Virtual Desktop Pilot Implementation Project

A Collaborative IT Project
Project Steering Chair: Claudio Pini
PM: John Mah  Co-architect : Brent Dunington

IT Managers Meeting: April 19, 2010
Virtual Desktop Pilot Implementation Project

• **Who: The Pilot Project** (8 months: Oct/09 – May/10):

  Collaborative Project Teams:
  
  – **Steering:**
    • UBC IT (incl SIS, FRO, HR), Medicine, Science, Dept Comp Sci, Sauder, President’s Office
  – **Project Team:**
    • Architecture
      – UBC IT Jason Fiset, Brent Dunington, Duncan Gourlie
      – Medicine IT Dennis Chow
      – Computer Science Sean Godel
    • Desktop Support
      – OAB Eric Lai, Alvin Poon
      – UBC IT Robert Padwick, Irina Zilbershtein
      – Deployment Ryan O’Grady (Med), Tom Yerex (Sci), Patrick Ho (Sci), Sean Shang (Sci)
    • Project Management
      – UBC IT John Mah, David Murray, John Cruz
  – **Pilot Users:**
    – Approx 40 in the Old Administration Building
    – Approx 40 in UBC IT LS Klinck building
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• Why: The Pilot Project
  – **Green:** thin-client + servers + SAN + HVAC < Desktop / Laptop energy consumption
    • 10w + 5w + 5w < 100 / 40w
    • = less CO² and < $$ kwh
  – **Support effort & Standardization:**
    • Reduction in number of images << current state of image variations
    • Reduction in proliferation of hardware models
    • Reduction in desk-side support effort for thin-clients or soft VDI clients
    • Reuse central library for images & virtualized UBC applications
    • Standard GPO’s for View clients + localized GPO’s
  – **Leverage common infrastructures/processes:**
    • VMWare server farm
    • NetApp appliances
    • Standard support / deployment / image management processes
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• What/When: The Pilot Project
  – **Back-End:** Architect, build, test, deploy a scalable Virtual Desktop Infrastructure environment for UBC
    • Based on VMWare View 4 (windows-based), NetApp, Virtual Grid, Enterprise AD
  – **Front-end:** Capture user desktop requirements in OAB, UBC IT
    • Select, test, install thin-client devices on a subset of pilot users
    • Install soft View client on remaining users/home access PC’s
  – **Support Process:** develop a working model for VDI Desktop deployment/support/image management
  – **Pilot admin user groups:** 80 users in UBC IT and OAB
  – **Financial:** Develop a TCO model, energy saving model
  – **Communication:** to UBC as a whole via IT.UBC website and forums
Pilot Approach & Timeline

User communication / engagement. Key stakeholder communication / awareness of outcomes

Deployment processes

User needs/desktop performance/functionality

Financial model

Prototype build

Lab
- validate technical design
- user environment
- user performance testing
- user app install
troubleshooting
- VD fine tuning
- IMAGE BUILD
- APP VIRTUALIZE

VD version 1

User VDI lab testing
- user app testing
- performance
- functionality
= current desktop PC

Tech team fine tuning for prod deployment

VD v1.0 production build, tested,
PTO

Deploy & support to faculty
of OAB

Deploy & support to faculty
UBC IT

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UBC IT

Architect / design
- VM's backend
- app backend
- user app environment
- thin-client
- front end
- network

confirm VD technology preference
- leverage other project learnings

Oct Nov Dec Jan Feb Mar Apr May
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Systems & Technology

• Vmware HA, DRS, vCenter
• VMWare User Data Disk
• Folder Redirection
• Logon Scripts
• VMWare Thin Apps
• User Home Directories
• Net App Storage

• HP Blade Servers
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Administration

• Delegated administration given to each Department Administrator.
• Separation of each Department using VMware resource pools.
• vCenter for central administration, performance trending, and alerting.
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How is it the same?

1. Windows XP or Vista experience
2. Fast login, access to all the applications needed to do your daily work
3. Same application performance as you currently experience
4. All your IE favorites, personal settings
5. Can network print as you normally do today
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How is it different?

1. Low power consumption
2. All work files stored on a network H:\drive, not local C:\
3. No wallpapers
4. No screensavers
5. New required software must be installed by IT desktop support
6. Laptop users cannot use the ‘virtual desktop’ on a bus, car or airplane (offline from the internet)
7. No Macintosh version yet
8. USB peripherals are not yet fully support until Sept/2010 eg. Local printers, CD/DVD burning, web-cams.
9. Must use USB keyboards/mice
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How is it better?

1. Able to connect to the same ‘virtual desktop’ from home or (any other UBC workstation – future)
2. Your personal favorites & settings stay with your ‘virtual desktop’ no matter where you access it from
3. Laptop users can chose to keep it at work, and use their personal computer at home to access the same work ‘virtual desktop’
4. For IT, simplified support – now using a common ‘virtual desktop’
   1. Longer lifespan for the thin-client device (>5 yrs)
   2. Upgrades to windows & applications will be automatically delivered to all users, without desk-side visits
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VDI video demo
## Virtual Applications Created

### Virtual Desktop Pilot Implementation Project

<table>
<thead>
<tr>
<th>Virtualized = Globally avail.</th>
<th>Tested Webapps</th>
<th>Not Virtualizing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Office suite 2007</td>
<td>1. Peoplesoft</td>
<td></td>
</tr>
<tr>
<td>2. Adobe reader 9.31</td>
<td>2. Sharepoint</td>
<td></td>
</tr>
<tr>
<td>3. Adobe Acrobat 9 pro</td>
<td>3. SISC</td>
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<tr>
<td>4. Adobe Creative Suite</td>
<td>4. UBC Webmail</td>
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<tr>
<td>5. Crystal Reports Std 10</td>
<td></td>
<td></td>
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<tr>
<td>6. Crystal Reports Pro 10</td>
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<td></td>
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<tr>
<td>7. Visio Std 2007</td>
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<td></td>
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<tr>
<td>8. Visio Pro 2007</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Project Pro 2007</td>
<td></td>
<td></td>
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<tr>
<td>10. Firefox</td>
<td></td>
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<tr>
<td>11. Skype 4.1.x</td>
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<td></td>
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<tr>
<td>12. Snagit 7</td>
<td></td>
<td></td>
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<tr>
<td>13. 7-zip</td>
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<td></td>
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<tr>
<td>14. Various media protocols</td>
<td></td>
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<tr>
<td>15. Flash</td>
<td></td>
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<tr>
<td>16. Nero Express &amp; 7 (CD burning)</td>
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</table>

### VMWare roadmap

1. July: Thin Win7 OS
2. July: Partial USB support on zero clients
3. Sept Full USB support on zero clients
OAB Deployment Progress as of 4/16/2010

21% = 11 = Windows 7.0

13% = 7 = nVision

8% = 4 = Road warriors

6% = 3 = Local printers

4% = 2 = IT staff reorg

38% = 20 = installed for 2d - 2w

11% = 6 = installed on 4/15

53 = Original Pilot user population
OAB Pilot Users: Overall Impressions (informal discussions)

✓ Seems the same [performance] as before
✓ Connecting from home is better
✓ Like not having to deal with 'auto-updates' from microsoft, adobe, etc
✓ Like the idea of fixes being pushed from central support
  – we’ve had several weekly OS updates already without the users knowing it.
✓ Appreciate the reduction in environmental waste
✓ Seem to appreciate access to more UBC IT support resources
OAB Pilot Users: Overall Major Challenges
(informal discussions)

- Occasional incidents of "network connection lost"
- Outlook running in non-cached mode: users notice server lag
  "Outlook is trying to retrieve data from the Microsoft Exchange Server ADMINMAIL.admin.ad.ubc.ca"
- Some people noticed lag in the interface (click-and-drag a window). generally addressed by turning off windows 'effects'
- Sad to give up the convenience of local printers
  ✓ Move some to network printers with 'secure' print codes
  ✓ Left critical needs users out of the VDI pilot
  ✓ Reviewing desktop network printers, plug n' play workarounds
- Outlook search can take longer (unique to those with multi-gigabyte mail files)
  ✓ Organize into folders < 5,000 items
  ✓ Use Advanced Search
  ✓ Clean up mailbox emails
OAB Pilot Users: Overall Minor Challenges
(informal discussions)

- Many users do not like the hi-res (1280 x) displays (small font) and would like a way to 'downgrade'. VMWare has plans to address this in a future release (timing TBD)
- Replacement keyboards were not ideal (tired or cheap)
- Two firewall issues (access to ISIS and OAB-BES share)
- Canon "Hole Punch" not user selectable in a shared environment (one user noticed this)
- Miss having an IT resource on-site, particularly in the mornings.
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• What’s Next: *Beyond* The Pilot Project
  
  – **Assess the Pilot:** 1-month sustainment/support
    • Monitor, metrics, support issues
    • Feedback into design -> larger scale deployment to UBC
    • Feedback in support processes -> scalable to local / global UBC levels
  
  – **Deployment Roadmap:** Captured user desktop req’ts for:
    • Sauder / Science / Dept. of Comp Science / Medicine / UBC Library / FRO and HR / SIS
      – Decision on next user groups within these faculties
  
  • Dependencies:
    – Enterprise AD status
    – Network end-to-end infrastructure status
    – Readiness of local support groups to manage
    – Funding
## Image Types and Anticipated Adoption Rates

<table>
<thead>
<tr>
<th>Image Type</th>
<th>Pro</th>
<th>Con</th>
<th>Adoption Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Staff</strong></td>
<td>Moderate usage patterns.</td>
<td>Mac Users.</td>
<td>80%</td>
</tr>
<tr>
<td></td>
<td>Core applications.</td>
<td>Mobile Users.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Few exceptions.</td>
<td></td>
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</tr>
<tr>
<td><strong>Research</strong></td>
<td>Some faculty members like the idea of desktop-as-a-service (small, quiet, robust, accessible via VPN/RDP)</td>
<td>Disincentive: Mostly obligated (by NSERC and CFI grant requirements) to procure and maintain unique equipment</td>
<td>10%-20%</td>
</tr>
<tr>
<td>(Faculty and Graduate Students)</td>
<td></td>
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</tr>
<tr>
<td><strong>Lab and Kiosk</strong></td>
<td><strong>Standard images.</strong></td>
<td>Peakish usage patterns.</td>
<td>30%-80%</td>
</tr>
<tr>
<td></td>
<td>Regular rebuilds.</td>
<td>Not always MS Windows.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Specialized Equipment</td>
<td></td>
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Virtual Desktop 2011 Implementation Planning - UBC

- Define Early Adopter’s (EA) needs and engage key VDI owner for the EA
- Early Adopter site discovery
- Early Adopter deployment prioritization
- Early Adopter staging activities
- Scale up the VDI server infrastructure - servers/SAN/EAD/Load balancing

HR (~60)
Finance (~100)
Medicine (~300)
Koerner (>800)
Science (TBD)
Sauder (TBD)

- Begin deploy
- 900 VDI’s over 9 months

- OAB UAT
- OAB deploy
- UBC IT deploy

March April May June
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QUESTIONS?

More info on VDI:

contact the PM:  johnsmah@exchange.ubc.ca

Online updates:  http://www.it.ubc.ca/projects/virtualdesktop.html