



Bitdefender®

Virtualization-centric Security for VMware Environments

In an ever-evolving virtualization landscape, security and compliance remain key concerns for organizations looking to adopt cloud computing models. Current approaches to security for datacenters still rely on traditional in-guest agents that are too resource-heavy and difficult to manage in virtualized environments. Such legacy solutions hamper performance and can cause major degradation of service during maintenance or scanning processes, as they are directly anchored to the computing resources of the physical hosts.

Bitdefender joined the VMware ecosystem of security partners to collaborate together in developing jointly integrated solutions that improve business by improving IT provision. Working with a member of the VMware Partner network means customers have a choice of committed, trusted security providers who are ready to help move the business forward. Together with the market leader in virtualization technologies, Bitdefender delivers a highly-optimized integrated solution, which accelerates cost efficiency and IT performance across the datacenter.

The Benefit of Centralizing Antimalware Functions in VMware Environments

Security for Virtualized Environments by Bitdefender has been designed, from day one, to increase the return on virtualization investment by seamlessly integrating with VMware's vShield Endpoint solution. Unlike legacy solutions, which require full antivirus clients to be installed on each guest, Bitdefender delivers a dedicated virtual machine to perform regular antimalware activities outside of the protected guests. This robust model saves crucial resources on the physical hosts that would otherwise be wasted during scan and update processes.

VMware vShield provides comprehensive protection for virtual datacenters and cloud environments at all levels—host, network, application, data and endpoint. It enables organizations to strengthen application and data security by providing protection against network intrusion, improving the performance of virus and malware protection for endpoints, improving the visibility and control of sensitive data, and accelerating IT compliance across the enterprise.

Included in the vShield suite, VMware vShield Endpoint solution delivers a modern framework, which allows security software components to be tightly integrated through a series of advanced libraries and APIs.

The vShield technology uses a thin driver to offload main antivirus events from the virtual machine to a hardened virtual appliance, delivered within the security software, which hosts the scan engines. Communication between the two components is realized through the VMware Endpoint Security (EPSEC) API, which enables file activity introspection at the hypervisor level.

For increased management and monitoring across the datacenter, vShield Endpoint plugs directly into vCenter, the management component for vSphere. It also provides access to third-party logging and auditing tools via REST (Representational State Transfer) APIs and the vShield Manager while efficiently protecting against data leakage.

Powered by the vShield Endpoint technology, Bitdefender implements centralized scanning on a tamperproof virtual machine. This integrated model increases performance indicators while saving critical amounts of system resources and eliminating the need for locally-installed antivirus agents.

Due to centralization of the main antimalware functions, Bitdefender also prevents AV storms or other resource contention scenarios, which occur with legacy solutions during simultaneous scan or update routines. While contributing to higher consolidation ratios through minimal resource consumption, Bitdefender guards the virtualized environments, always updated and alert.

The combination of virtualization and security expertise of VMware and Bitdefender will deliver ongoing value to our customers by offloading key antimalware functions to a security virtual machine for improved performance.

**Parag Patel, Vice President
Global Strategic Alliances, VMware**

Comprehensive Protection for Virtualized Environments

Bitdefender delivers a comprehensive security solution for virtualized datacenters, protecting both server and desktop systems, which run under Windows, Linux, or Solaris. Security for Virtualized Environments by Bitdefender has been designed on a remarkably scalable architecture, which incorporates patent-pending technologies designed to accelerate the security processes outside of vShield Endpoint coverage. Based on a series of multi-layer caching mechanisms, which deduplicate the antimalware effort, Bitdefender technologies provide a high level of performance and scalability while ensuring comprehensive protection adaptable to any virtualized environment.

Committed to providing comprehensive, best-of-breed security, Bitdefender has adapted its powerful engines to the unique requirements of virtualized environments by adding process and memory scan capabilities across all platforms. File system scan proves ineffective when an operating system has infected memory or process sections, since malicious code will regenerate itself on the file system. Both running and dormant virtual machines can be the targets of stealth rootkit injections, which may be replicated to other containers within the same host, so process and memory scan is often more important in virtualized environments than in physical ones.

Main Components of Security for Virtualized Environments

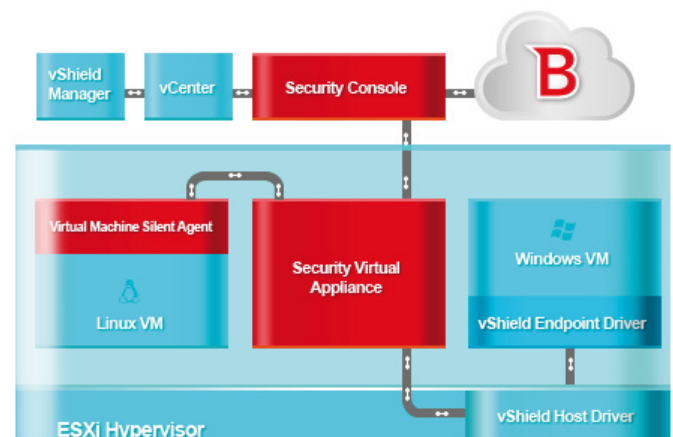
Bitdefender delivers a simplified package based on an innovative architectural framework comprising of:

Security Virtual Appliance (SVA): A dedicated security machine running on a hardened Linux server installed on each physical host. It is the single location for Bitdefender's scanning engines and signature updates. Connected to the protected guests through vShield EPSEC drivers, SVA supports scheduled, on-access and on-demand scanning and thus deduplicates the antivirus-associated load. It is made up of four modules, which plug in directly into the vShield Endpoint Library: powerful scanning engines, signatures database, scan managers and smart cache mechanisms.

Silent Agent: A lightweight in-guest component, with a very small footprint (up to 4 MB of disk and 6 MB of memory). It extends vShield support by accommodating process and memory scanning on the protected guests. Silent Agent also provides a straightforward interface displaying the local security status and notifications in order to raise end-user awareness. This component is optional in VMware environments and can be easily deployed and configured on any Windows, Linux or Solaris guest systems.

Security Console: An intuitive, web-based interface that acts like a security hub for the virtualized environment. Integrated with VMware vCenter server for enhanced visibility, the console is the central point of management and monitoring over the protected VMs. Bitdefender Security Console enables the deployment of Security Virtual Appliances and Silent Agents, provides a centralized quarantine and enforces policy throughout the virtualized datacenter. It also delivers advanced information on the security status of the protected machines through a real-time dashboard and on-demand, scheduled or recurrent reporting.

With its powerful set of easily-manageable components, Security for Virtualized Environments decouples the dependencies on physical infrastructure and builds a highly secure environment to efficiently protect datacenter investments.



About Bitdefender

Bitdefender is a global company that delivers security technology in more than 200 countries through a network of value-added alliances, distributors and reseller partners. Since 2001, Bitdefender has consistently produced award-winning security technology, for businesses and consumers, and is one of the top security providers in virtualization and cloud technologies. Through R&D, alliances and partnership teams, Bitdefender has created the highest standards of security excellence in both its number-one-ranked technology and its strategic alliances with some of the world's leading virtualization and cloud technology providers.

About VMware

VMware is the leader in virtualization and cloud infrastructure solutions that enable businesses to thrive in the Cloud Era. Customers rely on VMware to help them transform the way they build, deliver and consume Information Technology resources in a manner that is evolutionary and based on their specific needs. With 2011 revenues of \$3.77 billion, VMware has more than 300,000 customers and 25,000 partners. The company is headquartered in Silicon Valley with offices throughout the world and can be found online at www.vmware.com.

