

Virtualization: Enabling Flexible Computing Solutions



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Agenda

1. Introduction
2. Virtualization: What Is It?
3. Dell Perspective
4. Server Virtualization
5. Client Virtualization





Virtualization Fundamentals

- **What is virtualization?**
 - Virtualization is a software abstraction layer between hardware and software.
 - **What is the value proposition to customers?**
 - Consolidation:
 - migrate applications running on under-utilized hardware onto a single system
 - increase utilization and reduce management hassle & costs
 - Isolation:
 - isolate poorly behaved applications from the operating system. If the application crashes, other virtual machines are unaffected.
 - Great solution for legacy applications / OS migration
 - Scalability: load balance intensive workloads across multiple servers with ability of hot migration from one server to another.
 - **What are the products on the market today?**
 - **For Enterprise Servers:**
 - Vmware vSphere4
 - Microsoft HyperV
 - Citrix Zen Server
- For Client Computing: (this list is long, here are but a few)**
- Vmware View
 - Citrix Zen Desktop, Zen App
 - Microsoft RDS
 - ACP ThinManager

Server Virtualization

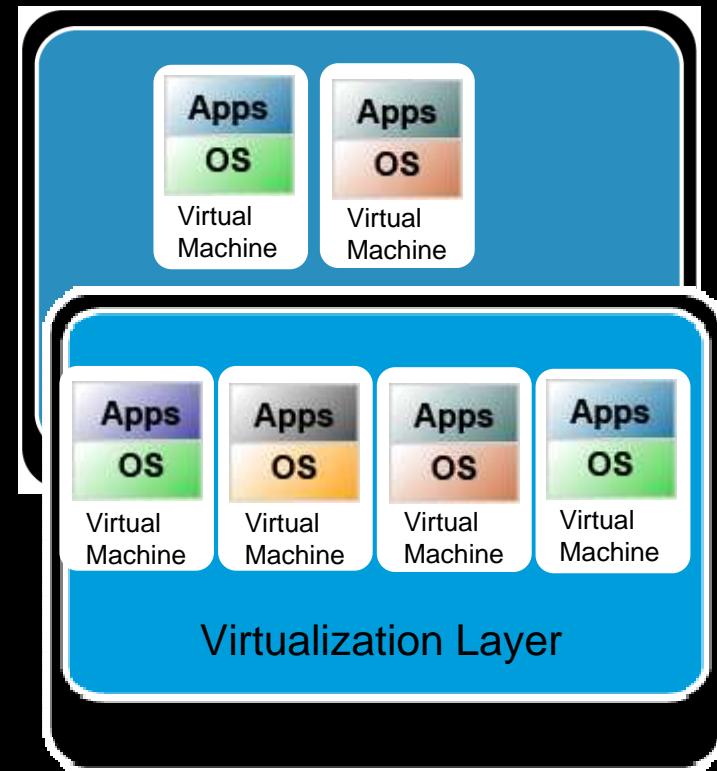
Helps improve manageability and lower costs

Server virtualization

- Shields software from hardware variability
- Runs multiple workloads on same server
- Enables rapid replicate/ relocate software

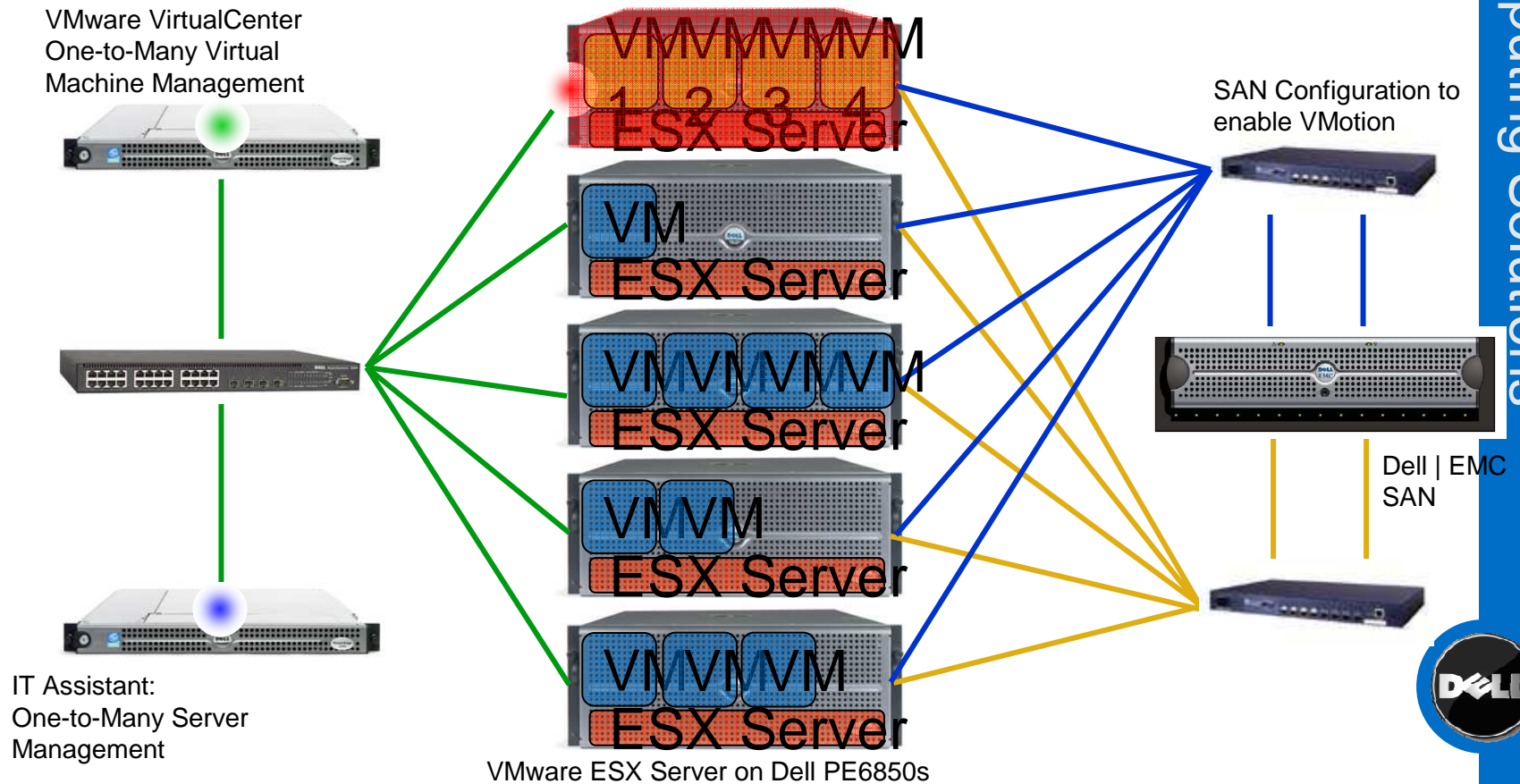
Usage

- Consolidate server infrastructure
- Optimize software development & test
- Speed resource provisioning
- Migrate legacy apps to current platforms
- Affordable business continuity



Directions: Integration with Systems Management

VMware ESX Server on Dell PE6850s (Highly Available Network)



Client Virtualization



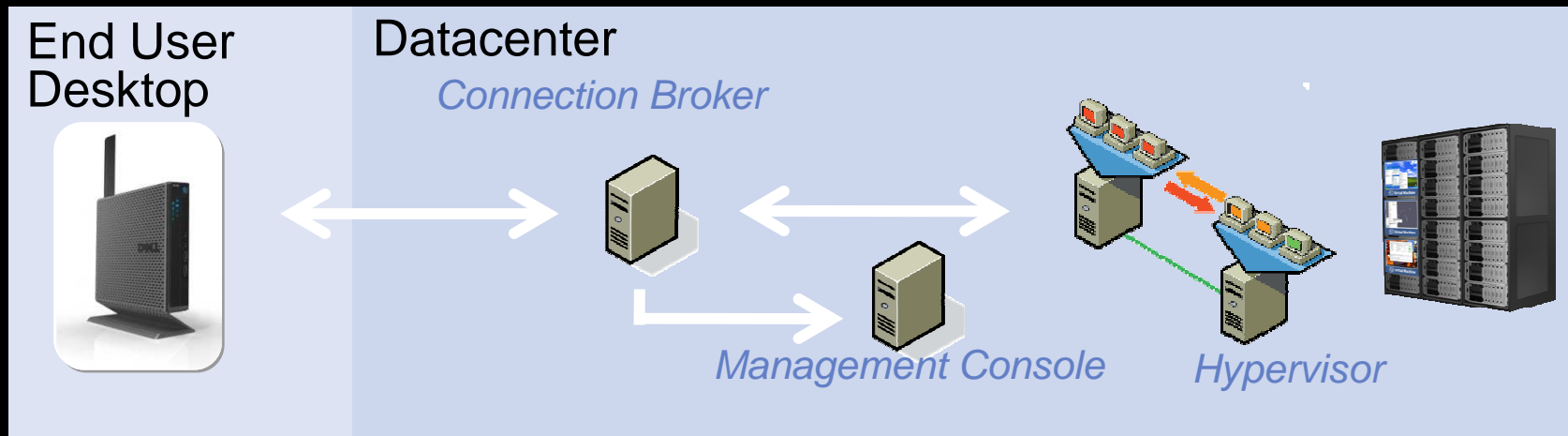




ON-DEMAND DESKTOP STREAMING



VIRTUAL REMOTE DESKTOP VMWARE VIEW & CITRIX XENDESKTOP



WHAT IS VIRTUAL REMOTE DESKTOP?

- Data center servers host multiple virtual client desktops that are accessed remotely
- Each desktop runs in its own isolated, protected virtual machine

BENEFITS - IT MANAGER & END USER

- Data Security / Compliance
- End User Flexibility
- Management Efficiencies
- Business Continuity & Disaster Recovery
- Streamlined Provisioning
- Desktop Isolation
- Extended Client Device Refresh Cycles



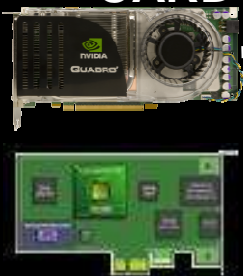
DEDICATED REMOTE WORKSTATION DELL PRECISION WITH FX100 REMOTE ACCESS DEVICE

Data Center

R5400 RACK
WORKSTATION

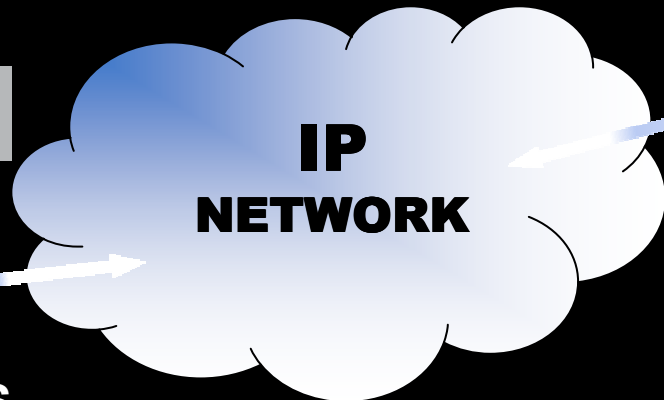


GRAPHICS
CARD



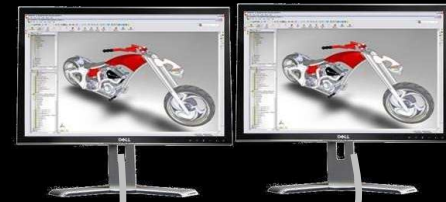
Digital
Video

REMOTE ACCESS
HOST CARD (PCI-e)
PC-over-IP®
HARDWARE
COMPRESSION



Corporate Campus

REMOTE USER



Digital
Video

HARDWARE
DECOMPRESSION



- USB
- KEYBOARD
- MOUSE
- AUDIO
- VIDEO



Flexible Computing Solutions



END-USER FLEXIBILITY

Delivery method and execution personalized to user scenario



- Local campus (LAN) Access
- Very good for high video requirements
- Areas with dense user populations
- Good for research, general office, healthcare



- Remote (WAN) access
- Session mobility
- Widest option of access devices
- Good for general office use, labs



- Local campus (LAN) Access best
- Environmental separation (security, biomedical)
- Very good for high video requirements
- Good for financial trading floors



- Remote (WAN), local campus (LAN) or offline
- Dual personality systems (home use, work use)
- Very good for multiple OS requirements
- Good for remote workers, mobile workers



Specialized Hardware

OPTIMIZED FOR FLEXIBLE COMPUTING SOLUTIONS

ON-DEMAND DESKTOP STREAMING

Client boots from external networked storage

Streamed OS for graphic rich performance while retaining data security (Vista Business*)



Diskless OptiPlex
with EasyConnect™ Options

VIRTUAL REMOTE DESKTOP

Server-based execution of desktop image, presentation streamed to a client



OptiPlex FX160
Flexible Computing Client
Embedded OS for simple virtual desktop implementations (XP Embedded and Linux)

DEDICATED REMOTE WORKSTATION

PC is relocated to the datacenter and accessed via a display/input device



Dell Precision R5400
rack workstation with
Dell FX100
Remote Access Device



Flexible Computing Solutions

DELL

Thank you!

