

Tech Outlook

October 2016

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Bringing PCs and Mobile Together

Unified endpoint management solutions from VMware help to reduce management costs and deliver a consistent user experience.



Despite reports to the contrary, the PC is not dead. Organizations continue to provision and maintain desktop and laptop computers, even though employees use mobile devices for many business activities. According to data from Gartner, business PC sales fell 6 percent in the first quarter of 2016, but

the analyst firm expects the market to pick back up as organizations begin making the transition to Windows 10 in 2016.

Despite continued advances in mobile technology, employees often need a PC for certain tasks — it remains the platform of choice for crunching numbers, manipulating data and work-

ing with many business applications. While business users prefer highly portable form factors, they also want large screens and substantial performance.

At the same time, organizations are investing in enterprise mobility. A Harris Poll survey conducted in October 2015 found that 73 percent of enterprises expect to mobilize their entire workforce, and 61 percent said investments in mobile solutions yield the greatest returns.

At the intersection of these trends lay two challenges: the maintenance of a diverse set of endpoints and the delivery of a seamless experience to users. Organizations need an end-user computing strategy that effectively

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integrates PCs and mobile devices and provides centralized access, management and control.

“Today, PCs and mobile devices are managed in silos. Most organizations have distinct sets of tools and expertise for managing the various categories of endpoints,” said Konstantin Cvetanov, Principal Architect, ProSys.

“The digital workspace is emerging as a simplified approach to managing, delivering and consuming applications. It aggregates all devices, applications and services while securely managing them through unified common access and identity. VMware has taken a leadership position in this space with a suite of solutions that deliver consumer simplicity with enterprise security and control.”

Extending Windows 10

Gartner predicted that businesses would require only nine months, on average, to evaluate Windows 10. The transition is taking closer to 18 months but still exceeds previous upgrade cycles by a year. Windows 10 is attractive because it provides a consistent platform and experience across a wide range of devices. However, the challenge of scaling Windows 10 desktops and applications, supporting legacy applications, and integrating an ever-expanding ecosystem of mobile applications and devices will further the need for a secure digital workspace as the solution.

“We believe there is an incredible opportunity to push identity-driven secure digital workspaces for the delivery of any app on any device, especially as businesses shift to Windows 10 and increasingly offer cloud-based productivity suites such as Office 365 to employees,” said Sanjay Poonen, executive vice president and general manager, End-User Computing and head of global marketing and communications, VMware.

VMware recently released new technology that extends Windows 10 management with capabilities such as configuration management and provisioning, software distribution, patch management, and client health and security management. It enables IT to deploy security patches and OS updates faster, install software more reliably and consolidate operational processes across all devices — on or off the domain.

“The ability to manage Windows 10 PCs and mobile devices using the same tools is facilitated by the new mobile device management functionalities of Windows 10 itself. By integrating PC lifecycle management with modern enterprise mobility management, the VMware unified endpoint manage-

ment technology can lower the cost of managing Windows deployments, and secure endpoints and data on any network across any application,” Cvetanov said. “It also helps solve the challenge of supporting an increasingly mobile workforce that demands a highly consistent experience and anytime, anywhere access to all applications from any device.”

The Digital Workspace

New enhancements in the VMware Horizon desktop virtualization suite further simplify desktop and application management and support today’s mobile workforce through a digital workspace. The VMware Blast Extreme protocol — which enables administrators to deliver a high-quality desktop experience to any endpoint — offers increased performance and a rich user experience by reducing bandwidth consumption by up to six times. An expanding list of Blast-enabled devices enables organizations to reduce the overall cost of providing and managing desktops by using more affordable hardware to deliver Horizon 7 or Horizon Air desktops and applications.

Workspace ONE with VMware Identity Manager helps overcome the deployment and management challenges of Office 365. Enhancements to the solution enable administrators to automatically provision and de-provision end-users based upon existing Active Directory group membership. Updates to the VMware Verify mobile push-application will also offer a consumer-simple registration workflow that eliminates the need for end-users to download and register a two-factor authentication application.

Legacy on-premises models for endpoint management are difficult with disjointed management and complex processes designed for fixed desktops and client-server applications. Gartner reports that, “The future of endpoint management lies in consolidation of management tools that manage traditional PCs and mobile devices as a common management framework evolves across the two.”

“As workforces become increasingly digital, VMware is enabling companies to provide access to personalized desktops and applications anytime, anywhere using a digital workspace,” said Cvetanov. “VMware is delivering innovative new solutions designed for the mobile-cloud era, with a focus on helping organizations drive down the cost and complexity of delivering applications and managing both desktops and mobile devices.”



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News Briefs

New Program Detects Data Leaks

A Baltimore-based company has developed data analytics software that continuously scours the so-called "Dark Web" to find compromised or stolen data as soon as it appears. Terbium Labs says when its Matchlight program finds such data, it immediately notifies a client's IT security team so that they can identify the breach and quickly set a response and recovery plan in motion.

"Matchlight illuminates the Dark Web and gives organizations the power to counter data theft quickly," said Danny Rogers, cofounder and CEO of Terbium Labs. "Matchlight gives organizations improved situational awareness and the peace of mind that comes from knowing that they will be alerted when critical data appears on the black market — a sure indication of a breach."

Matchlight creates digital fingerprints of a company's most valuable files and data and then continuously searches the entire Internet, including the anonymous areas that aren't indexed by search engines, looking for signature matches. Researchers at Johns Hopkins University have estimated that Google indexes less than 10 percent of the total Internet.

Terbium says Matchlight has been demonstrated to identify 30,000 new stolen credit cards and 6,000 newly compromised email addresses for sale on the Dark Web in a single day.

Organization Battles 'Patent Trolls'

In an effort to boost membership, an organization launched to provide innovative organizations with cooperative protection from "patent trolls" has announced that it is waiving its annual fee for startups. The License on Transfer (LOT) Network, founded by Google, Canon and Red Hat, says new members with annual revenues below \$5 million can join for free until March 1, 2017.

Patent trolls, known more formally as patent assertion entities (PAE), are companies that acquire patents for the sole purpose of filing lawsuits against other companies. Nearly 85 percent of all high-tech patent lawsuits filed each year are the work of patent trolls, according to the LOT Network.

The network says that more than 10,000 companies have been the victim at least once, with an average cost of \$3.2 million. Many of them can't afford it: Roughly half the victim companies earn less than \$10 million in annual revenue.

The LOT member agreement provides its members with a license to any patent assets owned by other members. Should a PAE acquire a member's patent, this licensing ensures that other members have immunity for the life of the patent.

Tech Outlook

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License to Spend

Poor software license management practices lead to runaway costs and security and compliance risks.

Mobility and the cloud have dramatically changed the way organizations acquire and use software. Users are downloading apps to their mobile devices and signing up for cloud-based solutions, often without the knowledge of IT or management. This “shadow IT” environment is virtually impossible to track and manage and creates a significant security threat.

In many cases, employees select consumer-grade solutions that don’t provide robust security or meet regulatory requirements. Sensitive data and intellectual property may be shared in public cloud platforms that lack adequate access controls.

Shadow IT also exacts a financial cost. Users often purchase software that duplicates existing licenses or capabilities, and fail to take advantage of volume discounts.

The shadow IT problem is driving interest in software asset management (SAM), a set of best practices for optimizing the purchasing and use of business applications. Whether performed manually or with automated software license optimization tools, SAM can provide tangible cost savings and help organizations maximize the value of their software investments. It can also help ensure that organizations remain in compliance with the terms of their software licenses.

“Organizations can leverage software license optimization solutions to score quick wins up front — inventorying their software estates for the first time, eliminating unused or unauthorized software from their networks or successfully defending themselves in a software audit,” said Ed Rossi, VP of product management, Flexera Software. “From there, they can go on to solve more complicated optimization problems that yield even greater return, such as strategies for fully utilizing all the software they’ve invested in before purchasing additional licenses.”

Audit Risks

In Flexera Software’s 10th annual survey of software licensing trends and practices, 75 percent of respondents admitted that at least some of their software is overused. Software vendors view this as a source of revenue, and conduct licensing audits to determine the extent of an organization’s noncompliance. So-called “true up” fees are charged for unlicensed usage, often at full list price. Back maintenance and support fees may be assessed as well.

The Flexera study found that 65 percent of organizations faced a software license compliance audit within the preceding year, with 23 percent audited three times or more. True-up fees totaled \$100,000 or more for 44 percent of enterprises, and \$1 million or more for 20 percent.

In addition to this significant, unbudgeted expense, organizations face the cost of the audit itself. Management, legal, IT and other resources must be directed toward responding to the audit on the vendor's timeline. An organization that is found to be out of compliance faces tougher negotiations with the vendor, resulting in fewer allowances and discounts going forward. If the result of the audit becomes public knowledge, the organization may face reputational costs as well.

While the Flexera report reveals significant software licensing challenges, it also suggests that organizations are becoming aware of the problem and looking for solutions. For instance, 81 percent of organizations said that managing software licenses is important, and 92 percent said they proactively track, manage and report software usage. However, 29 percent rely upon manual methods, while only 34 percent use automated SAM tools.

Valuable Exercise

Manual tracking may have worked with traditional license models, which generally provided one license per device or user. Today, software licenses frequently involve complex calculations for virtual machines, virtual desktops and the number of processor cores.

Modern SAM solutions help organizations maintain license compliance by automatically discovering software assets and reconciling usage against license entitlements. They can also aid in software license "recycling" — the recovery of unused licenses for reuse. According to Gartner, SAM tools and practices can cut software spending by as much as 30 percent.

"Automated software license optimization is a relatively new discipline and most organizations are at lower levels of maturity," said Hank Marquis, research director at Gartner. "But it's worth pursuing, as spending reductions contribute directly to the bottom line."

Effectively managing software licenses requires specialized knowledge and significant time and effort. It can pay big dividends, however, by reining in software costs and reducing security and compliance risks.

"The software license landscape is complex due to the sheer number of contracts to manage, the different types of licenses that must be administered, the different rules adopted by different vendors, and the fact that many organizations track their licensing information manually. We believe that as much as 33 percent of the software budget is being wasted due to insufficient software license management," said R. "Ray" Wang, founder and principal analyst, Constellation Research. "Organizations should focus on continual software license compliance to reduce software audit risk, and on fully utilizing the product use rights they've negotiated in their contracts to reduce shelfware."



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Enabling Automation

Windows Server 2016 enhancements designed to remove complexity and improve agility.

Mobile and cloud technologies have made network workloads far more dynamic and less predictable. To handle these demands, organizations need a data center platform with a high degree of automation so that they can more easily control and manage the environment.

Improved automation is one of the key characteristics of Windows Server 2016. From configuration and encryption to server and storage management, the new iteration of Microsoft's flagship operating system delivers unprecedented levels of automation to drive business agility.

Windows Server 2016 achieves this with a new architecture that Microsoft says has been "deeply refactored" with a host of features that address evolving IT priorities such as software-defined networking (SDN), cloud infrastructures, container-based microservices and increased security for virtual machines. A key to this approach is an enhanced networking stack in which SDN functionality is transferred directly from Microsoft's Azure cloud platform.

SDN is designed to ease the complexity of rigid hardware-centric network infrastructures. It creates a software layer that allows centralized, policy-based control of switching, routing and other network functions. This enables administrators to dynamically manage applications and workloads without the need to reengineer the base physical network.

Microsoft developed its SDN capabilities in support of the Azure public cloud, which delivers the company's software products from more than 100 data centers around the world. These features are being ported into Win-



dows Server 2016 to provide the same on-premises compute, storage and network virtualization features that power Azure in the cloud.

Azure Integration

Windows Server 2016 also features tight integration with Microsoft's Azure cloud service. The server OS makes significant chunks of the Azure code available on premises. This means developers can build applications that can run either in the data center or in the Azure public cloud. Other enhancements include gateways for connecting to Azure and other remote sites and a converged network fabric supporting both remote direct memory access (RDMA) and tenant traffic.

The Azure influence is evident in a number of cloud-inspired networking enhancements. A scalable network controller allows workloads to be deployed and maintained with a number of networking policies available within seconds. Networks can be dynamically segmented based on workload requirements using a distributed firewall, and network security groups can apply rich

policies within and across those segments.

Another cloud-focused feature is Windows Containers, which delivers advanced support for microservices and application containers. In this approach, apps are broken down into small bits of code that perform a single function, such as routing traffic, and then packaged in lightweight and portable containers that provide access to the CPU, memory, block I/O and network resources of the host operating system. This drives developer productivity and agility by allowing application code changes to move from development to production in minutes, enabling real-time change.

Small Wonder

Another feature designed to ease complexity and boost automation is Nano Server, a lightweight installation option designed to streamline cloud workflows. It is essentially a scaled-down version of Windows Server, stripped of a graphical user interface (GUI) and built for remote management.

Nano requires 93 percent less disk space than a full-on Windows Server deployment, and much of the reduced footprint comes from the removal of the GUI for a so-called “headless” deployment. Instead, users access a free set of web-based remote GUI tools that can be used to manage server installations from anywhere — whether they are in a data center or running in a virtual machine (VM) or in the cloud. Users can log into a web-based portal using a browser from any Windows, Mac OS or Linux PC and begin managing their Windows servers remotely.

The reduced footprint translates to better performance by eliminating unneeded services and processes that consume memory and CPU cycles. It also boosts security by shrinking the attack surface and reduces performance issues by limiting the number of functions each server instance must perform. Ultimately, these tiny, single-purpose Nano Server deployments will require fewer patch and update events, while delivering faster restarts, better resource utilization and tighter security. Microsoft expects 92 percent fewer critical bulletins and 80 percent fewer required reboots compared to a traditional server deployment.

More Enhancements

Windows Server 2016 includes numerous improvements to the Hyper-V hypervisor. The Rolling Cluster Upgrades feature allows users to upgrade clusters of Hyper-V virtual machines running on Windows Server 2012 R2 to Windows Server 2016 without any disruption. The new Hyper-V Replicas (HVR) feature dramatically improves replication. Previously limited to asynchronous replication of virtual hard disks, HVR enables either synchronous or asynchronous replication of entire volumes at the block level.

The new OS also features software-defined capabilities across storage, networking and compute that help reduce costs and increase agility. New security features help address evolving

threats and new threat vectors, and enhanced toolsets enable automated deployment and management of workloads across their entire lifecycle.

Windows Server 2016 is available in three main editions. The Datacenter edition is meant for highly virtualized data center and cloud environments, and includes powerful new features such as shielded virtual machines, software-defined storage and software-defined networking. The Standard edition is ideal for organizations that need limited virtualization but require a robust, general-purpose server OS, and the Essentials edition is designed for smaller organizations with fewer than 50 users.

A recent study on software utilization by Austin-based Spiceworks finds that Windows Server 2003 is still being used by 60 percent of North American companies — even though Microsoft ended support for that version last July. Those organizations will want to take a serious look at Windows Server 2016 and begin planning an upgrade quickly. Even if a major upgrade isn’t on the immediate timeline, the improvements in Windows Server 2016 are so compelling that organizations of all sizes should at least begin investigating it. Automation and management enhancements can eliminate complexity, improve agility and streamline modern workloads.

Service Center 2016 Enhancements Boost Hybrid Cloud Management

As part of the Windows Server 2016 rollout, Microsoft is also updating its System Center server management suite. Among the significant changes in System Center 2016 is integration with the cloud-based Operations Management Suite (OMS) to add support for managing and monitoring workloads in a hybrid cloud environment.

OMS is a Software-as-a-Service (SaaS) platform that allows an administrator to manage both on-premises and cloud IT assets from a single console. Log analytics features give administrators the ability to diagnose and troubleshoot hardware infrastructure, workload or application issues before they result in costly downtime or slow performance.

OMS automates backup and recovery, security, and compliance tasks across all applications, workloads and infrastructure, including Office 365 and Microsoft’s Azure cloud platform. In System Center 2016, OMS will also deliver broader support for Linux environments.

System Center 2016 includes Virtual Machine Manager (VMM), which delivers new capabilities for the software-defined data center, including managed Nano clusters, shielded virtual machines and rolling cluster upgrades. VMM makes it easy to deploy software-defined networking components such as network controllers, gateways and software load balancers using customizable templates.

Configuration Manager comprises tools to automate software deployment, data protection and compliance enforcement across all devices. Enhancements in System Center 2016 include support for the latest Windows 10 features, a Windows in-place upgrade, more frequent and easier updates, a unified end-user portal and more.

Automation features in Service Manager create significant speed and performance increases for tasks such as incident resolution, change control and service requests. Microsoft says users can expect 75 percent faster performance for scheduling Active Directory group expansion, and a four-fold improvement in incident processing capacity. Additionally, administrators can create rich reports and slice data based on a variety of dimensions using Service Manager’s data warehouse cubes.



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