

Sure Bet Program

Offered By: NV Energy

Administered By: KEMA Services, Inc.

International Game Technology Case Study: Server Virtualization Project



Project Description

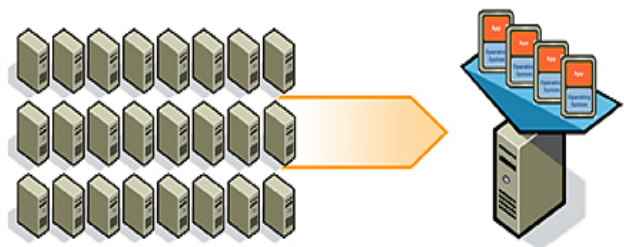
Server virtualization and corresponding energy savings; is it real or is it “virtual?”

Virtualization is the creation of a virtual, as opposed to an actual, version of a server device.

Server virtualization software allows multiple operating system images to run at the same time. For example, on a desktop computer, we can check email, write a letter, use a PDF reader and surf the internet. If each of these operations required a different operating system, we would have to shut down the internet and email in order to write a letter. With

server virtualization, multiple virtual machines run on a single physical machine, sharing the resources of the single computer across multiple environments. One physical computer can then be used by different virtual machines and can run different operating systems and multiple applications.

Under the old “one server, one application model,” internal resources are under utilized and IT administrators spent a great deal of time managing servers.





Since many applications can now be placed on one server, all of the old servers can be removed. If you have ever been in a server room, one thing you notice right away is that it is a bit chilly. The actual hardware generates quite a bit of heat and operates best at cool temperatures thus there tends to be a large air conditioning load. The air conditioning electric use can often be as much as the actual hardware electric use. Energy is saved in two ways, by the removal of the old servers and a reduction in air conditioning use.

Application

Server virtualization is being done for several reasons. A facility may physically be out of space and not have the room to add more servers for new applications. As our use of computers grows drastically, many of the original computer rooms were not designed with enough physical space. Another reason for vitalization is efficiency in operation, from the reduction in the hardware and improved ease of management to the reduced back up and recovery time and the ability to test software configurations before deploying them on a live system. While International Gaming Technology (IGT) had adequate space in their server room, it is for the second set of reasons that they chose to install virtual servers. IGT manufactures electronic gaming devices (slot machines) and develops the software that draws us to the machines and keeps us playing.



IGT was able to virtualize 100 servers (not all servers are able to be virtualized) and saved about 12% of the total energy use of the server area and the air conditioning load. The air conditioning savings represented approximately 68% of the total kW (kilowatt) and kWh (kilowatt hour) savings, which was definitely a bonus for a project that was necessary for reasons outside of energy savings. By far, the largest expense of virtualization is the purchase of the software. One such vendor is VM Ware, which is the software product that was used by IGT.

As a result of this project, IGT will be saving an average of 42 kW of demand use and 372,800 kWh of energy annually. At current electric rates, this enabled the facility to realize an overall annual savings of approximately \$46,600. IGT received an incentive of \$22,492 from NV Energy through the 2008 Sure Bet Program.

Project Results

Average Demand Reduction	42.56 kW
Annual Energy Savings	372,850 kWh
Annual Energy Cost Savings	\$46,606
Custom Incentive	\$22,492.22