IBM Systems and Technology Group University 2005

Virtualization Solutions: Products and Technologies that Deliver

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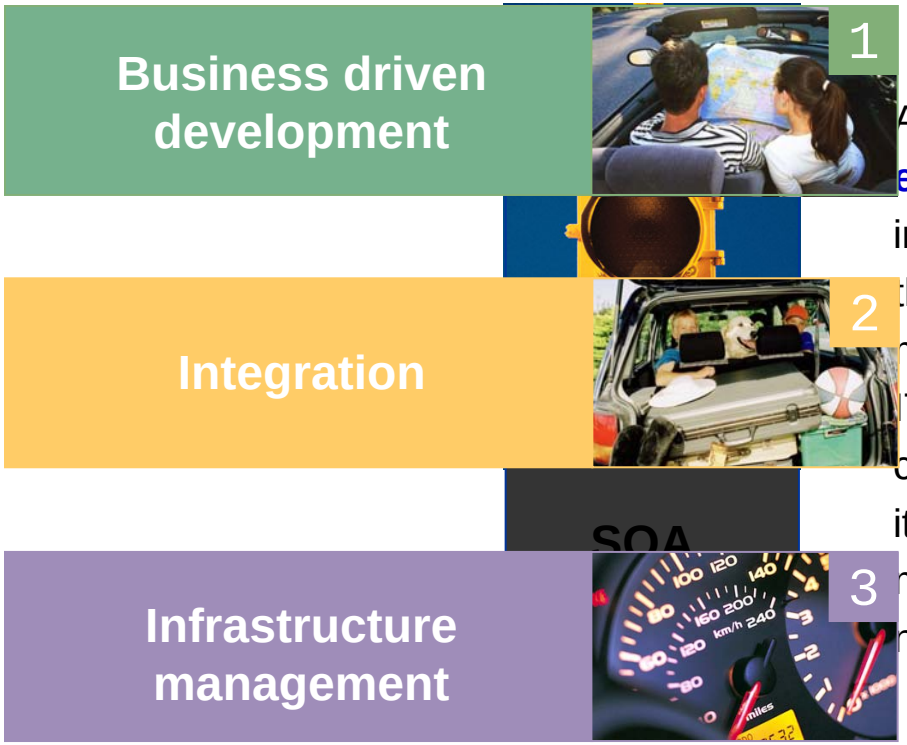
ON DEMAND BUSINESS™

Agenda

- Infrastructure Management in the On Demand Operating Environment
- Virtualization Solutions
- Using the IBM Virtualization Engine
- Identifying Customers
- Selling the Virtualization Engine – Getting Started

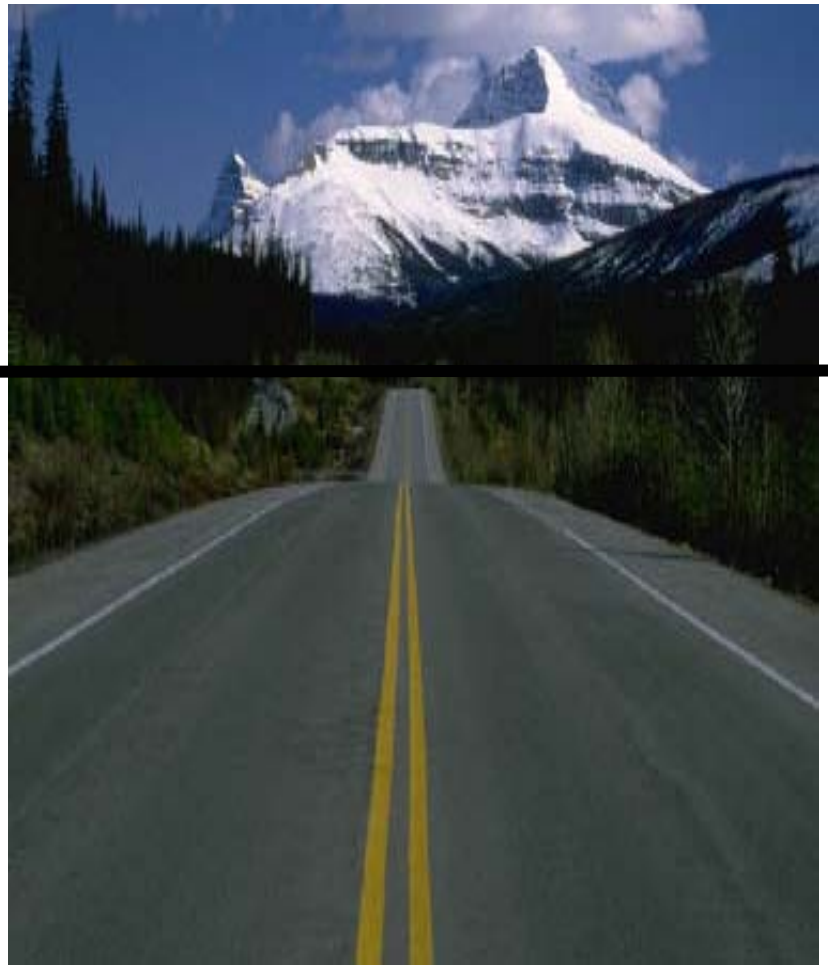
On Demand Operating Environment



An **on demand operating environment** is an integrated infrastructure that allows a business to manage the business and IT infrastructure so that it can constantly re-arrange itself to meet the movement to moment needs of the business.

Infrastructure management is more than technology

40%



60%

Technology
Hardware and software capabilities

Getting there requires…

Process
Definition/design, compliance and continuous improvement

People
Roles & responsibilities, management, skills development & discipline

A key part of our On Demand Operating Environment – focusing around helping customers optimize their IT

Infrastructure Management

Sense and respond to changes, manage and optimize for the needs of the business through **Automation** and **Virtualization** of your IT environment

Virtualization

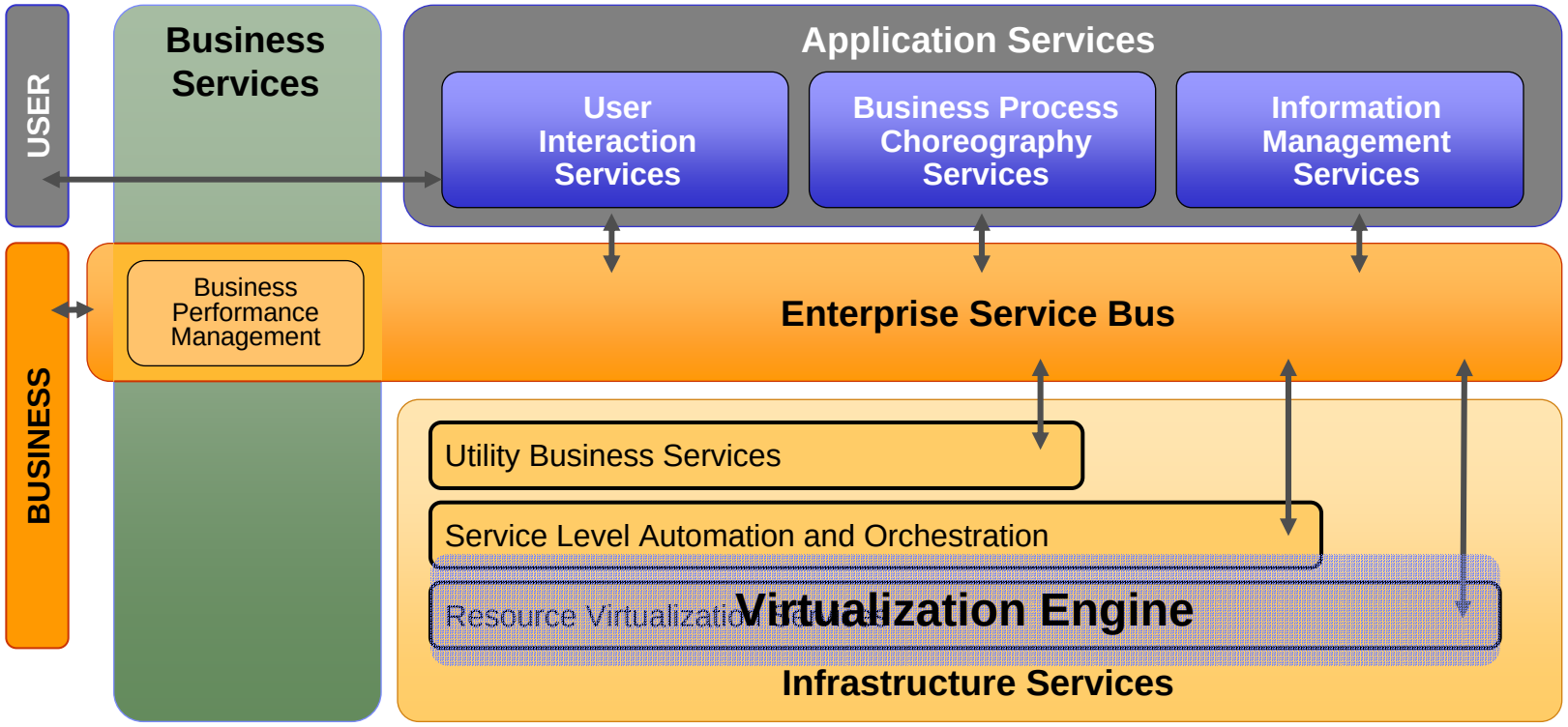
- Delivering **IT Simplification** through enterprise-wide fabrics, Grids and the virtualization of internal and external resources

Automation

- Increase flexibility and reduce costs by automating your IT best practices and extend across process disciplines and resources

On Demand Operating Environment architecture

The On Demand Operating Environment is based upon the concepts of a Service Oriented Architecture (SOA). Each element of the architecture is a service that together implemented the Operating Environment capabilities.



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Why IT optimization is important?

Fuel growth by managing costs:

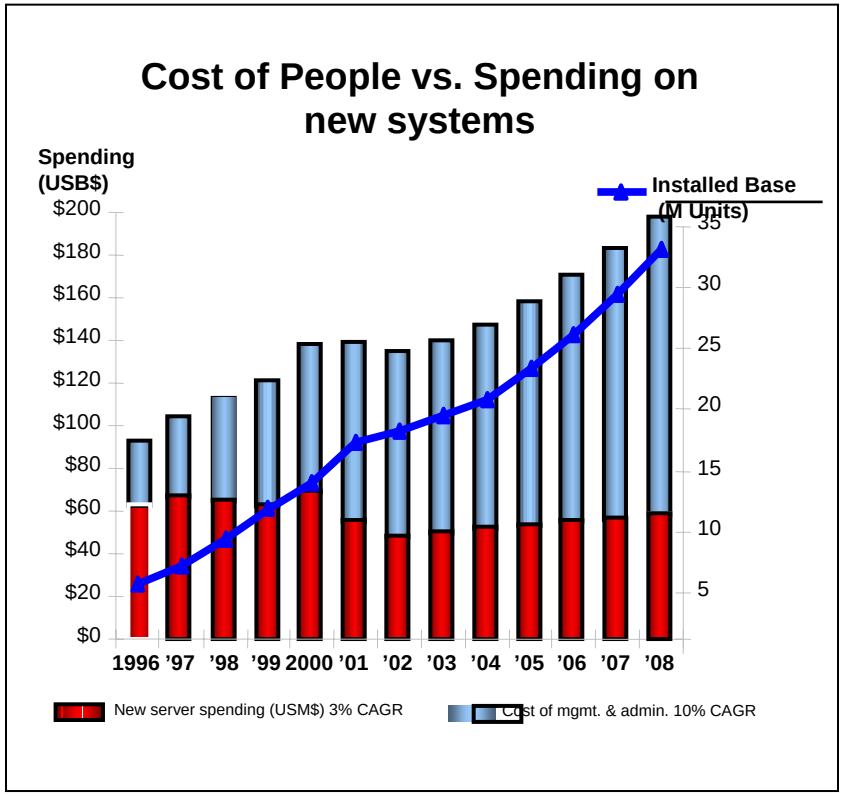
- 80% of CEO's view growth as a key focus area
- Operational costs far exceed the budgets for new hardware at approximately 2 ½ times the compound annual growth rate*

Complexity is growing:

- Existing computing capacity is highly underutilized
- Gartner predicts that enterprises that don't leverage virtualization technologies will spend as much as 25 percent more for their x86 servers

Business Flexibility:

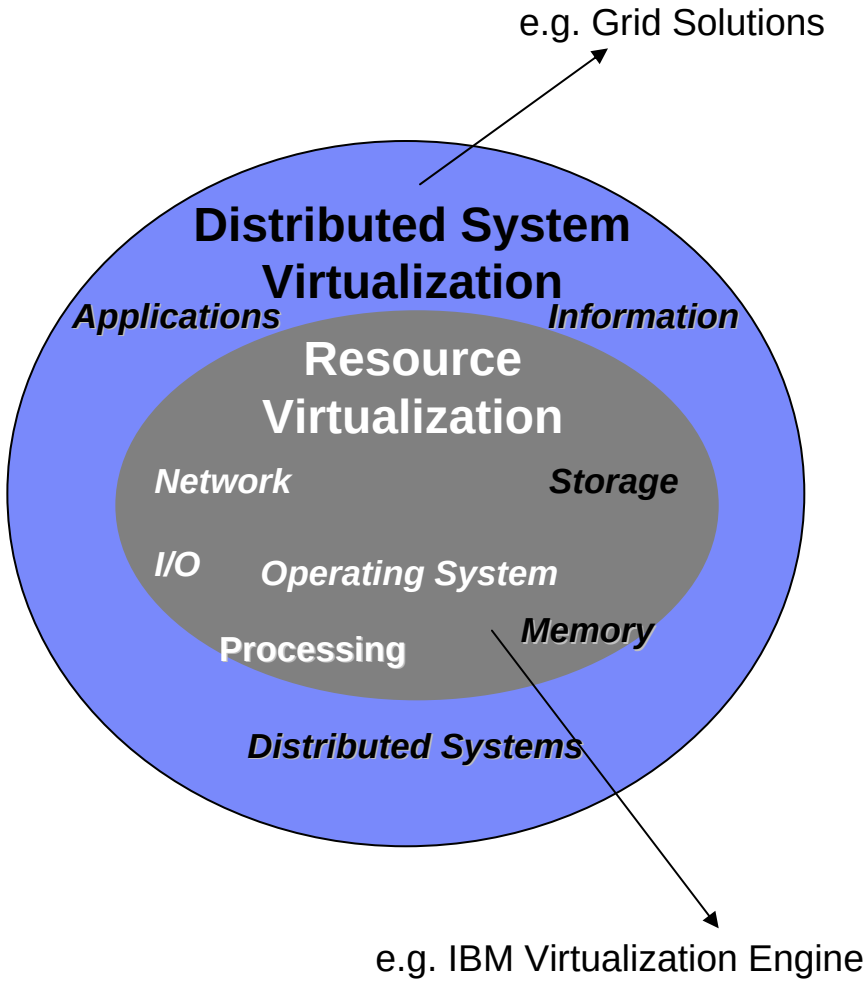
- Agility has been made a high priority across the organization … only 13% of the CEOs rate their organization's ability to respond to changing business conditions as very responsive **



Optimize IT assets now to fuel growth, improve ROI, increase staff productivity and improve quality of service.

**IDC, 2004 **CEO Study of 456 WW CEOs IBM Corporation, 2-04; Graphic: IDC Directions 4-7-04 Customer Adoption of On-Demand Enterprises.*

Why Virtualization?

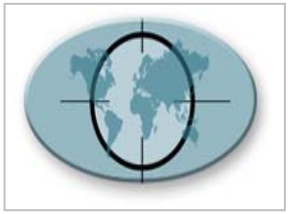


Customer Requirements

- **Lower the cost of their existing infrastructure by reducing operation and systems management cost while maintaining needed capacity.**
- **Reduce the complexity of adding to that infrastructure**
- **Gather information and collaboration across the organization to increase both the utilization of information and its effective use**
- **Deliver on SLA response times during spikes in production and test scenarios.**
- **Build heterogeneous infrastructure across the whole organization that are more responsive to the organization's needs**

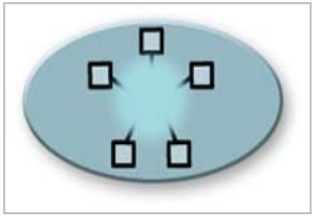
Virtualization Solutions: Stages of Deployment

Orchestrate Infrastructure: **Sense and respond to changes based on business policies**



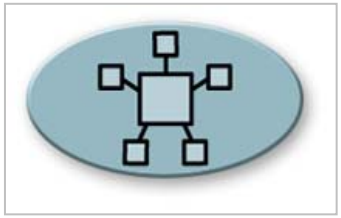
Virtualize Outside The Enterprise: **Suppliers, partners, customers and external resources**

Secure Cross Enterprises: **Enable internal and external integration and resources.**

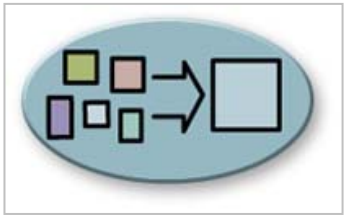


Virtualize The Enterprise: **Enterprise wide Grids and Global Fabrics**

Automate Workflows: **Tasks like change/ configuration, ITIL processes**



Virtualize Unlike Resources: **Heterogeneous systems, application based Grids and networks**



Virtualize Like Resources: **Homogenous systems, storage and networks**

Updated IT Governance and Management Processes

Clients are telling us...

- Most clients are at Stage 1 and are looking for physical and logical virtualization solutions
- Many workloads and environments can share different and heterogeneous environments, but need to be enabled
- Clients at Stage 2 are looking for insight into what's going on in their environment
- Infrastructure Management is about both virtualization and automation–not just one or the other

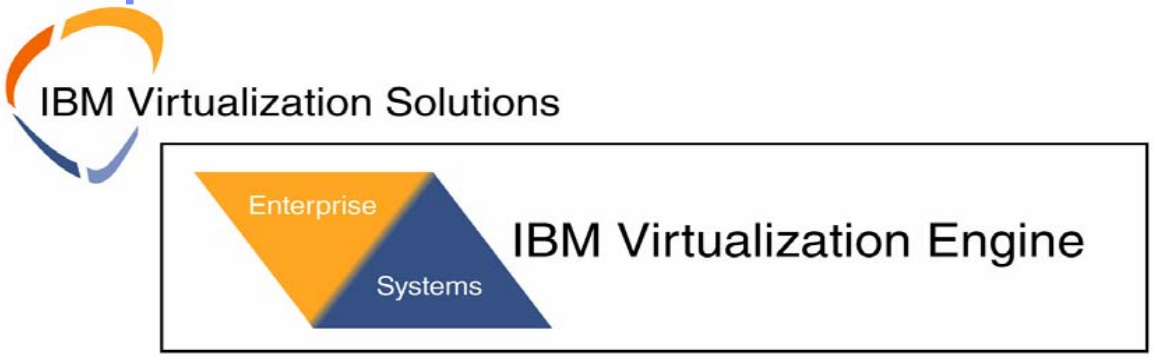
"Our infrastructure grew organically over the years without a master plan – things got bolted on – and now we are stuck where we are."

CIO from a Fortune 1000 company for IBM Marketing Research

Most clients are at Stage 1 and looking for physical and logical virtualization solutions

- **Simplify the infrastructure, reduce numbers of server and storage devices**
  - zSeries – Virtualize with z/VM and application consolidation on z/OS, manage multiple workloads and resources using Intelligent Resource Director
  - p5 -- Virtualize with new capabilities of power hypervisor
    - Advanced virtualization – micro-partitioning
  - i5 -- Virtualize with new capabilities of power hypervisor
    - Leverage the strength of systems management and extend to managing other systems in the server with IBM Director Multiplatform – Windows, AIX
  - xSeries & BladeCenter
    - Leverage virtualization capabilities of VMware and MSVS
    - Use IBM Director for management

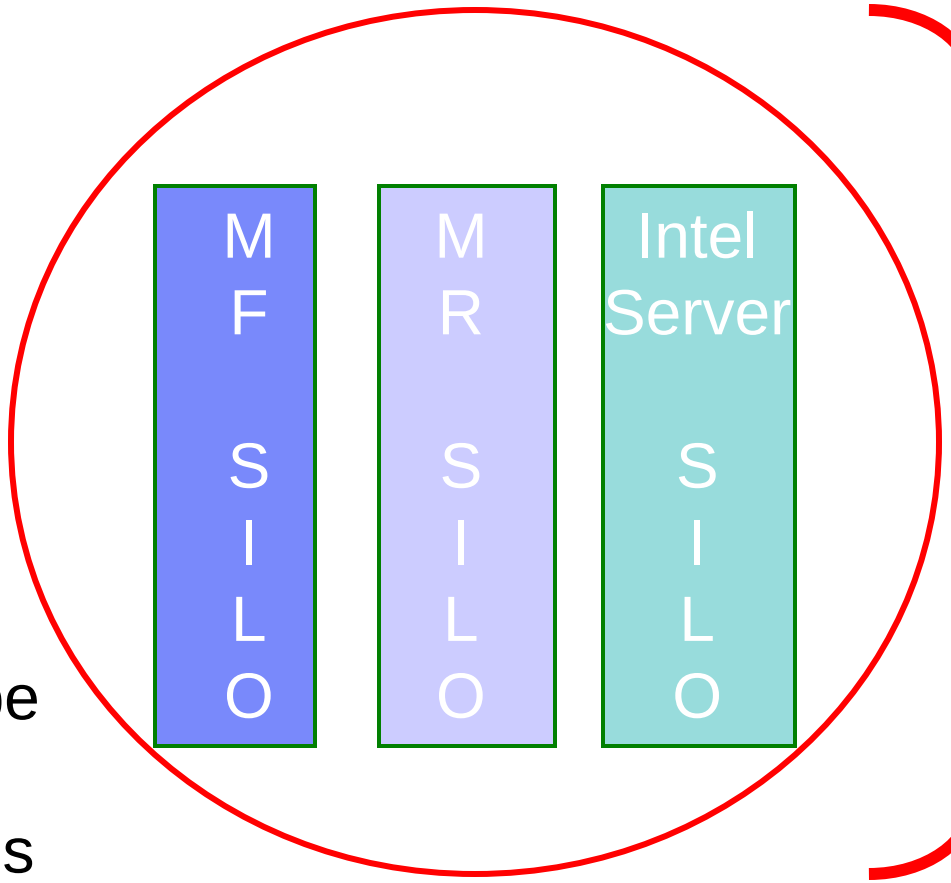
Server Simplification



- **IBM Virtualization Engine – for Systems**
  - Ability to consolidate multiple similar types of servers, even running different OS's, on larger, partitioned types

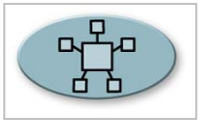
- zSeries
  - Dynamic lpar, Virtual I/O, Intelligent Resource Director (IRD), zSeries Application Assist Processor (zAAP), Parallel Sysplex Clustering, Hipersockets, VLANs
- xSeries & BladeCenter
  - Integrated shared infrastructure for Blades, IBM Director, VMWare, clustering
- pSeries
  - Clustering, NIM, Micro-partitioning, Dynamic lpar, Virtual Ethernet, Virtual I/O
- iSeries
  - Clustering, Dynamic lpar, Virtual Ethernet, Virtual I/O, IBM Director Multiplatform

Clients in Stage 2 are looking for insight into what's going on in their environment



Request from customers is to be able to look across these silos .. Where do they start?

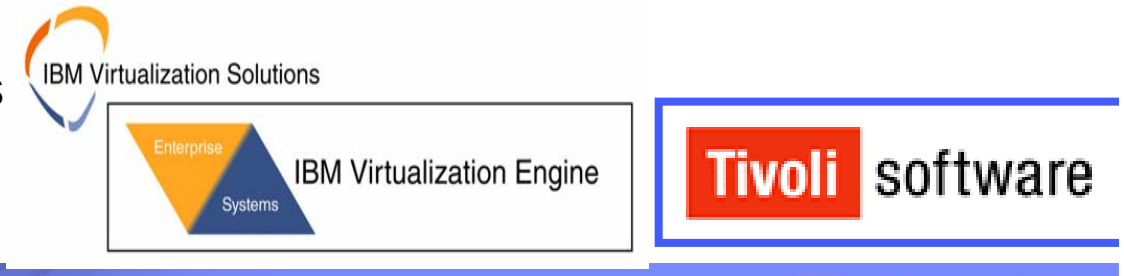
IBM Virtualization Engine™ Offerings



IBM Virtualization Engine - for Enterprise

- Currently sold as VE Suite for Servers
- Providing a common interface and management environment
- Including Tivoli Provisioning Manager

- Automated Resource Management based on business goals
  - **Enterprise Workload Manager**
- Converging IBM Out-of-the-box basic management of systems
  - **Director Multiplatform**
- Dynamically deploying and optimizing IT resources real-time
  - **Tivoli Provisioning Manager** with eServer workflows
- Building a solid open standards based approach to connectivity
  - **IBM Grid Toolbox**
- A "Dashboard" for your systems
  - **VE Console**



Many workloads can share different and heterogeneous environments, but need to be enabled

- WebSphere/DB2 workloads

  EWLM uses open interfaces based on ARM **
  - Websphere & DB2 instrumented to use ARM
  - Applications inherit the benefit of Websphere & DB2 ARM-enablement

  Enhance the capability by using CISCO workload balancing -- certain CISCO routers are EWLM-enabled and can communication with the EWLM domain to balance workload

- ERP workloads

  IBM Dynamic Infrastructure for mySAP Business Suite

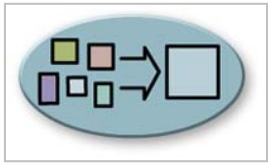
**** ARM – Automatic Response Measurement**

Standards-based application instrumentation, Uses Open Group ARM V4.0 standard

What is driving our current customer activity with virtualization?

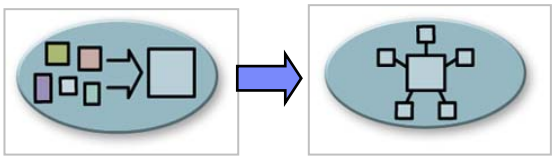
- Need to determine workload utilization across a set of resources
- Need to increase utilization of individual server resources and simplify management
- Need to monitor across a disparate environment

Customer Pain



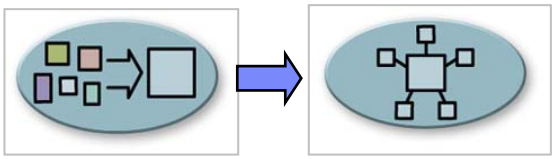
- **A workload is driving up resource utilization – need to be able to determine who is using the resource. Future requirement exists for prioritizing work coming into the infrastructure.**
  - Data warehouse is experiencing increasing activity. Customer is not sure who is driving requests into the warehouse.
  - Infrastructure profile – pSeries, AIX 5.2, DB2 UDB V8, various applications initiating queries
  - Proposed solution: Use EWLM filtering to determine where requests are coming from based on filtering rules
  - Future enhancement: Use EWLM R2 to prioritize requests coming in

Customer Pain



- **Web-based banking and office applications are difficult to monitor, maintain, upgrade and scale.**
  - Current environment has 600 servers. Processor and storage utilization is running between 12 & 14 percent
  - Stage 1 solution: Customer has consolidated on 70 Bladecenter servers & a Linux on zSeries infrastructure.
  - Future Stage 2 enhancement: Customer has already purchased TPM to provision across the infrastructure and is looking at consistent systems management tools.

Customer Pain

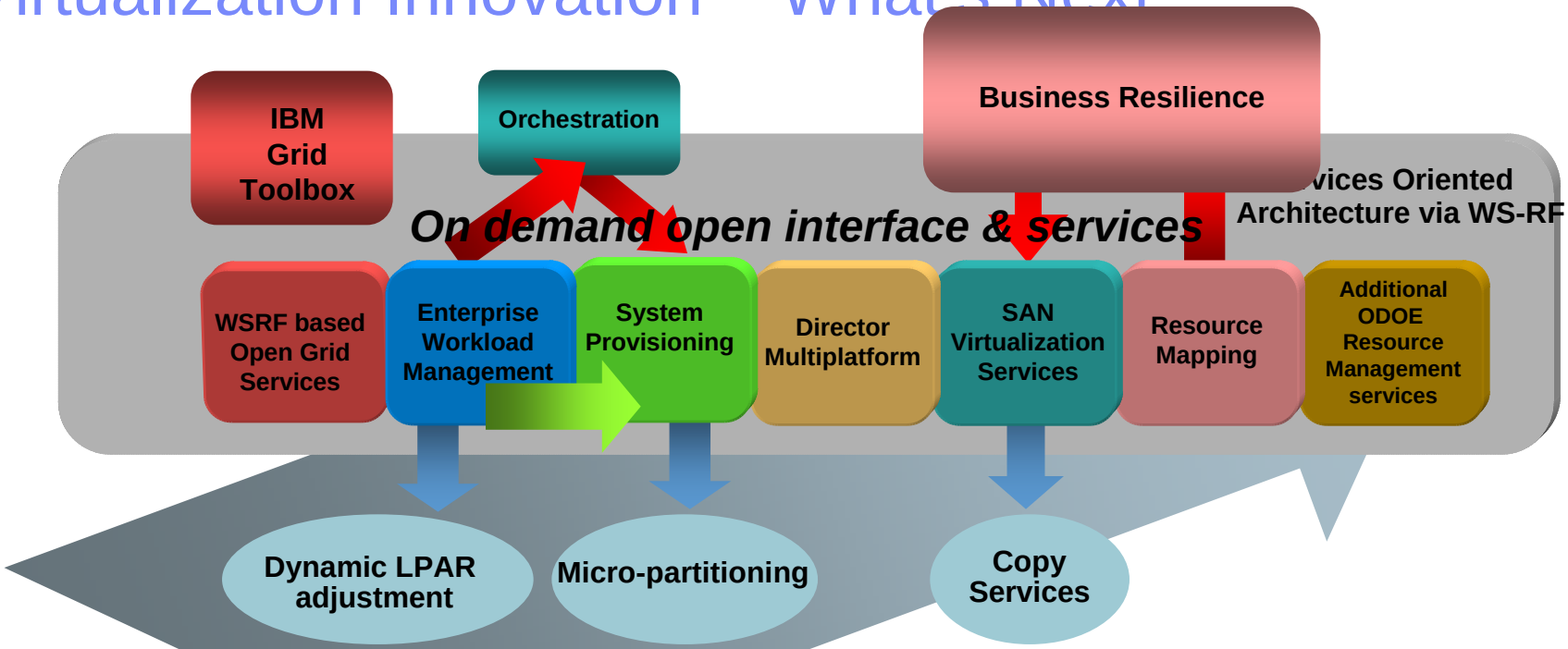


- **Need the capability to provide monitoring and provisioning across a virtualized environment.**

  Solution

  - Stage 1:
    - Implement IBM Director and provisioning in the windows environment, also includes some VMware/ESX environments managed by IBM Director.
    - Implement IBM Director Multiplatform and provisioning in the AIX environment.
  - Stage 2:
    - Use AIX as the platform to manage both the Windows and AIX environment
  - Future stage 2 enhancement:
    - EWLM

Virtualization Innovation – What's Next



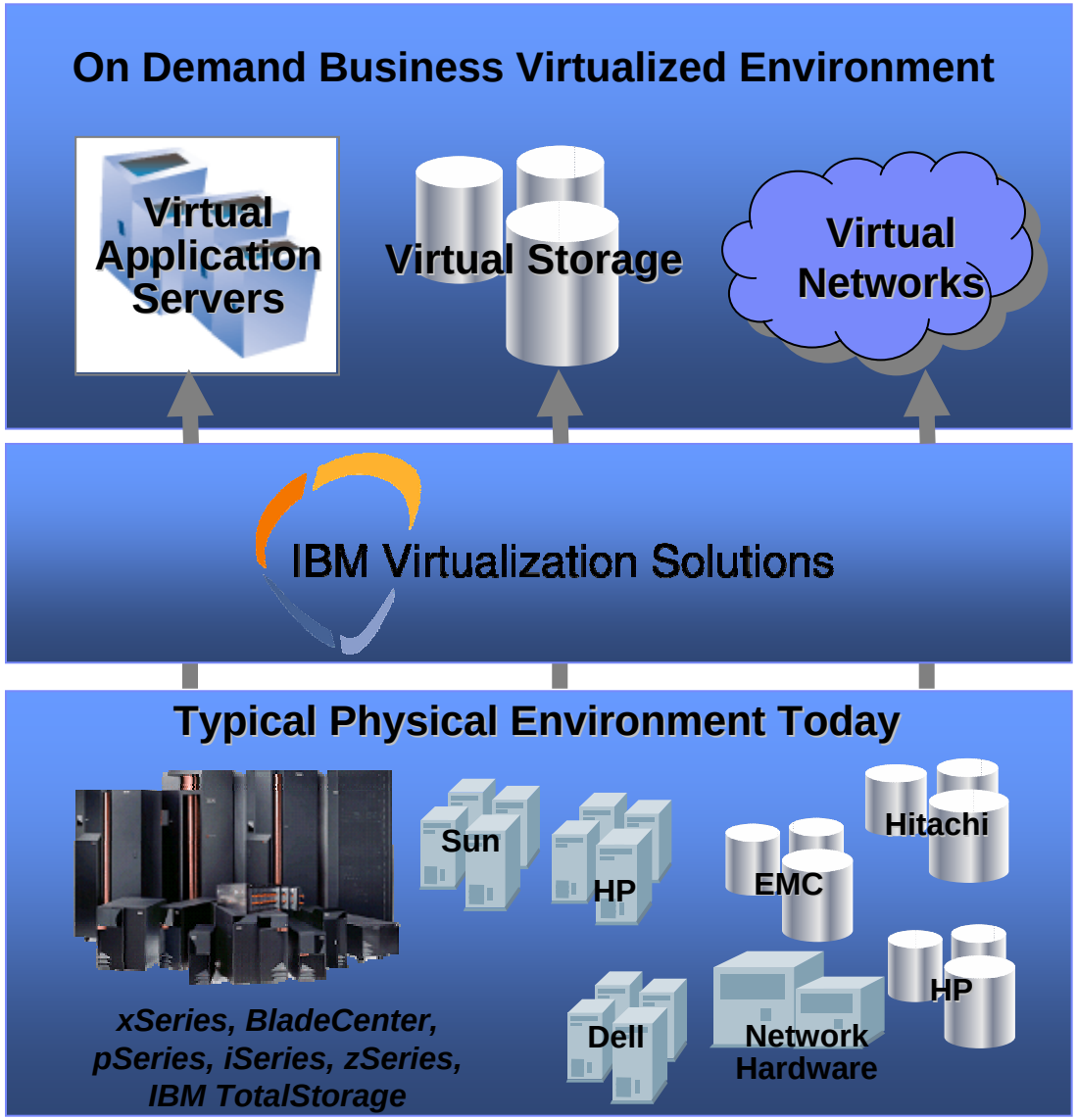
- **Expand the linkage between Services and Technologies**
- **Create solutions founded upon VE Services and Technologies**
  - IBM Dynamic Infrastructure for mySAP Business Suite
- **Broadening usage of the Open Standards & Web Services - Resource Framework (WS-RF)**
- **Expand the Ecosystem by making open standards and interfaces available**
  - EWLM APIs published – Currently exploited by Cisco & Nortel

All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.

Value of Virtualization

IBM Virtualization Benefits

- ☑ *Can help improve cost and speed*
- ☑ *Allows easier provisioning, management and deployment*
- ☑ *Changes are transparent to users which improves efficiency*



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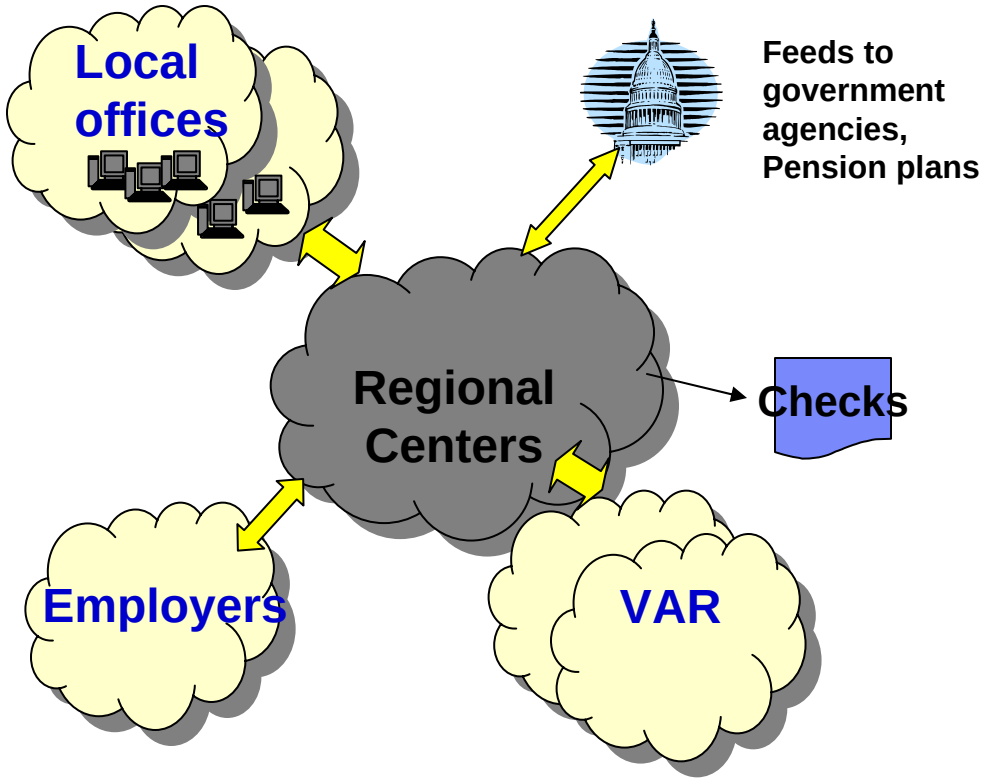
How is the Virtualization Engine being used?

- ESP customer – Sine Nomine
- Internal implementations
- Early adoptor profiles
- HiPODS prototype

Virtualization Engine Pilot Tax Accounting Project

- **Operational Goals**
  - Establish ability to cleanly instrument and analyze LAMP applications in VE
  - Demonstrate ability to react to demand by provisioning and controlling resource allocation with a minimum of human intervention
  - Simplify and develop component-level packaging and delivery for new deployment



ESP activity – Sine Nomine

Pilot Results

- Use of ARM correlator instrumentation accepted by open-source community
- EWLM classification based on query optimization vs background housekeeping & DBMS maint tasks
  - Gained a 10-15% throughput improvement on test
- Use of Grid Toolkit adapter components produce value-add outside grid implementations
- Wrapper and build-in option for instrumentation allowed rapid prototyping with VE tool infrastructure
- Established viability of VE instrumentation for LAMP application
- Scale-up and scale-out models effectively supported without additional development

Next Steps -- Working on creating cross systems virtualization and automation:

•VE console to trigger provisioning based on a set of thresholds
•Adding ARM instrumentation and EWLM prioritization to Apache and MySQL
•Instrumenting MySQL code and Apache PHP interface modules allowed more visibility into the app

ESP activity – Sine Nomine

Internal Implementations

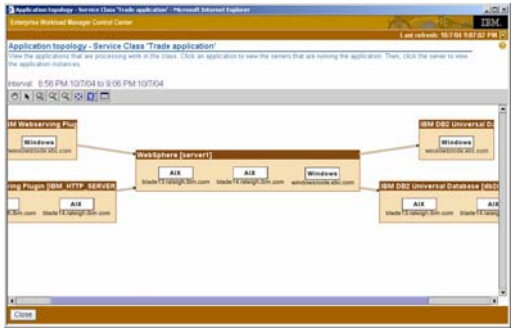
- Demo
  - Live for major events – see the ped
  - Raleigh briefing center
  - Video to be available for field 1Q04
- Start Your Engines
- Poughkeepsie Design Center
  - Ability to showcase EWLM

Virtualization Engine and the small business demo

- **Live demo (Currently only used at major shows – will be enabled at briefing centers, and video to be created)**
- **Small stock trading company**
- **Typical operating environment**
  - 16 Servers & operating system instances
  - Linux, AIX, Windows
  - Intel & POWER Servers (blade server + rack-mount)
  - Cisco Network
- **Business Challenge – Maintain critical customer service levels, even when demand unexpectedly increases**
- **Solution – IBM virtualization technologies help manage heterogeneous environments to deliver consistent performance**

Transactions Driven by Standard Trade-3 Refrerence Application

Putting it all together in one demo

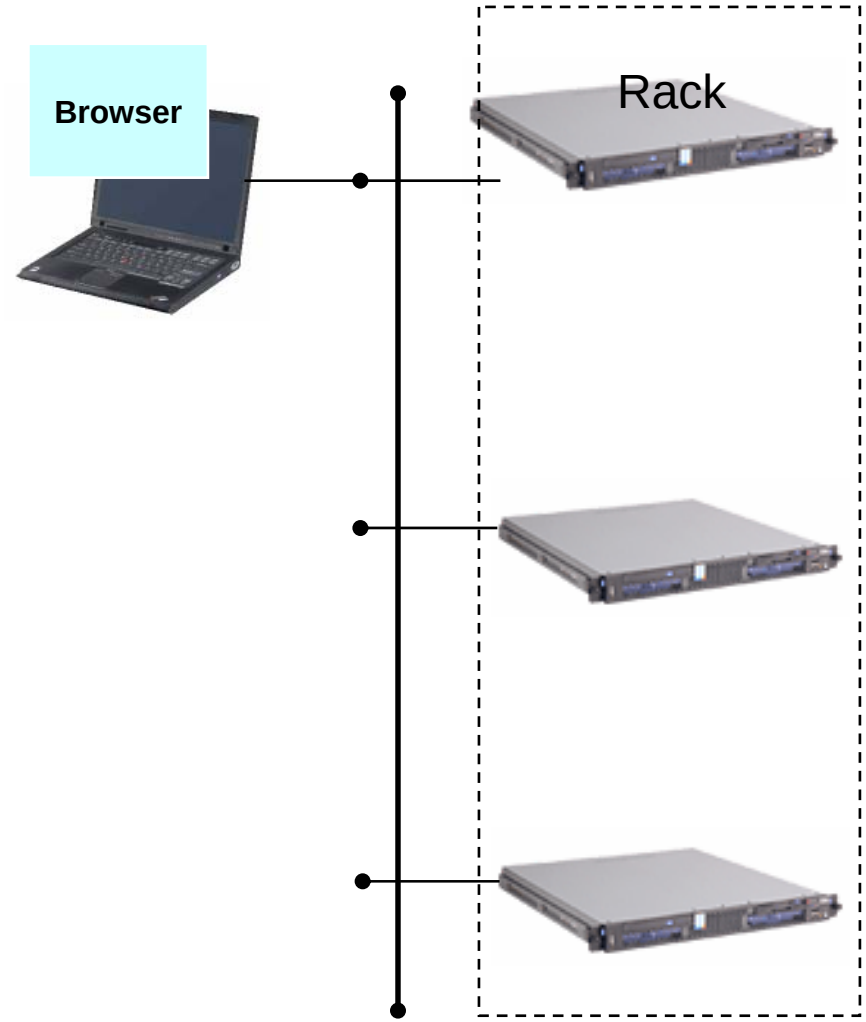


Cisco switches →
Redirect WebSphere workload based on input from EWLM

Rack mounted p5 servers
Balance workload and manage SAP infrastructure

BladeCenter with AIX, Linux and Windows
Management servers, VE Console, HealthCenter … Runs Trade3 workload

Logical Layout of a Lab Environment for SYE



x335 Server
2 x 3.2 Ghz
4GB memory

VE Console Server

ISC

VE Console Server

LDAP

DB2

WebSphere

x335 Server
2 x 3.2 Ghz Processors
4GB memory

Management Server

Director Multiplatform

eWLM Domain Manager

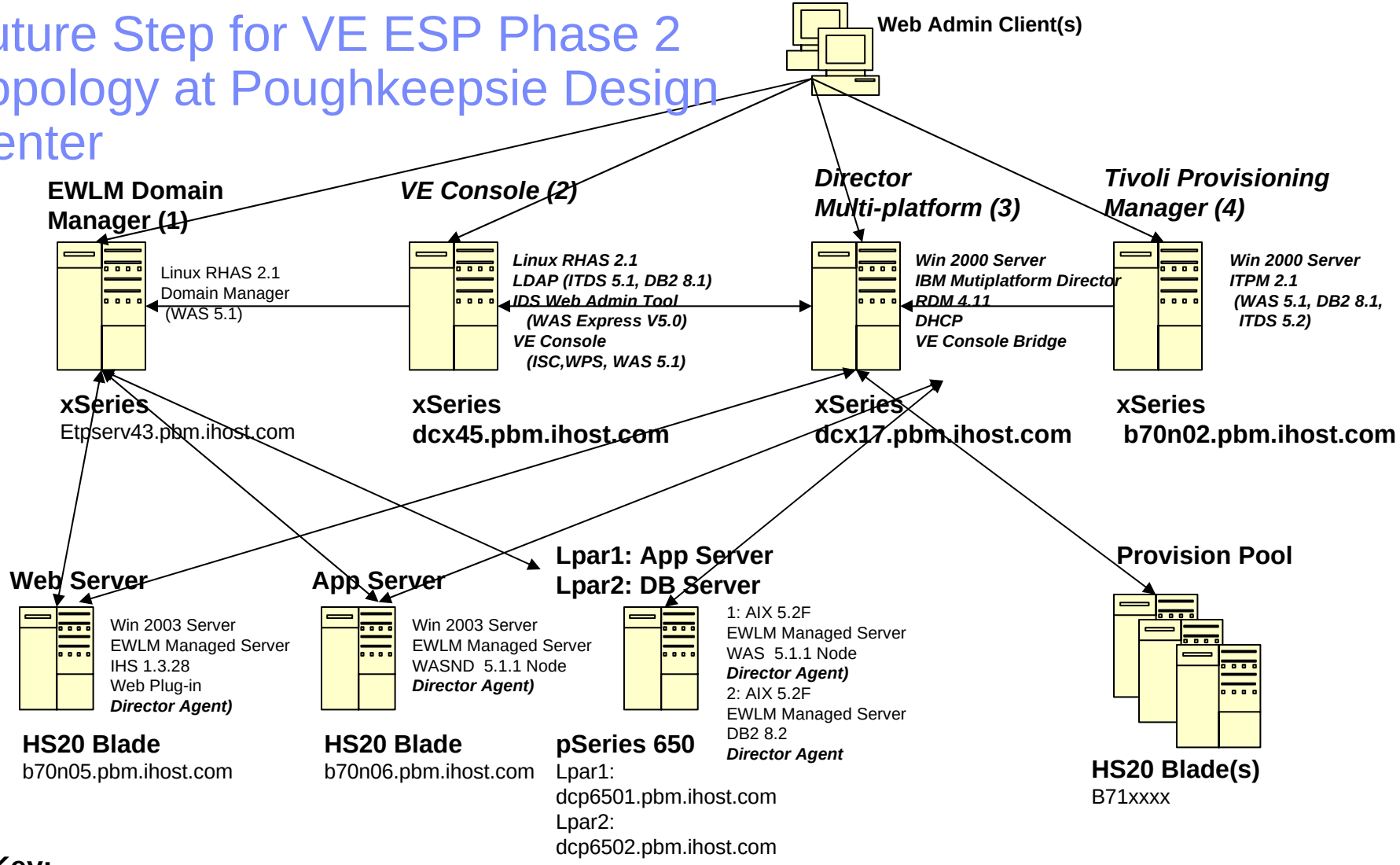
Tivoli Provisioning Manager

x335 Server
2 x 3.2 Ghz Processors
4GB memory

Managed Server(s)

VMWare Partitions

Future Step for VE ESP Phase 2 Topology at Poughkeepsie Design Center



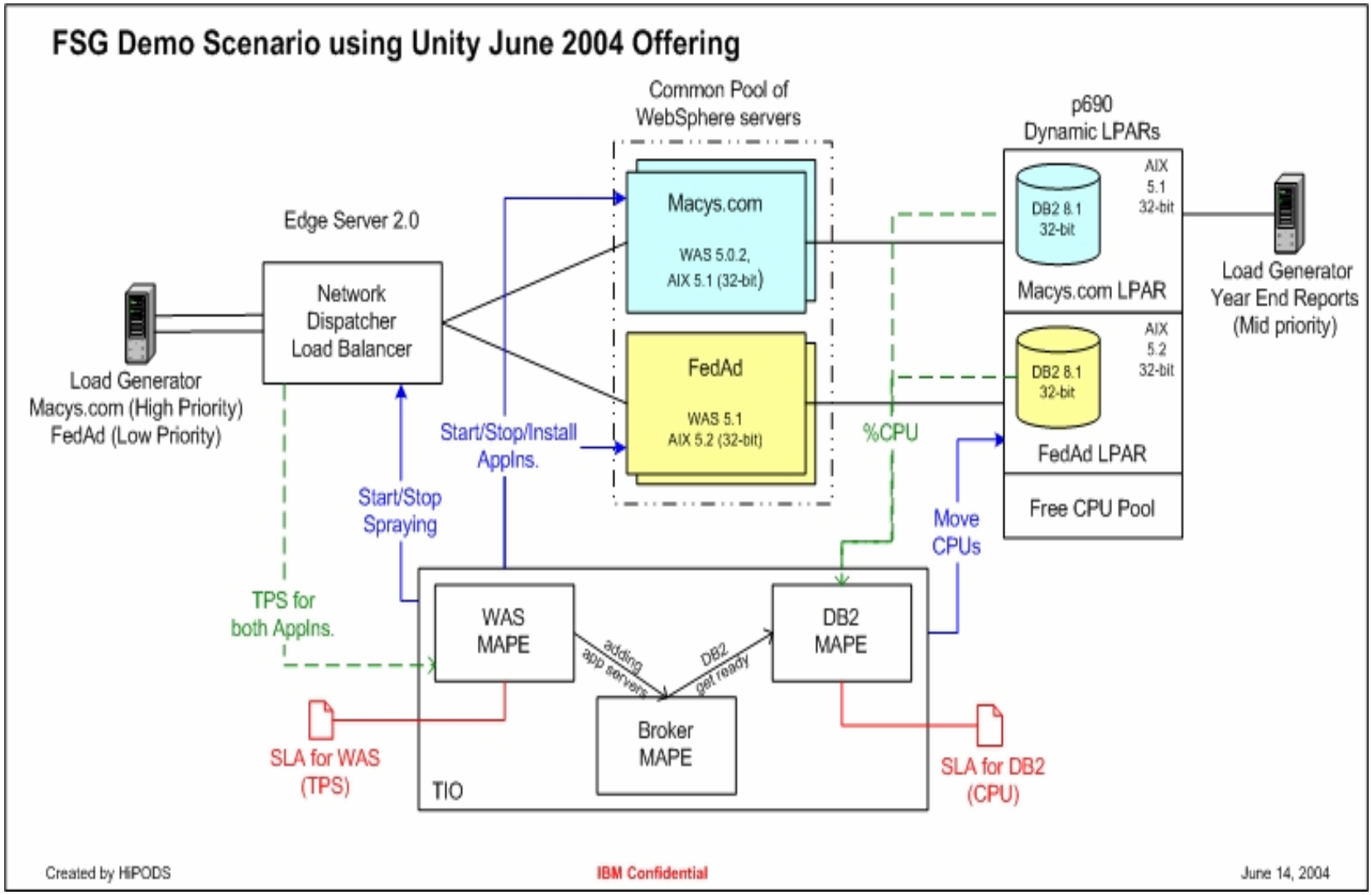
Key:
Italics : to be allocated/installed
(#): order of installation

Executive Summary -- HiPODS prototype

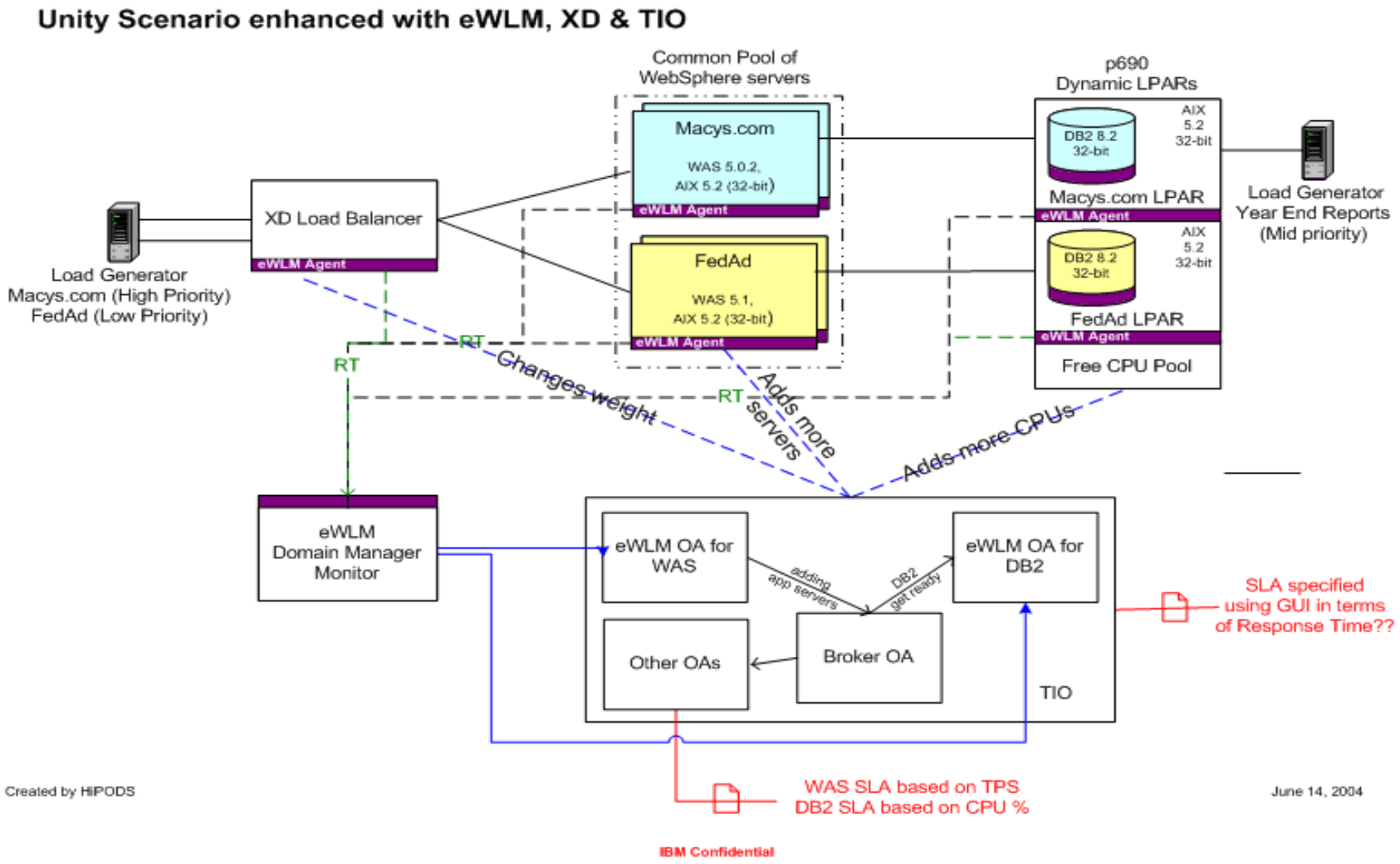
- Objective: Exercise VE components (eWLM & xLPAR Manager) in the customer environment.
- Results
  - Had sessions with the architects from HiPODS & STG to enhance the Unity scenario with VE components
  - Identified several possible scenarios. Detailed findings are in later charts
  - Identified actions needed to make all scenarios viable

  Recommend phased rollout approach leading to eWLM1.0+XD+TIO
  - Provides incremental value to the customer
- Case study documented in white paper: Orchestration Case Study: Integrating WebSphere & DB2 Orchestration with Enterprise Workload Manager avaiable at:
  - http://www-128.ibm.com/developerworks/websphere/zones/hvws/library.html

WADO Offering Scenario



WADO using eWLM1.0 + XD and TIO



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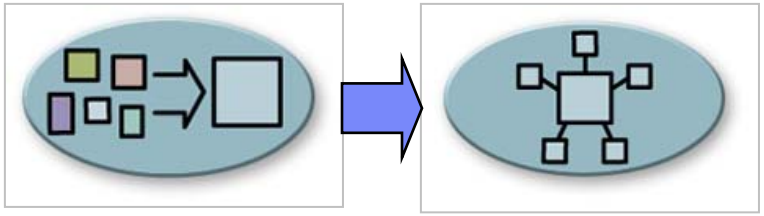
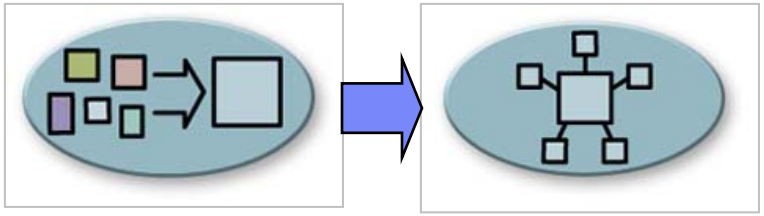
Identifying potential customers



- **VE Suite for Servers helps a customer evolve their Systems Virtualization from homogeneous to heterogeneous**
- **Does your customer?**
  - Have applications that span multiple operating systems?
  - Have an application model that uses WebSphere/DB2 and/or HTTP servers that span platforms?
  - Need to manage a complex infrastructure?
    - This could be SMB or LE – 3 operating systems and 50 or more servers
  - Need to discover which workloads are running on which servers?
  - Have an environment that needs to deal with spikes in utilization?
- **Is your customer in one of the targeted industries?**
  - Financial, Banking, Automotive, Government, Healthcare, Telco

Identifying potential customers



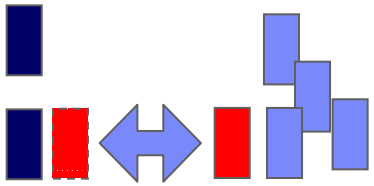
- **Has your customer?**
  - Done a Zodiac or other server consolidation study or done a server consolidation effort on their own?
    - If yes – then they are ready to take the next step
  - Looked at or purchased storage virtualization?
    - If yes – then they realize the benefit of infrastructure virtualization and may be ready to look at their server infrastructure
  - Has HP in their account trying to win with virtualization?
    - If yes – the VE Suite for Servers offers more capability to enhance our hardware foundation, and it's in the marketplace NOW.

IBM Virtualization Engine Suite for Servers Scenario Examples

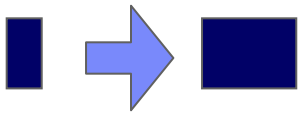
- **Provisioning in a development and test environment**
  - Stage 1 in a homogeneous environment, can move to stage 2
- **Using EWLM and TPM to manage systems that exploit capability of micro-partitioning**
  - Stage 1, enables systems to participate in Stage 2 in the future
  - Deploy EWLM & TPM initially in AIX 5.2 environment to prep the customer for next steps
- **Using EWLM in a WebSphere/DB2 environment**
  - Stage 2, enables management across a multi-system environment
  - ARM instrumentation already enabled for current versions of WebSphere & DB2
- **Using VE Console/Director MP to monitor health**
  - Stage 2, enables management of multiple server platforms
- **Open source environment**
  - Stage 2, enables management of multiple platforms
  - VE enhances management of LAMP applications across servers (see appendix)

IBM Dynamic Infrastructure for mySAP Business Suite Scenarios

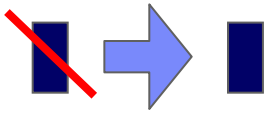
- **Scenario I:**
  - **Provisioning and De-Provisioning of SAP Application Server**
    - Provisioning of additional application servers from pool
    - De-Provisioning of selected nodes back to pool



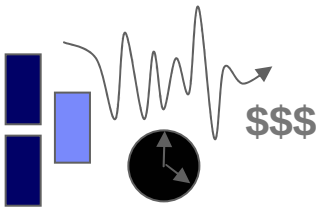
- **Scenario II:**
  - **Move the SAP Database Server to another (more powerful) server**
    - Provisioning of another (more powerful) database node
    - Move DB engine to new node
    - De-Provisioning of the old database node
    - Exchange of hw at times of a lease change



- **Scenario III:**
  - **Recover** from an **unplanned outage**
    - Automate operator sequence of activities
    - Recover in sub-minute timeframe without data loss

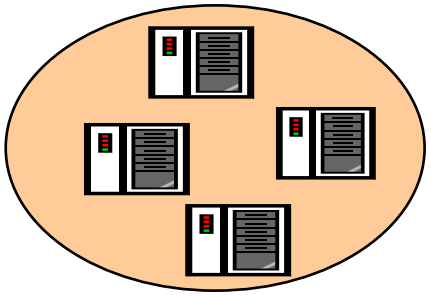


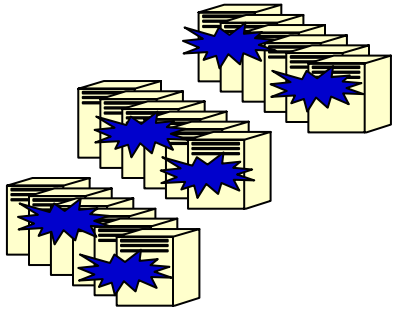
- **Scenario IV:**
  - Metering and Accounting Service for Billing (via Virtualization Engine)



Taking it to the next step

- **Determine the scope of the initial effort – not the entire infrastructure**
  - Confirm proper infrastructure support
  - Know limitations – See Virtualization Engine platform support chart in backup, use online planning advisor
    - **http://publib.boulder.ibm.com/eserver/v1r1/en_US/index.htm?info/veinfo/planner.htm**
    - i. e. – restrictions for EWLM platform support
      - Cannot manage linux infrastructure until R2 (4Q2005)
      - ...





Operations Management UI

Management Servers

Managed Through Servers

Managed Nodes (run actual customer workload)

Agenda

- Infrastructure Management in the On Demand Operating Environment
- Virtualization Solutions
- Using the IBM Virtualization Engine
- Identifying Customers
- Selling the Virtualization Engine – Getting Started

Why Should You Care?

Because:

- Taking your customers through the Virtualization Solutions journey creates many opportunities to sell servers, software and services.

- IBM is the only company that could tell the virtualization story comprehensively and makes the technologies available today - they are either embedded in the products or integrated in the VE suites.

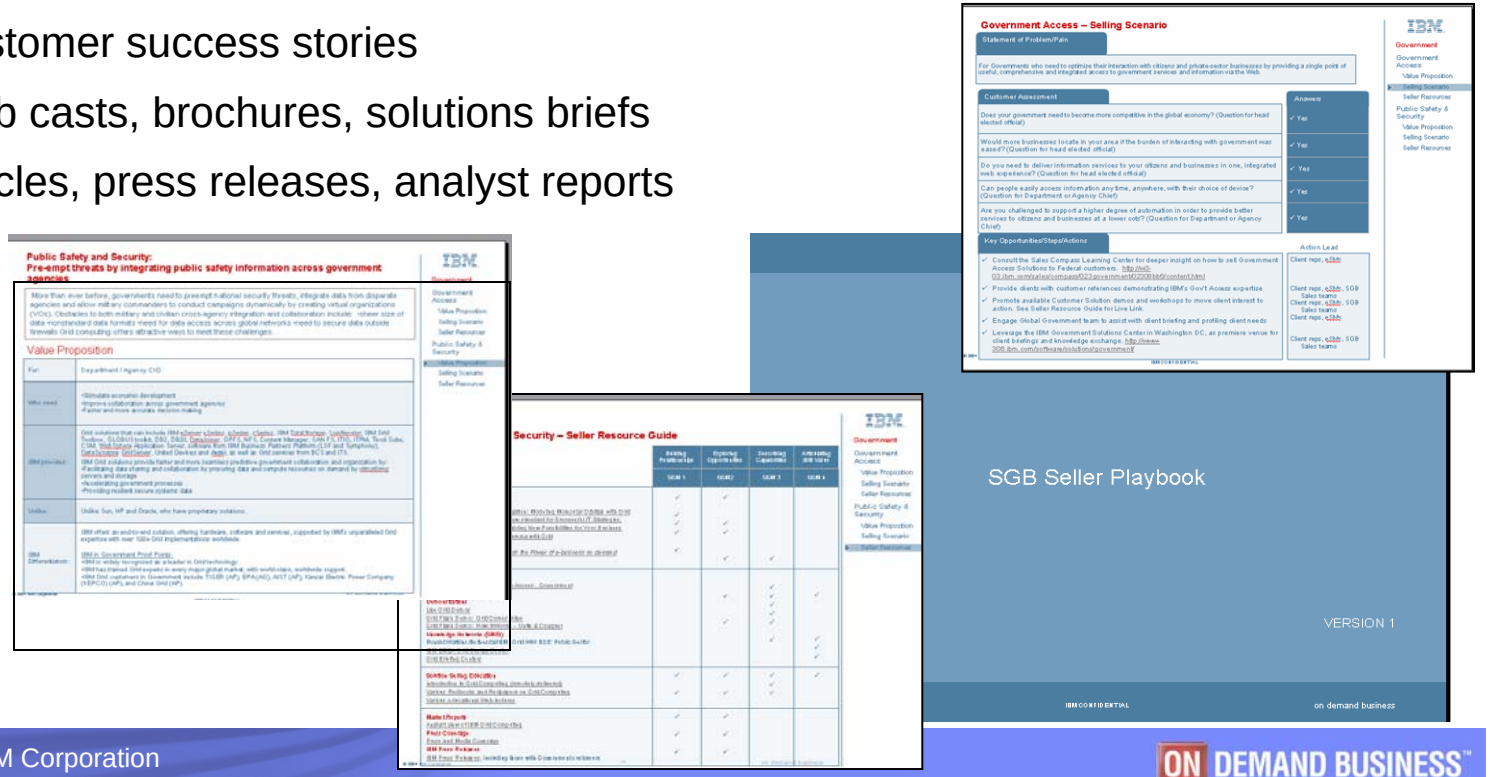
- With over 40 years of track record in building virtualization capabilities and our continued commitment to enhance our solutions, several analysts, such as DH Brown, Summit Strategies and The451, considers us ahead of the competitors.

Where to Start? Who can Help You?

Customer's Interest Level	Actions to Take	Who Can Help
Not familiar with Virtualization Solutions	**Executive briefing / Leverage "meeting in a box"**	**Your Geo Sales Leaders**
Aware of Virtualization but definition not consistent with IBM's vision	**Executive briefing / Leverage "meeting in a box"**	**Your Geo Sales Leaders**
Looking to further optimize their S-Con efforts	**Discuss where they are in the Stages of Deployment**	**Your Geo Sales Leaders**
Interested in Virtualization Solutions	**▪Gain executive sponsor and send technical customer to SYE** **▪Nominate customer to PO**	**1. Your Geo Sales Leaders** **2. Project Office (PO)**
Already a customer of one of the Virtualization Solution components	**Nominate customer to PO**	**1. Your Geo Sales Leaders** **2. Project Office**

SGB Seller Playbook

- **Available January 2005 from Systems Sales site**
- **Grid, Deep Computing, Linux and Virtualization Solutions**
- **Includes:**
  - Value propositions / key messages by industry
  - Qualification questions and next steps
  - Seller resources mapped to SSM steps
    - Customer success stories
    - Web casts, brochures, solutions briefs
    - Articles, press releases, analyst reports



Know What Everyone Else Will be Expected To Do in 2005

- **eSMs:**
  - Inspire the customers with the Virtualization solutions story – position it to meet your customer's IT Optimization needs.
- **Each Server Series Team:**
  - Drive sales of the Systems Edition of the Virtualization solutions as it applies to your series.
- **Geo Sales Leaders:**
  - Provide sales support, including executive briefings on the Virtualization Solutions. Assist in selling the Enterprise Edition of the Virtualization solutions.
- **Project Office:**
  - Assist in very complex deals; provide pricing; FOAK; identify required resources.

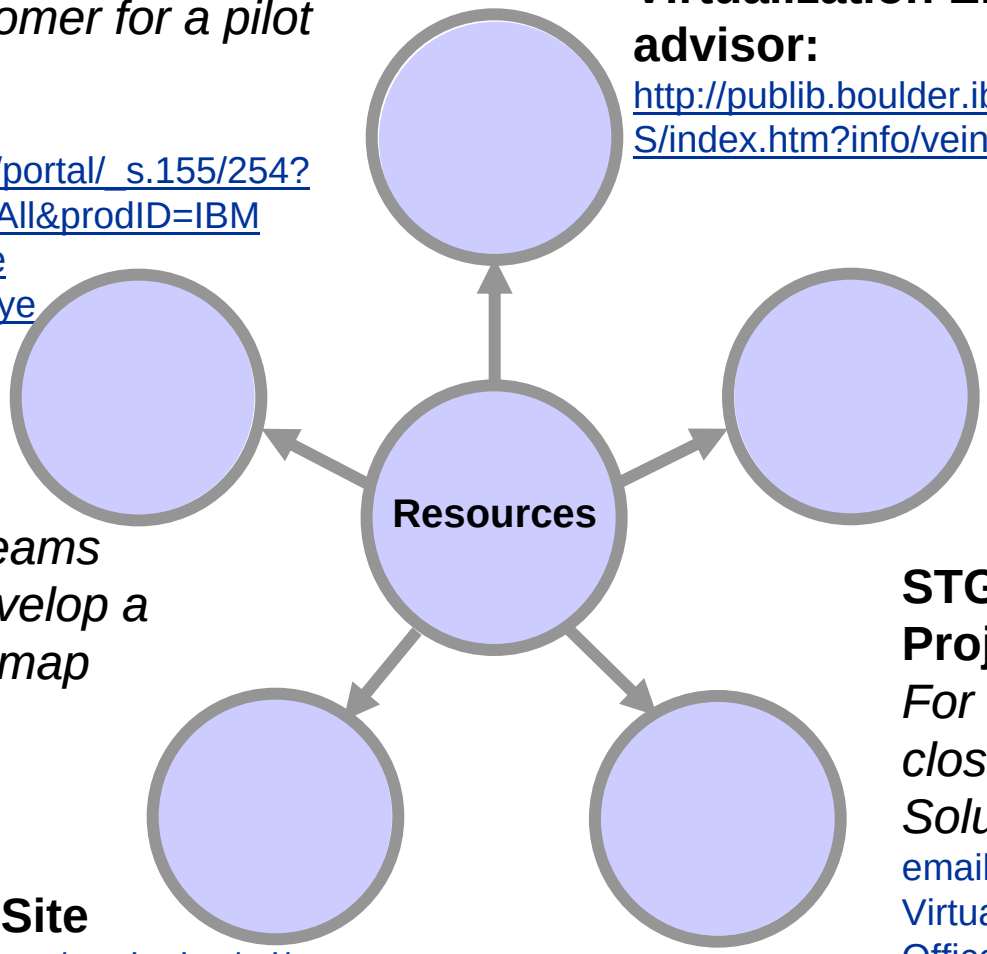
The Scope of Your Sales Support

Programs / Contacts	Scope of Activities	Contact for More Info
Geo Sales Leaders	**Executive briefing; sales support**	AG**: Judy Kelly/Southfield** EMEA**: Philippe Bricard/France** AP**: Yoshihiko Itoh/Japan**
Project Office	**FOAK; Pricing; Assistance in very complex deals; Identify required resources**	**VSPO@us.ibm.com**
SYE (Start Your Engine)	**Provides technical customers with hands-on-experience with the various VE components in preparation for a pilot**	**Tess Baruffaldi/Thornwood**
Briefing Centers	**Provides technical support for PoC, complex solutions design, demos, technical briefings etc.**	**Michael Kuhn/Somers**

Resources to help you sell

Start Your Engines Workshop
Preparing your customer for a pilot or proof of concept
http://w3-1.ibm.com/sales/systems/portal/_s.155/254?navID=f220s240&geoID=All&prodID=IBM eServer And TotalStorage Products&docID=etedvesye

Virtualization Engine planning advisor:
http://publib.boulder.ibm.com/eserver/v1r1/en_US/index.htm?info/veinfo/planner.htm



Next Steps
Helping account teams and customers develop a Virtualization roadmap
Barbara Korte (bkorte@us.ibm.com)

STG Worldwide Project Office
For any assistance to close a Virtualization Solution Sale:
email VSPO@us.ibm.com or Virtualization Solutions Project Office/Poughkeepsie/IBM.

Competitive Site
https://w3-2.ibm.com/marketing/mi/

Technical Support Makes It Easy to Buy, Install and Maintain Your Customer's Solution

Field Sales Teams ⟷ ***Customer***

Traditional Geo Technical Sales Support

Dedicated Technical Sales Team

Technical Architects and Specialists

Regional IT Specialists/Architects

Client, eServer, Storage, Software, & Solutions Expertise and Technical Skill for Face-to-Face Sales Oppys

Techline / Competeline

Remote solution design; sizings; configs; quick proposals; pricing; competitive support

Advanced Technical Support (ATS)

Complex solution design; critical situation support; benchmarks; proofs of concept; skills transfer

WW Centers

Single Point of Access on Systems Sales Portal

Presales / Marketing Centers

- Briefing Centers
- Competency Centers

Proof of Concept Centers

- Design Centers
- Integration Centers
- Benchmark Centers

IBM Development and ISV Enablement Centers

- Technology Centers
- Porting Centers
- International Competency Centers

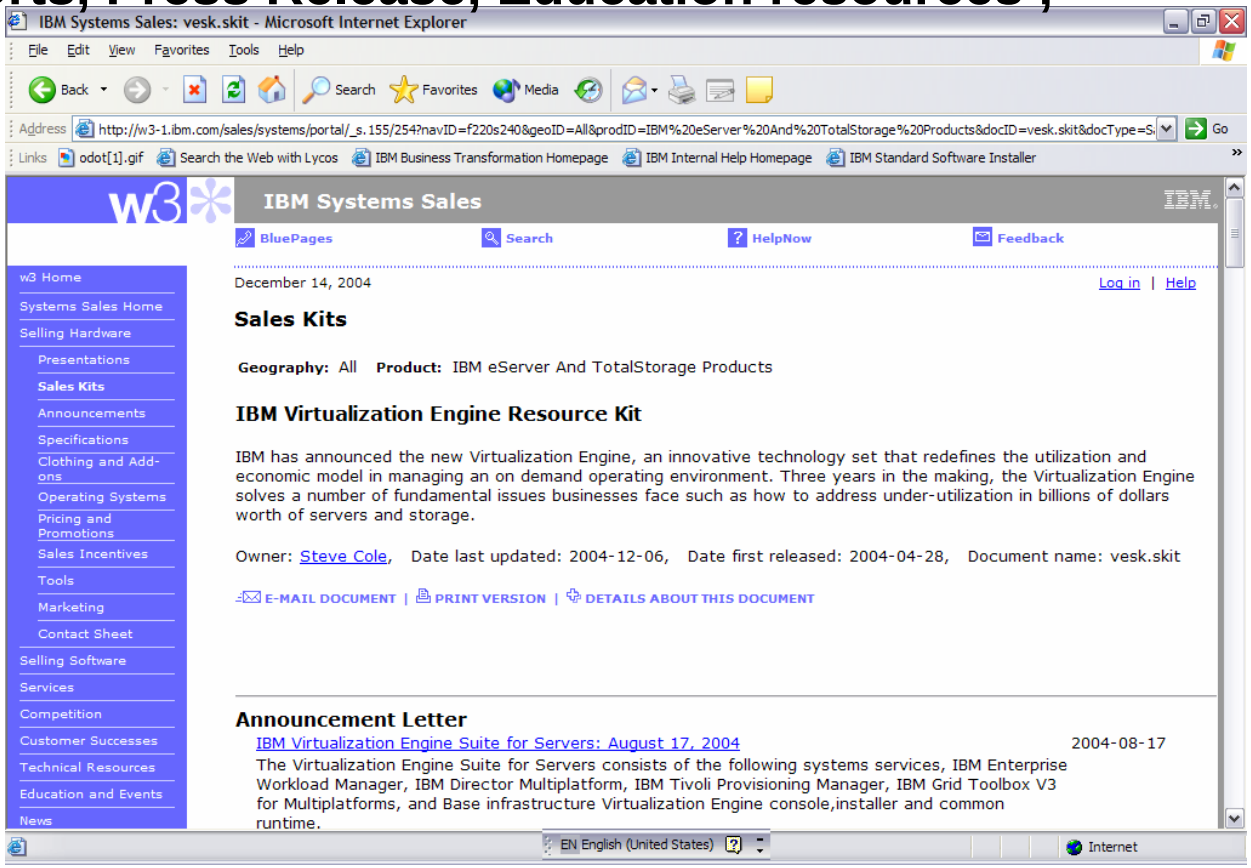
Who Else Can Help You: Design Centers

- **Cross IBM team (eServer, Software, Storage, Services) providing technical support to selected WW customers to speed deployment of integrated end-to-end On Demand infrastructures**
  - **Thought Leadership**
    - Virtualization Solutions
    - Grid/"On-Demand" computing
    - Autonomic computing
    - Information integration
    - Web Services
    - Linux
    - BladeCenter
  - **Inviting customers who:**
    - Have advanced e-business plans and strategies
    - Need help with technology selection/integration
    - Have a leading edge project w/ unique challenges
    - Are potential references for IBM
  - **Objective: Generate proof points of IBM's On Demand Strategy; Close significant IBM sales opportunities; Generate customer references; Leverage experiences**
  - **WW Design Centers working cooperatively:**
    - Poughkeepsie, NY (since 7/99)
    - Montpellier, France (since 6/00)
    - Makuhari, Japan (since 10/00)

Getting Smarter about Virtualization

- The Virtualization Engine Resource Kit **is the one-stop shopping location for all relevant information on Virtualization Solutions, including: Presentations, Red Books, Events, FAQ's, Analyst Reports, Press Release, Education resources , Brochures, etc.**

  - *(Note to Business Partners, http://www.ibm.com/partnerworld/sales/systems/ Due to Security features on www.ibm.Partnerworld we cannot provide direct hyperlinks . To access Virtualization Resource Kit, log into IBM System Sales home page. After you log in, then enter "VESK" in the search box on System Sales home page. Virtualization engine resource kit (VESK))*

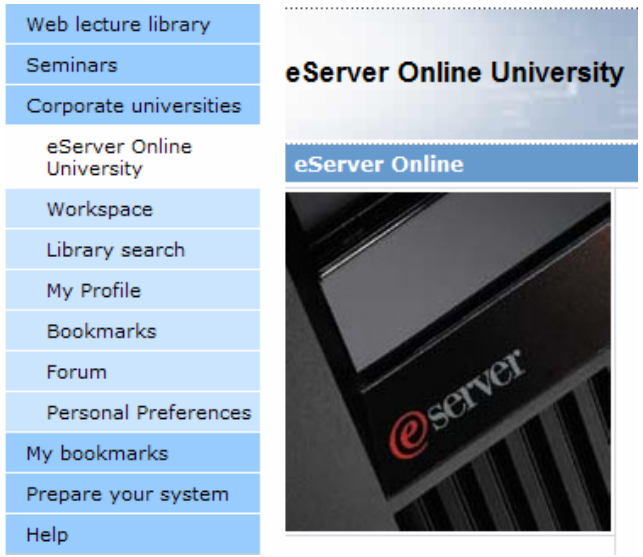


Tell Your Customer About Virtualization

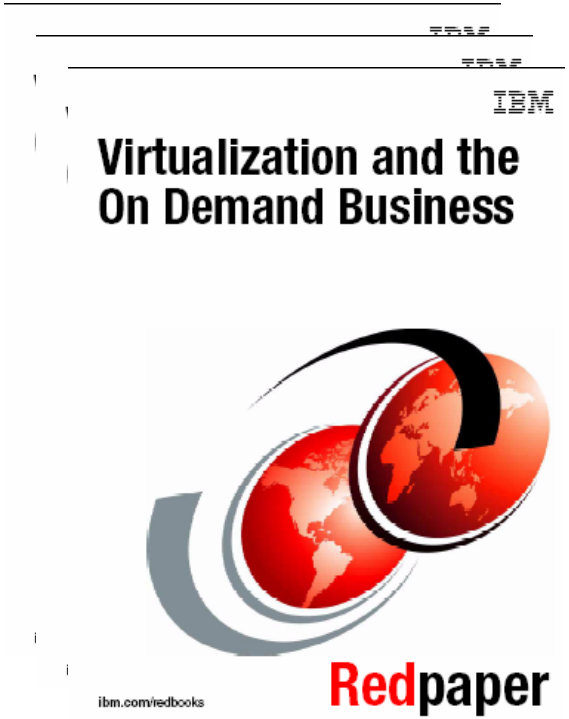
Leverage these resources to help you tell the Virtualization Story to your clients:

Brochures

Online education



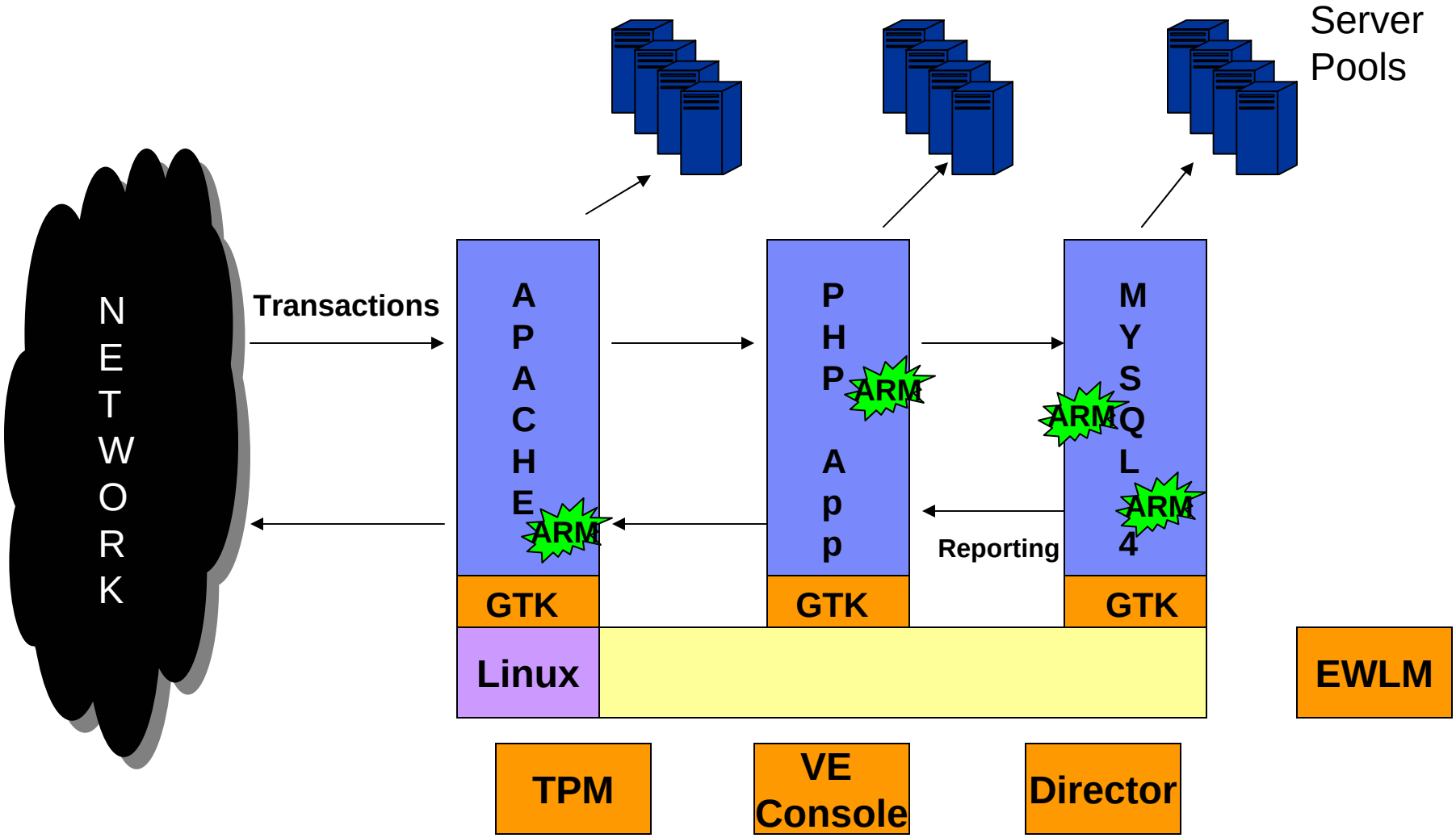
Click image above to view latest on-line Virtualization demo.



Technical papers

Appendix

Sine Nomine ESP
LAMP Instrumentation Components



- **Start Your Engines – A VE Suite for Servers hands-on technical workshop**
  - Objective
    - Provide an introduction to the IBM Virtualization Engine Suite for Servers and familiarize participants with the strategy behind the IBM Virtualization portfolio. Workshop delivers hands-on lab exercises so that key aspects of the VE suite for servers may be experienced and better understood.
  - Focus on using suite for server components
    - VE Console + hands-on lab, Director Multiplatform + hands-on lab, EWLM + hands-on lab, Tivoli Provisioning Manager + hands-on lab
  - Discussion of other virtualization technologies
    - Grid, Storage Virtualization
  - Nominate your customer for sessions in the US & EMEA, customer pays T&L, no charge for workshop
- **Early Customer Support Program – Virtualization Engine Suite for Servers Release 2**
  - Nominations in 2Q2005, program starts 3Q2005
  - Benefits to customers: Influence product development, access to service & support during beta, strengthen IBM/Customer relationship
  - Benefits to IBM: Improve product quality, improved customer input to development, increased customer satisfaction, customer references and testimonials

Ordering IBM Virtualization Engine Suite for Servers

- **PID number for VE Suite for Servers**
  - 5724i72 – VE Suite for Servers, includes all systems services: EWLM, TPM, IBM Director Multiplatform, IBM Grid Toolbox and VE Console
  - 5724i71 – A la Carte, includes capabilitiy to order the following components separately: EWLM, IBM Director Multiplatform, IBM Grid Toolbox
    - TPM may be ordered separately from Tivoli
- **Passport advantage info for VE Suite for Servers**
  - VE Suite for Servers – PID number 5724i72
    - PPA part number:
    - D53XCLL -- VE Systems Services for managing AIX & OS/400, license & 12 month maintenance
    - D53XFLL -- VE Systems Services for managing Solaris & Windows, license and 12 month maintenance
    - D53XELL -- Upgrade from Tivoli Provisioning Manager for managing AIX & OS/400, license & 12 month maintenance
    - D53XHLL -- Upgrade from Tivoli Provisioning Manager for managing Solaris & Windows, license & 12 month maintenance
  - A la carte – PID number 5724i71
    - PPA part number:
    - D53XALL – VE Director Multiplatform, license & 12 mo maintenance
    - D53ZRLL -- VE Grid Toolbox for Multiplatforms, license & 12 mo maintenance
    - D53X4LL -- VE EWLM Multiplatform for managing AIX & OS/400, license & 12 mo maintenance
    - D53X6LL -- VE EWLM Multiplatform for managing Solaris & Windows
- **STG Worldwide Sales Project Office for VE**
  - Assist in all pricing requests. To engage the STG Sales Project Office for IBM Virtualization Engine Suite for Servers, please send a Lotus Note to **VSPO@us.ibm.com** or **Virtualization Solutions Project Office/Poughkeepsie/IBM@IBMUS**.

IBM Dynamic Infrastructure Enterprise Edition *for* mySAP ™ Business Suite -- Jan 11, 2005 Announce

- **IBM Dynamic Infrastructure Enterprise Edition for mySAP ™ Business Suite**
  - Offering available on xSeries, pSeries and zSeries
  - Available on Passport Advantage as a chargeable component of the Virtualization Engine Suite for Servers
  - Three major technical components (TPM workflows, Dynamic Optimizer, UBS)
  - A customer solution on top of Virtualization Engine
  - Tivoli Provisioning Manager is a Pre-requisite (purchase stand alone or as part of the VE Suite for Servers)
  - IBM Dynamic Infrastructure for mySAP ™ Business Suite Services Available
- **IBM Dynamic Infrastructure features a set of core functions**
  - Resource Virtualization (server, storage and SAP application)
  - High Availability of all components (server, storage, application)
  - Dynamic Resource Allocation
  - Integrated Management (Control)
- **Some platforms extend the basic functions with out-of-the box capabilities**
  - On pSeries, zSeries and iSeries
    - Dynamic LPAR re-sizing (grow/shrink)
    - Dynamic provisioning of CPU/Memory/Adapters

The right technical support available at the right time...

SIGNATURE SELLING METHOD

PLAN		EXECUTE			IMPLEMENT	
Understand customer business & IT environ-ment	Develop plans linked to customer business initiatives	Establish buying vision with customer	Articulate IBM capabilities and qualify opportunity	Develop solution with customer	Close the sale	Monitor implementation and ensure expectations are met

Engage FTSS

Additional Questions? Contact Techline

- **Consultative advice**
- **Technology discussions**
- **Enablement discussions**
- **Customized solutions**
- **Virtual Innovation Center**

- **Demonstrations**
- **Reusable Solutions (SSPD)**
- **Briefing Centers**
- **Competitive positioning**
- **On Demand Centers**
- **Proof of Technology / Proof of Concept**
- **RFI/RFP (Special Bid)**
- **Solution design**
- **Benchmarking**
- **Trials and Early Ship Programs**
- **Readiness Plans**
- **Education and training services**
- **Proposals**
- **Solution Assurance Review**
- **Configure and Size**
- **Pricing and order prep**
- **Design and Architect**
- **Virtual Innovation Center**
- **Early Support Programs**

- **Support escalations**
- **Critical situation support**
- **Services hand-offs**
- **Customer Support Plans**
- **Capacity planning**
- **Technical Health Check**

Worldwide Benchmark and Design Centers

Montpellier
- Virtualization
- SYE
- pSeries
- iSeries
- zSeries
- xSeries
- Design Center
- FSS Solutions
- DCCoD
- Storage
- Linux Clusters

Poughkeepsie
- Virtualization
- pSeries
- zSeries
- xSeries
- Design Center
- DCCoD
- Linux Clusters
- eUtility

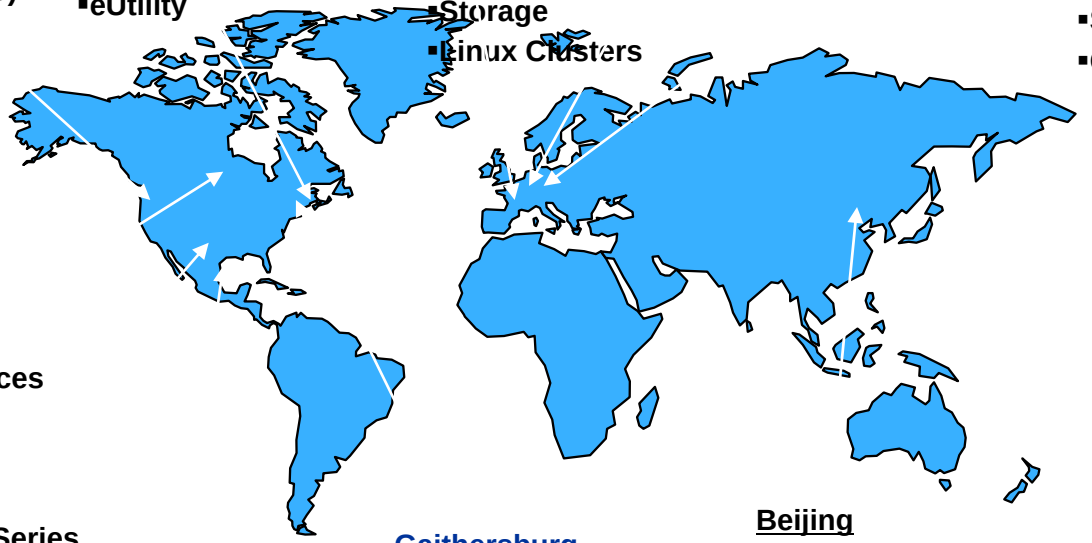
Boeblingen
- IDI for SAP
- zSeries (Linux)

Mainz
- Storage

Kirkland
- xSeries (MS)

Other Regional Facilities

Seoul	pSeries
Sydney	pSeries
Silicon Valley Lab	HVWS
Greenock	xSeries



Examples of Projects
- Design Engagements
- HPC Benchmarks
- Commercial Benchmarks
- ISV Enablement & Benchmarking (w/R. Warren)
- BICoC (w/SWG)

Rochester
- iSeries
- DCCoD
- Life Sciences Solutions

Dallas
- pSeries
- xSeries

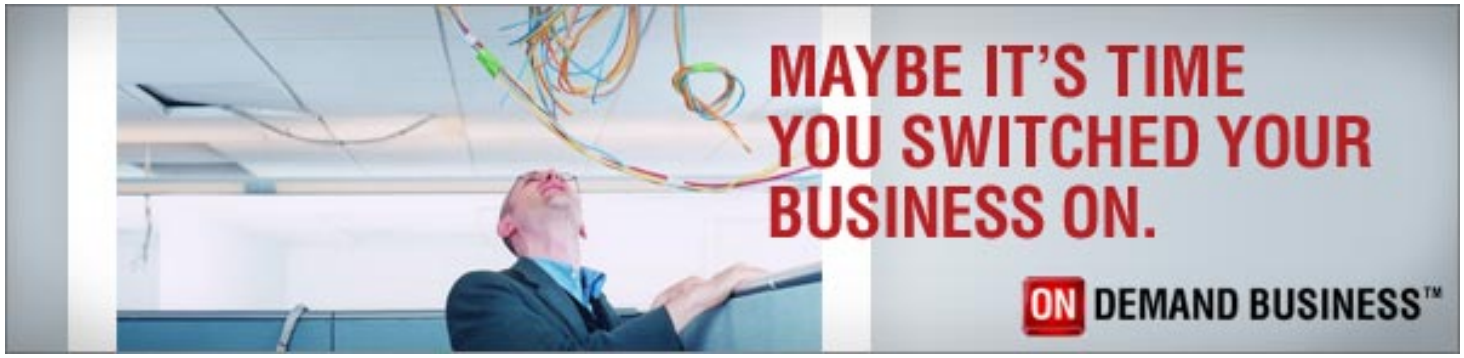
Houston
- DCCoD

Gaithersburg
- SYE
- zSeries
- Storage

Beijing
- pSeries
- xSeries
- iSeries
- zSeries

Tokyo
- SYE
- pSeries
- xSeries
- Design Center
- Storage

http://w3.ibm.com/sales/systems/benchmarks



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