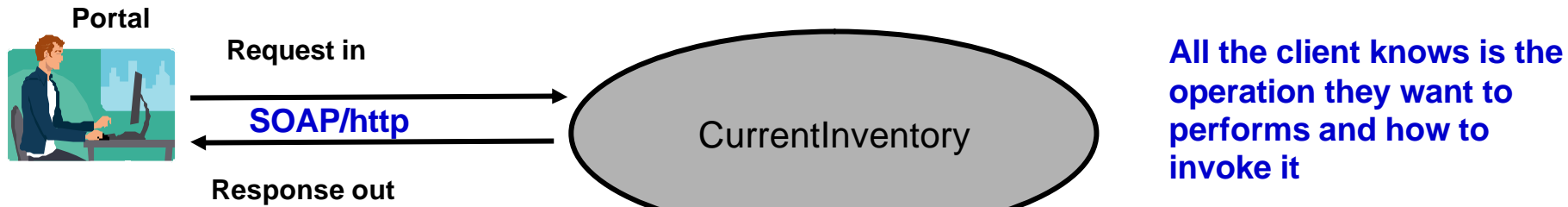
Cleansing Services - WebSphere QualityStage



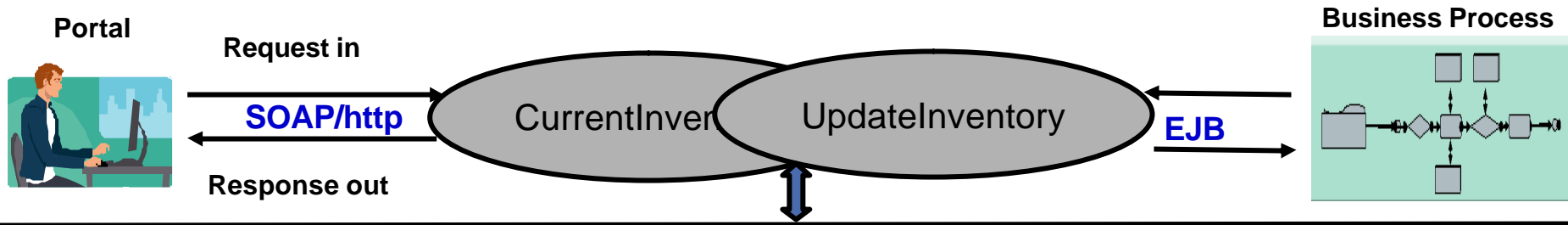
Transformation Services - WebSphere DataStage



Service-enabling information tasks



Multiple Information Services

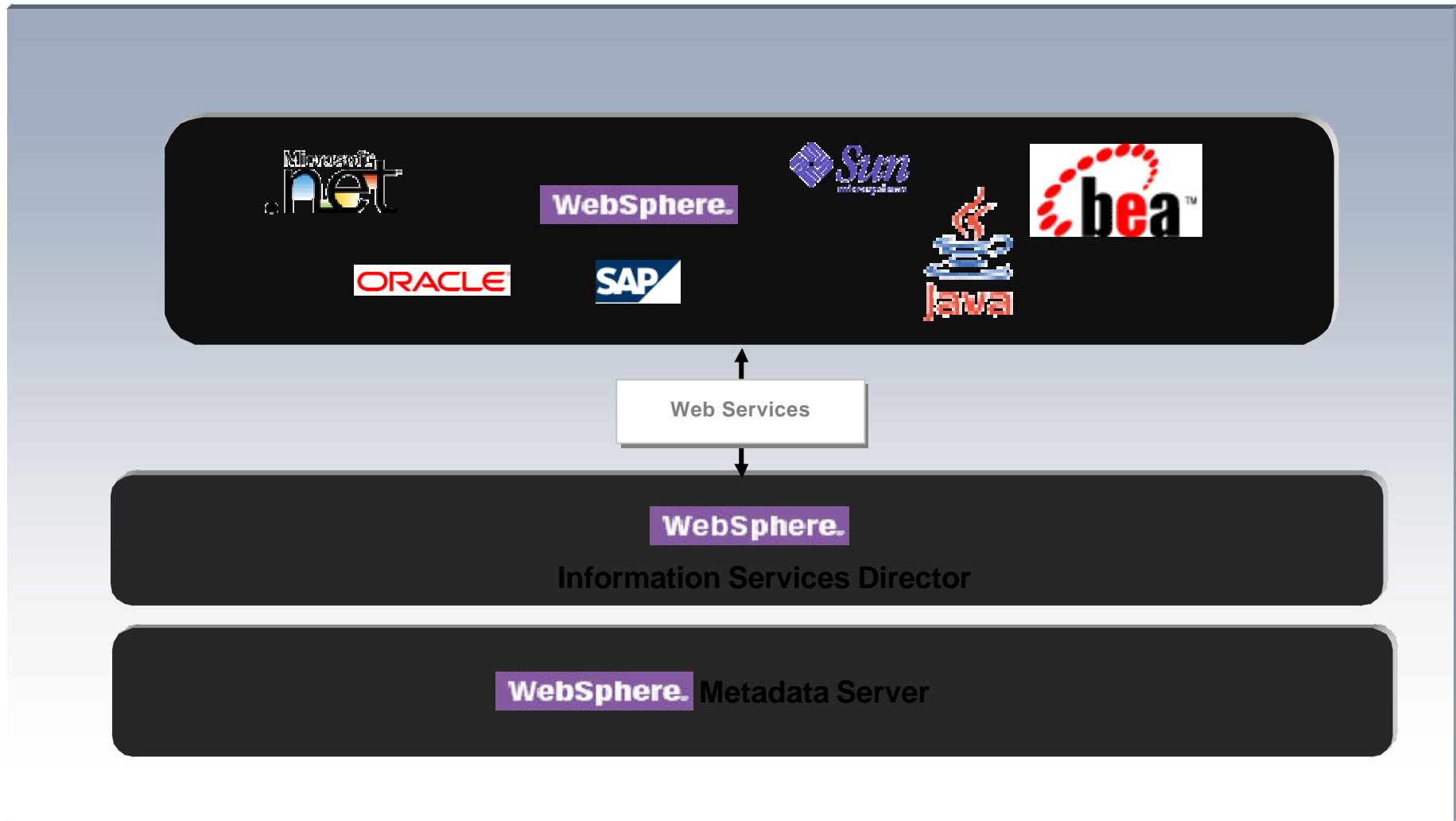


- ✍ User of Information Services shielded from the complexity of the information systems
- ✍ Information system can evolve without impacting users
- ✍ Single control point for access to information systems

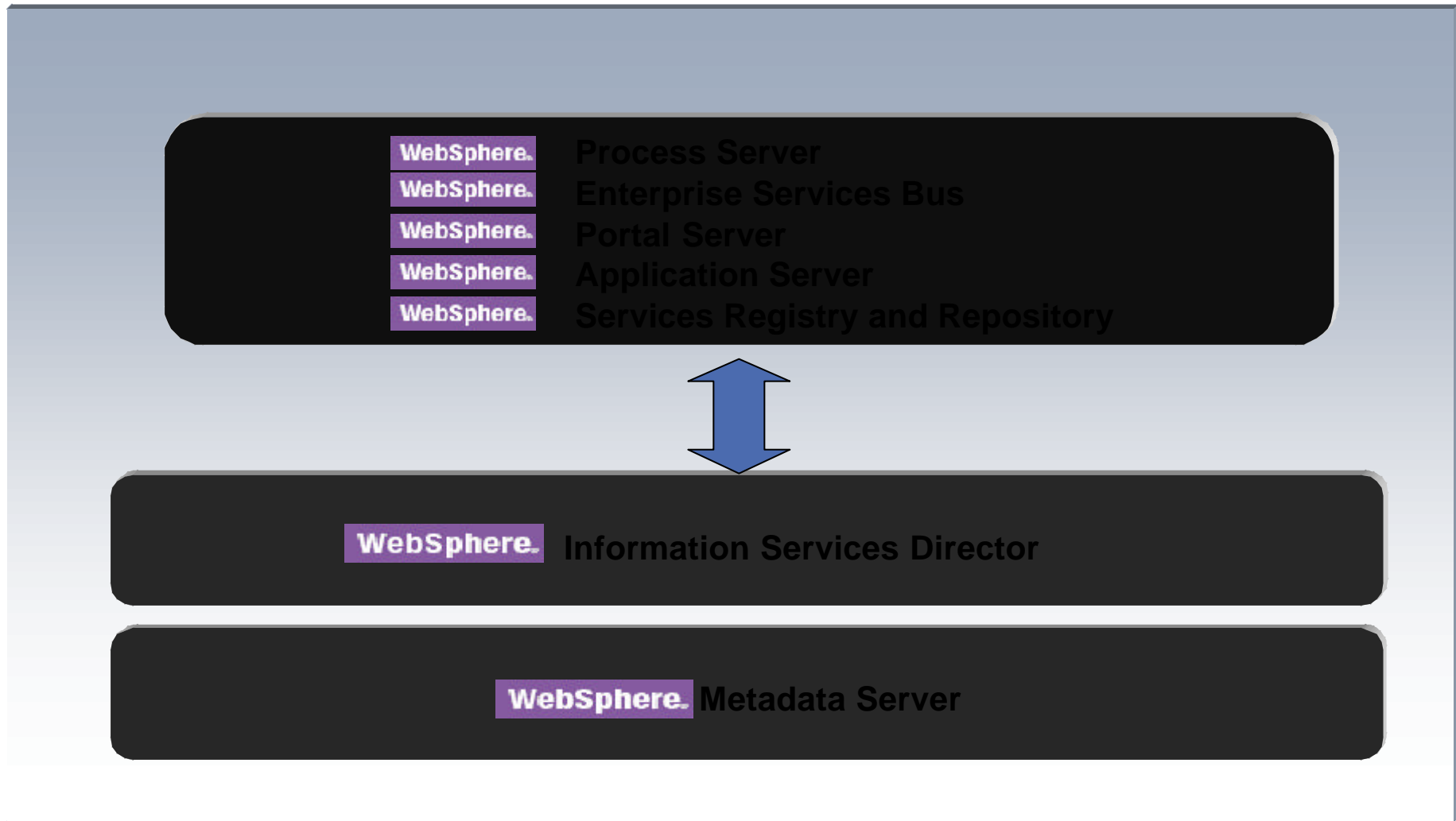
Information Service Director



Service Consumers



Service Consumers with Deep Integration



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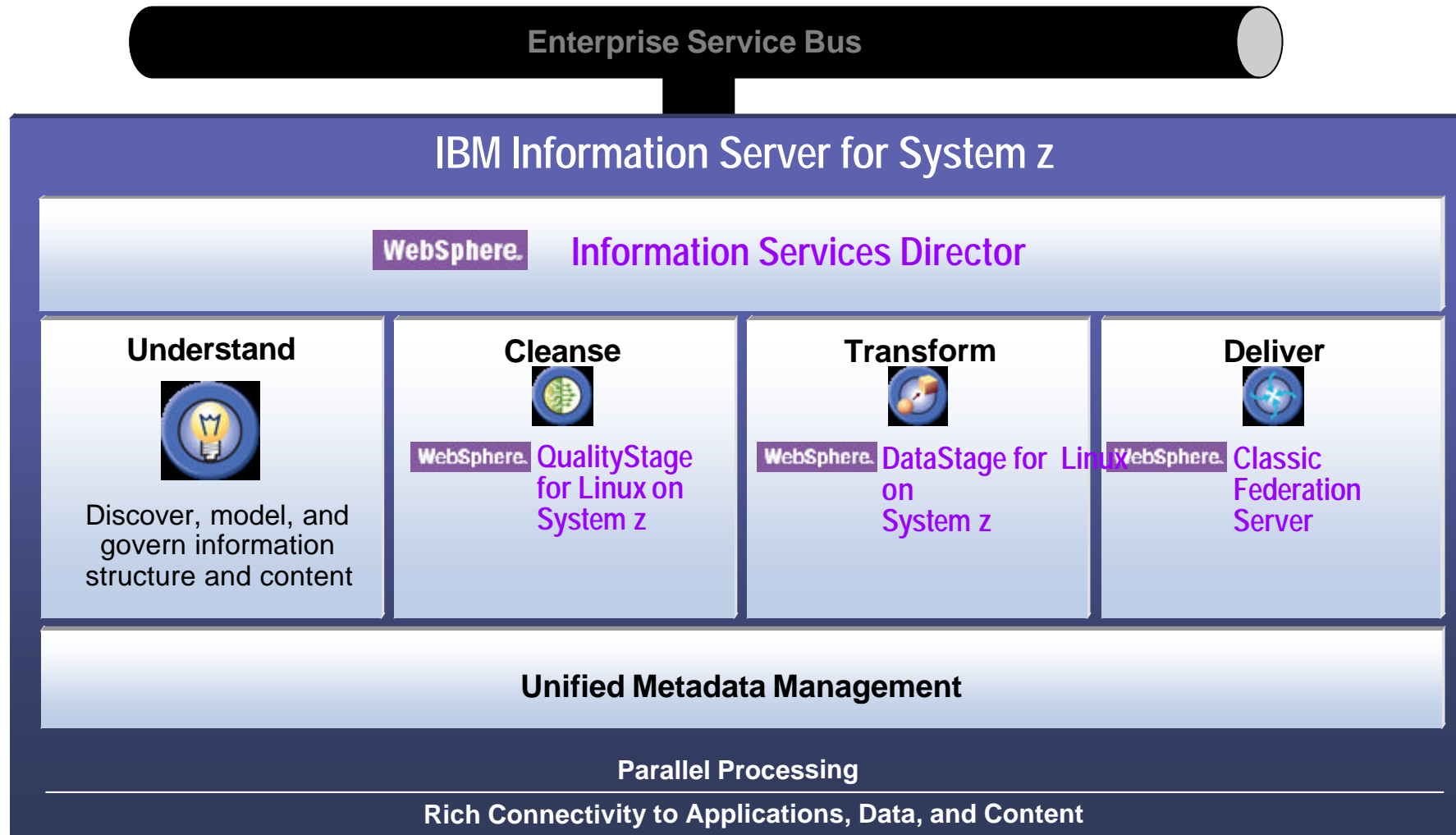
Wrap-Up

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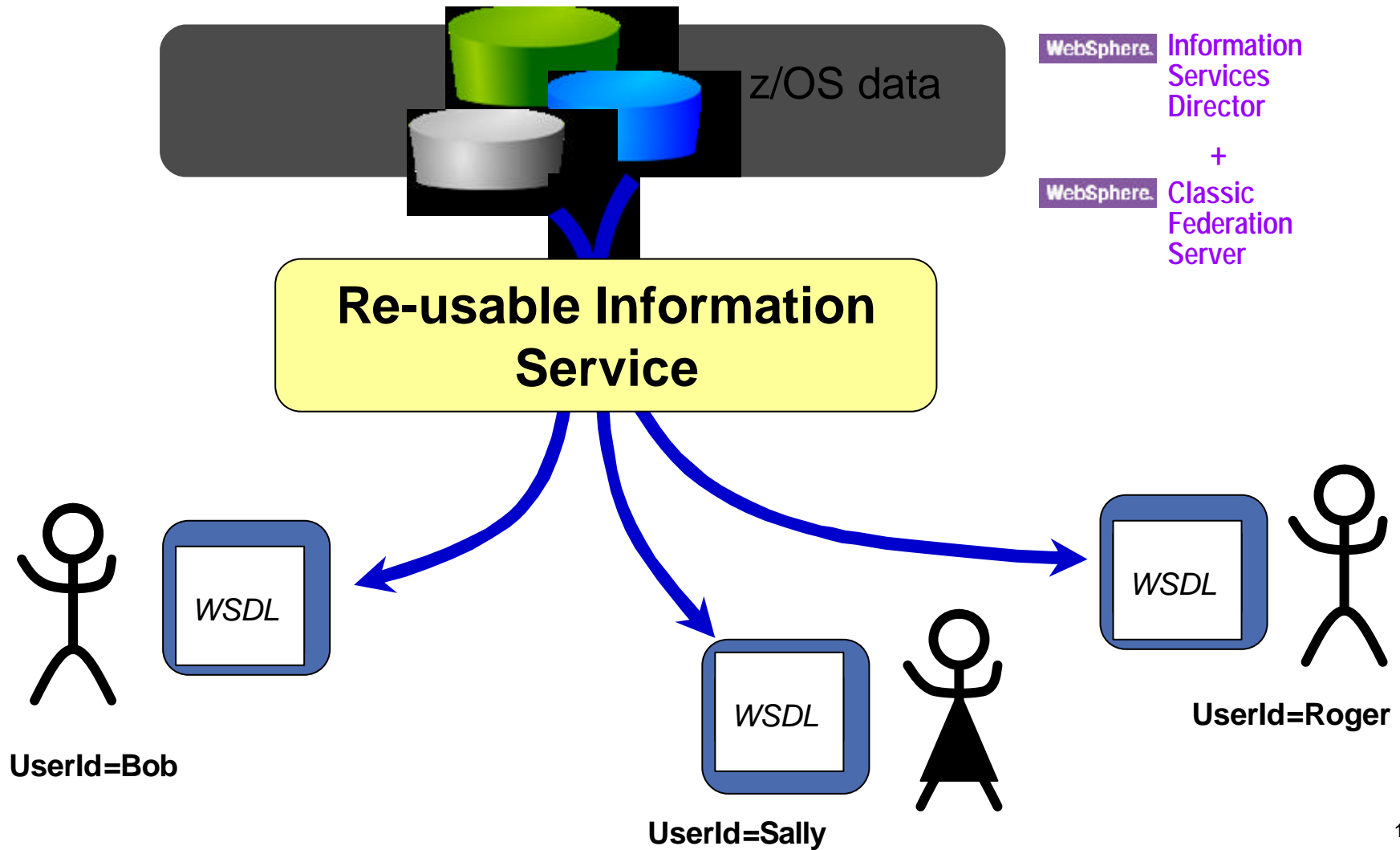
IBM Information Server for System z

Trusted Information for Dynamic Business Optimization



1. Basic – Legacy Data Access Services

Single point of control



Delivery:

IBM WebSphere Classic Federation Server for z/OS

Mainframe data is an equal participant

- ✍ Standardized ODBC and JDBC SQL interfaces to VSAM, IMS, CA-IDMS, CA-Datcom, Adabas and sequential data
- ✍ Metadata-driven, so there's no mainframe programming needed
- ✍ Works with existing mainframe infrastructure and "modern" applications and tools you need

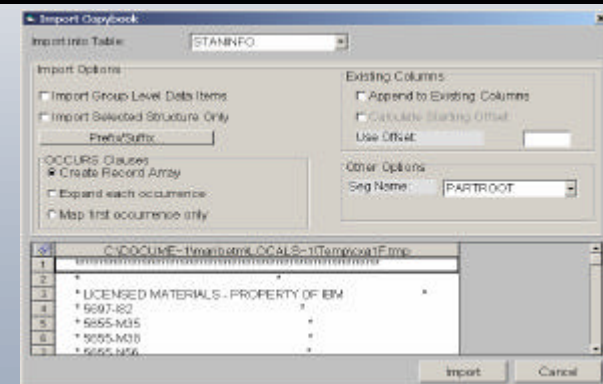
Deliver



WebSphere Classic Federation Server for z/OS

Read-from and write-to mainframe data sources using SQL from Unix, Windows, Linux and JVM platforms

Empowers mainframe data integration with Information Server components, your applications as well as IBM and 3rd party tools and applications



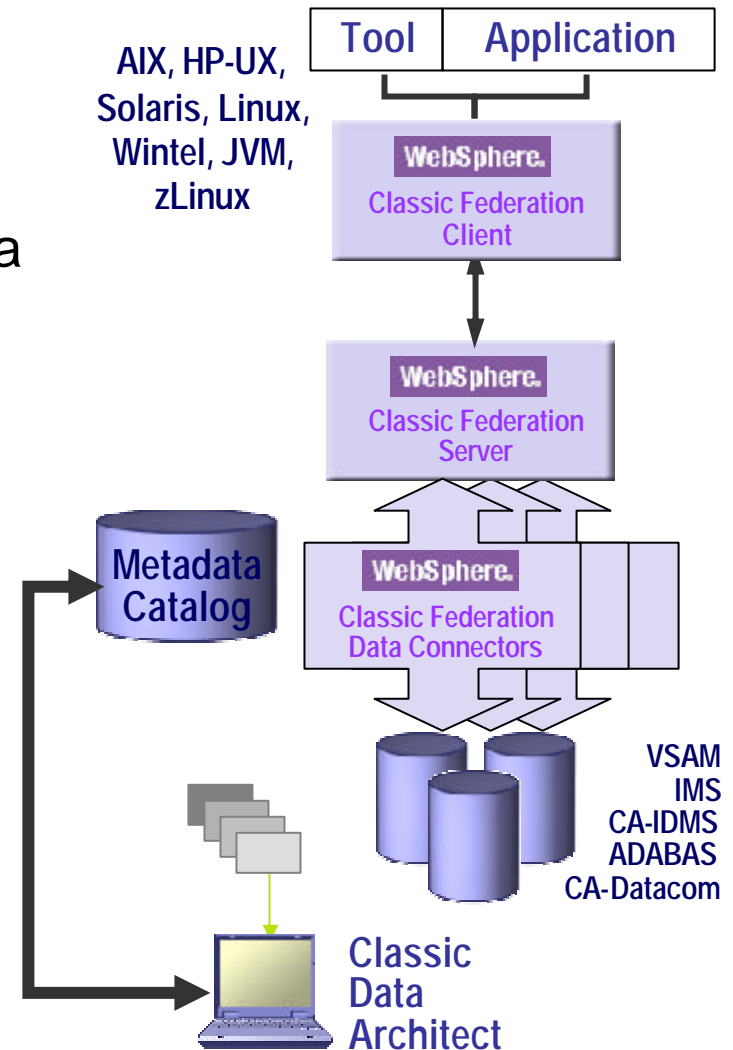
Dynamic Visual Metadata Management



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WebSphere Classic Federation Server

- ✍ Create relational description of mainframe data sources by mapping the physical data definitions to logical tables and views
- ✍ Mainframe Server and components act as a relational database engine
- ✍ JDBC and/or ODBC drivers provide standardized interface for tools and applications



Service-Enabling Mainframe Data

Case Study – Finance, Regulatory Compliance

▶ Challenges:

- Improve risk management across all member institutions
- Meet Basel II compliance deadline
- Access information:
 - in 23 different retail systems
 - from over 2500 branch offices

▶ Solution:

WebSphere Information Integration Platform providing single point access and control of risk-bearing information across many different mainframe systems in different technologies and formats.

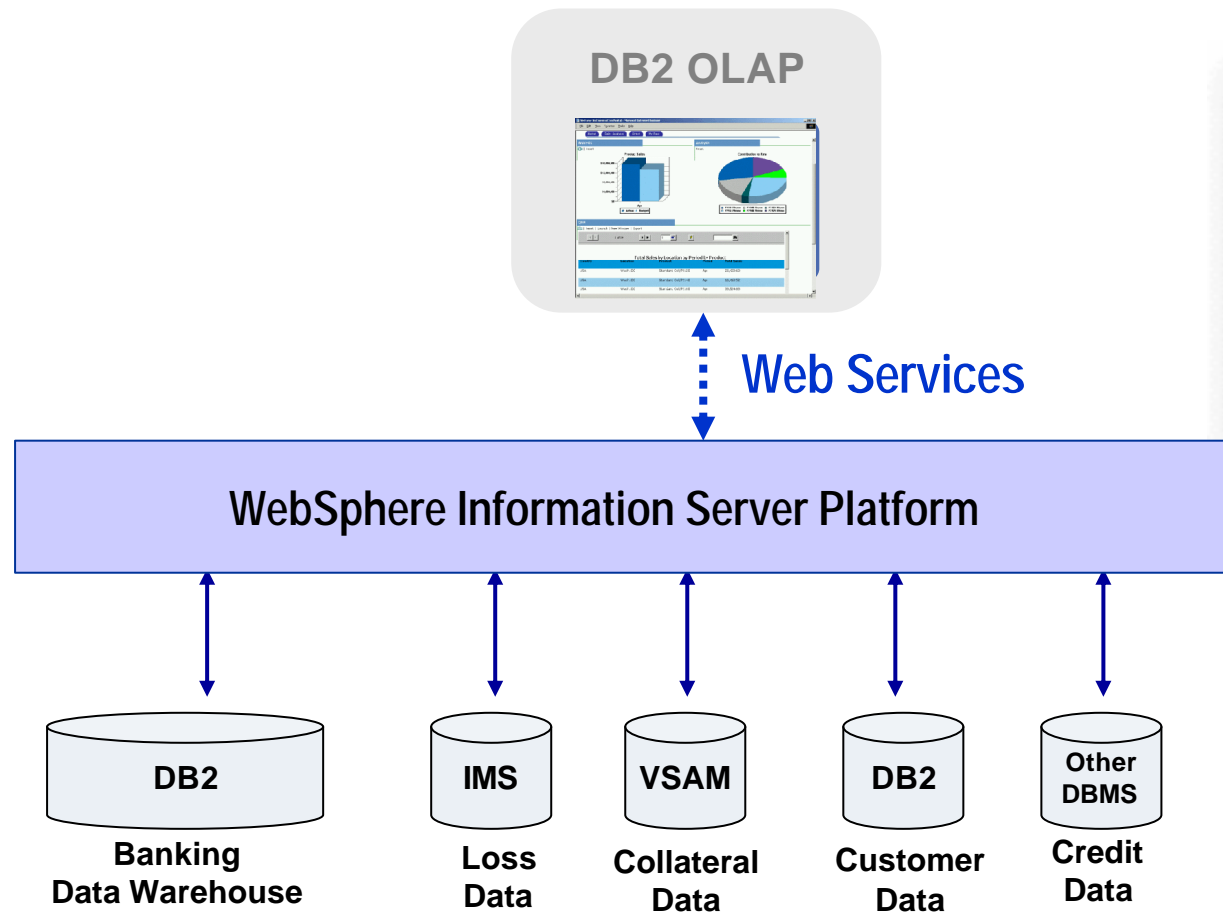
▶ Result:

- Enhanced risk management and increased efficiency of data collection for Base II required data
- Ability to view data in operational systems spread across the enterprise including third party information without disrupting retail system



Service-Enabling Mainframe Data :

Case Study – Finance, Regulatory Compliance



- **Basel II exception monitoring**
- **Risk measurement application invokes a Web service to collect data**

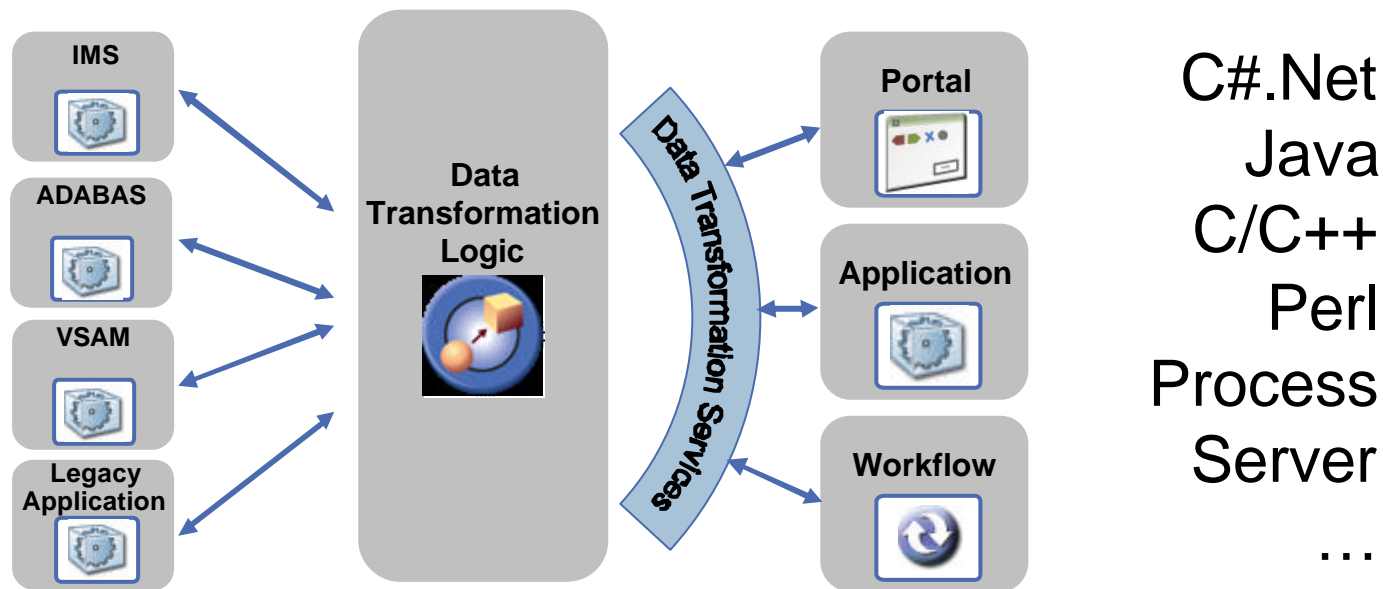


2. Intermediate: Transform Legacy Data

Re-purpose existing data for new business uses

WebSphere. Classic Federation Server + WebSphere. DataStage for Linux on System z + WebSphere. Information Services Director

Language and Implementation Independent !



Transform: IBM WebSphere DataStage

- ✍ Codeless visual design of data flows with hundreds of built-in transformation functions
- ✍ Optimized reuse of data integration objects
- ✍ Leverages parallel processing without requiring design changes
- ✍ Capable of supporting batch and real-time operations



Developers



Architects

Transform

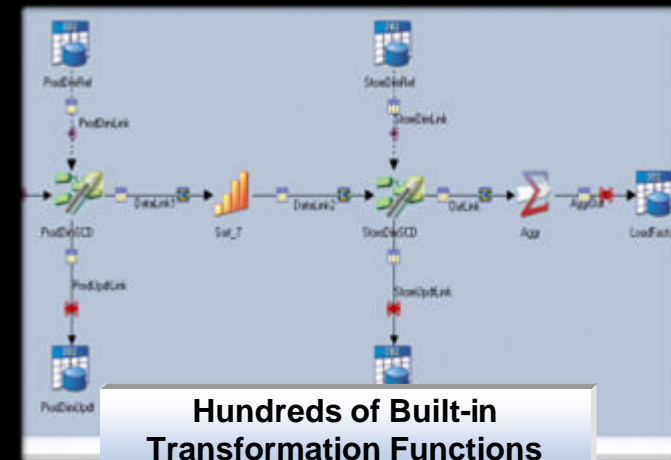


Deliver



WebSphere DataStage for Linux on System z

Transform and aggregate any volume of information in batch or real time through visually designed logic



Service-Enabling Mainframe Data

Case Study – Large U.S. Manufacturer

▶ Challenges:

- Complex inventory environment is dependent on Japanese parent for parts – on-the-boat, in-port, held-in-port, in-US-warehouse, ...
- Manual review of reports needed to provide single view of inventory to Finance, Manufacturing, Sales, etc. --- can take up to 3 weeks!
- Maintaining excessive inventory (high cost)
- Missing product delivery dates (lost revenue)

▶ Solution:

1. Surface inventory "delays" as services
2. Inventory services feed downstream systems (Finance, SCM, ...)
3. Monitoring applications leverage services

▶ Result:

- Reduced inventory overhead
- More efficient use of inventory, accelerating delivery of customer orders
- Consistent, accurate, up-to-date view of inventory for Finance
- Eliminated manual reconciliation – reduced manpower



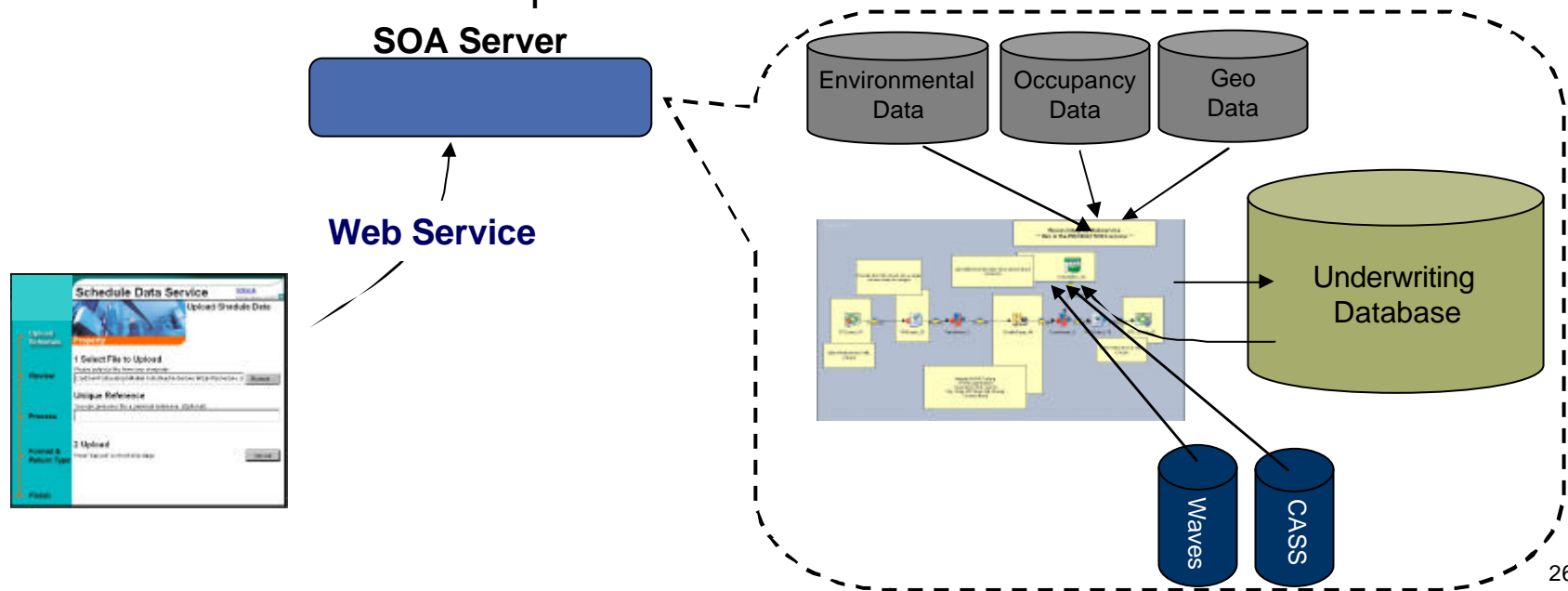
3. Advanced: Data Quality Services

Service-enabling for dynamic quality

WebSphere Classic Federation Server + WebSphere QualityStage for Linux on System z + WebSphere DataStage for Linux on System z + WebSphere Information Services Director

Standardization & Matching in real-time

- Service based rating system speeds up processing and reduces errors
- Complex processes can be offered as a single service
- Reusing of services instead of finding out all involved assets again!
- Services can be made up of services!



Service-Enabling Mainframe Data

Case Study – Insurance

▶ Challenges:

- Chronic shortfalls in productivity and customer satisfaction targets
 - Difficult, if not impossible to get correct customer-level information
 - Detailed information available at contract level only
 - Frequent conflicting information at group level
 - Major cause of billing errors and disputes

▶ Solution:

1. Best-of-breed data attributes identified and surfaced via Services
2. Information silos communicate with new "enterprise" applications
3. Complexity of IT environment is "hidden" from business users

▶ Result:

- Enterprise service applications quickly delivered without disrupting existing functional "silo" environments
- Up-to-date information reducing errors, disputes and improving service levels
- Productivity and customer satisfaction steadily improving

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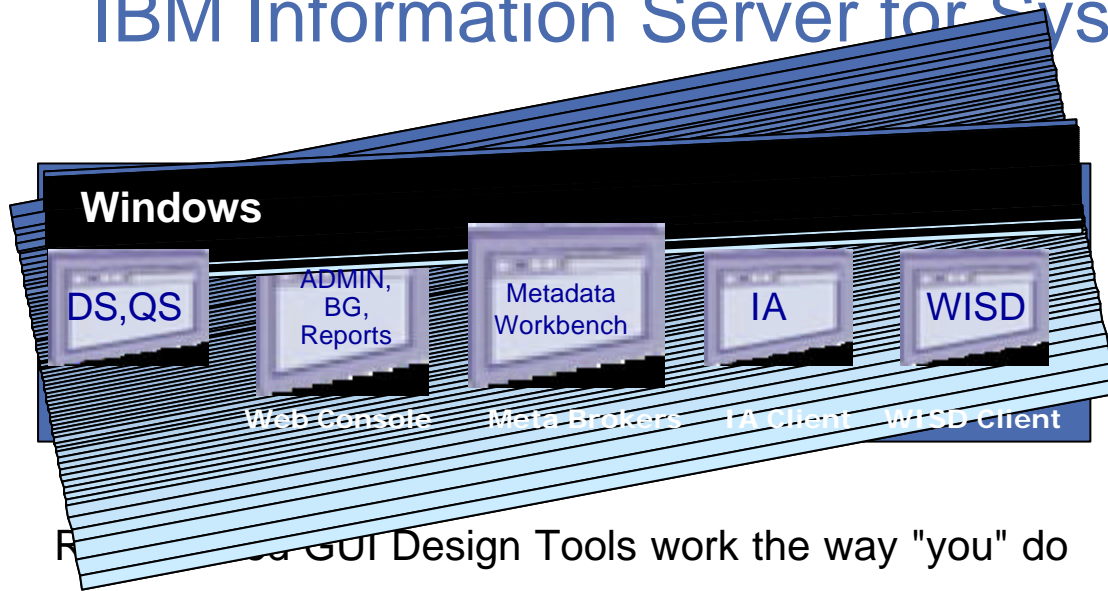
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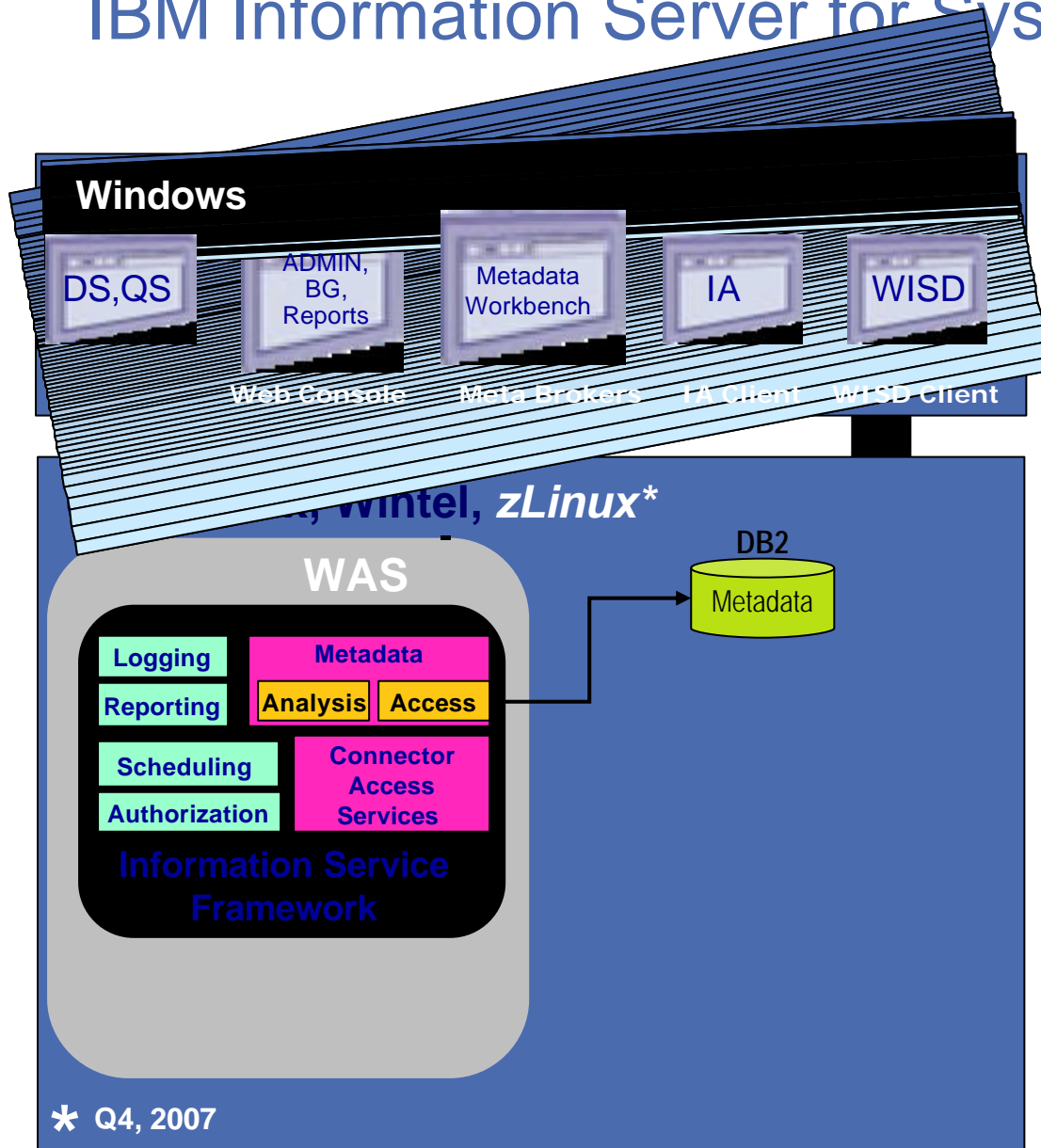
- **IBM Information Server for System z**



IBM Information Server for System z



IBM Information Server for System z

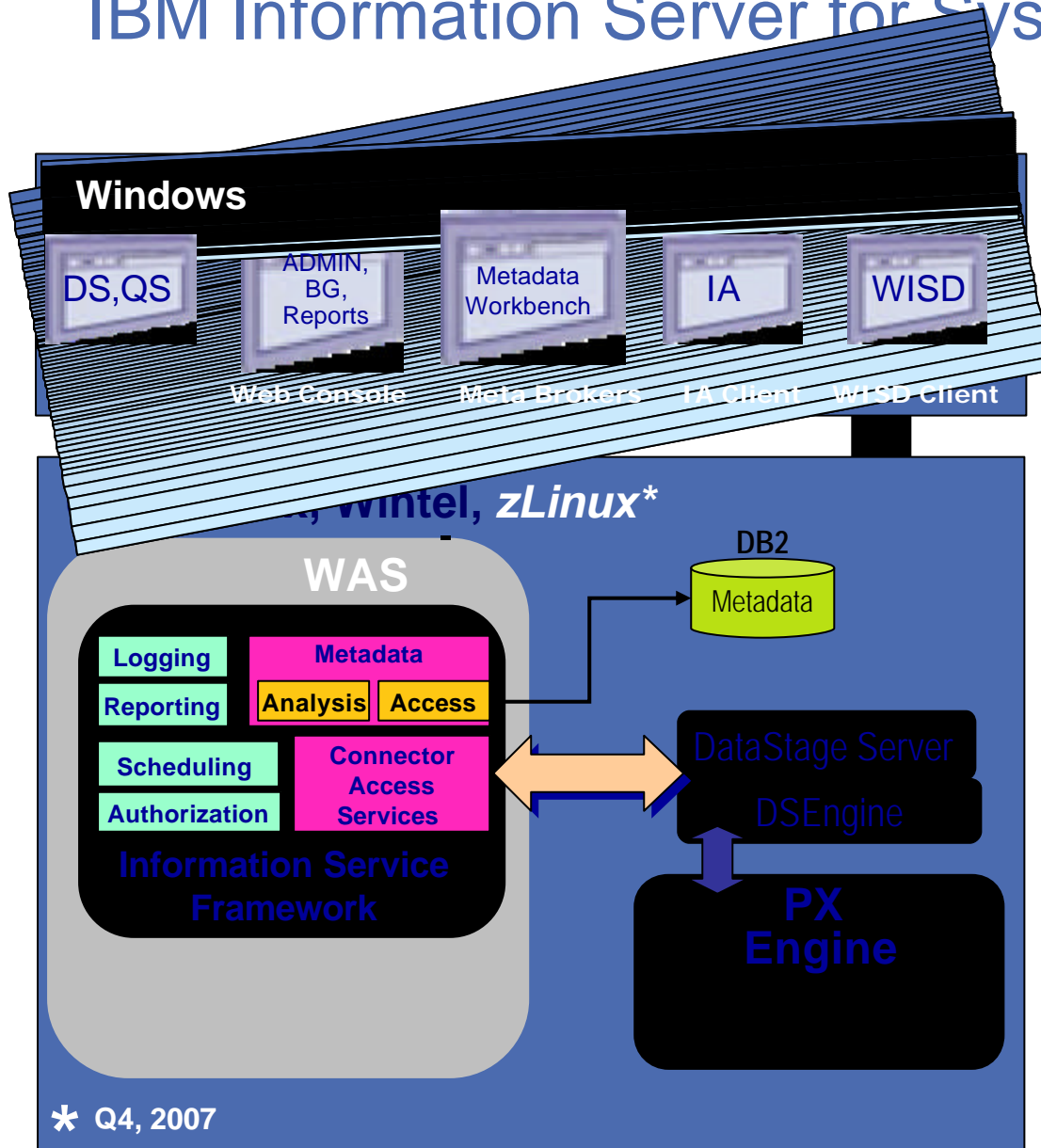


✍ **Common reusable services** framework leverages the power of a SOA environment

✍ **Meta data repository** promotes:

- ✍ reuse
- ✍ compliance to standards
- ✍ visual lineage
- ✍ impact analysis

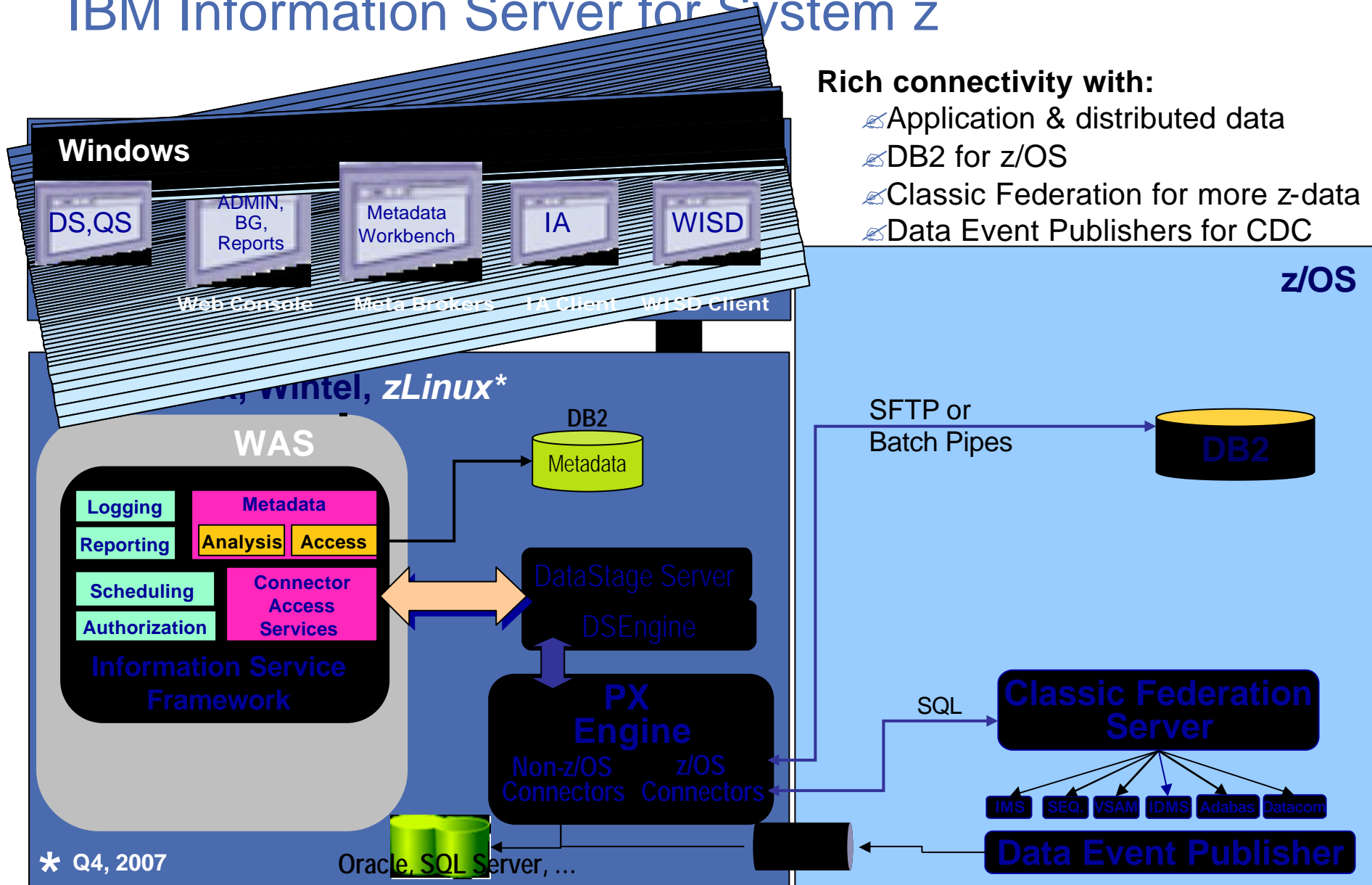
IBM Information Server for System z



New Linux for z deployment option

- ✍ Robust, parallel processing
- ✍ Hipersocket connectivity to z data
- ✍ Full Information Server suite: QualityStage, Information Analyzer...
- ✍ Minimal impact on z/OS costs: Leverages IFLs and zIIPs

IBM Information Server for System z



Rich connectivity with:

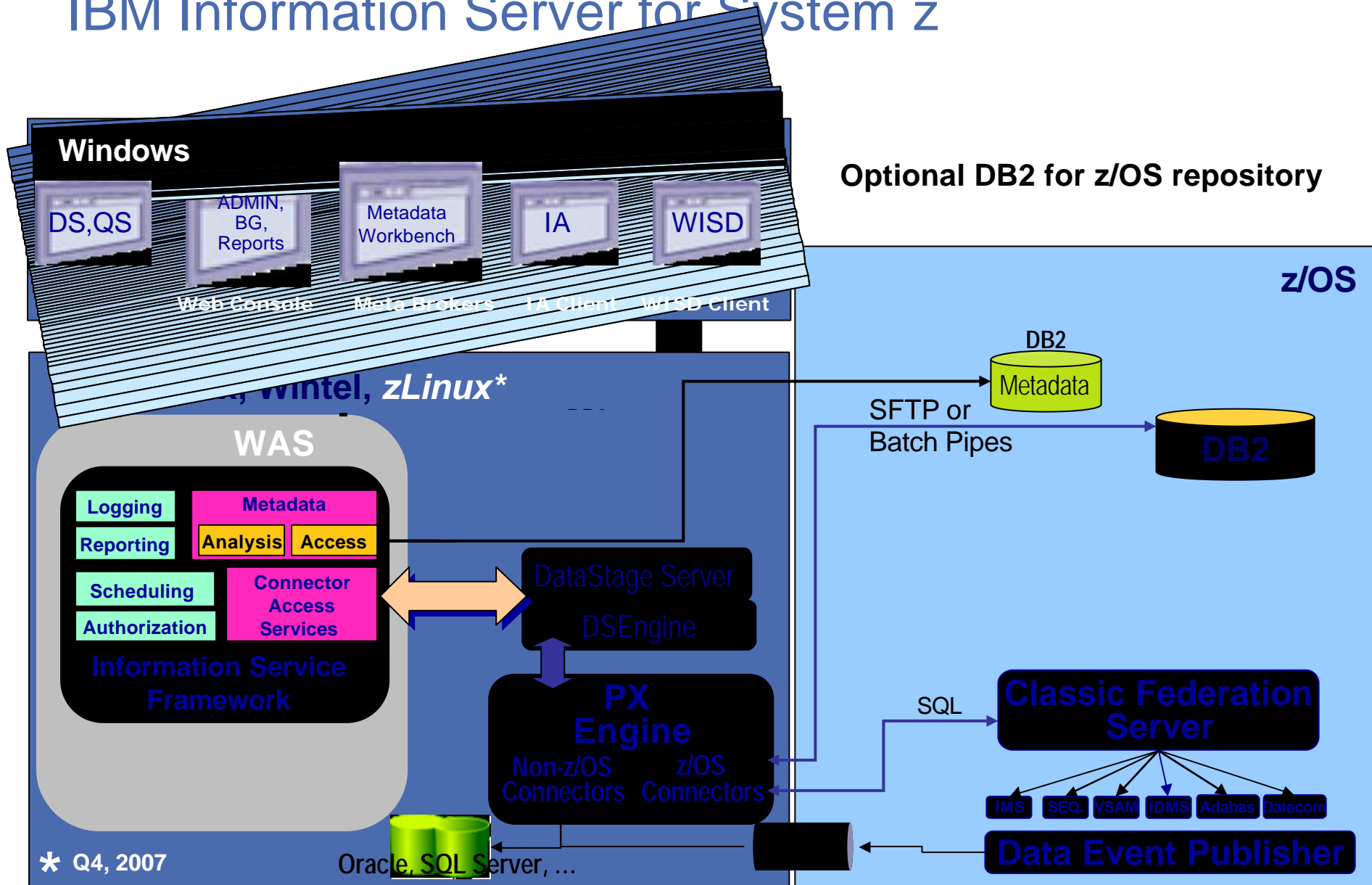
- Application & distributed data
- DB2 for z/OS
- Classic Federation for more z-data
- Data Event Publishers for CDC

* Q4, 2007

Oracle, SQL Server, ...

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IBM Information Server for System z



* Q4, 2007

Oracle, SQL Server, ...

IBM Information Server on System z

Benefits of a hybrid architecture that leverages zLinux

Significant cost savings:

- z/OS MIPs consumption dramatically reduced!
All Job Processing is on zLinux, except the z/OS data access
- DB2 access qualifies for ZIIP specialty engine
- MIPs charged at IFL rate ... NOT z/OS rate
- Reduced z/OS CPU minimizes impact on other z/OS software costs

High performance z data connectivity:

- Batch Pipes for DB2 load, DRDA to DB2 over hipersockets
- SQL to Classic over hipersockets, Integration with Data Event Publishers

Seamless integration with other Information Server platforms

- Same operational architecture and meta data Repository
- Eliminates deployment issues
- Maintains value of DataStage for z/OS investments



Inside IBM Information Server for System z

- ✍ Provides a central control point for information services
 - Provides shared metadata, logging, security, services registry, and configuration
 - Allows all information assets to be controlled centrally
- ✍ Provides trusted information as a service
 - Obtains a complete view of information across a diverse landscape
 - Enables consistent transformation and data cleansing
 - Provides information lineage and linkage to business semantics
- ✍ Provides flexibility & reduces cost
 - Allows information to be tailored to the purpose
 - Allows sources to change without disrupting processes
 - Provides multiple options for how information is accessed
- ✍ Saves time
 - Fosters reuse in the information access layer



