

Finding the Right Fit for the Virtual Desktop

Speakers

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Virtual Desktop Infrastructure

- Virtual Desktop Infrastructure, or VDI, is a desktop computing architecture that centralizes the desktop operating system and applications on Desktop Virtual Machines, or DVMs, running on a hypervisor on a shared physical server in the data center. VDI promises significant benefits in containing and reducing the management and support burden of delivering desktop computing. VDI, unlike earlier end-user virtualization approaches like terminal services and application virtualization, is intended to deliver the full capabilities of a native Windows desktop to users.

Why Do VDI

- Centralized Management
- Consistent End User Experience
- DR/Business Continuity
- Eliminate End Point Breaches
- Cost Savings

VDI Solutions

- Thin Clients- Are end points that have processor, graphics, drive and some sort of local operating system
- Zero Clients- Are end points that have none of the above.

Challenges

- USB Device Support
- Audio/Streaming media
- Win 7x64
- One off application installs
- Local download capability (Notebook lock down)

Components of VDI Solution

- Endpoints: PC's, Thin Clients, Zero Clients
- Broker: Vmware view, Xendesktop, Pano
- Virtual desktops

Xen Desktop Solution



- New PC's used as end points
- Allowed us to leverage savings on some MS Licensing
- Allowed a consistent experience in remote offices and home
- Eased the software update process
- Allowed for differing methods to conform with licensing issues (image, streamed, published)

Cost Comparison

	HP t5740*	HP t5745**	Dell Optiplex 380†
Unit	371	371	780
Monitor	110	110	Included
A/V software	87	Not needed	Not needed
VECD (4 yrs)	400	400	88
Office w/SA (4 yrs)	814	814	380
OS w/SA (4 yrs)	Not needed	Not needed	198
Total	\$1782	\$1695	\$1446

*Windows Embedded Thin Client

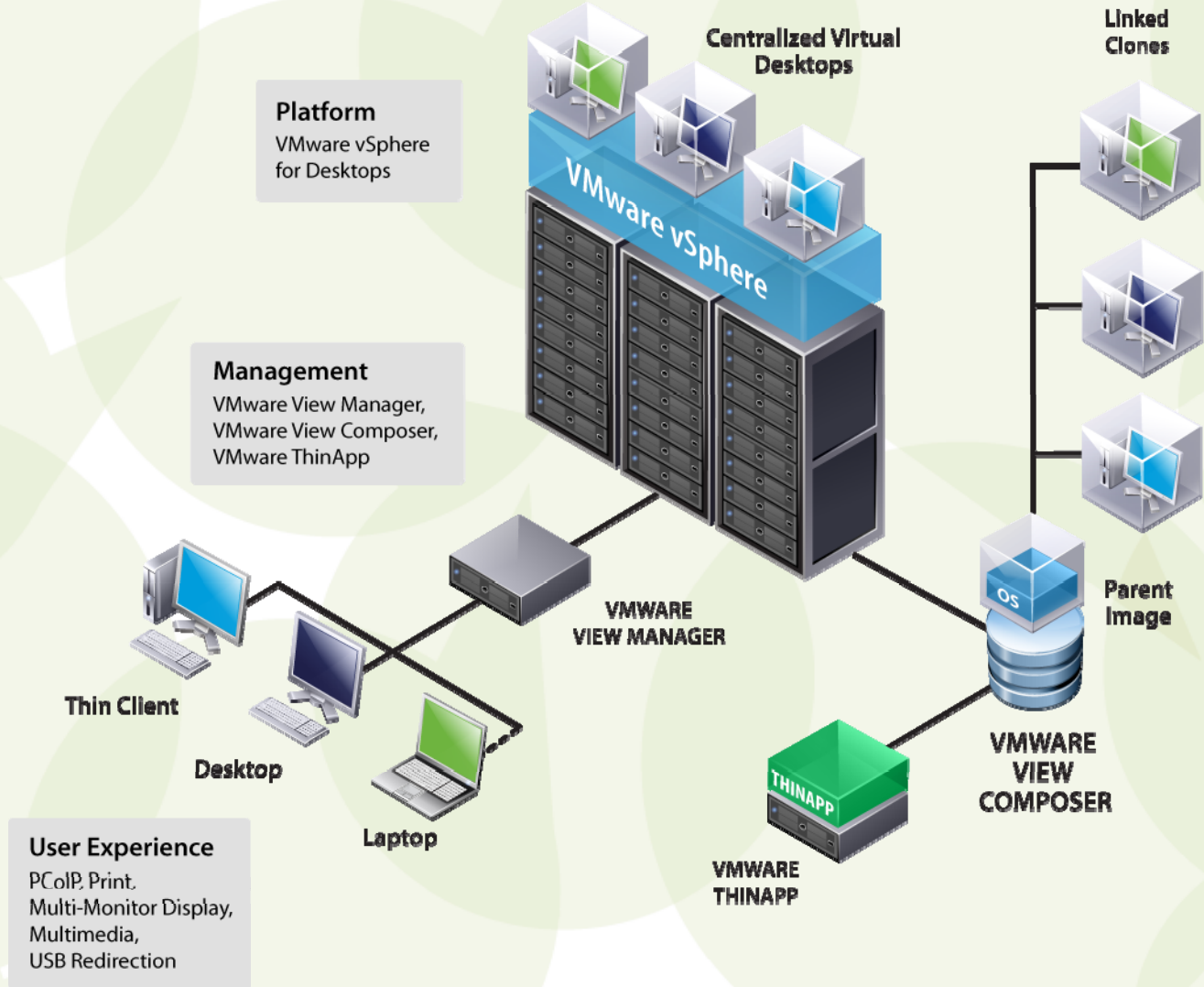
** Non-Windows Embedded Thin Client

† Win7, 2Gb Ram, 160Gb HD, 19" Flat panel

VMWARE View Solution

- IT Control, Simplify Update, Patch & Upgrade
- Manage from A Central Location
- Reduced costs
- Desktops tied to end users identity
- Automate provisioning from a template
- Guarantee updates are apply to every desktop

View 4: Delivers Desktops as a Managed Service



Pano Solution

- Allowed us to replace PC's with Zero Clients.
- End Points have no moving parts or Operating System. (100% centrally managed)
- Energy savings
- Hardware savings
- Consistent end user experience

Pano Platform



User workspace



← Pano Direct →

Server Room / Data Center



Zero Endpoint Management

- ESX / VDM / VirtualCenter
- User authentication
- DHCP Address
- User Base and Device Based

Thin Client Deployment

Thin Client VDI Seat Component	Each	Total
Wyse R00L Thin Client- 2GB Flash, 1GB RAM, 1.5Ghz CPU	\$ 549	\$ 54,900
Wyse Device Manager Enterprise 4.7 Standard seat license	\$ 49	\$ 4,900
Wyse Streaming Manager Appliance, (R90LE), one needed per 25 clients	\$ 825	\$ 3,300
Wyse Streaming Manager software license per thin client	\$ 200	\$ 20,000
Wyse TCX Suite 4.0 protocol extension bundle	\$ 75	\$ 7,500
VMware View 4 Enterprise (vSphere, vCenter, View Manager, etc.)	\$ 150	\$ 15,000
Windows XP VECD licenses per year, non-SA client	\$ 110	\$ 11,000
Server Hardware w/2 CPUs, 36GB RAM, eight 146GB 10K SAS drives	\$ 5,700	\$ 11,400
Total Cost for 100 Thin Client VDI Seats (at list price)		\$ 128,000
Cost per Thin Client VDI Seat		\$ 1,280

Pano Zero Client Deployment

Zero Client Pano System VDI Seat Component	Each	Total
Pano System, complete with Pano Device and Pano Manager	\$ 319	\$ 31,900
vSphere 4 Standard Edition server CPU license	\$ 795	\$ 3,180
vCenter 4 Standard Edition unlimited hosts license	\$ 4,995	\$ 4,995
<i>or with VMware View 4 Enterprise per DVM licenses</i>	\$ 150	\$ 15,000
Windows XP VECD licenses per year, non-SA client	\$ 110	\$ 11,000
Server Hardware w/2 CPUs, 36GB RAM, eight 146GB 10K SAS drives	\$ 5,700	\$ 11,400
Total Cost for 100 Zero Client VDI Seats (at list price)		\$ 62,475
Cost per Zero Client VDI Seat		\$ 625
<i>Cost per Pano Zero Client VDI Seat based on VMware View</i>		<i>\$ 693</i>

Lesson's Learned

- Creates additional infrastructure demands on the front end.
- Realized savings will be small on the front end
- End user adoption
- Virtualized desktops are not for everyone
- Must understand Microsoft Licensing. If not get help

Resources

- VMware www.vmware.com
- Panologic www.panologic.com
- Xen www.citrix.com