

## aCelera Enterprise - Virtual Appliance for Application Acceleration

### Acceleration in a Virtual Appliance: More Applications to More Users for Less Cost

Today's enterprises are implementing consolidation initiatives to reduce the amount of hardware which is consuming ever-increasing amounts of space, energy and IT dollars. Even in small to medium sized companies, IT managers have multiple systems and proprietary appliances, including application acceleration appliances, collocated in data centers and branch offices, requiring separate and costly maintenance and management. This proprietary, single-purpose hardware approach to supporting applications is inefficient, hard to manage, and expensive. aCelera saves IT organizations more than 60% in WAN optimization TCO over 3 years when compared to proprietary hardware appliances.

To support the flexibility of the modern virtualized enterprise, or cloud computing environments, and still gain the remote access performance benefits of application acceleration, IT managers must consider a solution that leverages a virtualized infrastructure as well as integrates application acceleration. Now with aCelera Enterprise, application acceleration can be delivered in software and deployed as a virtual appliance. aCelera Enterprise provides a more scalable, flexible, cost-effective, and manageable solution for IT managers and their remote users than traditional proprietary application acceleration or WAN optimization approaches.

### aCelera Enterprise Virtual Appliance for Application Acceleration

Certeon's aCelera Enterprise is a Virtual Appliance that runs natively within a Hypervisor and provides true application acceleration across the wide area network (WAN). aCelera software delivers the same reduction in application response time as its proprietary hardware appliance counterparts do, with the added benefit of eliminating the hardware footprint and high cost of separately managed, single-purpose boxes.

Supported on industry-standard server hardware and virtual machine operating systems such as VMware ESX or ESXi, Microsoft Hyper-V, Citrix XenServer, Red Hat KVM, and Microsoft Windows Server 2008 R2, aCelera delivers a more than 95% reduction in application response time to remote branch office users.

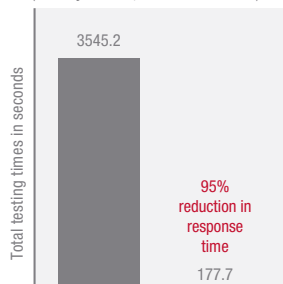
### aCelera Enterprise Benefits

Provisioning aCelera Enterprise as a VA inside a virtual operating system allows other virtualized applications to benefit from aCelera's performance enhancements. aCelera Enterprise also enables IT managers to allocate application performance and system resources on demand and where they are needed most. aCelera Enterprise appliances can be provisioned from a VM management system such as Microsoft System Center Virtual Machine Manager or VMware VirtualCenter — the same central systems that monitor and control all virtual operating systems and virtualized applications.

Finally, the cost and performance benefits of aCelera Enterprise application acceleration enable IT managers to deploy virtualized applications to remote branch offices faster and more easily, bringing greater productivity to all users.

### CIFS, HTTP, and HTTPS uploads and downloads

(Latency: 200ms, Bandwidth: 1 Mb/s)



### Performance

- Reduces remote application response times by more than 95%\*
- Reduces network bandwidth utilization by more than 95%\*

### Scalability

- Supports 50% more accelerated connections than hardware appliances
- Scales linearly with the addition of CPU cores, memory and disk
- Supports single instance (de-duplicating) history store for maintaining larger histories

### Virtualization

- Leverages the benefits of dynamic virtualized and cloud computing environments
- Saves IT organizations over 60% in WAN optimization costs

### Management

- Enables easier management of virtual and deployment, transparent addressing, statistical performance dashboard, and auto discovery
- Provides centralized provisioning and management through integration with virtualization management systems

### Virtual Appliance

- Ready-to-load software for any industry standard server
- Uses minimal system resources and can reside with other applications

### Supported Virtual Machine Operating Systems

- VMware ESX or ESXi
- VMware vSphere
- Microsoft Windows Hyper-V
- Microsoft Windows Server 2008 R2
- Citrix XenServer
- Red Hat KVM

\* Acceleration results may vary based upon traffic type.

## Performance

aCelera Enterprise delivers up to 95% reduction in application response time when accessing applications over the WAN. aCelera's optimal performance is delivered with minimal server overhead.

## Why Distributed Enterprises Need WAN Optimization

Enterprise users who are local to corporate data centers typically experience great performance when accessing applications and services over a LAN. However, their counterparts in remote offices experience very different results when accessing those same resources over the WAN. Accessing applications across a WAN introduces network congestion, latency, and packet loss that can dramatically slow remote end user response time. Many IT organizations increase their spending by adding more network bandwidth to address these issues, only to find that poor application response time over the WAN has not changed.

With the addition of virtualization, many enterprises are consolidating servers into corporate data centers. But the consolidation of applications out of the branches and into the data centers even more strain on the corporate WAN. In some cases, this degrades end user response time even further.

To correct these problems, IT managers use WAN or network optimization appliances. These proprietary appliances sit at both ends of the network

and attempt to mitigate the network impact on performance. These devices use techniques such as data packet compression, caching, and protocol optimization to reduce end user response time.

## Application Acceleration vs. Network Optimization

Application acceleration is all about reducing application response time. Application acceleration is different from what is typically referred to as appliance-based WAN optimization in that it not only performs data packet compression, history store, differencing and protocol optimization, but also knows enough about an application's semantics to effectively reduce the amount of application traffic being transmitted over the WAN. Effective application acceleration techniques, such as Certeon's unique Stream Based Differencing, can identify and reduce application traffic to only the essential data objects (i.e., changes). By reducing the amount of data traffic sent over the WAN, application response time can be dramatically improved.

## aCelera Enterprise Virtual Appliance Acceleration

aCelera Virtual Appliance software is a full-featured application acceleration solution but without the proprietary hardware. aCelera can be downloaded onto a remote server and lives inside a VM system infrastructure. It can be

deployed wherever it is needed, and it can be dynamically provisioned for whatever the user workload is in that location. As just another virtual application on a VM, aCelera Enterprise can be managed and controlled by the central management tools provided by the VM operating environment. aCelera runs on any standard server hardware. aCelera has been tested and certified on Microsoft's Hyper-V and VMware ESX and ESXi systems as well as Citrix XenServer, Red Hat KVM and Microsoft Windows Server 2008 R2.

In addition, aCelera Enterprise is based on Certeon's patent-pending Application Intelligent Networking techniques. These techniques include Stream Based Differencing which enables aCelera to difference more volumes of data faster and Acceleration Blueprints. Acceleration Blueprints teach the acceleration software VA the language of the specific protocol making acceleration, even faster. Blueprints ensure that no unchanged data need be transmitted more than once.

## Specifications

### aCelera Virtual Appliance — System Requirements

aCelera Virtual Appliance software can be loaded on any standard hardware. The minimum system requirements are:

#### Server Hardware

- Certified on VMware® Hardware Compatibility List to run ESX or ESXi, or
- Hyper-V™ Certified for Windows® Server 2008

### 64-bit CPU Support

- Intel CPUs with VT (virtualization technology), or
- AMD CPUs with AMD-V support

### Ethernet Network Interface Card

- One available interface for out-of-line deployments, or
- Two available interfaces for inline deployments

### Hardware

- 2 GB RAM
- 30 GB Free Disk Space



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