



Powering Enterprise Application Delivery

IT is facing a crisis delivering applications across the enterprise. The holy grail of IT - getting the most out of existing systems - is becoming ever more elusive. Virtualization, data center centralization and web-based applications are slowing system performance, reducing capacity, and saturating bandwidth. Hidden inefficiencies and conflicting device configurations compound the problem. Throwing more servers and bandwidth at the problem won't fix it. IT must find a way to optimize existing infrastructure within shrinking budgets.

Powering Enterprise Application Delivery

How to Solve Performance Problems in Delivering Business-critical Applications across the Enterprise

There is a crisis unfolding in IT that is limiting the ability to deliver applications across the enterprise. IT's top priorities – data center centralization, virtualization and collaboration – are cost-saving measures that are negatively impacting performance, saturating bandwidth, and reducing capacity. Hidden inefficiencies and conflicting configurations compound the problem. This creates an expanding drag on application performance. IT must find a way to improve application performance across the enterprise.

Enterprise application optimization amplifies performance of the existing infrastructure.

Application delivery optimization solutions attack this problem head-on. They improve performance, generating order-of-magnitude increases on the same infrastructure. Virtualized and accelerated systems also benefit. These solutions are a rational alternative to adding servers, upgrading bandwidth or tolerating declining application performance.

This paper will look at the challenges in delivering applications to the enterprise, and address steps companies can take to optimize application delivery.

Application Delivery Challenges

Performance Bandits

According a recent survey by CIO Magazine, virtualizing servers, centralizing data centers and adding high-bandwidth collaboration tools are IT's top priorities during this economic downturn.¹ While these projects make sense financially, they also have a dark side. Consider these results from a recent survey:²

Performance degradation occurred in:
- 77% of virtualization projects
- 69% of data center consolidation projects
- 43% of high-bandwidth Web 2.0 installations

- ❑ 77% of corporations reported that virtualization has had a significant, negative impact on application performance.
- ❑ 69% of companies said data center consolidation was causing application degradation.
- ❑ 43% confirmed that high-bandwidth applications such as video and collaboration were making it difficult to maintain performance.

Configuration Gremlins

There is also a covert but significant performance obstacle: the native inefficiency and static nature of system configuration settings.

There are too many configuration permutations to optimize system performance manually.

For example, Microsoft Windows 2003 Server, Exchange 2003 and Windows XP, a common configuration, together have over 350,000 permutations of configuration settings. This doesn't include the huge number of settings for browsers or applications, or for CPU, I/O and RAM on servers, desktop hardware and network devices.

Some of these settings may offset or even conflict with each other. The majority of them are poorly documented, yet the effects are significant. It's not realistic to consider tuning them manually, and impossible to do so in real time. As a result, you see degradation and suppressed capacity – hardware, software and bandwidth – across the enterprise.

Budget Blues

The traditional solution to application performance limitations has been to add servers and bandwidth. Ironically, a top priority in IT planning is to *avoid* adding servers and upgrading bandwidth.³ 75% of IT budgets will stay the same or be cut in 2009.⁴ IT has to find other efficiencies within their existing systems and bandwidth.

The application delivery problem is getting bigger, and it compounds with every new application. It can't be solved with traditional solutions or single-purpose acceleration products.

The Solution: Enterprise Application Optimization

Optimization tools unlock systems' potential, increasing the efficiency and capacity of applications.

Enterprise application optimization tools attack overt and covert causes of degradation. They unlock the potential of the existing IT infrastructure, increasing the efficiency of what you already have. This improves application performance across the enterprise without costly hardware, upgrades or increases in bandwidth.

Veloxum's iPTE

One application delivery optimization solution is Veloxum's intelligent Performance Tuning Engine (iPTE). It is a comprehensive solution specifically created to tune performance and maximize capacity. It works on all components of enterprise infrastructure (OSI layers 3-7), including:

- ❑ Applications
- ❑ Databases
- ❑ Servers
- ❑ Bandwidth
- ❑ Desktops
- ❑ Mobile devices
- ❑ Networking components

iPTE is different than niche solutions. It identifies and fixes problems in real time - including virtualized systems - and does so without voiding support contracts.

Benefits

iPTE has a number of features that make it an exceptional tool.

- ❑ Its patent-pending software both identifies and fixes performance problems via active remediation.
- ❑ It accelerates virtualized environments (VMWare, Citrix) and niche optimization tools for WANs and SANs (Riverbed, Juniper).
- ❑ iPTE is an "out-of-band" solution: it utilizes existing hardware, software and their manufacturer supported settings. iPTE does not invalidate any manufacturer warranties or service contracts.

Supported Operating Systems

- Microsoft Windows Server
- Microsoft Windows XP, Vista, Mobile
- Linux
- Sun Solaris
- Mac
- IBM AIX

Supported Applications & Databases

- Microsoft Exchange / Outlook
- Microsoft Sharepoint
- Lotus Notes
- Citrix
- VMware
- Internet Explorer
- Firefox
- SQLserver
- Oracle
- Sybase
- Peoplesoft

- Performance is tuned periodically with changes automatically deployed or through existing change control procedures using an adaptive knowledgebase of best practices.
- A Web Services API gives integration with existing network monitoring and management applications.
- iPTE operates on a wide range of operating systems.
- Deployment is fast and easy with near immediate results, and IT has complete control of the application.

Architecture Overview

There are four key components that make up the iPTE solution: the iPTE Agent, the iPTE Appliance, the iPTE Management Console, and the Policy and Profiling Engine.

iPTE Agent

The iPTE Agent is a lightweight, cross-platform agent that identifies the components – applications, databases, hardware, software, and operating systems – that are installed throughout the enterprise. The iPTE Agent tests and reports the baseline configuration results to the iPTE Appliance. The iPTE agent also implements the required configuration changes when it receives instructions from the iPTE Appliance. The agent is dormant until an active test is initiated.

iPTE Appliance

The iPTE Appliance collects data from agents and automatically creates a baseline. It compares the baseline against the iPTE Knowledgebase and identifies the recommended configuration changes. Once IT authorizes the remediation, either manually or automatically, the iPTE Appliance deploys the configuration change instructions to the iPTE Agent.

iPTE Management Console

The iPTE Management Console is a browser-based control center that gives IT complete control and continuous information on performance. Remediation can be set to occur immediately, on a deployment schedule, or triggered manually. IT can monitor



creeping problems and fix them before they cause downtime. The iPTE Management Console maintains a history of all changes, and can roll back any set of changes at any time. Data from the Console can be integrated and presented through existing enterprise monitoring tools such as Microsoft's Operations Manager (MOM).

Policy and Profiling Engine

The Policy and Profiling Engine lets IT set optimization policies for OSI layers 3-7. Specific applications, machines or users can be given priority for optimization. Users can have multiple profiles based on location and be optimized on different schedules for each. Different scenarios can be optimized on different schedules. For instance, a remote user should be optimized in real time, while an application that runs overnight can be optimized just before it is scheduled to run.

Implementation Process

Implementation of iPTE is surprisingly fast and easy for such an advanced solution.

iPTE Software Installation

The iPTE Appliance is installed in the data center on an existing server or as a virtual machine. The iPTE Agent is installed on all devices including local and remote servers, notebooks, home office systems, and Windows Mobile devices. It installs by standard software distribution methods and completes in seconds. The agent begins reporting immediately.

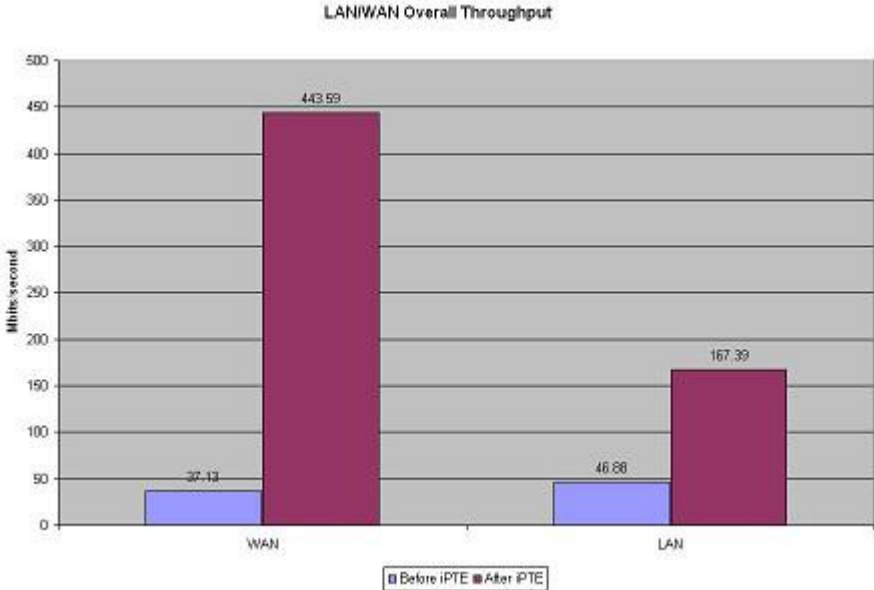
Process

The iPTE System and Methods for tuning an operating system, application or network component is a patent-pending process for enterprise application optimization. In addition to collecting a baseline, testing, reporting and implementing fixes, it also validates improvements, remediates automatically, monitors continuously, and rolls back if desired. These features – remediation, validation, continuous monitoring, and rollback – make iPTE distinct from network monitoring tools.

Performance Improvements

The following charts demonstrate typical performance improvements after implementing iPTE.

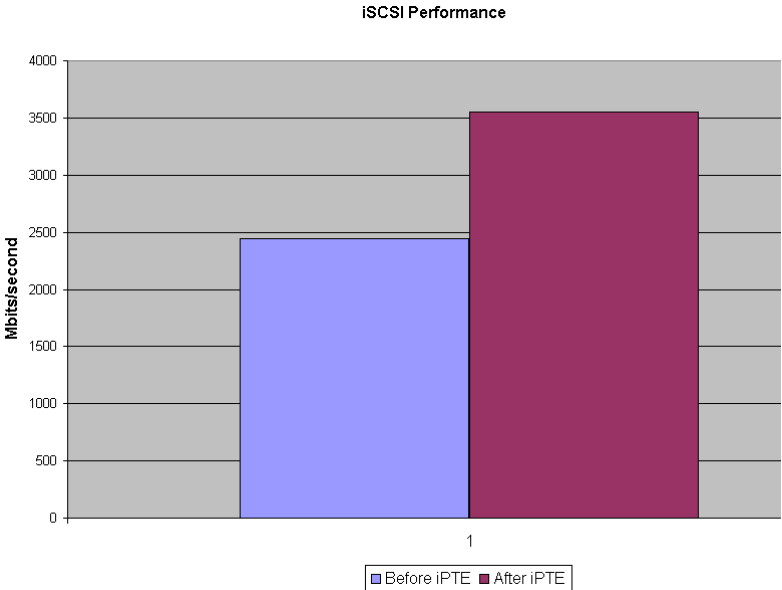
LAN/WAN Throughput Improvements



*LAN throughput improved by 257%.
WAN throughput improved by 1094%.*

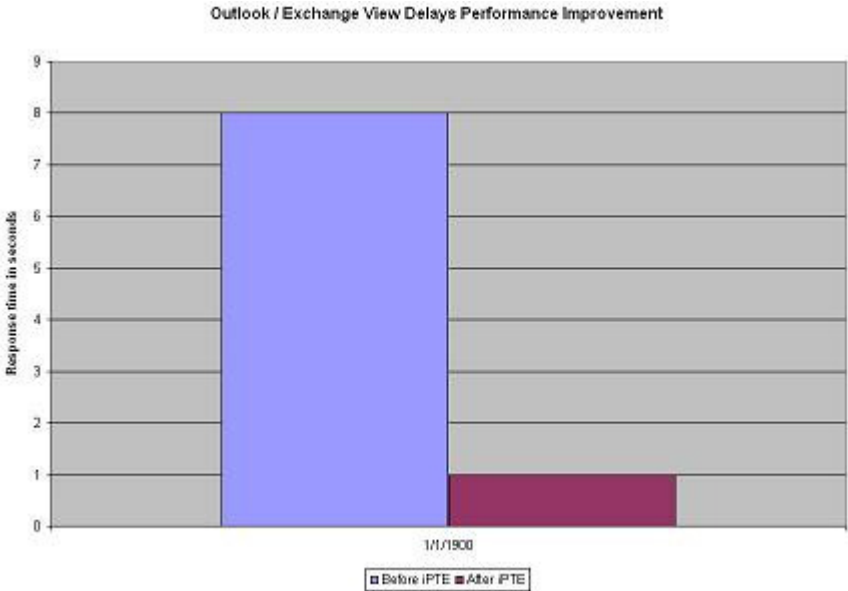
iSCSI Performance Improvements

iSCSI performance improved by 31%.



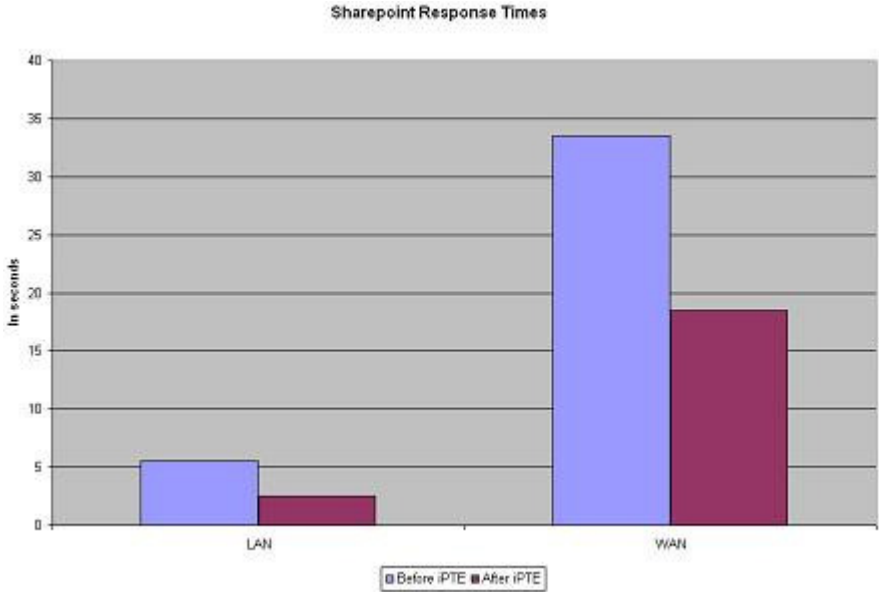
Microsoft Exchange Improvements

Exchange performance improved by 700%.



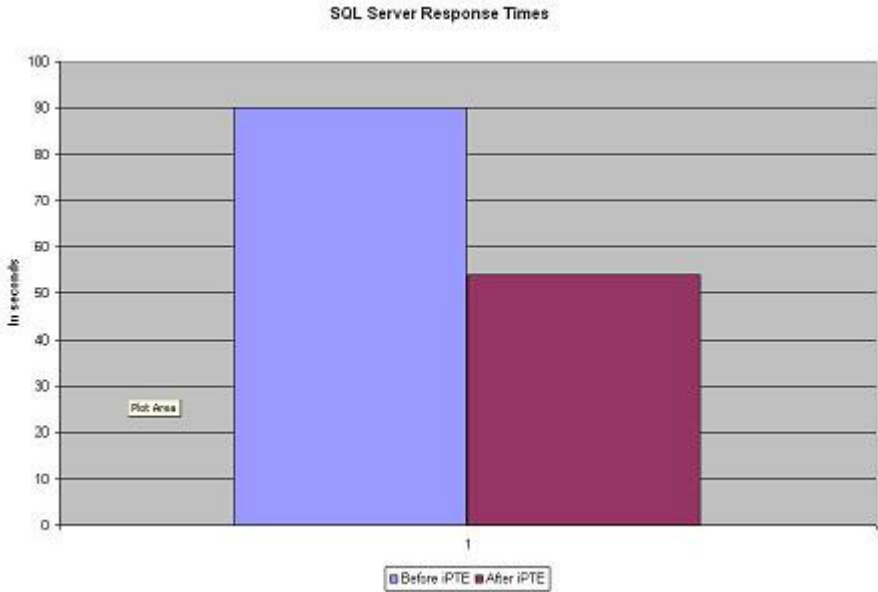
Microsoft Sharepoint Improvements

Sharepoint response time decreased by 45-55%.



SQL Server Read/Write Improvements

SQLserver response times decreased 40%.



Enabling Enterprise Application Delivery

iPTE is the solution to performance degradation, whether caused by unseen configuration inefficiencies or as a side effect of logical IT priorities. Designed to maximize the efficiency of your existing infrastructure, iPTE delivers immediate ROI and lets you do more with your existing systems.

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Veloxum LLC has applied over 80 years of industry experience to the development of iPTE, an automated, highly adaptive enterprise application optimization solution. Veloxum's "**Second Wind Promise**" guarantees specific, significant performance improvements or there is **no charge**. To enhance your enterprise application performance, or to learn more about iPTE and Veloxum, visit <http://www.veloxum.com>.

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<http://www.sundanceresearch.net/fbwpnewprodlaunch.html>

¹ "How to Prioritize IT Spending During an Economic Recession" CIO Magazine, November 20, 2008;
<<http://www.cio.com/article/464725>>

² "Optimizing Application Delivery over the WAN" Aberdeen Group, August 2008

³ "How to Prioritize IT Spending During an Economic Recession" CIO Magazine, November 20, 2008;
<<http://www.cio.com/article/464725>>

⁴ "CIO's IT Budget Survey Results: July Jitters Turn to October Fear" CIO Magazine, October 31, 2008;
<<http://www.cio.com/article/458317>>