

Dell Advanced Infrastructure Manager

Safer, quicker, cost effective Data center migration & consolidation

Data center migration and consolidation challenges

In the effort to support business and computing requirements of corporate units, you frequently need to improve upon your existing data center infrastructure. However, data center consolidation and/or infrastructure expansion is filled with risk; and with the complexity of today's computing solutions, system migration can wreak havoc if not executed flawlessly. The replication of the business systems, the acquisition of appropriate hardware and the logistical coordination are all significant challenges that must be addressed — all while maintaining existing quality of service.

- **Business system replication:** While most business systems start from a consistent build, each system will incur new patches and modifications over the course of its operational lifespan. These minor changes can prove difficult to replicate across multiple application tiers as the current environments become extremely complex. Even existing Disaster Recovery systems may not have an exact replica of the code, patches and drivers needed for business systems to function appropriately.
- **Hardware acquisition:** During a data center migration, new hardware must be acquired to allow limited downtime of your business systems. Frequently the hardware currently being utilized is several years old, which poses the challenge of finding similar hardware for business system migration.

All these points coupled with the requirements for limited downtime and accuracy, present a significant challenge for IT organizations to execute effectively, and pose a significant amount of risk as a large-scale data center migration can span months of planning, documenting and preparing.

Reducing the risk and timelines with Advanced Infrastructure Manager (AIM)

Dell AIM decouples the business applications from the physical hardware they run on by creating and retargeting "Personas." This process is significantly easier and more accurate than the exhaustive tasks of inventorying, system building and patching needed to replicate the operating environment. In a Dell AIM managed environment, a "Persona" is a network boot image of the exact operating

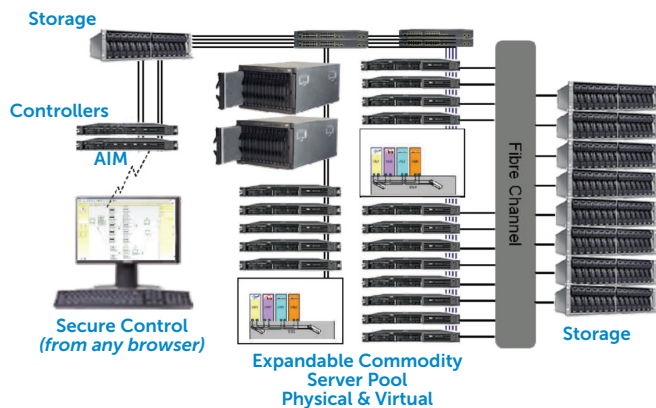
server builds that are run in the production environment. Once a persona is copied to both locations, the AIM controller allows you to configure the appropriate network topology and have the applications available to run at both locations.

Risk mitigation: Allowing the system to be booted from two locations provides you with a smooth transition plan. Systems under the AIM managed environment can be tested in the new location on a nonproduction network with just a few clicks. Once testing is completed and certified, another few clicks will allow the same personas and hardware to be booted into production. Additionally, this provides an immediate "fall back" plan if a problem were to arise at the new location — just power down the personas at the new location and power back the original servers until you feel comfortable migrating hardware from the existing site.

Benefits of Advanced Infrastructure Manager for data center migration

AIM's flexible system persona booting, along with virtualized network and storage connectivity, allows you to:

- **Capture existing business systems configuration:** Creation of personas for existing systems instead of attempting to manually create replicated hardware and software environments
- **Run concurrent business systems:** AIM allows you to have replicated business systems ready for operation at multiple data center locations
- **Leverage existing HA/DR hardware:** Utilizes existing High Availability and Disaster Recovery hardware during the migration to help alleviate the need for additional new hardware acquisition
- **Utilize different hardware platforms:** Facilitates personas to be booted on dissimilar hardware for Windows and Linux Operating Systems



Time to market: Utilizing AIM, IT organizations can quickly create an exact duplicate of the locally booted business systems. Once a system has a network booted persona, AIM provides the ability to run that system on any of the available server pools. This enables you to quickly replicate personas (using AIM or your existing storage replication solution) for migration to the new data center. Therefore, when it's time to migrate, a simple reboot will allow the new location's business system to become the live and active system.

Lower costs: Most of the existing High Availability (HA) and Disaster Recovery (DR) solutions result in excess hardware sitting idle in the data center. AIM's inherent N+1 High Availability allows you to utilize existing HA and DR servers for the migration effort in both data centers, instead of having to acquire new hardware. Additionally, AIM allows business systems to be booted from dissimilar hardware so you may leverage your existing infrastructure. Finally, AIM personas can be booted by bare metal servers or VMware ESX or Microsoft Hyper-V or Red Hat XEN hypervisors, providing the organization even more options from destination operating platforms.

Dell's Advanced Infrastructure Manager, provides your organization with a technology platform to help mitigate the risks, timelines and cost associated with data center consolidations or migrations.

AIM solution overview

AIM is a software solution that enables enterprise data centers to rapidly change which workloads various servers are running and which network and storage topologies those servers can access. It eliminates the need to make physical machine, cable, LAN or SAN changes.

The visible result of deploying AIM is that server repurposing becomes nearly instantaneous — changing system function and topology doesn't require touching physical cables or machines. IT teams can effortlessly rack once, cable once, then reconfigure repeatedly, as needed. Failover is automatic, and data center functionality matches the data center schematic — what you see is what you get.

By using AIM, data centers gain speed and agility, increasing performance while lowering costs. Specific business systems can be dynamically reconfigured as dictated by business priorities, time of day or other policy-based criteria; therefore, less hardware, software and other resources are needed. AIM delivers higher IT asset utilization, less costly failover and disaster recovery alternatives, rapid and efficient test and lifecycle recovery processes and a more easily managed infrastructure.

Summary

Dell AIM is a leading network-aware, just-in-time server repurposing and workload migration software solution available to mission-critical business systems implementers worldwide. Using AIM software, companies have been able to implement cost-effective High Availability solutions and rapid, automated Disaster Recovery solutions, while realizing the benefits of reduced infrastructure overhead, simplified manageability and increased system performance.

Steps for Migration Utilizing AIM

- **Inventory of existing business systems:** AIM controlled network switches and servers are easily inventoried and documented for planned migration.
- **Persona Creation:** Using the AIM toolkit, network boot personas are created as exact duplicates of the existing systems. Network and storage connectivity is "virtualized" to allow systems to be easily migrated.
- **Network booting:** Personas are network booted to new physical or virtual machines, including dissimilar hardware, for Linux and Windows.
- **Replication of personas to multiple locations:** AIM or network storage vendor toolsets are used to copy the personas to different locations. Personas can be booted for either location.
- **Use existing hardware/VMs:** The organization's existing HA/DR hardware and virtual machines are utilized for the migration to lessen the hardware acquisition required.
- **Push personas back to local disk:** After the migration, it's possible to push the personas back to local disk; however, leaving the personas on network storage allows AIM to improve business continuity (high availability and disaster recovery) and increase operational efficiency.

To learn more about how Dell AIM can help you, please visit Dell.com/Dell-AIM

© 2011 Dell Inc. All rights reserved. Dell, the DELL logo, the DELL badge, PowerEdge, and OpenManage are trademarks of Dell Inc. Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Dell disclaims proprietary interest in the marks and names of others. This document is for informational purposes only. Dell reserves the right to make changes without further notice to any products herein. The content provided is as is and without express or implied warranties of any kind.

