NETWORKWORLD

We value your input! Please click here to send us your comments about this e-dition.

TABLE OF CONTENTS | The leader in network knowledge | May 5, 2008 | Volume 25, Number 18 | Search NetworkWorld.com | PAGE VIEW

Can Microsoft manage the works?

BY JOHN FONTANA

LAS VEGAS – Microsoft this week set its sites on becoming a dominant enterprise management vendor, but experts and users say first it will have to define the scope of its goals, improve the platform, and prove it can be the caretaker of non-Windows systems. **Page 8.**

Efficiency the focus at Interop

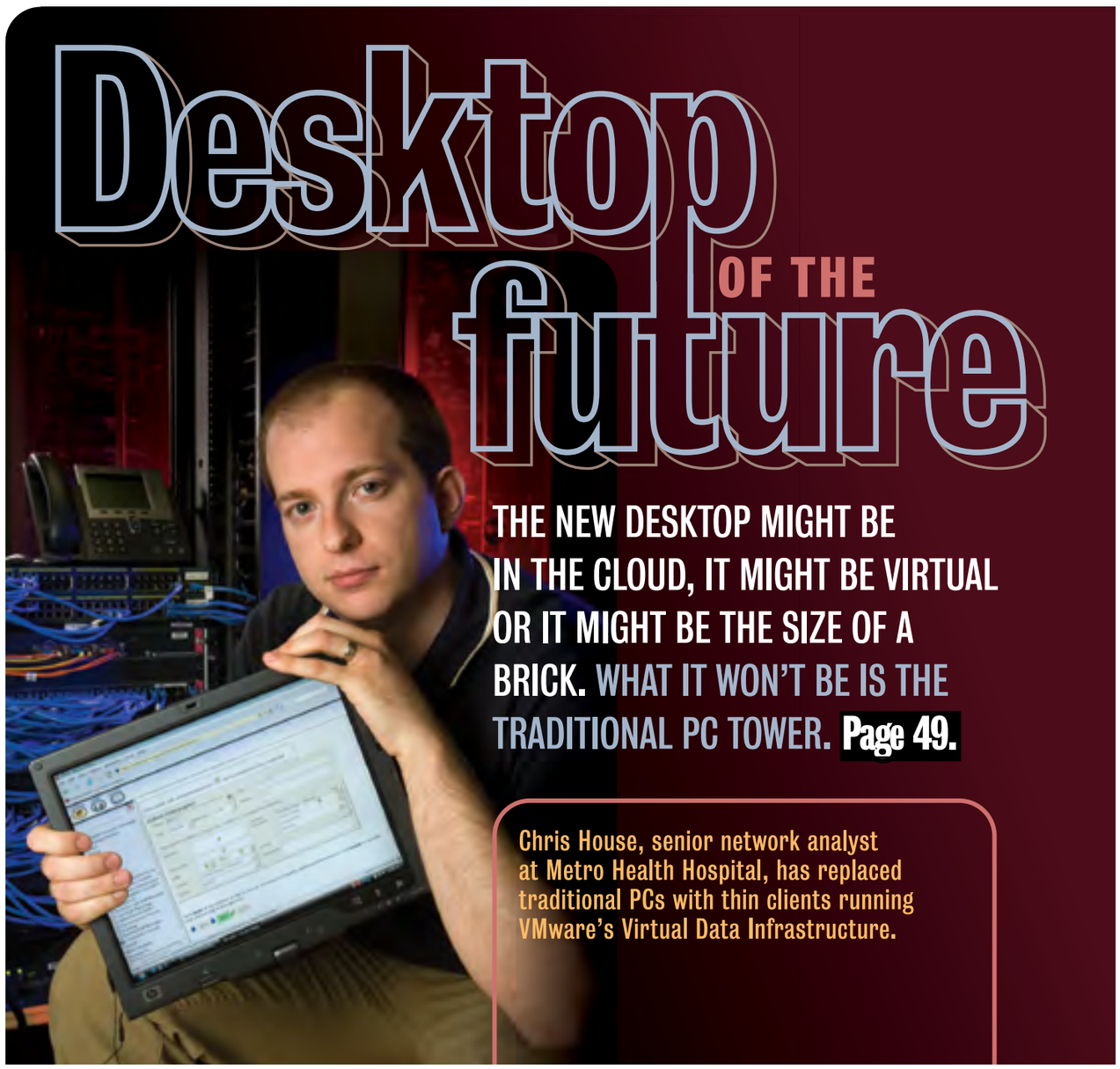
BY NETWORK WORLD STAFF

Technologies that can improve corporate bottom lines dominated the buzz at Interop, promising efficiencies and returns on investment that may help stave off cuts to IT spending in a tough economy. **Page 11.**

INTEROP
2008 › LAS VEGAS › SPECIAL COVERAGE

INSIDE: Find out why cloud computing isn't hot and how Interop built a big, temporary virtual network.

ONLINE: Check out our video coverage of the event and catch up on all the latest news and analysis.
www.nwdocfinder.com/4737



Desktop of the future

THE NEW DESKTOP MIGHT BE IN THE CLOUD, IT MIGHT BE VIRTUAL OR IT MIGHT BE THE SIZE OF A BRICK. WHAT IT WON'T BE IS THE TRADITIONAL PC TOWER. **Page 49.**

Chris House, senior network analyst at Metro Health Hospital, has replaced traditional PCs with thin clients running VMware's Virtual Data Infrastructure.

NEWS STORY

MICROSOFT VIRTUALIZES APPS
Microsoft is working on app virtualization technology designed to let customers quickly deploy infrastructure and stream applications on-demand. **Page 25.**

SKINNY ON MOBILE APPS
The move toward everyday use of complex business apps is going slowly. **Page 37.**

COOLTOOLS
Should you pass on iPass?
Page 48.

BACKSPIN MARK GIBBS

Microsoft forensics tool spells trouble.
Page 56.

NETBUZZ PAUL MCNAMARA

Why is this called 'virtual kidnapping?'
Page 58.

TABLE OF CONTENTS

5.5.08

BEST OF NW'S
NEWSLETTERS

Consolidate your logs, find golden nuggets

Technology executive: You may think of your log data as being rather mundane, but have you ever considered that it's a treasure trove of business intelligence? Of course, it's only "intelligence" if it can be presented in a way that helps you make sense of what's really happening on the network. That's the premise behind the offerings of LogRhythm, which provides enterprise log management and analysis. The company was founded in 2003 and its product is in its fourth generation. What the company does is simple, but not easy to accomplish: consolidate all the records from every kind of log you have; normalize the data into a standard form so you can interpret it; and perform analysis to help you clearly see problems, root causes and trends. **www.nwdocfinder.com/4727**

Wireless: Like the perpetual student, some extensions to the 802.11 wireless LAN standard seem as though they will linger in an indefinite state of development. However, one of those dallying standards, 802.11s for mesh networking, has registered a pulse. Though final standards ratification of 802.11s isn't expected until late 2009, PacketHop announced at Interop in Las Vegas that it is licensing pre-standard 802.11s software and firmware to makers of just about anything with the potential to wirelessly peer with something else. Think specialty applications for cars, industrial robots, surveillance cameras, electronic games and home entertainment components. **www.nwdocfinder.com/4728**

IT Careers and Training: A few weeks ago we reported that IT job security is plummeting five times faster than the nationwide average for all industries. IT workers must be keenly aware of trouble in the industry, according to a new survey that says IT worker confidence has reached its lowest point in several years. "It is not surprising to see this dip in IT worker confidence given the current state of the economy," says an April 16 report by IT and engineering services company Technisource. "Not only have reports about the future instability from financial organizations in connection with the sub-prime mortgage situation surfaced, but two H-1B visa bills are currently being debated in Congress. These two factors probably contributed to the insecurity felt over job availability."
www.nwdocfinder.com/4729

BLOGOSPHERE

■ **Cisco loses $2M order to ruthless Nortel energy efficiency calculator.** Cisco Subnet blogger Brad Reese tells the tale of how Nortel is beating Cisco on contracts by showing customers that Nortel equipment is more green. He writes, "The ruthless Nortel energy efficiency calculator continues to take its toll on Cisco according to the most recent TMCnet Hyperconnected Enterprise blog entry." The calculator, which Nortel says is verified by independent third parties, shows Nortel gear as greener and faster than Cisco ... "One customer (a school district) stopped processing an order for $2M of Cisco gear when they heard this story!"
www.nwdocfinder.com/4730

■ **Researchers study the language of IM. Next up: Facebook** The Alpha Doggs blog notes: "Not that we really needed university researchers to tell us this, but instant messaging qualifies as its own language according to Kent State University researchers. 'Instant messaging, or IM, is not just bad grammar or a bunch of mistakes,' says Dr. Pamela Takayoshi, Kent State University associate professor of English, in a statement. 'IM is a separate language form from formal English and has a common set of language features and standards.'"
www.nwdocfinder.com/4742

■ **Hackers of the world will once again unite at DEFCON 16.** On Aug. 8, DEFCON will take place, writes Noah Schiffman in his Security Phreak blog. "As usual, DEFCON is home to a number of classic hacker contests, including the Phreaking Challenge, Capture the Flag, Mystery Challenge, Hacker Jeopardy and the once great Spot the Fed contest. A few new events debuting this year include BuzzWord Survivor, Hardware Hacking Village and the unnecessarily controversial Race-to-Zero contest."
www.nwdocfinder.com/4732

■ **Four private investigators in the Israeli Trojan fiasco sentenced. Finally.** Richard Stiennon writes in his Stiennon on Security blog, "After three years four of the private investigators that used Michael Haephrati's Trojan software to gather competitive intelligence for their clients have finally been sentenced ... Readers in the U.S. will be perplexed by this case. Four PIs are now going to do jail time while the author of the illegal software goes free. And here is the big unanswered question: What about the executives at Bezeq, Tami4, Pelephone, Cellcom, and the other companies that hired the PIs to engage in these activities?"
www.nwdocfinder.com/4733

IT VIDEO

INTERVIEWS, THE COOLEST TOOLS AND MORE

COOL TOOLS:

Clickfree backup device

Keith Shaw speaks with Storage Appliance's Quan Lung about its Clickfree backup device, which aims to make data backup as easy as plugging in a USB cable.

www.nwdocfinder.com/4734

INTEROP:

Monitoring online video in the office

Ermis Sfakiyanudis of eTelemetry talks with Jason Meserve about its new Metron device, which helps companies monitor the usage of online video viewing of their employees.

www.nwdocfinder.com/4735

INTEROP:

Q&A: McAfee's David DeWalt

Tim Greene speaks with McAfee CEO David DeWalt about new dangerous malware, zero-day attacks, spear phishing and how McAfee deals with more than 500,000 network attacks per day.

www.nwdocfinder.com/4736

PEERSAY FROM OUR ONLINE FORUMS

From USA to SSA?

Re: Knock, knock, it's the FBI (www.nwdocfinder.com/4722):

Quote from the article: "Active interference with a botnet may carry serious legal consequences for researchers, since the botnet hosts are effectively computer systems belonging to third parties, who ordinarily are unaware that their systems are being misused." I think this scenario is indicative of a society, filled with fear and paranoia, which has gotten out of control.

Instead of addressing the causes of crime, we apprehend people, tag and categorize them, and throw them into a storage facility for hazardous material.

Our original founding fathers separated from Britain because of the injustice served at the hands of the Crown. Now our government is the tyrant.

The greatest evil demonstrated here, however, is that people will deem this an acceptable price to pay for safety. We will turn over our liberty and submit without a thought about it. Welcome to the Soviet States of America.

Adam Baca

We have given up huge portions (maybe all) of our privacy to the federal government. Not even sure why.

In the '80s the excuse was "narco-terrorists." In the '90s the excuse was "pedophiles." In the '00s the excuse is "global war on terrorism."

The Constitution has well-tested provisions for personal privacy, but the current conservatives have eliminated many of these critical laws. I can't figure it out — conservatives have historically been wary of the unchecked power of central government. Now they have given us the "Unitary Presidency," which means an all-powerful monarch in my book.

I don't have an answer on this, but I suspect many, many people would join me in fearing unlimited power by the feds.

A subtext in your article was "Vosburgh WAS a history professor." Sounds like he was forced to resign prior to proving guilt. Cool! Gutless private companies (universities) doing what the law should (or does) prohibit.

Sounds similar to the push for telecom wire-tap immunity. We will probably never know what data was gathered and on whom, and what it was used for.

Don Radick
www.nwdocfinder.com/4723

NAP and NAC

Re: Microsoft's NAP plays a leading role in NAC interoperability (www.nwdocfinder.com/4724):

I agree that Microsoft's NAP architecture changes the entire playing field. We think the arrival of NAP is one of the inflection points that will spur broader adoption of NAC/NAP across companies of all sizes.

Software-based NAC approaches might help companies manage the health of employee devices, but they don't really help with the identity and guest-access challenges (since by default their agent is not installed everywhere). Add that to the complexities of "one more client," as Joel noted, and it's clear why customers are choosing alternative approaches.

Todd Hooper
www.nwdocfinder.com/4725

He'll take the guy you never heard of

Re: Live mesh — The race to become Web 2.0's next Edison (www.nwdocfinder.com/4726): My recollection of the book (*The Big Switch*) and of other historical notes is that Edison was on the wrong side of the argument (he favored DC), and that it was Samuel Insull, Edison's clerk, who promoted the AC model that became the power utility model of today. Insull took over the reins at Chicago Edison, bought up other distributors and developed a pricing model that made electrification costs cheaper as utilization increased, and therefore attractive to the consumer.

Those organizations that strive to be the next Edison may be on the wrong track, focusing on generation rather than distribution and pricing. Businesses love variable, scalable operating costs rather than fixed investments in computing infrastructure. Better to be the next Insull.

Alan Mlinarchik
www.nwdocfinder.com/4726

The Internet may be losing its innovative edge

Jonathan Zittrain teaches at Oxford Internet Institute and Harvard University, and has been making headlines with his latest book, The Future of the Internet and How to Stop It, in which he argues that closed-system devices, such as the iPhone, are potentially harmful. In a recent Network World chat, Zittrain explained what he means. For a full transcript, visit www.networkworld.com/chat/

Nakshatram: The iPhone is making Internet usage even simpler. This comes with a price: a closed system. Isn't the price worth it?
I want to see us (and that means the market) avoid a dichotomy between the generative but now-dangerous PC-style platforms on the one hand, and the iPhone's gated community on the other. I'd prefer to work inward from the current Internet/PC rather than start with a closed system and pry it open.

baked: So you see the iPhone then as a logical outcome of market security pressures, but that the price of isolation is too high?
Exactly. I worry even that Android will fall victim to the very pressures driving people away from (or to lock down) their PCs. I'd like to see bottom-up ways of evaluating code, rather than farming out to McAfee, etc., and I think there are ways to preserve experimentalist architectures while also allowing room for prime-time stuff.

dreamworld: Does anyone in your vision make money on IT anymore? Or does it all become freeware?
Sure largely because the framers of each didn't set out to recoup it all or negotiate to get a slice. This is a classic commons problem, where a little common work can make us all better off and many of us richer, but it's sometimes tough to get firms and people to contribute.

Beregond: The first time I was told about the potential "death of the Internet," IPv4 was still classful and [Classless Inter-Domain Routing] dealt (for several years) with that problem. Then the BGP routing tables in core routers were getting too big for the amount of RAM in the routers in use at that time. . . . Since then, the Internet has been threatened with death half a dozen times, including when the "gated community" of AOL was linked to the net. Why should we be more concerned about the potential threat of the iPhone and similar devices?
Well, there's death and then there's death. Sometimes the wolf is really coming! But the "death" I have in mind — and to be sure, I rejected "the death of the Internet" as the title of the book despite pleas from the publisher — is more of a whimper than a bang. It's not some overloading of routing tables or bandwidth tsunami. It's more of a social transition. ■

ONLINE: Join our next chat
Talk with Network World Lab Alliance member Joel Snyder about network access control on May 5 at 2 p.m. EDT.
www.networkworld.com/chat

NETWORKWORLD.COM
follow these links to more resources online

Anonymizer acquired by risk-mitigation firm

Risk-mitigation firm Abraxas Corp. has acquired Anonymizer for an undisclosed price. Anonymizer makes products that can conceal an online user's identity. The company's founder and CTO Lance Cottrell has been an outspoken privacy advocate, particularly in areas of the world where government-based censorship and monitoring of individuals exists. Abraxas, which provides technology for the national security community, intends to keep Anonymizer as a subsidiary. **www.nwdocfinder.com/4738**

AT&T opens Mobile TV service. AT&T has begun broadcasting its Mobile TV service, which it says will provide live broadcasting of television shows and movies over mobile handsets. AT&T will use Qualcomm's MediaFLO technology to deliver content from several television networks, including CNN, Comedy Central, ESPN, MTV and CBS. The service will cost $15 per month for a basic package. **www.nwdocfinder.com/4739**

PacketHop jumps on WLAN mesh standard. PacketHop last week unveiled the first commercial implementation of the draft IEEE 802.11s wireless-LAN mesh standard. The Menlo Park, Calif., software vendor is betting that the draft standard is stable enough, and that wireless mesh networks are attractive enough, to draw OEM customers. Once embedded in mobile clients and wireless access points, 802.11s will let these devices discover each other and automatically set up their own wireless infrastructure, using their 802.11 radios.
www.nwdocfinder.com/4740

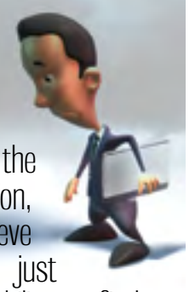
Study: U.S. needs stronger broadband policy. A complicated mix of factors, including population density and the cost of broadband, contribute to U.S. residents lagging behind several other nations in buying high-speed Internet service, but the government can take some steps to improve the numbers, according to a report by the Information Technology and Innovation Foundation. The U.S. government could adopt more favorable tax policies, allowing broadband network operators to depreciate their investments in next-generation networks faster, for example. The report also recommended that the government make more wireless spectrum available and fund state programs already working to expand broadband deployment.
www.nwdocfinder.com/4741

GOODBADUGLY

Free content-delivery network

Start-ups and entrepreneurs looking for cheap content delivery can relax: British vendor Velocix says it has them covered. The company's new Accelerator content-delivery service includes a 500GB-per-month allowance for file downloads, video streaming and Web-site acceleration services — and it's free to any business that wants it.

IT-worker confidence hits low point



IT-worker confidence has reached its lowest point in several years, according to a survey by Technisource. Among technology workers polled, 69% believe the economy is getting weaker. In addition, 55% of technology workers believe available jobs are declining, and just 48% are confident in their own ability to find a new job.

Most SOA efforts will fail spectacularly

IT departments often implement a service-oriented-architecture program that while technically proficient, doesn't meet the needs of business users, Burton Group analysts said at Interop Las Vegas. IT professionals generally are bad at presenting the business case for SOA and can tend to exaggerate predictions of reusability and underestimate project costs.

InBrief

IBM buys trading data vendor

IBM has acquired Infodyne, a privately held maker of software that quickly crunches hundreds of market data sources into a standardized form for the trading industry. Terms of the deal were not disclosed. "This is really a big play for us in the low-latency space," says Tom Rosamilia, general manager of IBM WebSphere, referring to the technologies that enable algorithmic trading, in which computers make buying and selling decisions by analyzing vast amounts of real-time market data. "InfoDyne has been a leader in this space, both with its platform and connections to data feeds out there." InfoDyne's technology will be moved under IBM's WebSphere brand. WebSphere includes products such as Front Office for Financial Markets, which serves a similar purpose to InfoDyne's technology.

3Com CEO to be based in China

3Com, the U.S. networking vendor looking to operations in China for a competitive edge, has named a new CEO who will be based in that country. The new CEO, Robert Mao, will replace Edgar Masri, who is leaving the company after less than two years. Mao's appointment will help support 3Com's growing and profitable China operations, 3Com says. Mao, 64, led Nortel Networks' business in greater China from 1997 to 2006 and most recently was 3Com's executive vice president of corporate development. In other 3Com news, former longtime executive Ron Sege is returning as president and COO. Sege, 51, will be based in the United States and will focus on 3Com's operations outside China, reporting to Mao. Sege worked at 3Com from 1989 to 1998 and was most recently president and CEO of Tropos Networks, a wireless mesh equipment vendor.

HP user groups combine forces

The HP user community now has a virtual supergroup, as Encompass, HP Interex EMEA and ITUG have consolidated into a single organization called Connect. With about 50,000 members, Connect will be the largest HP user group, according to its initial president, Nina Buik. "We realized we are much better together. We have a 50,000-member base out of the gate that is going to have a much stronger voice toward HP," says Buik, who is senior vice president of e-learning vendor MindIQ. Another HP group, Vivit, was invited to join the consolidate organization but declined.

Can Microsoft manage the works?

Software giant looks to lineup against CA, HP, IBM, BMC

BY JOHN FONTANA

LAS VEGAS – Microsoft this week set its sites on becoming a dominant enterprise management vendor, but experts and users say first it will have to define the scope of its goals, improve the platform, and prove it can be the caretaker of non-Windows systems.

The company laid out its plans this week at its annual Microsoft Management Summit (MMS) for a cross-platform enterprise data-center management infrastructure that includes hooks into Linux and Unix systems.

It's a major shift from five years ago when Microsoft announced at MMS that management was no longer going to be an afterthought and a comprehensive platform to manage Windows was at the center of a 10-year plan called the Dynamic Systems Initiative.

Just five years later, Microsoft plans to climb the ladder and attempt to compete with the major vendors – CA, HP, IBM and BMC – to manage desktops, datacenter automation and distributed systems regardless of the logo on the software.

"The shift they made was to support heterogeneous environments, and the question becomes how well will they support them," said Steve Brasen, an analyst with Enterprise Management Associates. "Initially [Microsoft's offering] is not as comprehensive as the big four, but over time I would expect their heterogeneous support to improve but the question then will be to what degree."

Brasen said Microsoft, which has been relying on third parties to build bridges to non-Microsoft platforms, had to take up the charge on its own in order to compete with the big four.

"We weren't surprised by their announcement," said Roger Pilc, senior vice president and general manager of CA's infrastructure management & data-center automation business unit. "It validates our view that systems management is an important space and companies increasingly need

help to manage growing complexity." Pilc said CA also sees demand to integrate management across physical and virtual platforms and users are looking for integration not only within CA's offerings but with "adjacent systems, so integration with System Center is something we bring to our customers."

Microsoft is taking the sort of integration attitude, clearly recognizing that corporate IT now has many management systems in place that keep operations alive.

At MMS this week, in addition to unveiling System Center Operations Manager 2007 Cross Platform Extensions, which bring Linux and Unix under the Microsoft management umbrella, the company unveiled Operations Manager 2007 Connectors.

The Connectors, acquired when the company bought Engyro last year, integrate Microsoft's System Center family of management tools with HP OpenView and IBM Tivoli management platforms. Other platforms will follow, according to Microsoft.

The two-sided approach is sensible, according to experts and users.

Observers say Microsoft is likely to win over Windows-centric shops that have a few Linux servers to manage and want to use Microsoft management tools that are familiar. But in larger companies with complex infrastructures the most likely path will be integration, and those users will evaluate Microsoft on the elegance of those integrations.

"I don't think we will ever be at one management system," said an IT architect with a major manufacturer who asked not to be named. "We will look at Microsoft where it makes the most sense and how well it plays together with other systems."

The proof will be in Microsoft showing what it can do.

"Microsoft needs to prove to its customers that they really know and understand the management space," says Nelson Ruest, a noted speaker and co-author of *Microsoft Windows Server 2008: The Complete Reference*. "What has happened in the past five years [since the introduction of DSI] that has made them knowledgeable enough to do this? I have not seen anything happen."

Ruest concedes that the management message from Microsoft is better, especially around virtualization and the data center. But if the company wants to convince users it can integrate platforms it will need to show it can integrate its own tool set.

A case in point came in February when Microsoft delayed until 2010 a critical workflow and service automation tool called System Center Service

Evolution of management

In 2003, Microsoft finally committed to building a management platform for Windows. Five years later, Microsoft wants to be a provider of cross-platform enterprise management systems to rival CA, HP and IBM.

Then	Now
Initiative to finally create a management platform for Windows.	Build a cross-platform enterprise management system.
Systems Management Server (SMS), Microsoft Operations Manager (MOM) will be combined into one product to form hub of platform.	Re-branded SMS and MOM under System Center banner; tools kept separate and MOM given major facelift; added virtual machine management.
Virtualization not even on far horizon of road map.	Virtualization driving expansion of platform.
Cross-platform support left to integration via third-party tools, platforms.	Linux, Unix support destined to be part of Microsoft's tool set.
Marketing buzzword: Dynamic Systems Initiative (DSI).	Marketing buzzword: Dynamic IT.
System Definition Model (SDM) is proprietary modeling language and key to DSI.	SDM out and Service Modeling Language (SML) in. Microsoft helped create SML (with CA, IBM and others) and standardize the SDM derivative; still missing other pieces such as Common Model Library.

Manager.

The tool helps administrators work through trouble tickets and anchors automated, pro-active service requests initiated via other system management tools. The tool also can aid in compliance auditing. Its workflow engine is based on the Windows Workflow Foundation, and it incorporates IT Infrastructure Library (ITIL), a set of best practices for IT services management, and the Microsoft Operations Framework.

It also provides a configuration management database (CMDB), which will host data from System Center Configuration Manager and from Operations Manager, and a workflow engine to move trouble tickets through the entire range of Microsoft management tools.

Microsoft says once the CMDB is rebuilt integration of System Center tools will become easier.

Experts say Microsoft can't catch the major management vendors without the Service Manager capabilities because users can't automate infrastructure management without it.

The Service Manager delay was caused by performance and scalability issues and the fact that it all needed to more closely align with Operations Manager 2007.

Analysts, users and partners praise the work Microsoft has done on Operations Manager, even though a re-architecting of the software gave users a painful migration from the 2005 version to the 2007 edition.

"Operations Manager is a very powerful platform," says a partner who requested anonymity, but he said as far as becoming a major management vendor that "Microsoft has a lot of ground to make up."

Author Ruest says Operations Manager is the best management product Microsoft has and is smart to build around it, as evidenced by the two announcements around cross-platform extensions and platform connectors made at MMS.

"It has a good programming model, a good design and a good ISV model, so lots of vendors can add functionality by creating management packs."

Unfortunately, Configuration Manager does not share the same programming model qualities, says Ruest, and does a poor job integrating with Active Directory, an important cog in Microsoft's management infrastructure.

Microsoft also is putting its faith in the open source realm in order to align its products with other platforms.

It is tapping the OpenPegasus project to build a bridge to Unix and Linux systems.

The project is an open source implementation of the Distributed Management Task Force's Common Information Model (CIM) and Web-based Enterprise Management (WBEM) standards.

The project is run by the OpenGroup, and Microsoft said it has joined the OpenPegasus steering committee.

Linux vendors Novell and Red Hat have incorporated WBEM or its derivatives into their Linux operating systems, and Sun and HP have done the same with their Unix-based operating systems. Microsoft has its own implementation of WBEM called Windows Management Instrumentation.

But some management vendors, such as CA, do not support OpenPegasus in their management agents, which could eventually cause some integration issues.

It all adds up to a number of challenges Microsoft will face in terms of products and perceptions over the next few years.

"I think there will be lots of skepticism in the market that Microsoft can do better Linux and Unix management than Linux and Unix vendors," says Darren Mar-Elia, president of SDMSoftware, which develops tools for Microsoft group policy.

"I don't see Microsoft competing in the traditional sense [with the major vendors]. I don't think they will take a big bite away from HP, CA and others in the near future."

Microsoft says DSI rollout underway

Efficiency the focus at Interop

Leaders say short-term infrastructure spending now means long-term efficiency

BY NETWORK WORLD STAFF

Technologies that can improve corporate bottom lines dominated the buzz at Interop Las Vegas, promising efficiencies and returns on investment that may help stave off cuts to IT spending in a tough economy.

Virtualization, service oriented architectures (SOA) and software-as-a-service all were cast in the light of improving efficiencies, speeding up applications, even enabling new types of products that can improve corporate earnings.

"I think it's time to rethink everything we've done with enterprise computing," says Mark Templeton, CEO of Citrix in his keynote, urging that businesses forge ahead with corporatewide IT improvement plans and adopt a software-as-a-service model both internally and externally, adding that that takes bold initiatives by IT executives. "You need to think a new way about your role as an IT leader," he said.

Templeton promised Citrix will round out its virtualization products later this year to further cost reductions by reducing the number of physical servers needed to support corporate networks and dynamically adjusting server capacity based on demand

Vendors touted SOA as building services that can be shared across business units using existing resources and lower long-term expenses. SOA can make it easier to do compliance reporting, software-as-a-service, legacy modernization, unified commu-

nications, business intelligence and various other important tasks, says Burton Group analyst Chris Howard, who moderated an Interop session on the technology.

Despite tight budgets, attendees swarmed the show floor and seemed focused on specific technologies as they waded through more than 350 exhibition booths, bombarded by sights and sounds including networking gear, rides, video games, car raffles and even a gospel choir. Show organizers wouldn't estimate what the final attendance count will be but claimed that attendance was tracking higher than last year.

Money-savings proved paramount in show-related hype about other well-established technologies. Wireless is less expensive to set up and maintain, and is the logical replacement for wired networks, says Kathy Paladino, president of Motorola's enterprise mobility unit, who delivered a keynote. The availability of 802.11n wireless gear signals the arrival of LAN-like quality that will phase out wired infrastructure. "The question is not why to cut the wires but when," Paladino says.

Nortel grabbed the forum of Interop to claim its switches can save on energy costs and that it's alliance with Microsoft will lead to more efficient virtualized data centers.

Nortel claimed that recent studies show its switches and routers are as much as 50% more energy efficient than competitive offerings.

This energy saving component has helped the company land 50 recent enterprise wins, says Joel Hackney, president of Nortel's Enterprise business. It's also playing a key role in helping Nortel create demand during a recessionary economy marked by reduced spending on enterprise IT, he says.

"The opportunity we see is simplifying networks," Hackney says, and is a chance to make inroads against Cisco. "Customers are looking for a choice. We have the opportunity for growth as the No. 2 player going against a very large market-share [leader]."

Even security vendors were getting into the cost-conscious act. Dave DeWalt, CEO of McAfee, in his keynote

ALEX DUNNE

characterized security suites - packages that combine multiple functions on a single platform - as a way to improve management efficiency and reduce the effort needed to deal with multiple vendors. "Security is a must-have, whether we have a recession or not," says DeWalt, and one way to make it affordable is by buying what he termed best-of-suite products that combine antivirus, antispam, NAC and other functions in one software package.

Despite enthusiasm for technologies that support more efficient, effective networks, some experts were also cautioning about the complexity of implementing them. For instance, SOA implementations are subject to alarming rates of difficulty, according to a Burton Group analyst on a panel about the technology.

"The state of the union of SOA right now is there's some fatigue set in," says Burton Group's Howard, noting that when he recently asked an audience of 300 people whether their SOA efforts were going well, only a half-dozen responded positively.

Often IT departments implement SOA programs that may be technically sound but don't meet the needs of business users, Howard said. Burton Group is researching SOA successes and failures through interviews with dozens of its clients, including both their IT professionals and business executives.

The business executives often conclude that IT exaggerates the benefits of reusability or underestimates project cost, Howard said. IT professionals are generally bad at presenting the business case for SOA, and need to get better at explaining to CEOs the long-term benefits in cost and flexibility, he says.

Vendors are also contributing to SOA problems. Rebranding old products and claiming they are SOA-compatible is pretty common, Howard said.

Over the next year, Juniper Networks will add services to its J-Series routers, such as high-end intrusion detection and unified threat management.

In fact, as in most technologies, it's not in vendors' interests to have products that are fully compatible with their competitors', he says.

Virtualization can have a dark side as well. When users can clone a virtual machine with the click of a mouse, or save versions of applications and operating systems for later use, they're asking for trouble if IT doesn't maintain tight control, virtualization management vendor Embotics warned in an Interop session.

This virtual sprawl can waste space on physical servers and tax software resources. It can also burden IT with more manual processes and increased security risk, Lynch said. "The risk of sprawl is a lot higher in the virtual world than it is in the physical world," he said.

Offline virtual machines present a problem, in that automatic patching systems don't recognize them, leaving them without critical updates, Lynch said. He recommended that IT shops set policies limiting the amount of time a virtual machine is allowed to stay offline. If it's offline for a period of, say, 30 days, just eliminate it, he said.

"It's time to rethink everything we've done with enterprise computing."
MARK TEMPLETON, CEO of Citrix

Other highlights of the show included Juniper revealing it plans to roll out low-end branch-office routers over the next year as it tries to supply equipment for small businesses and branch offices.

The goal is to put boxes in branches that support headquarters-like performance and availability, says Alex Gray, vice president and general manager of the company's branch products, which include the J-Series routers and SSG security gateways.

Meanwhile, for those awaiting Cisco's next big product overhaul, 2009 might be the year.

Cisco is planning a significant campus product launch under the codename "Big Bang," according to Marie Hattar, vice present of network systems and security solutions marketing. It will follow this year's refresh of the data center with the Nexus 7000 line, and the edge router portfolio with the ASR 1000 series.

Despite the jolt inspired by the code name, Hattar promises that Big Bang will be an "evolutionary" event for customers of Cisco's Catalyst 6500 switches, not a "forklift." To help ease the impact of Big Bang, Cisco plans to incrementally enhance the Catalyst 6500 line before then to extend its life span, Hattar says.

Interop network goes all-out virtual

World's largest temporary network slims down with virtual servers

BY JON BRODKIN

The monster network that powers the Interop Las Vegas show has joined the virtual age. For the first time, network engineers who build the world's largest temporary network and dismantle it a week later are going with an almost totally virtualized server environment, according to network architect Geoff Horne.

Last year Horne recalls his team pulling 20 to 25 servers off the racks after the show. This year practically every show function will be run on just one HP BladeSystem c7000 Enclosure, which is being virtualized using VMware ESX Server. On Tuesday, Horne was running more than 60 virtual machines on the BladeSystem, the virtual equivalent of a full rack. VMware can potentially run 32 virtual machines per blade. The InteropNet has two BladeSystem arrays, each with 14 blades. Only one of the arrays was in use, but if both were pushed to their full capacity Horne could run 896 virtual machines, or the virtual equivalent of 14 full-height racks.

The impetus is power savings and the flexibility to spin up new virtual machines as often as necessary.

"Cloning machines is trivial [with VMware]," Horne says.

Some vendors who donate equipment to the temporary network, known as the InteropNet, brought their own physical servers. But Horne is a stickler.

"If anyone had hardware we pretty much yanked it out and said 'no, you're going virtual," he says.

Horne and his team made exceptions for two servers that support Digium products, because they needed special PCI cards. Every other server is a virtual one running on the HP blade system.

Horne, who volunteers for the InteropNet and spends the rest of the year as a network design consultant, went through a learning curve because he doesn't have a ton of experience with virtualization.

Geoff Horne reduced the number of servers used at Interop's network from 25 to one.

"It's the first time I've used it on an array this big," he says. "I wanted to do it for a long time. [At Interop] I had the power to say 'guys, I'm banning hardware.' If you go into an enterprise, it's not easy to do that."

Though Horne and his team quickly got the hang of it, learning how to manage virtual machines was initially a challenge. Fortunately, a VMware technician on-site helped them through the roadblocks.

"It's weird for a lot of network guys. We're used to plugs and cables," Horne says. "You have to map what you did physically to what you do virtually."

The InteropNet is composed of vendor-donated equipment and software, about half of which is technology in alpha or beta and not yet generally available. The total value of donated equipment last year was nearly $10 million, and it's "easily that much" again this year, Horne says.

There might be some savings on the power bill, though. Besides virtualization, Horne and team have increased use of monitoring and cut usage of fans and energy hogs.

"We've got monitoring in every single switch and rack," Horne says. "We've cut back on heavy gear and optimized power supplies."

About 100 people, mostly volunteers, work on the InteropNet, delivering connectivity to 400 booths, 50 conference and meeting areas, and more than 20,000 attendees and exhibitors. There are at least 50 wireless access points and 1,600 KVM (keyboard, video, mouse) ports, Horne says.

About 20 vendors contribute technology to the InteropNet.

Interop Reporters' Notebook

Seen and heard in and around the Interop show floor

BY NETWORK WORLD STAFF

C.K. Prahalad delivered the keynote at Interop last week. Never heard of him? He's the most-influential management thinker in the world, according to The Times of London. He used the keynote platform to kick off the U.S. release of his new book, The New Age of Innovation: Driving Co-created Value Through Global Networks. Interesting stuff if you're in a graduate economics seminar, but he had a tough row to hoe vs. Cisco's preacher/CEO John Chambers and other keynote regulars. At the same time, Prahalad's book plug was a welcome relief from thinly veiled sales pitches that constitute many keynotes. A least Prahalad was up front about being on a book tour and was even classy enough to pass out free copies of the book to the audience. When was the last time Chambers gave you a router for listening to him talk?

Ditch the switch. Wi-Fi vendor Xirrus urged Interop attendees to "Ditch the Switch" by featuring a industrial-sized ditch digger in their booth. The vendor says its product is the only Wi-Fi device capable of replacing Ethernet work-group switches.

The Web 2.0 blues. It used to be easy for U.S. Bank to determine which users and systems could be trusted and which should be viewed with sus-

picion. Then along came Web 2.0. "We always said outside the corporation was untrusted and inside the corporation was trusted territory," U.S. Bank CTO Gary Hodge said in a keynote panel discussion on Web 2.0 security. "Web 2.0 has changed all that. We've had to expose the internal workings of

the corporation. There's a whole rash of new devices coming out to enable people to compute when they want to, with the iPhones and smartphones."

The horrors of network management. Network configuration vendor AlterPoint used a horror movie theme in its booth to relay the frights network managers face daily.

A mesh mess. Spent millions of dollars on management software and still struggle to quickly determine the root cause of network performance problems? It's a common scenario, according to Burton Group senior analyst Eric Siegel, and not one that will be solved by throwing more technology at the issue. Wireless, VoIP, virtualization, service-oriented architecture, Web services, unified communications and more emerging technologies make it impossible for staff to diagnose performance problems on networks as they did in the past, with clear lines drawn between IT groups. "The network is now the backplane for multicomputing systems, whereas in the past all the processing happened on the mainframe," he explains. "Now everything is all intertwined and intermeshed, and when things don't work well, it shows that some control over the environment has been lost at a time when tolerance for something being down is nonexistent."

Happy feet. Happy feet?: One booth at Interop didn't have as much to do with technology as it did reflexology. Interop attendees could stop and get the state of their sore feet assessed, pick up some gel insoles and carry on with the show.

The Mini Cooper of monitoring. Network monitoring vendor Net Optics used the Interop show floor and a Mini Cooper to send its message about its Monitoring Access Platform designed to MAP traffic for optimal monitoring. Interop attendees could also enter to win a TomTom GPS system at the vendor's booth.

Cloudy picture for cloud computing

Experts say enterprises are taking a wait-and-see approach

BY NEAL WEINBERG

LAS VEGAS -- You can call it cloud computing. You can call it grid computing. You can call it on-demand computing. Just don't call it the next big thing – at least not yet.

Efforts by Web heavyweights such as Amazon and Google to entice companies into tapping into the power of their data centers are being slowed by a number of factors, according to Interop panelists.

Analyst Alistair Croll of BitCurrent said there are specific applications for which grid/cloud computing is perfect. For example, *The New York Times* recently rented Amazon's grid to create searchable PDFs of newspaper articles going back decades. The *Times* estimated that the project would have taken 14 years if the *Times* had used its own servers. Amazon did the entire project in one day, for $240.

But those examples are few and far between, as most companies are still in the `kicking the tires' stage when it comes to grid computing. Reuven Cohen, founder and CTO of Enomaly, said his customers are primarily using grid computing for research and development projects, rather than production applications.

Kirill Sheynkman, head of start-up Elastra, said the early adopters of grid computing are Web. 2.0 start-ups who want to get up and running quickly and without a lot of capital expenses, independent software vendors that want to offer their applications in a software-as-a-service model, and enterprises who have selected specific applications for the cloud, such as salesforce automation or human resources.

"Equipment inside the corporate data center isn't going away anytime soon," added Sheynkman. Companies remain reluctant, for a variety of reasons, to trust the cloud for their mission-critical applications. Here are some of those reasons:

1. Data privacy. Many countries have specific laws that say data on citizens of that country must be kept inside that country. That's a problem in the cloud computing model, where the data could reside anywhere and the customer might not have any idea where, in a geographical sense, the data is.

2. Security. Companies are understandably concerned about the security implications of corporate data being housed in the cloud.

3. Licensing. The typical corporate software licensing model doesn't always translate well into the world of cloud computing, where one application might be running on untold numbers of servers.

4. Applications. In order for cloud computing to work, applications need to be written so that they can be broken up and the work divided among multiple servers. Not all applications are written that way, and companies are loathe to rewrite their existing applications.

5. Interoperability. For example, Amazon has its EC2 Web service, Google has its cloud computing service for messaging and collaboration, but the two don't interoperate.

6. Compliance. What happens when the auditors want to certify that the company is complying with various regulations, and the application in question is running in the cloud? It's a problem that has yet to be addressed.

7. SLAs. It's one thing to entrust a third party to run your applications, but what happens when performance lags. The vendors offering these services need to offer service-level agreements.

8. Network monitoring. Another question that remains unanswered is how does a company instrument its network and its applications in a cloud scenario. What types of network/application monitoring tools are required.

While many of these questions don't have answers yet, the panelists did agree that there is a great deal of interest in grid computing.

Xerox projects: smart docs, erasable paper

BY MICHAEL COONEY

Xerox's famed Palo Alto Research Center, scientists put some of their most ambitious projects – everything from intelligent document technology to solar energy ventures -- on display this week .

The 2008 "Inside Innovation at Xerox" featured scientists and projects from Xerox research centers across the US and the globe. They showcased a number of new technologies including:

· Intelligent redaction. Xerox and PARC scientists are developing ways to access and sort through content from massive amounts of documents, for what can or can't be seen, printed or copied. The intelligent redaction project, automates the process of protecting sensitive information in documents, and it matches the information that is revealed to the viewer's level of access. For example, a mortgage application is typically processed by a number of employees of the lender. Not everyone needs to see all the information in the application. Xerox's technology lets a single version of the application circulate within an organization, with the guarantee that each employee only sees what he or she needs to see in the document, according to the researchers.

· Next generation categorization. Xerox is looking at letting customers simultaneously tag text and images, for more effective categorization of online and paper-based documents. Researchers at Xerox Research Centre Europe (XRCE) have demonstrated a software technology that can link text and general images together. Current tools classify or "tag" either text or images so they can be processed; but until now no one has combined the two effectively, according to the company's Web site. By linking image and

Xerox scientists have invented a way to make prints with temporary images, so that the paper can be used over and over.

text-based content, this new software technology significantly improves fundamental document management tasks like retrieving information from a database or automatically routing documents. For example, if a brochure from an isolated hotel in the French Alps describes the hotel's features and includes maps and pictures of mountainous surroundings, the categorizer will automatically discover the content and link the text and the images together. Then someone searching for an isolated mountain lodge within a certain price range would retrieve the brochure even if "isolated lodge in the mountains" were never mentioned in the actual text.

· Seamless documents. At Fuji Xerox's U.S. lab, scientists are solving the problem of easy access to documents on small-screen devices such as cell phones. The idea here is to be able to take a picture of a document, upload it to a server which would process it and present it on the small screen. The experimental printing technology, a collaboration between the Xerox Research Centre of Canada and PARC (Palo Alto Research Center Inc.), could someday replace printed pages that are used for just a brief time before being discarded. Xerox estimates that as many as two out of every five pages printed in the office are for what it calls "daily" use, like e-mails, Web pages and reference materials that have been printed for a single viewing.

· Self-erasing, reusable paper: Xerox scientists have invented a way to make prints with temporary images, so that the paper can be used again and again, the group said. The experimental printing technology, a collaboration between the Xerox Research Centre of Canada and PARC , could someday replace printed pages that are used for just a brief time before being discarded, Xerox stated. Xerox estimates that as many as two out of every five pages printed in the office are for what it calls "daily" use, like e-mails, Web pages and reference materials that have been printed for a single viewing. This project is developing compounds that change color when they absorb a certain wavelength of light but then will gradually disappear. In its present version, the paper self-erases in about 16-24 hours and can be used multiple times, the group said.

· One-to-one communications technology: Xerox showed of its XMPie products which blends data and images to create personalized communications. The product family utilizing XMPie is already on the market.

Researchers also showed off what they call Clean Tech technology. The project includes PARC's low-cost solar concentrator that integrates the optical, thermal, and electrical aspects of high-efficiency concentrator photovoltaics into a single, flat, solid piece of glass. The result is a smaller solar panel that converts significantly more sunlight into electricity, is durable, safer to operate, and cheaper to manufacture – all of which adds up to solar power that is drastically more affordable and easier to implement than competing technologies, according to the group's Web site.

According to researchers, by using novel printing technologies to pattern the metal traces on conventional silicon solar cells, PARC's approach increases solar cell efficiencies by about 6-8% relative – leading to increased profits for manufacturers and more compact installations for consumers. The group is also looking to purifying water more effectively via particle filtration technology.

Last year, Xerox was awarded 584 U.S. utility patents. Xerox holds about 8,600 active US patents and with its partner, Fuji Xerox, invests $1.4 billion a year in research and development.

IBM, Google launch cloud initiative

Duo working together on Web-based vehicle to deliver apps to businesses, consumers

BY NETWORK WORLD STAFF

Google and IBM are testing a cloud computing infrastructure that could become an important avenue for them to deliver software and services to consumer and business users.

Google's Eric Schmidt and IBM's Sam Palmisano addressed a gathering of IBM business partners in Los Angeles on Thursday and revealed the two companies have developed a cloud computing environment that runs on Linux and includes Xen virtualization and an Apache implementation of the Google File System called Hadoop.

Last year, the two companies teamed up on a parallel-computing initiative.

The IBM/Google cloud environment is being tested at the Massachusetts Institute of Technology, Stanford University and Carnegie Mellon University.

The pair isn't the first to test the cloud concept.

Amazon is offering a cloud environment called EC2, which has companies or developers paying only for the capacity they need to run their applications or services that they in turn are offering to users or business partners.

While the two CEOs did not announce any future plans, they said the IBM/Google cloud would eventually be used to support an array of services and applications tailored for consumers and businesses.

Google already has a number of online services for consumers including calendars, photos and Google Docs word processing tools. Google also is positioning Google Docs as a suite of applications for corporate users, including offline capabilities.

IBM recently released IBM Symphony, a set of similar office productivity tools that users can download and run locally and can be tied into other services. It also has a set of social-networking tools that could be offered as a service.

The IBM/Google cloud initiative would compete with Microsoft's software-plus-services strategy and the recently announced Live Mesh, a storage and synchronization framework. Microsoft is attempting to tie the cloud to desktop and devices, and its on-premise business and server applications. In April, the company announced it had begun a beta to test a combination of Office and online services under the code-name Albany.

Schmidt was quoted by the Dow Jones news service as saying Google's relationship with IBM is a "key plank" in its strategy "otherwise we can't reach the customers."

A future look at data center power

11 cloud computing vendors to watch

IBM to build apps marketplace for SMBs

BY JAMES NICCOLAI

IBM is trying to rally support for an online applications marketplace for small and midsized businesses that it plans to launch later this year.

On Thursday, it outlined plans to create the Global Applications Marketplace, where small businesses will be able to browse and purchase applications from potentially thousands of independent software vendors around the world, which local IBM channel partners will then install and manage for them.

IBM optimistically compared the marketplace to Amazon.com, because customers will be able to read reviews of products written by other customers. It will also be like iTunes, in the sense that it will be tied to the vendor's hardware: customers who use the marketplace will have to have an IBM server, just as iTunes customers need an iPod.

The goal is to make it easier for companies with small or nonexistent IT departments to adopt new software and services to help run their businesses. For IBM and its partners it's a way to generate more business from companies with up to 500 employees, a market largely untapped by IBM thus far.

The initiative, also called the Blue Business Platform, was announced Thursday at IBM's Business Partner Leadership Conference in Los Angeles, where IBM pitched the idea to resellers and ISVs. Competitors will include Microsoft's Small Business Center, Salesforce.com and, eventually, SAP's Business ByDesign.

Small businesses will be able to search for applications at the marketplace and enter parameters like the number of employees they have. The system will spit back recommendations, including any IBM infrastructure software that might be appropriate. When the customer decides on an order, IBM sends it to a local reseller who will deploy and manage the software, said Matthew Friedman, vice president of marketing for IBM's Business Systems Division

Success will depend on getting buy-in from ISVs and resellers. To take part, ISVs will have to adopt a set of APIs that allow them to list their software on the marketplace. Other APIs will support remote management capabilities, like the ability to add and remove users or deliver patches, and also allow for integration with other applications and services.

A reseller could connect an application to Amazon's S3 hosted storage service, for example, but only if Amazon chooses to adopt the APIs, Friedman said. Longer term, IBM plans to release other APIs that allow for integration at the data level, allowing resellers to set up business processes, he said.

Only about 10 ISVs have implemented the APIs today, Friedman said, but IBM expects to get many more. Vendors that signalled support Thursday include CFXWorks, which provides credit card processing for retailers; Cincom, which offers a business intelligence product; and InterNetworX, which sells enterprise resource planning software.

IBM expects most of the applications to be installed on premise, the model used by 90% of SMBs today, Friedman said, although some software will be offered as a service. The resellers will also be able to incorporate online backup services, he said. The remote management will usually be provided by the reseller.

IBM is setting up hundreds of "innovation centers" around the world where ISVs can go to add the APIs to their software. It is emphasizing the big role that partners will play, although in some cases customers will be able to download and install software themselves, Friedman said. Most customers will want the specialized help that local resellers can provide, he said.

Alienating resellers is the main risk for IBM, said Dan Olds, principal analyst at Gabriel Consulting Group, in Beaverton, Oregon. Smaller resellers with little software expertise will benefit the most, he said, but bigger resellers may feel threatened that customers can now figure out what software they need online.

As a small business owner himself, Olds said the service sounds useful. "There are places you can search for applications, like Google, but you

don't really get all those choices in one place," he said.

For companies with less than 50 employees IBM will offer Lotus Foundations Start. It's a package of IBM's Lotus and Domino software that comes preinstalled on a server and is supposed to provide for all a small company's collaboration needs, including email, security, directory services, backup and recovery.

The product was unveiled at IBM's Lotusphere conference in January. It will be generally available by the end of June, priced starting from about $1,500, Friedman said. It will be the first of other "appliance servers" that IBM plans to release. IBM said it can be set up in 30 minutes and has "self managing" features to make it easy for small companies to use.

Big vendors have been trying for years to tap the SMB market, but have often struggled to meet the individual needs of small companies or come up with a viable business model. IBM said the global market is worth $500 billion, and called it its "largest opportunity for growth."

Microsoft's efforts to police the 'Net

BY ROBERT MCMILLAN AND NANCY GOHRING

Microsoft spends millions of dollars each year developing security products that it gives to law enforcement agencies, knowing that it may not make any money directly in return. The work is part of the company's efforts to be a good corporate citizen, although there are also some business benefits from the work it does.

The decision to make such investments was never a foregone conclusion. Brad Smith, Microsoft's general counsel, remembers a meeting with Canadian police three years ago when they asked him to spend more money to ramp up the Child Exploitation Tracking System (CETS), a software program for hunting down child predators.

"I went into the meeting thinking that we could not make the substantial investment to take this project forward," Smith said on Monday.

But when police showed him what they were investigating -- images of children, some of them infants, being abused -- he changed his mind. "I soon realized that we couldn't possibly bear to say no," he said.

Smith went back to Microsoft and scraped together an initial $2 million for the project, and the company has invested $10 million in it to date. Microsoft won't say how much it has spent overall on developing such forensic tools for law enforcement.

Since its creation, CETS has helped rescue 138 children, according to Smith. The program was developed jointly by Microsoft Canada, the Royal Canadian Mounted Police and the Toronto Police Service.

Fighting child abuse is only one of the projects undertaken by Microsoft's Internet Safety Enforcement team. The group of about 35 people works closely with law enforcement agencies around the world, providing software and information that can help fight a wide array of Internet crimes including phishing and botnets.

Smith and others spoke at a three-day conference Microsoft is hosting for law enforcement officials at its Redmond, Wash., headquarters, inviting U.S. and international police, prosecutors and representatives from agencies like the Federal Bureau of Investigation. Microsoft has been hosting the conferences, which invite feedback from the law enforcement agents, since 2006, Smith said.

"It's in Microsoft's interest for people to have a safe and healthy computing experience," said Aaron Kornblum, a senior attorney with Microsoft's Internet Safety Enforcement division. "This is a part of our broader corporate citizenship."

While the team may help with Microsoft's citizenry efforts, it was originally created in about 2001 after the company saw that a string of damaging viruses was affecting its software, said Tim Cranton, associate general counsel for Microsoft's Worldwide Internet Safety Programs.

Today, Microsoft sees its efforts to help police the Internet as being important to its future as it starts to offer more Internet-based services. "We

Microsoft General Counsel Brad Smith holds a USB device containing his company's forensic investigation software, called COFEE (Computer Online Forensic Evidence Extractor).

realized that when we look at the opportunities on the Net and where we want to go in terms of software plus services … for that to happen there needs to be a more trusted Internet," Cranton said. "People have to feel more comfortable about the security and privacy of their information on the Net."

Microsoft has also developed other tools for law enforcement use. One, which the company won't even name because it says that doing so might help the bad guys thwart it, helps agents track down phishers. The tool helped the Sûreté du Québec break up a global botnet network earlier this year, said Captain Frederick Gaudreau, who heads the provincial police force's cybercrime unit.

Last summer, Microsoft introduced another software tool called Computer Online Forensic Evidence Extractor (COFEE). It fits on a USB drive and helps law enforcement agents find important information quickly on criminals' computers. (Compare Patch and Vulnerability Management products)

Along with the custom-built software, law enforcement agencies use off-the-shelf products that Microsoft donates for their use. Interpol uses Groove, for example, a collaboration product that lets people work together across different organizations.

The software has allowed Interpol to operate more efficiently, said Jean-Michel Louboutin, executive director of police services for Interpol. "Microsoft for several years has been a valuable partner for Interpol," he said.

In a recent case, law enforcement agents discovered a child predator in Asia and, within an hour, agents in different parts of the world used Groove to collaborate in a way that allowed them to connect the individual to hundreds of megabytes of child pornography stored in Europe, Smith said. Law enforcement was able to arrest the man.

The conference continues through Wednesday, although the remaining days are closed to reporters.

Microsoft designing application virtualization

BY JOHN FONTANA

LAS VEGAS — Microsoft is working on application virtualization technology for the server that is designed to provide administrators the flexibility to quickly deploy infrastructure and even stream applications on-demand.

The capabilities would be similar to the application virtualization capabilities available in the client side via Microsoft Application Virtualization (formerly SoftGrid).

SoftGrid, which Microsoft acquired when it bought Softricity in May 2006, lets users package applications into "containers," store them on a server where they can be centrally managed, and then stream those containers to desktops, devices or shared PCs. It also can be used for on-demand delivery of patches and upgrades.

The benefit is that each application has a properly configured operating environment tailored to its needs. It also ensures applications don't interfere with each other, such as running different versions of Office on the same desktop.

"We are working to move server applications into stateless environments so applications don't need to go through the install process; they can be copied on top of the operating system," said Microsoft senior vice president Bob Muglia in his keynote address at the company's annual Microsoft Management Summit.

The effort is part of Microsoft's expanding virtualization strategy ahead of the shipment of Hyper-V, the server virtualization add-on to Windows Server 2008 expected to ship this summer.

Microsoft wants to bring application virtualization capabilities to the data center so users can quickly roll out infrastructure (middleware and operating systems) and then deliver applications either directly to the server or streamed on-demand when needed.

Images of applications and infrastructure would be stored in an online library, and deployed dynamically ensuring that the middleware's configuration is aligned with the needs of the application, but also allowing different versions of server applications to run on the same box.

The strategy, however, is a green field for Microsoft.

"There is nothing in market today from Microsoft to deploy this capability so this would be something new," says Dai Vu, director of virtualization products and solutions in Microsoft's server and tools division. "We are doing a lot of learning on the client side to accelerate what we want to do on the server side."

The prize for IT would be simplified deployment, such as eliminating recurring regression testing when rolling out applications.

While Vu did not discuss future plans or a road map for rolling out server virtualization, he did say that Microsoft was "actively investing in the technology."

But he added it is not a 12-month plan and would take some time. Vu said part of the difficulty is that in general server applications are much more intertwined with the operating system than on the client side and separating the two can be tricky.

Muglia said in his keynote address that the goal was to get to the point where separation between the operating system, the middleware and the applications means that the only traditional installation IT will have to do is laying down a hypervisor on physical server hardware.

Dealing with SQL injection attacks

BY ELLEN MESSMER

The massive wave of SQL injection attacks that started striking Microsoft-based Web sites around the world more than a week ago claimed as one of its victims Autoweb, a U.K.-based advertising and marketing site.

The ongoing attack, which hit Autoweb on a late Friday, exploited a vulnerability in a single line of code in the Web application to pierce through to the company's Microsoft SQL database, inject 30 characters to overwrite content, defaced Web pages, and ultimately knocked the site offline. The attack left Web pages that would attempt to inject malicious code into browsers of Web visitors.

It is estimated that at least a half-million Web pages had been infected in a similar style since it was flagged by security experts April 24. How Autoweb had to fight to recover its site over the long weekend that followed shows how devastating SQL injection attacks can be.

CIO Richard McCombe said nothing like this ever happened before to its Web site, which is hosted by a provider in Leeds, England. "We were struggling at that point to get the site back up."

But Autoweb's IT staff, who worked through the weekend, soon realized that database tables storing content provided by car dealers about their vehicles had been overwritten with a 30-character script.

A look at log files showed the attacks, which continued to surge through the weekend, were originating from IP addresses in China. So Autoweb blocked them. "That gave us a window of opportunity," says McCombe.

About a day's worth of new Web content from car dealers had been corrupted in the SQL injection attacks, but Autoweb did a daily backup, so it turned to that for clean content, and began backing up each hour through the weekend.

McCombe reached out for advice to U.K.-based firm Secerno, which builds a database-security appliance.

Steve Moyle, chief technology officer at Oxford, England-based Secerno, informed Autoweb that the most likely point of attack was through Web pages. McCombe then contacted the Web software developer, a contractor that worked for Autoweb, on a Sunday. But the developer said the problem was simply "over his head," said McCombe. The contractor had no idea how to find and fix the Web page vulnerability that allowed the SQL injection attack code

Autoweb's database tables, which stored content provided by car dealers about vehicles, were overwritten by a 30-character script, causing havoc on the Web site.

Get the best value when you choose the World's #1 Web Host!

Join us now: Get 3 months FREE on the 1&1 Home Package!*

Visit our website for Special Offers on Domains, Servers, and more!

1&1 is both the world's biggest web host, and the fastest growing. Our global community is over 7 million people strong. We are financially stable, profitable, and look forward to hosting your website for many years to come.

Your complete website solution

Whatever your Internet requirements, from personal websites to dedicated servers and e-commerce sites for businesses, 1&1 has a complete solution to fit your needs. The powerful, intuitive 1&1 Control Panel is web-based, giving you full control of your information from any Internet-connected computer with no software to install. Update your domains, modify all elements of your site, and even upgrade your 1&1 package, all with one password and one login.

FREE domains!

Sign up for one of our Web Hosting packages and receive up to 5 domain names FREE! You don't need an extra registrar!

All-inclusive prices, unbeatable value

Other companies promise affordable web hosting, but then charge extra for setup fees, higher renewal rates, or promotional services. With 1&1, the listed price is the number you'll pay, and you can expect a fully loaded, comprehensive suite of web services.

Advanced Data Centers

1&1 has spent $25 million to provide the ultimate home for your valuable information. Surpassing all standards of safety, power, connectivity, hardware, performance, and security, our Data Centers represent the future of information storage. 1&1's superior technology delivers reliable service for your website.

90-Day Money Back Guarantee

We take pride in our reputation for reliability. If you're not completely happy within 90 days from placing an order with 1&1, you will receive your money back – no questions asked.

Best Value: Compare for yourself.

	1&1 Home	Go Daddy DELUXE	Hostway GOLD
Included Domains (.com, .net, .org, .info or .biz)	2 Valued at up to $13.98/year!	$1.99/year	$7.95/year
Web Space	120 GB	150 GB	12 GB
Monthly Transfer Volume	1,200 GB	1,500 GB	250 GB
E-mail Accounts	1,200 IMAP or POP3	500 POP3	250 POP3
Mailbox Size	2000 MB	500 MB	75 MB
Website Builder	12 Pages	Additional $8.09/month	✓
Access to Open Source Application Library	✓	✓	–
Starter Software Suite	✓	–	–
Search Engine Submission	✓	–	–
90-Day Money Back Guarantee	✓	–	–
Support	24/7 Toll-free Phone, E-mail	24/7 Phone, E-mail	24/7 Toll-free Phone, E-mail
Price Per Month	~~$4.99~~	$6.64	$13.95

1&1 Home Package 3 months FREE!*

"Over the past 3 years, I've had 1&1 as a hosting solution for all my needs. Not only have they been extremely reliable, but fast also. And when considering value, 1&1 offers the best solution for the lowest price hands down. You just can't beat it!"

Nick Jagodzinski, www.blindroutine.com

* Visit 1and1.com for details. Prices based on comparable Linux web hosting package prices, effective 4/4/2008. Offer valid for Home Package only, 12 month minimum contract term required. Home Package special expires 6/30/2008. Product and program specifications, availability, and pricing subject to change without notice. All other trademarks are the property of their respective owners.

to execute successfully.

Secerno, an appliance vendor, couldn't help with Web application remediation since its expertise was in database protection, and its appliance couldn't be used in Autoweb's case since Autoweb had the Web application and the database on a single server.

But McCombe managed to find a Web development company to fix the Web application hole.

"It was a simple piece of code in the Web application," says McCombe. As Autoweb began to put the nightmare of the massive SQL injection attack behind it last week, it's apparent there's been an impact.

"We were at 25,000 visits a day, now we're at 20,000," says McCombe, saying the site's ranking in a Google search has dropped somewhat but it will do what it can to bring that back up.

Autoweb may be making changes in its infrastructure for future defense against such attacks. Autoweb's Web application and database reside on the same server, but in order to use Secerno's security appliance, the two would have to be separated off the same server.

Secerno's Moyle says there are an "infinite number of different SQL injection attacks." They are all designed "to fool the application layer into passing a command to the database to ask the database something you wish it wouldn't ask."

Moyle's opinion is that while there are good tools for penetration testing, such as SPI Dynamics, it's "not about the tools, it's the people using them."

Individuals with expertise are what count the most he says, pointing to Next Generation Security Software, which has offices in the United Kingdom and the United States, as one firm with a strong reputation in understanding SQL injection attacks at the application layer.

Application-layer firewalls are another approach to preventing SQL injection attacks and similar threats that may exploit vulnerabilities, cross-site scripting.

School district eases laptop woes

New approach reduces support problems and meters software-license use more efficiently

BY JOHN COX

The small IT staff of the Kent School District in Kent, Wash., has discovered a way to nearly kid-proof the thousands of notebook PCs it's phasing in for all grade levels.

The district uses the notebooks simply as a repository for groups of applications that are virtualized using the Microsoft Application Virtualization software (formerly SoftGrid). Each application is packaged with Microsoft's virtual runtime, stored on a server, and then downloaded to a notebook or desktop PC when a student logs on and clicks the corresponding icon. On a notebook, the package runs in a protective virtual "bubble," instead of actually being installed on the PC.

That means district IT staff largely avoid the plague of application conflicts, changes, DLL snafus, and all the other software-based problems that are routine for large laptop deployments. Because the PCs share a common, standard Windows XP software image, spares can be stored at every school. If a student's laptop stops working for any reason, he or she can swap it for a spare, fire it up, download the virtualized application set and get back to work.

Sidestepping the typical hardware and software support burden is critical to the district's ambitious goal of equipping all students in grades 7-12 with a laptop PC that could be taken home. But to truly realize the notebook's potential, district officials realized they also had to revamp the curriculum to make use of it, and train and support teachers to exploit both. The expanded laptop program got under way with an extensive pilot in September 2005.

Currently there are about 10,000 computers for 27,000 students in 40 buildings spread over 72 square miles just south of Seattle. Of those machines, 3,000 are notebooks, the rest desktops. The district will be adding up to 2,500 notebooks per year until it reaches the target goal of 15,000 for the upper grades, says Thuan Nguyen, the district's director of information technology. All are currently running Windows XP, but the district will be shifting to Vista in 2009.

Application overload

"The biggest thing about this deployment is not just the increased laptop numbers but the number of applications being managed," says Lee Nichols, global solutions director for Getronics, a Billerica, Mass., IT services firm (now a subsidiary of Dutch telecom provider KPN). "That's the real problem: how to manage all this?"

The district hired Getronics to help them do just that.

Astonishingly, the district has an inventory of 500 applications, based on a poll of the teachers. "That's been an eye-opener for me," admits Nguyen. Fortunately, with the Application Virtualization platform, IT staff now can track centrally what applications are being used, when, and how often. Only about 300 applications have actually been used. Nguyen will use this data to decide whether and when to retire some application licenses, and possibly to increase licenses for in-demand programs.

At first, the IT staff set out to find a conventional program to automate software installation on the PCs. But the Getronics team, which started working with the district in 2006, introduced them to SoftGrid, and its vendor, Softricity. It was during this period that Microsoft acquired Softricity, and started integrating the software with back-end servers such as Active Directory, Systems Manager Server, Terminal Services and Systems Center Configuration Manager.

In November 2007, Microsoft unveiled the beta release of Version 4.5, with the new naming convention.

Getronics worked with the IT staff to install the software components and to begin virtualizing the district's application portfolio between April and August of last year.

Platform elements

The school district is deploying some but not all of the Microsoft Application Virtualization components:

* Microsoft Application Virtualization Sequencer, which converts a standards a Windows application into a virtual application.

* One or more System Center Application Virtualization Management Servers, to store the virtualized programs.

* Microsoft Application Virtualization Clients, for PCs and laptops.

These components make use of the district's Active Directory for user authentication and authorization, and store application metering and usage data in a database.

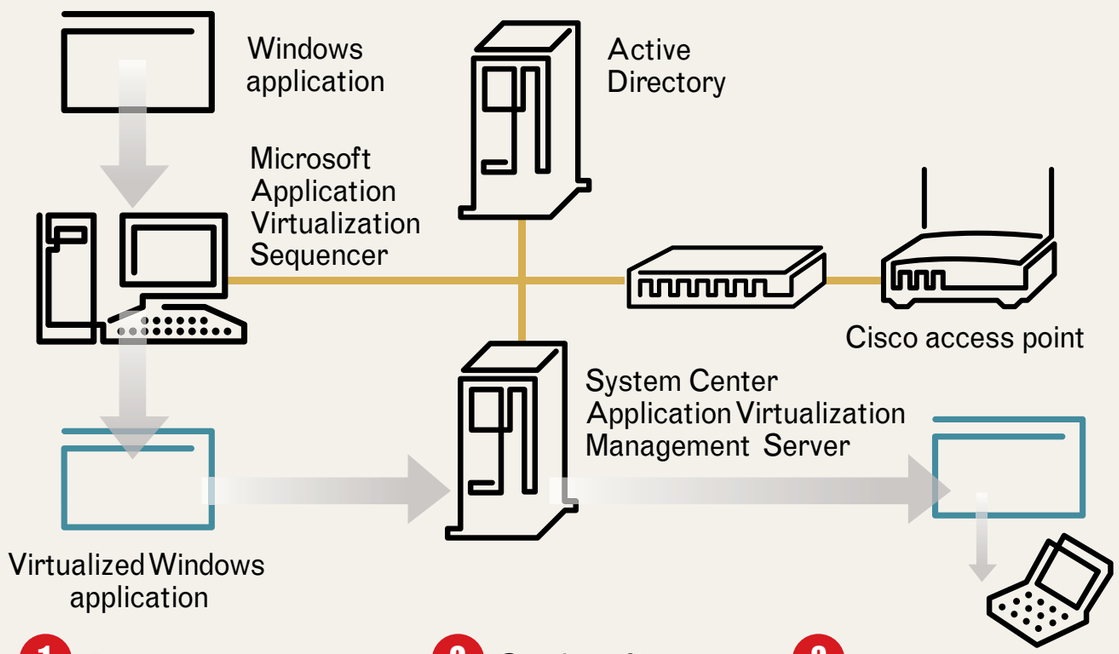
The sequencer basically runs a Windows application and records all of its interactions with the underlying operating system, such as Registry settings, DLLs used and ini files. Then it packages the application code, with the needed configuration settings, and wraps it with the Microsoft virtualization runtime environment. This package is stored on the application server, until it moves to the laptop in response to a user's key stroke.

Nguyen calls the package a "bubble."

"The application is moved and stored on the local notebook, but it's isolated in the bubble from all the other applications and the operating system itself," he says. Previously, when IT staff physically installed a new application on a PC, the software had to be extensively tested to make sure the new application worked and didn't interfere with its neighbors. Almost all of that time-consuming work is now eliminated.

The school of virtualization

Kent School District is using Microsoft's virtualization platform to minimize PC and applications management for 10,000 K-12 student computers



Deployment flexibility

Using Microsoft's application virtualization platform has allowed the district more flexibility in deploying software. The district is migrating from Office 2003 to the 2007 version. A user accustomed to the older version could have both virtualized versions on the laptop, using the older version when needed, and familiarizing himself with the new one as time permits. Similarly, Nguyen can now avoid what he calls the "nightmare" of having to maintain multiple versions of Java. "I can virtualize all these, and the application can call whichever one it needs," he says.

Virtual applications now run on all of district's current 10,000 PCs. Two existing HP servers were repurposed as the virtual application servers. Nguyen says sequencing is an art form, and it can take one to three days to complete, including all the necessary testing to be sure a new application opens and works as users expect it to. The virtu-

al application is moved to the server and associated with the relevant user accounts.

The first time a student logs on and authenticates, the virtualization server downloads the authorized applications, each wrapped in its virtual bubble. Typically, it takes 30 to 60 seconds to populate the PC. "It's a standard Windows experience for the students, and that's critical for us," says Nguyen.

Nguyen says a virtualized application can balk when it needs a specific driver, as it did in order to enable PCs to work with the district's interactive whiteboards. The code had to be manually re-installed on all the participating PCs, a "rather painful process," Nguyen recalls.

In the end, Kent School District has accomplished a lot while spending remarkably little: about $40,000, very roughly split between Microsoft for the new software licenses and Getronics for consulting, training and occasional help in troubleshooting.

For Nguyen, virtualization makes it possible for the IT staff to do more with what they have, and do it more nimbly. "Education is faster moving [now]," he says. "And we have to be, too."

A valuable education in app delivery
Microsoft designing application virtualization on server
Virtualization systems have subtle gotchas

Analytic databases to play bigger role

Vendors are preparing cloud-based data warehouse services to aid business intelligence

ABOVE THE CLOUD
James Kobielus

Analytic databases are the principal engines driving business intelligence, delivering operational data into reports, dashboards and ad-hoc queries.

Essential as they may be, analytic databases have been largely overlooked in the business intelligence industry's recent consolidation spree. Sitting at the core of data warehouses everywhere, these data stores have been treated as mere plumbing rather than as differentiating platform components.

Instead, most recent business intelligence mergers have been driven by vendors' desire to beef up their financial analytic applications, or add more sophisticated visualization, search and other access-oriented features to their business intelligence platforms.

Though often taken for granted, analytic databases will almost certainly become a key business intelligence solution differentiator over the next several years. With the trend toward commoditization of core business intelligence features, more vendors will distinguish their offerings through the speed, scalability, throughput and mixed-workload support that only a well-tuned analytic database can provide.

Every self-respecting business intelligence vendor will boast that their analytic database can handle more concurrent users, process more complex multidimensional queries, load bulk data more rapidly, execute more compute-intensive transforms, and manage more massive data sets than the competition. Just as important, they'll brag that they can do all this more affordably than the next guy.

In an increasingly commoditized business intelligence market, analytic price-performance is becoming the principal buying criterion. This trend is fueling the industry's growing focus on analytic appliances, which are also called business intelligence appliances or data warehousing appliances.

Indeed, most of the leading business intelligence vendors -- SAP/Business Objects, IBM/Cognos, Oracle, Microsoft and SAS Institute -- provide their own analytic appliances or are developing appliance-based offerings on their own or with partners.

Though these vendors will continue to deliver business intelligence/data warehouse solutions as packaged software offerings, they all see the appeal of appliances as turnkey solutions for many customer requirements. Midmarket customers, in particular, are taking a keen interest in appliances, which provide them with quick-deployment pre-optimized solutions and relieve the burden on their limited technical staffs.

As analytic appliances become central to enterprises' business intelligence strategies, data warehouse appliances will evolve into full-fledged business intelligence platforms in their own right. Appliance vendors such as Teradata, HP, Netezza, Greenplum, DATAllegro, Dataupia and ParAccel will expand their ability to run "in-database analytics" and other applications developed in-house, or by partners and customers.

Appliance vendors will outdo each other in tuning database features -- such as indexing, partitioning, in-memory caching, compression, cubing, tokenization and query-plan optimization -- that are geared for managing myriad analytic workloads. And every appliance vendor will beef up its hardware's scalability through massively parallel processing, clustering, workload management and other ongoing enhancements.

In addition, every vendor of column-oriented databases -- which are exquisitely well suited to data-intensive query processing -- will soon either realign its go-to-market strategy around appliances or get out of the analytics market altogether.

The performance advantages of a hardware-optimized column-oriented database over software-only rivals will be too pronounced for the latter to hold onto their market share. And though most appliance vendors eschew column-oriented approaches, preferring to tweak traditional row-oriented relational database management systems (RDBMS) for multidimensional online analytical processing, many will explore this alternative technique in order to eke out further performance improvements.

The growing demand for inexpensive analytic horsepower will also foster the development of subscription-based data warehouse services, also known as DW 2.0, Database 2.0, cloud databases and on-demand databases. Though not the first entrant in this new arena, Microsoft is the most prominent, having recently rolled out a limited beta of its hosted SQL Server Data Services (SSDS), which is slated for full production release in 2009.

Under SSDS, Microsoft hosts a subset of SQL Server's RDBMS functionality in support of analytics as well as transactional applications. Though it has not yet specifically optimized SSDS for analytics, Microsoft has stated that it plans to evolve the service in that direction.

As it becomes available from many service providers, DW 2.0 will offer an ever-expanding supply of inexpensive, plentiful analytic horsepower. Over the coming decade, software-as-a-service (SaaS) providers will begin to offer feature-complete, subscription-based business intelligence/data warehouse services for high-performance, high-volume, complex analytics. These clouds will leverage the full virtualized, distributed, scalable, grid-computing fabric that Microsoft, Google and other SaaS behemoths can bring to bear on data mining, performance optimization, and other compute- and data-intensive tasks.

Over time, we'll come to take DW 2.0 for granted. We'll call it up on demand, a utility for processing any and all decision-support tasks, large or small, throughout the business world or in our daily lives.

Kobielus is a senior analyst at Forrester Research. The opinions expressed are his own. He can be reached at jkobielus@forrester.com.

Security preparedness instead of threat prediction

RISK & REWARD
Andreas Antonopoulos

In the last column I talked about the challenge of trying to predict attacks, and how that approach leads to "anti-X" security strategies that are rapidly made obsolete by each new wave of threats.

The strategy of threat prediction suffers from two major flaws. First, it assumes predictability in a field that is full of surprises. Security is adversarial, and the adversaries already knows what we are doing – they can read this magazine, for example. New attacks are not designed in a vacuum; they are designed explicitly to sidestep our expectations. If we base our defenses on predicted threats, attackers sidestep our defenses when they sidestep our expectations.

Second, threat prediction causes tunnel vision. It pushes us to focus on attacks rather than assets, on the "bad" rather than the "valuable." This plays right into the hands of attackers, as tunnel vision narrows our defenses thereby making them easier to bypass. Rather than trying to predict threats, we should focus on general security preparedness.

After all, there is no such thing as a "secure" company or system. Everything can be broken with enough effort and money. Secure companies are not those that do not get breached – every company will suffer a security failure (or several) sooner or later. Rather, secure companies are those that minimize both the incidence of successful attacks and then further minimize the impact of those few breaches. Accepting breaches as normal, business-as-usual and unavoidable puts the emphasis on preparedness rather than prediction.

Of course, this does not invalidate the need to establish defenses and controls that are specific. Just like a flu shot in the fall, you may take precautions against specific threats that are known and predictable. But most companies put a lot less emphasis on preparedness that they do on specific threats. We have seen this in our research year after year, where we find very few companies with specific, well designed and well drilled incident-response policies. It's as if "incidents" represent the failure of security that no one wants to acknowledge. "Incidents" are of course the norm, not the exception. To repeat a biological example, we should be putting a lot more emphasis on frequent hand washing while keeping some chicken soup in stock, rather than trying to find more vaccines to take every fall.

Security preparedness favors the operational over the technological and the generic over the specific. The emphasis on operational security means more skilled people and fewer shiny appliances. The emphasis on the generic means more broad security controls (encryption, authentication, audit and monitoring) rather than specific silver bullets (anti-X). Uncertainty makes us uncomfortable but in fact is an ally – the less we focus on specific threats and the more we accept uncertainty, the better we can prepare for new threats.

Antonopoulos is a senior vice president and founding partner at Nemertes Research, an independent technology research firm. He can be reached at andreas@nemertes.com.

The elusive third wire for Internet service

Another setback for broadband-over-power-line and for the FCC

NET INSIDER
Scott Bradner

Some of you may have noticed that I write a lot about network neutrality. I wish it wasn't an important issue, but it is.

Network neutrality exists as an issue primarily because there is little real competition for residential high-speed Internet service.

In most of the United States there are only one or two ISPs -- that is, a monopoly or a duopoly -- offering residential Internet connections -- if there are any high-speed service offerings at all. A number of technologies have been touted as a potential "third wire" (after the phone line and cable coax) into the home, but none has shown much deployment. Now one of those has been dealt a setback -- perhaps a well-deserved one.

Historically, monopolies, as well as duopolies, of similarly minded players have had to be regulated if there is to be any assurance that customers will be provided quality service at reasonable -- at least to the regulator -- prices. The network neutrality issue revolves around the worry that Internet service, at least for residences, is one of the cases where some regulation is needed.

Actual competition tends to mean increased services for lower prices. Instead, we get the major residential DSL and cable ISPs raising prices regularly without improving services. An environment of actual competition would provide a strong incentive for ISPs to provide neutral Internet services: As soon as one provider decided to interfere with what its customers could do on the Internet, its competitors would advertise that they don't do the same thing, to attract customers away from the interfering ISP.

Actual competition requires actual competitors, however. Very few observ-

ers consider that big teleco and big cable do much in the way of competing, even where they offer services to the same neighborhoods. It's a dead giveaway when both providers raise prices in such neighborhoods, as has been happening with cable and DSL services.

The FCC has been painting a picture of competition in the residential ISP market that almost no one believes. It also has been looking to new technologies to provide a third wire in the residential market. Maybe with three or more providers, there might be a hint of competition. The commission has been pushing wireless ISPs -- which use Wi-Fi or, maybe someday, WiMAX -- to provide a "wireless wire" to compete with cable and telephone services, but to date there has been little deployment.

Another technology the FCC has been pushing for a number of years is broadband over power line (BPL). A while back, the FCC defined the rules under which BPL will have to operate. Those rules did not make everyone happy, in particular the amateur-radio folk, because they fear that BPL will interfere with their radios. So, they took the good old American path and sued. A court just ruled that they did have a some good arguments: It did not rule that BPL could cause interference, but it did rule that the FCC did not provide reasonable justification for its decision about the power BPL can radiate, and that the FCC needed to release the full technical reports it relied on in making its decisions about BPL.

So, the FCC will have to revisit its BPL rules and provide more transparency in its rule-making. It's far from clear. however, that this will make much difference -- BPL was failing on its own well before the lawsuit was filed, and the most optimistic numbers show that it's far from being a successful technology.

So, it looks like BPL will not help us avoid the network neutrality issue -- too bad.

Disclaimer: Harvard frequently does not seem to be good at avoiding issues, but I've heard nothing from the university about this particular one, so the above observations must be mine.

Bradner is Harvard University's technology security officer. He can be reached at sob@sobco.com.

SPECIAL FOCUS: Mobile application development

Mobile app coming along -- slowly

Tiny screens, lack of demand hamper mobile development

BY JON BRODKIN

Everywhere you go these days, people are using BlackBerries to check e-mail and set up appointments. But the march toward everyday use of more complex business applications on smartphones is going slowly at best.

Mobile CRM tools for salespeople have been on the market for several years, and more recently IBM's Cognos division has adapted business intelligence tools for handheld devices. The innovative form factor of the iPhone is also spurring vendors to think about how applications can be shrunk down for workers on the go.

But the mobile application market is still being held back by small screen sizes and limitations in storage, memory and computing power, according to analysts and vendors. Some applications are simply too complex for today's mobile devices.

"A lot of business applications that are done in house have to do with analytics," notes Saswato Das, a spokesman for SAP's business applications unit. "If you want to run something fairly sophisticated that requires a lot of memory, that requires a lot of computing power, a handheld today is not the best place to do it."

SAP, therefore, focuses most of its mobile efforts on providing customer relationship management (CRM) tools to sales and marketing people, he says.

Companies like Oracle and IBM are also optimizing their applications for smartphones to satisfy demand from an increasingly mobile workforce. A product called PCNow made by Cisco's WebEx division even gives smartphone users remote access to their PCs, allowing them to view files and folders from their hard drives and search their desktop computers, all from a BlackBerry or similar device.

Moving beyond CRM

But how much work do users really want to do on a BlackBerry? Gartner analyst Ken Dulaney thinks most workers don't want their smartphones to be like a second computer. Instead, they want just enough functionality to get by when they are out of the office. Dulaney sees GPS systems as a natural fit for mobile phones. But tasks have to be important and time-sensitive to make people accept the inconvenience of a small keyboard and screen, he says.

If you were presented a mobile phone and laptop side by side, and both had the same capabilities, "you would never use the phone," Dulaney says. "If people can wait until they get home or wait till they get back to their office, they will. The transactions put on the phone have to have some sense of time-criticality."

Perhaps Apple's iPhone will do for the business market what it has done for consumers, but it hasn't happened yet. Vendors say they are testing applications on the iPhone, because they want to be ready in case businesses decide to replace their keypad-based devices with the iPhone and its touch screen.

A vendor called Etelos made its CRM platform available on the iPhone last summer. SAP demonstrated a CRM application on the iPhone in December, but for now Das says the BlackBerry is "the king of the enterprise" and thus SAP's main focus.

"We would love to do the iPhone," says IBM Cognos product manager Anastasia Valentine. But "we haven't seen the enterprise demand for the iPhone yet."

Meanwhile, Cognos is pushing the mobile application market beyond CRM tools with IBM Cognos 8 Go! Mobile, a business intelligence tool for BlackBerries and phones based on the Windows Mobile operating system. Cognos Mobile has been available for more than a year.

Making a desktop application useful on a mobile device is challenging, Valentine notes. Some functionality must be stripped away in the mobile version, while new tools must be added to make applications easy to use.

With Cognos for mobile, product developers added interactivity elements, such as the ability to drill down on specific objects, hide and show columns and scroll through rows. The idea is to change the appearance of reports to make them easily readable on a 2-inch screen. Smartphone users can have scheduled analytical reports run automatically and delivered to the mobile device, though they still may prefer to access the reports on their desktops, Valentine notes. PDF-based printing is among the features that aren't available on the smartphone version of Cognos.

Specialists required

More than half of North American and European enterprises have deployed mobile e-mail, contacts and calendar, according to Forrester Research. In addition to those basic tools, some enterprises are using smartphones for

Mobile currents

Forrester Research identified three key mobile trends to watch

1. The BlackBerry vs. Microsoft battle for market share will hinge on user experience and cost. BlackBerry is the clear leader today because of a strong user experience, sleek devices and a detailed level of control that's attractive to IT. But many customers view the Windows Mobile operating system as the future because tight integration with Microsoft products makes it more cost-effective.

2. Enterprises and device manufacturers will try to break free from carrier control. Wireless carriers not only control which devices they allow on their networks, but can influence which technology and applications are installed in devices and which service plans subscribers must use. Some enterprises will rebel by buying mobile devices from alternative channels, such as value-added resellers, systems integrators and online retailers, and directly from manufacturers.

3. Management of smartphones and other client devices will begin to merge into one holistic approach. "Enterprises want to manage handhelds the same way they manage PCs, as just another endpoint on the network," Forrester writes in its report, "Key Device Trends that Will Shape Enterprise Mobility in 2008."

inventory management, logistics, field services and customer-facing applications, the research firm reports.

At DirecTV of El Segundo, Calif., 130 sales managers access Oracle's Siebel CRM On Demand on their BlackBerries.

"These guys, they live and die by this thing," says DirecTV program manager Erik Walters.

Getting to that point required help from a third-party vendor called Antenna Software. DirecTV uses Antenna's technology to access Siebel CRM On Demand through the BlackBerry. "Antenna is the resident application that sits on the BlackBerry device," Walters explains. "They use connectors to the Web services from Oracle."

DirecTV began using Siebel CRM more than three years ago, and chose Antenna because the CRM tool itself hadn't been extended to mobile devices. While Oracle made the Siebel CRM platform accessible through BlackBerries last year, Walters says the functionality is light compared with using Antenna to access the Oracle system.

That's not uncommon, according to Gartner's Dulaney. Big vendors in general haven't spent as much energy on mobile applications as they do on their flagship products, allowing mobile apps to go long periods without any updates. A lot of third parties like Antenna have cropped up to pick up the slack, he notes.

DirecTV's sales managers rely on their BlackBerries when visiting resellers, or dealers, whether it's a big company like Best Buy or a small satellite company, Walters says.

Phone calls to dealers, service requests, and tasks and appointments are automatically associated with the dealer's account. Sales reps also can place notes into an account that are visible to other DirecTV salespeople.

"The BlackBerry gives us the opportunity to have a complete 360-degree view of a dealer," Walters says. "Because as other people are working on these accounts . . . everybody's managing information into the same spot."

If sales reps meet with dealers they haven't corresponded with previously, they can use the BlackBerry to get all pertinent information about payments, service requests and activation rates.

Walters hopes the future will bring further integration allowing the BlackBerry to access DirecTV's proprietary back-end systems. "It would be nice to go through Web services and have direct links to those," he says. DirecTV even applied to Apple for a beta program to test out the iPhone for business purposes.

Meanwhile, for other companies interested in expanding their deployments of business applications to mobile devices, there's good news on the security front, according to Gartner's Delaney. The ability to perform a remote wipe on a lost device is pretty standard on the BlackBerry and similar devices. Encryption, virus checking, password systems and virtual private networks are readily available as well, Dulaney says. (Compare security products.)

In terms of security, "we don't look at these devices as being any different" than a laptop, he says.

Lessons from leaders in telecom management

EYE ON THE CARRIERS
Johna Till Johnson

Last week, I mentioned that telecom managers have my deepest respect. That's easy to say, but in this case, I really did put my money where my mouth is: Last month, my company honored 10 of the top enterprise organizations that demonstrated significant leadership when it comes to deploying communications services.

Our PilotHouse Innovators awards quantitatively measured the effectiveness of advanced communications services deployed by these companies, many of whom we've been benchmarking for years. (For those who don't know, the pilothouse is the glass-enclosed room high up on the deckhouse from which a ship is controlled — something we found a useful metaphor in selecting companies whose communications teams are leading the industry.)

Three firms asked us to keep their names confidential (because they view their telecom infrastructure as providing competitive differentiation). The remaining seven are: BP, Charles Schwab, LyondellBassell Industries, Matria Healthcare, Pfizer, Shaw Industries Group, and St. Luke's Health System. Winners were invited to a steak-and-lobster dinner at a restaurant named, fittingly enough, the Lighthouse.

For obvious reasons, I can't give the details of each company's individual communications infrastructure. But compared with the several hundred companies we looked at, the Innovators were significantly more likely to deploy advanced communications services, which included broadband wireless, MPLS, carrier Ethernet, and a range of peering and hosting services. Innovators also were considerably more likely to have deployed converged services, and have taken advantage of managed services (including outsourcing).

And get this: These companies actually understand the correlation between well-paid employees and a successful communications infrastructure: Innovators are 25% more likely than companies as a whole to be planning to give their communications teams raises within the next year. Not surprisingly, they also spend slightly more on their communications services as a percentage of IT budget than other companies — although their communications cost per employee is significantly lower.

Organizationally, these companies are also more likely to have convinced their management to view communications as a strategic asset. They're also more likely to have structured the communications team as a "service provider" within the organization. And most intriguingly, they're likely to have communications teams that are around 25% smaller than organizations overall — a good example of investing in a few good folks, rather than a stable of less-talented individuals.

The lessons to be gleaned? Positioning your communications team as a strategic asset can pay off big time — but to reap the rewards you need to be ahead of the curve both organizationally and technically. As I noted in the previous column, make sure your higher-ups understand that communications infrastructure can be a strategic asset. Position your team as an internal service provider. Carefully select and invest in talent —even if that means granting pay raises in the teeth of a recession. Stay on top of the new-generation communications services as they emerge. And I'll see you at next year's PilotHouse awards.

Johnson is president and senior founding partner at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.

HP researchers build intelligent memory

BY AGAM SHAH, IDG NEWS SERVICE

Researchers at HP have developed a working unit of a memory circuit that has existed in theory for 37 years, which could ultimately replace RAM and make computers more intelligent by tracking data it has retained.

The technology, called memristor, could allow computers to make decisions by understanding past patterns of data it has collected, similar to human brains collecting and understanding a series of events.

For example, a memristor circuit could be capable of telling a microwave the heating time for different food types based on the information it has collected over time, said Stanley Williams, senior fellow at HP.

A memristor circuit requires lower voltage and less time to turn on than competitive memory like DRAM and flash, Williams said. "Because it [uses] less voltage and less time, of course, it uses much less power," Williams said. Denser cells also allow memristor circuits to store more data than flash memory.

Through prototypes, HP is trying to show circuit designers what memristor is capable of doing. "What we have done is confirmed a concept for a new electronic device that was originally proposed nearly 40 years ago," Williams said.

Memristor is the fourth fundamental circuit element, joining the other three -- resistor, capacitor and inductor -- that had been known for 150 years, Williams said. The element has properties that cannot be duplicated by any combination of the other three elements, Williams said.

"It is as fundamental to electronic engineering as a chemical element is to chemistry or an electron is to physics," Williams said.

In a 1971 academic paper, Leon Chua, a mathematician and professor at the University of California at

Berkeley, wrote that memristor would have properties similar to a synapse in a brain. The synapse makes connections between two neurons, and the more often a signal is sent to a synapse, the stronger the synapse gets.

"That is a very different type of behavior than anything that had been observed before in circuit elements," Williams said.

HP is not going to reproduce all the functions of a brain in memristor, but the company is trying to build a relatively simple computing machine that operates on a different principle from today's computers, Williams said.

The scientists created the memory by applying a charge on a circuit with blocks of titanium dioxide. The actual resistance of the memristor changes depending on the amount of current flowing through the circuit, Williams said. When the current is turned off, the memory retains the information it has acquired.

Although the concept of memristor has existed for a while, the memory prototype is an academic device that will first work its way to academia. It could hit the commercial semiconductor market in five years, Williams said.

TECH UPDATE
An inside look at technologies and standards

What is the best wireless survey method?

BY KURT SAUTER

Despite all the advances in Wi-Fi, it is surprising how often the stumbling block for successful wireless deployment is the site survey.

The goal of the site survey is to determine the number and location of access points (APs) required to meet the Wi-Fi project's design goals, such as coverage, performance and user capacity.

An accurate site survey is just as important as selecting the proper hardware. If the site survey is too optimistic and calls for too few APs, the final installation will yield poor coverage, poor performance, or both. This in turn will require a follow-up survey to determine what changes may be required to the number or location of deployed APs.

The end result is increased costs for additional APs and costs for more cable, equipment, contractors and installation effort. If the survey is too conservative, more APs than needed will be specified and money is wasted on unneeded equipment and labor costs.

Site surveys can be performed by a number of methods but in general fall into two groups: active and predictive. An active survey (sometimes called a live survey) uses an actively transmitting AP and a Wi-Fi-enabled laptop to measure Wi-Fi signal strength from the AP in the actual environment to determine coverage, performance, how many APs are required, and where they will be installed.

A predictive site survey uses a software package to simulate the construction of the building. Floor plans of the site are imported into the tool and allow the user to assign attenuation values (how much RF energy is absorbed) for walls, floors, cubicles, windows and other objects in the building (most tools typically have a database of materials to choose from). The application will then predict the number and location of APs required to meet the desired coverage and performance goals.

Each method has advantages and disadvantages: Active site surveys measure the real radio-frequency performance of each AP location and, because they measure real signal propagation, they innately take into account all physical characteristics and contents of the building. There is no need to estimate the thickness or density of walls or floors and provide for things like books on bookshelves, file cabinets, mirrors in the bathroom,

The pros and cons

Which wireless LAN site survey method you use depends on the type of project your company is working on. Some of the key considerations between active and predictive surveys include:

	Active (live) survey	Predictive survey
SURVEY EFFORT	Potentially higher	Potentially lower
ACCESS POINT PLACEMENT	Exact locations chosen	Final locations may need to be moved
WIRELESS COVERAGE	Measured and known	Estimated: May require more APs
WIRELESS PERFORMANCE	Measured and known	Estimated: May require more APs
CABLING AND EQUIPMENT	Typically accurate	May require cables to be added or relocated
INSTALLATION	Usually a one-time event	May require moving APs around or adding more APs after installation
BEST SUITED FOR	Larger Wi-Fi projects and 802.11n	Smaller Wi-Fi projects

contents of closets, insulation in walls, and ducts and piping between floors.

This type of survey provides more accurate performance information for each AP and allows for the physical inspection of the chosen locations to assure the AP can be mounted there. An active site survey also can measure sources of interference or other Wi-Fi networks that may be operating nearby before the network is installed.

The downside of an active survey is it is more labor intensive and requires physical access to the building. What's more, some of today's thin APs won't work without being connected to their controller, which can make surveying more cumbersome as there is more equipment to lug around, and is one of the reasons some integrators may try to push for a predictive site survey.

Predictive site surveys may take less time but still require "seat time" in front of a computer vs. the "leg time" needed for an active survey.

A predictive survey is advantageous when travel to the location is not feasible or access to the building is not possible. The construction of the building still must be known and input into the program. It is typically difficult to accurately model all the contents and makeup of a building without physically seeing it, and is especially hard for buildings that have changed or have been remodeled over time and don't match the floor plan used.

Predictive coverage and performance is an estimate, and so will be the number and location of APs the tool calls for. APs may not even be physically mountable at the predicted location unless it is visually inspected. One other note, with 802.11n it will be even more difficult to predict performance as most tools cannot model RF multipath (reflections) which plays a greater role in 802.11n performance.

Getting the survey correct becomes more important with larger scale projects. Dan McCarriar of Carnegie Mellon University, who is upgrading one of the oldest and largest campus-wide Wi-Fi networks to 802.11n, says: "We are using and requiring active site surveys. Rolling out Wi-Fi for a large campus such as ours mandates accurate site surveys. We do not want to go back and redo things later. It is unacceptable from a cost, equipment, cabling, and manpower perspective for a project of this size to be off by even a small percentage".

In summary, predictive site surveys may be acceptable for smaller, less complex Wi-Fi deployments, or can be used for a budgetary estimate that is then followed up with an active survey. The larger and more business critical your Wi-Fi project is, the more essential the accuracy of an sctive site survey becomes. Predictive tools can be off by more than 50% in terms of the actual numbers of AP required.

Most vendors are capable of doing both active and predictive surveys. To ensure the success of a Wi-Fi project, require vendors to provide an active site survey, especially on large Wi-Fi projects.

Sauter is director of product marketing at Xirrus and also participates in IEEE and Wi-Fi Alliance task groups. He can be reached at kurt.sauter@xirrus.com.

ASK DR. INTERNET

Steve Blass

Getting baseline records established with Tripwire 7

We installed Tripwire 7 and have deployed the software agents to the systems we want to monitor, but are having trouble getting our baseline records established. We created nodes for each of our Windows servers and set up the Active Directory monitoring rules we want the system to use for monitoring directory service operations. For some reason the baseline operation runs very briefly and does not create a baseline record or provide any error messages to guide our troubleshooting. Any ideas?

It sounds like you are trying to apply Active Directory Rules to Windows Server Nodes. There are multiple types of Node definitions in Tripwire and each Node type can be the target for matching types of monitoring rules. In short, Active Directory Rules can only be applied to Active Directory Nodes. Take a look at the Nodes view in the Tripwire console and determine whether the Node Type is listed as Windows Server or Directory Server. You may need to create another set of entries for the systems as Active Directory server nodes in addition to an existing set of Windows Server nodes. When you select a Node in the Nodes view and activate the Baseline action you should be presented with a dialog from which to select the Rules that will be applied to the Node for creating the Baseline. To monitor server operating system elements and Active Directory elements on the same physical system you will need Node definitions of type Windows Server for monitoring the operating system and associated Windows File System and/or Windows Registry Rules along with Active Directory Node definitions and Active Directory Rules.

Blass is an IT manager in Phoenix. He can be reached at sblass@asu.edu.

Books for the IT library

GEARHEAD
Mark Gibbs

Last week I discussed the issue of virtualization technologies being less than transparent for some applications that you might want to run in them.

To throw some fuel on this fire a Gearhead reader, A. Non from Boston, wrote to say "I'm hearing that issues in SAP and Oracle environments are severe enough that some customers are being told to de-install VMware or the vendors will not continue support!" As far as I can make out, SAP only approved VMware's ESX Server 3.0 last November (other VM environments are not supported) and Oracle only approves use of its own Oracle Virtual Server for virtualization. Comments anyone?

While I continue to do some research into this topic I thought I'd cover something a little different this week: What I've been reading.

First up are a couple of reference books by my old friend and fellow laborer in the *Network World* salt mines, Ray Horak. The first tome (at 560 pages, a tome it verily is) is the *Webster's New World Telecom Dictionary*.

What's remarkable about this work is it defines over 4,600 telecom terms and, scanning through it, it appears there are more TLAs (three-letter acronyms) involved than the mind can comfortably encompass. I've found the dictionary incredibly useful when researching, and every now and then I find an interesting snippet of trivia (did you know Bob Metcalfe's middle name is "Melancton"?).

Ray's second tome (791 pages!) is the *Telecommunications and Data Communications Handbook*, an exhaustive survey of communications technologies supposedly for non-engineers. I write "supposedly" because the book frequently gets technical. Its value to engineers and management is as a starting point, and the topics covered include ev-

erything from CATV and fax through to VoIP, WiMAX and ZigBee. In fact it might be said the book covers comms from Access Point to ZigBee (actually the index starts at "AAL Type 1" – ATM Adaptation Layer 1 – and ends at "zone" but I thought that sounded less sexy).

These are both valuable reference books, and every corporate IT library should have copies. Highly recommended.

My next book choice is *Tagging: People-Powered Metadata for the Social Web,* by Gene Smith, which I will discuss at greater length in my Network World Web Applications newsletter in the near future. Bottom line: If you are working with social media this book provides a great framework for thinking about the context and value of tagging and covers a lot of useful information along with technical and practical advice. Highly recommended.

Now, is your organization doing anything with Second Life? I'd be interested to find out what your involvement might be because I've just received a set of books that cover an aspect of SL that I didn't know was so sophisticated: Scripting in Second Life.

The titles are *Introduction to Linden Scripting Language for Second Life, Scripting Recipes for Second Life,* and *Introduction to Textures, Animation, Audio and Sculpting in Second Life,* by Jeff Heaton.

On the con side, these books are not well-written, they contain mistakes and are leaden. That said, on the pro side, they do the job, and I haven't seen any other titles that provide as good an introduction to Linden Scripting Language (LSL).

This scripting language is interesting because of the context of its use. While it a similar to C and JavaScript, it isn't a fully fleshed out high-level language. But learning LSL is difficult because there are no other books on the subject and, while there are a few online primers available, none go as deep as Heaton's books. Recommended with reservations.

Gibbs often has his nose stuck in a book in Ventura, Calif. Tell gearhead@gibbs.com *what you're reading.*

Should you pass on iPass?

COOLTOOLS
Keith Shaw

Over the past month, I've been testing a service from iPass that aggregates Wi-Fi hot spot services from a number of providers, offering users Internet connectivity from several locations without having to shell out for expensive day passes or subscribe to multiple services. In addition, the iPassConnect Mobility service offers the addition of a wide-area CDMA EV-DO card for network access in places where Wi-Fi hot spots are not available.

If you're a mobile worker in an enterprise (or in IT supporting such a worker), this may sound familiar. The iPass service has been available for enterprises for a few years — what's new is that the iPassConnect Mobility service is additionally being aimed at consumers and small-to-midsize businesses. Some of the benefits of the enterprise offering, such as multiple service offerings under the iPass umbrella, are available for a price that smaller businesses can afford.

The service subscription provides one account that can access multiple hot spots, hotel Ethernet services and even dial-up locations (yes, these places do still exist). The service boasts access to more than 95,000 Wi-Fi hot spots around the world, including more than 500 airports, 20,000 hotels and more than 70,000 retail locations. The big spots for iPass include being able to access hot spot services at Starbucks and McDonald's locations.

The client software that comes with the service lets you know whether or not the Wi-Fi hot spots it sees are iPass-enabled, and comes with access to a hot spot finder Web site (or offline application if you want to go hot spot hunting). Service plans begin at $29.95 per month (for Wi-Fi-only access in North America), with 3G network access (North America only) and worldwide hot spot access costing more per month.

So is the service worth it? Over the month of travels to Las Vegas (twice) and New York, I was able to connect to several Wi-Fi hot spot locations without having to worry about paying for a day pass, which are overpriced. In locations where there weren't any iPass-enabled hot spots, the 3G EV-DO card was nice to have but slower than Wi-Fi, which doused my enthusiasm.

Another issue I had was that when I found a location that honored the iPass subscription (including a McDonald's in New York), I couldn't find a power outlet to keep the laptop charged. There is still a problem with locations offering Wi-Fi hot spot access but not providing customers with areas to plug in to keep their laptops charged.

Airport access at two airports (Providence and Boston) was great, allowing me to connect without having to pay for the day pass. Hotel access was a big disappointment. In each hotel I stayed at (two Las Vegas hotels, and one in New York), iPass did not have an agreement with the hotel, which meant I had to pay the hotel's daily fee instead of using the iPass subscription. Hotel access is a huge part of the mobile worker's experience. Having thousands of hot spot locations is fine, but most mobile workers want to have access in two primary locations — at the airport (where iPass worked perfectly) and in their hotel room.

The bottom line on the service's worth depends on how much you travel and rely on hot spot locations and services. It shouldn't take long to calculate whether the multiple day passes and subscriptions add up to $30 per month for you, especially if you are fine with Wi-Fi hot spot hunting. If the costs are higher than $30, then the iPass service is well worth it.

Shaw can be reached at kshaw@nww.com. *Check out our 30-plus videos from last week's Interop 2008 show in Las Vegas (where the Mandalay Bay hotel was charging $13.99 per day for high-speed access).*

Desktop of the future

It might be in the cloud, it might be virtual or it might be the size of a brick. But it won't be the traditional PC tower and monitor.

BY JOANNE CUMMINGS

Metro Health Hospital, a healthcare system serving 130,000 patients across Michigan, is already using what some consider the desktop of the future. The hospital has rolled out server-hosted virtual desktops to every employee no matter where they are or what client device they use.

While employees within the hospital primarily use thin clients to access their virtualized desktops, those outside the hospital can use whatever device they want, says Chris House, senior network analyst at the healthcare firm.

"It works in the hospital, but it also works over the Internet because it's just Remote Desktop [Protocol]," House says, explaining that VMware's Virtual Data Infrastructure (VDI) uses RDP to communicate with the client devices.

The only data that passes across the network are mouse clicks and screen changes, ensuring optimal performance. But unlike other remote presentation technologies, such as Citrix Xen App (formerly Presentation Server), users aren't accessing only applications, but are actually able to access their complete Windows XP desktop just as if it were local.

The overall effect is greater security and flexibility — without a hit on productivity. "We have remote transcriptionists who deal with medical records and information, and they're able to access their sessions remotely from their homes over their high-speed Internet connection and then work that way," House says. "They get our desktop, and we don't have to worry about what they're using as their home computer."

Metro Health's setup is also far more secure than traditional PCs. Not only have the virtual desktops been locked down so that employees can't use non-sanctioned peripherals such as CD drives and USB sticks, but with

Microsoft

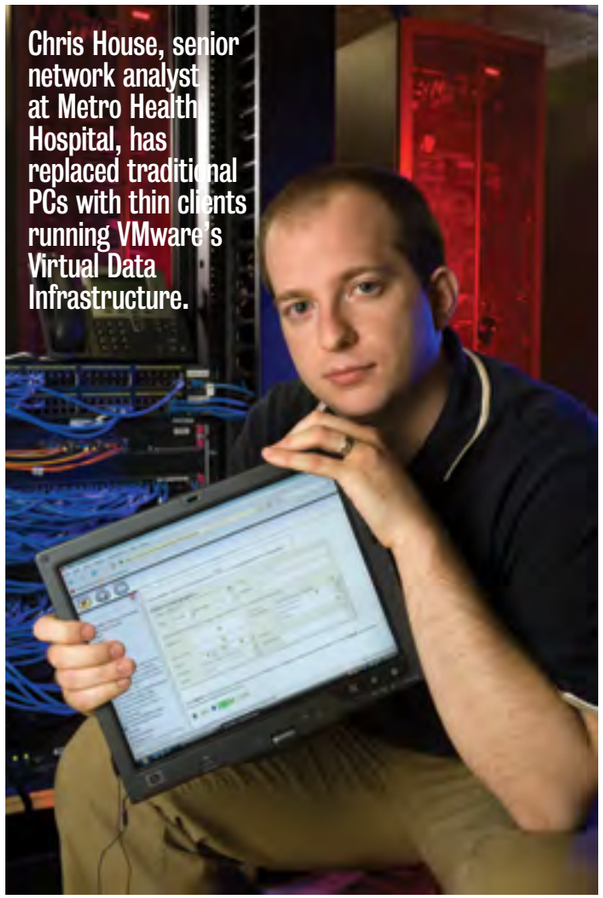
It has a powerful heart, more secure and protected than ever. It has legs of steel, capable of running longer, harder, more reliably. And it's alive with innovations, like Windows PowerShell™, Network Access Protection, and Failover Clustering, that will help unleash the potential of your servers, your IT department, and your business.

Meet the new Windows Server® 2008 at **serverunleashed.com**

Meet **Windows Server** 2008.

The server unleashed.

Windows Server® 2008


Chris House, senior network analyst at Metro Health Hospital, has replaced traditional PCs with thin clients running VMware's Virtual Data Infrastructure.

VDI, the actual remote PC sessions run on centralized VMware ESX servers in the hospital's secure data center. This ensures that the hospital complies with Health Insurance Portability and Accountability Act regulations, as sensitive patient data never leaves the hospital. "It's very secure and easy to lock down," he says.

Changing of the guard

It seems like the enterprise desktop has been the same for decades: PC tower, monitor, Windows operating system, Microsoft productivity applications. But experts say the desktop of the future may look and feel quite different. Possibilities include server-hosted desktop virtualization, the ubiquitous Microsoft Office being replaced by applications in the cloud such as Google Apps, Linux making huge inroads in terms of desktop OS, and the venerable tower PC you're probably using right now quickly becoming obsolete.

Here's a preview of what to expect over the next five years or so:

One thing users and experts agree on is that the traditional PC tower is practically dead, and in five years, other form factors, such as laptops, thin clients and ultra-small computers will be more the norm.

"The actual computer part will become much smaller," says James Gaskin, an author, speaker and *Network World* tester in Houston. "Look at the Apple Mini, the Shuttle PC or the all-in-one PCs like the Mac, where they stick all the workings of the computer on the back of the monitor. In five years, the desktop form factor will have shrunk even more than it has today."

Michael Rose, an analyst at IDC, agrees and notes that laptops will become far more common in terms of the typical enterprise desktop, because of the need for mobility and especially as virtualization takes greater hold. "My sense is we'll see a continuing trend away from desktops toward notebooks," he says. "And when you add desktop virtualization into the mix, there's even a possibility it could drive sales of more thin-client products, especially if we're talking the server-hosted desktop model like VDI."

In fact, IDC estimates that shipments of laptops will overtake PC shipments this year. While in 2007, PCs accounted for 37% of the market, and laptops 30%, in 2008, the analyst firm projects that PCs will drop to 35.3% and laptops will hit 36.3%.

In a March report, the analyst firm found that worldwide PC shipments were expected to grow 12.8% in 2008, but that the growth was fueled primarily by the market for portable computers. The firm also predicts that thin-client shipments will more than double over the next five years to 7.2 million worldwide.

Function over form

While most experts expect the desktop to shrink, others say that in the future, form factor will be irrelevant. "It will have a keyboard, a mouse and a display, but whether that is connected to a tower, a laptop, a thin client or just coming out of a hole in the wall, I really think that won't matter," says Brian Madden, an independent technology analyst and author in Bethel Park, Pa. "Instead, it's all going to be about use cases, delivering the right user experience and right application for the right use case."

Madden is a proponent of what he calls the employee-owned PC. In that scenario, employees can use whatever client they like, whether it's a corporate-provided PC or a laptop from home. The idea is that the employee retains control over the PC, its applications, the Internet sites it can reach and the peripherals it can support. But when they hook it into the corporate network, they are delivered a virtual desktop that runs locally, in much the

same manner as VMware's current VMware ACE product. That corporate desktop is configured with the enterprise applications they need but is completely locked down and separate from the host PC.

Madden cites new technologies such as VMware Fusion, which lets Macintosh users seamlessly run virtualized Windows, and the Kidaro Managed Workspace as enabling tools for his vision. Kidaro, which was recently acquired by Microsoft, wraps enterprise data and applications in a virtual machine hosted locally, but it also includes something called Trim Transfer, which enables organizations to download virtual machines to desktops efficiently, without requiring an excess of network bandwidth.

"What's cool is that using something like VMware Fusion or Kidaro, we can have a seamless integration between the host machine and the Windows virtual machine," he says. "So I'll have a Windows desktop sitting in front of me, and within that Windows desktop, I have my personal Windows desktop and the corporate Windows virtual machine running locally. I have corporate Word and personal Word, and corporate Outlook and personal Internet Explorer."

The best part is that the corporate environment remains secure, locked down and controlled. "The corporate virtual machine can come with certain security settings so it can get on the corporate VLAN," Madden explains. "But the host can only stay on the VLAN connected to the Internet, without access to anything else."

Madden says such a scenario will be necessary as Generation Y moves into corporate leadership positions. "Users want more freedom and flexibility," he says. "The so-called echo generation, the MySpace, YouTube, text messaging, cell phone generation is turning 30 years old this year," he says. "They're starting to move up pretty highly in companies, and they won't put up with the corporation saying you can't change your device."

Opening up the desktop

Once desktop virtualization scenarios take hold, the choices for desktop operating system will be opened up a bit more, experts say. For example, in

Top desktop players five years from now

Experts say these vendors probably will play key roles in delivering the desktop of the future

Microsoft. Microsoft will still be a big factor in 2013 because of its near-monopoly of the desktop's operating system and applications. Plus, it's recently made some astute acquisitions that line it up to be a strong player in virtualization. These include Kidaro and Calista, which works to streamline Remote Desktop Protocol to make it more efficient and virtual-machine-ready. "I just cannot envision a future that doesn't involve Windows applications — not in 2013," says technology analyst Brian Madden.

Google. If anyone has the resources to challenge Microsoft's dominance on the desktop, it's Google, experts say. "I think Google in five years will have a huge impact on how people use computing resources and information," says Network World's James Gaskin. "It has the resources, drive, intelligence and force of will to challenge Microsoft, and I think it will have a bigger impact than Microsoft by far."

VMware. Right now, VMware has all the pieces in place to make true virtualized desktops, both offline and online, a reality. Just as in server virtualization, however, VMware's desktop Achilles' heel is Microsoft's stranglehold on the market for operating systems. "The reality is that VMware does amazing stuff and has great technology, but I think they'll be a has-been in five years," Madden says. "I think they'll have a market-share problem, because everything VMware can do, Microsoft can do cheaper and better."

a VDI scenario, the actual client computer can use any operating system, be it Linux Ubuntu or Apple Macintosh OSX, and still seamlessly work with corporate applications standardized on Windows XP or Vista.

"That's what we're seeing here – you just use what you like, thin clients, PCs, Macs or even Linux," Metro Health's House says.

Others say they see Linux perhaps outstripping Windows, especially for organizations that don't require custom programs and rely more on typical Office-type applications. "Five years down the road, Linux will have a bigger chunk of at least the small business market," Gaskin says.

As proof, he says he recently switched two of his four PCs over from Windows to Linux, one using Ubuntu and the other configured with Foresight.

"I used to do 80% of my work on the Windows PCs and 20% on Linux, but now it's reversed," Gaskin says. "Now, it's really 90% on the Linux system. On Linux, I have my Firefox browser and OpenOffice, and I can do all the things I normally do for most of my day, browsing, writing, presentations and spreadsheets. All for the price of zero. And that's pretty compelling.

He says that a plus for Linux is its openness. "I got Ubuntu Linux with OpenOffice about six months ago, when Microsoft's Office 2007 came out," he says, noting that Office 2007 uses new XML-based document extensions. "Those docx files were making a big problem because you couldn't read them with Office 2003, and suddenly, Office was incompatible with Office."

When a colleague sent him a Word file with the new docx extension, however, Ubuntu Linux had no problem working with it. "I couldn't open it on my XP with OpenOffice, but the Linux version of OpenOffice Ubuntu could read, open and convert those docx files. So Linux was ahead of Windows by far there."

But beyond consumers and small businesses, most experts don't see Microsoft losing too much operating system market share, at least in five years.

"Today, we live in a Windows world, and in 2013, we'll still be in a Windows world," Madden says. "I'm a Mac user personally, but corporate applications are run on Windows and that's just how it is."

Metro Health's House agrees. "I don't know if anyone will challenge Microsoft in the OS arena," he says. "From our healthcare point of view, all of our applications are written for Windows, so we don't think twice about running anything else."

One caveat is Microsoft's OS licensing policies on virtualization, says IDC's Rose. Currently, if enterprises wish to run Windows in a virtual PC environment, they need to buy into Microsoft's Software Assurance long-term licensing and pricing model.

"Software Assurance has about a 1% penetration rate, so obviously, that's a pretty significant way to kind of squelch adoption of virtualization on the desktop," Rose says, noting that it may lead some enterprises to consider alternatives such as Linux on the desktop.

But more likely, he says, is that Microsoft will realize that virtualization is actually good for its market share. "From Microsoft's, and our perspective, desktop virtualization is a win-win because Microsoft doesn't lose any OS licenses," Rose says. "If anything, it's good for Microsoft because it will probably mean there will be more Windows footprints out there."

Collaboration in the cloud

That said, experts say that even five years down the road, Microsoft will continue to dominate in terms of desktop applications, like the ubiquitous Microsoft Office suite.

"I see Microsoft as dominant in five years, solely because inertia is the strongest physical force," Gaskin says. While other, more open desktop suites, like StarOffice and OpenOffice, will make inroads, Microsoft's lead will be too much to overcome, he says.

A big factor here is that it's still much harder for typical users to purchase Linux PCs outfitted with OpenOffice than it is Windows PC with Microsoft Office. "Linux still has some things they need to fix, mainly because the vast majority of people aren't going to work harder to get Linux and OpenOffice than they are to get Microsoft," Gaskin says. "So the onus is on Linux to make it easy to use and install."

Another alternative is to access office productivity applications over the Internet, using services like Google Apps. Once again, experts say the Google choice will work for some enterprises, but for the most part, it won't be able to handle the varied vertical market applications that today's Windows-based tools can.

"In five years, we'll see some big name corporations switch to Google Apps," Madden says, noting that his firm actually uses it currently for e-mail and collaboration. "It's great, but what are the applications that actually make corporations go around? There are a lot of corporations that use very customized applications, and probably five of them will be covered by Google Apps. It's not going to make a big dent in a typical enterprise."

Instead of typical office applications, experts say the sweet spot for online applications like Google Apps is in collaboration, especially as more organizations become virtual and distributed.

"For the most part, people don't need Google Apps even today -- everybody has Office on their computer," Gaskin says. "But where it makes sense is for online collaboration, with tools like HyperOffice."

As an example, he says he knows of a wine importer with employees and vendors scattered across 23 time zones. "It uses HyperOffice to store documents, share calendars and share overall information. Collaboration is becoming much more important, and I see a lot of those applications moving to the cloud."

Attacking the online/offline problem

A big problem, however, for applications such as Google Apps and HyperOffice that run in the cloud is that they have limited offline capabilities. Although high-speed Internet access is becoming more ubiquitous, there are still places where a connection can't be made, and users can't work.

"Every knowledge worker or advanced user is going to need offline capability," Madden says. "Maybe someday bandwidth will be truly ubiquitous, even in the subway and airplanes and the middle of the desert. But that will be a while. It won't be in five years."

Google is attempting to tackle the problem with its Google Gears API, which lets developers create offline capabilities for their online applications. Similarly, Adobe is offering Adobe AIR, which enables Internet Flash-based applications to work offline. And finally, Microsoft offers Silverlight, which does the same thing for Internet-based .Net applications.

"People say Google Gears, AIR and Silverlight all compete against each other, because they all let rich Internet applications run online and offline, and this will be the new battleground. Whoever wins this is going to win the next application architecture battle," Madden says.

Right now, he says Microsoft has the advantage because Silverlight uses common tools, such as Visual Studio and C#, while AIR requires knowledge of ActionScript and Gears requires high-level Java programming knowledge. "The majority of business applications today are Microsoft applications written on the .Net platform," he says. "And Silverlight will dovetail right into that. Google Gears won't make a dent in the corporate world, but Silverlight could."

And this online/offline dichotomy is a problem not only for rich Internet applications, but it also affects desktop virtualization scenarios like VDI, which also require some kind of network connection.

For its part, VMware recently demoed what it calls VDI Offline, which enables users accessing their server-hosted VDI virtual desktops to take them with them when they disconnect from the network.

"We've demonstrated that technology, but we don't have a product in that space yet," says Jerry Chen, VMware's senior director of enterprise desktop. "We have the technologies to run it offline, with our ACE Workstation product, and we can also run it online with our VDI. We showed an early concept of moving it back and forth, between the online and offline environments, but it's just a concept right now."

And that's the biggest challenge experts hope will be tackled in five years. Although many pieces of this future virtualized vision currently exist, they're all separate piece-meal products. In the future, however, enterprises should be able to purchase more integrated, fully functional products.

"Today, there is no one vendor or one

integrated solution that can truly allow IT to deliver desktops and applications with one product, one platform and one framework that allows any user from any device to access any application or any data online/offline from any form factor anywhere," Madden says. "Even though all the technologies currently exist for the most part."

He portends more mergers and consolidations, followed by the availability of integrated products in five years. "It will take a while to shake out, but eventually, we'll get to where they're building one, integrated desktop solution that an IT person in 2013 can go out and buy and deploy."

Cummings is a freelance writer in North Andover, Mass. She can be reached at jocummings@comcast.net.

Watch a slideshow of the desktops.

Microsoft forensics tool spells trouble

Security through obscurity has never worked, and Microsoft's COFEE will encourage hackers to find the holes

BACK SPIN
Mark Gibbs

If there is one security technique that has proven to be as effective and realistic as keeping diamonds safe in a paper bag it is security through obscurity.

The idea of security through obscurity is an old one: In the desk there's the hidden compartment for the property deeds. Or there's the secret door that looks like a bookcase that leads to the vault and the key to the vault is hidden in the suit of armor.

The problem is that these ploys are always overturned by the simplest events. Scooby-Doo jumps on the desk looking for a Scooby snack and the desk breaks revealing the hidden compartment. Shaggy casually leans on the bookcase pressing the false book spine that unlocks the door and he falls through. Velma runs into the suit of armor and knocks it over, sending the key flying through the air to land in Shaggy's hand.

But apparently these well-documented examples of the weakness of security through obscurity have not been enough for some people. Not convinced by the incontrovertible evidence demonstrated by Scooby-Doo and friends, some companies will persist in believing that hiding stuff will keep it safe.

But, that said, it is one thing for a company to believe that security through obscurity will work and quite another for that company to provide a tool that makes it possible for selected people to get around that security.

At this point you might be thinking, "Wow! Now that's dumb. It couldn't get any worse!" And guess what, my friend, you'd be wrong because, if that company should then tell the world about what they've done, well, they are sitting ducks for anyone who is clever enough and has enough time to figure

out how to break the security.

As you might guess, I have an example of this insane thinking for you. And lest you think my example concerns some young, naive, dementedly optimistic startup, let me disabuse you of the notion: The company in question is . . . wait for it, wait for it … yes, it's Microsoft!

According to several sources, including *The Seattle Times*, Microsoft has a tool called COFEE – Computer Online Forensic Evidence Extractor – that the company has made available to some law enforcement agencies. Consisting of a USB drive that reportedly provides 150 special programs that make decrypting and analyzing the contents of Windows-based computers much easier, COFEE has been distributed to more than 2,000 officers in 15 countries.

Now, Microsoft isn't doing this as a public service. Oh no. When the details of COFEE were revealed by Microsoft, General Counsel Brad Smith at a conference last week admitted the company had a profit motive.

What I find so incredible about this is that no matter how much effort Microsoft puts into keeping the COFEE devices under control, one or more will eventually get lost or stolen or duplicated. Worse still is that Microsoft is making it publicly clear that there are techniques that make "cracking" Windows easier and more effective. This in turn tells every hacker out there that more opportunities are just waiting for them!

Enterprise IT should consider the implications of this revelation carefully. If you are big users of Microsoft products and these techniques become widespread and exploited – which they will – it is going to take some insane number of updates for Microsoft to patch all of the vulnerabilities. Worse still, there's going to be the inevitable delays and mistakes that will leave your network exposed and you probably won't even know it!

The only reason that this mess exists at all is that Windows is a family of closed, proprietary operating systems that can't be properly audited and that have problems that Microsoft doesn't have to be honest about. Open source operating systems have never looked so good!

So, we know that Scooby, Shaggy and Velma can accidentally break security through obscurity, just imagine what a motivated hacker could do.

Gibbs has everything locked down in Ventura, Calif., he thinks. Reveal your concerns at backspin@gibbs.com.

Why is this called 'virtual kidnapping'?

NET BUZZ
Paul McNamara

The crime itself is horrific -- beyond comprehension in its cruelty -- so there's some hesitancy to complain about semantics. But this is a technology column and the underlying issue -- society's tendency to blame modern-day bad deeds on technology instead of the bad-deed doers -- is an important one.

Here's an excerpt from a story headlined "'Virtual Kidnappings Exploit Very Real Fears," in last Tuesday's New York Times:

"The phone call begins with the cries of an anguished child calling for a parent: 'Mama! Papa!' … The youngster's sobs are quickly replaced by a husky male voice that means business. 'We've got your child,' he says in rapid-fire Spanish, usually adding an expletive for effect and then rattling off a list of demands that might include cash or jewels dropped off at a certain street corner or a sizable deposit made to a local bank. … This is 'virtual kidnapping,' the name being given to Mexico's latest crime craze, one that has capitalized on the raw nerves of a country that has been terrorized by the real thing for years."

The word virtual, of course, has come to take on several meanings in the technology world, but perhaps the one most commonly understood by your average newspaper reader is "on the Internet." Second Life is a virtual world (perhaps there are virtual kidnappings there). Those people you know only on MySpace are your virtual friends. Last week's Interop conference in Las Vegas was dominated by talk of virtualization.

None of which has anything whatsoever to do with what's been happening to those terrified parents in Mexico.

So back to the question in this column's headline: Why call this crime "virtual kidnapping."

I'll tell you why: Someone somewhere along the line -- probably a fel-

low journalist -- decided that "fake kidnapping" or "phony kidnapping," both of which are not only more precise but better convey what actually happens, suffer from not being very "sexy" . . . especially when compared to something as hip, here and now as "virtual kidnapping."

And while we're parsing: The nonkidnappings didn't "virtually" happen -- as in "virtually everyone likes ice cream," or "the planes virtually collided" -- they didn't come close to happening in any way, shape or form.

How many readers do you suppose presumed they were about to read a story involving kidnapping and the Internet? . . . Just about all of them, I'd say.

Labels matter.

We really don't like Mondays

Does a dread of returning to work on Monday keep you awake Sunday night?

According to the online job mart Monster, about half of U.S. and U.K. participants in an unscientific survey report having their Sunday night sleep disrupted by the mere thought of going back to work on Monday morning.

Such job-inspired fitfulness was reported less often by Germans (40%), Italians (37%), Swedes, (37%) and Belgians (35%). And, sleeping most soundly of all, with only 29% reporting Sunday night difficulties, were the French (insert your own wisecrack here).

More than 24,000 individuals registered their opinions in the Monster poll, which asked the question thusly: "Does the thought of going to work on Monday affect your Sunday night's sleep?" (Left unstated was the obvious suggestion that if you are among the hordes tossing and turning over job stress Sunday evening, perhaps you might want to consider a visit to your trusty job-search site first thing Monday morning.)

Personally, I can say with confidence and candor that the prospect of returning to work does not keep me awake Sunday night, because I don't need any excuse to keep from sleeping: I'm just lousy at it; always have been.

Finally, a confession/question: Has anyone else ever put off sending an e-mail in the wee hours because you didn't want the recipient to know that you were up that early and/or late? ... C'mon, I can't be the only one.

McNamara can be reached at buzz@nww.com.

HOW TO NAVIGATE Network World's e-dition

Formatted for better readability, Network World's e-dition contains the same content as our print publication along with extras not available in print.

e-dition Features

1. **Navigation** – Bookmarks; highlighted, clickable stories on the front page; clickable table of contents; thumbnails on "pages" tab and Acrobat's own tools make moving around in the e-dition simple.
2. **Search** – Easily search www.networkworld.com or the e-dition for more information.
3. **Clickable ads** – Click anywhere on the ad to link to their Website.
4. **E-mail this article** – Send an article to a friend or colleague.
5. **Comment on this article** – Share your insight with others! Comments appear on our community site at www.networkworld.com/community.
6. **Related links** – In-content links that help you find additional information.
7. **Stories on similar topics** – A list of links to related stories appears at the end of most stories.
8. **Feedback** – Let us know what you liked or how we could improve your reading experience.