

Desktop and Application Virtualization

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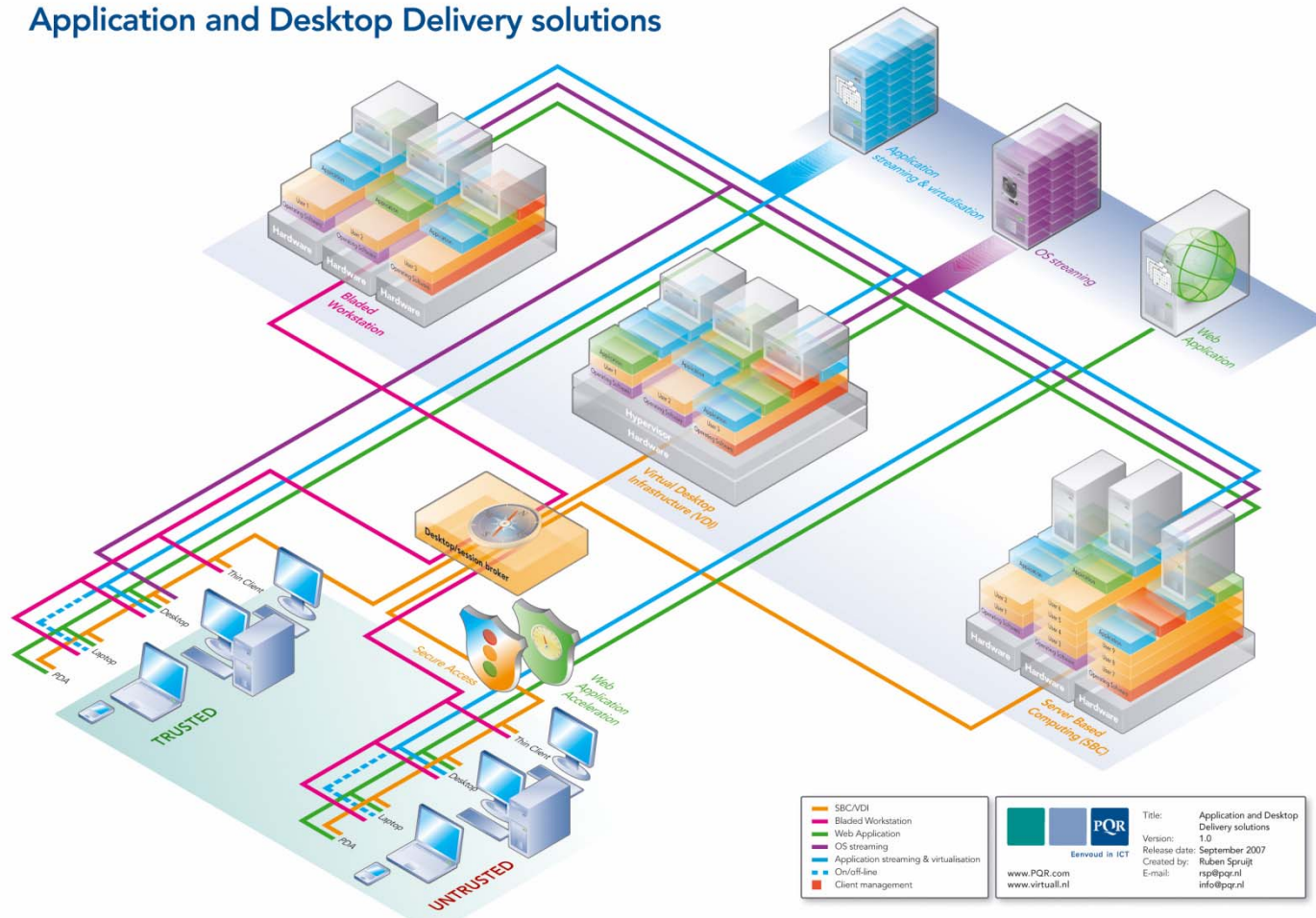
February 4, 2008

Agenda

- Review of technology options
- Overview of technology selection: when to use application virtualization, and when to use desktop virtualization
- Cost implications
- Open session! Questions are welcome at any time!

App and Desktop Delivery

Application and Desktop Delivery solutions



- <http://www.virtuall.nl/articles/applicationanddesktopdelivery/>

VDI: Everyone wants in...

Application Streaming Partners:

Connection Broker Partners:

Protocol Enhancement Partners:

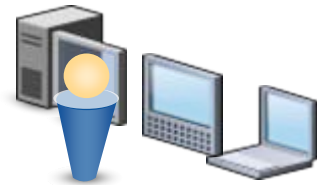
End-to-End Solutions Partners:

Thin Client Partners

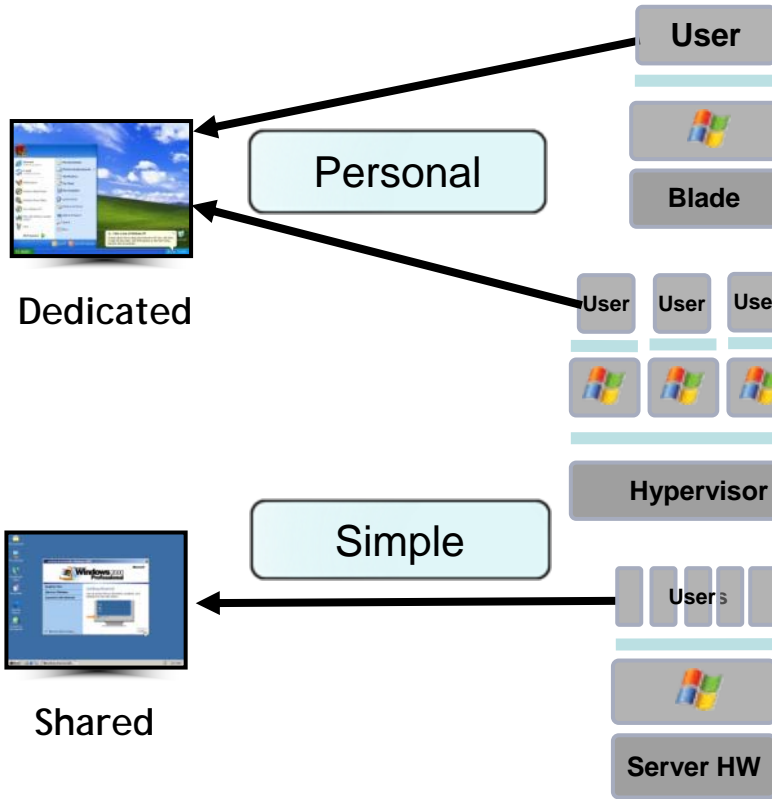
     	     	   	    	    	    	     
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Overview of Application Delivery Solutions

VDI/DDI



Desktop, Thin Client, Laptop



Dedicated

Shared

Personal

Simple

User

Blade

User User User

Hypervisor

Users

Server HW



Virtualized



Streamed



Optimized



Installed

Which desktop delivery fits best?

Which application delivery model is best?

Image from:
Ruben Spruijt

VDI: What does it solve?

- VDI solves application issues for apps that will not run in TS
- Great for users that require elevated privileges (developers, management, etc.)
- Gives user more “freedom” in their desktop
- Centralizes desktops without using TS

VDI: What it's not

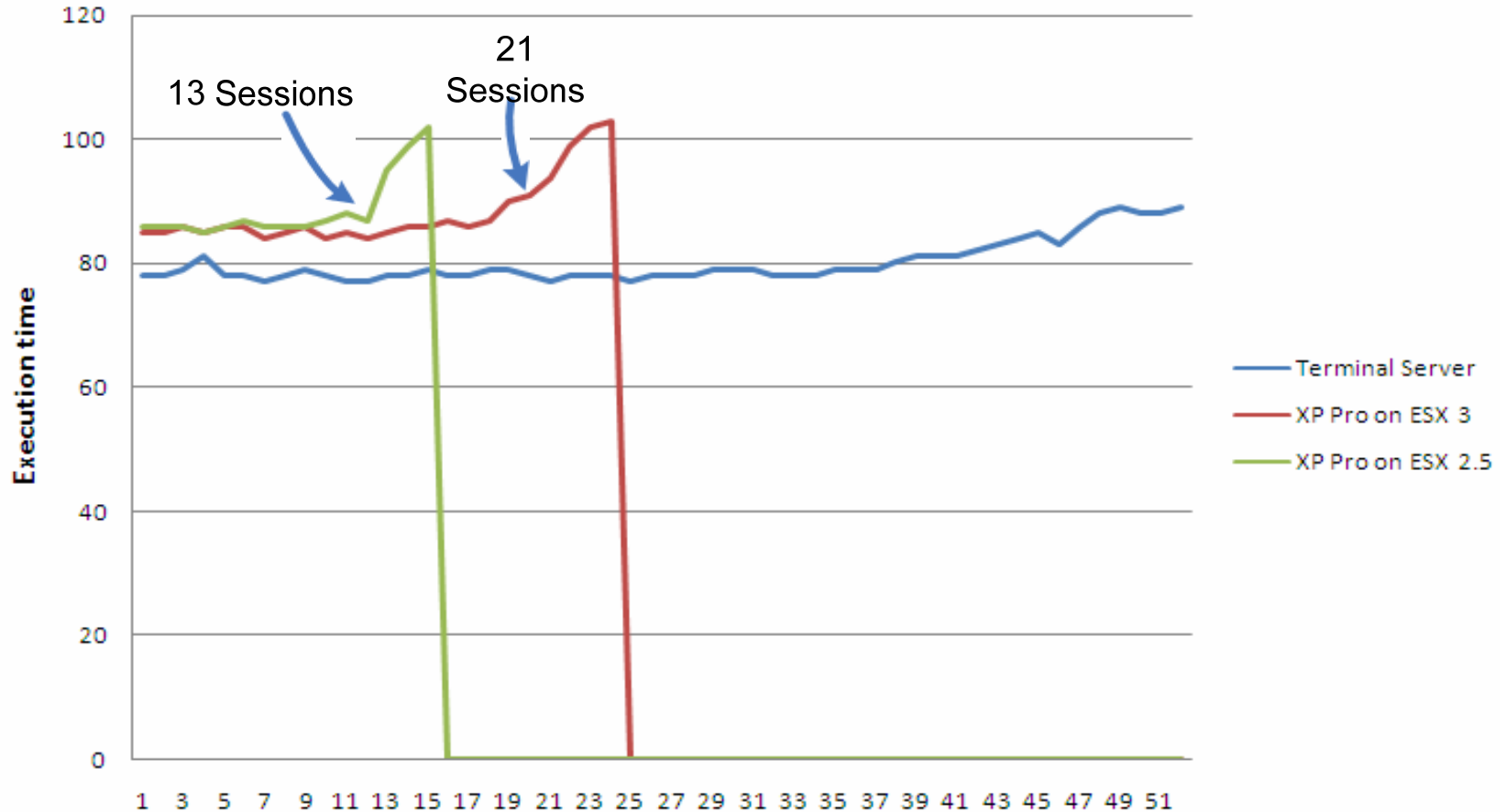
- Contrary to popular belief it does NOT give the user a complete desktop experience...
- It is still RDP... remote desktop protocol
- Peripherals, USB mapping, drivers, etc can have the same issues in VDI as they do in TS
- It does not fix “reader rabbit” or CAD programs that are video intense...

How many users per server using VDI?

- As with all technologies... It depends.
- We tested dual processor servers with automated /scripted workflows, and duplicated load in a Terminal Server environment and VDI environment.
- Used Dell PE 2850 dual proc with 8GB
- Used a workload script that is processor bound

VDI Performance vs. TS

Sessions vs. Execution Time



Let's compare a wholesale TS replacement

- What to compare?
 - Server costs
 - OS costs
 - Licenses for TS, CTX, or ESX
 - AV, SMS, monitoring, management, racks, power, etc. etc.
- Assume a system with 300 concurrent users
- Use my performance numbers for scaling
- Using VDI license model from VMware

VDI-only Solution

Item	# Required	Per Unit Cost	Cost
XP Pro License	300	\$120	\$36,000
Ant-Virus (per client)	300	\$29	\$8,700
ESX Server hosts (dual procs) *	15	\$5,300	\$79,500
VMware VDI 100 pack Std	3	\$17,500	\$52,500
1st year support (Gold)	3	\$2,800	\$8,400
One time "pilot" SKU and 25 VMs	1	\$27,350	\$27,350
VirtualCenter License	1	\$5,000	\$5,000
VirtualCenter Servers	1	\$2,800	\$2,800
VirtualCenter Server OS License	1	\$700	\$700
Rack space, UPS, KVM (per server)	15	\$300	\$4,500
VDI broker cost Provision	300	\$50	\$15,000
Cost Per Connection:	\$801.50		\$240,450.00

TS/Citrix Cost

Item	# required	Cost / Unit	Total cost
TS CALs	300	\$73.00	\$21,900.00
Citrix CALs (Enterprise)	300	\$450.00	\$135,000.00
Anti Virus (server)	7	\$290.00	\$2,030.00
TS/CTX Server	7	\$3,742.00	\$26,194.00
OS License (W2K3 -S)	7	\$700.00	\$4,900.00
Rack space, UPS KVM (per server)	7	\$300.00	\$2,100.00
			\$192,124.00
TS only Per User Cost:	\$190.41	Citrix Per User Cost:	\$640.41
TS w/ a broker software:	\$240.41		

The solution is...

A hybrid in most cases

- Targeted use of VDI solutions for the right reasons, TS when it makes sense
- Careful selection of broker technologies (I like Provision Networks just purchased by Quest)
- Look for brokers with the following:
 - Ability to support multiple platforms (Xen, ESX, etc.)
 - Printing support! Universal print driver is helpful
 - Client support (Thin, Win, Web, etc.)
 - Web/SSL based connectivity for ICA/RDP

Application Virtualization

- App virtualization allows for:
 - more agile deployment
 - simplified management
 - Can solve application conflicts
 - Layers ABOVE VDI/DDI/TS but can be used for local TS replacement in some cases
- Major players in this space:
 - MS with SoftGrid
 - VMware with Thininstall
 - Altiris SVS
 - Citrix AIE 2 with App Streaming and Isolation

How it works...

- Each vendor is a bit different
 - MS/SoftGrid – Virtualizes file system, registry, and some services
 - Altiris SVS – Virtualization is redirection not execution/application virtualization (apps can conflict)
 - Citrix – Virtualizes / isolates. Advanced redirection, some conflicts when DCOM is used
 - Thininstall – No local client, basically changes an application install into a single executable

The Matrix

● = Not applicable, ● = It depends, ● = applicable, ● = In development

	Altiris SVS	Citrix Application Streaming Feature	Microsoft SoftGrid	Thininstall VS
Virtualization / Isolation				
Application virtualization ⁱ	●	●	●	●
Application isolation ⁱⁱ	●	●	●	●
Application redirection ⁱⁱⁱ	●	●	●	●
No need for application regression testing	●	● ^{iv}	●	●
Run multiple versions of same application without any change of conflicts on any level	● ^v	● ^{vi}	●	●
Manageability				
Application is on-demand delivered as a service	●	●	●	●
Application license metering	●	● ^{vii}	●	●
Application virtualization solution license metering	●	●	●	●
Central management platform for application availability	● ^{viii}	●	●	● ^{ix}
Application availability	●	●	●	●
Application rollback	●	●	●	●
Application upgrade	● ^x	●	●	●
Application active upgrade	●	●	●	● ^{xi}

Available from Ruben at <http://www.virtuall.nl/articles/ProductInformation/>

When to Use App Virtualization

- To change the way you do application deployment
- To secure the application, make it portable
- To decrease time to market on applications
- To reduce application conflicts
- To leverage application packages across numerous platforms (TS, desktop, laptop)

Online Information

Altiris Community

<http://juice.altiris.com/svs>

SoftGrid Community

<http://www.softgridguru.com>

Thinstall Community

<http://www.thinstall.com/thintalk>

Altiris SVS downloads

<http://www.svsdownloads.nl>

Altiris SVS downloads

<http://www.svsdownloads.com>

SoftGrid downloads

<http://www.sftdownloads.com>

Microsoft SoftGrid team Blog

<http://blogs.technet.com/softgrid/>

“To install or not to install”

<http://www.dabcc.com/downloadfile.aspx?id=152>

To Virtualize Applications or not..that was the question”

<http://www.virtuall.nl/articles/PublishedArticles/>

Online SoftGrid OSD description

http://www.tmurgent.com/Osd/Osd_Illustrated.htm

Application virtualization “How it works” videos

<http://www.virtuall.nl/videos/>

Application virtualization live demo script

<http://www.virtuall.nl/videos/>

Application virtualization, isolation and redirection feature compare matrix “The Matrix”

<http://www.virtuall.nl/articles/ProductInformation/>

BrianMadden Live, Altiris SVS + Appstream

<http://www.brianmadden.com/live/A-conversation-with-Altiriss-Scott-Jones-and-Appstreams-Brian-Duckering>

BrianMadden Live, Citrix Application Streaming Feature

<http://www.brianmadden.com/live/A-conversation-with-Citrixs-Project-Tarpon-application-streaming-product-group>

Altiris SVS + Appstream demo

www.appstreamlive.com

Sbc.vanbragt.net, Softgrid review

<http://sbc.vanbragt.net/mambo/deployment/softricity-3.1.html>

Questions?

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