SIGMA
Solutions, Incorporated

Vol. 9 No. 6

SigmaUptime

Enabling the Mobile Desktop

UPTIME

ALSO INSIDE:

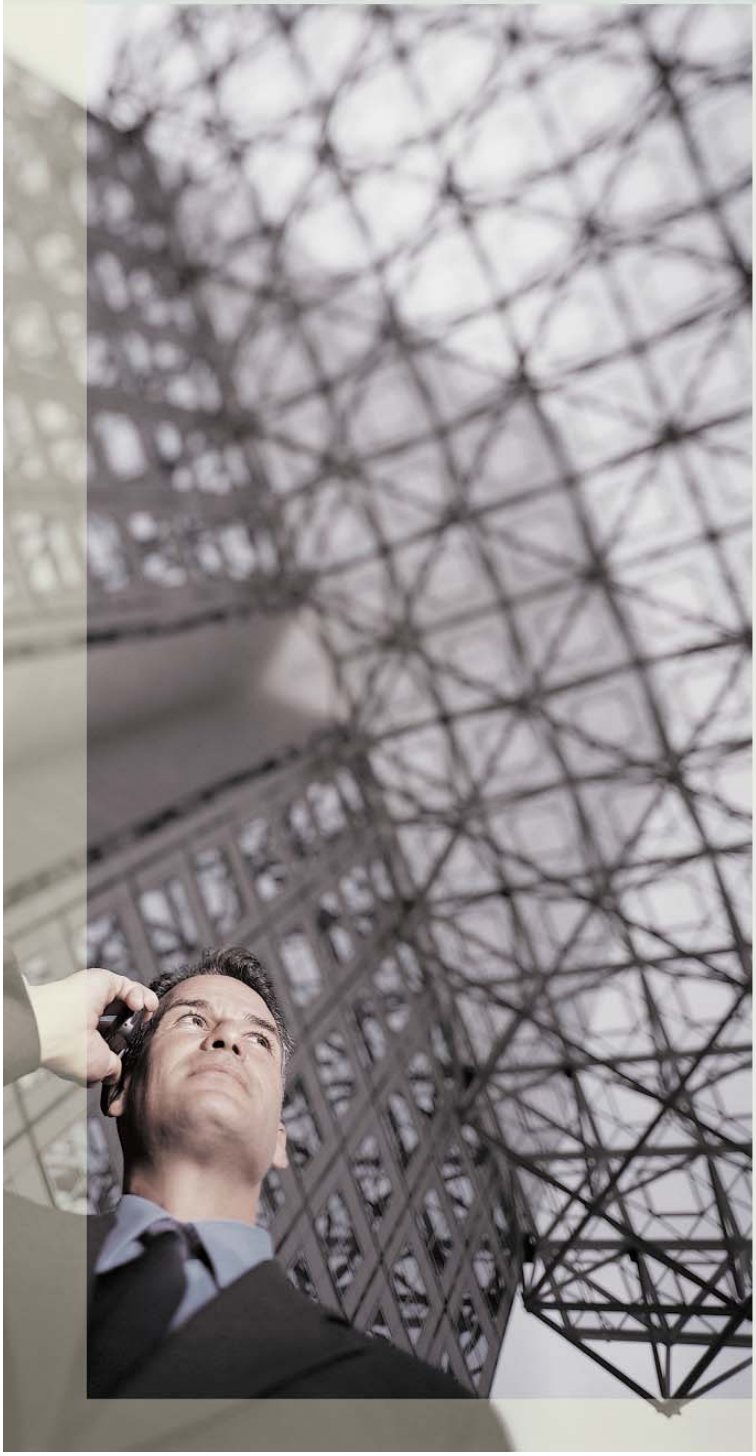
Overcoming barriers to desktop virtualization ... page 8

Creating an application-fluent network ... page 10

PRSRT STD
U.S. POSTAGE
PAID
Tulsa, OK
Permit No. 2146

SIGMA
Solutions, Incorporated

Focus on your business



Not on your technology

SIGMA Solutions' portfolio of **cloud services** and **managed services** helps you free up valuable team resources so that they can be directed to business-critical activities.

SIGMA's **cloud services** are essentially common applications provided as a service. Subscribers utilize the function, without the burden of hardware acquisition, technology administration, or hands-on maintenance. SIGMA owns the asset and the responsibility for uptime. The portfolio of these functions includes e-mail, web and portal services.

Managed services can be shared or dedicated resources that are delivered onsite or from a remote, state-of-the-art IT center. Some of the potential engagements include co-location, backup and recovery, remote hands, monitoring and alerting, project management, and systems administration.

SIGMA's technology practice teams provide the custom services many organizations need for large-scale project implementations, short-term initiatives or one-time engagements. Whatever your needs, SIGMA is the virtual IT department to address your computing requirements.

800.567.5964 **www.sigmasolinc.com**

San Antonio, TX | Austin, TX | Dallas, TX | Houston, TX | New Orleans, LA | Tulsa, OK | Santa Fe, NM

Contents

Cover Story

4 **Enabling the Mobile Desktop**

Once upon a time, organizations provided all the technology their employees needed. Today, however, workers want to use their own mobile devices to access enterprise resources. IT sees a host of support and security challenges. Desktop virtualization can help the two live happily ever after.

Features

8 **Overcoming Barriers to Desktop Virtualization**

Adoption of desktop virtualization has been limited due to high acquisition costs, insufficient user experience, scalability issues and limitations on the use cases that could benefit from virtualized desktops. With VMware View 4, VMware and its ecosystem of partners eliminate these barriers, enabling broader, mainstream enterprise adoption of desktop virtualization.

10 **Speaking the Language**

In today's complex networks, the ability to understand the language of applications is critical to avoiding performance issues. An application-fluent network is embedded with the intelligence to view deeply into application traffic, make decisions, apply policies and implement services to ensure apps are secure, fast and available.

4

Sigma
UPTIME

Copyright © 2010 CMS Special Interest Publications. All rights reserved.

Editorial Correspondence:
4941 S. 78th E. Ave., Tulsa, OK 74145
Phone (800) 726-7667 • Fax (918) 270-7134

Change of Address: Send corrected address label to the above address.

Some parts of this publication may be reprinted or reproduced in nonprofit or internal-use publications with advance written permission.

Sigma UPTIME is published monthly by CMS Special Interest Publications. Printed in the U.S.A. Product names may be trademarks of their respective companies.

ENABLING THE M

Once upon a time, organizations provided all the technology their employees needed. Today, however, more and more employees rely on their own devices — and expect them to be supported by the IT department. This trend is fueled by the popularity of notebooks, tablets and smartphones that enable worker mobility.

"Industry analysts call this trend the 'consumerization of IT,' and it reflects the simple fact that the average person has become a reasonably sophisticated technology user," said Eric Kronenthal, VP of Professional Services, Sigma Solutions. "As consumers buy devices that help them maximize personal productivity, there is a natural crossover into the workplace. It would be inconvenient and inefficient, for instance, to require employees to carry separate mobile phones for work and personal use."

This trend obviously imposes significant burdens on the IT department. Deploying and managing traditional desktops already represents one of the greatest challenges facing IT managers, and the job just keeps getting more difficult due to the constant need for application upgrades, operating system patches and antivirus updates. Mobility and the growing use of end-user-owned devices only exacerbate the problem. It's hard to manage equipment you don't own, and harder still to secure and support a diverse collection of hardware and software that is literally changing every day.

Desktop virtualization can help. The latest desktop virtualization solutions support mobility by enabling access to virtual desktop images using any network-connected device. This shifts the IT support burden from the end-user's smartphone or tablet onto the server-based

continued on page 6

IOBILE DESKTOP

By 2014, 90 percent of organizations will support corporate applications on personal devices.

The trend toward supporting corporate applications on employee-owned notebooks and smartphones is already under way in many organizations and will become commonplace within four years, according to Gartner, Inc. The research firm says the main driver for adoption of mobile devices will be employees — i.e., individuals who prefer to use private consumer smartphones or notebooks for business, rather than using old-style limited enterprise devices. IT is set to enter the next phase of the consumerization trend, in which the attention of users and IT organizations shifts from devices, infrastructure and applications to information and interaction with peers. This change in view will herald the start of the postconsumerization era.

desktop image. Standards-based virtual desktop infrastructures (VDIs) and mobile devices with built-in VDI capabilities promise a new paradigm that enables mobility and "bring-your-own-computer" (BYOC) programs while helping to relieve the IT support burden.

Dealing with Reality

On the one hand it might be simpler to limit or even prohibit the use of end-user-owned devices within the enterprise IT infrastructure. However, IT consumerization offers some very real benefits. Innovation today is frequently driven inward from consumers rather than outward from the IT department. Web 2.0 technology, hosted applications, wireless, smartphones, social networks and instant messaging are just a few examples of grassroots technologies that have gained a foothold within the mainstream IT infrastructure.

"As ubiquitous connectivity takes hold, consumers are driving more innovation and technology trends in the enterprise," said Joshua Holbrook, Yankee Group Enterprise Research program manager. "Enterprises can't avoid consumerization or implement traditional approaches to managing consumerization in the enterprise because it's failing. It's time for a new operating model."

Desktop virtualization and cloud computing platforms provide a framework for this new model by consolidating and centralizing complete desktop environments and introducing an element of flexibility to the delivery of technology services. Workers become more productive because they can get their full desktop experience from any location, and IT becomes more efficient by managing a large number of desktop environments from the data center.

"Desktop virtualization addresses some of the most troublesome problems facing IT today — desktop administration, data security and technology refresh costs — while satisfying workers' demands for mobility," said Kronenthal. "IT is freed from the tasks of patching operating systems, installing and updating applications, and ensuring that data is protected on each and every desktop, and workers get to use their preferred devices."

With desktop virtualization, a server hosts an entire desktop environment specific to each user. Virtual machine images are built and stored on the server and delivered to end-users on demand. These images can be customized with the operating system, applications, security settings and other personalization features required by specific users.

"With these virtual images stored in a central server, users have the ability to access their personalized computing environments as long as they have a way of connecting

End of the PC era?

Smartphones and tablet computers will outnumber PC shipments within the next 18 months, IDC analysts predict. The level of activity in the mobile computing market will be staggering, IDC says, with nearly 25 billion mobile apps to be downloaded in 2011, up from just over 10 billion in 2010.

to that central source," Kronenthal said. "Organizations also have the ability to leverage public or private clouds, where key business applications can be accessed anytime, anywhere, from any network-connected device."

The Smartphone Factor

Mobile technology is probably most responsible for the acceleration of IT consumerization. Smartphones, media tablets and other mobile devices have blurred the line between personal and business life and rapidly introduced new mobile applications into the IT world. IDC expects mobile computing to continue to explode in 2011, with shipments of application-capable non-PC mobile devices outnumbering PC shipments within the next 18 months.

Many of these devices will support desktop virtualization — Cisco recently introduced a media tablet with built-in VDI support, and other device manufacturers have announced alliances with VDI vendors. Indeed, some experts see desktop virtualization as the next mobile device "killer app."

"The ability to run secure, centrally managed virtual machines directly on end-user devices enables companies to adopt large-scale BYOC programs for mobile devices," Kronenthal said. "Instead of receiving generic, standard-issue laptops from IT when they join the company, employees in a BYOC program can receive vouchers that can be applied to the purchase and support of any device they choose."

A BYOC approach can greatly increase user satisfaction by giving employees the freedom to choose the exact mix of options, features and styles that match their personality and individual computing needs. Equally important, it relieves the IT department of the costly chore of trying to control the nearly infinite combination of variables on each unique device.

"Managing a typical end-user desktop can cost more than $5,000 a year, which means companies literally spend billions of dollars trying to manage desktops PCs across far-flung enterprises," said Kronenthal. "Adoption of desktop virtualization solutions is being driven by the need to reduce this TCO equation as well as by the demand for a more flexible, independent and secure computing environment."

As the workforce becomes younger and more tech-savvy, employees will continue to introduce consumer tools and services into the enterprise — with or without the blessing of IT departments. Gartner Research has maintained that the consumerization of IT is an "irreversible mega-trend," urging forward-looking companies to embrace these technologies. While this trend clearly poses challenges, organizations that develop a virtual desktop infrastructure capable of supporting end-user-owned technology may find that the two are a perfect match. Benefits ranging from employee satisfaction, reduced management costs and greater productivity will deliver a storybook ending.

Overcoming Barriers to Desktop Virtualization

VMware enables rapid adoption of desktop virtualization by driving new quality, cost and scalability standards with VMware View 4.

Desktop virtualization has long remained a top IT goal because of the added security, manageability and compliance capabilities delivered. Adoption, however, has been limited due to high acquisition costs, insufficient user experience, scalability issues and limitations on the use cases that could benefit from virtualized desktops. With VMware View 4, VMware and its ecosystem of partners eliminate these barriers, enabling broader, mainstream enterprise adoption of desktop virtualization.

VMware View 4 is the industry's only purpose-built desktop virtualization solution, setting a new quality, cost and scale standard for desktop virtualization environments. Built on VMware vSphere, the industry's leading virtualization platform, VMware View 4 is a complete desktop virtualization solution featuring a rich, flexible desktop user experience while delivering dramatic efficiency, security, performance, scalability and management improvements — all while reducing desktop total cost of ownership by as much as 50 percent.

VMware View 4 provides:

- Simplified desktop provisioning and management with flexible on-demand provisioning of thousands of desktops and applications instantaneously and the ability to manage up to tens of thousands of desktops from a single console;
- User flexibility and rich user experience with always-on access to applications and desktops from nearly any device;
- Differentiated desktop SLAs including enterprise-class availability, disaster recovery, failover and scalability supporting tens of thousands of users across the enterprise;
- Improved security and compliance through centralized management of security policies permissions and updates.

VMware View 4 establishes a new desktop experience standard, capable of satisfying the broadest range of users — from the basic task worker to the designer — with a rich, high-quality user environment across the widest range of devices and networks. It features PC over IP (PCoIP), a new adaptive display protocol specifically developed for virtual desktop delivery that dynamically detects device type, net-

work connections and locations providing the optimal desktop experience for each unique user scenario. Only VMware View with PCoIP analyzes and optimizes for both hardware and software environments.

Other elements of the VMware view desktop experience include:

- VMware View Display — Multi-monitor, adaptive display support, resolution optimization for each monitor with an option to pivot and rotate the display output, supporting rich audio and video content with increased performance.
- VMware View Direct — Seamless mapping from the virtual desktop to the end-user's device for locally attached peripherals through USB connection for increased productivity.
- VMware View Printing — Automatically discovers, connects to and prints to locally attached printer without the need to install print drivers. Delivers a high-quality printing experience even over low-bandwidth connections.
- VMware View Unified Access — Continuous desktop availability with a single point of authentication for users to access VMware View environments, Windows Terminal Servers, Blade PCs or even remote physical PCs.

VMware View 4 will establish new levels of efficiency and cost savings through product advancements and close collaboration with partners, driving down storage, networking and compute resource costs. It is built upon VMware vSphere 4, which includes unique enhancements for desktop virtualization, delivering better performance and higher virtual machine densities to support demanding desktop environments on a minimum numbers of servers, reducing overall costs.

VMware vSphere 4 will ensure scalability and consistent performance regardless of desktop loads and across peak usage periods, balancing resources and requirements for optimal performance, without disruption or downtime. Proven in the most demanding enterprise environments, vSphere will deliver unparalleled availability and business continuity for virtualized desktop environments, ensuring the highest level of performance without disruption to desktop users. With VMware View 4, customers can now scale to deploy and manage tens of thousands of desktops as a result of advancements in virtual desktop provisioning and management.

VMware View 4 will enable enterprises to significantly reduce the ongoing management and operating expenses associated with desktops. Centralized management, standardized desktop images and flexible provisioning and upgrades enable enterprises to manage thousands of users from a single console while bringing greater enforcement of security, permissions and compliance policies. Customer deployments consistently demonstrate administrative cost reductions of 50 percent or greater.

vmware

Move Beyond Traditional Desktop Management

Create a seamless desktop experience with VMware View 4.5, the industry's leading purpose-built solution for delivering desktops as a managed service. Transform application and desktop management into an efficient, automated process by providing a modern, flexible desktop enabling desktop administrators to increase control while reducing the total cost of desktop ownership by 50%. Provide end-users with a rich, consistent, high performance desktop experience and bring the power of the datacenter and VMware vSphere to your desktop environment.

vmware PARTNER PREMIER

SIGMA Solutions, Incorporated

800.567.5964

www.sigmasolinc.com

Copyright © 2010 VMware, Inc. All rights reserved. VMW-18

Speaking the Language

Application fluency is essential for acceleration, optimization and security in modern networks.

Hungry guy walks into a café in Sardinia, Italy. He doesn't speak the language, so he merely points to the first thing on the menu — *Casu Marzu* — and a few minutes later is served a plate of cheese. More precisely, a plate of sheep milk cheese riddled with live insect larvae, a regional delicacy colloquially known as "maggot cheese."

Moral of the story: It is difficult to underestimate the value of fluency.

In today's complex networks, the ability to understand the language of applications is critical to avoiding gag-inducing performance issues. An application-fluent network is embedded with the intelligence to view deeply into application traffic, make decisions, apply policies and implement services to ensure apps are secure, fast and available.

"Technologies that understand specific elements of applications and transactions will enable a new class of application delivery solutions," said Mark Fabbi, vice president of enterprise communications for Gartner. "These new technologies are 'application fluent' and are necessary to solve complex network and server latency bottlenecks which cannot be addressed by existing network-level solutions."

Going with the Flow

In a nutshell, application-fluent devices switch and distribute network traffic based on "application flows" rather than on packet header information. Flows are built by reassembling packets into a full application message. Flow inspection delivers much more information and, thus, greater accuracy in application identification compared with packet inspection, which can only predict what an application appears to be, based upon a few attributes.

Gartner defines an application-fluent network as a combination of application delivery controllers (ADCs) and WAN optimization controllers (WOCs) united by a common management and

policy layer that understands the context of application interactions and applies policies and optimization from the appropriate network devices. Fabbi says an application-fluent network not only knows what application is running, it also has knowledge of the syntax and semantics of the application and the elements of the transaction. And it knows who is connecting, how they're connecting, and with what device.

Application fluency is the latest step in the evolution of application delivery. In the not-so-distant past, enterprises ensured application performance and data availability by employing simple load balancing technology that allowed two or more servers to operate behind a switch, while appearing to the end-user as a single destination. Advanced switching technology then enabled the creation of "application-aware" networks in which Layer 4-7 switches examined packet headers, protocols and destination ports and assigned priority to applications according to business demands.

The emergence of ADCs introduced a higher degree of intelligence by allowing compute and application resources to be dynamically tiered, provisioned and accessed across increasingly dispersed and mobile groups of users. Designed to manage Web applications and user traffic to those applications, ADCs provide a broad range of functions such as load balancing, content switching, SSL (secure sockets layer) offload/acceleration, and content caching and compression.

Inside Information

However, products that focus on accelerating simple Web applications or enhancing the speed of selected users in a controlled WAN environment ignore the realities of today's complex enterprise. Applications — even those with Web front ends — use a variety of behind-the-scenes protocols and are accessed from a wide range of locations. Modern applications built for Web 2.0, virtualized and cloud environments are sometimes mashups of multiple apps with advanced features such as non-standard or dynamic port negotiation, and encryption. For example, an enterprise online shopping application might have a disparate collection of HTML, Java Servlets and Enterprise JavaBeans linked to each other. While such applications contribute to improved business communication, collaboration and agility, identifying them by looking only at packet structure is virtually impossible.

The ability to identify an application based on internal characteristics is absolutely critical in order to intelligently apply policies about security or acceleration or routing. That's what makes application fluency crucial for a wide variety of technologies related to application delivery. It is the foundation for Web application firewalls, which allow access to, from or by an application or service based on configured policies. Other security and routing policies are essential for application acceleration and for intelligently routing application messages.

"Traditional network devices have been 'application aware' at best. To ensure the optimal performance, security and predictability of new application deployments, enterprises must invest in next-generation solutions that enable a far more application-fluent network architecture," said Fabbi. "Application delivery solutions that understand how to intelligently apply policies to specific application types will be more quickly adopted by enterprises and will be in the best position to gain market share in this important and rapidly growing market."

As the complexity of applications has increased with the advent of new application development and deployment models such as Web 2.0, virtualization and cloud computing, the "language" of those applications has also increased in complexity. By adding application-fluent components to the network edge, intermediate and even core layers, organizations can ensure that key network resources won't get lost in translation.

Many Web App Exploits Have No Known Fix

Sixty percent of the 4,019 Web application vulnerabilities discovered in Q1 and Q2 2010 have no known fix, according to a report on Web app vulnerability trends released recently by security vendor Cenzic. In addition, the report noted that 45 percent of vulnerabilities have publicly available exploit code, leaving users in extreme danger of hacker attacks.

Another key finding in Cenzic's Trends Report is a shift in the security of common Web browsers compared to the same period last year. Vulnerabilities in Apple's Safari more than tripled from 25 in the second half of 2009 to 83 in the first half of 2010. Google Chrome also experienced a significant increase in the number of vulnerabilities, which rose from 25 to 69. However, both Microsoft Internet Explorer and Mozilla Firefox showed security improvements. Internet Explorer had 40 vulnerabilities compared to 44 in the second half of 2009 and Firefox had 59 compared to 77 in the second half of 2009. However, the firm noted that all browsers did a great job in patching their vulnerabilities quickly.

The most common published vulnerabilities on Web applications detailed in the report continue to be Cross Site Scripting (XSS) and SQL Injection vulnerabilities, which account for 28 percent and 20 percent of all Web attacks, respectively.

SIGMA
Solutions, Incorporated

Technology to EMPOWER your business.

The ***EMPOWER*** *Business Methodology* was developed by SIGMA SOLUTIONS, Inc. specifically to help organizations bring strategic initiatives to market, in the shortest time possible, with the highest degree of impact, and with complete confidence that the targeted successes are realized.

By utilizing a *"proven"* project solution process, the overall expense and effort is minimized. The methodology pre-determined costs and defines the return on investment based upon customer data. Projects that traditionally can take multiple quarters or years to implement can be up and running in a few months. By staying true to the process, efficiencies are realized for internal and external project teams.

EMPOWER assures operational excellence. No energy is wasted on any task that does not directly support objectives that are well defined and agreed upon. No technologies are propagated unless they are first measured against today's market conditions. Too often aging and disparate systems linger when their operational impact has been diminished. Without a comprehensive perspective, overall functionality is compromised.

EMPOWER brings a new capacity for management teams to "rethink" their systems implementations as a competitive differentiator, rather than a burdensome expense.

800.567.5964 **www.sigmasolinc.com**

San Antonio, TX | Austin, TX | Dallas, TX | Houston, TX | New Orleans, LA | Tulsa, OK | Santa Fe, NM