Herzlich willkommen!

04.06. München
10.06. Frankfurt
12.06. Hamburg
17.06. Düsseldorf

IT-BUSINESS Akademie

Accelerating Your Success™

Virtual Iron –
Enterprise Class Server Virtualisierung zu SMB-Preisen

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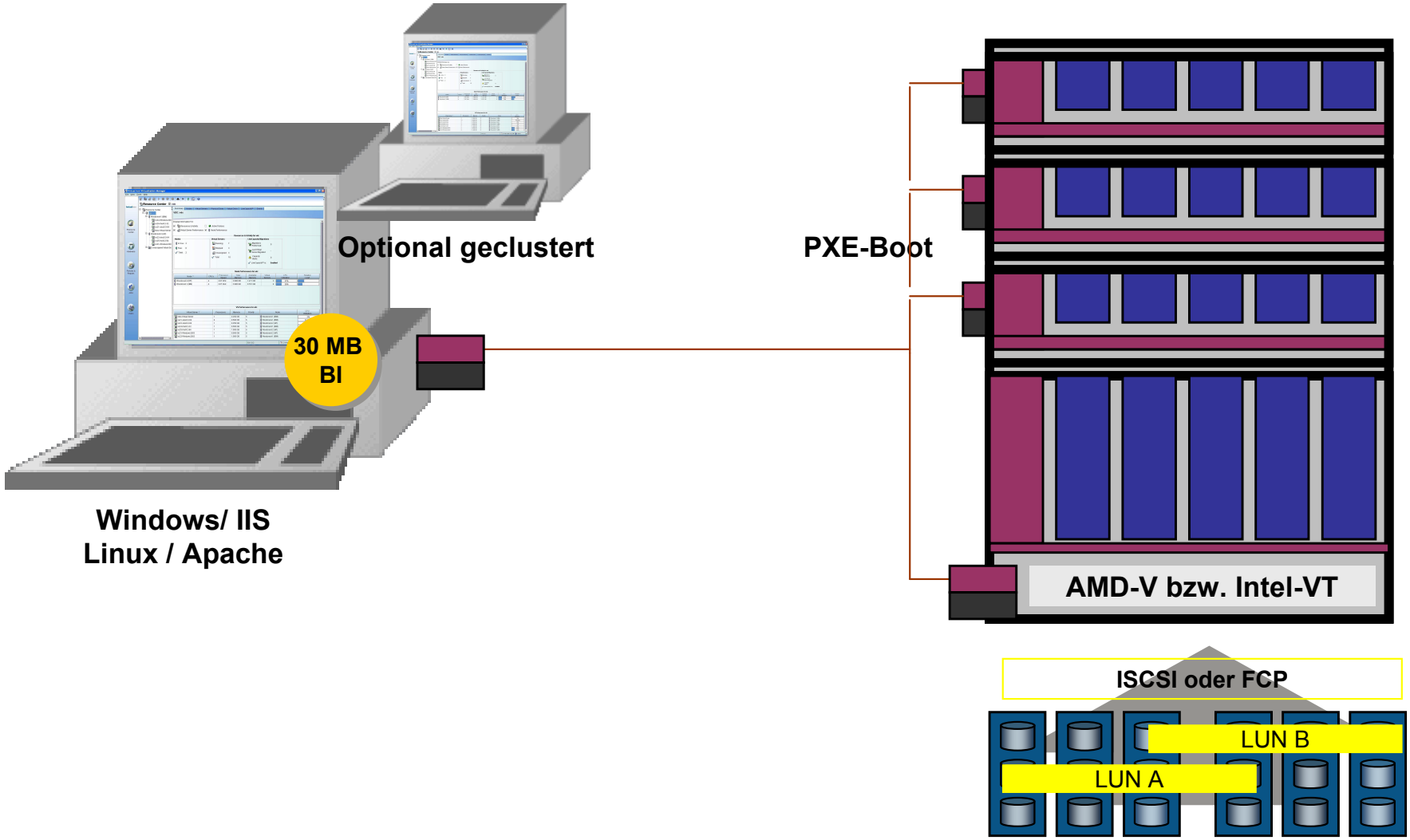
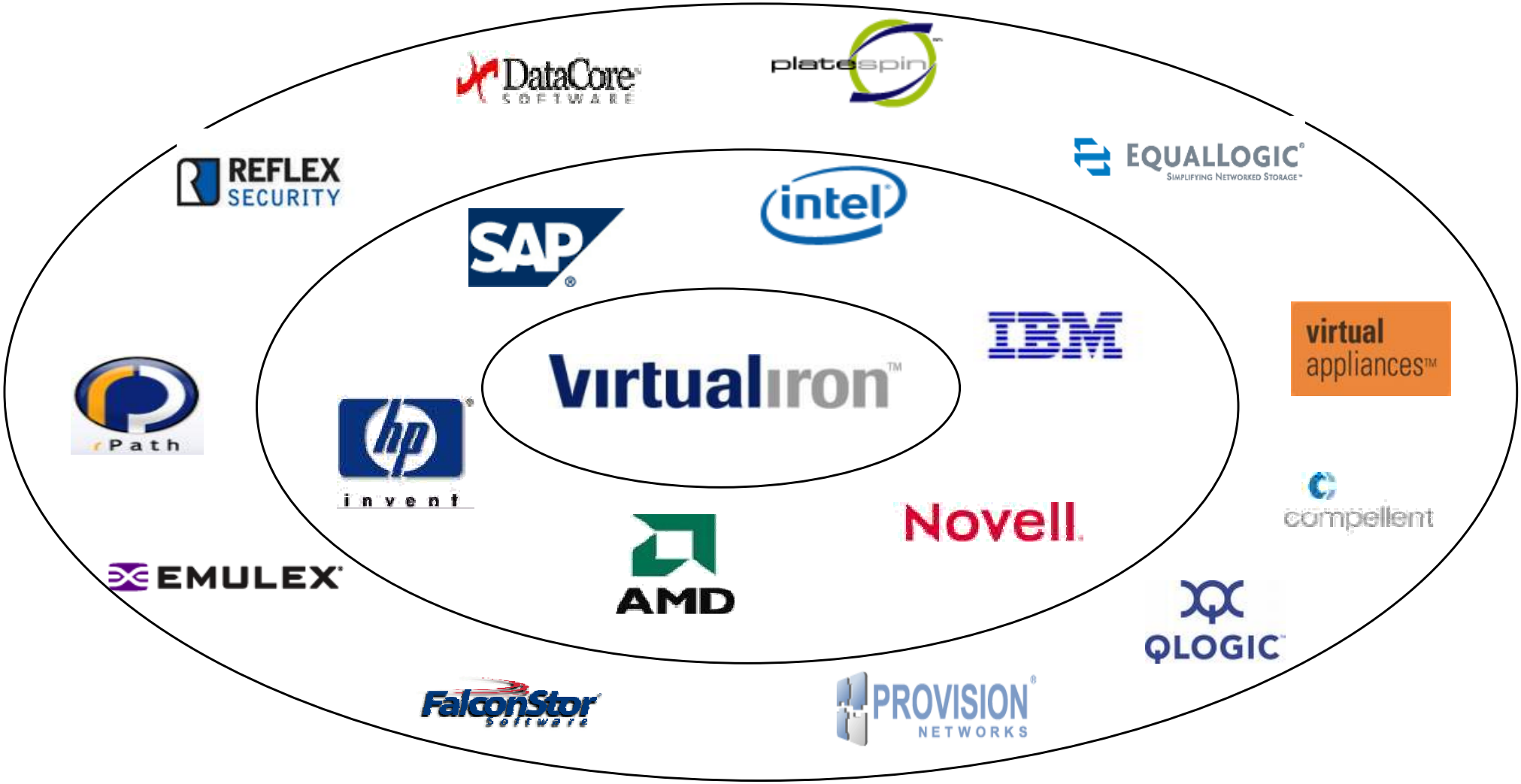
Virtual Iron bietet die Lösung

Funktionen	
Lizensierung	per Socket
Management Tool	Virtualization Manager
Automatisierte Installation	LiveProvisioning, Cloning
Migration virtueller Maschinen	LiveMigrate
Nutzung von Stromsparpotentialen	GreenButton
Unterstützung von Wartungsfenstern	LiveMaintenance
Dynamische CPU-Nutzung	LiveCapacity
regelbasierende Automatisierung	LiveCapacity + LiveRecovery
Erfassung von Systeminformationen	integrierte Datenbank
Integration von Systemmanagement	CIM-Schnittstelle
Virtuell SMP	8 CPU's
Wiederherstellung virtueller Machinen	LiveRecovery
Onlinesicherung	LiveSnapshot, Integration von 3d party BackupSoftware
transparente Speichermigration	über FalconStor
Integration von "Altsystemen"	LiveConvert

Architektur

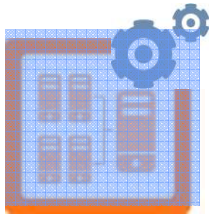


Breites Spektrum an Kooperationen und Technologiepartnerschaften



Virtual Iron…

- **einfaches, socket-basierendes Preismodell**
- **Virtualization Manager inklusive**
- **Niedrige Supportkosten [Updates inklusive]**
  - **Silver [updates & mailsupport]**
  - **Platinum [updates & 24X7]**



Extended Enterprise Edition

EU 799/socket

- **Up to purchased sockets**
- **Unlimited virtual servers**
- **Virtual SMP**
- **Local, iSCSI, FC storage**
- **Snap Shot**
- **VLAN**
- **LiveMigration**
- **LiveMaintenance**
- **LiveRecovery**
- **LiveCapacity**
- **Certified Novell kernel**
- **6 P2V or V2V per socket**

Virtual Partner in Deutschland

- **Netz an qualifizierten Partnern**
- **Keine “Clubgebühr”**
- **Aktives Partnering**
- **Kooperationen mit Hardwareherstellern in Deutschland**

Referenzen

PUTNAM INVESTMENTS
TOSHIBA
intel
SIEMENS
KPMG
PGA TOUR
MARSH
HITACHI Inspire the Next
Raytheon
NTT Group
NetApp
MOBIUS
JBCC
Parker
priceline.com
L3 communications
JM Johnson Matthey
PODRAVKA
transgene
City of Evanston
XCalibre
ct caixaterrassa
Stanleybet
manz automation
SoftBank Telecom
PayOne SOLUTIONS
UNIVERSITÄTS- UND REHABILITATIONSKLINIKEN ULM
RKU
Truck-Lite

Virtual Iron … USP's

- **Integrierte, intuitive Weboberfläche**
- **Keine Installation auf Gastmaschinen [diskless Hosts], dadurch einfaches Deployment und einfacher Update**
- **Migration virtueller Maschinen zwischen Prozessorgenerationen**
- **Sichere Virtualisierung, [nahezu] kein Hacking auf Hostsystemen möglich**
- **8-Prozessor-SMP in Gastmaschinen und 128 GB RAM sowie 32/64 Bit-Betrieb machen VI tauglich auch für Anforderungen von DB-Applikationen**
- **Hoher I/O-Durchsatz, geringer Verlust an CPU**
- **Beste Skripting-Engine am Markt**
- **Beruht auf Open-Source-Technologie**
- **Günstiger Preis …**

Virtual Iron Key Features

- **Nativ Multi-OS Support**
  - **Windows 2000, XP, Vista, 2003, 2008, RHEL-5, SLES-10**
  - **32 / 64 Bit mixed**
- **Höchstleistung**
  - **Bare metal x86 Virtualisierung für höchste Leistung**
  - **Optimiert für AMD und Intel HW-Virtualisierung**

- **Simple Deployment and Installation**
  - **schnelle und einfache Installation**
  - **Nutzung zertifizierter Novell Linux Treiber**
  - **Unterstützung von DAS-Storage: IDE, SATA, SCSI, SAS**
  - **Unterstützung von: Fibre Channel und ISCSI incl. SAN-Boot**
  - **SnapShot und dynamische Volume Extension**

- **Integrierte Multi-Server Verwaltung**
  - **Volle Lebenszyklusverwaltung virtueller Server**
  - **regelbasierendes Ressourcemanagement virtueller Server**
  - **dynamisches Monitoring und dynamische Verwaltung**
  - **Integriertes Desaster Recovery virtueller Server**
- **Schnelles Provisioning**
  - **Nutzung von OS-Installationsmedien**
  - **Cloning für schnellen Roll-Out**
  - **Unterstützung von Sysprep**

Free Test Download

Eine große und wachsende Zahl unterstützter Hardware…

- **SLES10 Kernel**
- **Unterstützung von Novel-zertifizierter Hardware**
- **Virtual Iron Hardware Compatibility List (HCL)**

Virtual Iron Virtualization Manager

File View Tools Help

Resource Center vdc

Resource Center
Hardware
Policies & Reports
Jobs
Users

- Resource Center
  - vdc
    - Woodcrest-1 (IBM)
      - vs32-Windows200:
      - vs24-rhel4.2-32
      - vs21-sles9.3-64
      - New Virtual Server
    - Woodcrest-2 (HP)
      - vs22-sles9.3-64
      - vs25-rhel4.2-64
      - vs31-Windows200:
    - Unassigned Virtual Se

Summary | Nodes | Virtual Servers | Physical Disks | Virtual Disks | LiveCapacity™ | Events

VDC: vdc

Display Information For:

- [x] Resources & Activity
- [ ] Active Policies
- [x] Virtual Server Performance
- [x] Node Performance

Resources & Activity for vdc

Nodes

- In Use: 2
- Free: 0
- Total: 2

Virtual Servers

- Running: 7
- Stopped: 3
- Unassigned: 3
- Total: 10

LiveCapacity Migrations

- Migrations Performed: 0
- Last Virtual Server Migrated: -
- Capacity Alerts: 0
- LiveCapacity™ is: **Enabled**

Node Performance for vdc

Node	CPU's	Processor Speed	Total Memory	Available Memory	Virtual Servers	CPU Utilization	Relative Load
Woodcrest-2 (HP)	4	2.67 GHz	3.998 GB	1.271 GB	3	27%	
Woodcrest-1 (IBM)	4	2.67 GHz	3.998 GB	0.761 GB	4	26%	

VS Performance for vdc

Virtual Server	Processors	Memory	Priority	Node	CPU Utilization
New Virtual Server	1	0.250 GB	5	Woodcrest-1 (IBM)	2%
vs21-sles9.3-64	4	0.500 GB	5	Woodcrest-1 (IBM)	Pending
vs22-sles9.3-64	1	0.250 GB	5	Woodcrest-2 (HP)	0%
vs24-rhel4.2-32	1	0.500 GB	5	Woodcrest-1 (IBM)	1%
vs25-rhel4.2-64	1	1.000 GB	5	Woodcrest-2 (HP)	0%
vs31-Windows2003	1	0.500 GB	5	Woodcrest-2 (HP)	24%
vs32-Windows2003	1	1.000 GB	5	Woodcrest-1 (IBM)	24%

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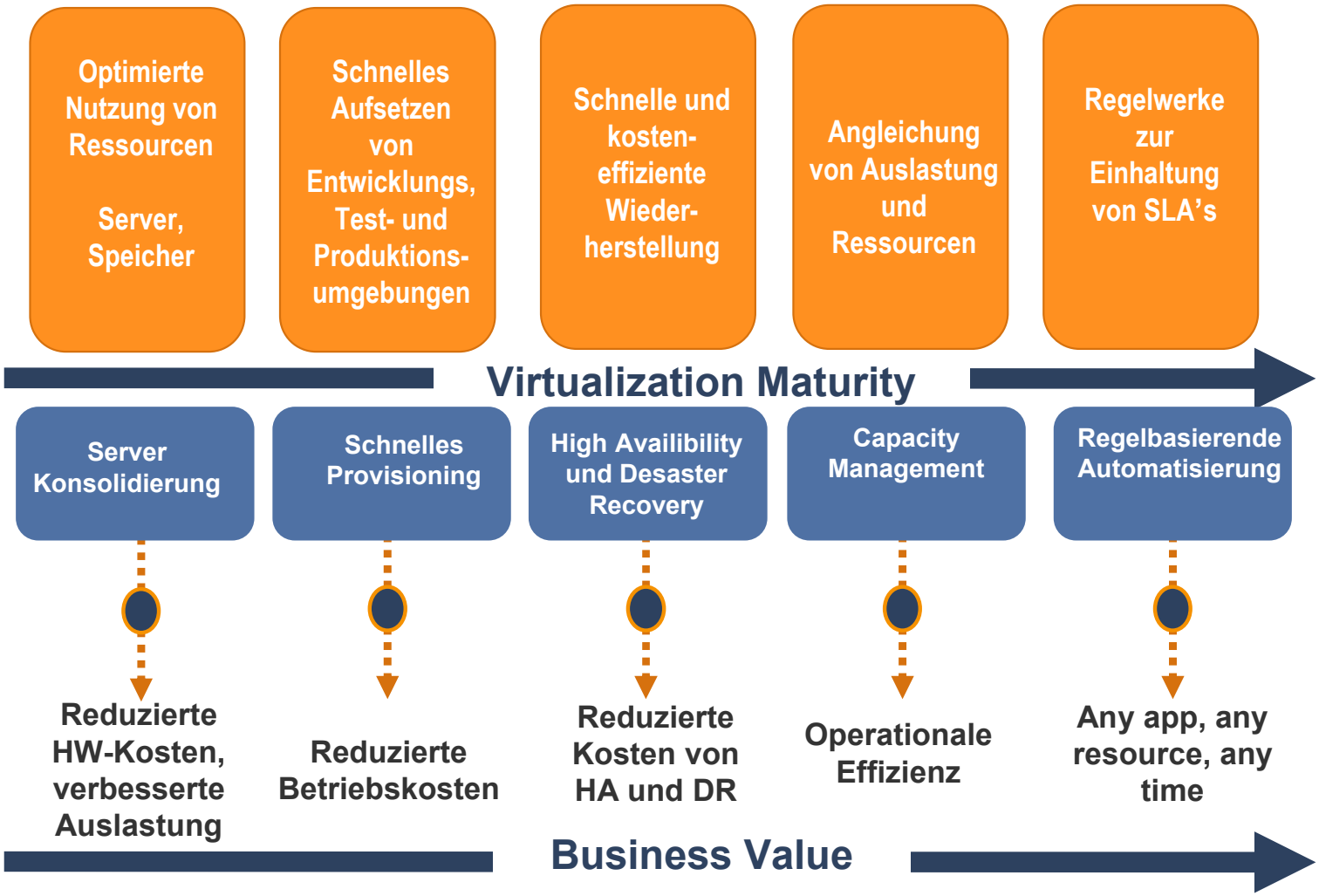
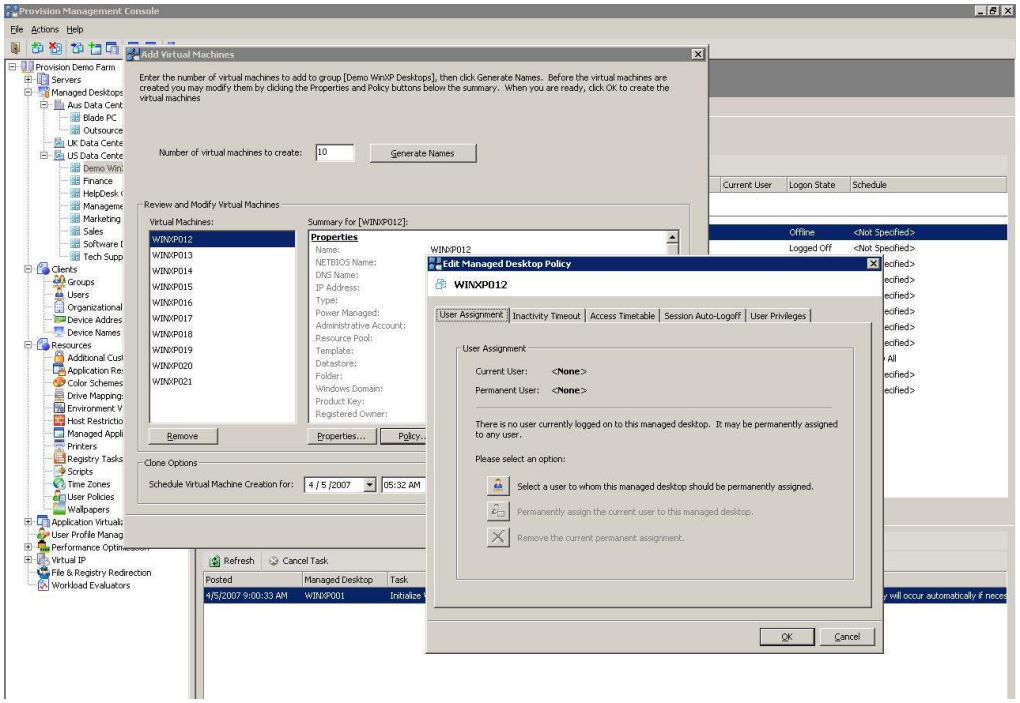
Der Lebenszyklus von Servervirtualisierung



Desktop Virtualisierung

- Virtual Iron arbeitet mit unterschiedlichen Connection Brokern zusammen
- Avnet forciert VDI und Terminal Services zusammen mit Ericom… oder auch Provision Networks



Hosting von Desktops auf Servern bringt Vorteile…

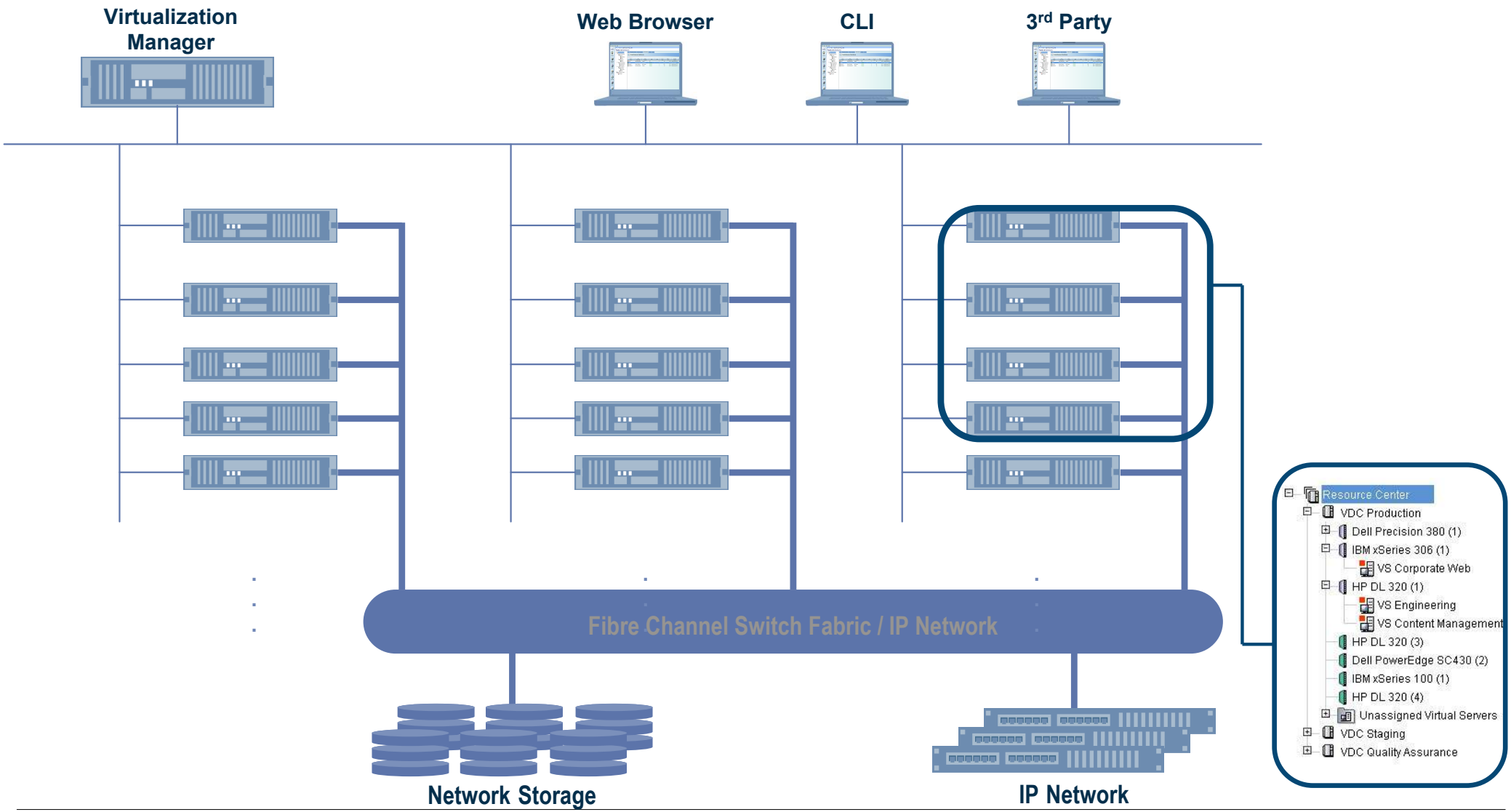
- **Niedrigere Hard- und SW-Kosten**
- **Daten liegen sicher im Rechenzentrum**
- **Niedrigere IT-Supportkosten**
- **Produktivitätserhöhung**
- **Reduzierung von Arbeitszeitausfällen**

"Desktop virtualization offers significant benefits, including better security, manageability, and access to desktop applications in a distributed world." Forrester Research, Desktop Virtualization is the Future of the Corporate PC, January 5, 2006

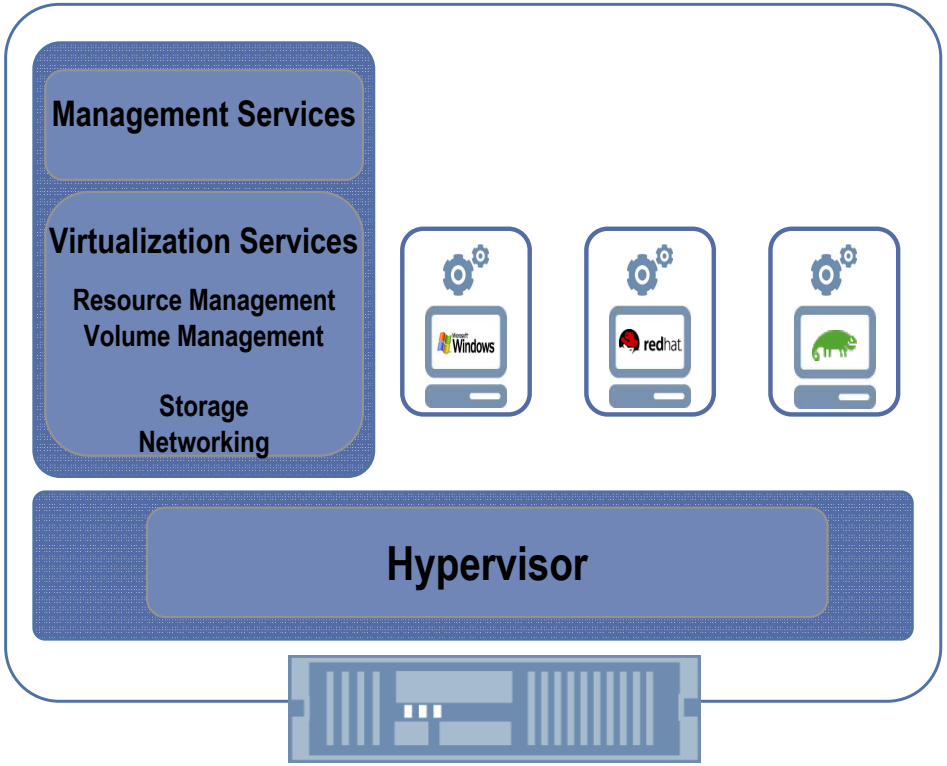
Wann testen Sie Virtual Iron…?

Technischer Backup

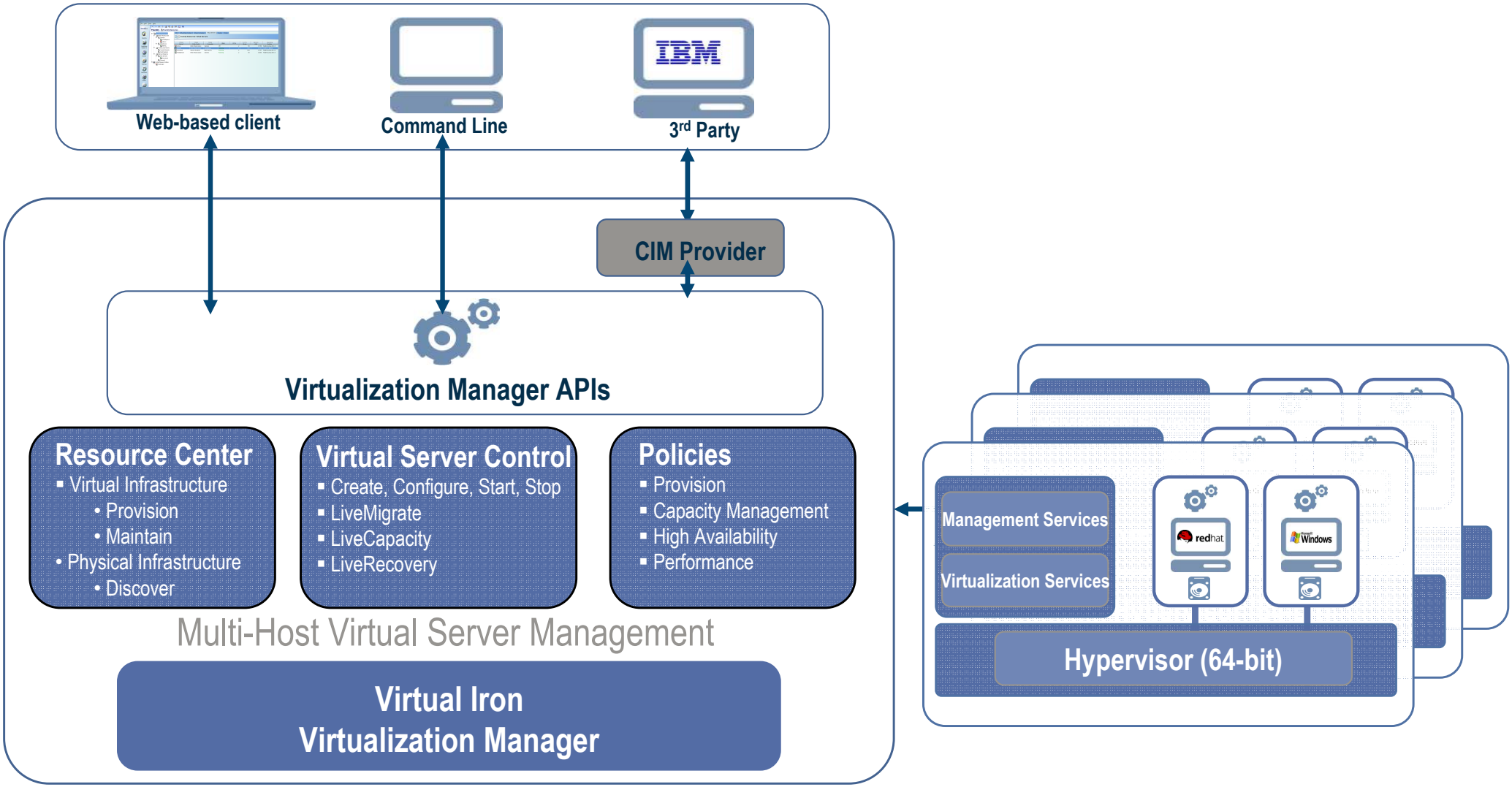
Virtual Infrastructure Physical Representation



Virtualization Stack



- **Management Services**
  - Create and control virtual servers
  - Statistics and data collection
  - Status and error reporting
- **Virtualization Services**
  - Full virtualization (on Intel VTx/AMD-V hardware)
  - Server resource management
  - Virtual devices: networks, disks, console
  - Logical Volume Manager
  - Support 32 and 64 bit unmodified guest OS's
  - Dynamic virtual server migration
  - Secure, small, stateless
  - Based on certified Linux kernel
- **Open Source Hypervisor**
  - x64 Support (Xeon, Opteron)
  - Virtualization assist in hardware
  - Broad platform support


Web-based client
Command Line
IBM
3rd Party
CIM Provider
Virtualization Manager APIs
Resource Center
▪ Virtual Infrastructure
• Provision
• Maintain
• Physical Infrastructure
• Discover
Virtual Server Control
▪ Create, Configure, Start, Stop
▪ LiveMigrate
▪ LiveCapacity
▪ LiveRecovery
Policies
▪ Provision
▪ Capacity Management
▪ High Availability
▪ Performance
Multi-Host Virtual Server Management
Virtual Iron
Virtualization Manager
Management Services
Virtualization Services
redhat
Windows
Hypervisor (64-bit)

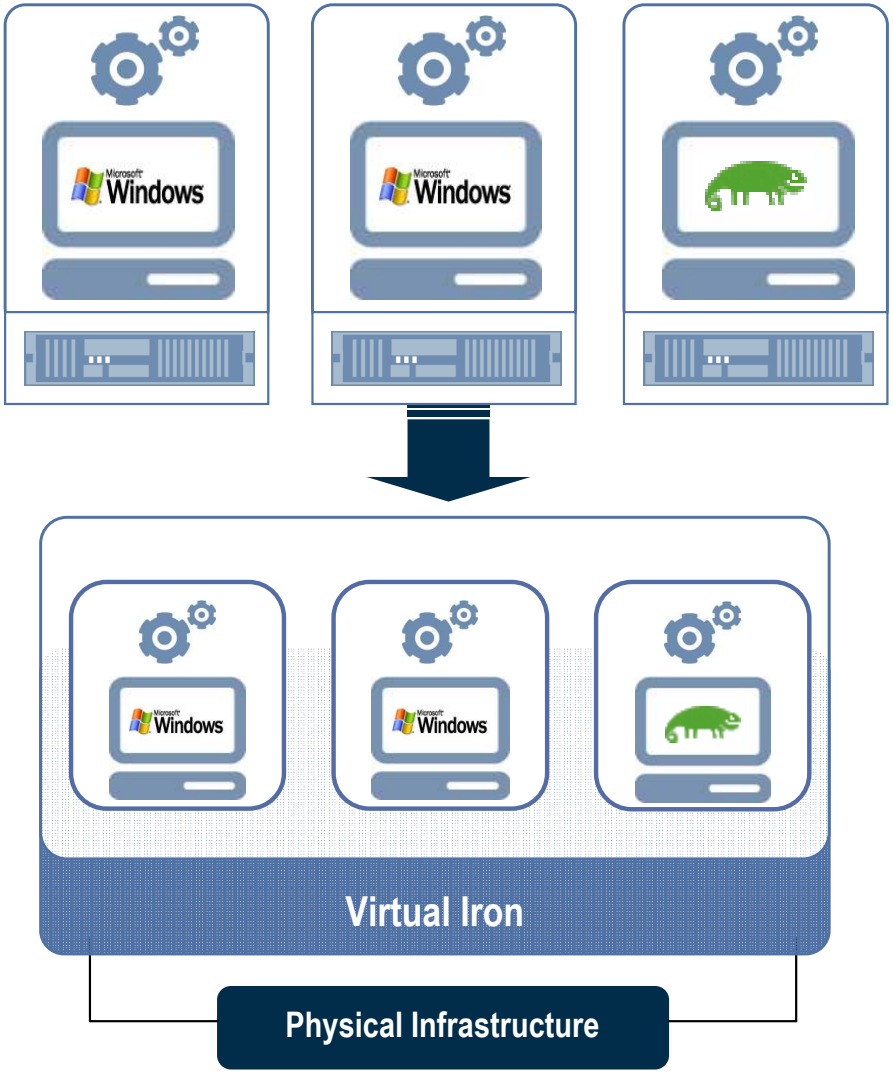
Consolidation

Challenge

- unkontrolliertes Serverwachstum
- Server für Einzelanwendungen
- unausgelastete Ressourcen
- Kosten

Solution

- Konsolidierung
- Erhöhte Ressourcenauslastung
- Weniger Server
- Einsparungen bei HW, SW, Energie und Administrationskosten



Rapid Provisioning

Challenge

- Zeitaufwand
- Fehler
- Dev/Test/Prod Komplexität

Solution

- Goldene Images
- Instant Provisioning
- Cloning
- Reduzierung von Zeit & Fehlern

Typische Provisionierungsschritte

Physical Installation
- Aufsetzen der HW
- OS-Installation
- OS-Konfiguration
- Anwendungsinstallation
- Anwendungskonfiguration

Stunden bis Wochen

Virtual Install
- Anlegen eines virtual server
- Klonen des reference stack
- Starten des virtual server

Minuten

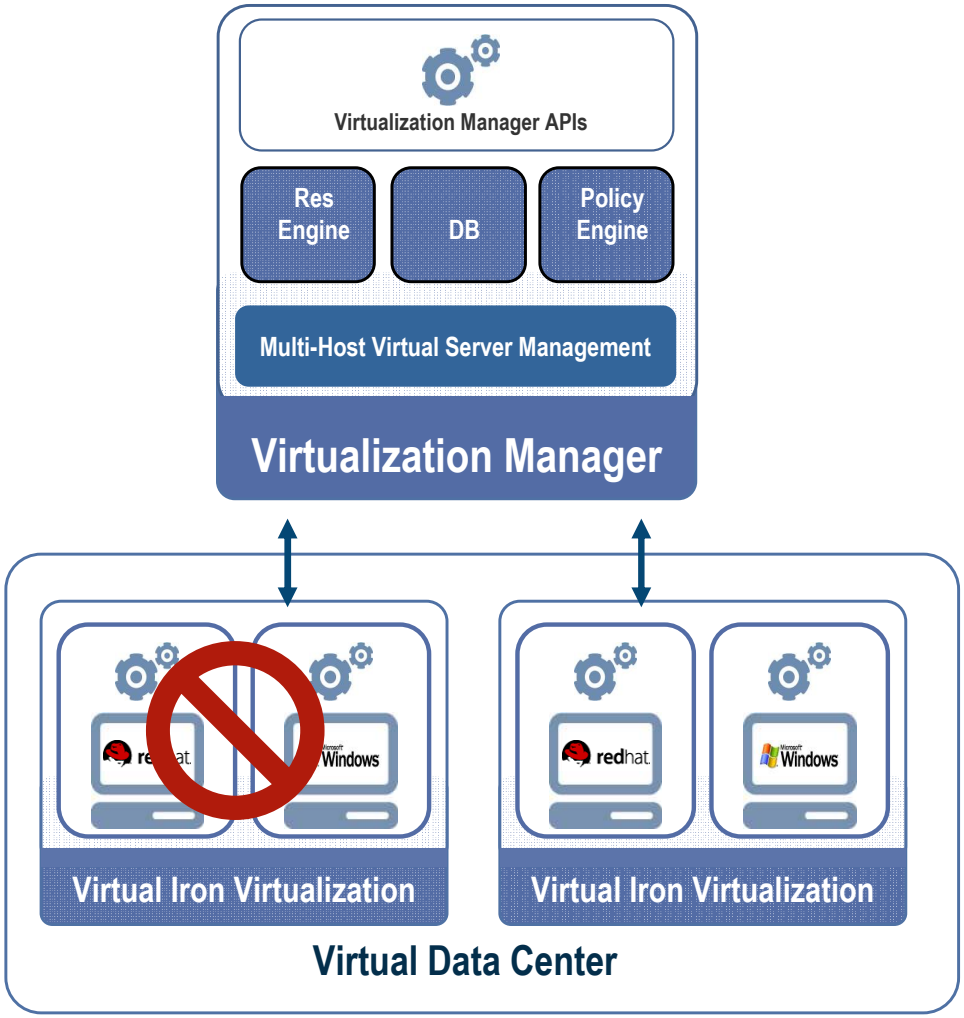
High Availability & Disaster Recovery

Challenge

- Redundante ungenutzte HW
- Teuer
- Komplexe Verwaltung
- Arbeitsintensiv

Solution

- Reduzierung ungenutzter Server
- Automatisierung
- N+1 HW Unabhängigkeit
- Fehlerisolierung
- HA für jede Anwendung



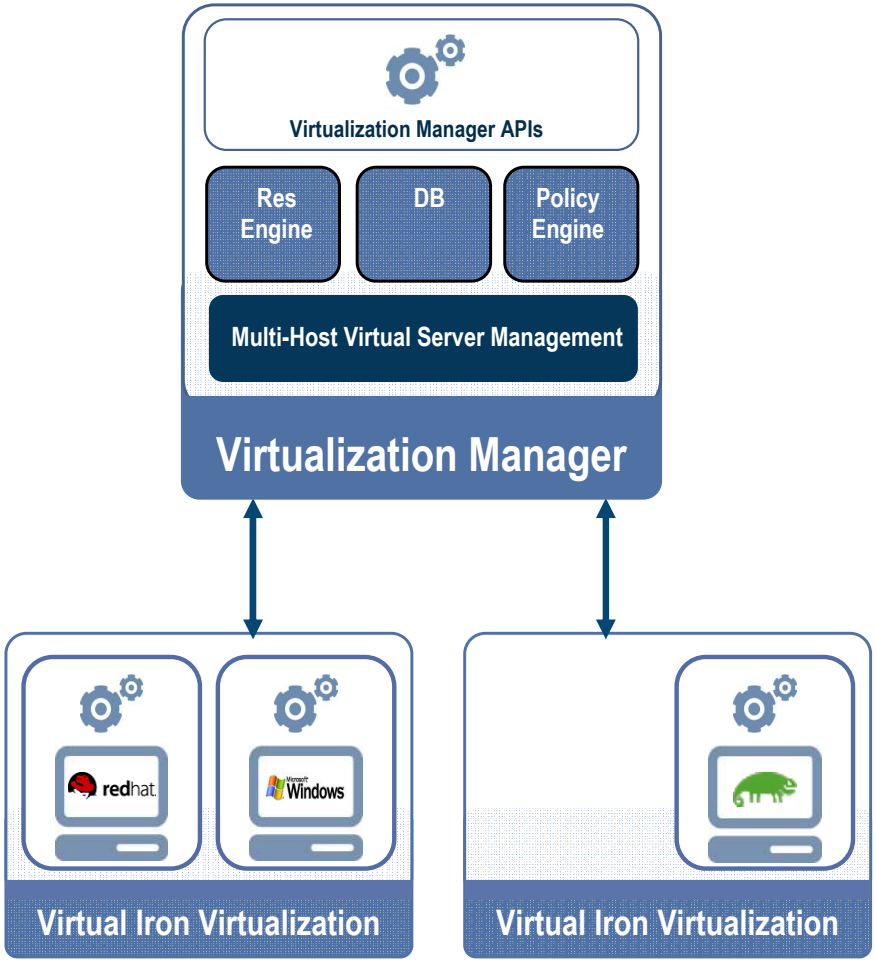
Dynamic Capacity Management

Challenge

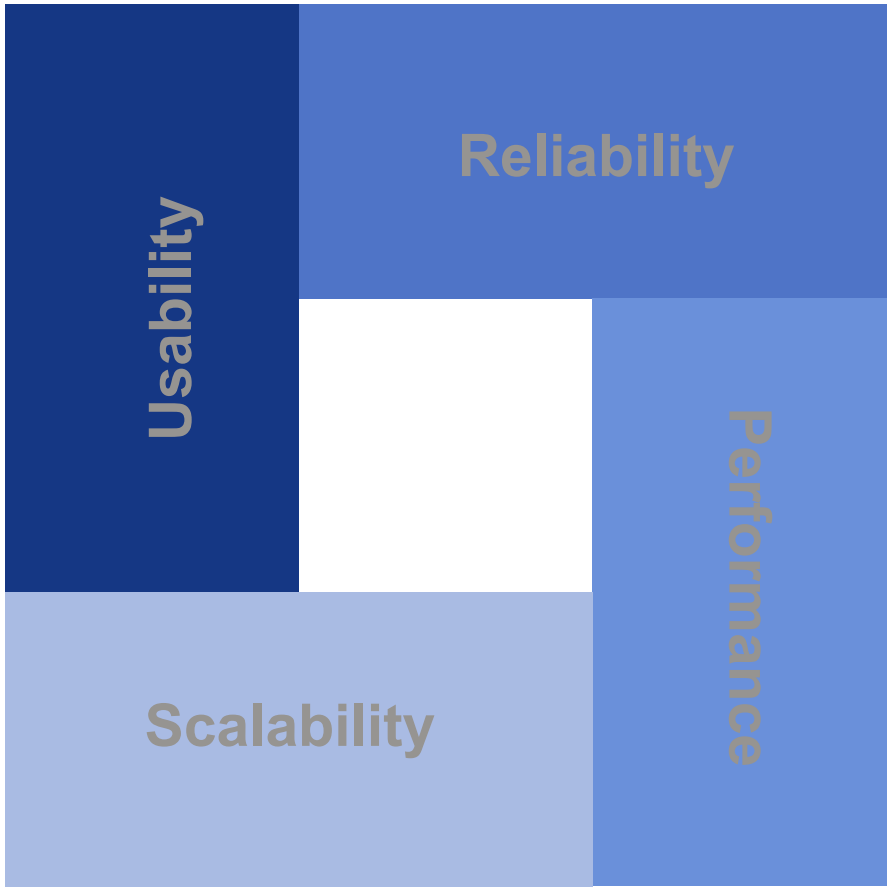
- SLA's
- Optimierung von Personalnutzung
- Anwendungsperformance
- Reduzierung von Stillständen
- Menschliche Fehler
- Sicherheit

Solution

- Automatische Lastverteilung
- regelbasierende Verwaltung
- Tracking von Performancedaten
- Dynamische CPU-Zuteilung

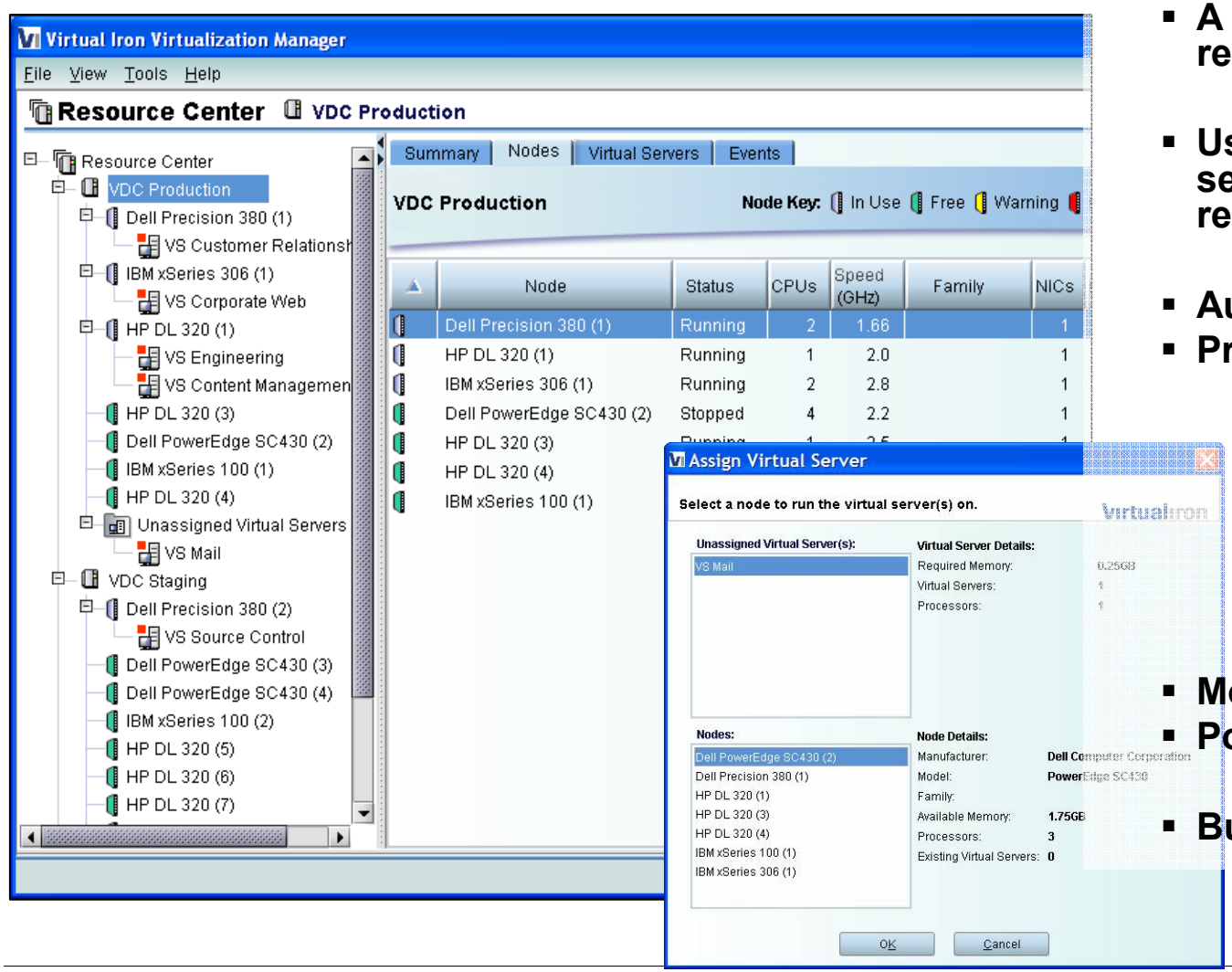


Virtual Iron's Xen Project Efforts



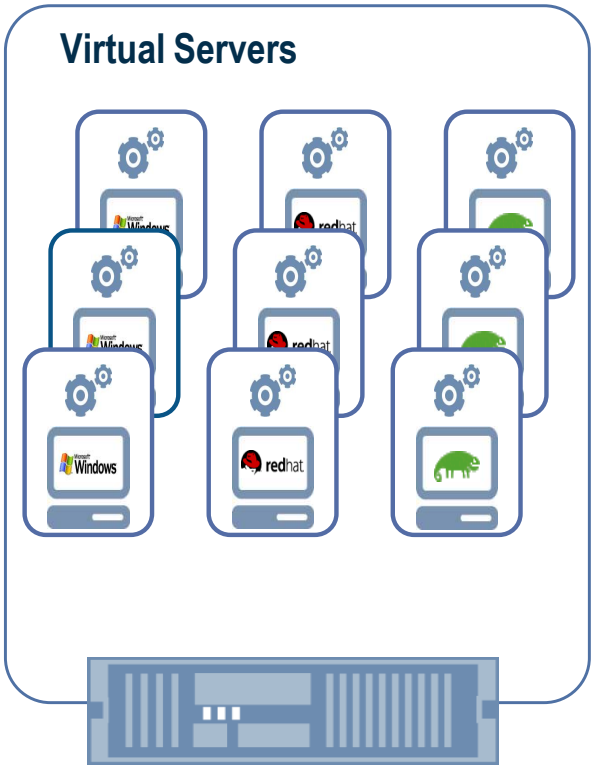
- **Usability**
  - Mature and harden the Open Source Hypervisor
  - 32 and 64-bit on one hypervisor
  - Comprehensive management environment
- **Reliability**
  - Deliver predictable uptime
  - Secure
- **Performance**
  - Improve I/O efficiency – accelerated drivers
  - Support enterprise-class workloads
- **Scalability**
  - 50+ virtual servers per physical server
  - Large RAM
  - Large numbers of processors per virtual server

Virtual Data Center - Shared Resource Pools



- A shared pool of physical and virtual resources
- Users create and run as many virtual servers as desired while limiting resources used
- Automated placement of virtual servers
- Precise Resource Controls
  - Virtual servers get their resources from resource pools
  - Resource allocation can be changed dynamically
    - Add new physical servers
    - Add new virtual servers
- Monitor Resource Use & Activity
- Policy Monitoring
- Built-in policies:
  - LiveMigrate, LiveRecovery, LiveCapacity, LiveMaintenance

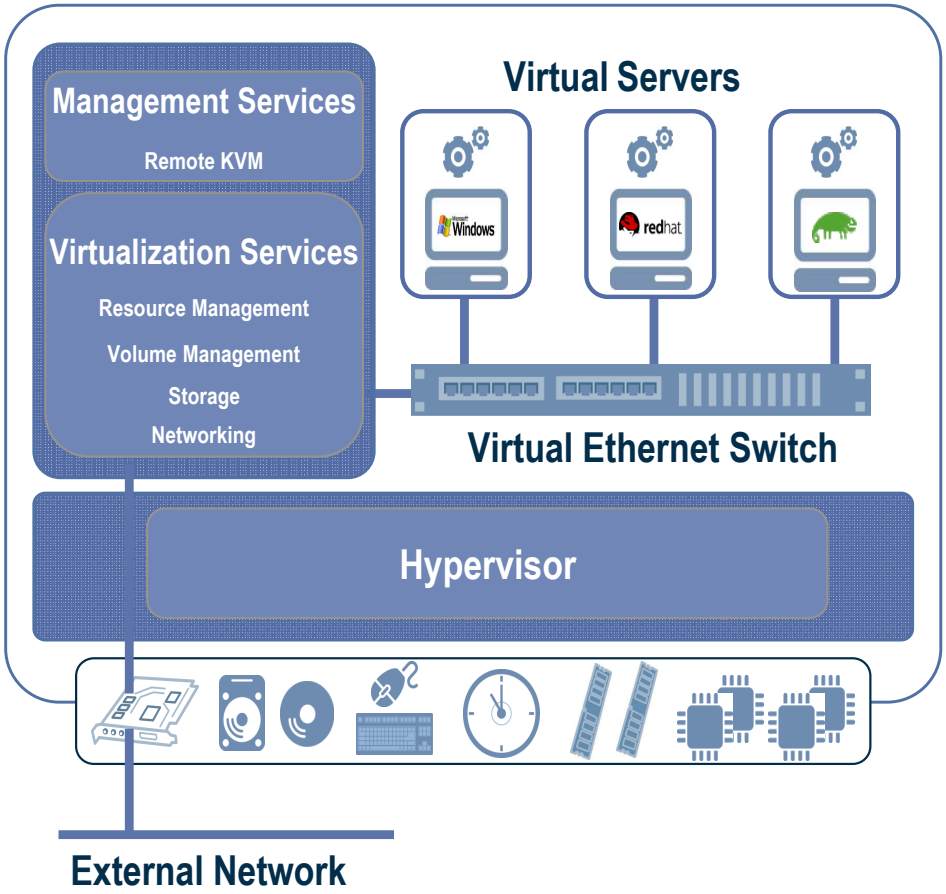
Virtual Servers



- **Logical Partitioning**
  - Fine grained resource controls
  - Full virtualization with VT & AMD-V
  - Existing unmodified 32 & 64-bit OS's
  - Fault containment and security isolation
  - Up to 8-way virtual SMP
- **Dynamic Capacity**
  - More Virtual CPUs than Physical
- **Guest OS Install**
  - CDROM, ISO Images, Network
- **Guest OS Boot**
  - Disk, PXE, CDROM, Network Image
  - Optional accelerated block & network devices
- **Graphical Virtual Console**
  - SVGA/Keyboard/Mouse
  - Remote & Secure

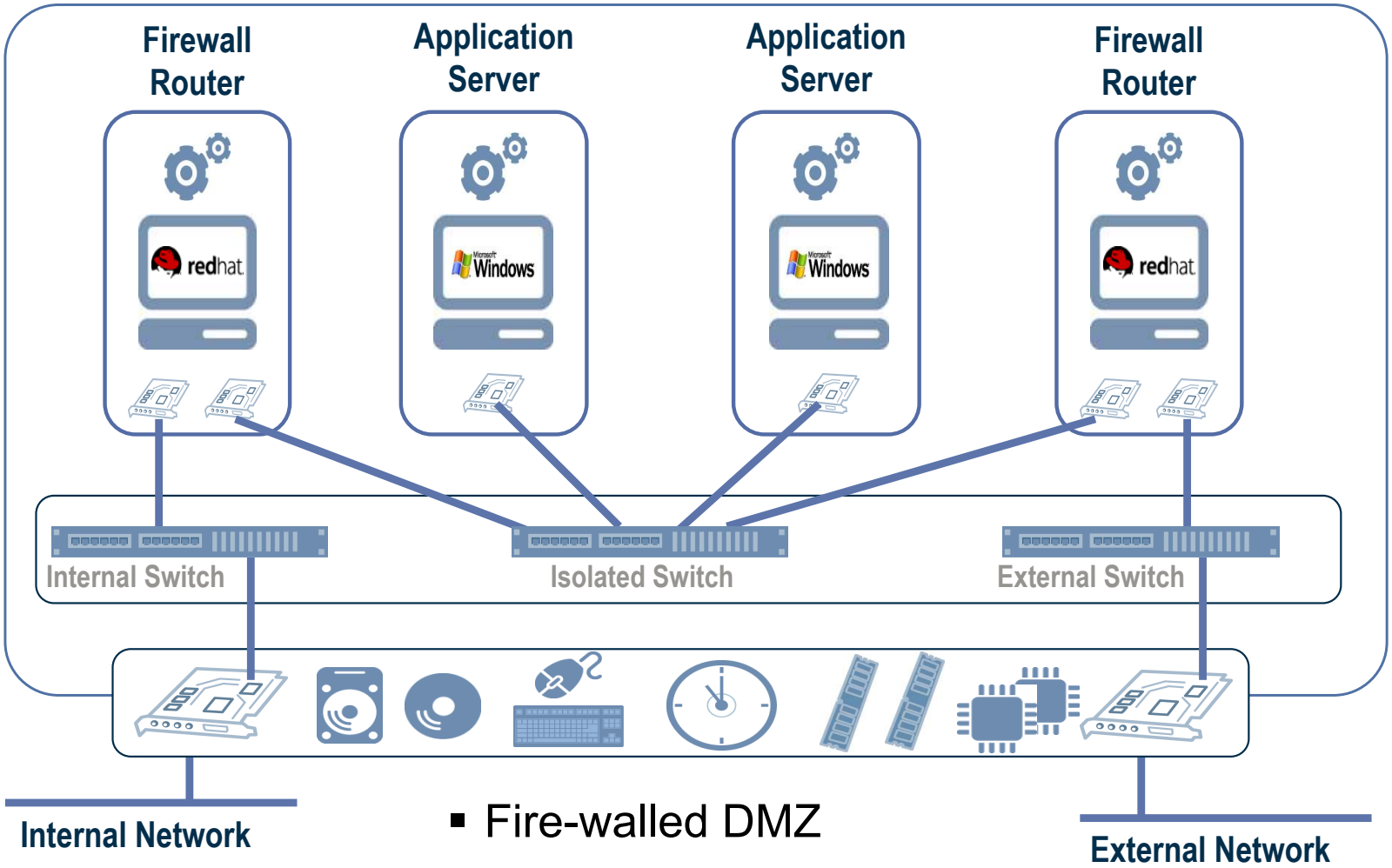
Virtual Server Networking Options

- **Virtual Server Networking Options**
  - Isolated (no Virtual NICs)
  - 1 to 8 Virtual NICs per virtual server
  - Virtual NICs can be plugged into a Virtual Ethernet Switch
- **Virtual Ethernet Switch**
  - Connects Virtual Servers to external connectivity
  - Connects VSs to other VSs via a private internal virtual switch (Version 3.1)
- **Physical Devices**
  - 1 to 8 physical NICs per server



Virtual Server Networking Example

- Example of a virtual switch use

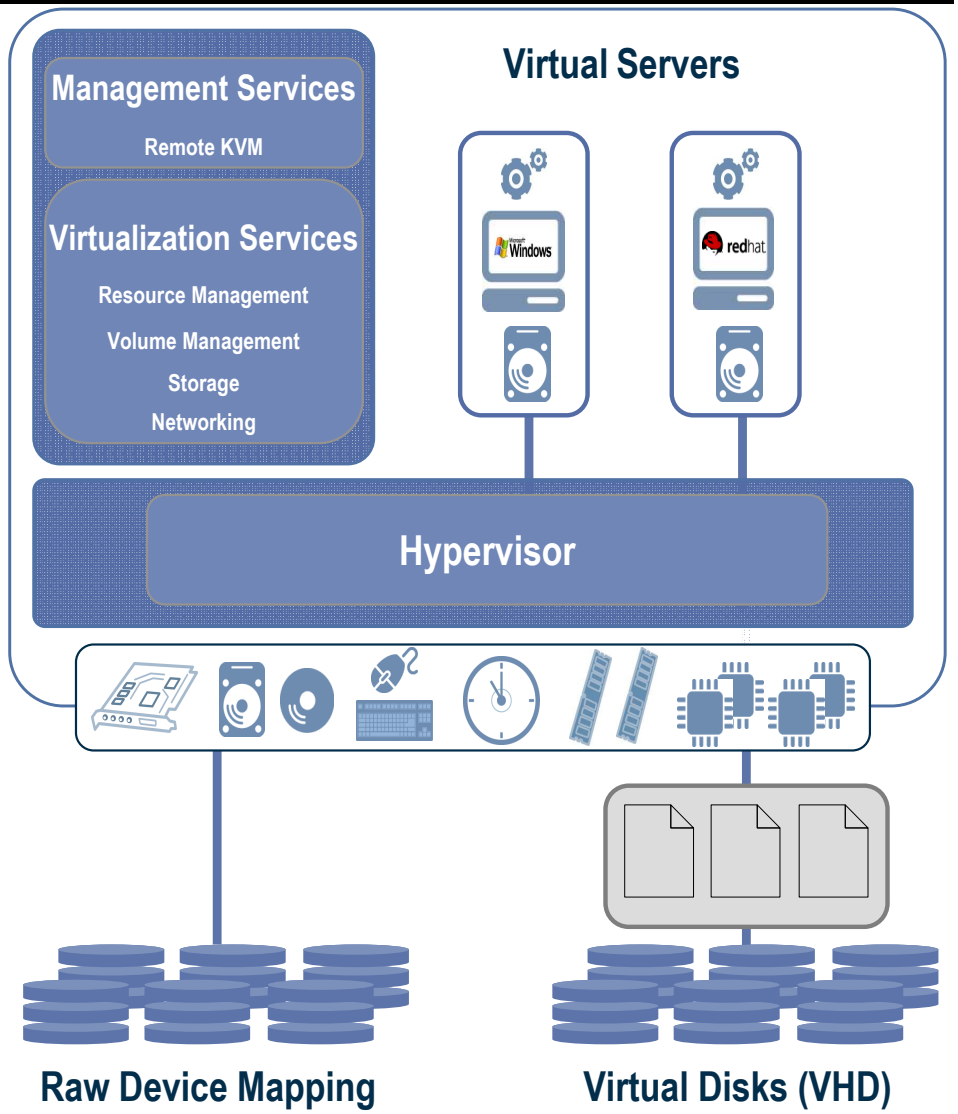


- Fire-walled DMZ

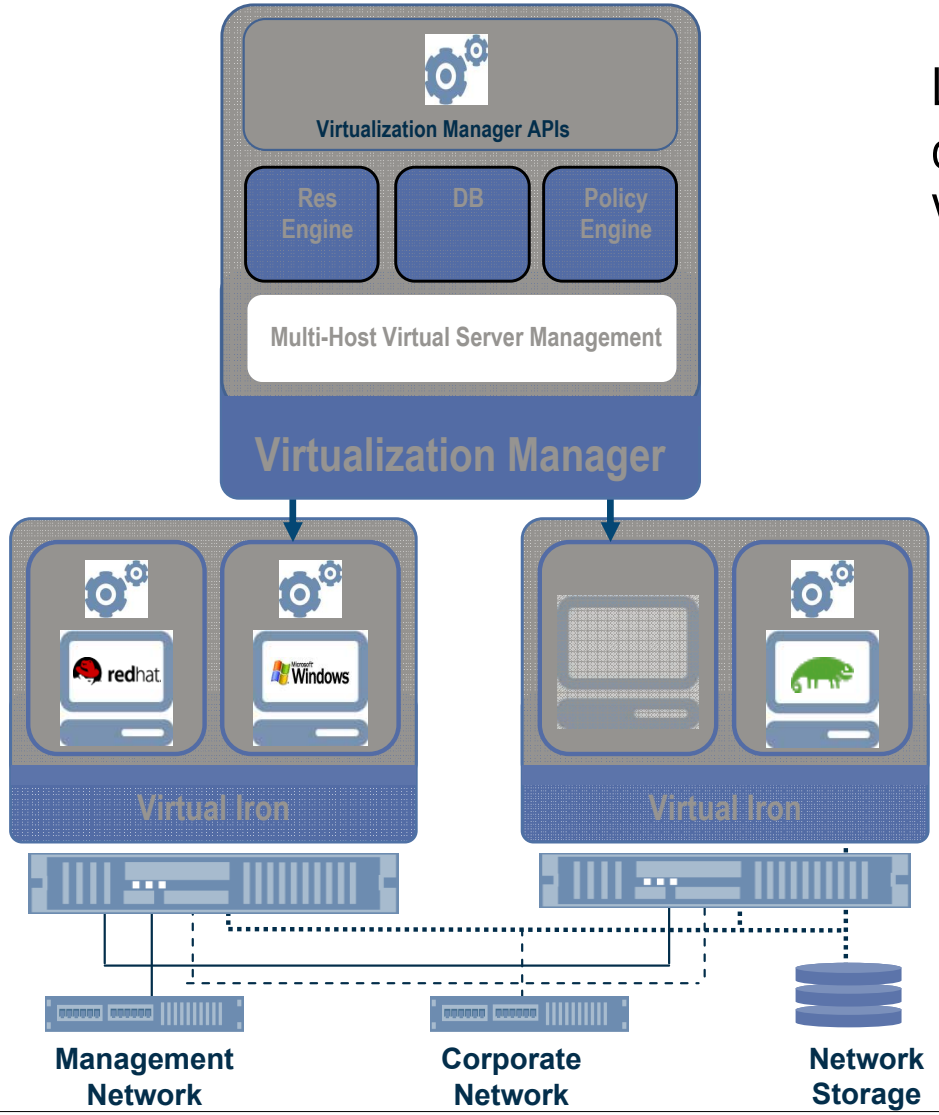
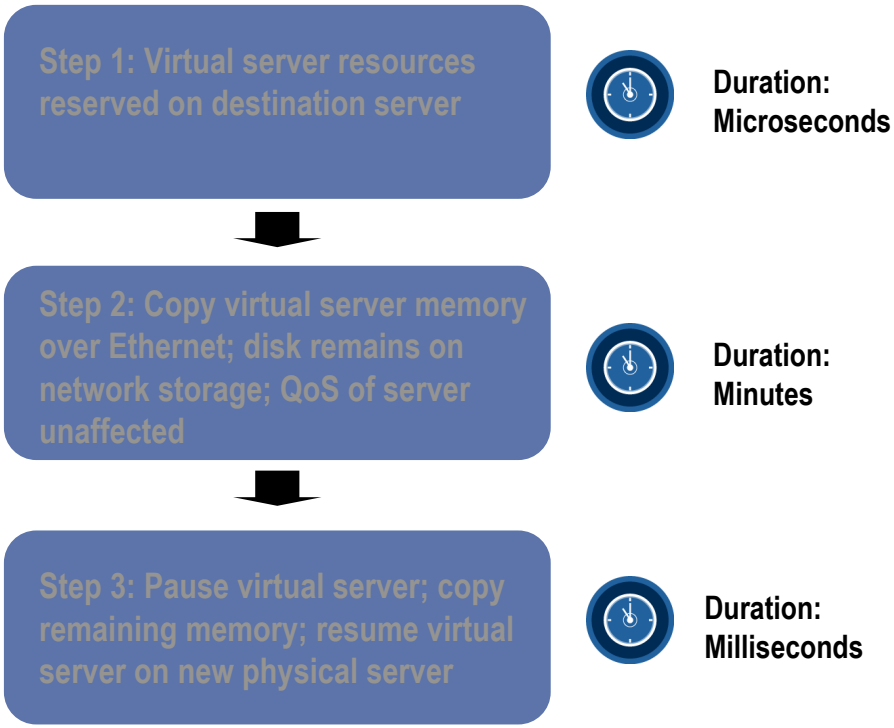
Virtual Server Storage Options (Block Devices)

- **Raw Block Devices**
  - Access to raw LUNs
  - "Pass-through" block device
  - LiveMigrate is enabled for VSs with raw LUNs
    - Target server must be able to see the underlying raw LUN
  - Excellent Performance

- **Virtual Disks (Version 3.1)**
  - File encapsulation (MS VHD format)
  - Device transparency
  - Storage type is transparent to guests
  - Can partition & grow storage
  - Can be easily copied, exported (just a file)
  - Supports physical to virtual and virtual to virtual conversions



Virtual Infrastructure - LiveMigrate



LiveMigrate moves a running virtual server from one physical server to another, coordinated by the Virtualization Manager