

HP FlexFabric Virtual Switch 5900v



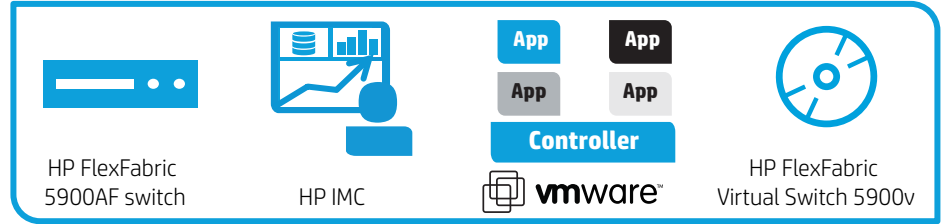
Accelerate and secure the virtual access

Product overview

The new HP FlexFabric Virtual Switch 5900v, in combination with HP Intelligent Management Center (IMC) and HP 5900AF Virtual Ethernet Port Aggregator (VEPA) capable switches provide a robust solution for monitoring, securing, and managing virtual machine (VM) traffic.

This solution brings together the extensive management tools of IMC, the rich virtualization features of the 5900AF Top-of-Rack (ToR), and the power of the new virtual switch 5900v. It also builds on the already established HP IMC and VMware vCenter management integration to deliver a diverse and extensible solution that is ready for extending HP software-defined networking solution to VMs.

Figure 1. HP FlexFabric Virtual Switch 5900v, a complete solution



Accelerate and simplify the virtual server access

The HP 5900v switch is a kernel-based software solution in the form of a logical switch. This Virtual Switch replaces standard vSwitch in the VMware ESXi infrastructure to deliver advanced networking capabilities. The HP Virtual Switch 5900v provides each VM with a dedicated switch port. The seamless integration of the 5900v switch preserves the established roles and policies and works within the virtual environment without requiring changes or causing disruption. The 5900v switch is designed to support the industry-standard VEPA technology (802.1Qbg), also known as Ethernet Virtual Bridging (EVB), in conjunction with the 5900AF top-of-rack switches.

The Virtual Switch 5900v communicates with the VEPA-enabled 5900AF switches at the link layer using VEPA forwarding and Virtual Station Interface (VSI) Discovery and Configuration Protocol (VDP). In other words, the 5900v switch passes the VM-VM traffic through the 5900AF switches giving full visibility of that traffic to network administrators.

With the newly acquired visibility of the VM-VM traffic, network administrators can define, apply, and manage network policies and services at the VM level using the

HP IMC management capabilities. The full visibility of the VM-VM traffic opens the door for monitoring (using sFlow in hardware), managing, and securing (using hardware based/TCAM ACLs) that traffic to remove potential threats and to simplify management tasks and policies.

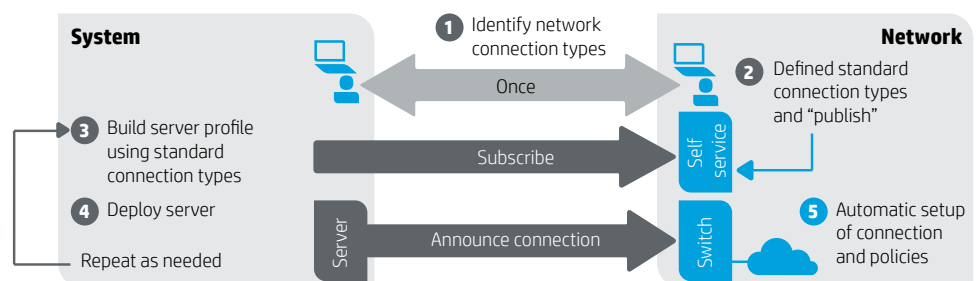
One of the main concerns of enterprises is the inability to track VM resources during and after vMotion activities. The FlexFabric Virtual Switch 5900v in conjunction with HP IMC and HP 5900AF switches removes that problem. With the VM networking policy defined at the VM level, these profiles automatically migrate in tandem with VMs without intervention from networking administrators.

As VM workloads move from server to server, or across racks, the FlexFabric Virtual Switch 5900v and IMC maintain clear and full visibility of configuration and topology changes and ensure that network and security policies automatically follow VMs. This allows VMs maintain their assigned resources and continue to operate as expected.

HP IMC automates Virtual Switch network policies

HP IMC Virtual Application Networks (VAN) Connection Manager module plays a critical role in providing a unified view of the physical and virtual switching infrastructure.

Figure 2. Establishing connections made easy



The IMC VAN Connection Manager module interacts with the VMware ESX vCenter via a plug-in interface to track the creation and movement of VMs. You can use HP IMC to create network policies that can be assigned per application or VM.

IMC enables you to provision, apply, and manage standard networking policies, such as access control lists and quality of service to VMs using familiar tools used to manage physical switches. These policies migrate in tandem with VMs providing simple, automated, and consistent application of network policies without the intervention of network administrators.

HP 5900AF accelerate Virtual Switch network policies

The HP 5900AF Top-of-rack (ToR) access layer switches are a corner stone of the HP 5900v switch solution. Through the support of industry-standard EVB and VEPA, the HP 5900AF ToR switches provide the foundation needed to interact with, and enable the Virtual Switch in the VMware ESXi environment.

The IEEE 802.1Qbg standard defines the interaction between the Virtual Switch environment and the infrastructure physical switch. EVB enables the management of VM traffic by using VEPA and VDP protocols. This makes the VM movement or mobility across the network possible. It also gives network

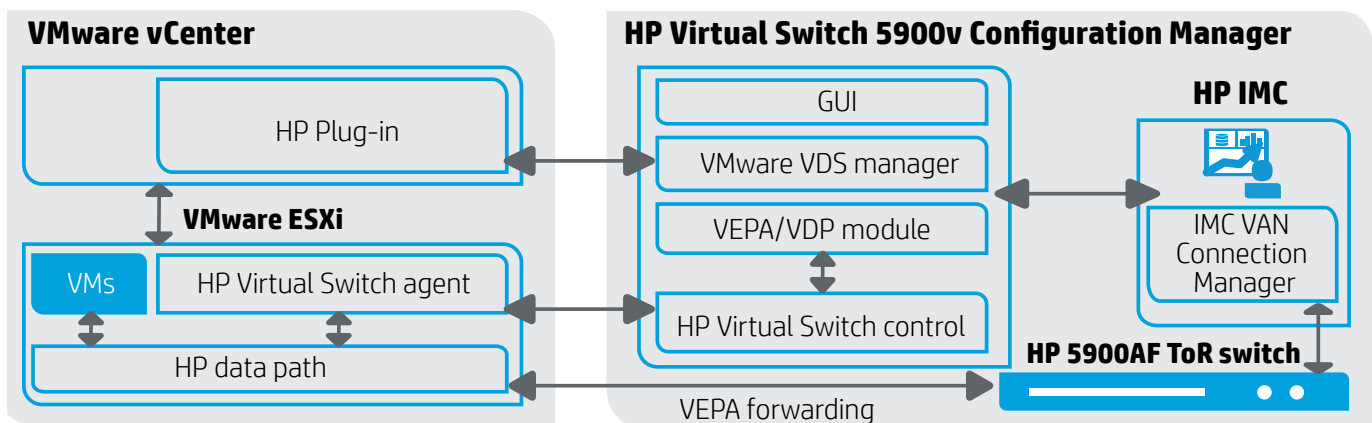
administrators the means to create and automate migrations of VM profiles.

After a VM is created and installed, with the support of EVB and VEPA, it communicates through the 5900v virtual switch to the 5900AF physical switches and IMC to automatically provision the appropriate network policies. The provisioned policies reside on the 5900AF physical switch and can be executed at line rates when applied against the specific VM traffic.

Processing network-related policies and tasks, the 5900AF ToR switches offloads the host server CPU of these tasks, which frees the host server resources to execute business applications.

Dedicated networking resources speeds the execution of networking tasks and accelerates the VM-related processes at the server access.

Figure 3. HP FlexFabric Virtual Switch 5900v, a modular solution



Key benefits

- **Lower costs:** You don't need a dedicated hardware appliance. The FlexFabric Virtual Switch 5900v is a well-thought-out integration of industry standards, powerful access switches, management tools, and VMware infrastructure that deliver a unique VM solution. The kernel-based software solution eliminates the need for intrusive and costly hardware appliances.
- **Simplify virtual server access:** Automatic VM-VM profile and policy migration simplifies workload mobility when using VMware vMotion. The network policies and profiles created with the HP IMC and FlexFabric Virtual Switch 5900v migrate in tandem with VMs when using vMotion without requiring intervention by network administrators.
- **Extend the reach of HP IMC to VMware environments:** Our groundbreaking,

complete Virtual Switch solution includes industry-leading management application and powerful L2/L3 access switches. The HP 5900v FlexFabric Virtual Switch 5900v works in conjunction with HP IMC management and HP 5900AF switches to extend the HP VAN connection manager to the VMware environments. Network administrators can apply networking policies at the VM level.

• **Improve network performance:** The HP 5900AF ToR switches with VEPA support provide an offload or acceleration capability relative to performing the same functions within the VMware ESX hypervisor. Realize network performance improvements depending on the specific features you have enabled.

• **Return CPU cycles to business applications:** The FlexFabric Virtual Switch 5900v working hand in hand with the 5900AF

ToR switches offloads networking-related processing from the host. The freed host resources help support more applications and VMs more efficiently, improving data center performance.

- **Simplify VM network management:** You can use familiar management tool found in HP IMC to apply standard network policies to VMs.
- **Monitor and secure VM-VM traffic:** With full visibility of VM to VM traffic, leveraging hardware-based sFlow in the 5900AF switches, you can monitor and secure that traffic to improve data center security and performance

Availability

The HP FlexFabric Virtual Switch 5900v will be available Q4 2013. Pricing is not yet available.

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