



Accelerating data center operations

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Virtualization propels hardware efficiency and minimizes capital expenses but often results in complexity. Dell™ Active System Manager software offers an intuitive, automated, and centralized management framework for converged infrastructure.



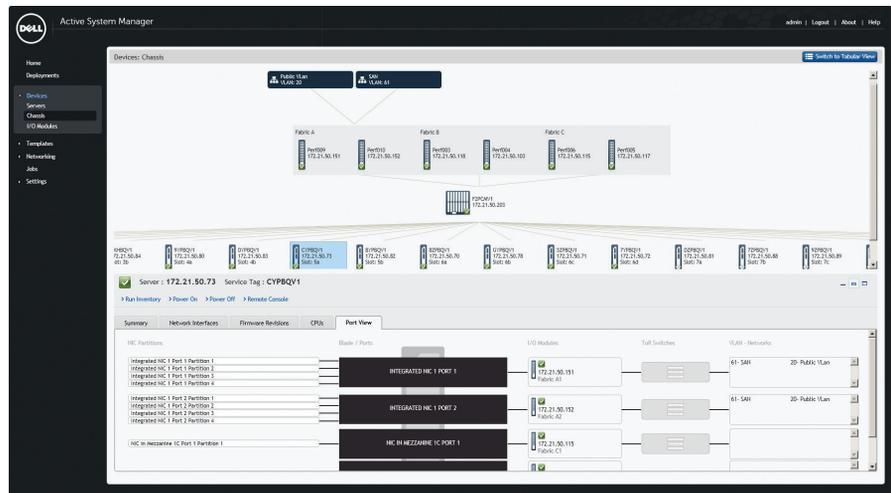
Business conditions can change rapidly in today's world, and keeping pace requires organizations to maintain infrastructure flexibility while controlling costs. Staying on top of dynamic business conditions also requires ensuring that systems run efficiently and fulfill intended requirements aimed at furthering successful business outcomes.

IT administrators and managers that need to react to the ebb and flow of business operations often spend far too much time attending to repetitive, mundane, and manual tasks. Bringing infrastructure onboard or reconfiguring existing infrastructure to meet business needs can be time-consuming and complex. In addition, many tools available today are simply inadequate for the task at hand. Because many of these tools tend to be specialized, multiple consoles are often required to complete desired tasks. The manual steps, dense procedures, and the necessary interaction among multiple teams of IT staff can increase the potential for errors and result in unanticipated delays in getting infrastructure operational according to plan.

Given these challenges, many organizations are leveraging converged infrastructure to help simplify the processes of provisioning and managing their systems. Unfortunately, not all converged infrastructure solutions can streamline provisioning and management processes. Dell Active Infrastructure, a recent converged infrastructure family release, helps IT organizations respond



Figure 1.
Dell Active System Manager:
Centralized configuration
and management of
converged infrastructure



rapidly to business demands, enhance data center efficiency, and strengthen IT service quality. Active Infrastructure is well suited for organizations that are standardizing on x86 server architectures and need a dynamic infrastructure designed to operate in a simplified and automated fashion.

Active Infrastructure provides IT organizations the flexibility to adopt converged infrastructure in the form of a preintegrated system reference architecture—such as the Dell Active System 800—or a custom-built solution. At the core of Active Infrastructure is Dell Active System Manager, an intuitive, workload-centric converged infrastructure manager that streamlines configuration and ongoing monitoring of systems and processes.

Automated template-based provisioning

Dell Active System Manager helps simplify and automate common configuration tasks through implementation of a template-based provisioning model, which enables IT administrators to encapsulate key infrastructure configuration elements in the form of templates. These templates need to be defined only once based on the best practices and policies of the organization. Once templates are defined, they can be applied repeatedly as needed.

Centralizing capture of the infrastructure configuration through templates helps dramatically reduce hardware failure risks and human errors, and it enables consistent and accurate provisioning. There are two types of templates in Active Infrastructure: a management template and a deployment template. A management template establishes a framework for ongoing infrastructure management and encapsulates the following key configuration attributes of a modular chassis and the components within it:

- **Device access:** IP address and credential configuration
- **Security:** Chassis Management Controller (CMC) and Integrated Dell Remote Access Controller (iDRAC) login credentials for administrators
- **Monitoring:** Trap, e-mail, and syslog destinations
- **Time:** Network Time Protocol (NTP) servers and time zone
- **Networking:** Services such as Telnet, Secure Shell (SSH), and Domain Name System (DNS) registration
- **Power policies and configuration:** Redundancy policies

Deployment templates are designed to simplify workload-centric configuration

of compute and I/O resources within the chassis. A deployment template encapsulates the following significant configuration elements that set the foundation for hosting an OS or application:

- Minimum processor and memory requirements
- BIOS settings administrators can use to configure key attributes such as enabling virtualization technology or setting up the system profile for optimal power or performance characteristics
- RAID settings that enable configuring internal drives for hosting an OS or secondary disks
- Boot sequence that administrators can use to set up the desired device order for booting the server
- Boot information that enables administrators to configure the server to boot to an OS logical unit (LUN) image on shared storage, to internal Secure Digital (SD) drives, or from the network for OS provisioning or stateless deployments
- I/O connectivity that allows for configuring the logical network interface cards (NICs) for Ethernet, Internet SCSI (iSCSI), or Fibre Channel over Ethernet (FCoE) access and assigning bandwidth characteristics to meet application service needs

By leveraging management and deployment templates, Active System Manager automates the configuration of the infrastructure, enabling IT to enhance operational efficiency and rapidly reprovision or add capacity in response to changing business needs. In situations of planned or unplanned downtime, such as hardware upgrades or failures, administrators can use Active System Manager to rapidly move an active deployment to a different set of hardware. During the migration process, the network identity information moves to the new server to allow a seamless transition without requiring the network or storage to be reconfigured.

Administrators can also detach a deployment from a server to erase identity and return the server to a pool of available servers. The identity is still associated with the deployment and can be reattached later to a different server.

Infrastructure life-cycle management

Dell Active System Manager provides comprehensive life-cycle management of the hardware infrastructure from initial setup and discovery through provisioning, ongoing maintenance, and decommissioning of the chassis, I/O module, and server. Administrators can use Active System Manager to discover, inventory, and configure the chassis, blade servers, and I/O modules. Hardware inventory, health status information, and physical and logical topological connectivity from the hardware infrastructure to the logical networks can be viewed on the same console. Active System Manager also provides a view showing connectivity from the logical network partitions on the servers to the ports, I/O modules, top-of-rack switch, and logical networks (see Figure 1).

To help simplify infrastructure life-cycle management, the intuitive, easy-to-use Active System Manager interface presents multiple guided user workflows. The Getting started page in the Active System Manager console provides the following steps:

1. Discover and inventory the chassis and the blade servers and I/O modules within the chassis.
2. Create management templates that define network, security, and monitoring policies within the chassis.
3. Configure the chassis using the management templates. The chassis is also upgraded to the minimum required firmware to enable manageability of the infrastructure.
4. Create a deployment template that configures the networking and boot configuration for the server.
5. Use the deployment template to deploy one or more servers.

The Active System Manager interface and management framework helps shorten response time to changing business needs and get newly procured hardware into production quickly. Because Active System Manager is a Web-based application, administrators can use it for remote access to its single, centralized console for configuring and managing the infrastructure. And its role-based model provides support for administrator and operator roles.

Rapid response in dynamic environments

Business environments are often subject to rapid, dynamic changes that require organizations to be flexible, agile, and responsive to business needs. Many organizations realize the importance of a cost-effective infrastructure that can support operations efficiently and help grow the business. Dell Active System Manager enables organizations to leverage converged infrastructure by helping simplify and automate configuration, deployment, and management.

The Active System Manager template-based model minimizes the steps required for configuration. Its single, centralized console is designed to simplify management and maintenance, enabling IT professionals to not only be responsive when business needs change, but also spend more time on strategic rather than manual maintenance operations. 

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Dell Active Infrastructure:
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