Network Virtualization: A survey of the Wintec EPG

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Introduction

Internal network (platform) virtualization is the creation of a virtual machine (VM) that appears to be another physical computer with an operating system. Multiple VMs can run on the same physical host. This reduces costs for an organisation that desires extended network functionality (Barkham et al., 2003).

Virtualisation, as a topic, is already integrated into a general Wintec School of IT degree networking paper. EPG ICT industry members have been surveyed to determine the current extent of virtualization implementation in their organisations. This poster focuses on an analysis of their responses and the options available, based on these results.

Content

Five EPG members from medium to large organisations responded. Responses from a retired member and a self-employed member have been excluded.

Table 1 gives an indication of the size of each organisation, based on the number of servers and desktops they have.

All respondents were using virtual servers at the time of the survey, of which four (80%) respondents had at least five virtual servers. Two (40%) used at least 10 virtual desktops. One respondent, who did not use any virtual desktops, is looking to have 10 or more installed by the end of 2011.

Virtualization platforms were also surveyed. The results displayed in figure 1 indicate that VMware server was the most popular choice followed by Xen. Given the very small sample size, no firm conclusions can be drawn. Barkham et al (2003) highlight the efficiency of using Xen for virtualization. Neih & Leonard (2000) found that VMware is also effective in teaching the topic.

Four (80%) respondents are using Virtual Local Area Networks (VLANs). Four (80%) felt that it would be useful for graduates to possess virtualization knowledge and skills and the remaining respondent (20%) felt it would be very useful for them. There were no respondents who felt it would not be useful. Four (80%) felt that it would be somewhat helpful for a graduate with these knowledge and skills to get a job in their organisation and the remaining respondent (20%) felt it would not help them.

Conclusion

Platform virtualization is used significantly by all five survey respondents. VMware server appears to be the most popular software platform from these respondents, followed closely by Xen. The authors acknowledge the small sample size and plan to survey a larger sample size in the future. Given the wide adoption of virtualization from the respondents, this survey will be modified to include larger virtual server and desktop numbers. The results give an indication that it may be worthwhile for the Wintec School of IT to develop a seven credit, level six, module dedicated to this topic.

References

Barkham, P., Dragovic, B., Fraser, K., Hand, S., Harris, T. (2003). Xen and the art of virtualization. Proceedings of the 19th ACM symposium of Operating Systems principles.(pp. 164-177), New York, USA: ACM SOSP

Neih, J., Leonard, O. (2000). Examining VMWare. Dr Dobb's journal

Organisation	Number of servers	Number of Desktops
1	9	300
2	500	3000
3	378	6500
4	25	1000
5	100	500

Table 1. Number of servers and desktops at each organisation
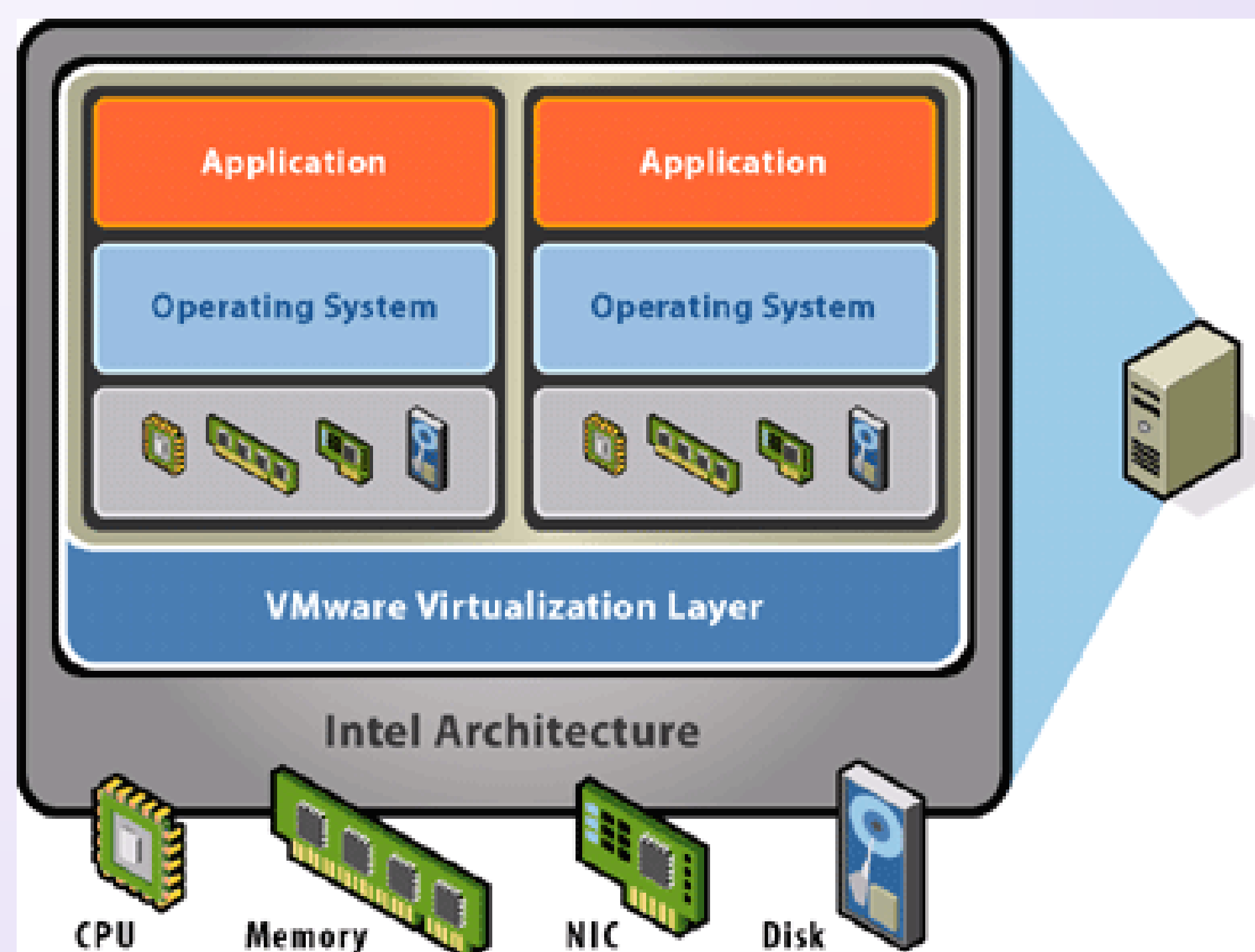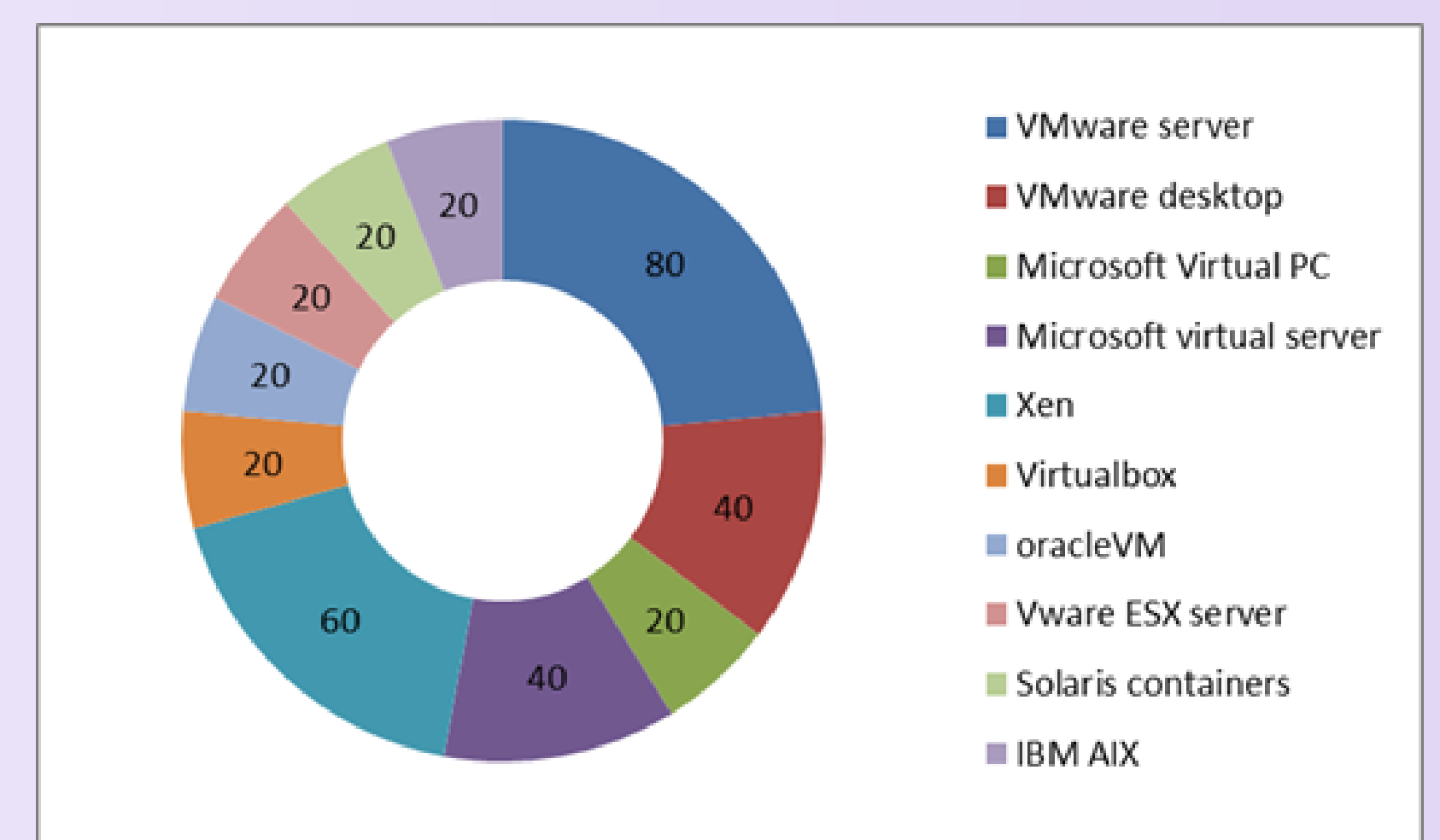

http://www.cornerstone.it/solutions_server.php

Fig 1. Percentage of virtualization platform usage from respondents

Fig 2. Student practical exercise using VMware Player

Fig 3. Wintec Diploma Module draft prescription