

IBM System z Technology Summit



Why WebSphere Application Server on System z?



z doctor is in!

Visit the z Solution Suite for 1-1 consultations; see the zEnterprise in action

Save the Date

Impact2011

Changing the Way Business and
IT Leaders Work

Optimize for Growth.
Deliver Results.

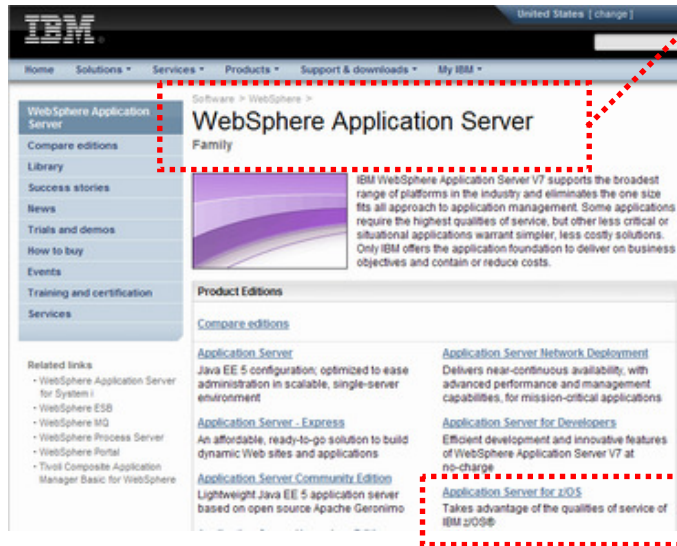
April 10–15
Las Vegas, NV

ibm.com/impact



Two Questions We'll Answer Today ...

ibm.com WebSphere page ...



WebSphere Application Server Family

WebSphere. software

How does WebSphere Application Server address your business imperatives?

Application Server for z/OS

Takes advantage of the qualities of service of IBM z/OS®

What is meant by "Takes advantage of the qualities of service of IBM z/OS?"

IBM zEnterprise System



IBM zEnterprise 196 (z196)

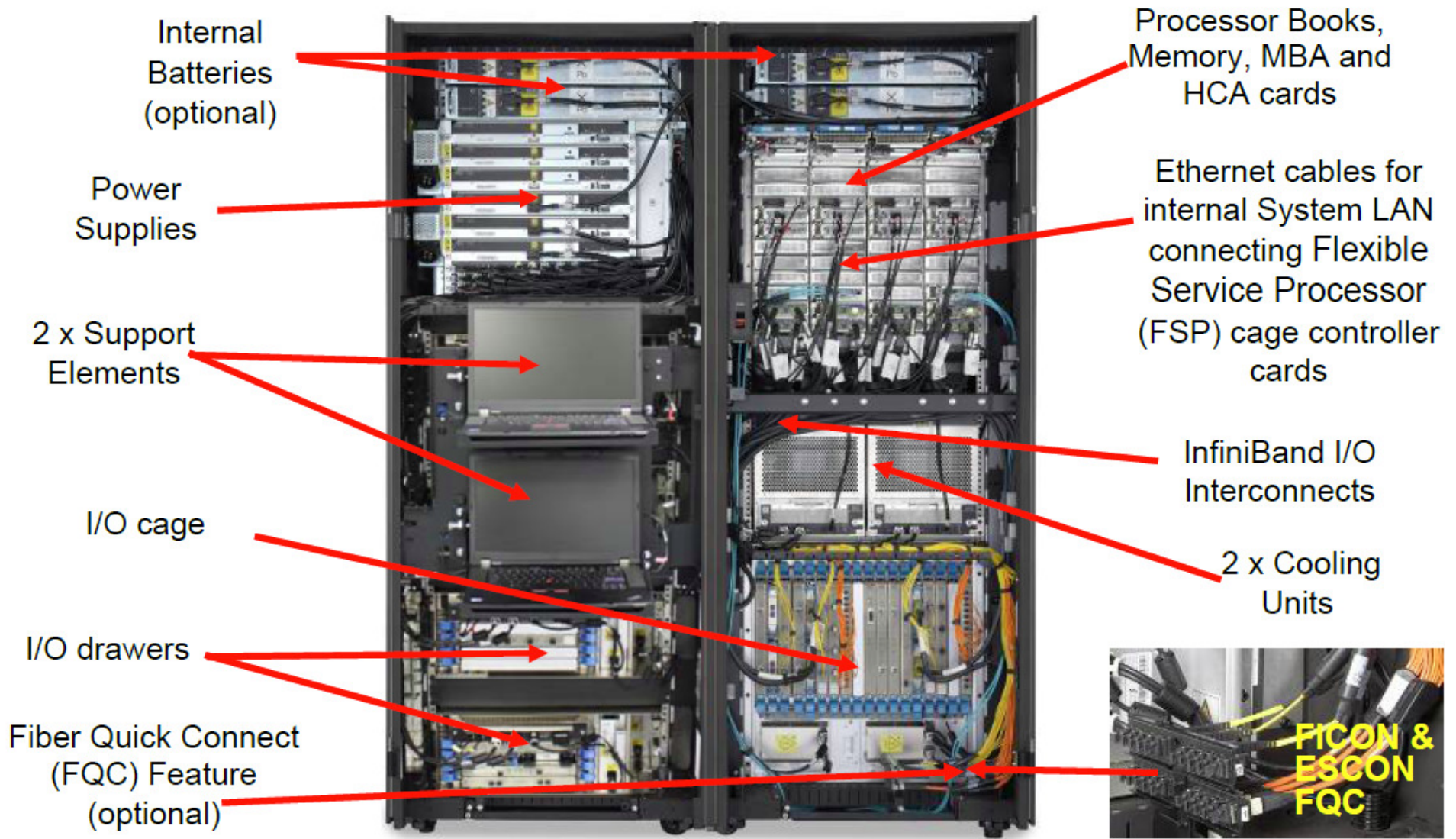


IBM zEnterprise BladeCenter Extension (zBX)

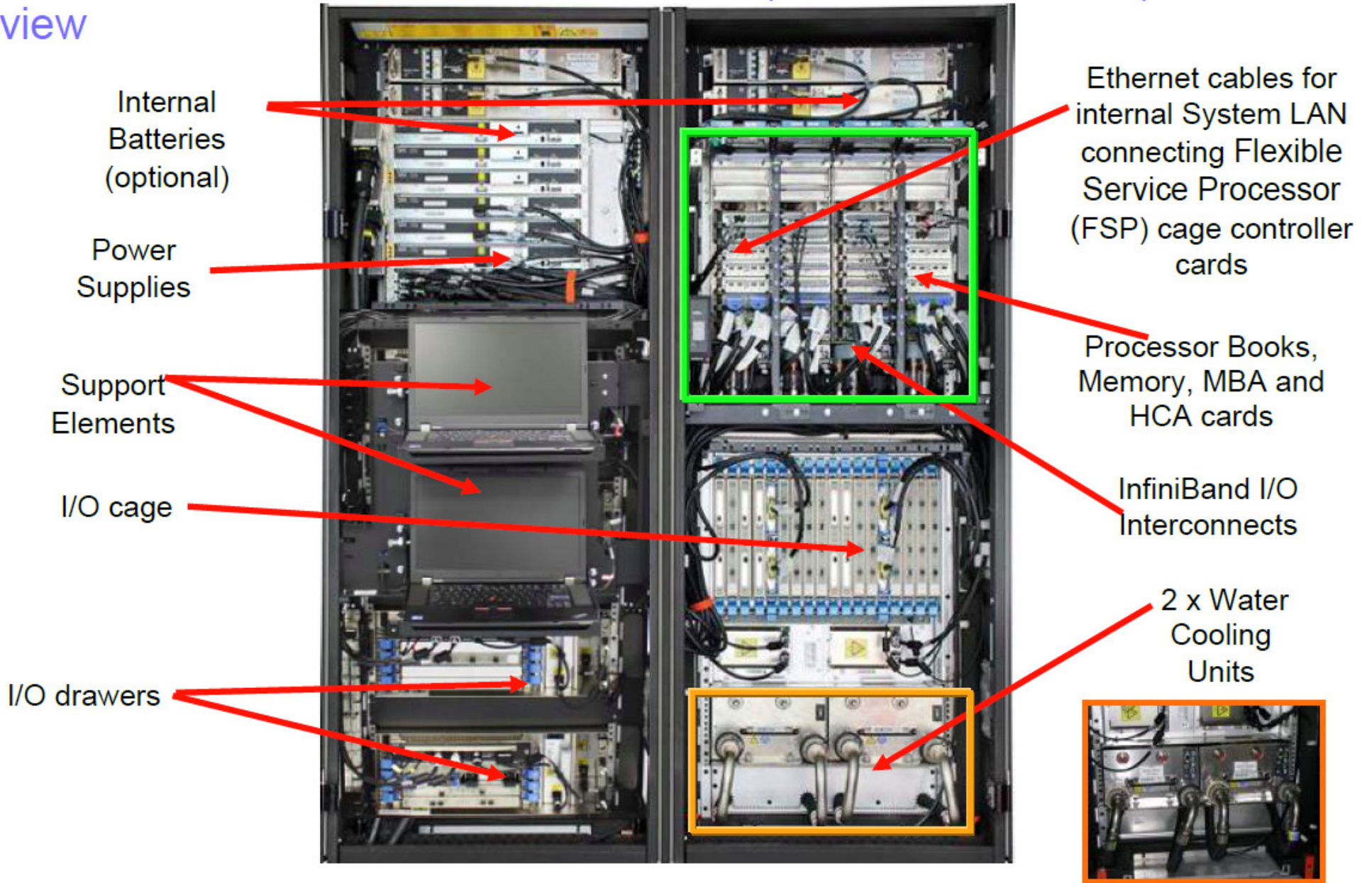
IBM zEnterprise Unified Resource Manager (zManager)



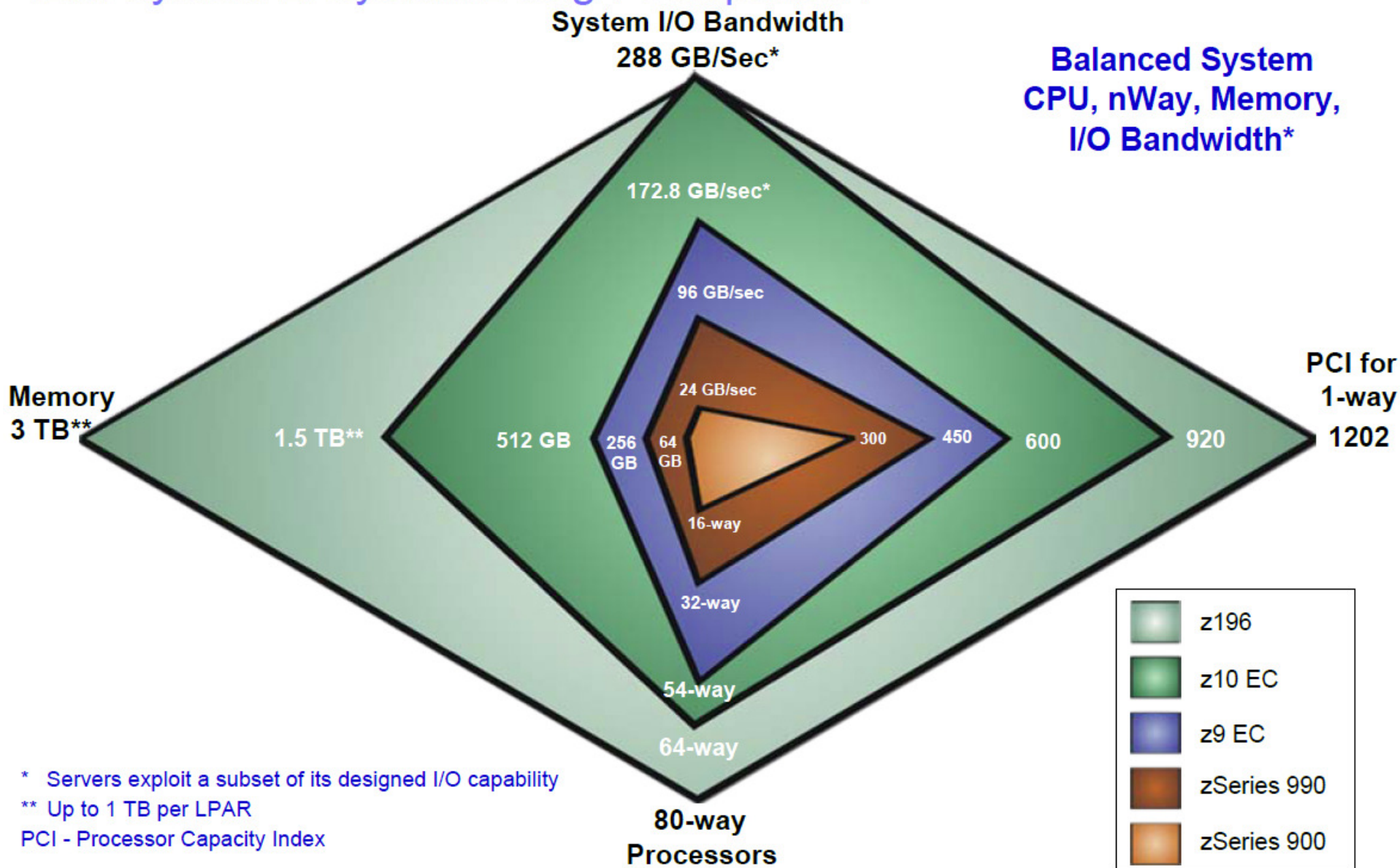
z196 – Under the covers (Model M66 or M80)



z196 Water cooled – Under the covers (Model M66 or M80) front view



IBM System z: System Design Comparison



* Servers exploit a subset of its designed I/O capability

** Up to 1 TB per LPAR

PCI - Processor Capacity Index

The WebSphere Application Server Family

An industry-leading open standard application server platform, with powerful business functionality

Manage Cost

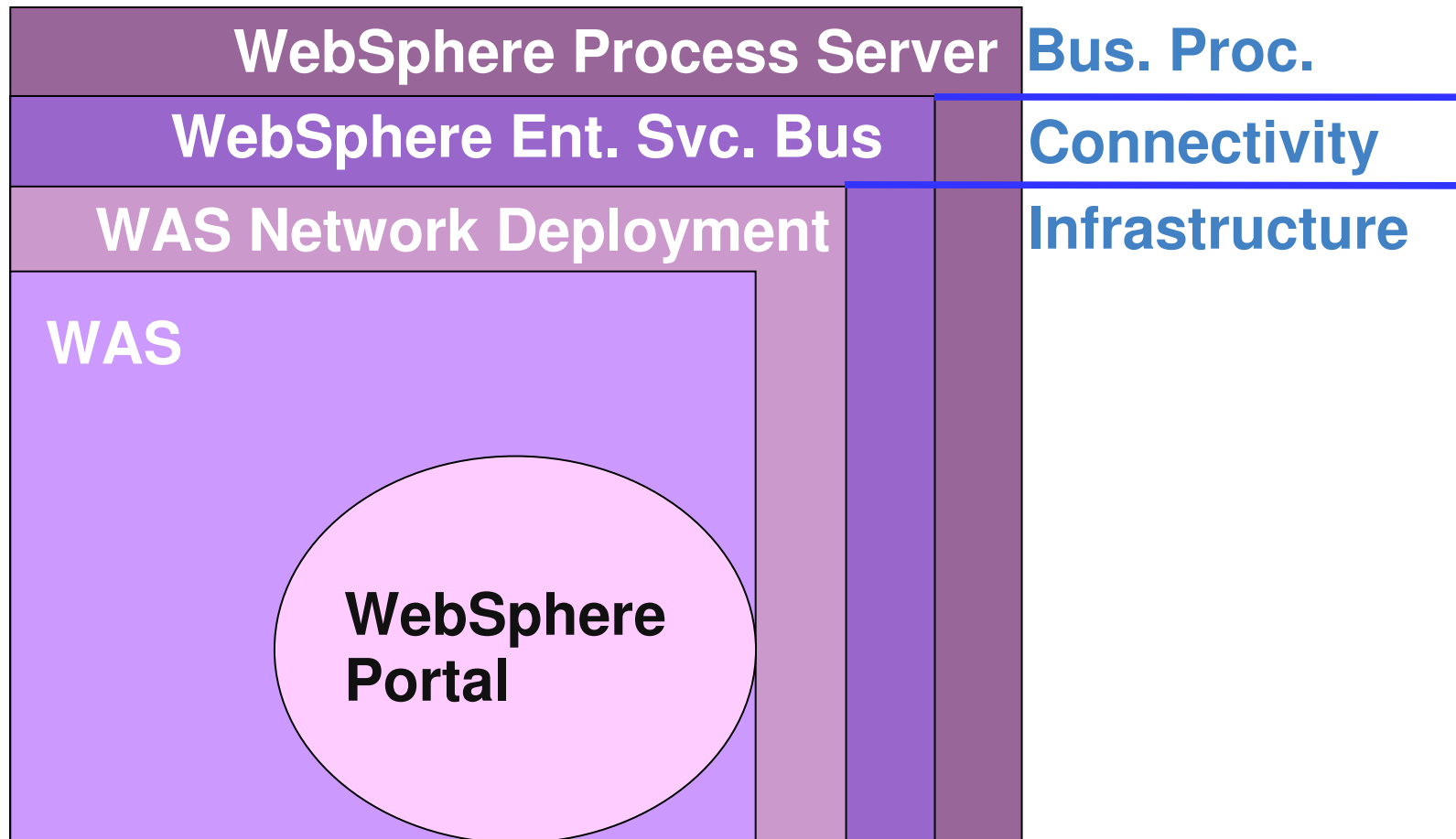
- Common standards across all platforms
- Common tooling across all platforms
- Many of the same skills across all platforms

Enhance Agility

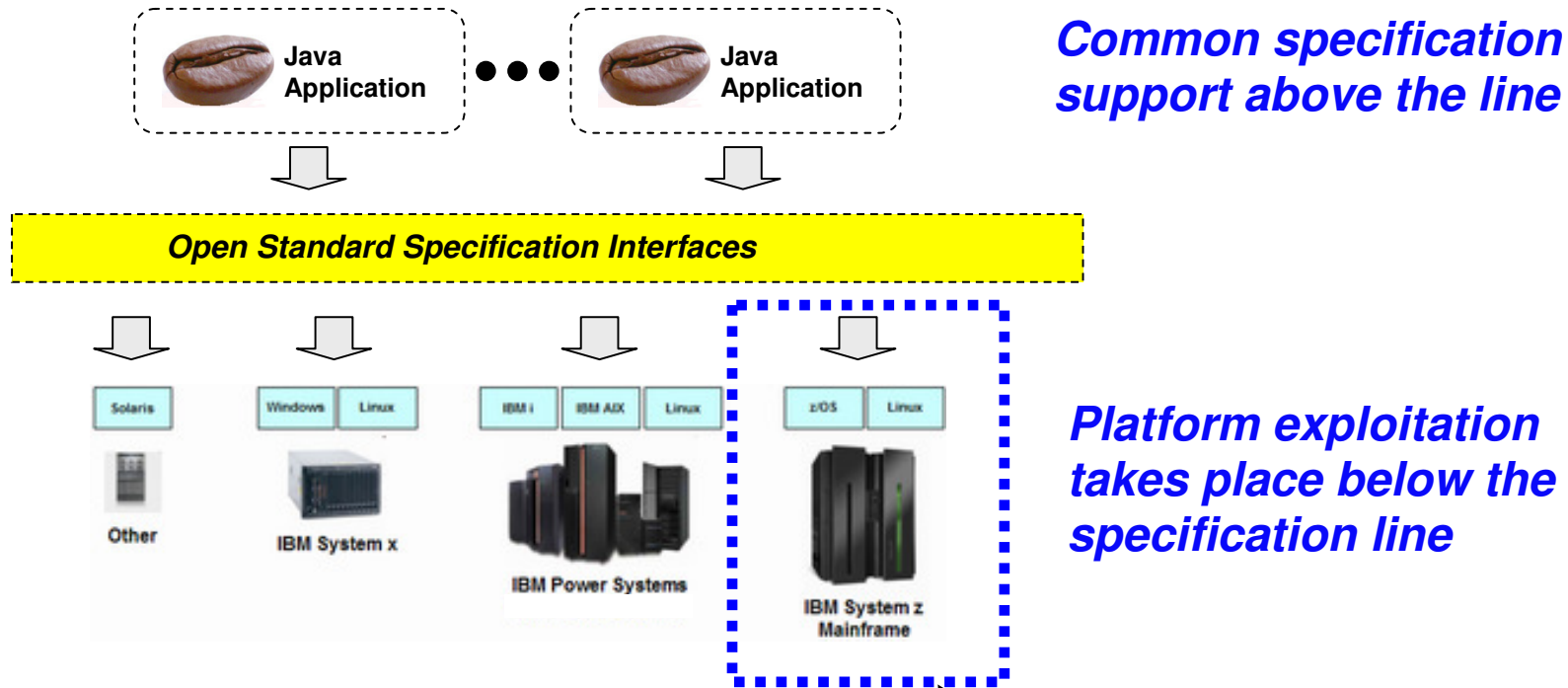
- Rapid development and deployment model
- Many dynamic runtime elements

Common business applications runtime across the enterprise ... development, test, production

The WebSphere Application Server 'Stack'

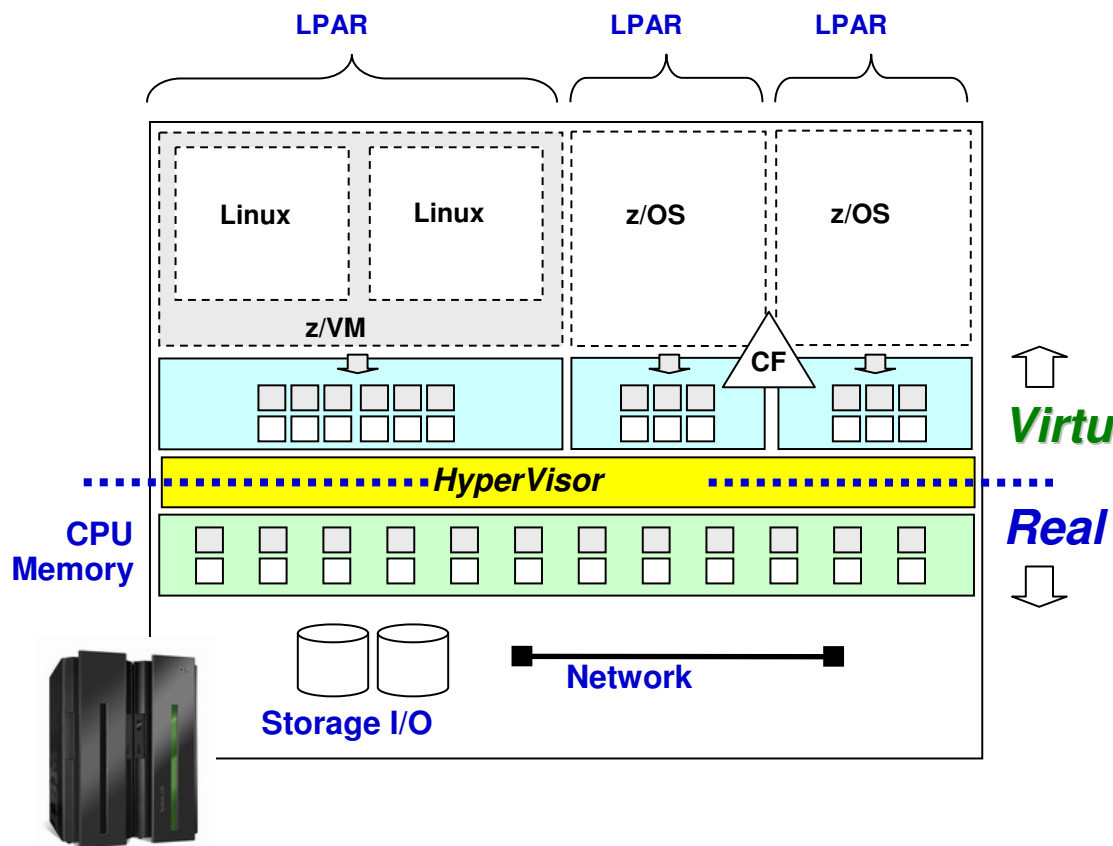


Common Standards Across Family of Platforms



It's all about the System z and z/OS platform and the way WAS z/OS exploits the platform

Industry-Leading Virtualization Technology



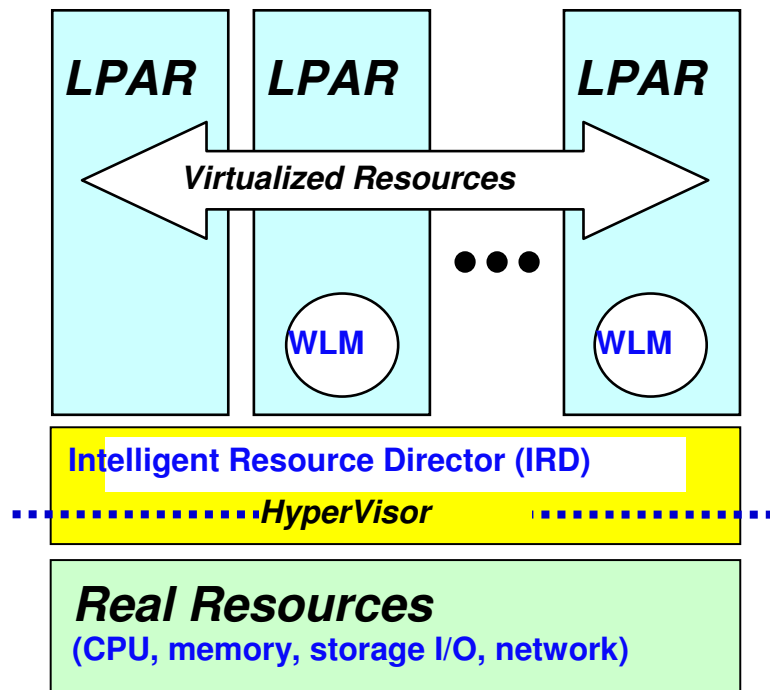
Not merely “like”
the mainframe
It *is* the mainframe

↑
Virtualized
↓
Real

Proven enterprise
quality virtualization
technology

Not all virtualization technologies are the same

Dynamic Resource Re-Allocation Between LPARs



Add CPU non-disruptively

Re-allocate CPU non-disruptively

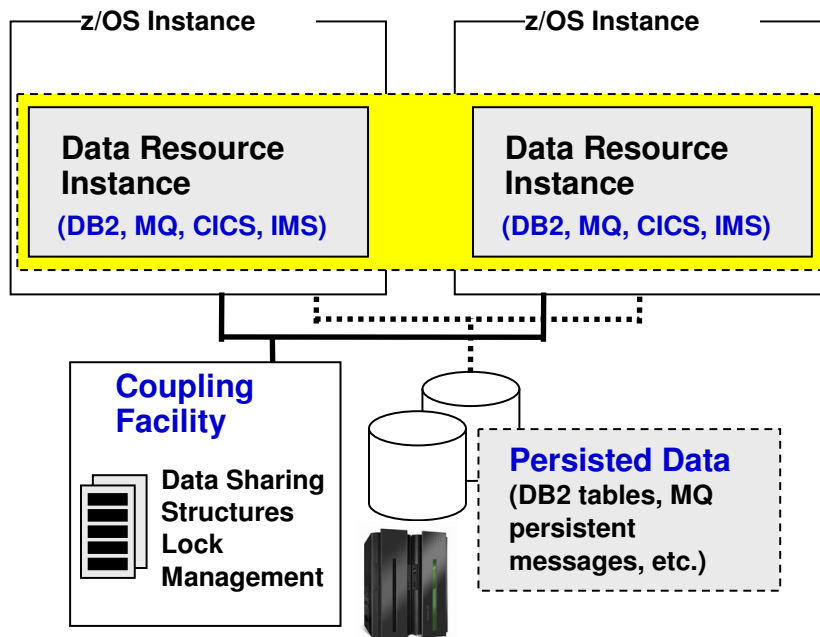
IRD intelligently balances

Vary I/O capacity dynamically

WLM advise IRD

Virtualization technology that evolved in the enterprise
Solid, stable and proven

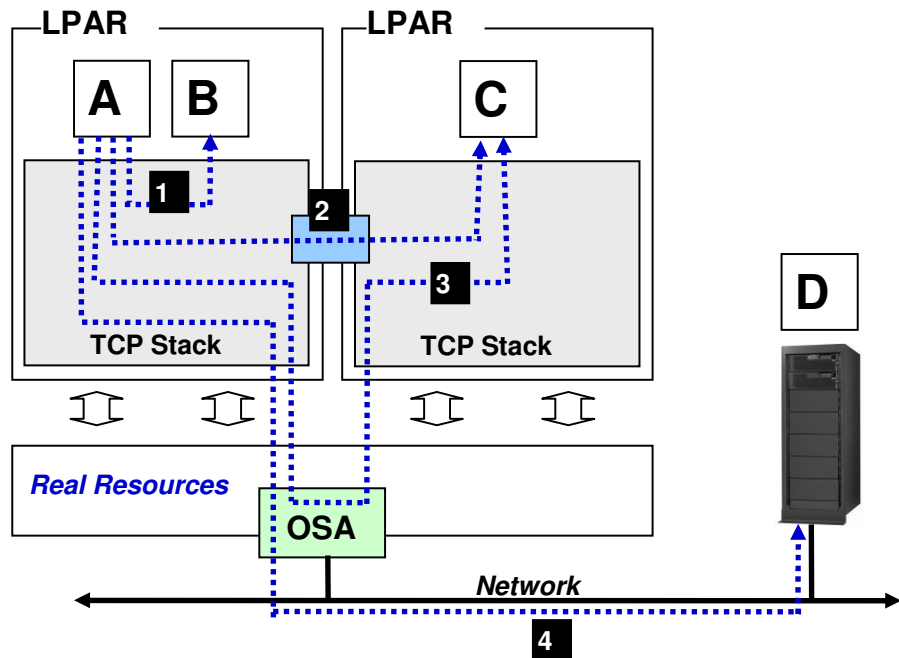
True Data Sharing From Multiple Resource Instances



- **Parallel Sysplex provides clustered z/OS instances**
- **Shared data, lock management, coordinated time management, high-speed data transfer**
- **Mature, stable, reliable**
- **Unbeatable availability**

Provides scalability and availability ... to levels used throughout the world for critical activity

Intelligent TCP/IP

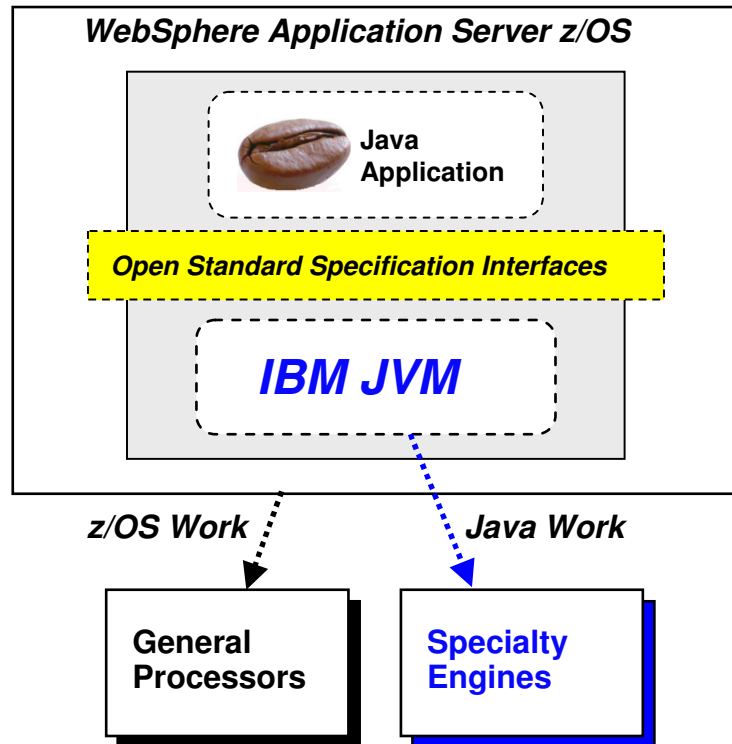


1. **Same LPAR**
No network ... cross memory ... *ultra fast*
2. **Different LPAR, HiperSockets**
No network ... cross memory ... *very fast*
3. **Different LPAR, *not* HiperSockets**
No wire ... just adapter card ... *fast*
4. **Off System z**
Traditional networking here

When throughput and scalability is important, network delays can add up

TCP/IP on z/OS is very aware and optimizes its path to reduce overhead and benefit your business

Specialty Engine Exploitation

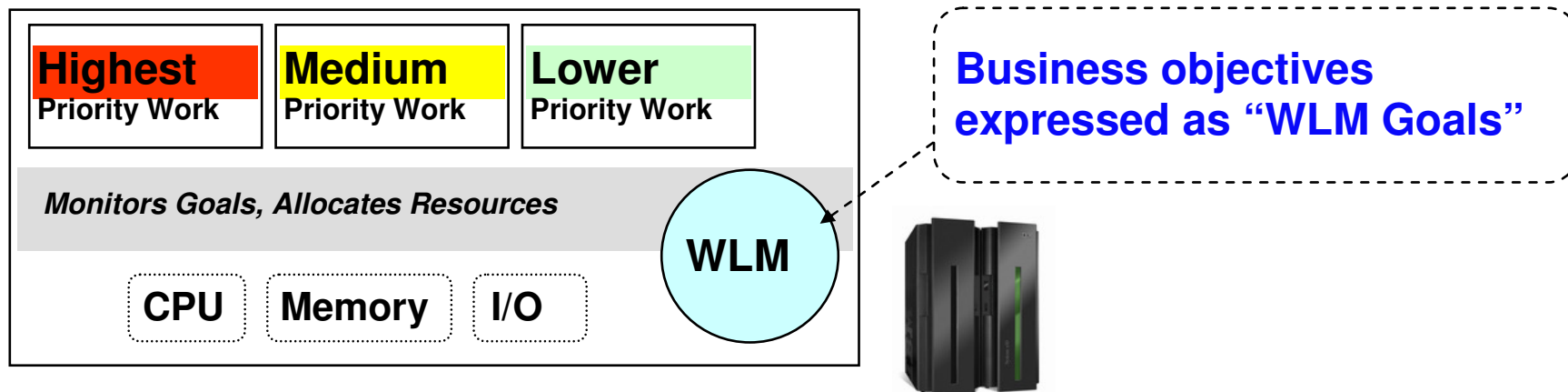


- Offload Java work to financially attractive specialty engines
- Completely transparent process to applications
- Greater general processor capacity for non-Java work
- Lower software licensing costs, and/or the avoidance of additional costs

Works for Java offload, Linux on System z offload and certain DB2 processing offload

A feature enthusiastically embraced by many System z and z/OS customers!

Workload Manager (WLM) Exploitation



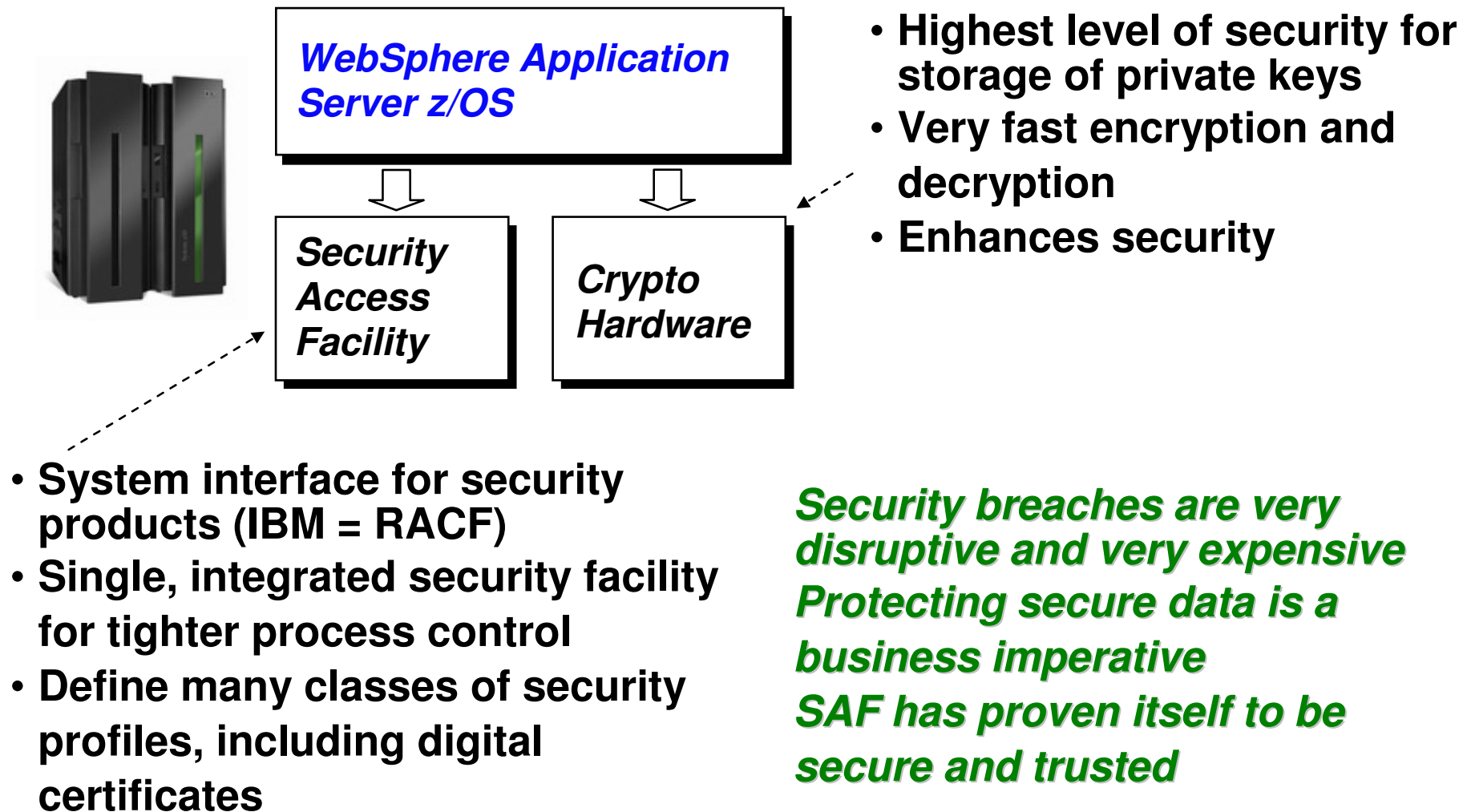
Benefits to you and your business:

- Intelligent control of resources towards meeting *your* goals
- Very efficient resource sharing can be accomplished
- Critical work gets the resources, less critical held off temporarily
- Intelligent routing of work based on WLM monitoring of system

Manage costs -- very efficient utilization of asset investment

Provide agility -- intelligent and dynamic allocation to meet goals

SAF and Crypto Hardware

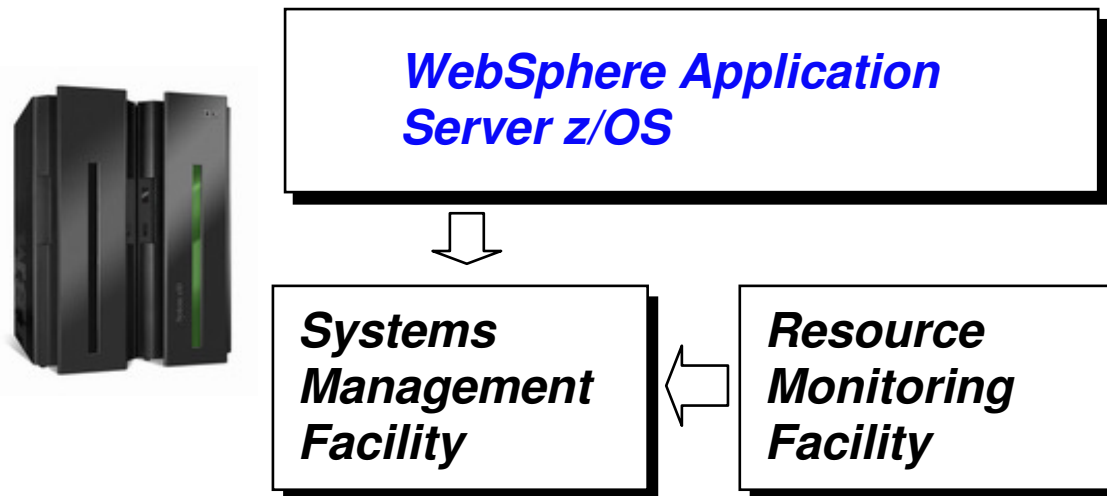


- System interface for security products (IBM = RACF)
- Single, integrated security facility for tighter process control
- Define many classes of security profiles, including digital certificates

- Highest level of security for storage of private keys
- Very fast encryption and decryption
- Enhances security

*Security breaches are very disruptive and very expensive
Protecting secure data is a business imperative
SAF has proven itself to be secure and trusted*

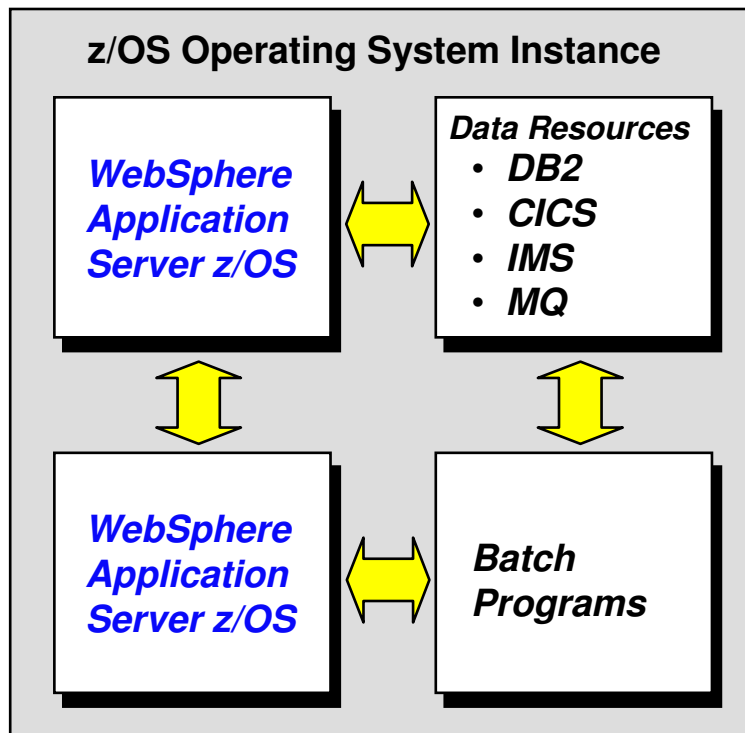
SMF and RMF -- Measuring and Reporting on Activity



- Achieve very accurate and customized reporting of system activity
- Perform very precise capacity measurement and planning
- Capture who is using what resources and when
- Allows finer-grained accounting and chargeback
- Many tools on the shelf to do analysis and reporting

Have a clear view of your resource investment and utilize it as fully as you can with the information you can gather

Collocation Benefits



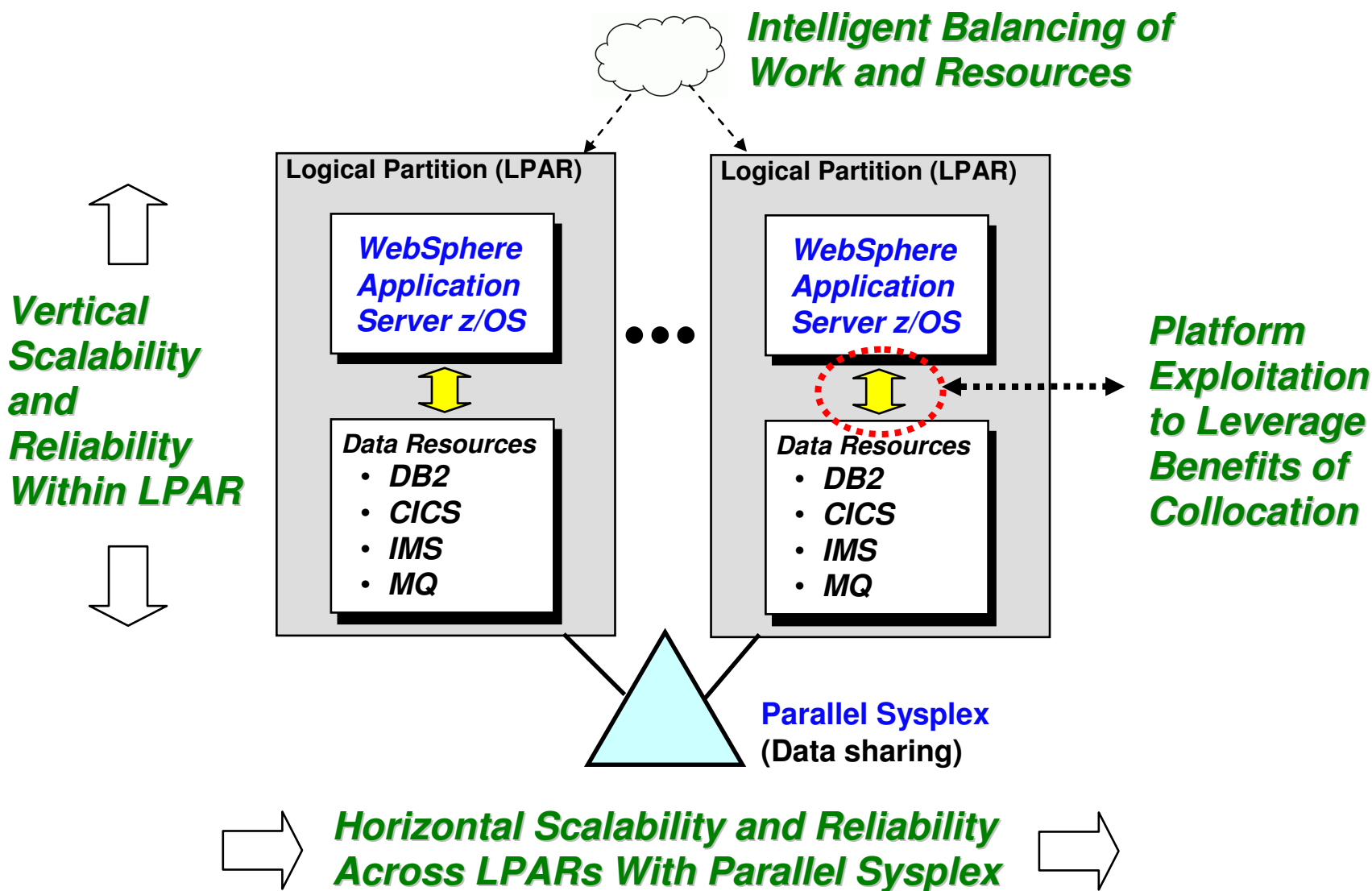
- ***Extremely*** fast data transfer
- Tightly controlled by z/OS authorization processes
- Eliminate need to serialize and deserialize data and objects
- Eliminate need for encryption overhead
- Propagate several forms of user identity

Efficient -- very low overhead so scalability can be addressed

Secure -- no network, can't be sniffed or hacked

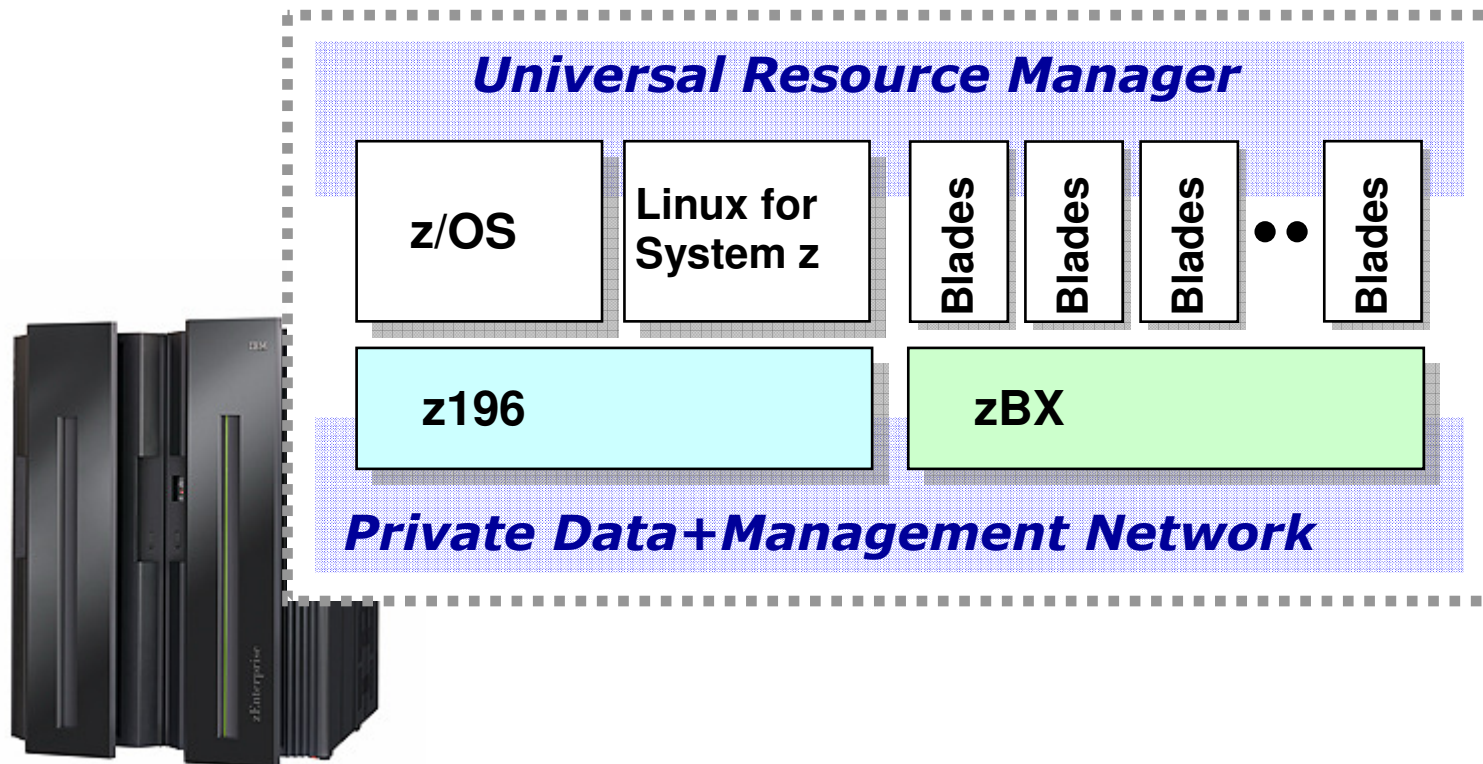
Fast -- for very high volume workloads

Collocation, Scalability and High Availability



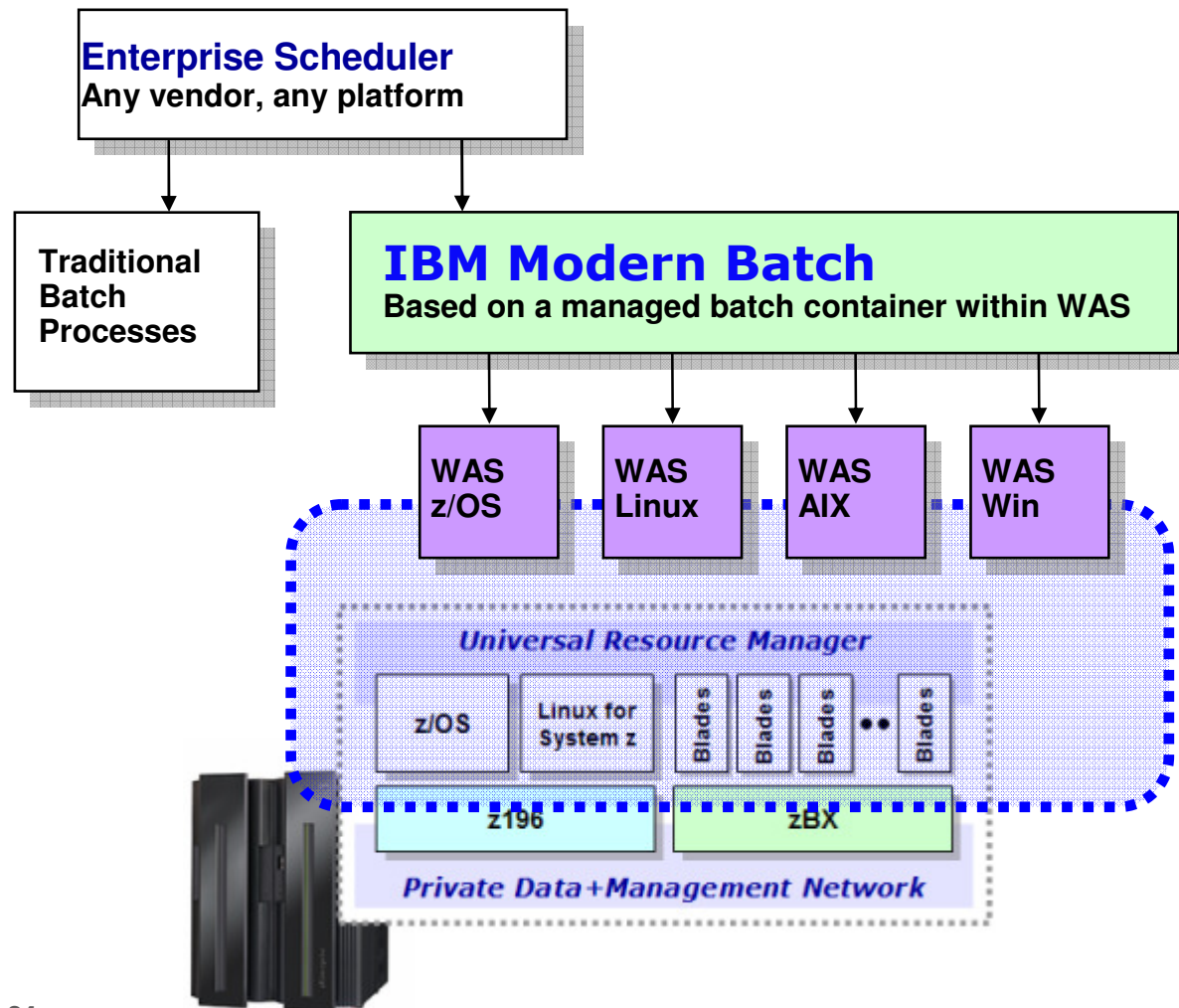
zEnterprise – Best of All Worlds

The z/OS benefits we've discussed for work best suited for that, and a coordinated and integrated multi-system machine it all



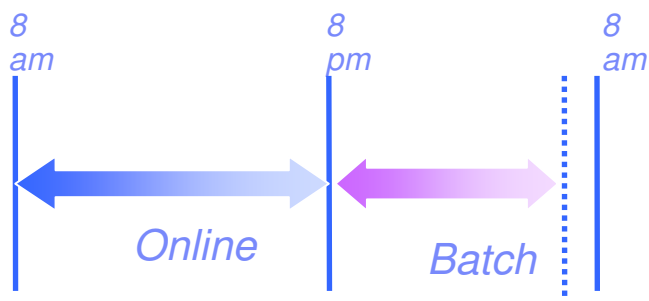
Modern Batch ... Coupled with zEnterprise

IBM's Modern Batch provides flexible Java batch processing across multiple environments. Put the zEnterprise underneath and ...

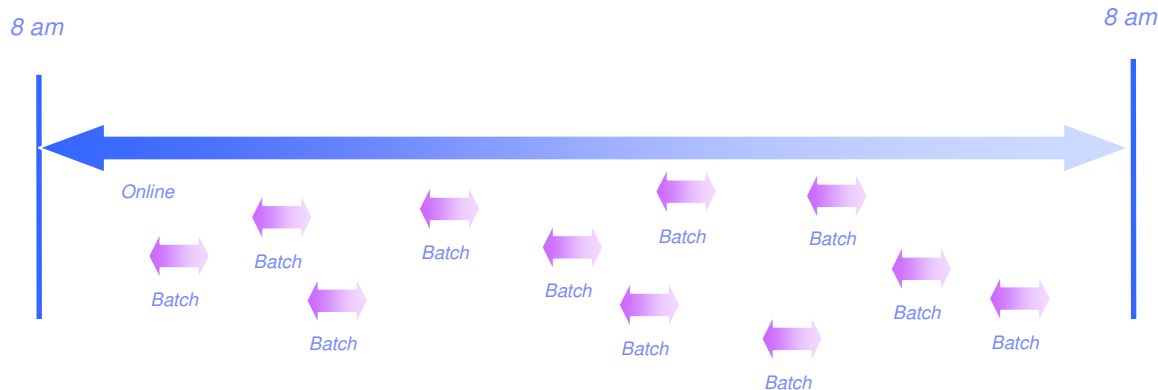


IBM's Modern Batch provides the managed container environment for Java batch
WAS provides the runtime for combined OLTP and Batch
zEnterprise provides the execution environments that allow the best "fit for purpose" for your needs

Defining the Issues of Traditional Batch on a Mainframe

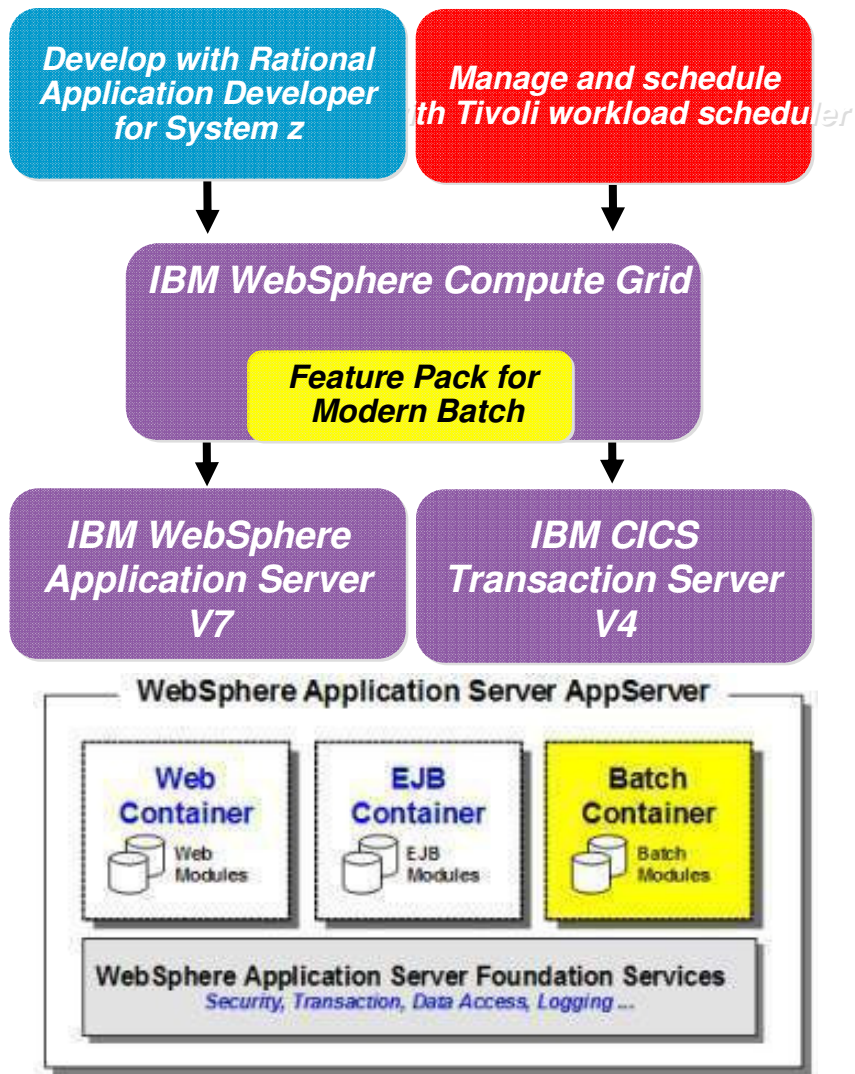


Globalization is putting pressure on traditional “batch windows”. There’s more data but shrinking batch time.



Is there a way to run batch concurrent with OLTP without affecting SLA for on-line applications?

Improved Utilization using Modern Batch on the zEnterprise



What it is

-- Architectural framework for meaningful integration between OLTP and batch applications. Reincorporates savings of batch processing into today's OLTP environment

What it offers

-- Continuous interweaving of batch and OLTP processes **aka** 24 x 7 batch and OLTP

-- Reduced cost through business logic sharing on a **shared** infrastructure

-- Reduced operational cost from OLTP application and batch job **integration**

-- High throughput and low resource consumption on z/OS for Java Batch when collocated with data subsystems

Already have a z/OS culture

- Already understand it
- Already built processes around it
 - Change management / Problem management
- Already know how to manage, measure, operate with it – tooling and experience

Like zSeries Hardware Benefits

- Reliability, availability (5 or 6 nines capable), virtualization
- LPARs and internal network speeds - zBX

Like z/OS Capabilities

- WLM for policy based performance management
- Parallel sysplex for multi-system data sharing
- RACF (resource access control facility) for most robust security system available
- RRS (resource recovery service) for transaction management

Want WAS based products close to mainframe apps

- CICS, IMS, DB2; also z/OS optimizations / h/w optimizations
- Network bandwidth adds up

Possible TCO benefits

- vs. distributed environments

Performance Mgmt and Capacity Planning easier

- Tools and discipline exists – for many years
- vs. distributed concept of `buy more/bigger h/w` - drives up TCO

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