Xen.org Case Study

ATG virtualizes over 2,000 remote agency sites

"The open source Xen® hypervisor gave ATG the critical hardware independence needed for our next generation betting terminal"

Jana Persson
Client Systems
Architect, ATG

ATG, the Swedish Horse Racing Totalisator Board, provides the people of Sweden with a meaningful leisure activity by using top-quality trotting and thoroughbred racing as a foundation, and applying an innovative and responsible approach to make betting on horse racing exciting, entertaining and accessible. ATG is charged with working to ensure that Swedish trotting and thoroughbred racing is carried on in such a way that the long-term conditions for the development and geographical distribution of the sport are guaranteed.

The Challenge: Delivering hardware independence for established and future solutions

KEY BENEFITS

Device Independence

Open Source Access

Cost Efficiency
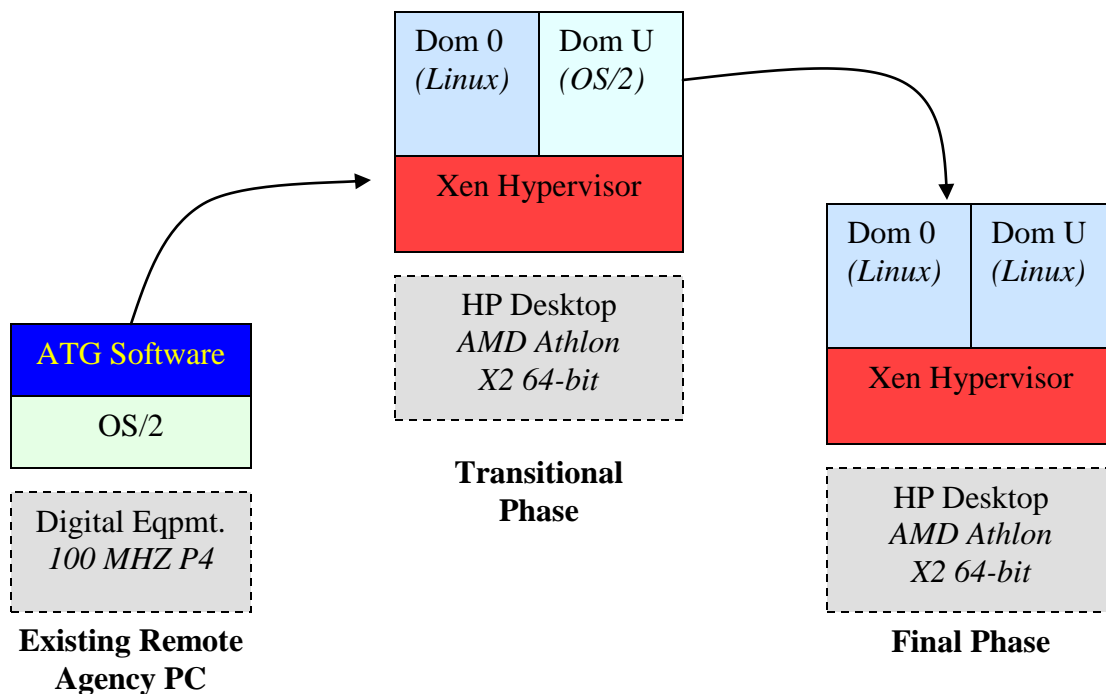
Easy Administration

In 2003, ATG planned to modernize over 2,000 remote personal computers over an extended period of time and needed a cost effective solution that allowed for an evolutionary transition. Moving from OS/2 supported hardware to newer Linux machines required application support for OS/2 as well as the ability for OS/2 and Linux machines to co-exist within their network. ATG also needed a comprehensive solution that allowed them to transition their betting application from an OS/2 dependent program to a new Java, browser based solution.

 "Virtualization provided us with the most cost effective and scalable solution to continue running our existing betting application on OS/2 while being able to deploy new hardware to our remote sites capable of supporting the latest peripherals," said Persson. "We also gained the added benefit of simplified hardware update by uploading new Domain U images over our private network and running configuration files to install and launch updated client systems."

Implementing Open Source Xen Hypervisor

Leveraging the power of virtualization with the industry leading open source Xen hypervisor, ATG deployed new Linux computers to the remote sites that ran OS/2 virtual sessions. "Having an open source solution for virtualization, gave us the freedom and flexibility to make the necessary changes we specifically needed for our solution," said Persson. "We also believed that a Linux operating system gave us the best operating environment for virtualizing not just our existing OS/2 applications but also our upcoming Java and service based solutions," noted Persson.

The figure below shows a typical remote agency PC running the new Xen hypervisor solution during the transition period; Domain 0 is the Xen hypervisor control virtual machine and Domain U is the OS/2 paravirtualized guest running the current ATG betting applications.

In the second phase of the project, the OS/2 betting application is partially moved to the new Java platform capable of running on a new Linux Domain U. In the third phase, all functionality and drivers will no longer be running on OS/2 and the OS/2 Domain U will be removed from the solution.

Joining the Open Source Xen Hypervisor Project
An additional benefit for ATG is the opportunity to influence the development of the Xen hypervisor by not only using the solution but also developing software for the project. Having the ability to directly influence the Xen hypervisor solution to suit the needs of ATG provides a unique opportunity for a customer looking to make a product the foundation of their infrastructure.