Desktop Virtualisation

Progress in Universities - 2010

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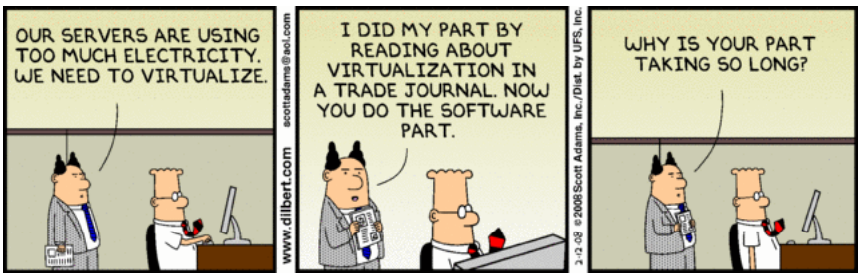

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Desktop Virtualisation - Progress

- The University of Melbourne set out to investigate desktop virtualisation as an option to update open access student computers in the Library
- But how advanced were other universities in relation to the deployment of desktop virtualisation on campus?
- Would the university be at the bleeding edge of technology if they implemented desktop virtualisation?
- Or would they be fast followers or technology laggards?
- Asurvey was carried out in August 2010 of Australian and New Zealand universities, plus some selected international members of Universitas 21

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The Survey

- An online survey of about 10 questions was developed and circulated to members of CAUDIT (Council of Australian University Directors of Information Technology) and Universitas 21 members
- The survey looked at both current and planned desktop virtualisation implementations
- The survey asked about support for…
  - both Macs and PCs
  - both university and student owned computers
  - and also support for smart devices such as iPads or iPhones
- The survey also investigated the type of virtualisation – application, desktop image or dedicated thin clients?

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The Response

- There was a good response rate of 50% from the 40 Australian and New Zealand members of CAUDIT
- Eight members of Universitas 21 also responded, namely…
  - **UK** - University of Edinburgh
  - **USA** - University of Connecticut
  - **Canada** - McGill University
  - " - University of British Columbia
  - **Singapore** - National University of Singapore
  - **Hong Kong** - The University of Hong Kong
  - **New Zealand** - Auckland University
  - **Australia** - University of Queensland

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Summary of Survey Results

1. The implementation of desktop virtualisation in the universities surveyed in 2010 is still at the early adopter level, with no large scale implementations
2. One third of those surveyed were trialing pilot studies
3. The two major drivers for universities are…
   - reducing costs - but most importantly,
   - providing a better service to students

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Summary of Survey Results

4. Most deployments were Windows environments, with few Mac deployments
5. The technologies deployed were from Citrix, VMware and Microsoft
6. Most universities plan to utilise existing PC or Mac computers, rather than buy dedicated thin clients
7. Few universities support student-owned laptops, with even less support for smart devices, like iPads

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Summary of Survey Results

8. Most trials were carried out in-house, with only one university planning to outsource its desktop virtualisation

9. Three quarters of the universities NOT trialing Desktop Virtualisation, plan to do so in the near future

10. Both CAUDIT and Universitas 21 members had similar profiles and deployment levels

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Major Factors Highlighted in the Survey

I. There is a lack of product support for Mac and Linux environments

II. Enterprise wide licensing for desktop virtualisation products is still a major problem for universities

III. The vendor offerings for Desktop Virtualisation are not yet considered to be fully mature

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Five follow up Case Studies

- Follow up studies were carried out with five selected universities that had progressed further with desktop virtualisation trials
- The studies covered Australia, New Zealand and Canada
- The five case studies covered a number of different approaches to desktop virtualisation

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Case Study 'A'

- University 'A' utilise a central Citrix server farm with 150 site licenses
- The performance of the central Citrix farm was considered quite good, which after tuning was capable of running a classroom of 50 PCs starting up AutoCAD at the same time
- They use existing entry level PCs and no thin clients
- The Citrix farm was not accessible from off campus, due to licensing restriction, which they would like to overcome

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Case Study 'A' continued

- University 'A' also trialed Panologic thin client devices, but found them too restrictive, suffering from shared USB and power-off problems
- Interestingly, students discovered that if they downloaded a Citrix client onto their own laptop, they could then access the central Citrix farm on campus
- This led to the university then supporting student owned devices

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Case Study 'B'

- University 'B' deploy a 600 seat Citrix based disk virtualisation environment using Xen Desktop
- They mainly support disk streaming for common applications
- They also trialed thin clients, but found problems with HD video streams and USB pass-through
- They utilise standard PCs as client devices

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Case Study 'B' continued

- Software licensing is the biggest problem for this university, preferring a cost effective enterprise wide licensing agreement, such as the VMware server licensing agreement arranged through CAUDIT
- However they expect the market to lower the cost of virtual desktop software, to make it more cost effective over the next 18 months to replace PCs with thin clients
- The university also wants good Mac support, as some of their faculties have 50% Mac deployment!

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Case Study 'C'

- University 'C' want to provide a uniform campus-wide environment, so that all students can access **ALL** the differentfaculty-based computer labs
- Each student will have a customised desktop image matching what they need for their enrolled subjects
- The university typically supports entry level PCs. However they plan to replace existing Citrix thin clients in the Library with PCs to simplify support
- They now buy PCs with 4 year warranties to extend the replacement cycle

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Case Study 'C' continued

- They utilise Keyserver to manage software licensing as well as to monitor the effective use of each application
- They plan to use either VMware View or Microsoft V-Apps
- They centrally support software applications such as MatLab, Adobe Suite, SPSS and SAS
- Currently they do not support student owned devices

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Case Study 'D'

- University 'D' are trialing both application virtualisation and dedicated thin clients
- They are using thin clients, such as the Wsye P20 and V10L, as well as the Dell TX100
- They utilise a 100-user VMware View enterprise license
- The pilot trial group are very happy that they can use the same application software on their iPads at home, their laptops on campus, plus thin clients in the computer labs

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Case Study 'E'

- University 'E' have a different approach to desktop virtualisation to the other universities surveyed
- They were the only university surveyed who carried out a formal Cost-Benefit Analysis as they expect substantial savings by rolling out over 4,000 thin clients over the next 4 years
- They are deploying low cost, zero-memory devices to administration staff only, currently Wsye 20 or Dell FX100 thin clients

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Case Study 'E' continued

- They utilise VMware View, with good acceptance by staff, especially for off-campus access
- No Mac virtualisation support is provided yet
- They have only virtualised simple software applications, not for software such as SPSS, AutoCAD, SAS or MatLab
- Their prime objective is to reduce costs by eliminating IT support visits to staff offices over the expected 5-10 year lifetime of thin client devices

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7 Common Themes from the 5 Case Studies

1. These five universities are involved in small scale trials, focused on university owned devices, typically PCs
2. There is currently a lack of support for Macs
3. The universities have problems with cost-effective enterprise licensing to cover all enrolled students

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7 Common Themes from the Case Studies

4. The major focus for the trial of thin client devices is to reduce the cost of ownership
5. The major focus for the trial of application virtualisation is to provide better service to students
6. The best example of the deployment of thin clients is University 'E', who plan to deploy 4,000 devices over 4 years
7. University 'C' is an example of how to enable faculty-specialised computer labs to be accessible by all students, via access to virtualised application software based on each student profile

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6 Conclusions re Desktop Virtualisation

I. It is still early days for the deployment of desktop and application virtualisation in universities

II. Mac support needs to be improved to meet most university's needs

III. Enterprise licensing needs to be affordable before campus-wide solutions can be deployed for all students

6 Conclusions re Desktop Virtualisation

IV. Entry level PCs will continue to remain the major client device for many years

V. The survey found few formal cost-benefit analysis studies had been done by universities

VI. Virtualisation software from the three major vendors (Citrix, VMware, Microsoft) needs to develop new functionality to meet the current needs of universities

2011 update - The University of Melbourne

1. The university has just concluded a successful Proof of Concept trial in the Library, using Dell Optiplex FX150 thin clients outsourced to and managed by Citrix
2. Initially they found performance issues, but Citrix fine tuned the system to provide performance indistinguishable from desktop PCs
3. The students find them quite boring as they are just like PCs ☺
4. The university now plans to gradually replace desktop PCs in the Library with thin clients

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2011 update – other universities

1. A major driver for desktop virtualisation is student demand for access to university software apps from home, on campus and their own devices.
2. The effort required to virtualise software applications is quite large – e.g. one university has virtualised 700 applications
3. A Queensland university had to relocate 500 staff from a flood damaged building into student PC labs – achieved in a day using desktop virtualisation!
4. At least one university has negotiated a cost effective 500-user license for VMware View, as an add-on to the VMware server site license agreement
5. Products from the desktop virtualisation vendors still have limited support for MAC and Linux

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- Jeff McDonell July 2011

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