

**Virtual Networking Made Easy:**

*Simplify and centralize management of your virtual environment for faster, easier and more secure configuration at lower costs.*

**Virtualization Challenge**

As demand for greater processing resources has continued to outstrip available floor space, rack space, power and air-conditioning in the data center, the market has turned to virtualization in order to maximize the resources available.

With the majority of today’s data centers deploying virtualization, it is necessary to find ways to simplify management while improving availability and security. Some of the pain points and obstacles to virtualization are found in the network and preparing destinations for virtual machine (VM) migrations. For example, the wrong QoS settings can cut off an application; the wrong VLAN can result in the application not being able to connect to the network and wrong ACL’s can compromise security. Today, many administrators are faced with the difficult task of manually configuring all networking settings in advance to anticipate all VM movements, potentially opening the network to security holes and configuration errors.

Another management area that some are looking to address is with “stacking,” which allows IT to manage multiple switch modules as if they were a single device. By connecting multiple switches together using high-speed interfaces, IT can increase availability, reliability and recoverability as server administrators are no longer constrained by a single chassis system for implementing complex, highly available topologies.

BLADE Network Technologies’ integrated software solution, SmartConnect<sup>™</sup> with VMready<sup>™</sup> is designed to maximize the benefits of virtualization in the server environment while eliminating the exposure to error that exists in the traditional networking environment.

Features and Benefits of SmartConnect with VMready	
Feature	Benefit
Single switch image, single firmware file, single configuration file	Ease of administration and manageability eliminates opportunity for errors due to configuration or release-level mismatch
Platform-independent GUI for simplified device and group configuration	Intuitive, rapid deployment of virtual environments into the network, with single configuration and intelligent replication of attributes
Group definition and isolation	Association of related services and network elements in secure, easy-to-manage domains
VMotion and VM awareness	Intelligent response to motion events in the virtual environment, guaranteeing appropriate provisioning for Virtual machines

VMready provides the tool that the administrator needs in order to implement the underlying virtual environment: VMready can:

- Learn and adapt to the virtual implementation on the attached physical hosts.
- Assign network policies on a VM level to guarantee the appropriate allocation of networking resources.
- Automatically monitor and detect events in the virtual environment so that network policies remain associated with their virtual machines no matter where they reside in the environment. This ensures the single, simple initial configuration eliminates errors and maximizes service availability at all times.

## Why SmartConnect with VMready?

### Leverage Investment in Administrator Expertise

IT is constantly being forced to do more with less with an already stretched team. SmartConnect with VMready can help your teams simplify the configuration of existing virtual environments to maximize reliability and availability, while also extending the investment into the network with Virtual Switch Groups.

### Improve Service Delivery

Enterprises rely on their networks to support new services and capabilities. Virtual Switch Groups logically align the network switch with the topologies and provisioning architected by the server administrator, so that the desired optimal topology is extended into the network, preserving service level commitments.

### Simpler Management with Stacking

Support for up to 8 switches in a stack further simplifies deployment and day-to-day management.

### No Impact on Performance

Unlike other solutions on the market, SmartConnect with VMready leverages switch-resident software to maximize the number of Virtual machines per server and does not rob server CPU cycles.

## Open to Your Choice of VM Providers

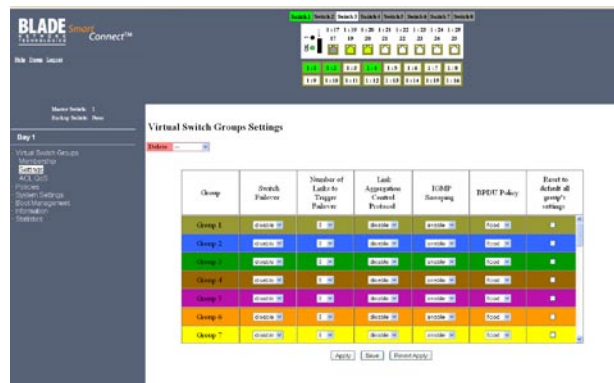
BLADE has leveraged an open design that will work with all leading VM providers. In addition, it will interface to management platforms so data on VM usage can be exported for accounting, change management and more.

## Network Provisioning

Automated network settings for VM movement help ensure that network settings migrate with the Virtual Machines.

Ensure critical attributes of Virtual Machines so that access control, security and quality of service (QoS) are maintained by the network.

- Access Control Lists (ACL's)
- Quality of Service (QoS)
  - 802.1p
  - Port queues
  - DSCP remapping
- Virtual LAN membership
- Domain isolation



## Manage Multiple Virtual Machines with Group Membership

After initializing the switch, automatically discover Virtual machines as they appear on server interfaces. Select the MAC addresses of the Virtual machines you wish to configure and assign them to the appropriate group. SmartConnect with VMready will automatically move the configuration to any port on which the VM appears.

## Configure and Monitor Network Attributes to Ensure Efficient, Easier and Secure Administration of the Virtual Environment

Use SmartConnect's intuitive Browser Based Interface (BBI) to extend the virtual environment into the network. From controlling access to virtual machines, to finely tuning resource allocations, the SmartConnect BBI with its graphical depiction of Virtual Switch Groups provides maximum flexibility and ease for server administrators.

- Set low-water thresholds for failover scenarios
- Enable IGMP support
- Control broadcast storms
- Assign QoS attributes to
  - Virtual Switch Groups
  - Ports or groups of ports
  - Individual Virtual Machines
- Remap QoS attributes for continuous service paths
- Restrict users with role-based hierarchy

Use BLADEHarmony Manager to centrally administer, monitor, and report across all SmartConnect with VMready-based switches. This includes network-wide reporting of the Virtual Switch Group and Stacking configurations.

BLADEHarmony Manager also interfaces to the leading virtualization vendors' management software to provide additional details about the discovered virtual machines.

## Which Products Support SmartConnect with VMready?

SmartConnect with VMready software is supported on the following products:

- BNT 1/10G Uplink Ethernet Switch module for IBM BladeCenter (IBM product number 44W4404). The software is included in the price of the switch and covered under the life of the warranty.
- HP 1:10Gb BL-c Switch for HP BladeSystem (HP product number BNH-00104-33). The software is available for purchase through BLADEHarmony Premium Services, at <http://www.bladenetwork.net/BLADEHarmony-Premium-Services.html>.

