CHAPTER 5   IT INFRASTRUCTURE AND EMERGING TECHNOLOGIES
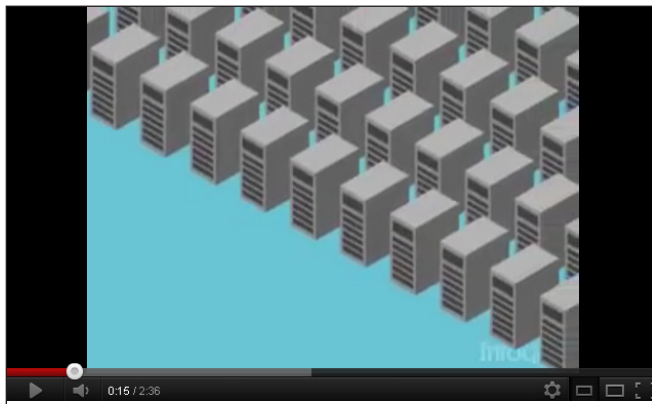
CASE 3   # Hudson's Bay Company and IBM: Virtual Blade Platform

(a) What Is Server Virtualization?

VIDEO CASE

SUMMARY   Server virtualization is a technique of optimizing computing resources by dividing individual physical servers into "virtual servers" with their own environments and applications. It is one of the most common methods for companies to consolidate computing power, reduce costs, and become "greener" as a result. The first video is a basic introduction to server virtualization. L=2:35.

URL   http://www.youtube.com/watch?v=p11lJOnALS4

(b) Hudson's Bay Company and IBM: Virtual Blade Platform

VIDEO CASE

SUMMARY Hudson's Bay Company is a Canadian firm founded in 1670 as a fur trading company. Today Hudson's Bay operates 500 stores, and is one of the largest retailers in Canada. The company turned to IBM's virtualization platform to achieve cost savings, greater flexibility, and reliability, as it grew to provide customers with new services and products. L=7:21.

URL http://www.youtube.com/watch?v=6PSwzkdDdvU

NOTE First, watch the brief overview of virtualization, and then watch the IBM video about Hudson's Bay Company and their experience with IBM blade servers and virtualization.

CASE Enterprise data centers contain lots of servers. Server workloads vary widely based on factors like the time of day, tasks requiring completion, user activity, and so on. Thus, many servers spend much of their time idle, which is a waste of precious resources requiring cooling and maintenance.

Server virtualization is a technique that divides physical servers into virtual servers. What does this mean? Each virtual server "looks" like a real server, and multiple virtual servers can run in parallel on a single machine. Virtualization software called a hypervisor creates a layer of abstraction between the native hardware and virtual servers and allows different operating systems to run at the same time.

The three types of server virtualization are virtualization (the most basic type), paravirtualization, and operating system virtualization. Operating system virtualization is one single operating system divided into multiple independent partitions that run that system. Performance using this technique is comparable to what you'd receive without using virtualization at all.

Server virtualization is a common method of reducing technology costs, but it also increases the complexity of the server environment. Network managers need the expertise to run a system including virtualization.

For big companies like Hudson's Bay Company, however, the results are well worth it. Hudson's Bay Company was founded in 1670 as a fur trading company. Since then, it's grown into one of the largest companies in Canada, with 500 stores. HBC derives a lot of value from IBM blade servers and their capacity for virtualization. HBC needed more servers due to its expanding Citrix environment (Citrix is a developer of software and services specialized for virtualization) and IBM blade servers were their logical choice.

Other advantages of the blades were the ability to use IBM Director software to manage the physical servers, perform predictive analysis, interface with VMWare, and work from

home using its remote support capability. The blades have multiple drives, so that if there's a problem with a blade, it's easy to remove it, fix the issue, and replace it. Server downtime that once extended to multiple hours now takes minutes for HBC to resolve.

One concept described in the video is a SAN, or Storage-Area Network. SANs connect multiple storage devices on a separate high-speed network dedicated to storage. IBM's blade servers were attractive to HBC due to their ability to be booted directly from the HBC SAN.

VIDEO CASE QUESTIONS

1. Explain the difference between the three types of server virtualization using the first video.

2. Why is virtualization important to a company like Hudson's Bay Company? How did that factor into their decision to partner with IBM?

3. What kinds of companies are likely to use a storage area network (SAN)?

4. Can you think of any risks involved in virtualization?

5. Explain why virtualization is considered a "green" technology.