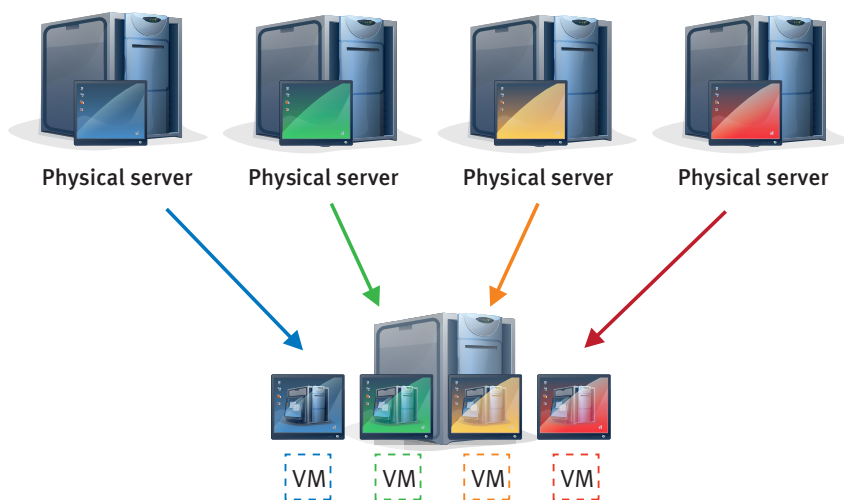


Server consolidation



A U. S. Gulf Coast state's department of transportation plans, designs, and manages the state's transportation infrastructure, including thousands of miles of state highways as well as water, air and rail. Three hundred servers drive advanced applications, ensuring swift and safe traffic flow.



Challenges:

In 2009, the department launched a virtualisation initiative to lower its hardware costs and improve overall hardware reliability, beginning with the 150 servers located in its main data center. They wanted to avoid placing backup agents on each of the many Virtual Machines before they could be backed up. They found that using the same agent-based backup software that was used for physical servers with their new virtual machine environment created numerous problems.

The processing overhead and resource footprint required for each either made it impossible to simultaneously conduct backups for all of the virtual machines on a physical host or they had to reduce the number of virtual machines supported per physical server – which reduced the virtualisation cost savings that were achieved and also left the physical host underused when backups weren't being run.

Ultimately, they decided to stagger their virtual machine backups so that no more than one or in some cases two backups are ever run simultaneously on any machine. This enabled them to retain the cost benefits they obtained from the server consolidation, but resulted in an administrative headache of a magnitude they hadn't anticipated.

Solution:

- Acronis® Backup & Recovery™ 11 Advanced Server
- Acronis® Backup & Recovery™ 11 Virtual Edition

Key Benefits:

- Fast, reliable migrations between physical and virtual machines, using patented, proven Acronis disk imaging technology that has migrated millions of servers worldwide.
- Migrations can be performed instantly or on a scheduled basis.
- Support for all major virtual machine hypervisors- VMware® ESX(i)/vSphere®, Microsoft Hyper-V®, Red Hat® Enterprise Virtualisation, Citrix® XenServer® and Parallels® - in one product.

Implementation:

Acronis® Backup & Recovery 11 Virtual Edition is used to facilitate the company's physical server to virtual server (P2V) conversions. Acronis® Backup & Recovery 11 Virtual Edition is used with VMware® VMotion® for the servers connected on the company's iSCSI SAN and standalone for the internal servers and remote servers that are connected across the Internet.

Results:

With Acronis agentless backup, a single host agent manages the backup tasks of all Virtual Machines on that host automatically. They currently have about 4-6 Virtual Machines per single host running at any given time, and all their backups are coordinated through a single management server that runs as a vApp on one of the servers.

Overall the vApp manages 24 servers each. The backup overhead on the physical hosts is minimal. With Acronis agentless backup, it's one less thing they rely on the virtual machine operating system to do. In fact they found that it's totally transparent to the virtual machine.

Acronis has also provided the key to an accelerated server consolidation strategy with a goal of virtualizing all of the department's 300 servers that could be virtualised. The department used Acronis disk imaging technology, including bare metal restore, to cut the migration time between physical server from several hours to under an hour, saving approximately 80% of the time it previously took to convert physical servers into virtual machines.

The department's virtualisation initiative didn't end there, though. Once their servers were re-invoked as virtual machines they realised that they could not only achieve the benefits of server consolidation, they discovered a new and unanticipated benefit – dynamic virtual machine allocation, reallocation, and hot/warm standby.

They found that Acronis' Instant Restore™ option enabled them to rapidly recover a disrupted virtual machine on another system. When combined with the Acronis® Backup & Recovery™ 11 Universal Restore™ option, that they could recover the virtual machine on a dissimilar physical host platform. This enabled them to include all of their old and new physical servers into their Disaster Recovery Plan. They also discovered that they could use clone copies of virtual machines as test beds for application development, testing, and updates without disruption to their production virtual machines.

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