



Ensuring VDI Migration Success

**CAPTURING MAXIMUM SOFTWARE SAVINGS THROUGH PLANNING
AND MONITORING**



VDI FAIL

Seriously how the hell do you manage that?



Agenda

- What does Scalable's Survey™ product do?
- How does it help plan a move to VDI?
- How does it help maintain maximum VDI value?
- Business Case



Survey™

What does Survey Do?



Unique Usage Monitoring Technology

- Measures human/application interaction on workstations
 - φ Proprietary algorithms to determine type and intensity of human activity
 - Traditional applications
 - Web Applications
 - Citrix/Terminal Server Applications
 - Virtualised Applications (ThinApp, App-V)
 - φ Tracks mouse movements and keyboard activity for foreground applications
 - Differentiates read-only activity from read/write activity
 - Measures the amount of time human was active in any application
 - Detail down to active window caption name
- Measures process activity on workstations and servers
 - φ Per Process Activity
 - CPU, memory and elapsed time
 - φ Used to track usage of background applications on workstations or server processes
 - φ Discovers underlying hardware capabilities
- Measures utilization of certain peripherals
 - φ Printers (local & network)
 - φ Monitors
 - φ USB Devices





References



“We avoided \$386,000 of costs within 2 months of the implementation, which was more than we paid for the product.”

“We immediately cost justified our investment... We saved 56% on our first off-host application we evaluated”



“Realized a 167% ROI on Survey investment in less than 6 months for only 3 software vendors .. Eliminated the need to purchase additional existing software products for 2 years”

“...with the software licenses alone [we] shaved \$250,000 off our bill... Additionally saved \$100,000 on Hardware and \$2000 a month by replacing printers”



“...with 800 fewer licenses (Microsoft) we saved \$1.1 million in software without sacrificing productivity”

“..in the four months since we ran the pilot, we have saved around \$50,000 in software costs... we expect to achieve our ROI in well under twelve months”



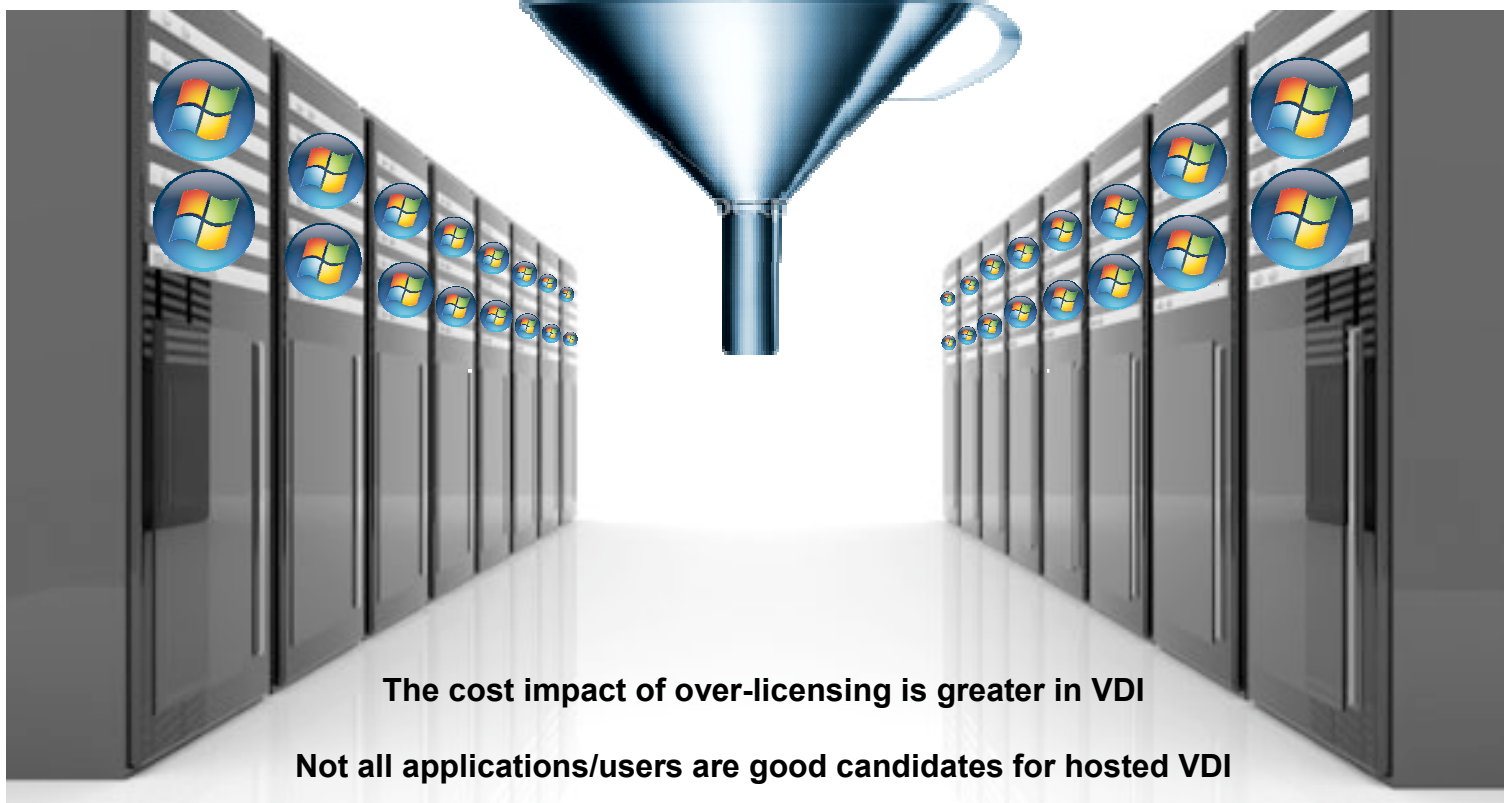


Survey™

How Does Survey Help Plan a Move to VDI?



Hosted – VDI Fundamentals



The cost impact of over-licensing is greater in VDI

Not all applications/users are good candidates for hosted VDI

Software costs re-emerge without vigilance



Planning for VDI A Brief Look at the Licensing Questions

- Local VDI
 - φ Largely similar to per device licensing
 - 29% hike in SA costs and you are good to go for OS licensing
 - Application licenses may be OS sensitive
- Hosted VDI – Operating Systems Issues
 - φ Virtual Enterprise Centralized Desktop (VECD) Implications
 - Subscription license to enable a device to access an instance of a Virtual Desktop
 - VECD for non-corporate Windows desktops is about double the cost of corporate desktops
 - How many of the users you wish to migrate have OEM OS licenses?
 - Have they been migrated to Software Assurance
- Hosted VDI – Application Issues
 - φ Microsoft Products
 - Which devices are enabled to use the products?
 - φ Third-party tools
 - Various scenarios
 - Concurrent user, per device, per OS, per named user
- Hosted VDI – Connection Broker Charges
 - φ Concurrent users or named users

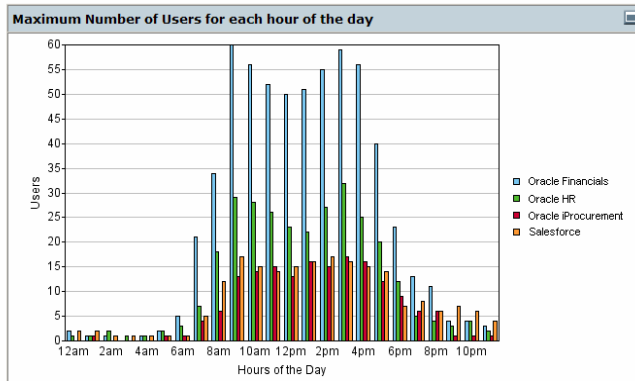




Identify Usage Accurately When, Where, How and by Whom

Application Users by Hour

8/11/2007 to 2/6/2008 • 128 days in report • excludes weekends
 Applications: Oracle Financials, Oracle HR, Oracle iProcurement, Salesforce



Identifies true software user community to ensure VDI license agreements are correctly structured

Top 10 Applications

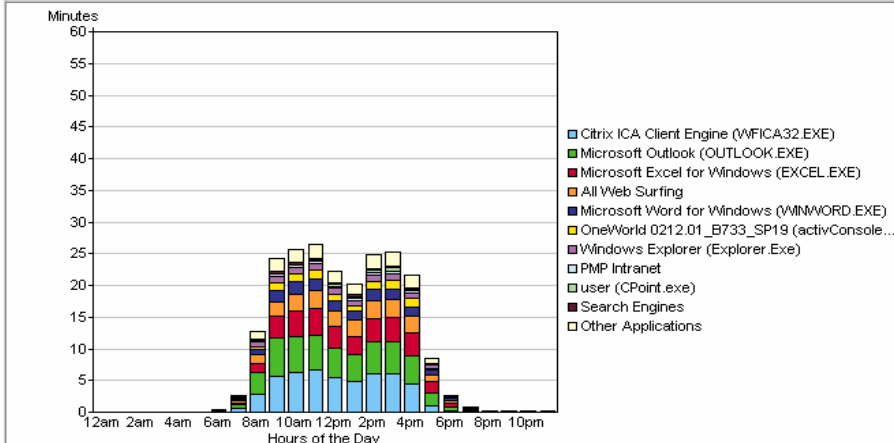
1/01/2007 to 31/03/2007 • 65 days in report • excludes weekends

Communities: Gordon Gotch, PMP Limited

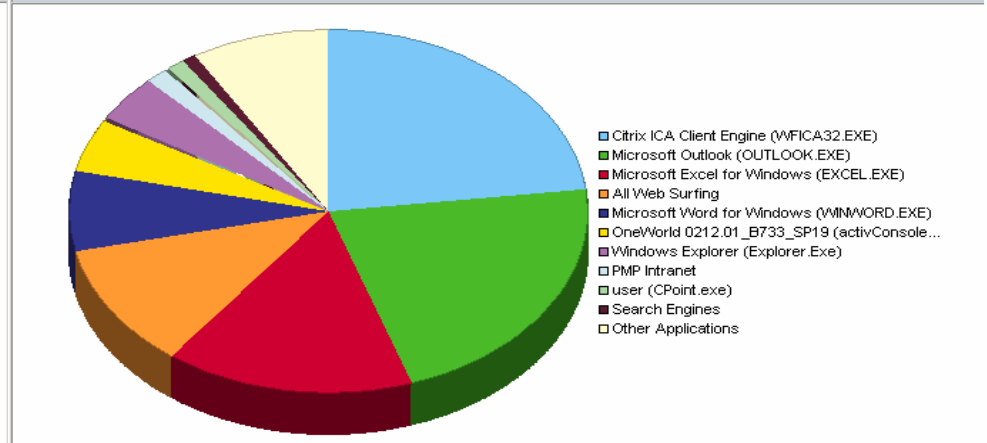
Executable Catalog and Web Applications displayed

Application Name	Usage Time (h:mm)	Average Daily Usage (h:mm)	Percent of Total Usage	Average Users Per Day	Number of Days Used	Last Day Used
Citrix ICA Client Engine (WFICA32.EXE)	12793:35	0:50	22.9%	120.6	64	30/03/2007
Microsoft Outlook (OUTLOOK.EXE)	12229:22	0:48	21.9%	177.9	65	30/03/2007
Microsoft Excel for Windows (EXCEL.EXE)	8632:42	0:34	15.5%	172.7	65	30/03/2007
All Web Surfing	6124:29	0:24	11.0%	173.4	65	30/03/2007
Microsoft Word for Windows (WINWORD.EXE)	4166:37	0:16	7.5%	151.2	65	30/03/2007
OneWorld 0212.01_B733_SP19 (activConsole.exe)	2663:16	0:10	4.8%	22.7	63	30/03/2007
Windows Explorer (Explorer.Exe)	2457:58	0:10	4.4%	189.8	65	30/03/2007
PMP Intranet	842:31	0:03	1.5%	150.2	65	30/03/2007
user (CPoint.exe)	564:48	0:02	1.0%	4.7	63	30/03/2007
Search Engines	548:59	0:02	1.0%	70.3	64	30/03/2007
Other Applications	4792:22	N/A	8.6%	N/A	N/A	N/A

Daily Usage of an Average Community Member



Community Usage Time Percentages



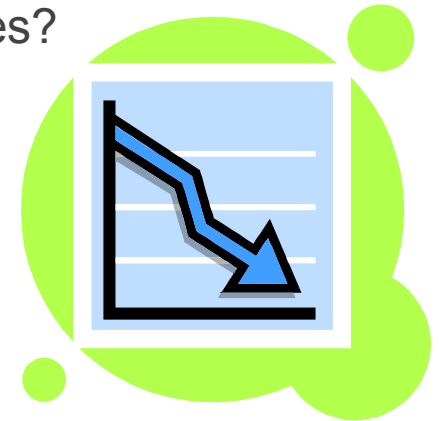


Reader & Report Replacement Analysis

- Determination based on proprietary usage analysis techniques
- Enables organisations to identify those situations where applications are used to read information only
- Ensures VDI licensing is correctly specified

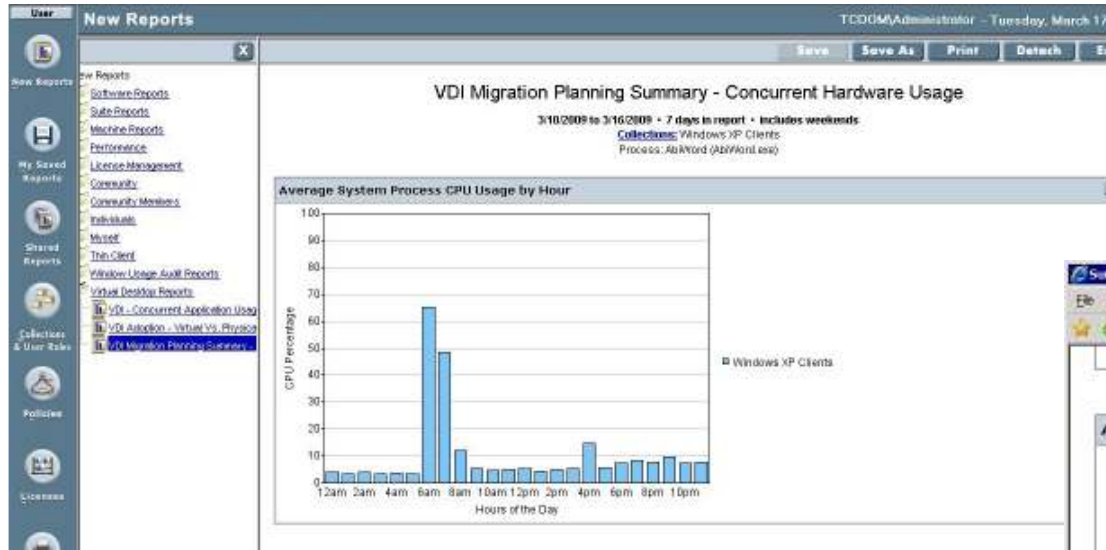
Replacement Candidates (Read only usage)						
Application/Machine Name	Reader Days	Idle Days	Daily Average Usage for Days with Usage (h:mm)	Last Day Used	Machine Reporting Percentage	
Visio 2000						
<input checked="" type="checkbox"/> SSI\DONALDCWXP2 (Donald Chance)	1	4	0:01	7/12/2005	100.0%	
<input checked="" type="checkbox"/> SSI\EVO00636 (Keith Lineberry)	1	4	0:01	7/12/2005	100.0%	
<input checked="" type="checkbox"/> SSI\SCOTTFWXP (Scott Fisher)	1	4	0:03	7/8/2005	100.0%	
<input checked="" type="checkbox"/> SSI\TREYAWXP (Trey Arolfo)	1	4	0:06	7/7/2005	100.0%	
<input checked="" type="checkbox"/> Select All						Replace

- What server capacity do my various migration tranches need?
 - φ What is my peak average Memory/CPU usage for a particular community
 - φ What is my peak average Memory/CPU usages for a particular application?
- Are applications/devices used which are poor VDI candidates?
 - φ Graphics heavy applications
 - φ Do I have excessive local printing/ LPT connections
- Are USB devices in use that present a problem
 - φ Headsets etc
- Do I have any multi-monitor users
 - φ Check for real multi-monitor usage rather than just inventory
- Can we repurpose existing workstation as Thin Client Terminals
 - φ Can save £300 per user

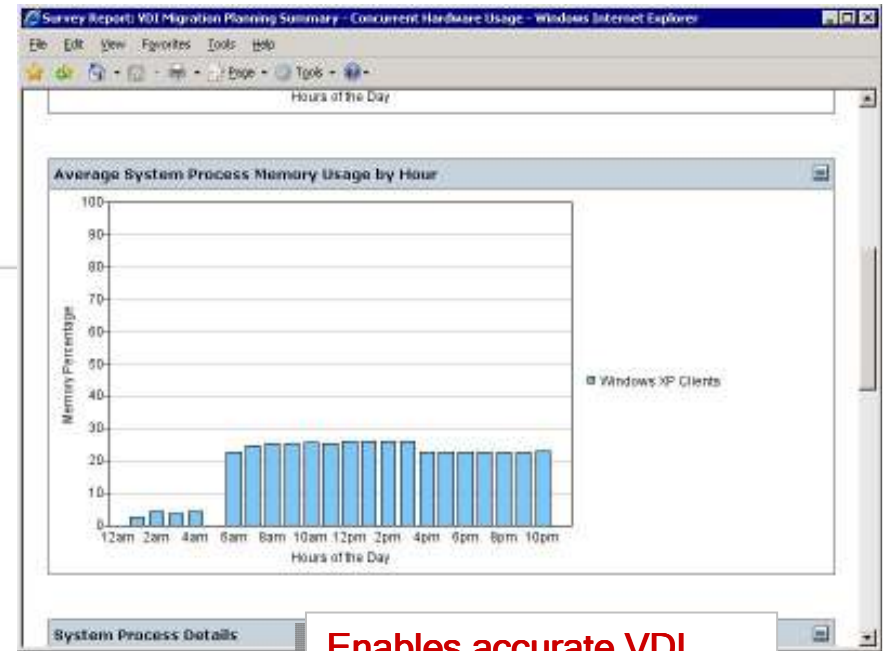




Virtual Desktop Planning



Analysis of concurrent CPU and memory consumption for a particular application (or group of applications) across a selection of workstations



Enables accurate VDI server hardware sizing ahead of migration of applications and users to VDI



Non Supported Applications/Users

USB Device Usage

-> Quickly identify user's of non-compatible VDI software such as AutoCAD, Photoshop etc

-> Rule out user's that will have a negative end-user experience

Machine Name	Usage Time (h:mm)	Average Machine Usage per Day (h:mm)	Number of Days Used
Application Name: VDI Non-Compatible Applications (Count: 7) (Usage: 5:28)			
SFT\BDRINKWATER1 (Bill Drinkwater)	0:05	0:00	
SFT\CGREEN6910P (Clark Green)	2:05	0:01	
SFT\JWHIPPLE (Jason Whipple)	0:11	0:00	
SFT\KPARKER6910P (Kerry Parker)	0:07	0:00	
SFT\LSHELTON61P (Lane Shelton)	0:28	0:00	
SFT\TFITZ-VISTA (Thomas Fitzgerald)	2:16	0:01	
SFT\WTAYLOR6910P (West Taylor)	0:16	0:00	
Application Name: Windows 7 Non-Compatible Applications (Count: 3) (Usage: 13:15)			
SFT\APOLVINO (Andrew Polvino)	10:01	0:03	

Machine Name	Device Name	Event	Event Date
Machine Name: SFT\ASSANTENC6400 (Count: 33)	Device Name: AuthenTec Inc. AES2501 (Count: 31)		
	Device Name: USB Mass Storage Device (Count: 2)		
Machine Name: SFT\AGERBNC6400 (Count: 1)	Device Name: AuthenTec Inc. AES2501 (Count: 1)		
Machine Name: SFT\ALACAVA1 (Count: 18)	Device Name: SMI USB DISK USB Device (Count: 18)		
Machine Name: SFT\ARASNOWNC6400A (Count: 24)	Device Name: AuthenTec Inc. AES2501A (Count: 20)		
	Device Name: Logitech QuickCam Pro 3000 (08B0) (Count: 4)		
Machine Name: SFT\AROHRBOUGH6400 (Count: 25)	Device Name: AuthenTec Inc. AES2501A (Count: 23)		
	Device Name: BlackBerry (Count: 1)		

-> Identify non-supported USB devices and printers based on actual usage

-> Recycle/retire underutilized printers

Local Printer Usage

Collection/Machine Name	Printer Name	Pages Printed	Last Day Used	Printer Port
All Machines				
SFT\ASPEROWNC6400 (Amy Sperow)	HP Officejet Pro L7500 Series	984	7/29/2009	USB001
SFT\BCANFIELD1 (Beth Canfield)	DYMO LabelWriter 400	87	7/31/2009	USB002
SFT\BCANFIELD-HOME (Beth Canfield)	HP Officejet 7200 series	1,410	8/5/2009	USB001
SFT\BDPUA1 (Bobbie Valerio)	HP LaserJet 3050 Series PCL 6	624	8/5/2009	DOT4_001
SFT\BFLANNERY (Barbara Flannery)	hp LaserJet 3015 PCL 6	3,145	8/1/2009	DOT4_001
SFT\BHOLDEN6910P (Blake Holden)	Adobe PDF	76	8/5/2009	LPT1:
SFT\BHOLDEN6910P (Blake Holden)	HP LaserJet 3050 Series PCL 6	486	8/5/2009	DOT4_001
SFT\BNILSONNC6220A (Ben Nilson)	HP Officejet Pro L7500 Series	280	8/5/2009	USB001
SFT\CCOSTIGAN1 (Cecilia Costigan)	HP LaserJet 1100 (MS)	2,676	8/5/2009	LPT1:
SFT\CGREEN6910P (Clark Green)	HP DeskJet 950C/952C/959C	27	7/24/2009	USB001
SFT\CLANGTON1 (Nichole Prendergast)	hp LaserJet 3030 PCL 6	269	7/14/2009	DOT4_001
SFT\CMCFADDEN (Charles McFadden)	HP Color LaserJet 2840 PCL 6	1,008	8/5/2009	DOT4_001



Repurpose Underutilized Desktops

-> Identify under-utilized machines

-> Repurpose or re-allocate under-utilized machines

Machine Information

Machine Name Component Instance

Property	Value
Machine Name: SFTVA417A (David Cymbala) (Count: 15)	
Component: Physical Memory (Count: 8)	
Component: Processor(s) (Count: 5)	
Instance: General Attributes (Count: 5)	
Count	1
Manufacturer	GenuineIntel
Max. Speed	1994
Speed	1994 MHz
Type	x86 Family 15 Model 2 Stepping 4
Component: Usage Time (Count: 2)	
Instance: Past 90 days (Count: 2)	
Average Daily Usage Time	N/A
Total Usage Time	26 Minutes
Machine Name: SFTCLANGTON1 (Nichole Prandergast) (Count: 10)	

Usage Detail by Machine

Drag a column header here to group by that column

Machine Name	Usage Time (h:mm)	Average Machine Usage per Day (h:mm)	Number of Days Used	Last Day Used	Number of Days Reported	Date Discovered
SFTVA417A (David Cymbala)	5:43	0:03	43	8/5/2009	68	10/10/2006
SFTDMCCARTHYEVO (David McCarthy)	0:29	0:00	3	8/5/2009	67	10/10/2006
SFTNELCOM WIN2003 (Bart Man)	0:01	0:00	1	5/21/2009	68	10/10/2006
SFTGENESIS1 (Bart Man)	0:00	0:00	0	N/A	68	10/16/2007
SFTJSHERIAN1 (Jeff Sherian)	0:02	0:00	1	7/23/2009	11	10/10/2006
SFTKRUSTYBURGER (KRUSTYBURGER..)	2:43	0:01	49	7/31/2009	68	10/10/2006
SFTNRSHARED (NR Shared)	3:24	0:02	17	7/24/2009	68	6/12/2007
SFTSCORPIO (SCORPIO\Administrator)	0:00	0:00	0	N/A	68	6/22/2007
SFTSURVEY-POC (Lionel Hutz)	0:27	0:00	5	7/17/2009	67	4/24/2007



Virtual Desktop Dashboard

Survey VDI Planning Dashboard Report

Machine Count

Suitable
Possible
Unsuitable



2023

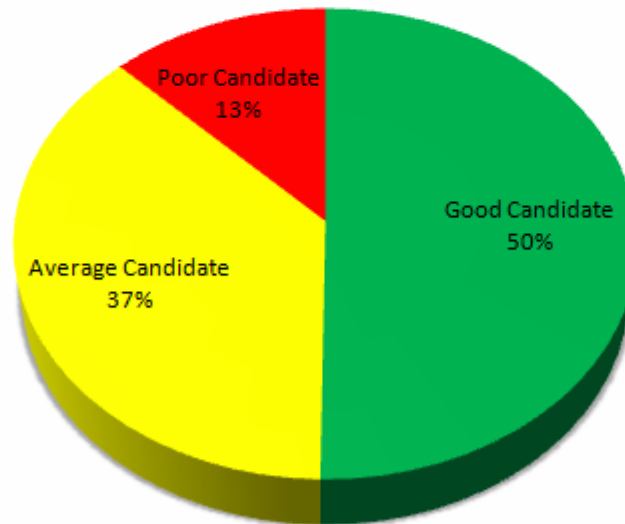
1501

503

->Which users in my environment would be a good fit for VDI?

-> Which users are not a good fit and can I migrate them in the future?

VDI Planning Dashboard





Virtual Desktop Dashboard Detail

Machine Name	Candidate Status	Remark
SFTA417A (David Cymbala)	Suitable	Machine meets VDI base-line selection criteria
SFTA417B (David Cymbala)	Suitable	Machine meets VDI base-line selection criteria
SFTAASSANTENC6400 (Andre Assante)	Suitable	Machine meets VDI base-line selection criteria
SFTVAGERBNC6400 (Adam Gerb)	Unsuitable	Heavy Multimedia Application Usage, Remote Location, > 20GB disk utilization
SFTVALACAVA1 (Fred LaCava)	Suitable	Machine meets VDI base-line selection criteria
SFTAPOLVINO (Andrew Polvino)	Suitable	Machine meets VDI base-line selection criteria
SFTVARASNOWNC6400A (Adam Rasnow)	Unsuitable	> 3 monitors, > 1600x1200 Resolution, Non-VDI Compatible Application Usage
SFTAROHROUBOUGH6400 (Andrew Rohrbough)	Suitable	Machine meets VDI base-line selection criteria
SFTASPEROWNC6400 (Amy Sperow)	Suitable	Machine meets VDI base-line selection criteria
SFTBCANFIELD1 (Beth Canfield)	Suitable	Machine meets VDI base-line selection criteria
SFTBCANFIELD.HOME (Beth Canfield)	Unsuitable	Physical Memory > 2GB, Physical Memory Utilization > 85%, User Data Storage > 10GB..
SFTBCLARK (Bryan Clark)	Suitable	Machine meets VDI base-line selection criteria
SFTBDIFFER1 (Beth Differ)	Unsuitable	Non-VDI Compatible Application Usage, 3D Accelerator Detected, > 90% CPU utilization
SFTBDPUA1 (Bobbie Valerio)	Suitable	Machine meets VDI base-line selection criteria
SFTBDRINKWATER1 (Bill Drinkwater)	Suitable	Machine meets VDI base-line selection criteria
SFTBFLANNERY (Barbara Flannery)	Possible	Non-Mass Storage USB Device Usage, Local Printer Usage (>1 page per day)
SFTBHOLDEN6910P (Blake Holden)	Suitable	Machine meets VDI base-line selection criteria
SFTBMERSEREAU (Barbara Mersereau)	Suitable	Machine meets VDI base-line selection criteria
SFTBNILSONNC6220A (Ben Nilson)	Suitable	Machine meets VDI base-line selection criteria
SFTBWHITE (Bill White)	Suitable	Machine meets VDI base-line selection criteria
SFTCAPPLEGARTH (Charles Applegarth)	Possible	2 Monitors, Non-Mass Storage USB Device Detected
SFTCCADLSON1 (Christopher Cadson)	Suitable	Machine meets VDI base-line selection criteria
SFTCCADLSON2 (Christopher Cadson)	Suitable	Machine meets VDI base-line selection criteria

-> Identify list of candidate users/desktops and rule out desktop's that are not good candidates based on user definable input



Survey™

How Does Survey Help Maintain Maximum Value from VDI?



Virtual Desktop Deployment Monitoring Ongoing VDI Use

Thin Client Users of an Application

Application/Users	Usage Time (h:mm)	Average Daily Usage (h:mm)	Number of Days Used	
Reflection for IBM (R8win.exe)				
Donna Lenhard	78:23	0:18	19	
Ray, Karen	41:07	0:09	10	11/27/2007
Foulds, Tammy	37:57	0:09	12	12/6/2007
Kathy Cressinger	37:11	0:09	12	12/4/2007
McCreary, Mary	33:05	0:08	19	12/6/2007

Identify who is using the licensed application to ensure maximum savings are captured ongoing

Reed, Kim
Ebright, Lisa
Mull, Michele
Young, Deb
Nancarvis, Michelle
Cook, Donna
Baker Jamey
Carol Boyer
Hess, Crystal
Melinda Brown
Kelly Quick
Park, Fred
Michele Benfer
Troxell, Cheryl
Crystal Peachey
computerroom1
Lisa Herman
McDermott, Charlotte

Usage Detail by Machine

Machine Name	Usage Time (h:mm)	Average Machine Usage per Day (h:mm)	Number of Days Used	Last Day Used	Number of Days Reported	Date Discovered
SFTVA417A (David Cymbala)	5:43	0:03	43	8/5/2009	68	10/10/2006
SFTVDMCCARTHYEVO (David McCarthy)	0:29	0:00	3	8/5/2009	67	10/10/2006
SFTVELCOM WIN2003 (Bart Man)	0:01	0:00	1	5/21/2009	68	10/10/2006
SFTGENESIS1 (Bart Man)	0:00	0:00	0	N/A	68	10/16/2007
SFTJSHERIAN1 (Jeff Sherian)	0:02	0:00	1	7/23/2009	11	10/10/2006
SFTKRUSTYBURGER (KRUSTYBURGERV..)	2:43	0:01	49	7/31/2009	68	10/10/2006
SFTNRSHARED (NR Shared)						2007
SFTVSCORPIO (SCORPIOAdministrato						2007
SFTVSURVEY-POC (Lionel Hutz)						2007

-> Identify virtual desktops that are under-utilized

-> Free up storage and hardware resources based on real usage information

-> Mitigate "VM Sprawl"



Virtual Desktop Deployment

Application Usage Statistics			
Machine/Application Name	Thin Client Usage	Desktop Usage	Action Recommendation
X Server for Win32 (exceed.exe)			
SSI\DP00203	20:33	12:05	Recommend uninstall from Desktop
SSI\DP00408	12:09	2:05	Recommend uninstall from Desktop
SSI\DD00100	4:45	2:28	Recommend uninstall from Desktop
SSI\DP00107	0:10	0:19	Recommend limiting Thin Client access from this Machine
SSI\DP00201	19:31	0:54	Recommend uninstall from Desktop
SSI\DP0521	8:41	0:13	Recommend uninstall from Desktop
SSI\DD00128	14:31	1:49	Recommend uninstall from Desktop
SSI\EVO00636	1:09	0:38	Recommend uninstall from Desktop
SSI\EVO00635	3:11	0:45	Recommend uninstall from Desktop
SSI\DP00288	3:13	0:00	Uninstall from the Desktop
Microsoft Excel for Windows (Excel.exe)			
SSI\DP00203	1:14	0:29	Recommend uninstall from Desktop
SSI\DP00408	10:59	0:42	Recommend uninstall from Desktop
SSI\DD00100	19:53	4:10	Recommend uninstall from Desktop
SSI\DP00107	6:09	1:03	Recommend uninstall from Desktop
SSI\DP00201	2:32	0:30	Recommend uninstall from Desktop
SSI\DP0521	1:30	0:00	Uninstall from the Desktop
SSI\DD00128	12:46	2:01	Recommend uninstall from Desktop
SSI\EVO00636	3:58	0:47	Recommend uninstall from Desktop
SSI\EVO00635	1:26	0:06	Recommend uninstall from Desktop
SSI\DP00288	0:25	0:00	Uninstall from the Desktop

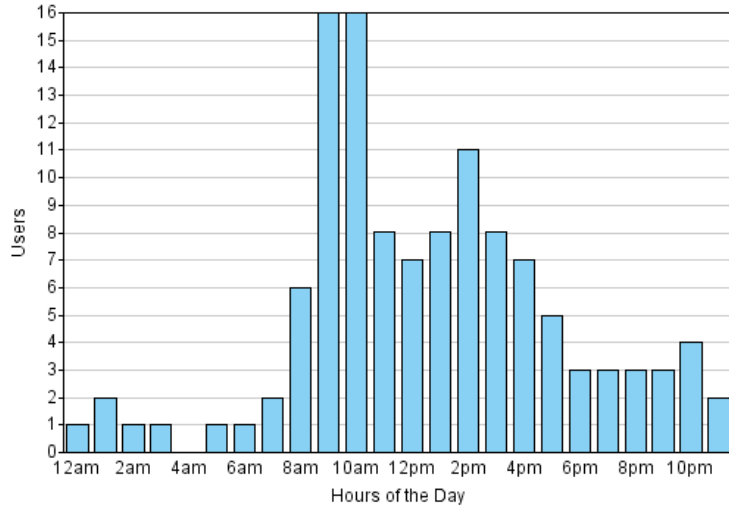
Audit and eliminate software licensing costs associated with desktop/virtual desktop application redundancy.



Concurrent Users vs. Concurrently Active Users

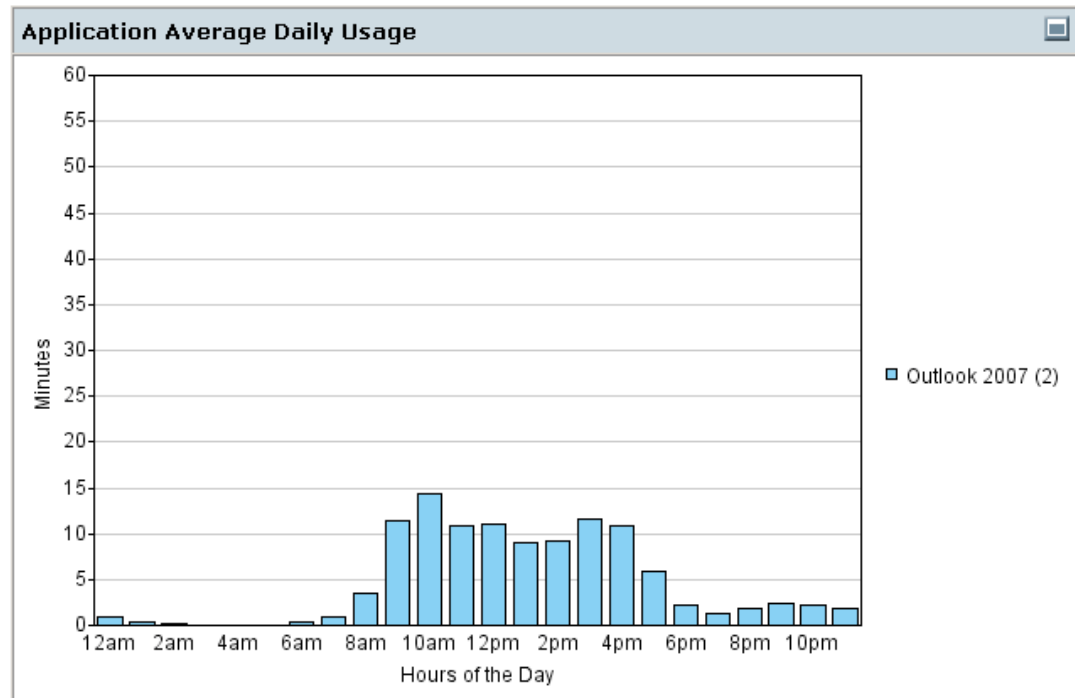
Thin Client Application Users by Hour

1/1/2009 to 6/1/2009 • 108 days in report • excludes weekends
[Collections:](#) All Machines
Software Catalog Applications displayed



Software costs accrue based on concurrent or named users. It is possible to contrast this, for any user community, with active use of the licensed software

Outlook 2007





Survey™

Business Case

- Software costs dwarf hardware costs in the migration to VDI
- Certain classes of software and user may not be suitable for migration to VDI
- Failure to truly appreciate the aforementioned points will make VDI an expensive failure
- *Survey mitigates the risk of failure by providing contextually relevant visibility into all aspects of software utilization, pre and post migration*

