



IBM IT Education Services

## Session E50

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## VSE Trends and Directions

VSE Technical Conference

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ESCON	Parallel Sysplex*	VSE/ESA
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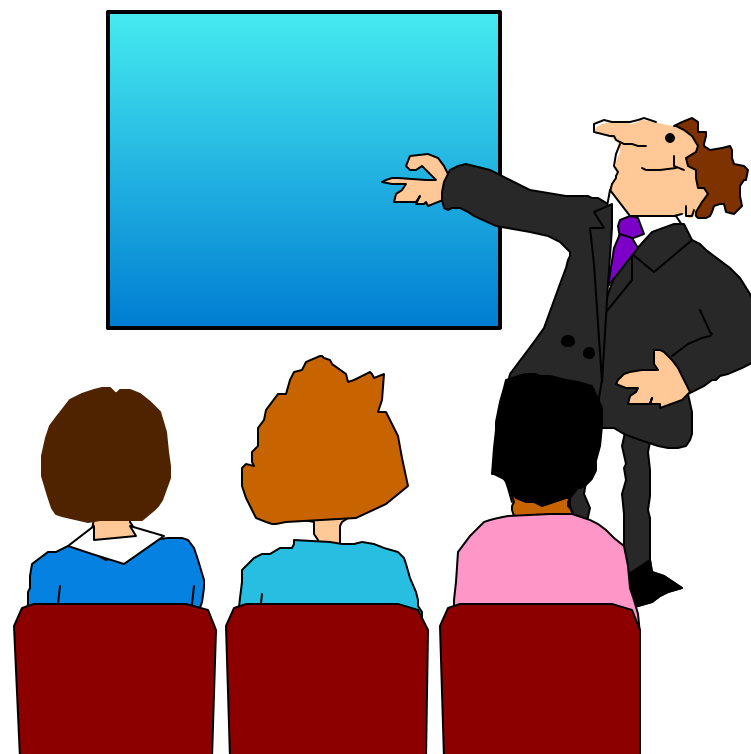
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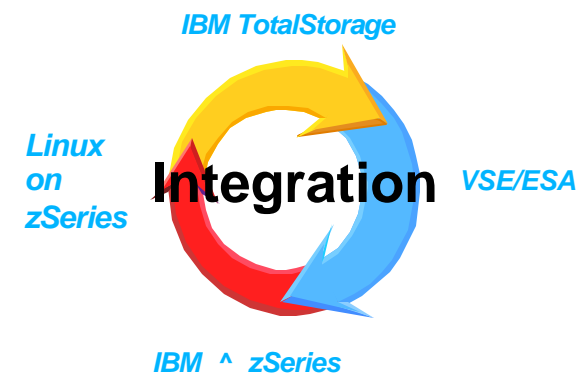
# Agenda

- Summary
- VSE Update
- e-business Roadmap
- Customer Scenarios
- VSE and Linux
- VSE Directions
- Conclusion



## Making the Most of VSE

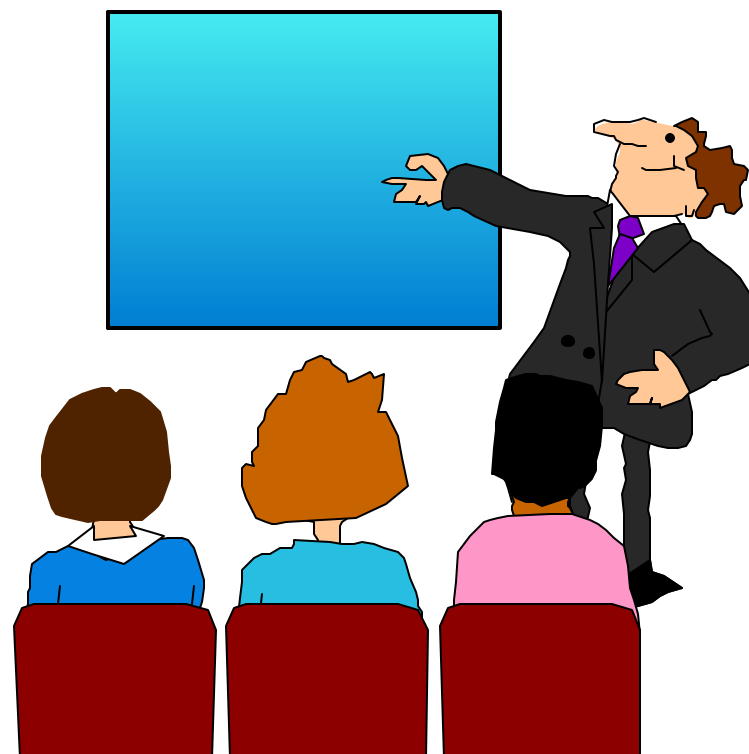
- **Protect** your extensive investments in *VSE* programs, data, equipment, and IT skills, plus business processes, end user training, etc.
  - ▶ extend core CICS TS VSE/ESA applications to the web
  - ▶ exploit current IBM servers, storage, and software
- **Integrate** VSE with the rest of your IT
  - ▶ interoperability based on open standards
    - IBM Middleware
    - VSE e-business connectors
  - ▶ utilize Linux on zSeries where appropriate
    - consolidate existing distributed servers
    - new infrastructure and/or line-of-business applications



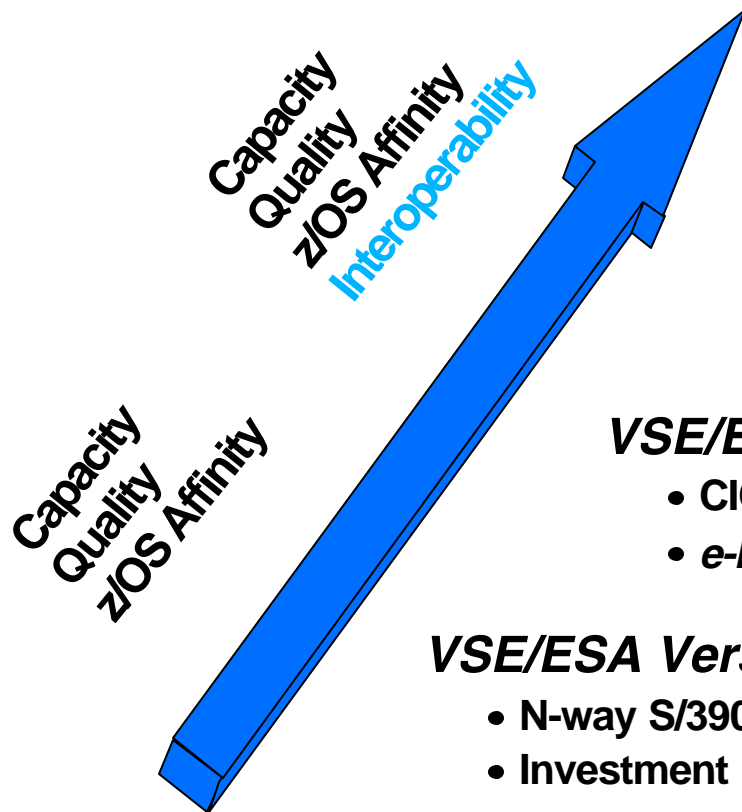
*leverage VSE - without being limited by VSE*

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# Responding to Customer Needs



## VSE/ESA Version 1 1990

- Constraint Relief
- ESA exploitation

## VSE/ESA Version 2 1994

- N-way S/390 Servers
- Investment Protection - Year 2000

## VSE/ESA V2.4 1999

- CICS Transaction Server for VSE/ESA
- *e-business*

## VSE/ESA V2.5 9/2000

- Interoperability

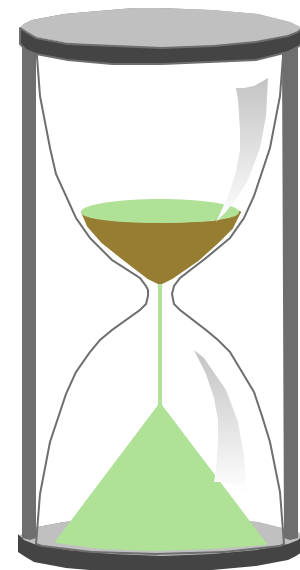
## VSE/ESA V2.7 3/14/2003

- Enhanced Interoperability
- ALS2 servers only



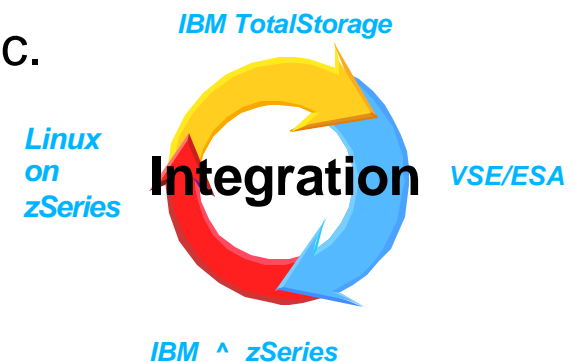
## What 's New?

- CA-Top Secret for VSE/ESA is no longer available from IBM
  - ▶ ann 6/4/2002, Withdrawal from Marketing 9/2002
- VSE/ESA V2.6
  - ▶ GA 12/14/2001
  - ▶ V2.6.3 available 9/12/2003
- VSE/ESA V2.7
  - ▶ GA 3/14/2003
  - ▶ **V2.7.1 available 9/12/2003**
- End of support for VSE/ESA V2.5
  - ▶ ann 8/6/2002, **effective 12/31/2003**
- DB2 Server for VSE and VM V7.3
  - ▶ ann 2/18/2003, GA 3/28/2003
  - ▶ included in VSE/ESA V2.7.1 and V2.6.3



## VSE/ESA Version 2 Release 7 - GA 3/14/2003

- Web services
  - ▶ SOAP and XML services
  - ▶ new DL/I connector
  - ▶ VSEScript interface to VSE e-business connectors
- CICS TS VSE/ESA CWS enhancements
  - ▶ client authentication
  - ▶ misc enhancements ported from z/OS
- Usability and availability
  - ▶ librarian 31-bit, more POWER queue entries, etc.
- +10 User Group requirements
- LE for VSE/ESA V1.4.3 (new mod level)
- IBM TCP/IP for VSE/ESA V1.5 (new release)
- MQSeries V2.1.2 (new mod level)





## VSE/ESA Version 2 Release 7 - GA 3/14/2003

### ■ Hardware

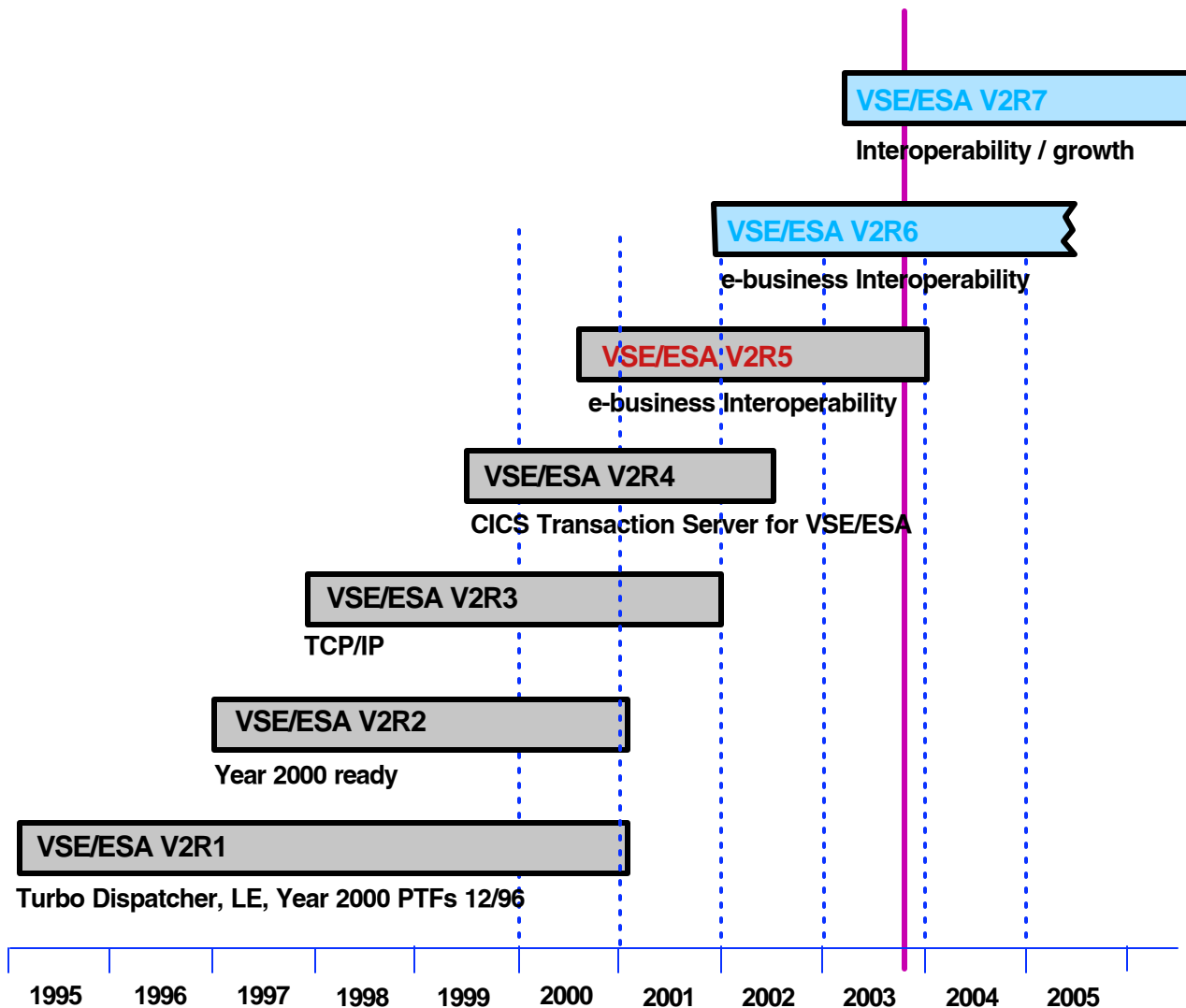
- ▶ HiperSockets (for *very fast* memory-to-memory communication)
  - VSE interoperability with Linux on zSeries
- ▶ PCICA hardware encryption assist enhances SSL
- ▶ Support for
  - zSeries 800, 900 and **990** (in 31-bit mode)
  - S/390 G5 and G6
  - S/390 Multiprise 3000
  - equivalent
- ▶ ESS Large Volume Support (1-32760 cylinders)
  - up to approximately 27GB/volume
  - VSAM limited to approximately 4.5GB/volume
- ▶ **IBM 3592 Tape**



## VSE/ESA V2.6.3 - 9/12/2003

- VSE/ESA V2.6 is the last VSE release to support
  - ▶ ES/9000 - 9121, 9021
  - ▶ ES/9000 - 9221, IBM 9672-Rx1
  - ▶ IBM 9672 G2, G3, G4
  - ▶ IBM Multiprise 2000
  - ▶ P390, R390, S/390 Integrated Server
- VSE/ESA V2.6 Marketing ended with GA of V2.7
  - ▶ How to order V2.6?
- *VSE/ESA V2.6.3 orderable as a feature of VSE/ESA V2.7.1*
  - ▶ *VSE Central Functions 'Service Option'*
    - *feature codes 5802 = 3480 format and 6119 = 3590 format*
  - ▶ *V2.6.3 base tapes shipped in addition to V2.7.1 tapes*

# VSE/ESA Version 2 Summary



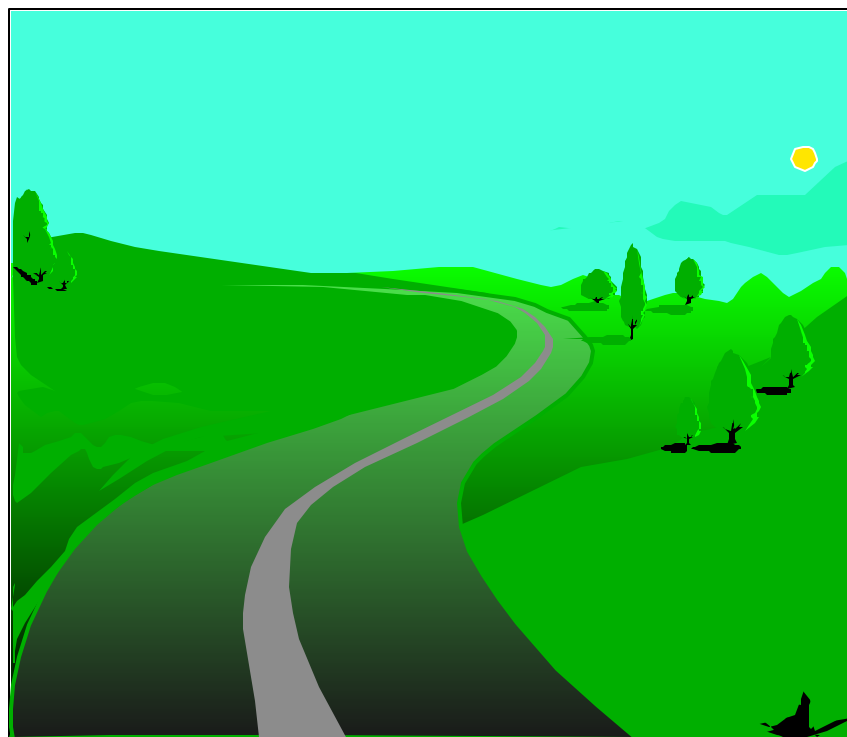
## Key Software and Hardware - End of Service

- VSE
  - ▶ VSE/ESA Version 2 Release 3 - 12/2001
  - ▶ VSE/ESA Version 2 Release 4 - 06/2002
  - ▶ VSE/ESA Version 2 Release 5 - 12/2003
- VM
  - ▶ VM/ESA Version 2 Release 4 - 06/2003
  - ▶ z/VM Version 4 Release 1 - 06/2003
  - ▶ z/VM Version 4 Release 2 - 12/2003
  - ▶ z/VM Version 4 Release 3 - 05/2005
  - ▶ z/VM Version 4 Release 4 - 08/2006
- S/390 Servers
  - ▶ ES/9021 and 9121 - 06/2003
  - ▶ ES/9221 and IBM 9672-Rx1 ('CMOS G1') - 12/2003

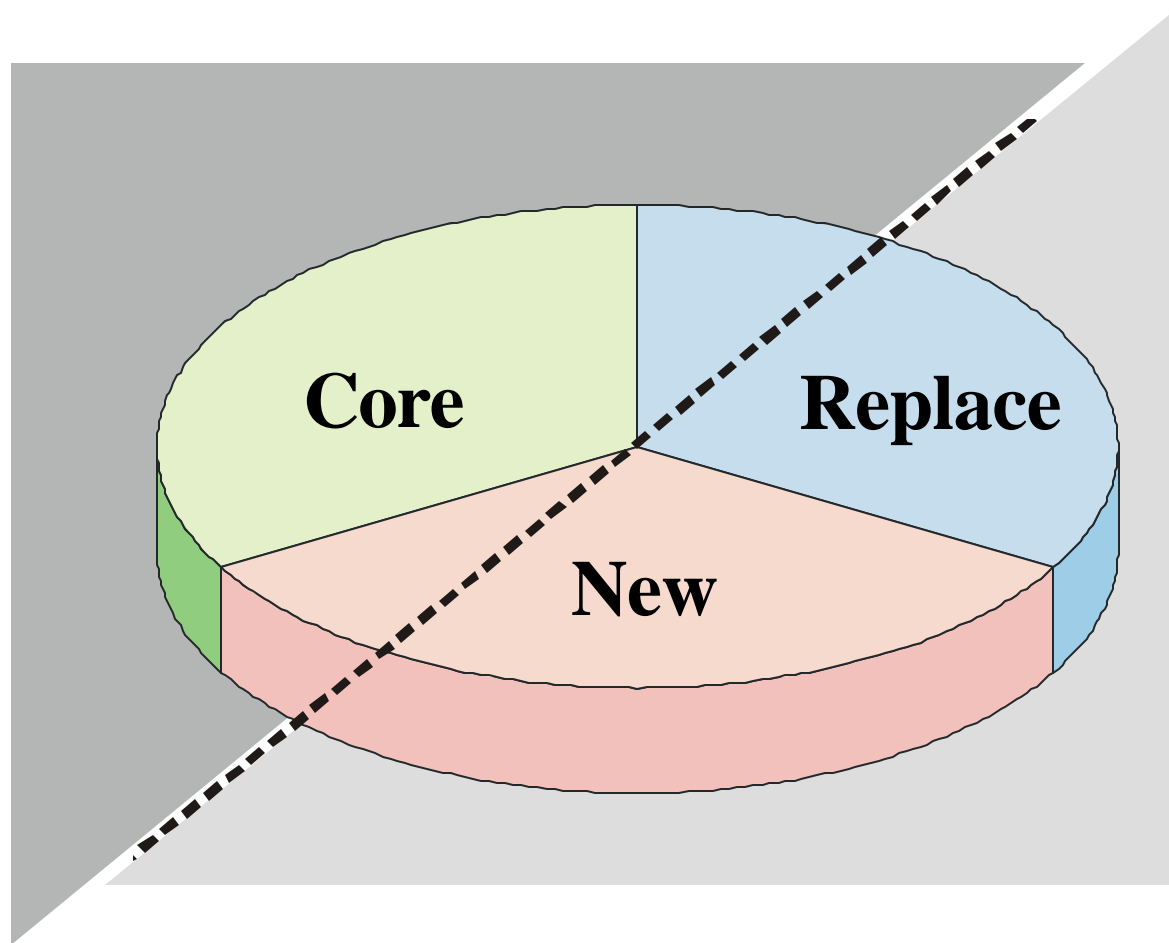


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- VSE and VM Update
- e-business Roadmap
  - ▶ applications
  - ▶ hybrid model
- VSE and Linux
- Customer Scenarios
- VSE Directions
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# Application Portfolio



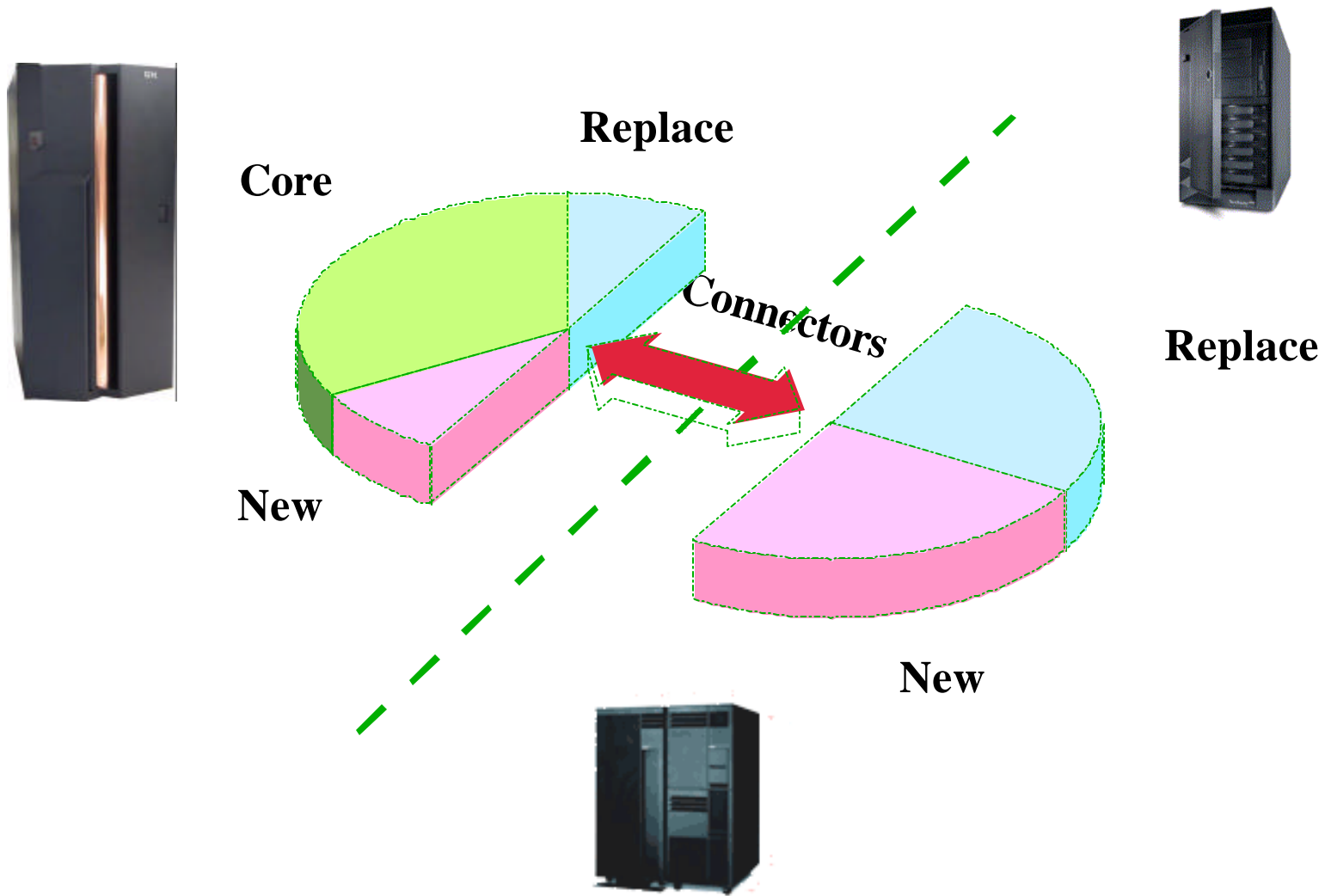
Note: Pie arbitrarily divided into thirds. Percent of applications in each category is unique to each customer

## 'Typical' Customer Environment

- It's a hybrid world
  - ▶ average 3.5 unique platforms incl Windows and Unix dialects
  - ▶ no single hardware/software platform is always best
- Core VSE applications
  - ▶ mostly alive, doing well, and growing
- Replacement applications
  - ▶ platform driven by application selection
  - ▶ often customers have growing core applications and replacement
- New infrastructure and e-business applications
  - ▶ other platforms (not VSE) are often a better choice
  - ▶ usage of Linux rapidly growing

**Customers need an e-business model that's flexible and extendable, yet protects core investments**

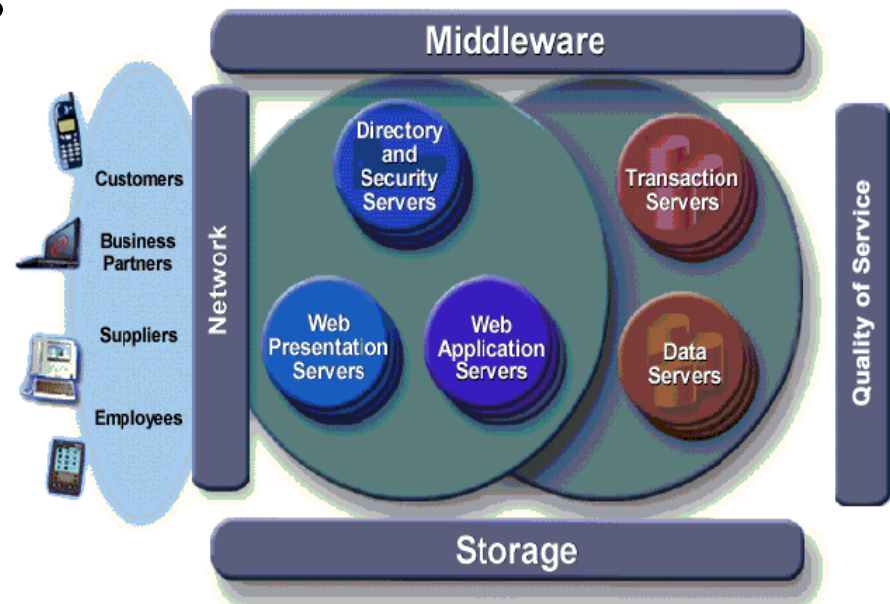
# Integrating Hybrid Environments



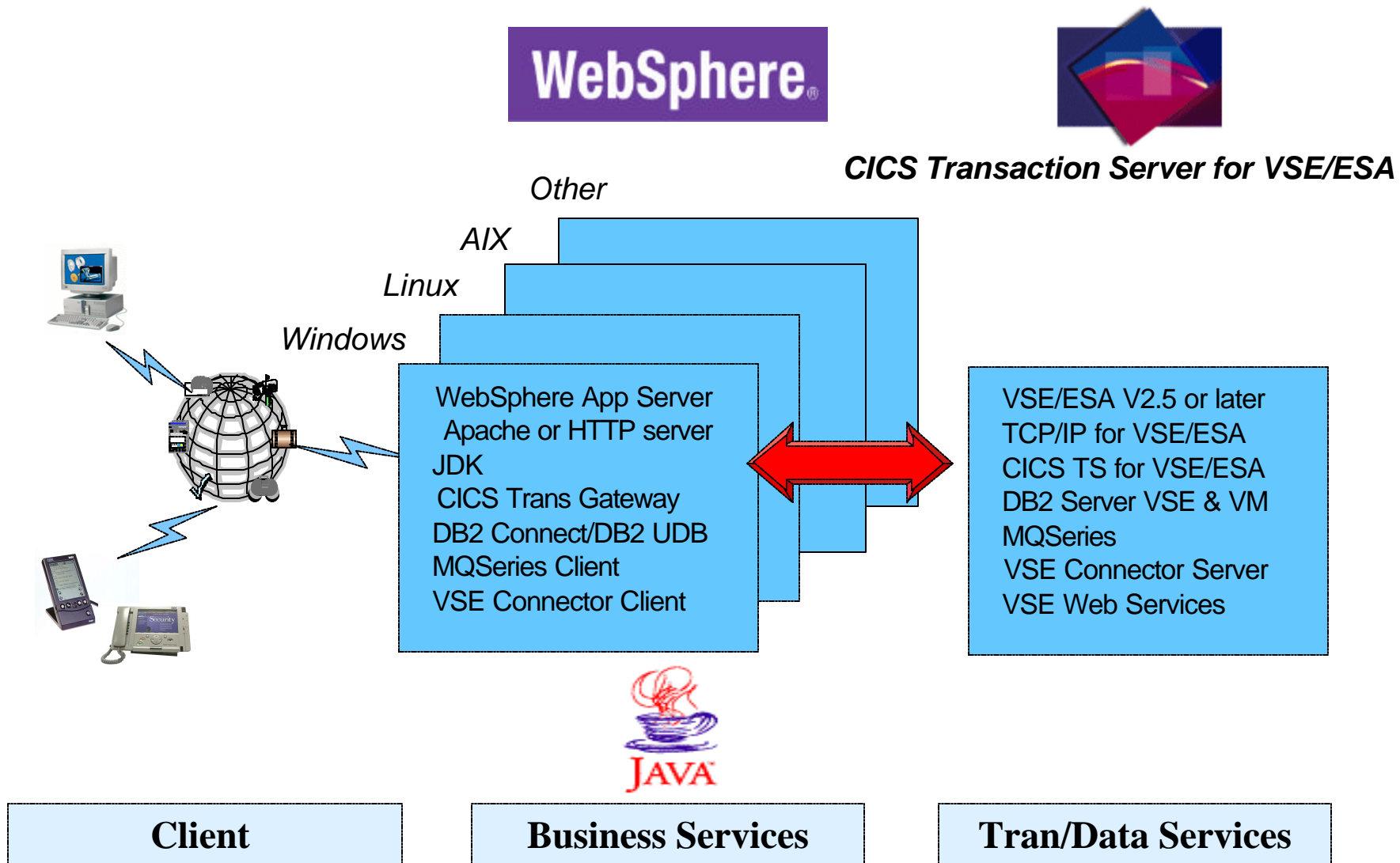


## How?

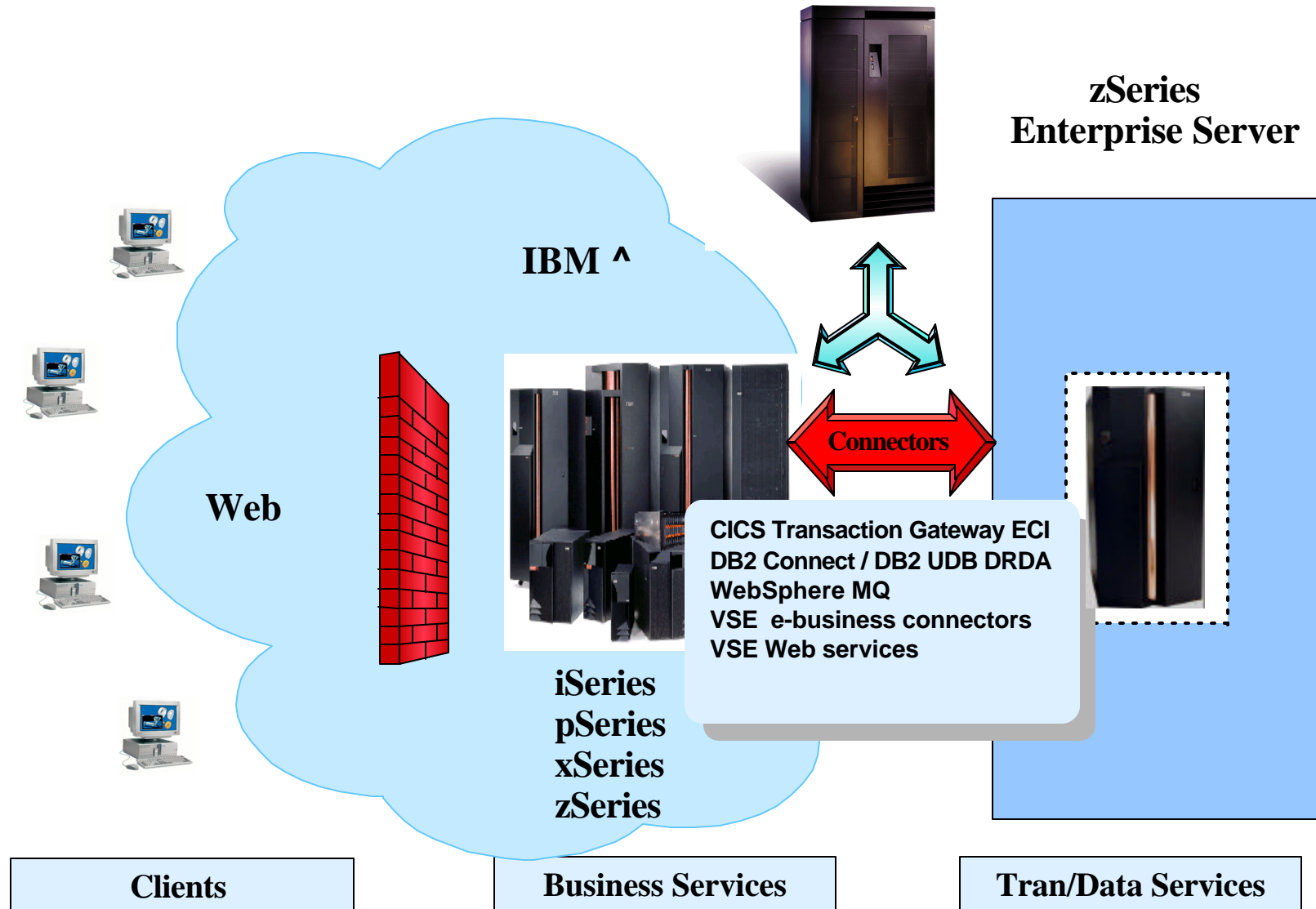
- A hybrid, 3-tier framework
  - ▶ a comprehensive, robust e-business model
  - ▶ based on open, industry standards
  - ▶ supports key platforms
  - ▶ leadership products
  - ▶ helps protect core investments



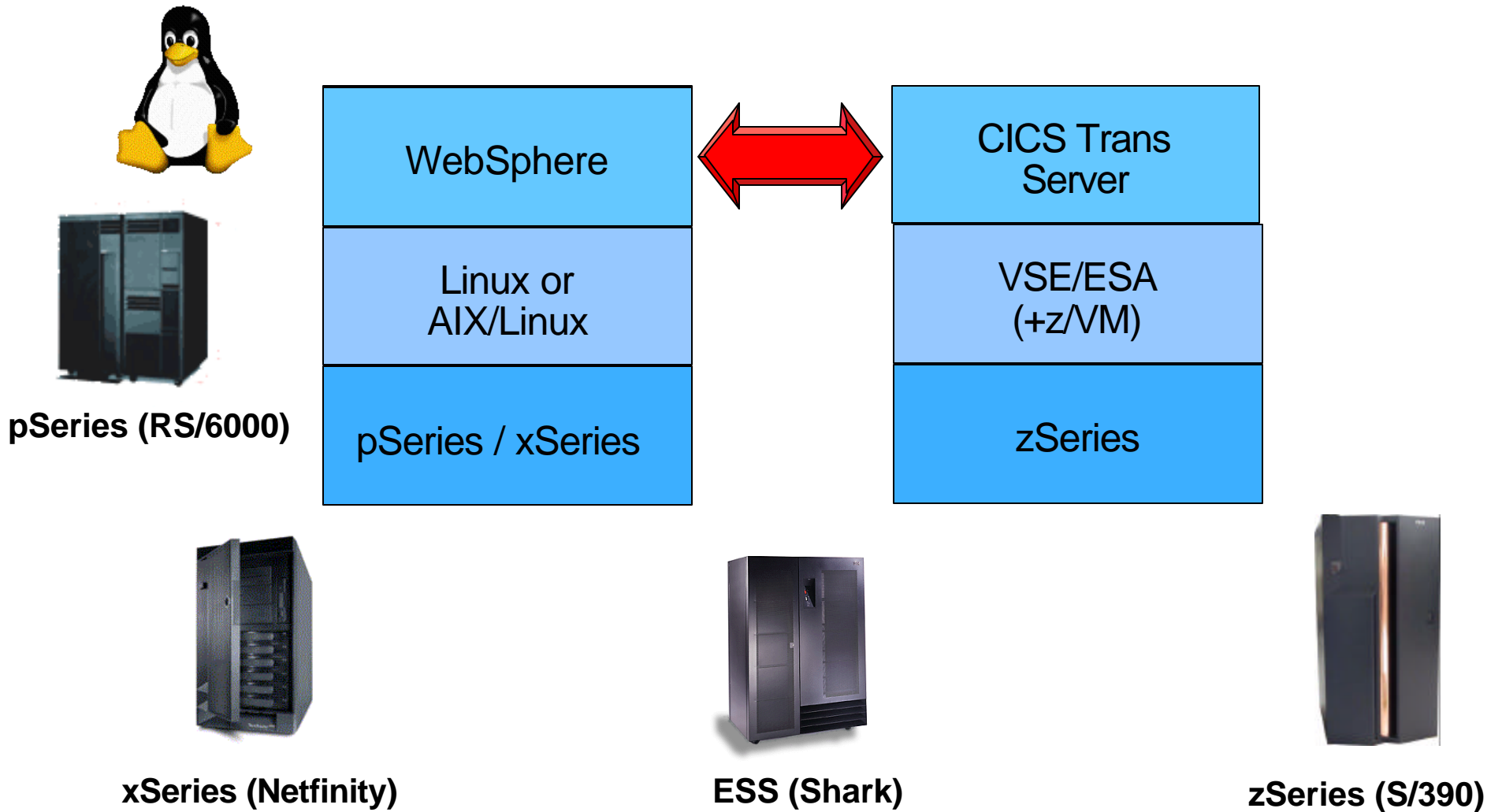
# Middleware for Hybrid (3 tier) Model



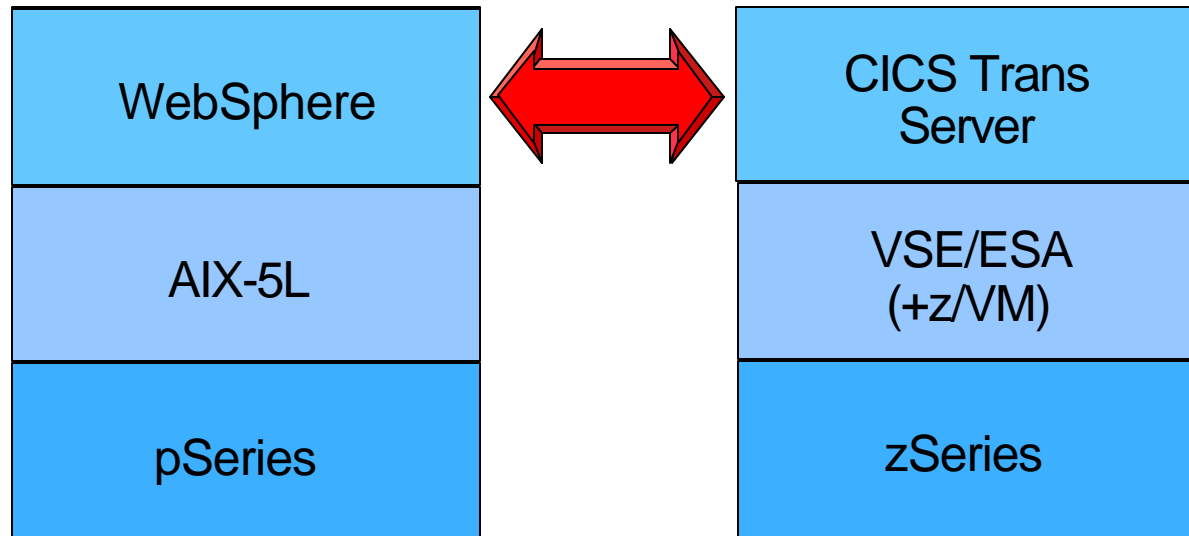
# Hybrid Model



# Alternate Environment 1: Linux (x and pSeries)



# Alternate Environment 2: AIX-5L



**pSeries**

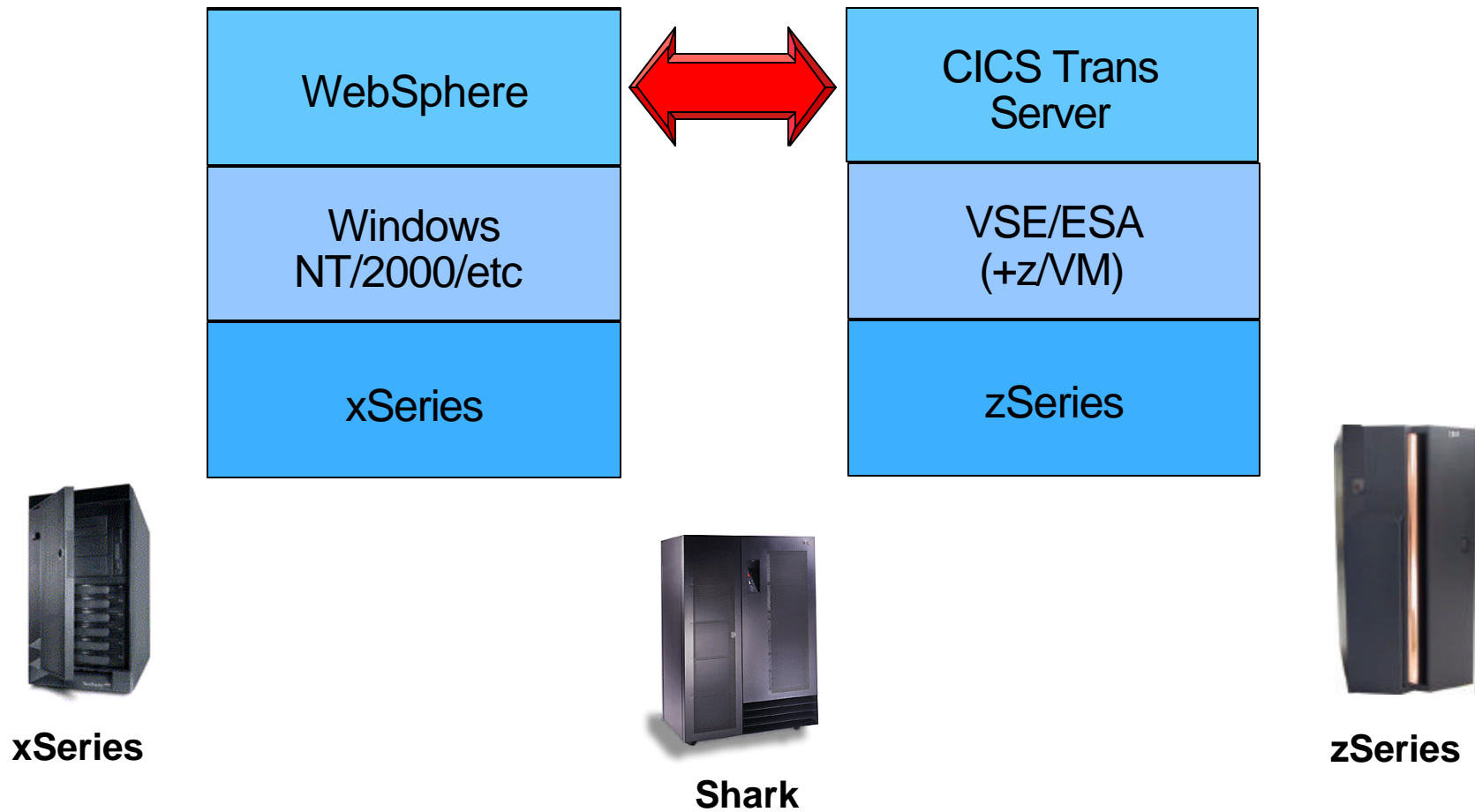


**Shark**

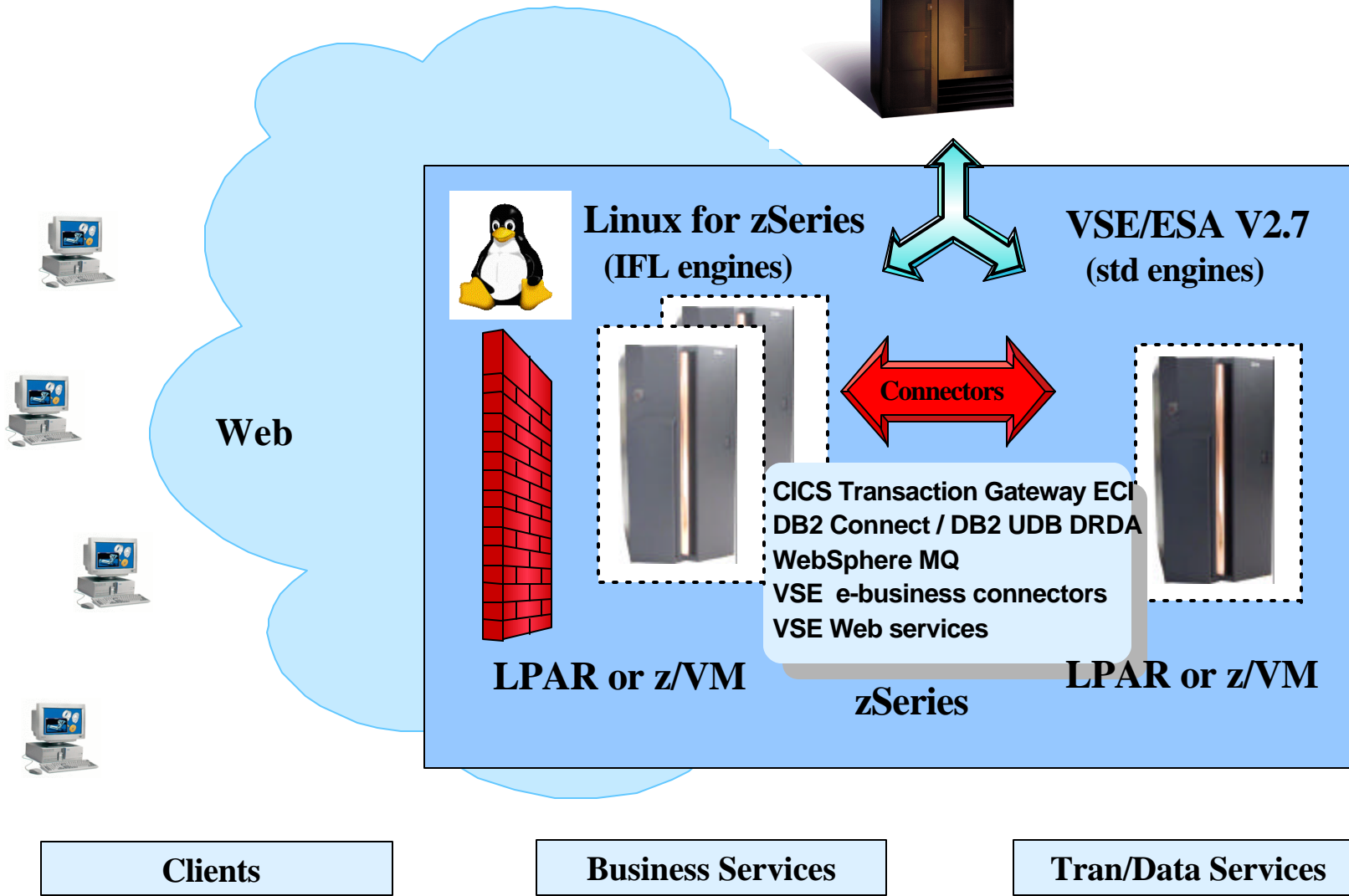


**zSeries**

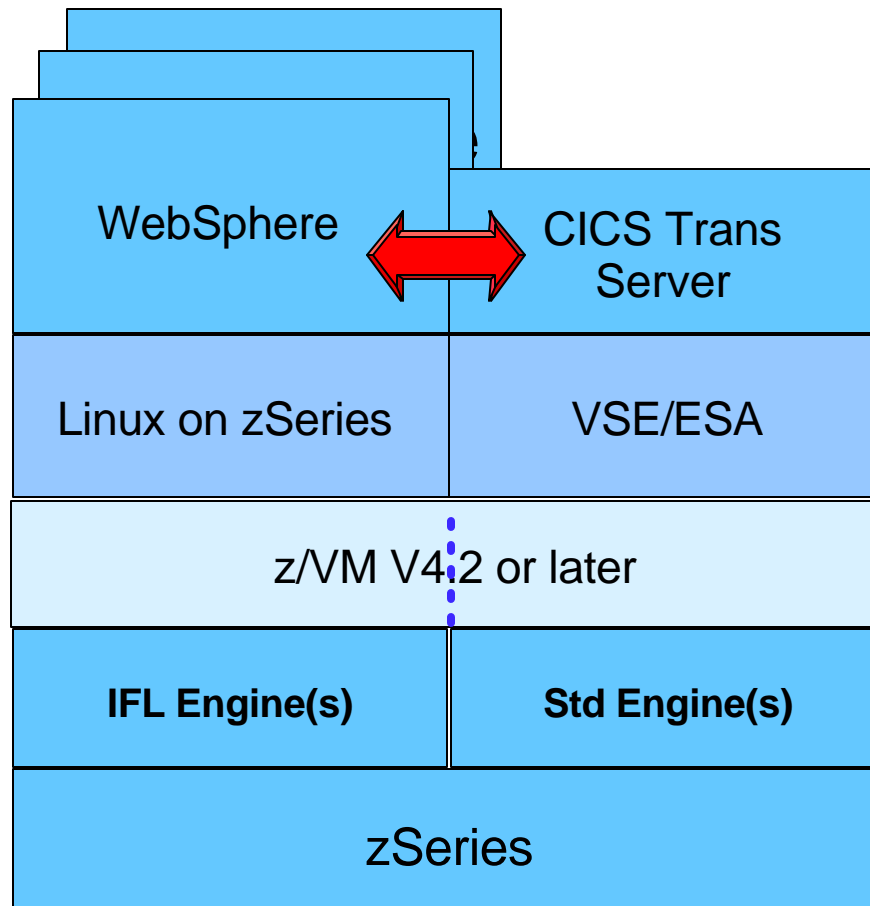
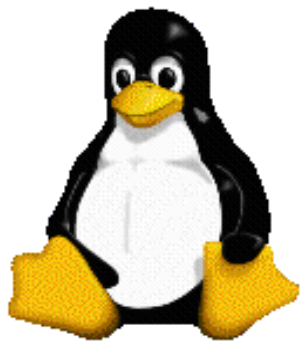
# Alternate Environment 3: Windows



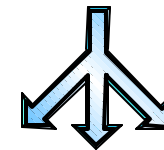
# Why Not Think Inside the Box?



# Alternate Environment 4: Linux on zSeries



ESS (Shark)

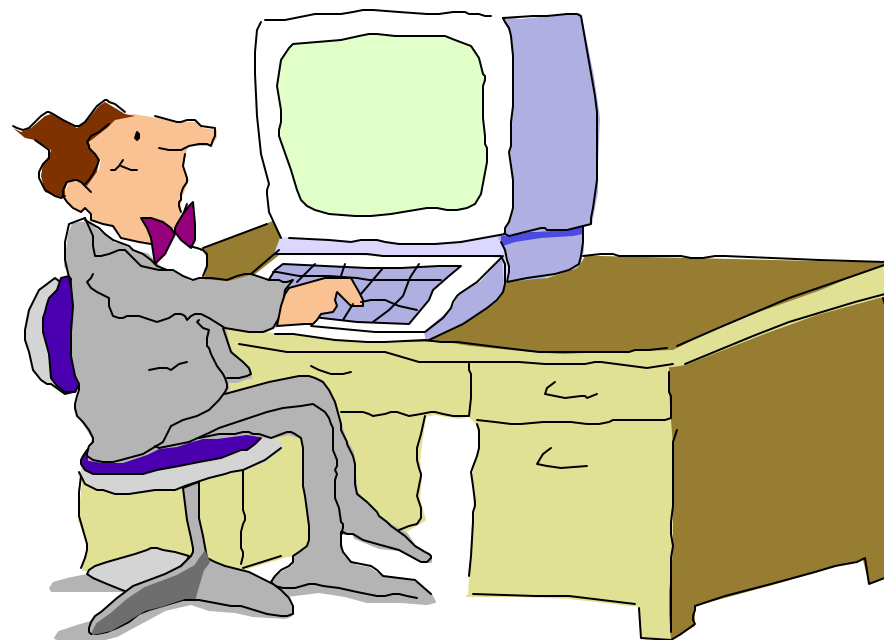


zSeries



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# IBM ^ Family supports Linux

## zSeries:

- zSeries 800 for Linux
- Many Linux servers on a single HW platform
- Unmatched scalability
- Large applications portfolio
- Simplified systems management
- Runs in an LPAR or under z/VM
- 31 & 64-bit
- Reduced total cost of ownership (TCO)

## iSeries:

- iSeries Linux edition - 820
- Reliable and scalable
- Up to 31 Linux partitions
- Integration with OS/400
- Resource sharing and management
- I/O flexibility



## xSeries

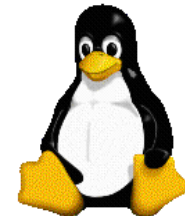
- xSeries 343 for Telco
- X-architecture innovation
- OS freedom of choice
- Affordable, scalable, reliable
- Appliances
- xSeries 335, 305 Xeon rack-optimized servers
- Clusters 1300, 1350:
  - ▶ Integration and testing of IBM & OEM
  - ▶ Speed to market
  - ▶ xSeries rack-optimized servers

## pSeries:

- Native Linux 32-bit & 64-bit
- Linux Virtual Servers on p670, p690
- Native Linux Server p630
- Linux affinity on AIX-5L
- I/O Bandwidth and RAS
- Multiplatform flexibility

## Linux on zSeries TCO Advantages

- **Improve computing resource utilization**
  - ▶ resource sharing and workload balancing
- **Improve management of resources**
  - ▶ flexible & responsive (quickly add or reconfigure 'virtual' servers)
  - ▶ improve systems reliability and availability
  - ▶ improve and simplify disaster recovery
  - ▶ simplify application architecture and/or infrastructure (i.e. combine application tiers from multiple platforms onto one platform, reduce intersystem networking, etc.)
  - ▶ simplify system administration
- **Reduce operational costs** related to personnel, environment (power, heating and cooling), floor space, etc.
- **Reduce distributed software licensing costs**



## zSeries Advantages

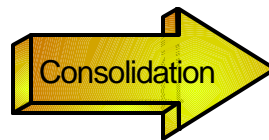
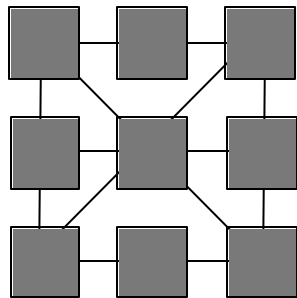
- **Integrated Facility for Linux (IFL)**
  - ▶ full engine capacity
  - ▶ no effect on 'traditional' z/OS, VSE, etc. software charges
  - ▶ runs standalone Linux and z/VM (with Linux guests only)
- **HiperSockets**
  - ▶ “Network in a Box”
- **z/VM**
  - ▶ great for consolidation of new and existing distributed workloads
    - flexible / responsive
    - operations / systems management / environmental savings
    - utilization of shared resources
  - ▶ disaster recovery
- **IBM Middleware / Open Source and ISV applications**
- **Integrated Platform for Linux**



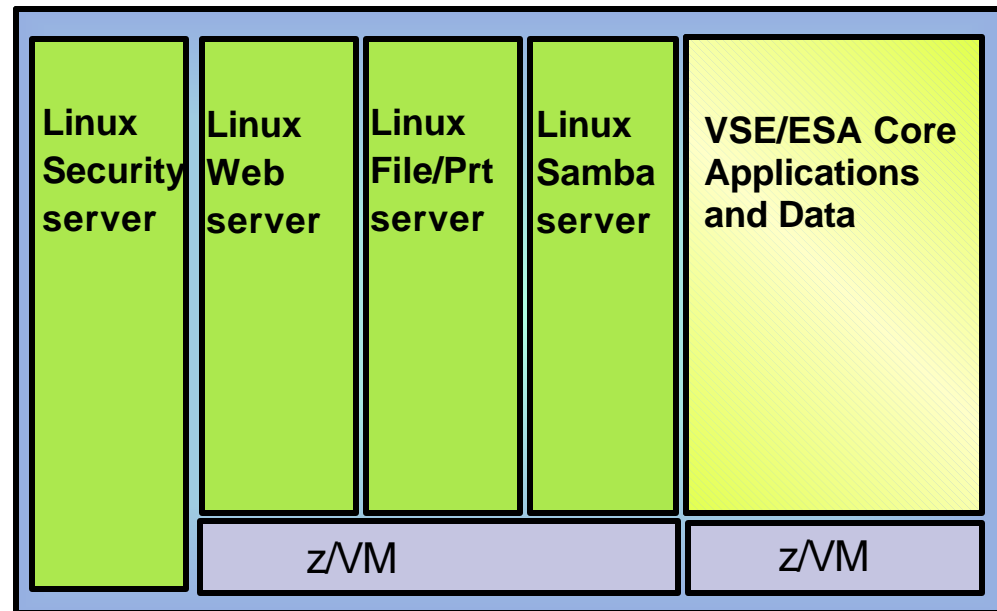
# Independent Linux on zSeries Solutions



infrastructure ...  
ie. file/print servers, etc.



**zSeries or S/390 Mainframe**

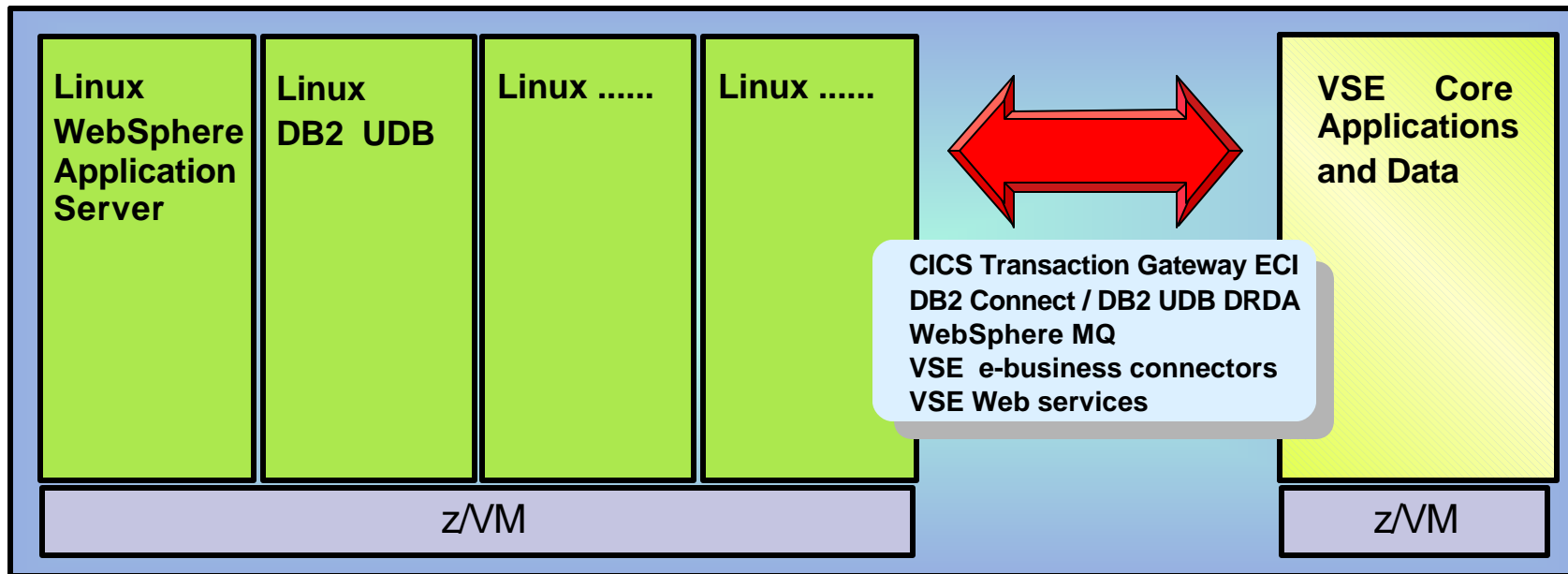


# Integrated Linux on zSeries Solutions



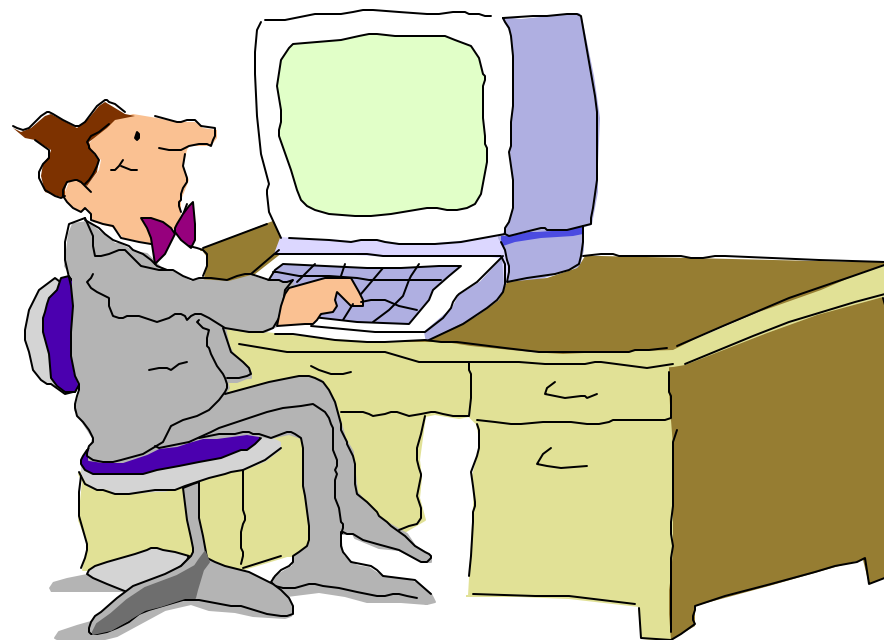
web application servers, etc.

zSeries or S/390 Mainframe



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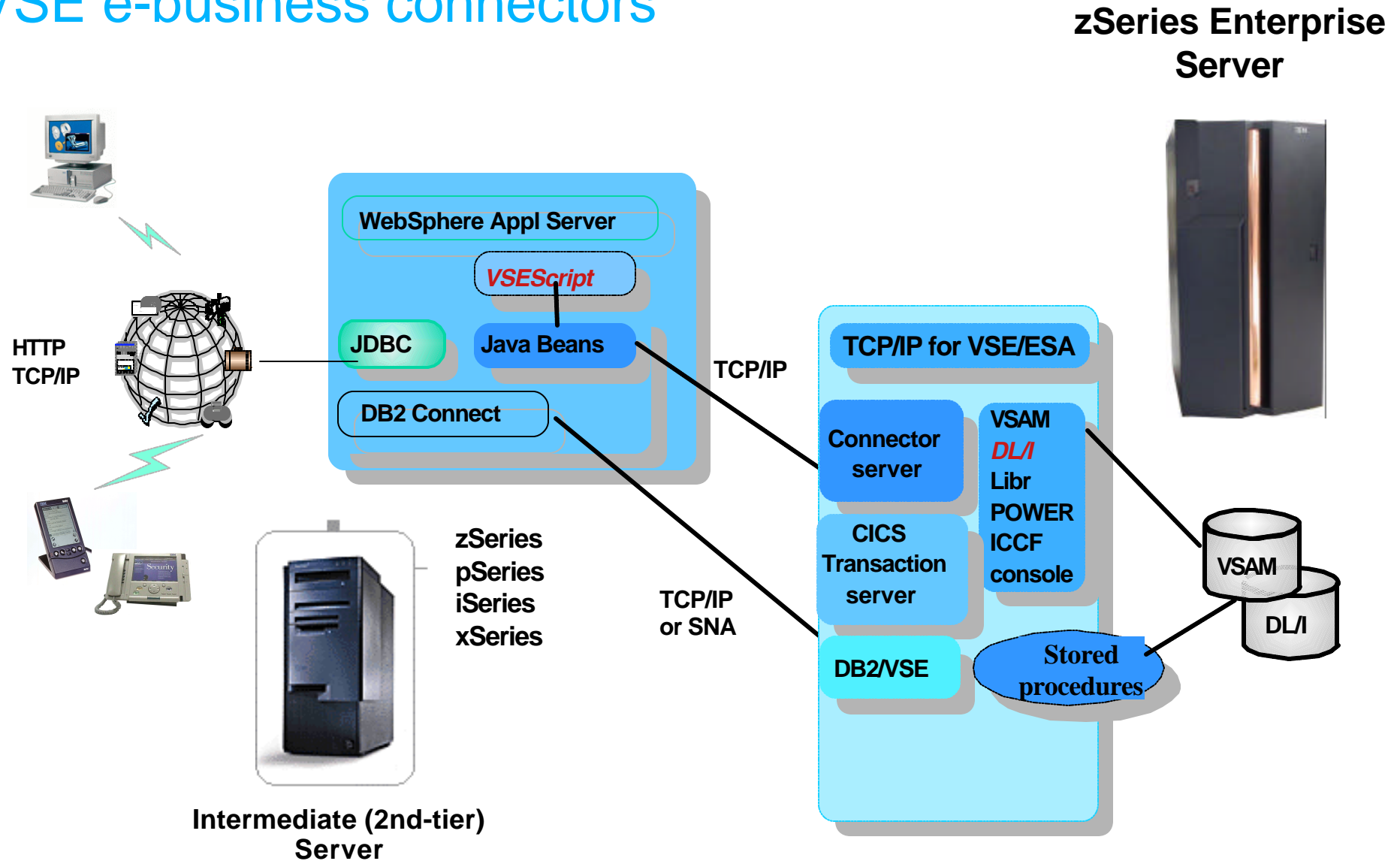


## VSE/ESA e-business connectors (V2.5/V2.6/V2.7)

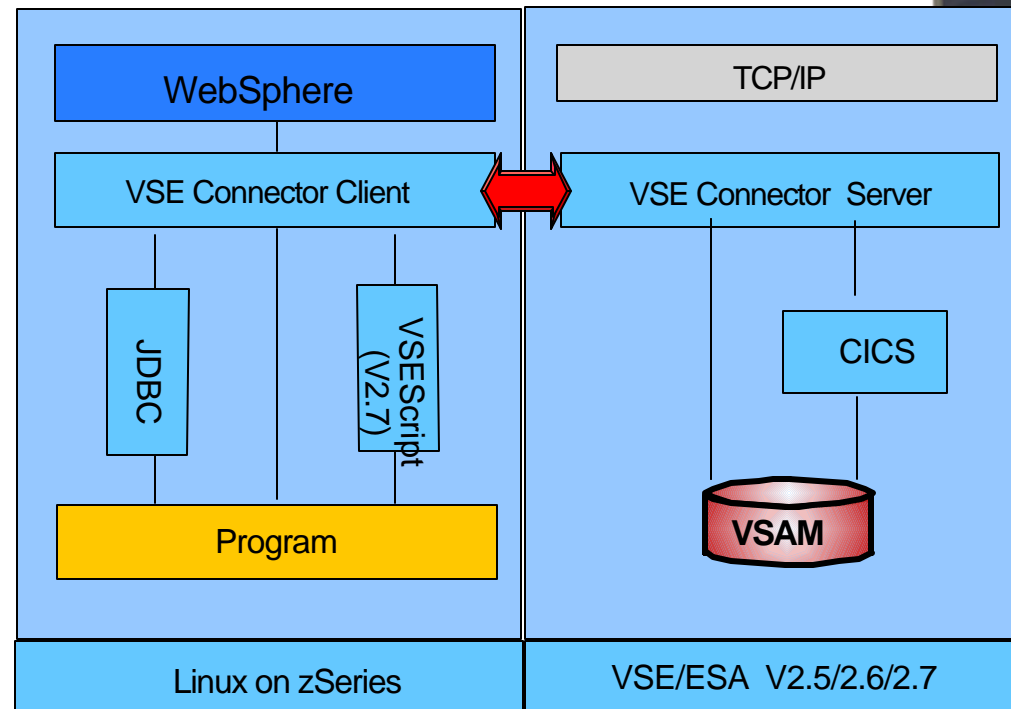
- VSE Connector (BSD sockets based)
  - ▶ connectivity via TCP/IP
  - ▶ implemented as long running server partition on VSE
  - ▶ Java beans on Web Application Server
    - *script language for access from non-Java programs*
  - ▶ access VSAM, *DL/I*, POWER, Librarian, ICCF, console
- DB2-based Connector (uses DRDA)
  - ▶ connectivity via TCP/IP or SNA
  - ▶ implemented as DB2 stored procedures on VSE
  - ▶ standard JDBC/ODBC calls on Web Application Server
    - using DB2 Connect or DB2 UDB
  - ▶ access to VSAM and DL/I (and DB2 or course)
- Complementary to existing IBM and ISV middleware



# VSE e-business connectors



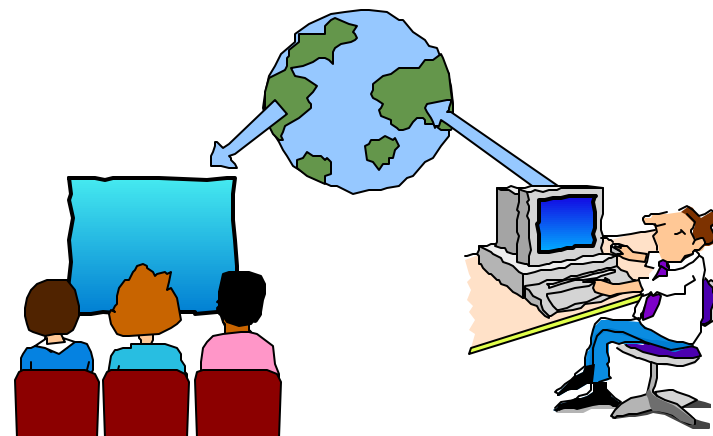
# Scenario 1 - 'Pull'



- Integrate VSE/VSAM data into new applications
- Synchronize data on Linux and VSE / Reduce FTPs

## VSE/VSAM Redirector (V2.6/V2.7)

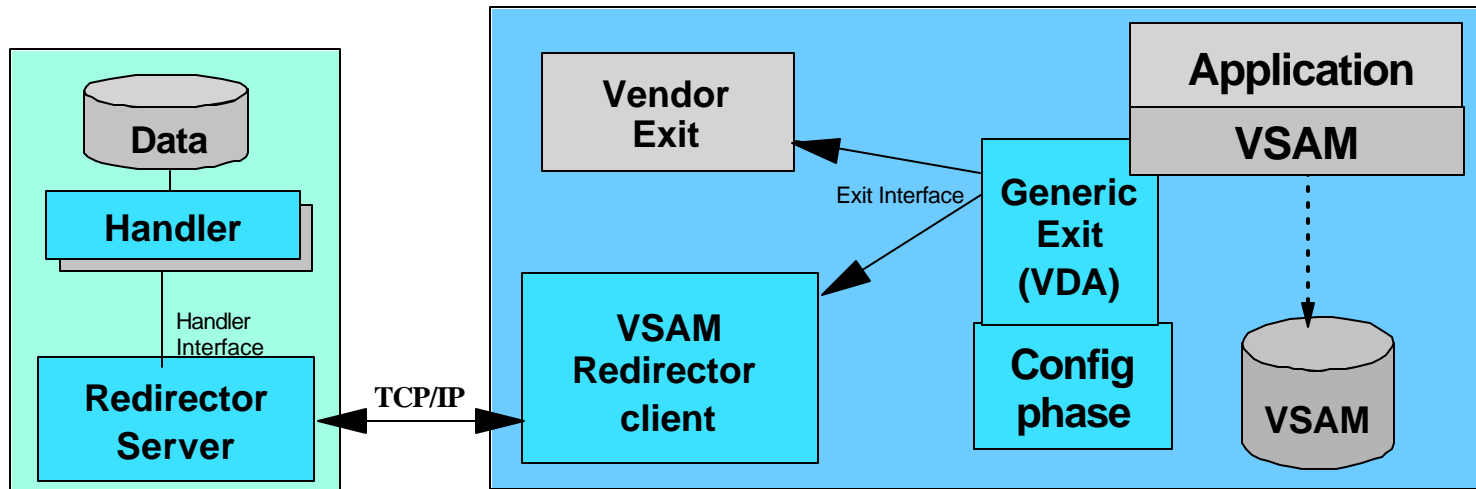
- VSAM Redirector Client (runs on VSE)
  - ▶ based on generic VSAM exit
  - ▶ transparent (no changes) to VSE application
  - ▶ intercepts VSAM request and routes to Redirector Server
- VSAM Redirector Server (runs on any Java Platform)
  - ▶ implemented in Java
  - ▶ fields request from VSE client
  - ▶ calls file-specific handler
  - ▶ returns result to VSE



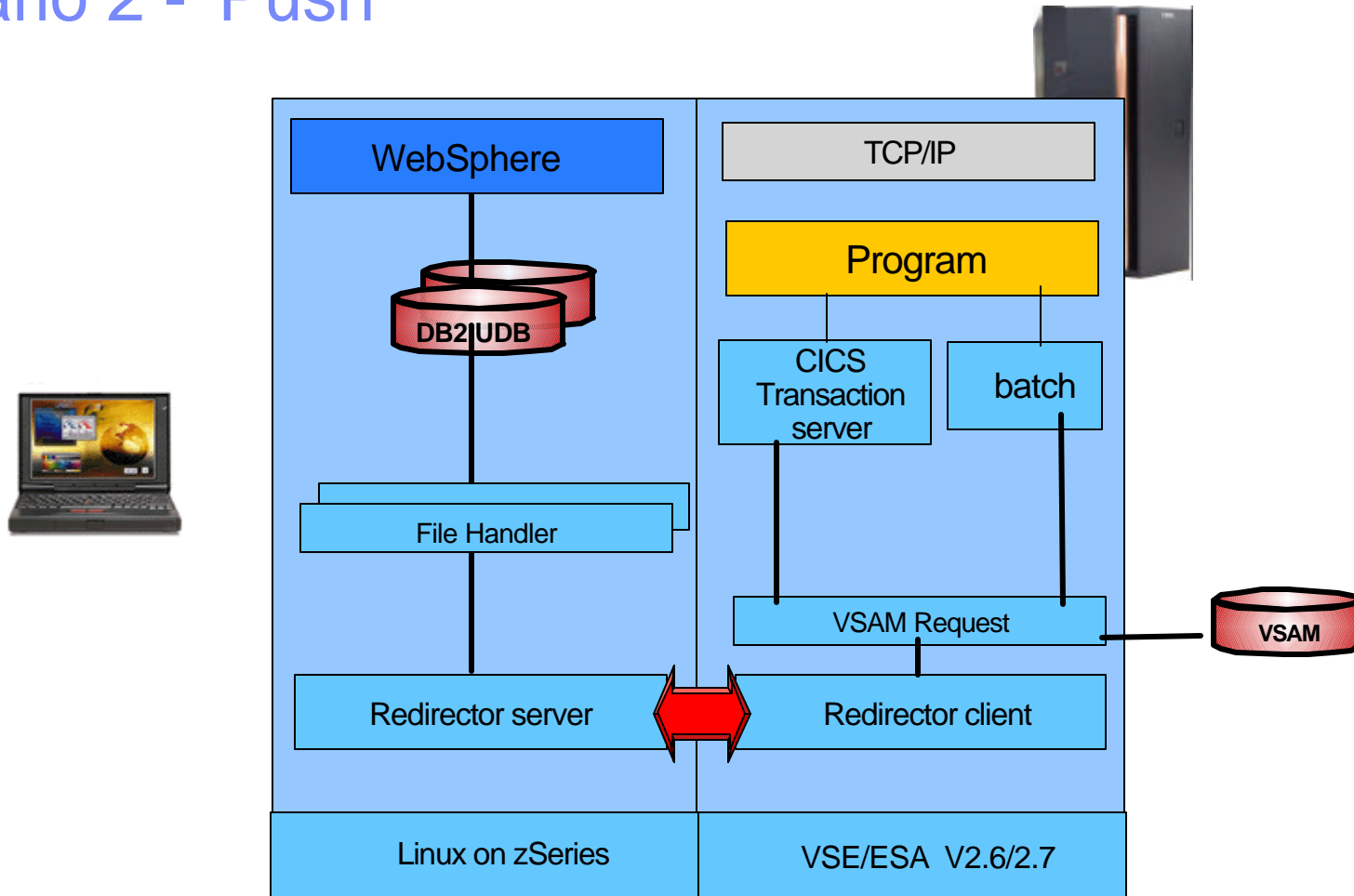
# VSE/VSAM Redirector

Java Platform

VSE/ESA V2.6/2.7



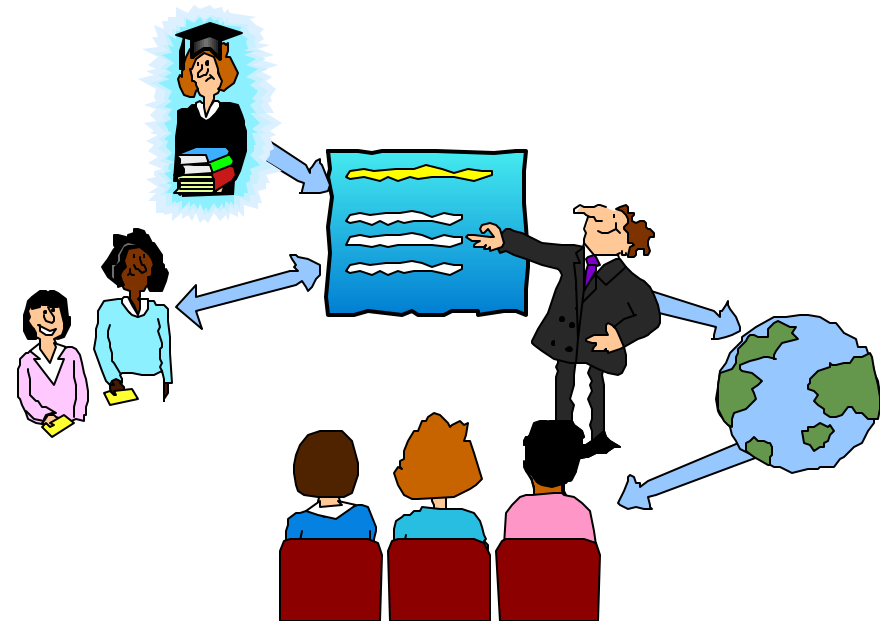
# Scenario 2 - 'Push'



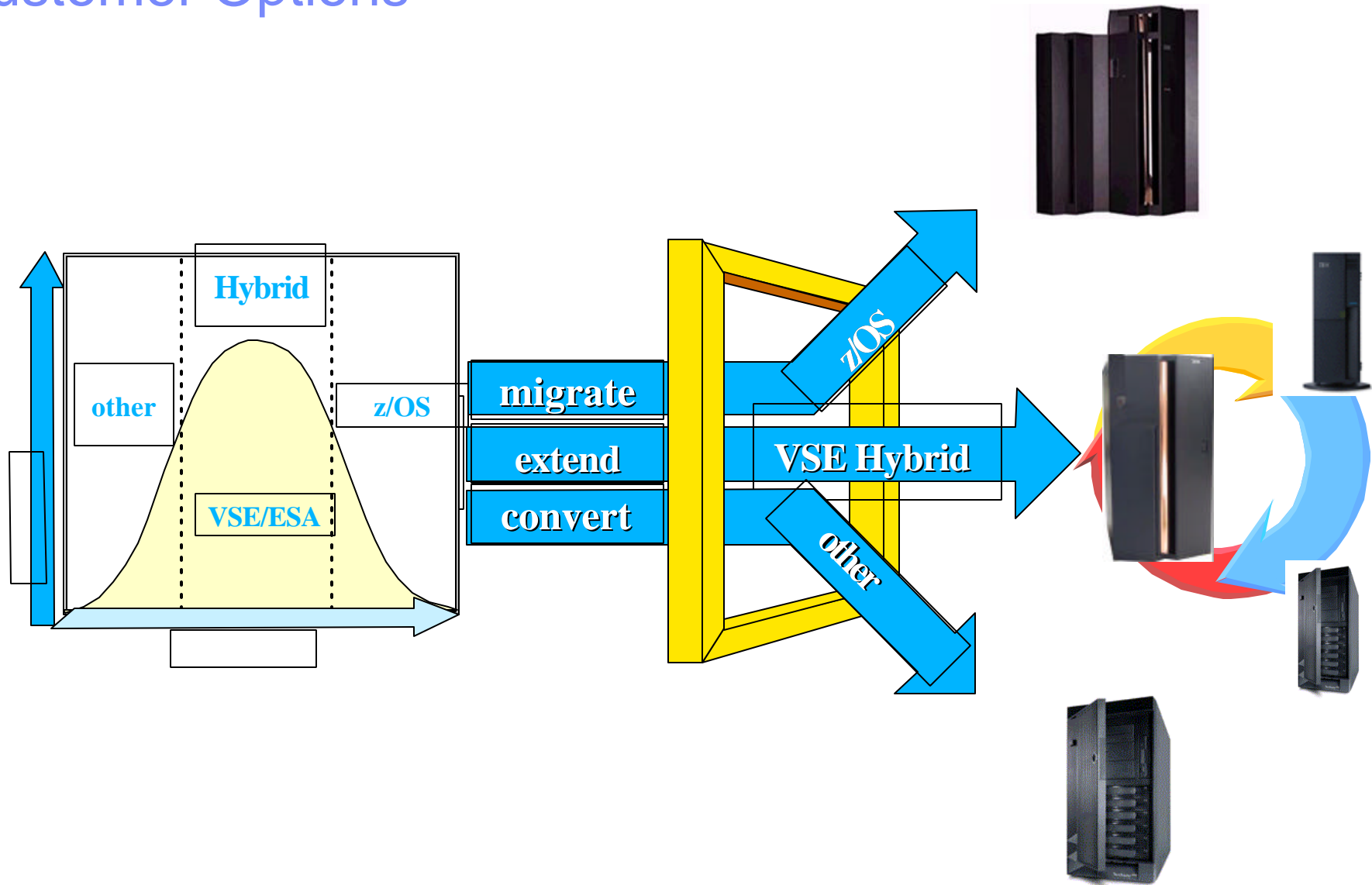
- VSE access to DB2 UDB (or other db and file systems) on Linux
- Synchronize DB2 UDB on Linux with VSAM on VSE / Reduce FTPs

# Agenda

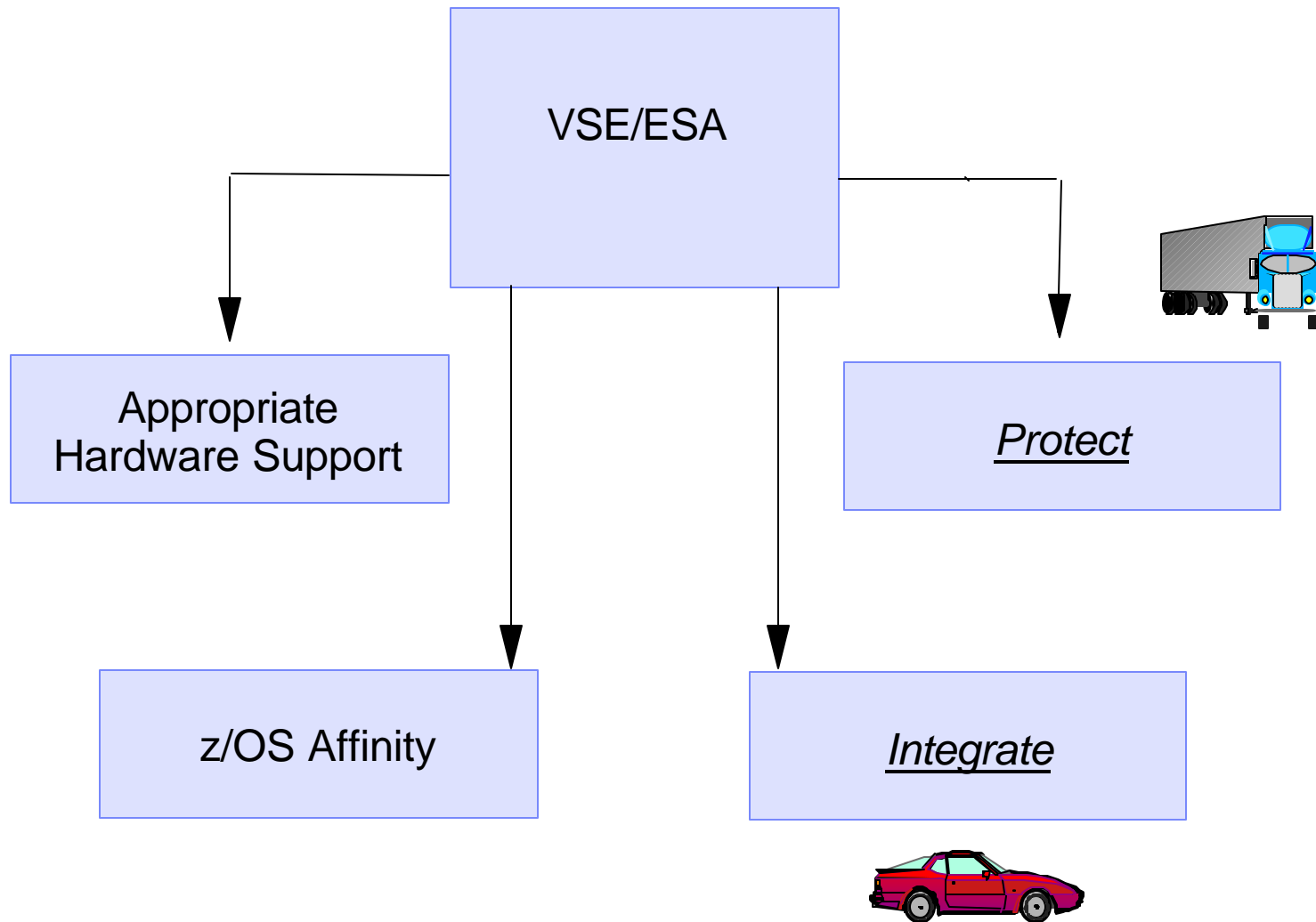
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# Customer Options

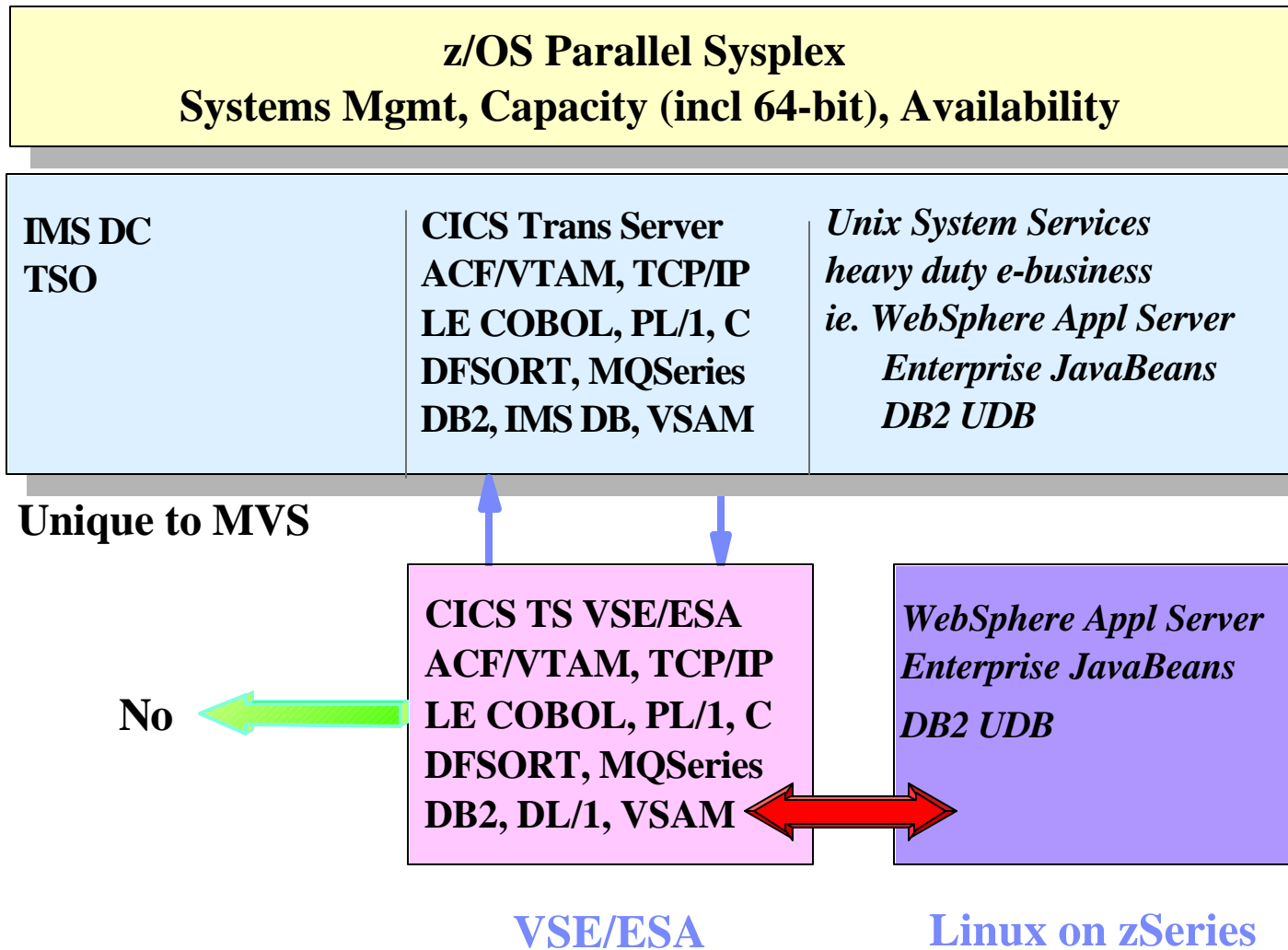


# Areas of Ongoing Emphasis



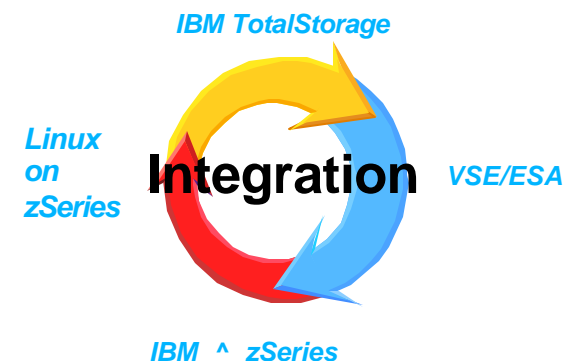


# The Best of Both Worlds

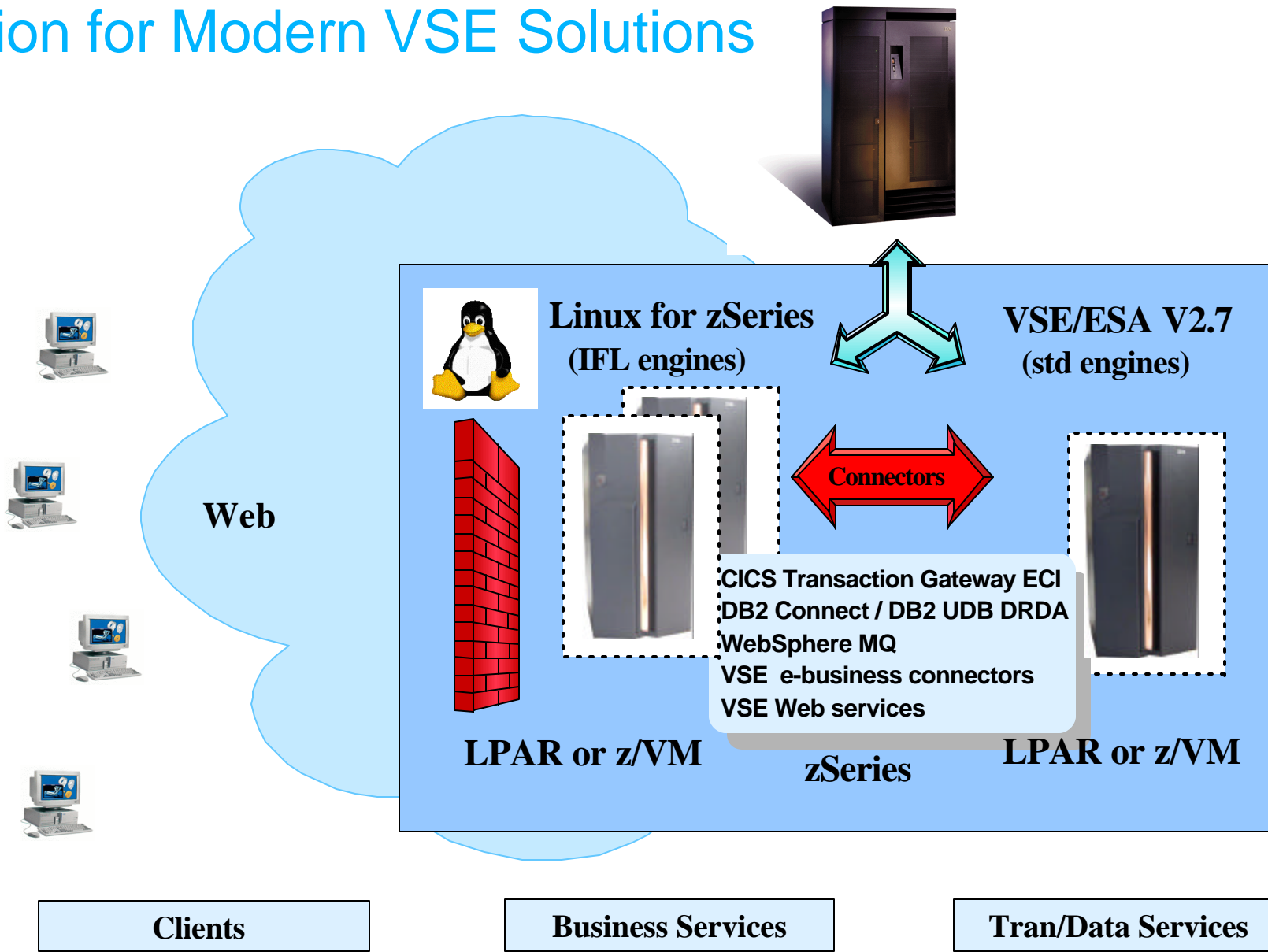


## Linux on zSeries Advantages for VSE Customers

- **Consolidate servers for low cost**
  - ▶ gain TCO benefits of Linux and zSeries
- **New Linux on zSeries applications based on IBM Middleware**
  - ▶ WebSphere Application Server
  - ▶ DB2 UDB
  - ▶ advanced application development tools
- **New Linux-based open source and/or ISV applications**
  - ▶ Linux *for* zSeries to exploit zSeries 64-bit capabilities
  - ▶ complement 31-bit core VSE applications
- **Integrate Linux and VSE solutions**
  - ▶ Linux access to VSE applications and data

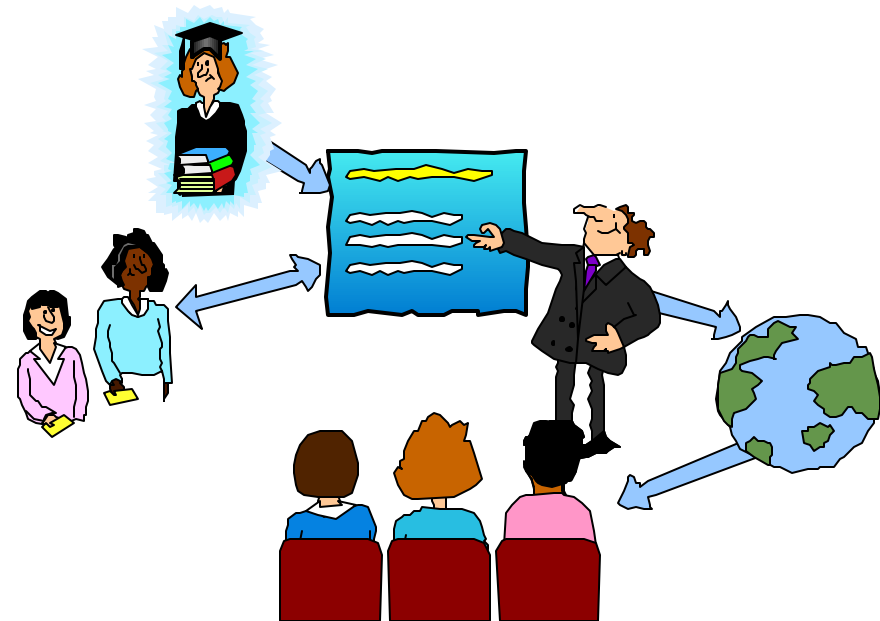


# Vision for Modern VSE Solutions



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## VSE Trends and Directions - easy as Pie!

- **Protect** your extensive investments in *VSE* programs, data, equipment, and IT skills, plus business processes, end user training, etc.
  - ▶ extend core CICS TS VSE/ESA applications to the web
  - ▶ exploit current IBM servers, storage, and software
- **Integrate** VSE with the rest of your IT
  - ▶ interoperability based on open standards
    - IBM Middleware
    - VSE **e-business** connectors and web services
  - ▶ utilize Linux on zSeries where appropriate
    - consolidate existing distributed servers
    - new infrastructure and/or line-of-business applications

## Past, Present, Future

- After more than 35 years providing cost effective solutions to IBM customers the world over, VSE doesn't get older - it gets better! Using the hybrid model, you can leverage your VSE investment without being limited by it

