Defining Technology for Business



I-commerce impact sends shock waves through ERP world

Web-enabled or not, companies are picking up the pace to respond to accelerating demands from the marketplace. Although enterprise resource planning (ERP) giant SAP may have been caught off guard by the onset of Internet commerce, the company is quickly shifting into high gear. See article, page 14.

Meanwhile, manufacturers are optimizing their existing ERP infrastructures to handle the growing need for speed. See Special News Report, page 34.

NEWS

▶ Hewlett-Packard recruits partners for E-speak integration platform. 5

Soul of an old machine: EMC buys Data General, 12



▶ Dan Briody: Who's to blame, Intel or the OEMs?

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IMU ANN ARBOR MI 48106-0984

Tools for your tag team: SoftQuad's XMetaL uses a word processor model for XML markup. 51

Help yourself: How to turn employee selfservice tools into a boon instead of a bane. 93

From bricks to clicks

■GM leads wave of next-generation I-commerce initiatives

By Dana Gardner

TO DOT-COM or not to dot-com? With the potential cost savings and expanded reach of Internet commerce too great to ignore, even a global corporate behemoth such as General Motors is now fully designing its long-term business strategy around the Internet.

A new e-GM division, launched

last week, is one of the early examples of the wave of traditional brick-and-mortar companies, such as Wal-Mart and Williams-Sonoma, that is pursuing major initiatives based on Web services.

"The early Internet economy we have now is only a small vibration of the changes we will see," said George Colony, founder and CEO

of Forrester Research, in Cambridge, Mass. "It will be General Electric, GM, and Wal-Mart that will harmonize their channels and create a single experience for the customer. This is where the action is going to happen. This e-GM is the Manhattan Project of [Internet commerce]."

▶ GM page 32

Payment systems

Credit cards become virtual with eCharge

By Matthew Nelson

PAYMENT COMPANY eCharge plans to do to Internet credit card systems what the Internet itself did to brick-and-mortar stores.

Officials at eCharge will announce this week a completely Internet-based credit and payment system to facilitate purchasing between buyers and eCharge-enabled merchants.

However, eCharge will offer merchants a discount from what they are charged by traditional credit cards such as Visa and MasterCard.

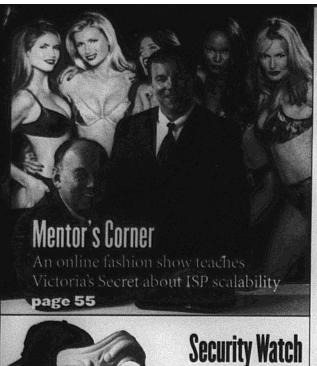
With a less-expensive option available, those traditional cards may be in big trouble.

"The current pricing structure is going to collapse. There is no question about it," said Albert Pang, an electronic-commerce software analyst at International Data Corp., in Mountain View, Calif. "It will change the rules of the game with credit card payment systems over the Internet. It will have an impact

▶ ECHARGE page 32



Apple v. VirnetX, IPR2015-00812, Petitioner Apple Inc. - Exhibit 1064, p. 1

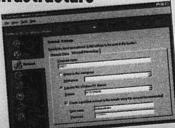


If you're not careful, identity thieves may hijack your personal information and masquerade as you page 48

Platforms & Infrastructure

Symantec's latest tools help you support your mobile workforce





THIS WEEK

- 5 Hewlett-Packard recruits partners to use its E-speak electronic-commerce technology.
- 8 Oracle prophesies that the demand for its delayed Linuxbased 11ii suite will remain strong come 2000.
- 12 The enterprise-storage war heats up with EMC's acquisition of Data General.
- 14 Business-app behemoth SAP lumbers into the Web arena, but the move may be too late.
- 20 Microsoft and the U.S. government draw conflicting conclusions as to whether the company abused its power.
- 24 Street Prices: Pentium desktops
- 28 Hologix's Attricom lightens the electronic-commerce load for heavy industries.
- 28 The Bug Report
- 32 Comdisco tackles some new projects, including data center services and an IT investment tracking tool.
- 34 IT's influence spreads as manufacturers integrate production systems with ERP and Internetbased supply chains.

Platforms & Infrastructure

- 39 Review: Symantec's pcAnywhere 9.0 connects remote employees to critical data, applications, and users' systems.
- Review: Mobile Essentials. Version 2.0, from Symantec, eases connecting mobile users to the corporate network.

Intranets & I-Commerce

- 51 Review: SoftQuad Software releases XMetal. 1.0, a production tool for creating content based on XML and SGML.
- 54 Review: BeatWare's e-Picture 1.0 integrates all the features a Web designer needs to edit, illustrate, animate, and more.
- 55 Mentor's Corner: Victoria's Secret's too-popular springfashion cybercast persuades the retailer to adopt IP multicasting technology.

Enterprise Computing

- 59 Review: The flexibility of SalesLogix's SalesLogix 3.1 puts it among the cream of the customer relationship management software crop.
- 60 Review: Corel's latest version of Paradox is easier to use, but with its array of design flaws, the product still needs work.

Test Center Comparison

68 The InfoWorld Test Center examines your options for midtier customer relationship management software.

Enterprise Careers

- 93 Employee self-service tools can boost productivity, but only if workers have the desire and the training to use them.
- 94 Three IT managers reflect on the experiences they had and choices they made while traveling down their career paths.

Do personality profiles build teams or close minds? 95

NICHOLAS PETRELEY Sure, some software stinks. And it may be your fault. 114

SANDY REED The consumer PC market is booming, yet fewer people are using their PCs. 83

Opinions

- 5 From the News Desk / Michael Vizard
- 46 Window Manager / **Brian Livingston**
- 48 Security Watch / Stuart McClure and Joel Scambray
- 56 Net Prophet / Dylan Tweney
- 66 Test Center Rx / Laura Wonnacott and Brooks Talley
- 82 To the Editor
- 82 InfoToon / Tom Cheney
- 83 From the Editor in Chief / Sandy Reed
- 95 IS Survival Guide / Bob Lewis
- 95 Career Currents / Margaret Steen
- 113 The Gripe Line / Ed Foster
- 113 Notes From the Field / Robert X. Cringely
- 114 Down to the Wire / Nicholas Petreley
- 114 From the Ether / Bob Metcalfe
- 110 Reader Resources

ONLINE THIS WEEK

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► Maggie Biggs: Have you taken a vacation this summer? If so, did you check e-mail or voice mail while you were away? Why do you think some people have trouble disconnecting?



- ► Test Center: What do you think about the promise of customer relationship management tools? Are these products too much work for the return, or are you willing to take the plunge to suit your business needs?
- Bob Lewis: Do exercises that try to instill an appreciation for the perspective of various identifiable groups work, or do they just make the problem worse by emphasizing the groups' characteristics to the detriment of the individuals'?

▶ Nicholas Petreley: We are willing accomplices to the negligent software publishers because we tolerate inferior software. Do you see a bright future for software, or will everyone take bugs and security holes for granted?

OPINIONS

▶ Dan Briody: Why did Intel blame PC makers for the delay of its own Mobile Pentium III chip? And who should we believe, Intel or the OEMs?

INTERVIEW

▶ Steve Kiely: In the age of Web site outages, the CEO of Stratus Computer talks about why such mission-critical systems will increasingly depend upon a solid server infrastructure of faulttolerant systems.

Newsletters

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- by Stuart McClure and Joel Scambray
- ▶ The Tweney Report, by Net Prophet **Dylan Tweney**
- ▶ Wireless World. by Dan Briody
- ► The Linux Report

6 INFOWORLD AUGUST 16, 1999 www.infoworld.com

INTRANETS & I-COMMERCE

NET PROPHET · DYLAN TWENEY

The 'e's have it: learning to spell the new economy

TOP THE INSANITY. I'm drowning in a sea of "e"s.

It all started innocently enough. "Ecommerce" was an understandable, pronounceable abbreviation for "electronic commerce."

But then people started adding the "e" prefix to one damn thing after another. IBM started talking about e-business. Hewlett-Packard helped Microsoft launch eChristmas.com and then went on to offer e-Services. Then came an avalanche of e-terms, both literal and poetic: eToys, eBay, E-Loan, eConcert, eMachines, and even eEye.

This e-mania has reached its apex of

ridiculousness in the term e-conomy. You can almost hear the pundits patting themselves on the back for coining that one.

And yet — hello? — this isn't even a new word. Someone just dropped a hyphen into a perfectly good English word — one that already began with "e," in case you hadn't noticed.

I, for one, have had e-nough.

Yet, as a pundit myself, I have a professional obligation to coin terms. Besides, I want to help shore up the embattled forces behind the "I" prefix, short for "Internet," of course. (InfoWorld, bucking the trend, has long preferred "I-commerce" to "e-commerce.")

Thus, in the spirit of rampant neologisms, I propose that we call the next-generation Internet the I-nternet.

The term I-nternet, of course, refers to the fact that now even the Internet itself isn't immune to the disruptive, decentralizing forces of the Internet.

Three recent battles over Net technologies — the DNS, instant messaging, and Web page annotations — illustrate the point.

The Internet's DNS, the key to readable Net addresses, has long been administered by a single government contractor, Network Solutions Inc. (NSI). The U.S. government proposed a more open, decentralized system, to be organized by the nonprofit Internet Corporation for Assigned Names and Numbers (ICANN). Yet ICANN is proving itself incapable of creating a workable alternative, and NSI meanwhile remains firmly in control.

In other words, the entire I-nternet, which ostensibly empowers small companies to compete with the biggest ones, is being held hostage by a single government contractor.

Another I-nternet attraction is the topsyturvy farce of Microsoft lashing out at America Online for refusing to make its chat client, AOL Instant Messenger, interoperable with Microsoft's chat client, MSN Messenger.

Microsoft s chat client, Mish Messenger.

Microsoft, the champion of openness? Give
me a break. At no point has Microsoft offered
to open its own chat client to AOL or anyone
else — openness only goes one way here.

On the I-nternet, "openness" may be nothing more than a verbal cudgel wielded by the public relations groups in big corporations.

And yet, once in awhile something comes along that really does open things up a bit. One such technology is Third Voice (www .thirdvoice.com), a browser add-on that lets anyone stick virtual Post-it Notes on any Web page, for the whole world to see.

Third Voice has provoked strong reactions. The company and its proponents call the plug-in a powerful tool for free speech. Yet Web publishers are aghast that their Web sites are getting "tagged" by Third Voice graffiti.

Nowadays, when everything starts with an "e," the Web itself almost seems passé. That's why I'm glad there are still new technologies capable of provoking outrage and debate.

Does the I-nternet really have revolutionary potential left in it, or is it e-business as usual? Write to me at dylan@infoworld.com.

Dylan Tweney is the content development manager for the InfoWorld Web site. He has been writing about the Internet since 1993.

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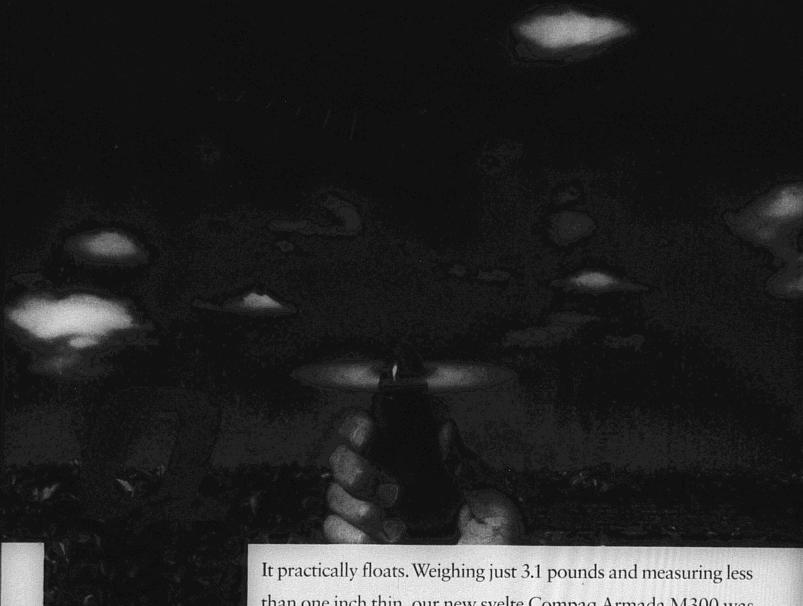
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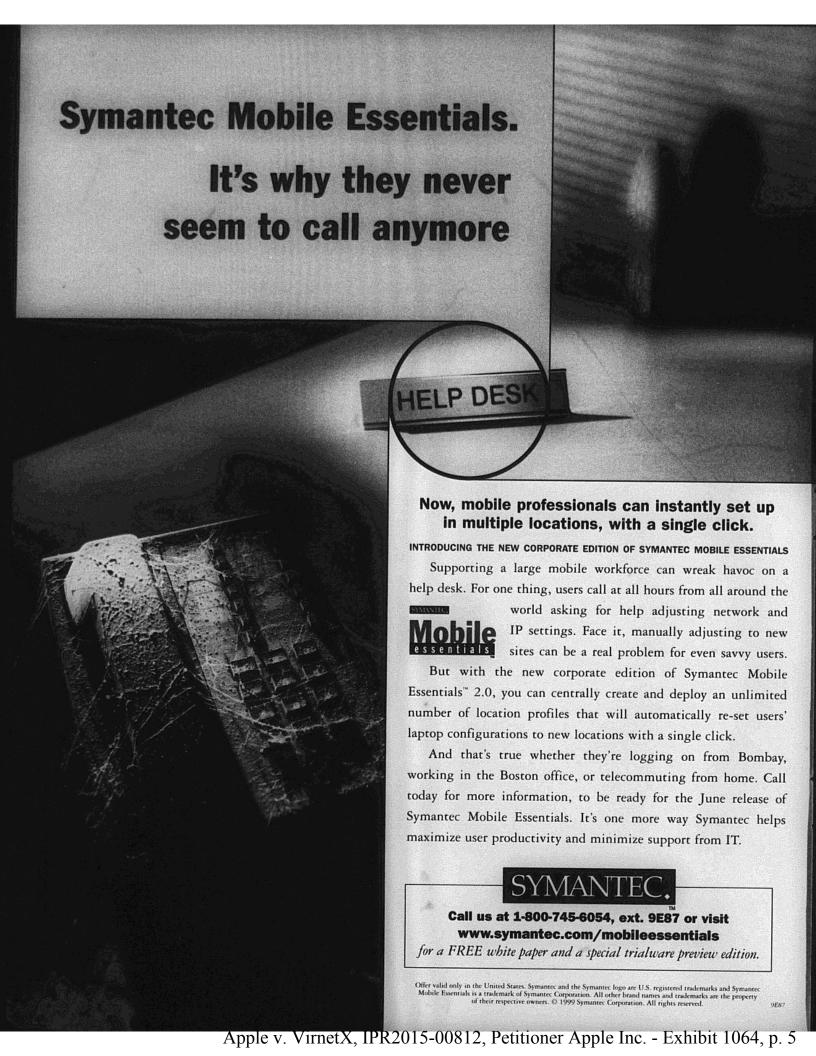
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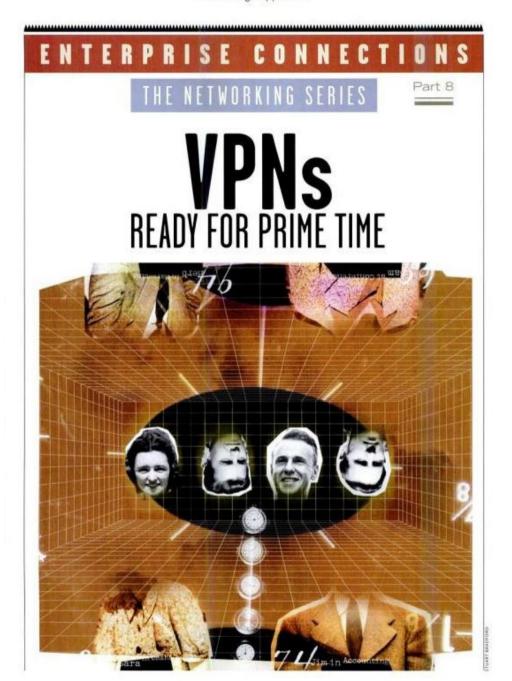
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INTERNET

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WHO HAS THE MOST

VPN

EXPERIENCE?

REMOTE ACCESS

INTRANET

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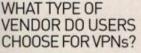
REALITY OF VIRTUAL PRIVATE NETWORKS

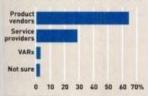
IRTUAL PRIVATE NETWORKS (VPN) solve a number of networking challenges. These include greater security for communications across the network, the ability to quickly deploy additional users and locations, converging a number of enterprise communications capabilities, plus supporting a number of strategic applications, such as electronic commerce, voice and video conferencing, telecommuting, and remote access.

The positive effects that VPNs can have on an organization can be dramatic, according to VPN equipment vendor Check Point Software Technologies Ltd. of Redwood City, Calif. These positive effects may include: an increase in sales, accelerated product development cycles, and strengthened strategic partnerships. Prior to the advent of VPNs, if additional communication facilities

were needed, the network manager had one option: Call the telephone company and order up more leased lines. Not only was this an expensive solution in many cases, but the associated lead times for installation of those extra circuits did not always keep pace with business objectives.

Check Point sees three configurations for VPNs





that can lead the network manager down that positive path. These include:

- ► Intranets: for communication between various corporate departments and branch offices
- ► Remote access: to keep the remote or mobile employee connected with home
- Extranets: for connectivity between a corporation and its business partners,

customers, and suppliers.

ARE VPNs MORE VIRTUAL OR REAL?

Are VPNs truly the holy grail that net managers have been seeking, or are they just one more technology to implement, test, and deploy, with the hopes that this time, the carriers and the networking vendors

AAAAAAAA

THE IP SECURITY PROTOCOLS

ost VPN vendors will throw the term "IPsec" at their customers when discussing the capabilities of their products and services. But what does this mean for the network manager?

IPsec, short for Internet Protocol Security Protocol Suite, provides privacy (the process of encrypting the data) and authentication (the process of identifying the originator of that data) for IP-based internetworks. The protocols are documented in a series of Request for Comments (RFC) documents:

RFC	SUBJECT
2401	Security Architecture for the
	Internet Protocol

- 2402 IP Authentication Header 2403 The Use of HMAC-MD5-96 within ESP and AH
- 2404 The Use of HMAC-SHA-1-96 within ESP and AH
- 2405 The ESP DES-CBC Cipher Algorithm with Explicit IV 2406 IP Encapsulating Security
- Payload (ESP)

 2407 The Internet IP Security
 Domain of Interpretation for

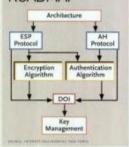
ISAKMP

2408 Internet Security Association and Key Management Protocol (ISAKMP) 2409 The Internet Key Exchange (IKE)

- 2410 The NULL Encryption Algorithm and its use with IPsec
- 2411 IP Security Document Roadmap
- 2412 The OAKLEY Key Determination Process

The inter-relationships of the above documents, plus the protocols and algorithms that are documented within the IPsec suite, are defined in RFC 2411. Note that the security architecture document (RFC 2401) covers the general concepts of IPsec technologies. There are then two key protocols: the Encapsulating Security Payload (ESP, defined in RFC 2406), which provides privacy, and the Authentication Header (AH, defined in RFC 2402), which provides authentication. Various algorithms in support of the ESP and AH processes have their own documents (such as RFCs 2403, 2404, and 2405). The Domain of Interpretation (DOI, defined in RFC 2407) documents default values and other specifications. The Key Management documents define various key management schemes (see RFC 2408, RFC 2409,

IP SECURITY PROTOCOL SUITE DOCUMENT ROADMAP



and RFC 2412).

If it sounds like this is a lot of material to digest, it is: The Internet Engineering Task Force labored for several years on these IPsec documents. For starters, check out RFC 2411 (the document roadmap) and RFC 2401 (the security architecture), and then continue the research based on your network's specific security requirements.

All of these documents are available on the IETF Web site: www.ieft. org/rfc.html. *

got it right? Should network managers re-architect their networking infrastructures one more time or stay with the tried-and-proven leased-line solutions for the WAN connections?

Network managers responsible for geographically dispersed systems, typically connected via lowspeed links, and also lacking the staff or time to implement a piece-part solution, are good candidates for VPN technologies, according to John McConnell, president of McConnell Associates in Boulder, Colo.

Just make sure you and the vendors are talking the same language before you sign up. "VPNs are given a very broad definition; secure communications over a shared public network," says Atul Kapoor, senior vice president and managing director of research and analysis for the Tolly Group in Manasquan, N.J. "VPNs are a natural for the intranet/extranet age, and therefore should be with us as far as one can safely predict these things."

But given such a broad definition of VPN service, what networking challenges do end users count on this technology to solve? "For now, the top application by far is remote access to corporate networking resources. This is where people are piloting and now scaling their VPNs," says Eric Zines, senior consultant with Telechoice Inc., a Boston-based WAN

ΛΛΛΛΛΛΛ

consultancy. As security and performance issues are addressed little by little. Zines predicts more interest in site-to-site VPN connectivity for heavy-duty applications, and eventually, someday, all applications. "The goal for this technology is converged networks and applications," so that network managers can reap

the economic advantages and management benefits of running everything over a single infrastructure, Zines says.

HOW WELL DO VPNs PERFORM?

If you ask most network managers to list their top three concerns, the performance of their networks is likely to lead that list. "The real battle in the VPN industry is guaranteed performance," says Zines. "Availability and latency guarantees are nice, but they don't cut it in a mission-critical environ-SPONSORED BY ment."

VERITAS

Check Point Hewlett-Packard

Much of this boils down to the quality of service, or QoS, and the measurements that go into QoS determinations.

"Unfortunately, there is still more quality of lip service, as opposed to quality of service," says Frank Henderson, chief technical officer of the Net-Plex Group, an Iselin, N.J., consultancy.

But one of the keys to cracking the VPN challenge is to be well-armed with details concerning the specifics of your network, and how its various elements are operating. In many cases, this boils down to a clear understanding of network performance metrics, which include network availability and la-

Network availability is a ratio of the time that the network is operational, compared with the total time of the measurement period, and then expressed as a percentage. A number that is frequently tossed around is 99.999%, or "five nines" of network availability, which means that the service provider is guaranteeing that the network will only go down .001% of the time, a very small amount that would take literally years of measurements to accurately verify.

Latency is the delay, typically measured in milliseconds, to get from one location to another via the service provider's network. Typical latencies across North America are in the range of 100 milliseconds or thereabouts. For some applications, like E-mail, file transfers, or store-and-forward fax transmis-

"The real battle sions, additional latency is not a in the VPN indusmajor issue. But for real-time applications, such as voice or try is guaranteed video, excess latency results in poor application performance, performance." and ultimately, end-user dissatisfaction with that service. And if Eric Zines, Telechoice the end users are unhappy, network managers know that it is only a matter of time before their

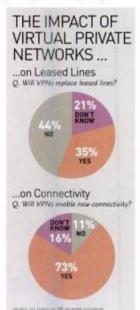
phone will start to ring.

So a little preventive medicine in the form of a Service Level Agreement, or SLA, is typically included in the contract with the VPN provider. And if the provider misses a performance bogey, there is typically some type of service refund or credit given, as specified in the service contract, for the time that the network did not perform as advertised. But these refunds may be in the too-little-too-late category.

Having some network management systems available to measure, and document, VPN performance can be critical when it comes time to settle up with the provider at the end of the month. Not only should you know if you are getting what you pay

for, but whether what you are getting is adequate to meet your infrastructure quirements. Hewlett-Packard Co.'s Network System Test Division has developed a number of scalable network test solutions, ranging from software-only systems that run un-Windows 95/98/NT, to fully configured dedicated analyzers that support both switched and shared network architectures.

The HP LAN Analvzer is a Windowsbased protocol analysis and monitoring suite that consists of optional Expert, Active, and



ΔΛΛΛΛΛΛ

SURFING FOR UP-TO-DATE WEB INFORMATION

he Web 'surfing' business is an extremely fickle one. Few know this better than Excite Inc., which has expanded from its inception as a search engine to a point of presence for the Web, including search, a personal channelized front page, chat boards, communities, Email, and instant messaging.

Since Excite has expanded its business model beyond the search engine by adding a variety of new services, its users are creating new demands on data availability. For Excite, easily and automatically propagating index data from its single-source query server to remote read-only mirrors is essential.

Eric Anderson, UNIX Systems Administrator at Excite, turned to VERITAS Software in Mountain View, Calif., with his network storage challenge. Anderson agreed to beta test VERITAS Storage Replicator for File Systems (SRFS) because automation is key to enabling the company to go forward with its business. "Using SRFS will save time for our administrators and maintenance overhead. Currently we have one person spending about 20 hours maintaining the mirrors. Using SRFS, we may be able to reduce this to just two hours per week," Anderson says.

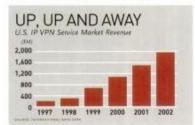
Excite is testing SRFS to create and maintain up to 12 remote worldwide read-only mirrors of its source query server index data.

The company primarily uses Sun Solaris servers and arrays, Initially, Excite started testing with two Sun servers, and grew the configuration to the currently used 10 Sun E4000s with two SPARC storage arrays each on the West Coast, and six on the East Coast. Query servers handle the search words typed by users on the Web. The query servers process the search words, and deliver a list of related concepts rather than just key words. The company has a set of "fetchers" that collect information from the Internet. That information is then updated and merged onto a 120 GB volume database. The 120 GB in Excite's database is being managed by the underlying file system. That merged information is then manually copied to a series of array servers, which the query servers use to gather and post results to users.

Using SRFS, the newly merged data set is then replicated over the Internet to Excite's designated hosts on the East Coast. Anderson is hopeful that SRFS will automate this process, saving time in the copying process that in turn will enable Excite to deliver a quicker, more up-to-date index at all "local" locations.

VERITAS Software is the de-facto standard for application storage management, with over 60 of the world's leading servers and operating systems integrating its software. VERITAS provides these customers with enterprise-class application storage management software solutions to manage the explosion of data and the growing complexity and scalability of networked environments that exist today.

Distributed software modules, The distributed network analysis and management module is an excellent resource for VPN managers with multiple physical locations on the network. This module enables the network manager to centrally view and manage all LAN Analyzer data collection resources on the network. Each manageable device appears with its



IP address of user-defined name.

All of the troubleshooting and monitoring features that are available locally with HP LAN Analyzer are available for distributed devices that are also part of the management system. In the case where a technician is on site at a remote location to help troubleshoot a problem, the Distributed module greatly minimizes the time to resolve a problem. This module lets both the network manager and the local support technician simultaneously view and analyze the segment in question. The network manager and technician can then collaborate to solve the problem, thus optimizing the time necessary to restore the network to full operational status.

MEETING THE VPN CHALLENGE

According to a recent report issued by International Data Corp. in Framingham, Mass., vendors have

 $\wedge \wedge \wedge \wedge \wedge \wedge \wedge \wedge$

been scrambling of late to make their products compliant with the recently published Internet Engineering Task Force (IETF) standards for Internet Protocol Security, or IPsec.

According to IDC, leading solutions and products for VPNs should incorporate the following key features:

- The ability to transparently interface with existing local-area network services and infrastructure
 - Integration with firewalls
- Integration with public key infrastructures and digital certificates
- Encryption and security association hardware acceleration, either embedded in the system or offered as an optional add-on
- The ability to interface with existing authentication systems, management systems, and directories
 - The ability to deal with both security-oriented

"The goal for this technology is converged networks and applications." Eric Zines, Telechoice

policies and performance-oriented quality-of-service (QoS) policies

 Unique product sets for the enterprise and service providers.

And with some careful attention to network design, data throughput, security, and management schemes, the

current VPN offerings promise to meet and exceed the challenges of their leased-line predecessors.

Mark A. Miller, P.E., (mark@diginet.com) is president of DigiNet Corp., a Denver-based internetwork consulting firm.

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BREAKING NEWS ONLINE

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FORUMS

Lab Talk: Is CRM in your future?

Customer relationship management (CRM) software can streamline your sales process and help you gain and retain customers, or it can drag your company into a morass similar to the worst of bigscale enterprise software. What do you think about the promise of CRM? Are these products too much work for the return, or are they necessary to address your customer relationship needs? If so, what criteria will you use to decide which solution is best for your situation? Join our Lab Talk forum, hosted by the Enterprise Computing team's Technology Analyst Mario Apicella and Editor at Large Dan Sommer.

Developers Den: Vacation contradiction

Many people are taking some time off this summer. However, all too often, technology pros announce their time away from the office by saying that they will check voice mail and e-mail occasionally. Why can't some technology pros disconnect? Have you taken a vacation this summer, and if so, did you check e-mail or voice mail while you were away? Did you bring a cellular phone, laptop, or other mobile device to your vacation destination? Visit Developers Den this week and tell Senior Analyst Maggie Biggs why she shouldn't be checking in on you while she's on vacation.

TALK BACK

To contact Enterprise Computing staff writers, send e-mail to firstname __lastname@infoworld.com.

▶ Customer relationship management software

SalesLogix offers flexible CRM

■ Suite well-suited to distributed sales forces using client/server or Internet

> Turn to

page 68 for

a comparison

of three CRM

By Mario Apicella, InfoWorld Test Center

F YOU ARE struggling to find and keep customers, then you are usually looking for an edge: an extra push that makes it easier for your staff to close and sustain sales. Customer relation-

ship management (CRM) software can give you the edge you need to boost sales and service.

One solution that can give you an edge is Sales-Logix's SalesLogix 3.1,

which offers a multifaceted collection of Windows applications for your sales and marketing efforts. These provide native support for major relational databases and a structure that you can easily tailor to the geography and the business model of your company.

If your business needs include a widely distributed sales force with both Web-based and client/server architectures, the ability to easily customize applications for your users, and automatic links to a leading financial package, then Sales-Logix can deliver.

To learn about other products in this field, turn to the Test Center Comparison that starts on page 68. We considered SalesLogix for the Comparison, but determined that customers do not usually include it with the three products we tested when making purchase decisions.

The business benefits of CRM are compelling. It's far cheaper to hold onto customers than to find new ones. Thus you need to do a better job of serving those you already have while you look for more. CRM products automate many of the tasks that your sales staff performs to keep close to your customers.

The architecture of SalesLogix allows you to create islands of distributed databases that synchronize automatically with a central company repository for better allocation of the information where it is more frequently used.

Furthermore, using specialized suites, you can easily personalize the product to manage your customers' interactions on the Internet and on your local network, and close the ties with your back-office application by creating your own interface or adopting the ready-touse integration with financial software from Great Plains.

Thanks to its flexible architecture, a powerful bundle of customization tools, and a built-in set of applications providing support

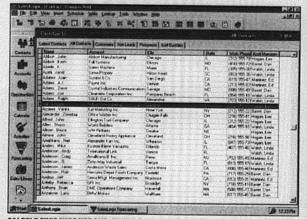
for sales and marketing, SalesLogix is a product that can capture your attention. However, the possibility of creating decentralized and automatically aligned subsets of compa-

ny data makes the product more appealing for companies with multiple, autonomously managed locations. In addition, SalesLogix provides a Web-based client that you can safely distribute to third parties, such as resellers and distributors, allowing them to update or query your company archives.

Installing a product as versatile as SalesLogix requires some planning, because there are several components that need to be properly set according to your requirements.

I was able to create SalesLogix's archives on Microsoft or Oracle databases; I found detailed instructions in the manual to prepare the database for the installation.

For remote, occasionally con-



SALESLOGIN'S WORKGROUP CLIENT has a consistent, friendly interface that can be personalized by system administrators or users.

nected users, SalesLogix offers the combination of remote clients with their own databases and a synchronization server. You can provide remote branches with a local database and set the product to automatically synchronize with the main database.

For CRM interactions over the Internet, SalesLogix offers a Webhost component that works with Microsoft or Netscape Web servers, and offers browser-based clients and administration.

SalesLogix offers a dedicated module, the Workgroup Administrator, to manage how your local or remote users will access the system, to set synchronization rules for remote locations or remote users, and to schedule agents running automated tasks, such as delivering reports, for your users.

User security is based on profiles that dictate access to database tables with field-level granularity and grant or deny access to menu items on the client and to other people's calendar entries. You can assign users to multiple teams and grant specific or team-inherited access rights. Sales Logix offers an extensive set of windows to enter security data for each user, but using profiles and cloning a new user from a template speeds up the process.

One of the most interesting features of SalesLogix is that it provides a wealth of tools to personalize the product to your needs. For example, using Workgroup Administrator, you can easily add new tables and link them to existing datables and link them to existing datables your new data structure and make it available to the data dictionary of the reporting system.

In addition to letting you add data, SalesLogix provides a set of tools to adapt the logic of the product to your needs. Using the SalesLogix Architect component, you can add custom functions to your system that work similarly in concept to plug-ins for Web browsers.

For example, by using SalesLogix plug-ins, you can create workflows such as the steps to validate a lead; automate recursive activities with scripts coded in SQL or Basic; or add or modify reports. Although 1

> SALESLOGIX page 62

THE BOTTOM LINE

SalesLogix 3.1



SUMMARY

SalesLogix 3.1 offers a comprehensive suite of Windows-based products that manage customer relationships for midrange companies in a client/server environment or via the Internet. SalesLogix shines with its modularity, customization tools, and scalable architecture.

BUSINESS CASE

The built-in synchronization schema makes the product suitable for organizations with multiple, independently managed locations. The lead generation capability of its Web client suits Internet businesses. The product's modularity lets you select only the required components, thus minimizing your initial acquisition and implementation costs.

PROS

- Scalable, multitier, multilocation architecture
- OPowerful customization tools
- Vendor-supplied integration with Great Plains financial applications

CONS

Does not support marketing campaigns

COST

Server: \$2,995; standard client: \$495; Enterprise and Advanced Sales SolutionPacks: \$995 per client.Training: \$1,750 (system administrator); \$1,500 (developer)

PLATFORM

Windows; multiplatform database access

SalesLogix Corp., Scottsdale, Ariz. (800) 643-6400: www.salesloaix.com

For scoring and testing methodology, go to archive infoworld.com/method.