Dell Force10 Network automation
Open Automation Framework

Increase network flexibility, availability and manageability in virtualized data center environments; reduce operational expenses with network automation; ensure architectural freedom through open, industry standards-based approach.

Enhanced network flexibility, availability and manageability

Dell Force10's Open Automation framework leads the industry providing an open standards-based automation solution for data center operations. The portfolio offering allows data centers big and small, virtual and conventional, to simplify operations, while increasing operational efficiency and deployment velocity.
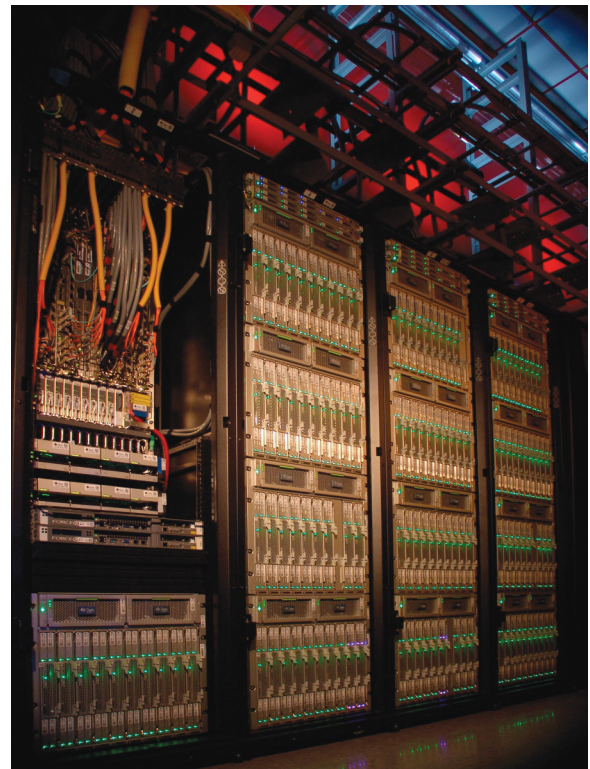
Key benefits

- Faster network installation and configuration
- Eliminate network switch configuration errors
- Improve manageability and availability with standard configurations
- Enable improved network monitoring
- Enable customized network management
- Enable accelerated network problem identification and resolution
- Reduce operational expenses
- Easy script development
- Automated VLAN provisioning in virtual environments
- Maintain network connectivity and security policies in virtual environments
- Support for VMware vSphere 4.0 and 4.1
- Support for Citrix XenServer 5.6
- Simultaneously support multiple hypervisors
- Support for third party system management tools
- Supports advanced Web GUI access with customizable features

> Tools to enable data center managers with the capabilities required in today's dynamic, virtual data center environments

The Open Automation Framework is comprises a suite of inter-related network management tools that can be used together or independently. These tools provide data center managers with a complete set of capabilities required in today's dynamic, virtual data center environments:
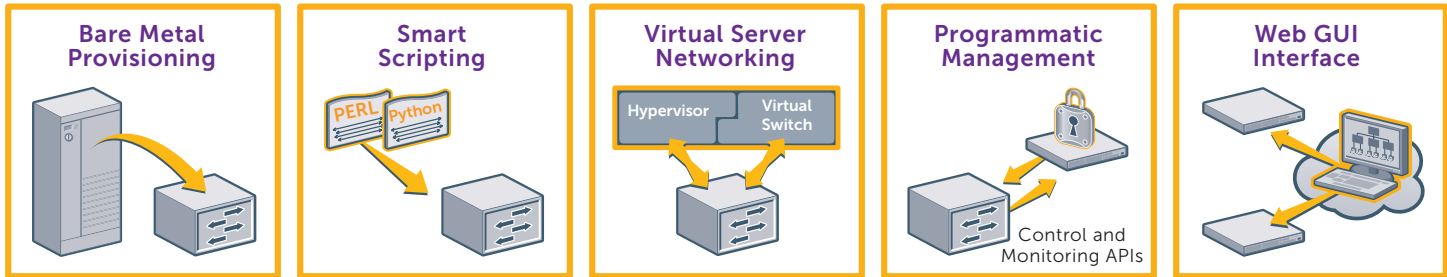
- **Bare Metal Provisioning** reduces installation time, eliminates configuration errors and enforces standard configurations by automatically configuring network switches.
- **Smart Scripting** improves network monitoring and management with a robust, Perl/Python scripting environment.
- **Virtual Server Networking** increases network flexibility by automatically provisioning VLANs when VMs are migrated.
- **Programmatic Management** simplifies network management by integrating with multiple third party system management tools.
- **Web GUI Interface** extends web connectivity to Dell Force10 platforms via an extensible web GUI enabling custom GUI solutions while simplifying management.

Dell Force10 Open Automation Framework enables network automation in complex data center environments.

Network automation: Open Automation Framework

Bare Metal Provisioning	Smart Scripting	Virtual Server Networking	Programmatic Management	Web GUI Interface

Bare Metal Provisioning

Automated Bare Metal Provisioning

Automatic network switch configuration

- Reduce installation time
- Enforce standard configurations
- Eliminate configuration errors
- Simplify OS upgrades

Smart Scripting

Perl & Python Dynamic Scripting

Perl & Python scripting environment for custom monitoring and management

- Increase network uptime
- Reduce time for problem resolution
- Improve configuration mgmt and auditing

Virtual Server Networking

Hypervisor – Switch Communications

Virtual Machine/Virtual LAN interworking, management and provisioning

- Increase data center flexibility
- Maintain network connectivity and security with VM migration
- Reduce OpEx

Programmatic Management

System Management Orchestration

Seamless integration with programmatic interfaces and system management tools

- Simplify network management
- Minimize number of management tools
- Reduce OpEx

Web GUI Interface

Web Based Management

Web based system control and user interface

- Ubiquitous management access
- Simplify management tasks
- Extensible Web GUI for custom user interface environments

Bare metal provisioning

Automated bare metal configuration reduces operational expenses, accelerates switch installation, simplifies OS upgrades and increases network availability by automatically configuring Dell Force10 switches. This eliminates the need for a network administrator to manually configure the switch, resulting in faster installation, elimination of configuration errors and enforcement of standard configurations. Upon installation, the Dell Force10 switch searches the network for a DHCP server. The DHCP server provides the Dell Force10 switch with an IP address and the location of a TFTP server. The TFTP server maintains a configuration file and an approved version of FTOS, the operating system for Dell Force10 switches. The Dell Force10 switch automatically configures itself by loading the configuration file and FTOS.

Smart scripting

Smart scripting increases network availability and manageability by allowing network administrators to deploy custom monitoring and management scripts on Dell Force10 switching platforms. With this capability, network administrators can implement version control systems, automatically generate alerts, create custom logging tools and automate management of network devices. Virtually any function that can be performed through the CLI can be implemented with smart scripting. Smart scripting provides a scripting environment that supports Perl and Python, making it easy for IT administrators to quickly develop scripts without having to learn a new scripting language.

Virtual server networking

Virtual environments require network infrastructure to be dynamic in order to ensure network connectivity and security policies are maintained when VMs are migrated. Virtual server networking facilitates communications between Dell Force10 network switches and virtual machine management software to orchestrate automated VM/VLAN provisioning and virtual machine migration. This is a powerful capability that great simplifies the many of the tasks associated with virtualized computing environments. Our virtual server networking software supports VMware vSphere 4.0/4.1 and Citrix XenServer 5.6.

Programmatic management

Programmatic management greatly improves network manageability by allowing Dell Force10 network devices to be managed by third party system management tools via standard programmatic interfaces. The programmatic management environment and set of interfaces communicate directly with third-party system management tools, avoiding the need for a dedicated network management tool.

Web GUI Interface

Ease and breadth of connectivity remain a paramount necessity for both equipment and development communities. The Web GUI Interface addresses Web connectivity in a general sense for Dell Force10 platforms but also offers more advanced capabilities to help simplify management tasks and customize GUI environments. The advanced Web user interface is a significant step up from traditional web-based switching platforms interfaces. Customers can simply and easily tailor management and user interfaces with either in-house or third-party tools to create custom management and GUI environments.

Network automation: Open Automation Framework

Avoid vendor lock-in

The Open Automation Framework provides IT managers the flexibility to deploy network automation without vendor lock-in. By supporting industry standards and developing a strong eco-system of technology partners, Dell Force10 gives IT managers the choice to select hypervisor and system management technology partners that best meet their needs.

Specifications

Smart Scripting

> Perl
> Python

Virtual Server Networking

> VMware 4.0, 4.1
> Citrix XenServer 5.6

Programmatic Management

> XML
> HP Network Automation software

Learn more at Dell.com/Networking