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E-COMMERCE ARCHITECTURE PLANNING

Thinking About Web Quality of Service

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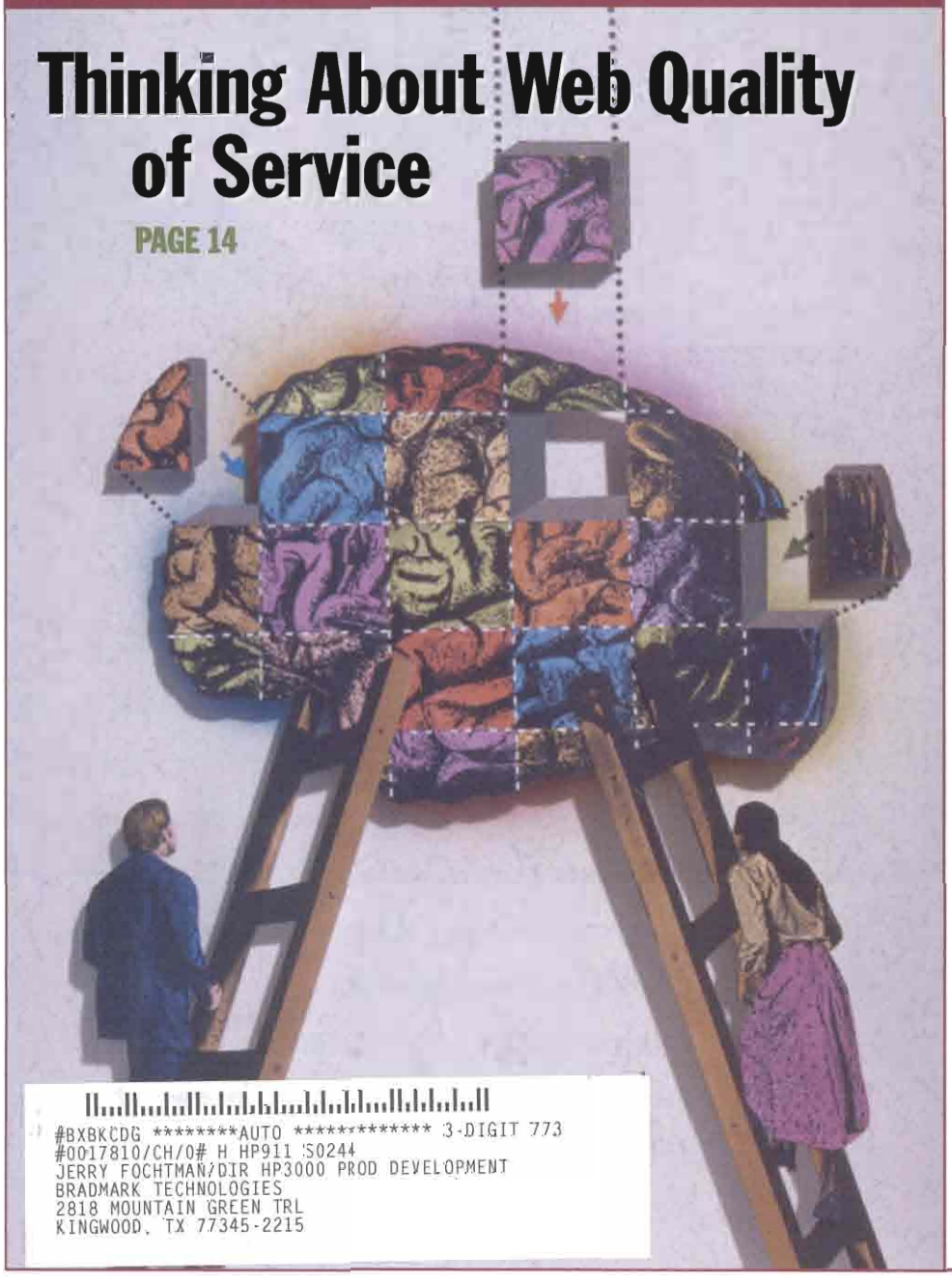

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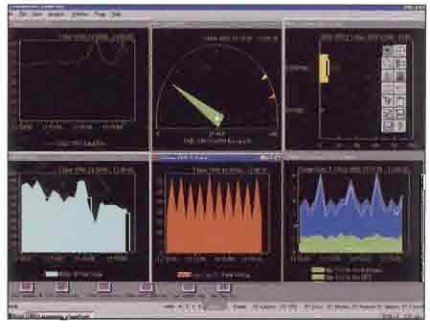

Product Watch
- Datametrics' ViewPoint

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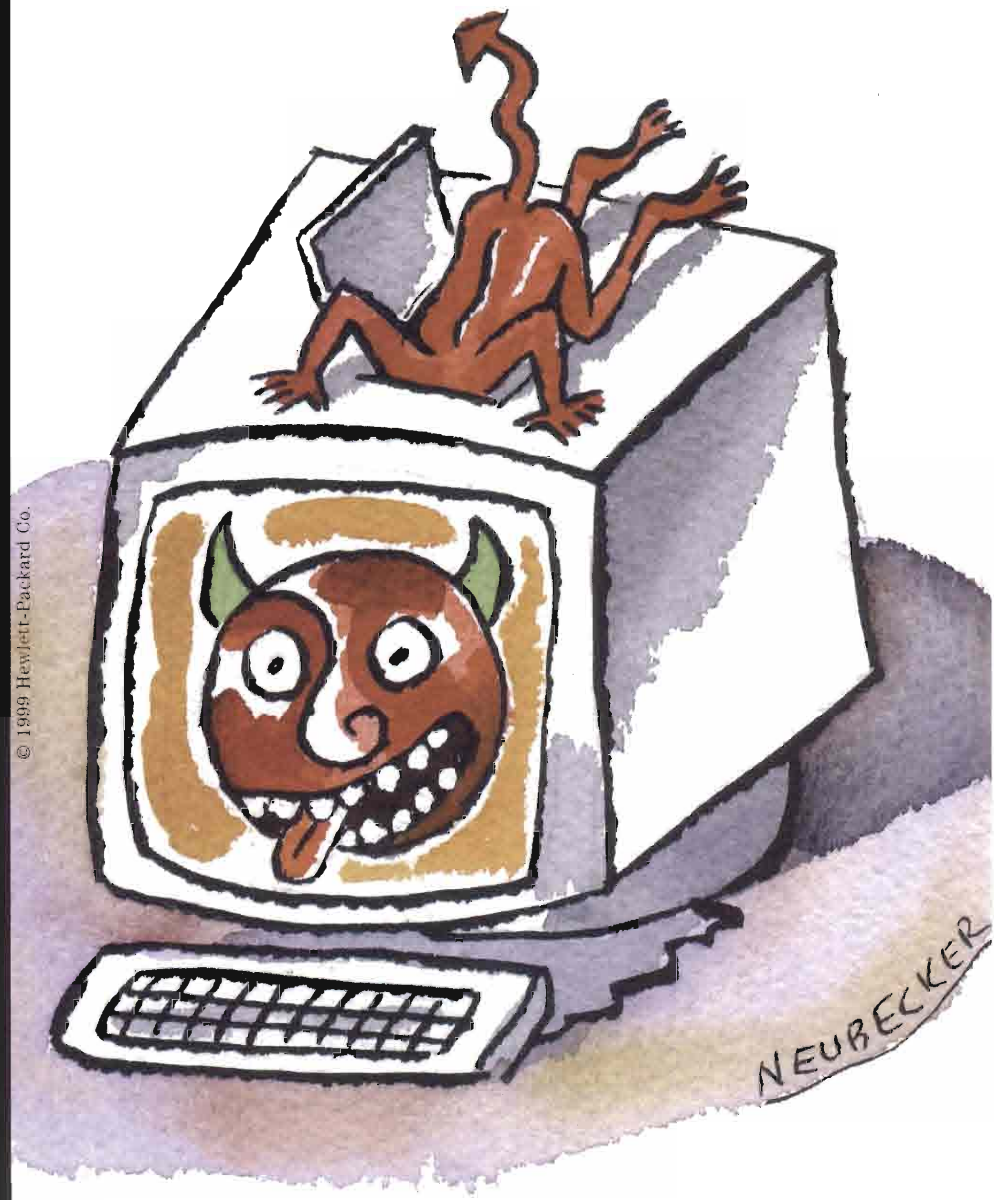

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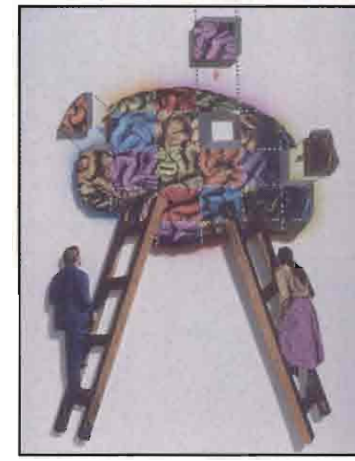

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A Pattern Of Timeless Moments

At a time when we are experiencing, in author James Gleick's (*Faster*) words, "the acceleration of just about everything," it's remarkable if we slow down enough as we hurtle towards the next millennium, to note that HP celebrated 60 years of existence in 1999. The boom-boom times we've enjoyed for the past 17 years, contrast starkly to 1939, when nearly everyone on this planet was shaking off the worst economic bust of the 20th century — the Great Depression.

Who knew in January 1939 a casual coin toss between friends would decide the name of a company casting such a long historical shadow. At the end of 1939, ostensibly the very first Silicon Valley startup, posted a whopping $5,369 in revenue with $1,563 in profits.

Lest we forget?

DEJA VU ALL OVER AGAIN

Interestingly, in an attempt to see if history can repeat itself, that part of HP established by Hewlett and Packard, which has now been spun off as Agilent Technologies is acting like a start up. Only this time, there's plenty of new age marketing muscle behind them. For those who like interesting connections, 1939 was also the year Lew Platt was born. And, as if to prove that history is inherently cyclical, Mr. Platt, as most know by now, is retiring as CEO, president and chairman of HP in 1999. And in another twist of fate, Carleton S. Fiorina, who once worked as a secretary in HP's shipping department, became in 1999, the first outsider to be named HP's CEO and president. It's nothing less than a worthy 21st century challenge for Fiorina, who was named by Fortune Magazine, as the most powerful business woman in America two years running. "[HP has] deep engineering prowess. I bring strategic vision, which HP needs," she was quoted as saying in Fortune's October article.

But let's face it: Without the best people, the recycle bin is full of companies who have been erased from the hard drive of history. Despite the sanguine reports from the business and trade press and super star status achieved by some corporate founders and leaders, we know deep down that the greatest technology and the best leaders just can't cut it alone. And HP's history is full of people and personalities who have made lasting contributions: Joel Birnbaum, Dick Hackborn, Norm Neely, Charlie Litton, Fred Terman, Lew Platt and John Young. HP alumni have gone to become part of history at other companies: Robert Frankenberg at Novell; Ed McCracken at Silicon Graphics. And as a historical footnote, almost forgotten now, is the fact that Apple co-founder, Steve Wozniak once worked at HP.

HP WAYS AND MEANS

I've discovered that HP is unique among hot shot Silicon Valley startups and Internet high fliers. Like other companies, they celebrate their successes, but usually not themselves. Joel Birnbaum, retired from leading HP's Labs, is HP's E-services visionary. Yet he is relatively unknown amongst the digerati. Dick Hackborn (returning to HP as chairman) was largely responsible for bootstrapping HP's printer business. And Lew Platt, though not as recognizable as Bill Gates or as quotable as Scott McNealy, has done more than his fair share to humanize and promote the HP Way.

Platt is credited with expanding the possibilities for women not only like Fiorina to excel at HP, but also Ann Livermore, now spearheading HP's thrust in HP's E-services, as well as Carolyn Ticknor, HP's printer and imaging leader. Both Livermore and Ticknor, by the way, also join Fiorina on Fortune's most powerful women list.

With the curtain coming down on the 20th century, our focus these days is on little else but the future — future profits, future growth, future technologies.
So, it's important to note that HP has something that most Internet and dot.com companies can only hope to have 60 years from now: A proud past.

George A. Thompson
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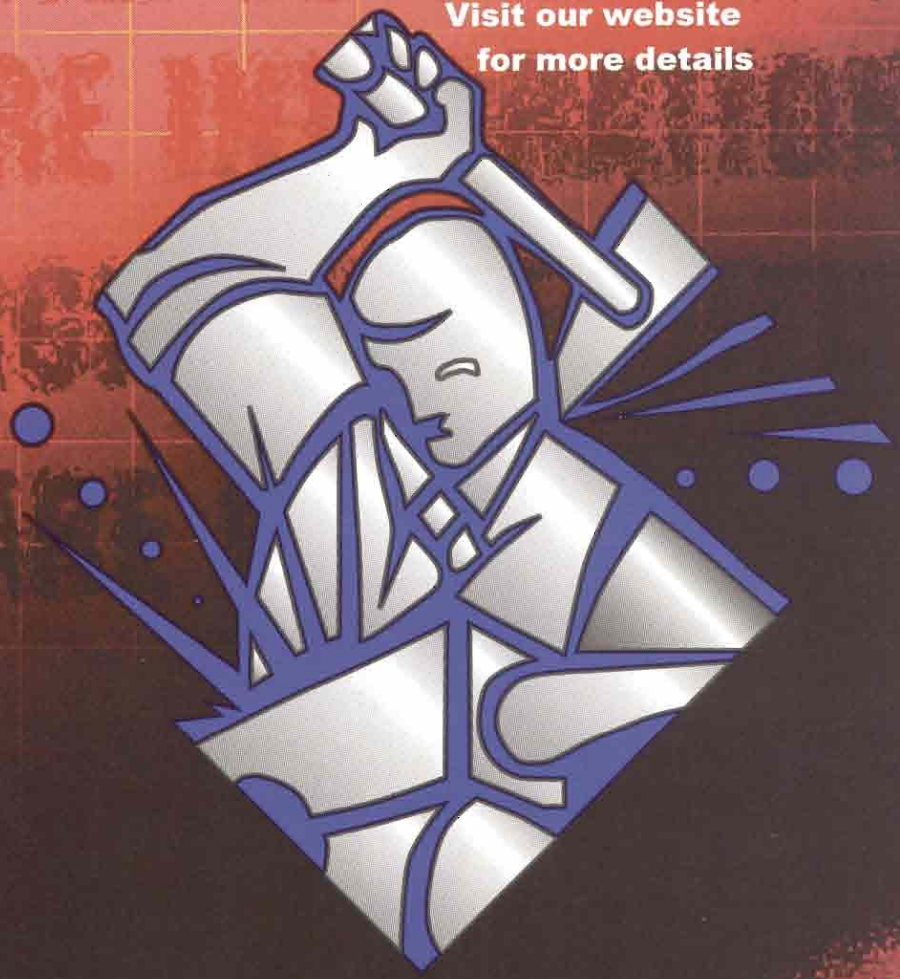

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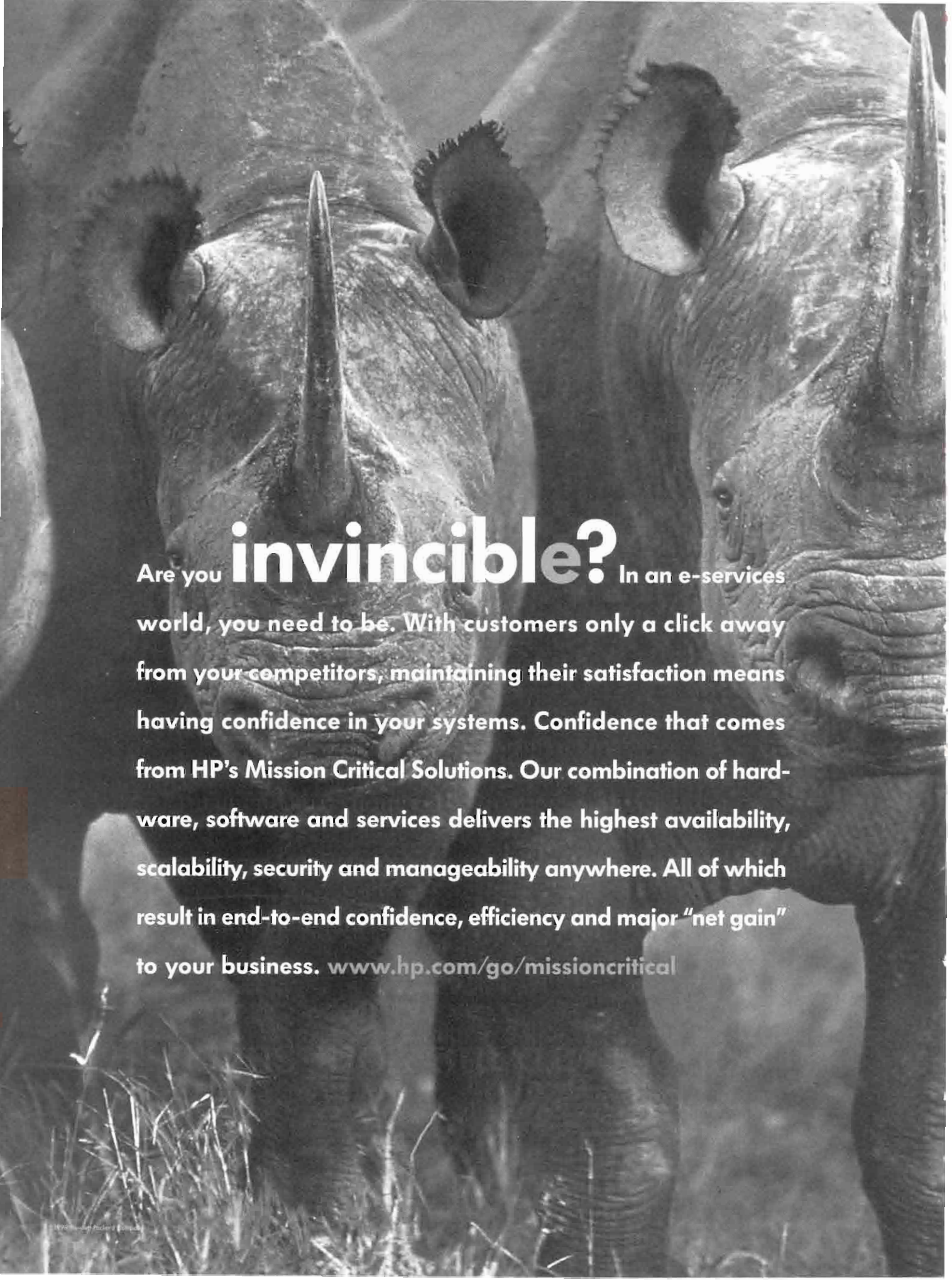
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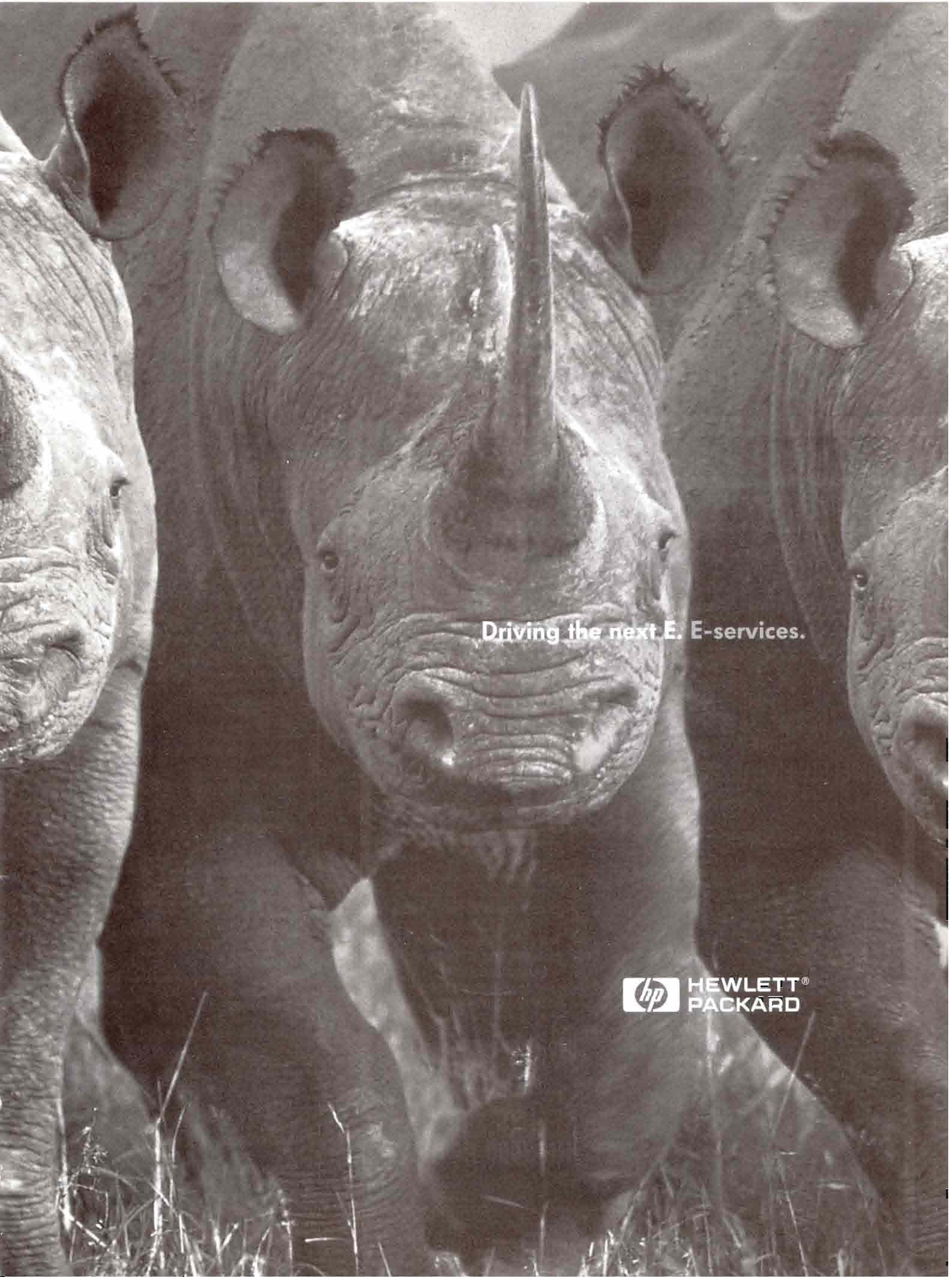
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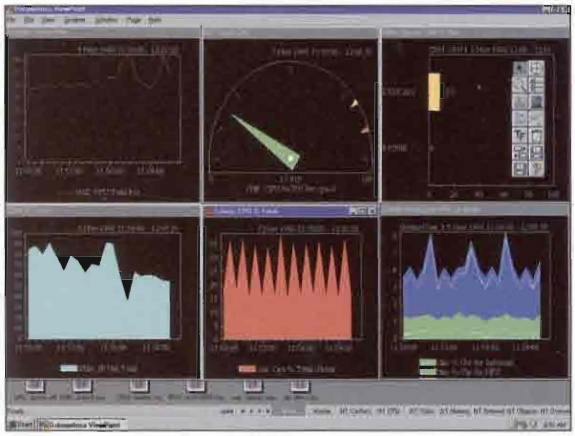

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- ViewPoint console is $12,000.

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Tyson Foods Inc. (Springdale, Ark.) has the daunting task of satisfying the world's craving for chicken. In fact, to meet that demand, Tyson produces, markets and distributes more than $8 billion worth of chicken and chicken-based food products around the world annually. ViewPoint, a system performance management solution from Datametrics Systems Corp., takes care of tuning Tyson's computer network.

ViewPoint actively monitors the activities of devices, operating systems, databases, and applications across a distributed heterogeneous network — even one as distributed and heterogeneous as the one maintained by Tyson Foods. "We have about 300 servers at Tyson Foods," says Jim Bennett, manager of systems administration at Tyson Foods. The company also has more than 3,500 PCs spread throughout 60 remote plants and offices. "Half of them are [Windows] NT, the rest are Unix, and then we have OpenVMS. One of the things that ViewPoint gives us is the same view of the different systems regardless of the OS."

The ViewPoint solution is made up of two primary components: data collectors, which actively compile information about system performance; and the central console, which analyzes the data and puts it into a readable format such as a graph or chart. When ViewPoint discovers a problem, or potential problem, with any of the monitored hardware or software, it sends a real-time alert message via e-mail or pager to the designated system administrator or administrators. Additionally, system administrators can set performance thresholds for key areas and then program ViewPoint to automatically take protective actions when those thresholds are violated.

ViewPoint also provides systems planning capabilities through its Capacity Planner feature. This allows system administrators to create workload growth reports based on network performance history. The Capacity Planner gathers performance data about the business-critical systems, including CPU, memory, I/O and disk usage. It then simulates performance growth and produces a forecasting report that Datametrics claims is accurate to within five percentage points.

What Bennett likes best about ViewPoint is AutoWeb. This built-in feature allows system performance data to be viewed through a Web browser, such as Microsoft Internet Explorer and Netscape Navigator. Tyson Foods uses this feature to present system performance data easy-to-read charts and graphs on the company intranet, which can be accessed by all its employees.

Although Bennett can't quantify how much time and money Tyson Foods has saved by running ViewPoint on its network, he says that it's definitely been an asset. "It's a pretty good product to use. And it's not hard to use." However, Bennett notes that "we'd like to see a tighter coupling of the OS with databases or other applications."

— Jeff Dodd, Contributing Author

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What They Didn't Tell You At IT Management School

TO THE UNTRAINED EYE, a typical e-business environment may appear suspiciously similar to the more traditional IT environment: the rows of gleaming servers, the databases and associated business and financial applications, the array of management tools...

Phil Sheridan

There is a simple way to tell the difference between the two: More often than not, the e-commerce environment is the one with the IT manager tearing his hair out.

• A high profile Internet advertising network that profiles online viewers for targeted ad campaigns, delivering more than 550 million banner ads to those viewers each day. To meet its agreements to advertisers, the company must be prepared to distribute targeted content (ad "views") to a theoretically unlimited number of ad "viewers" at all times.

Yet the company can have no prior knowledge of who these viewers will be, when they will appear, or what quantity of ad "views" will be required.

• Princeton eCom provides electronic bill payment and presentment solutions over the Internet, serving as an outsourcing provider to companies like Bell Atlantic Mobile to enable them to provide their customers with online bill payment and access to account information. The company must process batch jobs sent in by its outsourcing customers. Service Level Agreements frequently specify financial penalties if the jobs are not completed in time (typically, four hours or less from the time of receipt).

It must also provide online account information on-demand to end-users. Yet the company cannot know in advance when batch jobs will come in, or when end-users will choose to access their accounts online.

•The National Association of Securities Dealers (NASD), parent company of NASD Regulation and the NASDAQ and AMEX stock markets, recently implemented an internet-based regulatory application (Web CRD(SM)) providing broker/dealers and regulators with online access to reports from a database containing records on more than 5,500 broker-dealers and 600,000 brokers. The reports can be accessed electronically through the end-user's browser.

The system currently generates and distributes an average of 500 reports per day, many of them running to thousands of pages in length. Yet, while IT can predict general usage patterns (i.e. more reports will be

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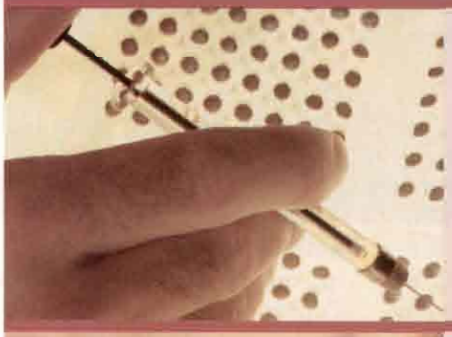
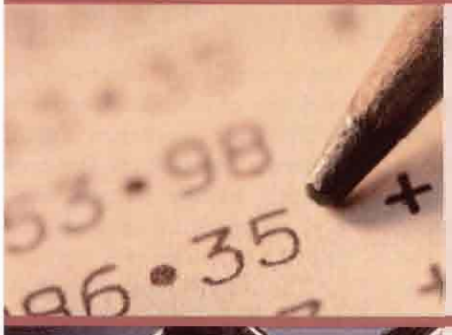
A branch of the U.S. Armed Forces uses AppWorx to manage a suite of Oracle-based applications encompassing five sites, 50 servers, 5,000 daily jobs, and 6,000 end-users.



A multinational pharmaceutical firm depends on AppWorx to manage the output of a sales reporting application. Sales personnel can request reports remotely, receive them via the internet, and view and print them from their desktop.



A Big Six accounting firm porting a VMS application to UNIX used AppWorx to eliminate scripting to handle batch processing. More than 30 DCL scripts of up to 35 pages each were replaced in less than two days.

A large engine manufacturer standardized on AppWorx two years before implementing a nationwide inventory application, enabling the application to be developed faster, less expensively and with increased functionality.

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requested during trading hours than late at night) it must be prepared to handle requests far in excess of its average capacity, any time of the day or night.

E-business environments, like those above, exponentially increase the volume of data that must be handled by the IT infrastructure. In the course of processing, aggregating, analyzing, and reporting on transactional data, the Internet ad company adds the equivalent of six million new rows to its Oracle database every day, 365 days a year. As the company grows, that number will only increase. Further complications arise when the immense volumes of data don't arrive at predictable times or in predictable quantities. To the contrary, they may arrive all at once, packing the vicious punch of a "data tsunami."

Such data tsunamis can be random events. At other times, companies unwittingly bring them upon themselves by undertaking a major Web-oriented marketing initiative and failing to clue in IT. Such sudden influxes of data can easily overwhelm even robust, high-performance, high-capacity environments. They also complicate the task of scheduling and automating processes, because companies don't know when the data will be arriving and when the batch processing will need to begin.

For many years, IT administrators have lamented the shrinking of the "batch window." In the Internet environment, this window shrinks to zero, as e-businesses must keep their doors open all day, every day, and provide immediate service to customers. There are no "off hours." Total availability means that IT must find new ways of handling the ever-fluctuating processing load, so that machines do not become overloaded, diminishing response time.

Because customers have come to expect total, 24x7 availability with reasonable response times, a system that is available but unresponsive in a timely manner is little better than one that has crashed. And when their expectations are not met, end-users need only click to be connected with a competitor. CFOs at Princeton eCom check their site at 2:00 a.m. to ensure that their own customers are getting the service they promised, and Princeton eCom contracted to deliver.

The unpredictability of processing in the e-business environment has led some to argue that "there's no such thing as scheduling in the online world." To the contrary, effective scheduling offers perhaps the greatest opportunity to "backend-proof" the IT environment and to achieve increased efficiency through automation.

Dynamic workflow automation, enables the system to intelligently handle scheduling "on the fly" in accordance with pre-established business rules.

Until recently, scheduling has come down to a more-or-less "static" ordering of predictable data processing events: generating invoices every Tuesday at 2:00 a.m. The e-business environment is far more dynamic, with events. Yet total on-line processing is simply not feasible for the vast majority of e-businesses. The solution is dynamic workflow automation, software enabling the system to intelligently handle scheduling "on the fly" in accordance with pre-established business rules.

The NASD employs such a system for its Web-based reporting application, collecting incoming requests and distributing workload based on availability of processing and other criteria established by central IT. The system also serves as a "regulator valve" in the case of a sudden influx of report requests, ensuring that a data tsunami will not overwhelm the system.

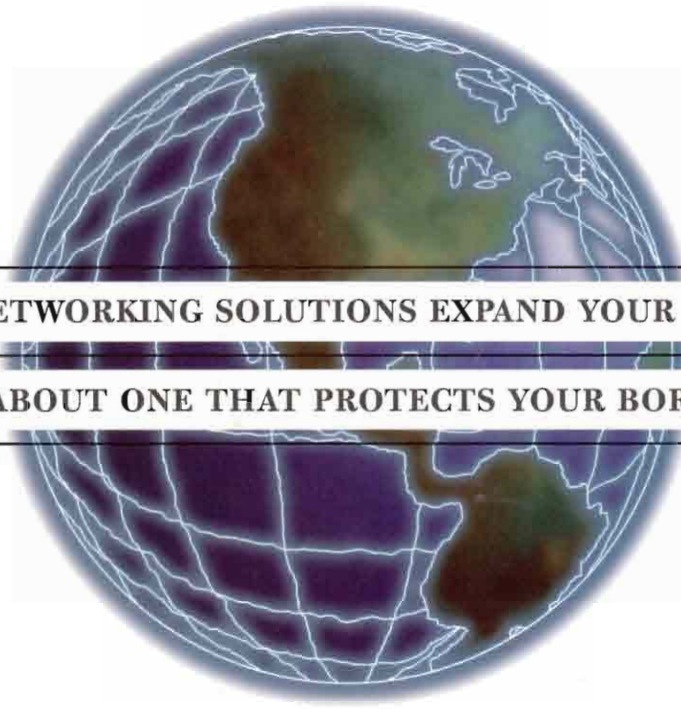
Dynamic workflow automation also has the potential to increase operational efficiency. This requires using automation tools that can interact with the data and output from the application, which would include being able to read application data directly from an application's underlying RDBMS.

For example, a major hotel chain with an online reservation system has found that running a particular batch job on fewer than 100 reservation requests results in inefficient processing — yet it can have no way of knowing when customers will make hotel reservations. Their solution involves establishing a "trigger" to automatically run the job when a sufficient number of reservations have come in (subject to availability of processing resources and other dependencies).

Another example of dynamic automation is having tools monitor the output data files or reports and check for conditions. For instance, if the debits and credits don't balance on the ledger reports, a tool should be able to ascertain that directly and take corrective action as opposed to having to wait for a manual review of the data and the attendant delay that it implies.

Faced with exponentially-increasing volumes of data and the need to ensure continuous availability in the face of unpredictable demands, e-businesses must plan ahead to ensure robust, efficient workflow. A tool for dynamic workflow automation can assist in this process, maximizing the efficiency of computing resources and serving as a single point of integration between an e-commerce application, back-end ERP and financial applications, and report delivery tools.

— Phil Sheridan is vice president of marketing at AppWorx (Bellevue, Wash.).



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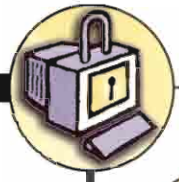

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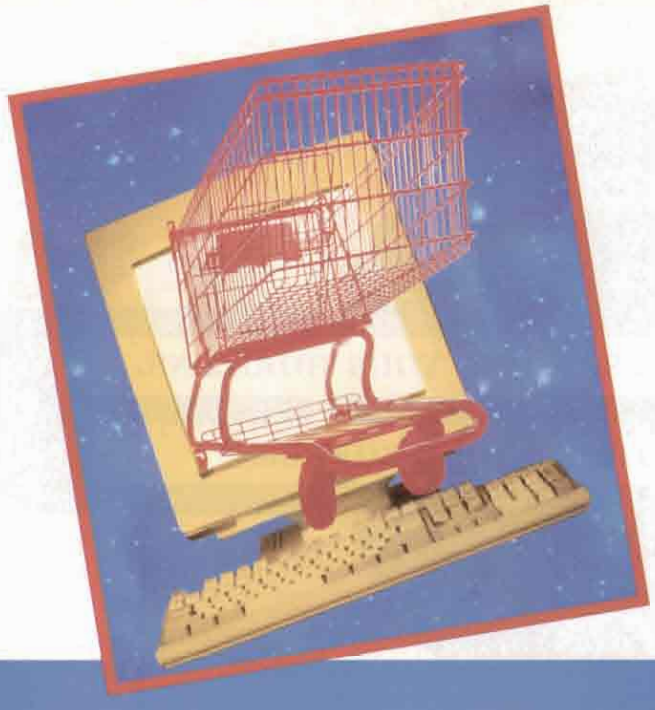


Web Site Quality Of Service

With more and more shoppers purchasing products online, companies need to step up their e-commerce efforts and make their sites easier and more efficient to use.

Everybody is implementing e-commerce these days. Or so it seems. You can't scan an IT magazine (like *HP Professional*, for example) without reading an article or watch your favorite TV program without seeing a commercial for e-everything. Conventional wisdom says that the Web has redefined the retail business.

The trade of goods over the Internet was $43 million in 1998, a figure that will double every year over the next five years to $1.3 trillion in 2003. Certainly, the media's back-offices and IT managers are taking notice. They will invest upwards of $10 billion on Internet technology to accommodate company news and other service organizations by the year 2002, according to International Data Corporation. Media General business managers saw completely new areas of services opening up for its customer advertisers. This, in turn, catalyzed a new, more sophisticated breed of Web services for its clients. Some of these Web sites are attracting over 1 million page views per month.

And, although not inevitable, click-and-mortar companies (CAM) have seemingly eclipsed their brick-and-mortar (BAM) counterparts. However, all is not well for cyber-merchants and cyber-shoppers. There's anecdotal evidence floating around about one newspaper that lost $1 million on a failed online business directory venture — a powerful, disincentive for investing in e-commerce.

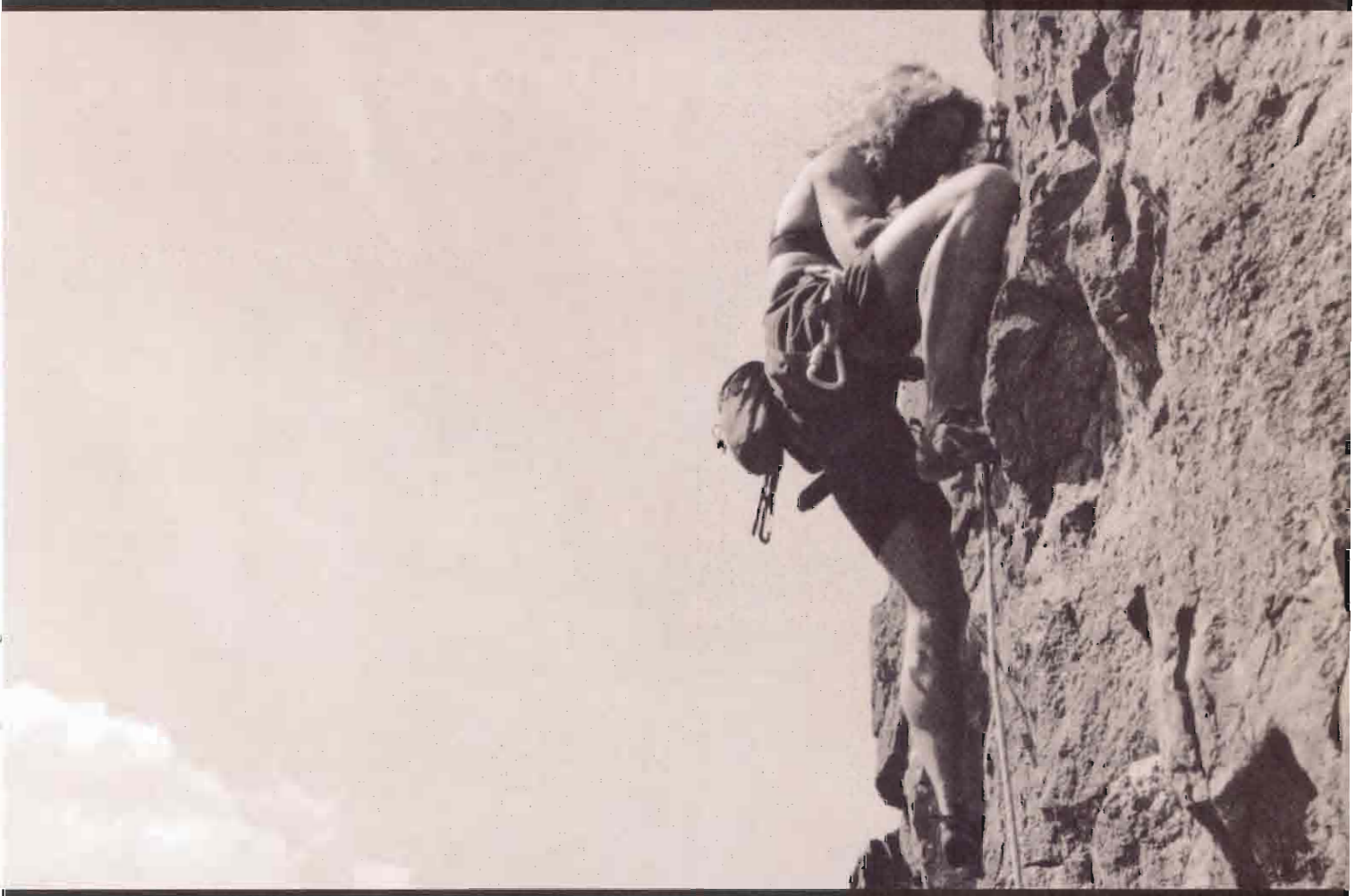
Many online shopping sites are a frustrating waiting game of error messages and time-outs. If a customer is shopping for a high-end product, merchants don't want to lose the sale just because the server is slow. In order to optimize service processes and avoid issues that can cause slow or seemingly unresponsive Web sites, an increasing numbers of new e-merchants are connecting with service providers like Local.Net.

Besides common problems, LocalNet and Media General also have a common solution: HP's Web Quality of Service (WebQoS) software, first introduced in May 1998, is now in its second version (see *HP Professional*, May 1999).

In this month's issue, we're highlighting how IT teams from Media General and LocalNet are building better e-commerce infrastructures using HP's WebQoS solution.

— George A. Thompson
Editor-in-Chief

A competitive world offers two possibilities.
You can lose. Or, if you want to win, you can change.
—L.C. Thurow



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Local.Net Helps To Enhance E-Business

Vince Palmieri, President of Local.Net

Traditional merchants jumping into e-commerce often have an inadequate knowledge of the technical issues. They want consumers browsing their Web sites, viewing product photos and details and placing orders securely with a credit card. But dealing successfully with the technical underpinning to build and deploy a Web site with truly responsive service levels, one that actually encourages on-line sales activity, is key.

Obviously, e-merchants want their Web sites to be responsive, but a number of design decisions they'll need to make along the way significantly affect Web server performance and complicate that goal. Few business managers could be expected to suggest that a site serving a U.S.-only market could optimize its speed by running on a U.S.-only network. Simpler issues, such as the use of too many frames or large graphics, can also detract from a customer's experience while visiting a Web site. But slow responses are also caused by deeper technical issues — for example, transferring data across the wrong backbone.

Nature Or Nurture

Another aspect affecting performance, beyond the intrinsic design of a Web site and the selection of a proper network backbone, is the nature of a Web site's traffic and should be used to determine the best packet transfer methods. The most commonly used packet switching approach to date operates on a first-come, first-serve approach to serving Web traffic. However, many service providers would like to take the highly desirable step of packet switching that prioritizes server resources for their premier customers.

One of many possible examples is web traffic related to a retail store. In such a website, a merchant could have "checkout lanes," which could include cash-only, ten-items-or-less, or credit-card purchase order modes. By directing the cash payment customers, a group we'll assign as priority-one customers, the merchant can serve them very quickly and complete the order.

Think back just a few years to 1995 when the term e-commerce had yet to be coined. It was at this time that Local.Net (San Bernadino, Calif.) took the plunge and incorporated. The first customers relied on Local.Net for e-commerce hosting, web development, order fulfillment, back end accounting, and inventory reporting. In its first year, Local.Net lured seven customers. One, the Rotolo Chevrolet dealership (*rotolo.com*), led e-commerce activities by selling 11 cars a month and established car sales as a permanent feature of the Internet landscape. The dealer's presence on the Internet scene has grown since then. Rotolo expanded its online sales to include used car inventory, parts, financing worksheets, directions, customer service desk, and has even hired a dedicated Internet salesmanperson.

Another client, Ricoh, the renowned Japan-based manufacturer of photographic equipment, is well known for its technically advanced systems. More recently, one of Ricoh's newest digital cameras got the attention of *PC Magazine* as Editor's Choice, recognizing its feature rich and easy-to-use nature that is prominently featured in Ricoh's direct sales Web site.

The largest of LocalNet's hosted sites, *govtstore.com*, provides secure access for government employees to more than 40,000 SKUs, and is followed closely by Cardservice, a leading transaction service for over 110,000 merchants. The company processed over $6 billion in bank-card volume last year.

By outsourcing Web site provisioning to LocalNet, these companies were able to quickly begin leveraging the Internet as a sales engine and pipeline — then take advantage of technology optimizations thereafter as often as the hardware and software evolves. These companies don't want to delay their entry into e-commerce or add to their overhead costs with in-house Web site expertise. So to provide customers with prioritized packet transfer, Local.Net uses HP's WebQuality of Service 2.0 (WebQoS) software. WebQoS 2.0 is server-based software that works with the Web server and network transport to support its features.

The Host With The Most

Local.Net hosts multiple sites on one server, an HP 90000 Model A180C, and the new provisioning service directs traffic flow according to several service levels or plans that are established. WebQoS reads the URL of the request, and URLs that match the high priority customer get more CPU power. This means that processing requests for customer URLs on one service plan type are deferred momentarily if a customer URL on a higher priority plan comes in at the same time. Additionally, WebQoS enables the company to inform site visitors how quickly their request will be completed.

Local.Net developers, working closely with HP's WebQoS product engineering group, were among the first to apply the e-business enhancements commercially. Most Web sites are not integrated well with real-time inventory data. By leveraging WebQoS technology to apportion and prioritize service it is possible now to implement a unique advantage, one which figures prominently in Ricoh's Web site. A bulleted feature is displayed for customers who are filling out orders online. It calls attention to the fact that if a product is not in stock, then the site will prevent users from ordering it saying, "If we do not have it in stock, we will let you know ahead of time."

Web site users who think they deserve some preferential treatment and response from vendors may be right. But for web site developers, this has been a real problem, there has not been an efficient way to provide server priority to preferred customers.

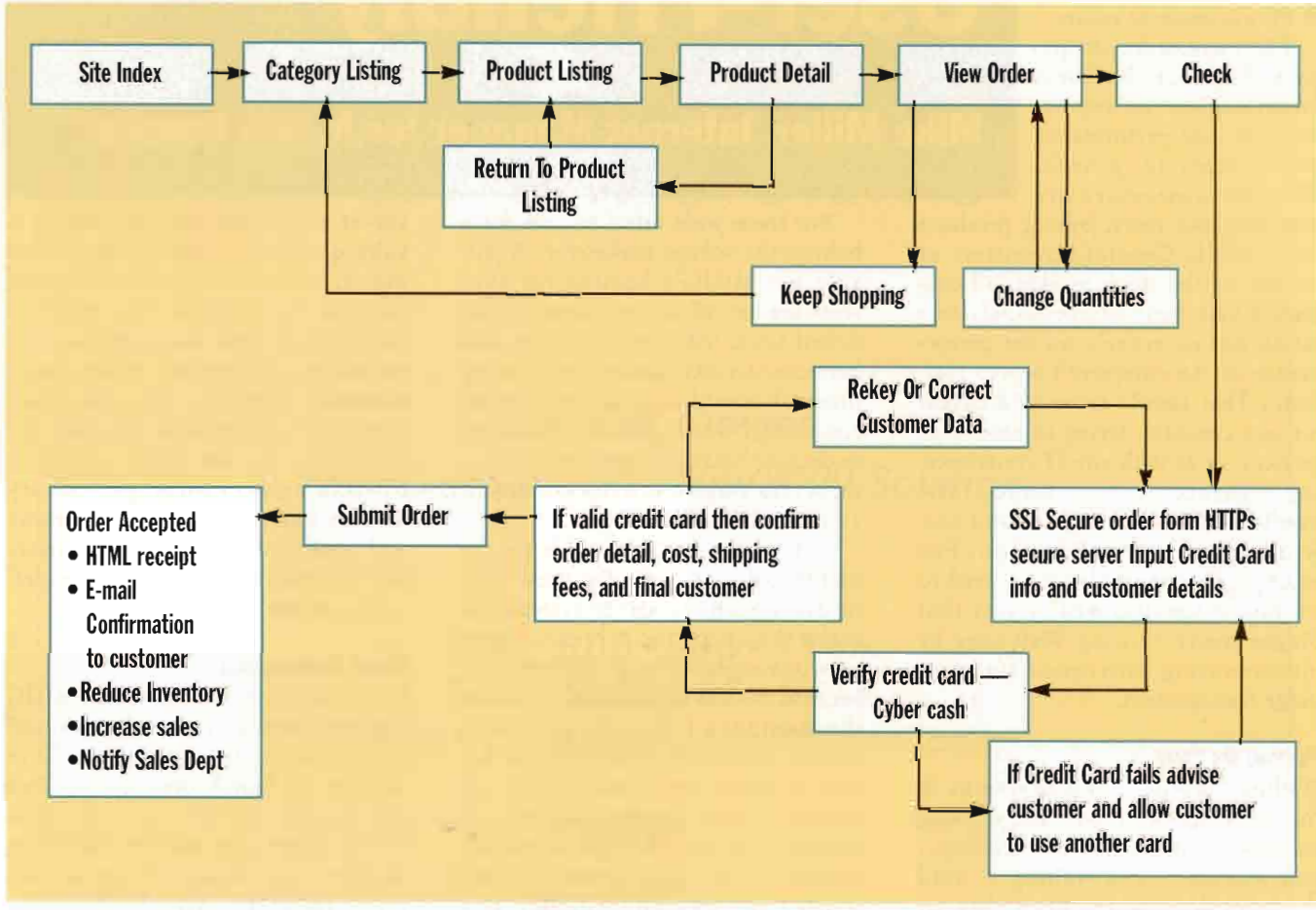
Ins And Outs Of WebQoS

Using WebQoS, Local.Net's engineering team can now offer differentiated services. Internet software and routing equipment can tag IP packets, creating the mechanism for distinction and for enhanced levels of service. This capability is at the heart of HP's WebQoS, which allows HP 9000 and other servers running HP-UX to stabilize service during periods of heavy demand, optimize equipment use, prioritize customers and enable Local.Net to deliver consistently exceptional Web-based Internet service.

There are three key aspects underlying WebQoS: peak usage management, user class tagging, and service class identification. Peak-usage management, similar to the "take a number" method of traffic control is used in many face-to-face customer service situations. The software can limit the number of a site's concurrent users to keep a service provider's performance high and help avoid failures. With a soon-to-be released feature, users trying to access a full site may be shown a window with a clock counting down until the site is available — this window then automatically connects them to the site. Identifying user classes allows Local.Net to assign priorities and offer higher service levels to its premier customers.

Service providers can use WebQoS to offer quality of service assurances to their customers' customers. For example, a banking Web site can assign Level 3 Quality of Service to its corporate accounts to make sure they get the fastest, most efficient use of the Web site, over less profitable cus-

Continued on Page 42



Website transactions are handled in two stages: In Stage 1 customers select products and the merchant collects customer data. Stage 2 is characterized by order acquisition, payment and credit card verification.

How Media General Became More User-Friendly

Mike Miller, Internet Manager for Media General

Media General is a prominent provider of news, information and entertainment services. It has holdings in newspaper publishing, broadcast television, and newsprint. Most of the company's enterprise interests are in the Southeast and include 21 daily newspapers, nearly 100 weekly and other periodicals, and 13 major television stations. In an effort to capitalize on new opportunities catalyzed by the Internet and to keep pace with the growth of their primary media markets (Tampa Bay, Fla.; Richmond, Va.; and Winston-Salem, N.C.), Media General's Internet Group (MGIG) began an aggressive campaign to leverage more fully its infrastructure for news gathering and distribution in the e-commerce realm.

The focus of the company's Internet business group has been on improving Web site performance and capacity for growth. Whether customers are searching out news, buying products from Media General advertisers or trading in the stock market, all customers base their Internet satisfaction rating almost entirely on the performance of the company's server platform. That should serve as a caveat for any company trying to extend its services, or as with any IT reengineering project, to build the hardware/software engines and network in an optimal fashion. For example, Web site platforms need to overcome specific weaknesses that plague many existing Web sites by incorporating provisions for peak usage management.

Putting On Wait

Without exceptional precautions in the construction of Web site services, visitors are frequently left waiting... and waiting ... and waiting ... until they simply give up. Then they go elsewhere. That's clearly not an ingredient for a successful Internet enterprise and was a primary factor in MGIG's moves to improve Web site performance. MGIG addressed immediate issues of response time and reliability and are initiating activities that are a hallmark of next-generation Web services. These include tailoring the response levels to customers with preferred customer identification and differentiating service levels based on customer history.

But there were other reasons for a behind-the-scenes makeover. Available via MGIG's hosting for four years are two of the most heavily trafficked sites, *weathercenter.com* and *hurricane.weathercenter.com*. During times of unsettled or severe weather conditions, which are not infrequent in the Southeast, the number of hits at these sites will increase by as many as 10 times the normal rate.

In the past, it was possible for the number of users deluging these sites to overwhelm the server system and make the queue for accessing other sites unacceptably long. Furthermore, because the news is an integral part of the business for each of Media General's holdings, it's important that each of these sites is accessible at all times to convey late-breaking news or exclusive stories. The risk of overextended or inefficient systems is lost revenue and reduced credibility as a convenient, reliable news source.

Media General and HP development consultants took a two-part approach to this challenge. The first action was to establish cost-effective Internet-based services, building on an existing open system environment that can accommodate exceptional growth in this area and handle increasingly comprehensive, load-intensive Web sites.

Keeping pace with new services relies heavily on the scalability of the server platforms and databases. A subsequent, but equally important aspect, was to develop a solution that ensured exceptional user response even during peak usage periods and regardless of network maintenance schedules, upgrades, and other situations such as hurricane weather disruptions. As an early adopter, MGIG's deployment of preliminary services took a few months to install and configure for smooth operation, but the final installation was completed in a matter of days.

Great Expectations

Over the past few months, MGIG deployed two 2-way HP 9000 Model R390s and a single 1-way R390 in addition to four Model A180C Web servers. The R390's were deployed for the larger sites and the A180's for smaller ones. Measured against current industry standards, i.e., WebSPEC, the upgrade has been a significant success, especially consid-

ering that MGIG's hosting of 65 sites grew from one to four servers. The new servers are performing at a rate 108% better than the old ones. And with software upgrades they have demonstrated user response times 30 times faster than the previous units. Additionally the servers are rack-maximized, which results in significant space savings.

While web service providers typically try to put in as much "horsepower" as they think will be needed, MGIG's approach is more sophisticated. Consequently, the setup at Media General is designed to accommodate varying service loads such as spikes of four to five times the normal traffic for a three day period when hurricanes blow through. Two R390 application servers are combined with HP WebQoS software. That's important because it specifically enables MGIG to allocate server resources and balance capacity to various Web sites as needed.

Web site platforms need to overcome specific weaknesses that plague many existing Web sites by incorporating provisions for peak usage management.

Because the servers perform so well on their own, HP WebQoS is used primarily for setting thresholds, whereby the various newspaper sites are guaranteed a certain amount of bandwidth and preventing the hurricane sites from overwhelming the system during spiking periods. MGIG is also using features to enhance the load balancing and make this more proactive, which requires a bit of experimentation over time to find the exact numbers. Additionally, MGIG gains the capability to maintain Web sites on multiple servers. This gives the company a proactive approach, rather than reactive, to load balancing.

One of MGIG's first uses of this aspect of the software technology will be to "govern" one of the region's most popular and variable sites, *weathercenter.com,* so that it does not completely overrun other sites when a hurricane hits. While all that goes on in the back-offices of MGIG, visitors

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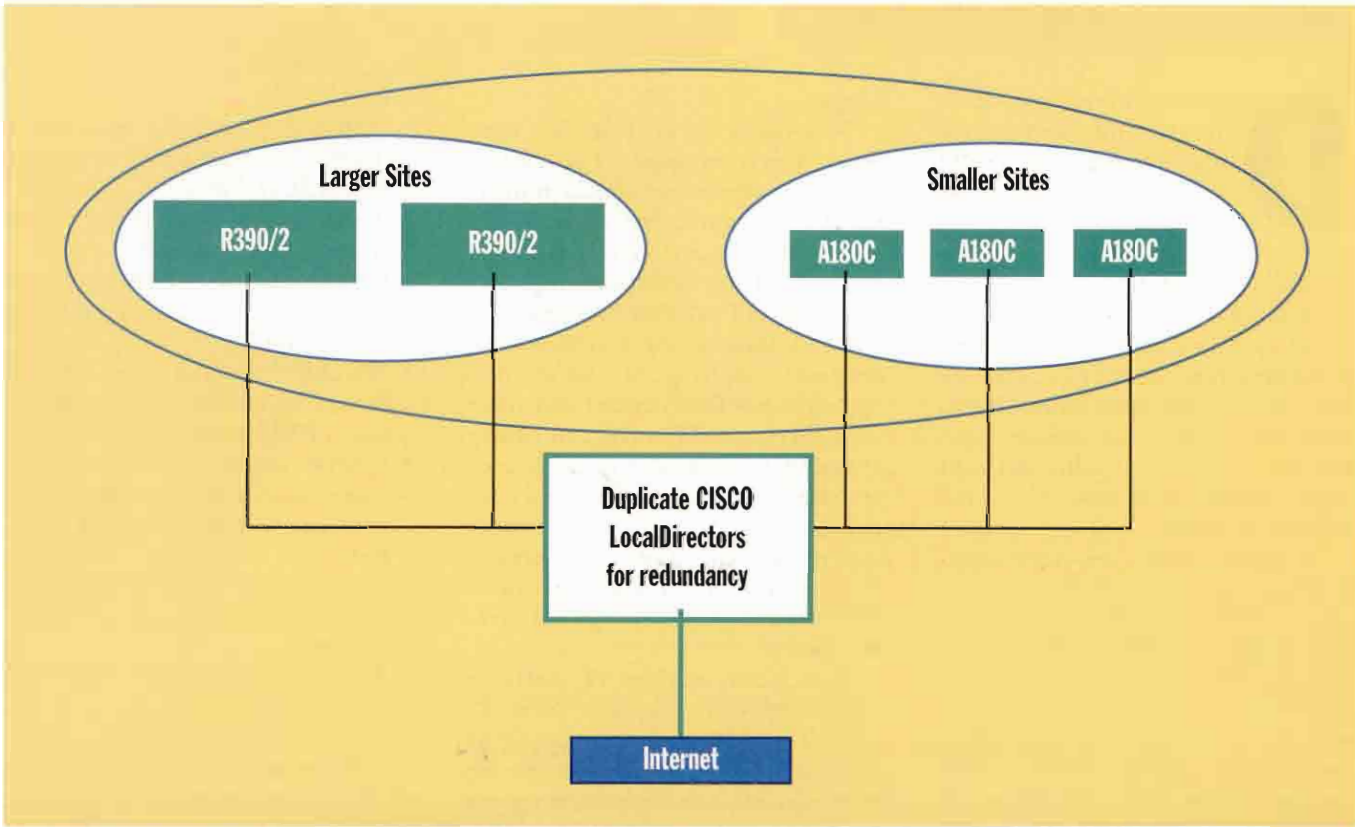

Media General's Internet load balancing is done in a reactive mode with Cisco Local Directors which monitor overload situations but do not automatically compensate for them.

EAP With Simulation-Based Decision Support

ANY COMPANY KEEPING UP with today's fast paced IT industry has implemented Enterprise Architecture Planning. By using simulation techniques, EAP won't just save time, but will also be cost effective. The solution begins with decision support software that simulates the real world. And ends with delivering innovative IT network services.

Shobana Narayanaswamy and Marc Cohen

Data warehousing, e-commerce and Enterprise Resource Planning (ERP) are firmly entrenched as business-critical operations that can make or break nearly every company. These great expectations have forced IT to rethink its traditional piecemeal approach to systems implementation. In the past, network managers, systems administrators and application specialists concentrated on their individual silos without much thought as to how the overall puzzle fit together.

However, today's no-excuses-just-make-sure-it-works attitude has given rise to the practice of Enterprise Architecture Planning, or EAP. At its most fundamental level, EAP is the alignment of IT resources and services with the operational and competitive needs of the business. EAP is a two-step process in which IT managers must first must identify what is needed to support an organization and then lay out a blueprint to make it happen.

Fortunately for IT, there is a solution. Decision support software, based on simulations closely mirroring the real world, has evolved to a point where its accuracy and ease of use make it the most powerful, cost-effective and reliable technique to guide IT through the countless EAP decisions. Applying the same technology that R&D organizations have used for years, IT staffs can finally abandon the costly, risk-avoidance practice of over-engineering and concentrate on accelerating the introduction of new and innovative services that businesses can use as competitive differentiates in today's global marketplace.

Simulation enables IT staffs to experiment with countless "what if" scenarios quickly and inexpensively to determine a best course of action for every decision that must be made. And it can do so without any impact on the production network and without the need for burdensome trial implementations. The cost and time necessary to manually test a similar number of scenarios is prohibitive and does not enable scalability testing. And, simulation allows EAP to be an ongoing and dynamic process, helping optimize day-to-day network and application performance by identifying potential causes of problems and helping chart a path that ensures optimal business productivity.

Simulation-based decision support software, such as MIL 3's IT DecisionGuru and HP's OpenView Service Simulator, assists IT organizations by:

- Predicting when traffic loads will reach a point requiring additional bandwidth;
- Avoiding over-provisioning of very expensive WAN capacity;
- Identifying potential performance gains associated with relocating a data center;
- Weighing the price/performance benefit of migrating technologies (e.g., FDDI backbone to ATM);
- Determining if IT resources will deliver service-levels in compliance with existing or proposed SLAs; and
- Illustrating the impact of new application deployments on existing IT services.

Recently, a major East Coast bank put the power of simulation to the test. The bank was planning a significant Voice over IP (VoIP) deployment across its packet switched network linking several major sites in the Mid-Atlantic region. The cost savings offered by converged voice and data

DESIGNING WITH EAP

EAP takes into consideration the organizational structure, performance expectations, projected growth, business objectives and budgetary realities. The process of designing an IT infrastructure has become so complex that it is simply impossible for even the most capable engineer to efficiently design a workable environment without the use of advanced planning tools. The alternative is unacceptable.

To design and deploy IT resources through trial and error is a slow, costly and risk-filled approach with potentially devastating consequences. Effective EAP addresses all major components of IT including:

- Applications
- Data warehousing
- E-commerce
- E-mail
- ERP
- Voice over IP and video conferencing
- Workforce collaboration
- Networks
- Communications protocols
- Interconnect devices
- LAN bandwidth and transport technology (e.g., Ethernet, FDDI, Token-Ring, etc.)
- Quality of service
- WAN capacity
- Data flow
- Systems
- Number and location of servers and data centers
- Physical location of work groups

communications is significant when compared to operating an autonomous voice network using the traditional public telephone network. However, the bandwidth and Quality of Service (QoS) requirements of VoIP could have a potentially devastating impact on less time-sensitive, yet extremely important e-mail, ERP and OLTP traffic.

In the past, the bank would have had no alternative but to grossly over provision multiple frame relay or ATM links between its sites and pare down its capacity gradually as the IT staff determined appropriate capacity. Using simulation-based Decision Support Software, the bank was able to save hundreds of thousands of dollars by purchasing only the necessary bandwidth and an appropriate buffer to ensure that it could handle any spikes in usage without sacrificing the productivity of thousands of employees relying on the network for countless business functions.

IT organizations have a golden opportunity to shine by implementing a proven EAP methodology based on an appropriate simulation technology to deliver new and differentiating IT services. Network-based applications and information are at the heart of virtually every organization. As companies commit millions of dollars to IT projects, deployment failure is not an option. Simulation empowering IT decision making is IT's silver bullet, helping overcome nearly any IT challenge quickly and cost effectively.

— Shobana Narayanaswamy is an Engineer and Marc Cohen is CEO at MIL 3.

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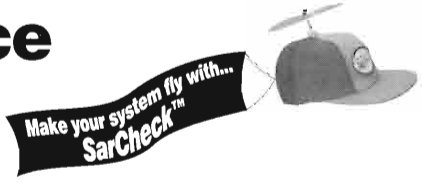

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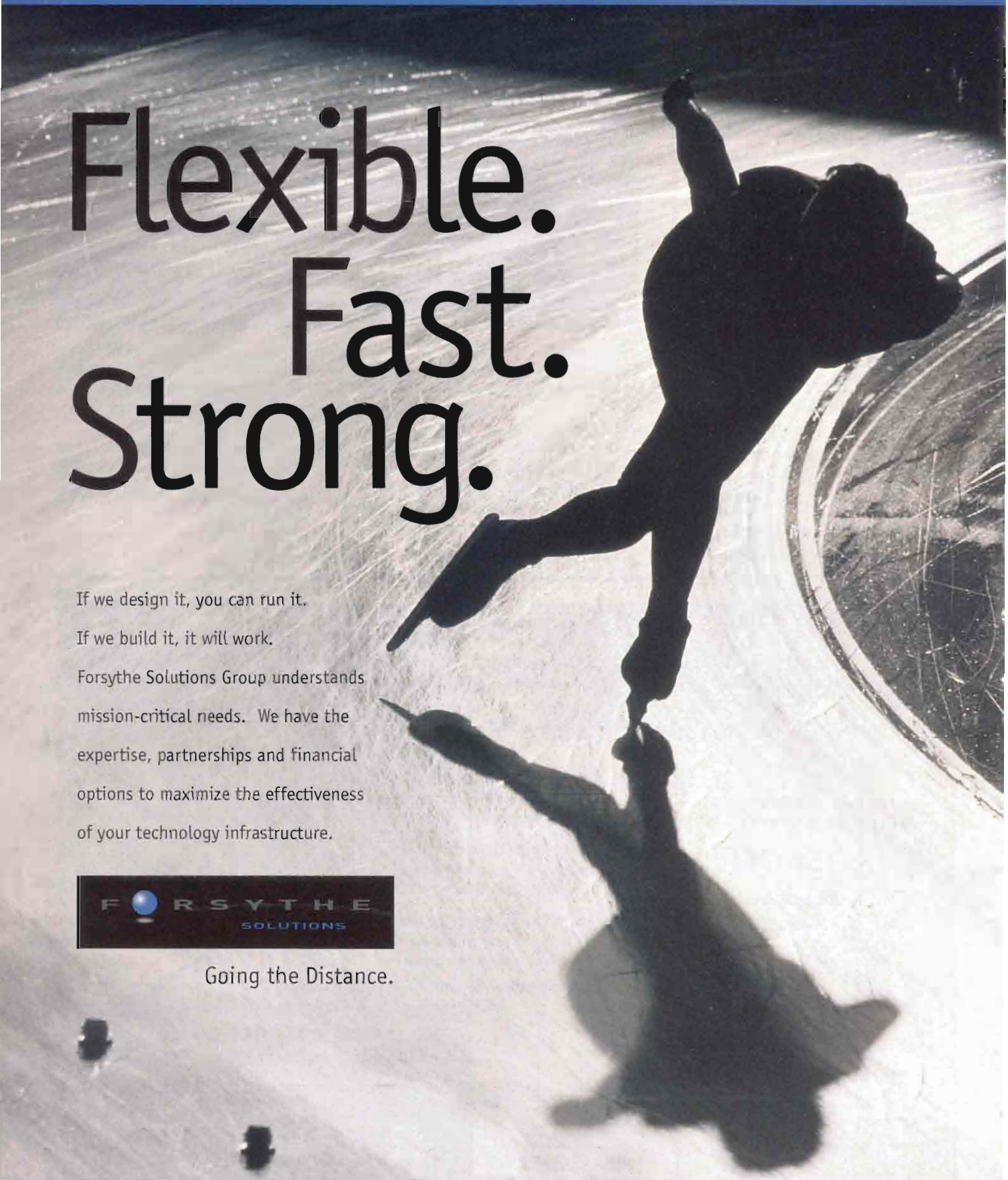

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The Search Continues

LAST MONTH we talked about the line syntax of the **find** command and used a few of the 'what to look for' qualifier options. This month we will look at many more of the qualifier options including qualifiers with arguments.

As a review,

```
find  ~  -name '*test' -print
```

will list (or print) all object names (files or directories or ...) in my home directory (~) whose name ends with 'test'. Note that the **-name** option acts to match a pattern (***test**) against the name of the object. There is a similar qualifier that matches against the pathname of the object **find** is checking, instead of against only the name (basename) of the object.

For example, this command:

```
find ~ -name '*top' -print
```

results in the following output on my system:

```
/disc/users/fred/archive/desktop
/disc/users/fred/desktop
```

because those were the only two objects with names that ended in 'top'. Changing the qualifier option from **-name** to **-path**:

```
find ~ -path '*top' -print
```

results in the same output. This is actually an improper use of the **-name** option. Since the option is used to match against the pathname, rather than the object name, you must specify a pattern that matches the entire pathname (if you don't, **find** seems to treat **-path** the same as **-name**). A proper pattern typically starts with '*/' and ends with '/*', and can use any of the standard filename wildcard characters. For example:

```
find ~ -path '*/*top/*' -print
```

would now list every name under any pathname that has a directory name ending in 'top' — for example: '*/disc/users/fred/desktop/hppro*' would appear in the output, as well as every other object under the '*/disc/users/fred/desktop*' and '*/disc/users/fred/archive/desktop*' directories.

Fred Mallett
frederm@famece.com

Next are a couple options that are primarily used by system administrators. If a file is restored from tape and it was owned by a user that is not valid for this system, it can cause numbers, instead of owner information, to appear in the output of the **ls** command. The following **find** command will list all such files on this system:

```
find / \( -nogroup -o -nouser \)
-print
```

This command reads in ordinary English as: find and print the pathname for all files from the / level down, that either have no owner, or no group owner listed in the password database. I was surprised by how many it found on my system (120).

NUMERIC ARGUMENTS

So far we have used the **-name** and **-path** options that required arguments. The next few options accept a numeric argument instead of a filename pattern. There are a couple issues with these numeric arguments that you must understand before using them. First of all, in the man pages they are usually listed as '**n**'. For example, the **-size** qualifier is usually listed as '**-size n**'. Whenever you see the **n**, this means you can use a decimal integer numeric argument to the option. The trick is that **find** looks for an exact match to that number. For example:

```
find ~ -size 2 -type f -print
```

This looks for files that are exactly 1024 bytes in length. This could also be written as:

```
find ~ -size 1024c -type f -print
```

By default, the numeric argument to the size option means number of 512 byte blocks. If a 'c' follows the number (as in the second example), the number now means characters (bytes). If you prefix the number with a sign, this changes the meaning to 'less than' or 'greater than' this integer. For example, to look for small files in my home directory I might issue:

```
find ~ -size -1024c -type f -print
```

Whenever you see the n, this means you can use a decimal integer numeric argument to the option.

Note that this would find files that are 1023 bytes or less in size (not files that are exactly 1024 bytes).

Several other qualifier options take numeric arguments, such as:

```
-user n
-group n
```

These options take the numeric user or group ID number. Remember that they can be used with the logical operators to get 'ranges' of numbers. For example, if I wanted to list all objects owned by users whose UID numbers were between 1000 and 1600, this would work:

```
find / -user +999 -user -1601
-print
```

This takes advantage of the implied -a (and) operator between any two options.

```
find / \( \( -user +999 -user
-1601 \) -o -group 38 \) -
print
```

prints the pathname for objects owned by users with UIDs between 1000 and 1600, or those objects that have a group number (GID) of 38.

The **-links n** option is true if there are **n** hard links to an object being tested. The **-inum n** option can be used to look for files with a specific inode number.

Another way to search for objects would be based on time. This is among the most more common reasons for developing a list of pathnames. For example, the **-atime n** option determines if an object was last accessed in "n" days.

```
find ~ -atime +179 -print
```

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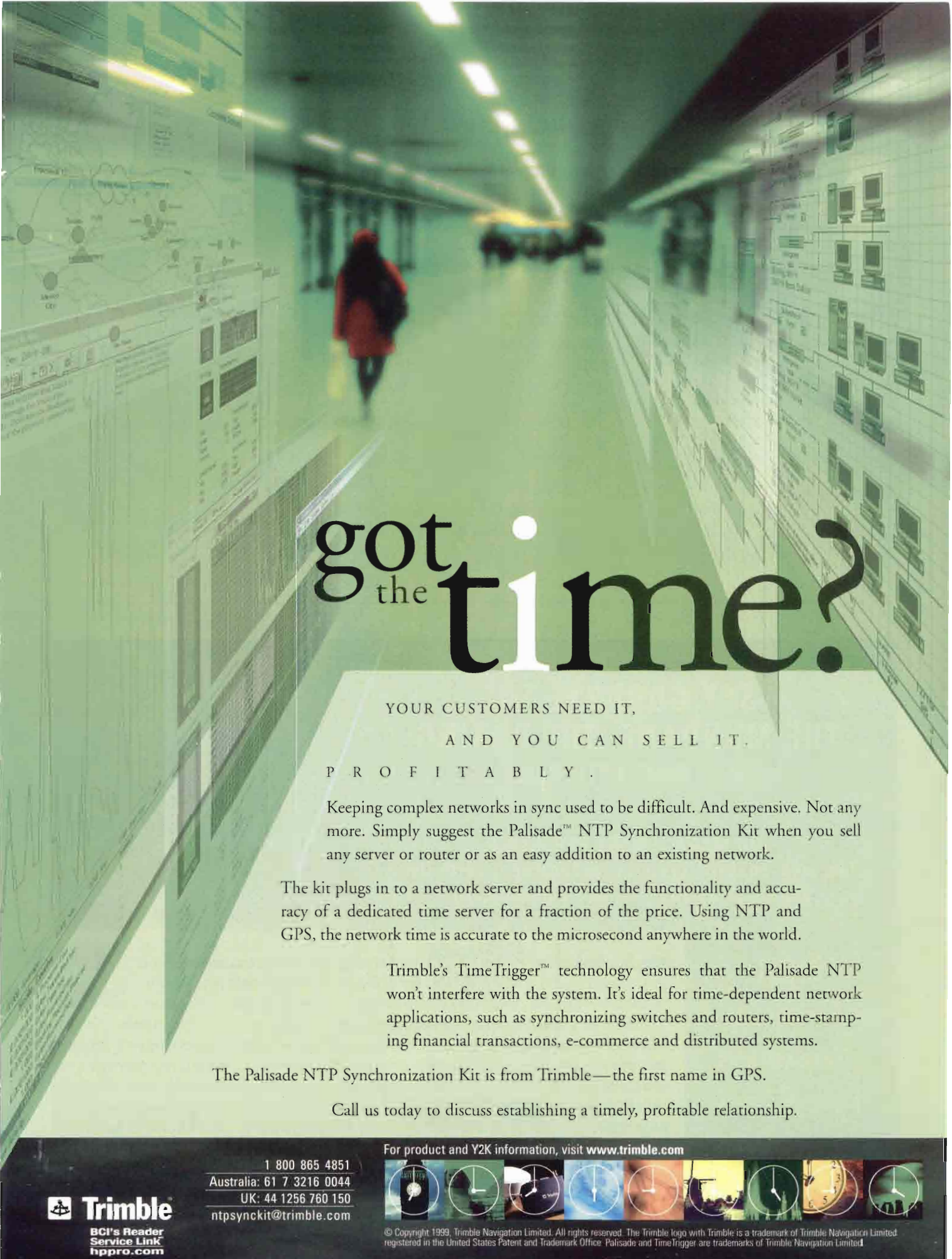

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This command lists files that have not been accessed for over 179 days. Note that directories have the time accessed changed by the find command itself, so it is really only useful for files.

Some related options are **-mtime n** and **-ctime n** for comparing against time modified or changed respectively. The meaning of time modified is rather obvious: directory or file contents being changed. Change time of an object is updated whenever information stored in the inode structure is changed, such as permissions, ownership or size of the object. Developing a list based on modification time is often used for backup-type purposes, or to limit a **find** search only to files you have modified recently.

PRUNING THE LIST

You can usually qualify all the objects you want, a harder problem is to remove items you don't want from the list. Let's take an example:

```
find ~ -type f  -atime +179  -print
```

This command builds a list of files in my home directory that have not been accessed in the last half year. Supposing my purpose for building this list is to move all those files into my 'archive' directory. The problem is that I want to put them into the existing '~/archive' directory. The command above also lists all files that are already in that directory. We could pipe the output through **grep -v**, but that would not work perfectly.

A good solution would be to use the **-prune** option of **find**. This option can be used to prevent find from searching in a particular directory tree.

```
find ~ -path '*/fred/archive/*'
-prune -o  -type f  -atime +179
-print
```

Now the list created will not contain anything under the 'archive' tree. Another similar option is **-fstype**. This option accepts some arguments that determine the filesystem type it will traverse. For example, you can prevent following links that point across NFS mount points with:

```
find / -fstype NFS -prune
```

Similarly, you could also have written:

```
find / -fsonly HFS
```

After all, this is UNIX, so there has to be more than one way to do something. Next month we will finish with the **find** command by looking at the ways that **find** allows us to have commands automatically executed using pathnames that **find** found as arguments. ◆

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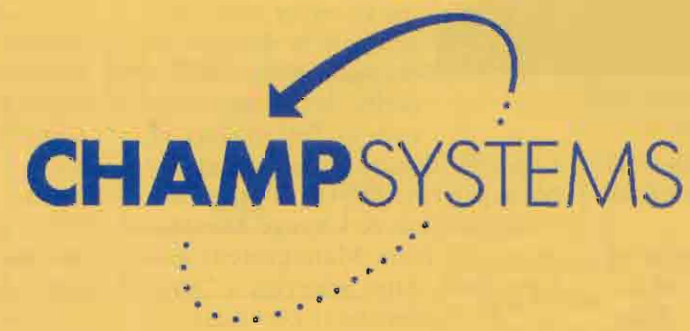

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Time To Get Certified

EVERYONE IS JOINING the certification gold rush. And HP is no exception. Under the program name *HP Certified* they have introduced a series of tests designed to give an official

Ryan Maley
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stamp of approval to those information technology practitioners who wish to be recognized for their HP specific skills. The HP Certified program began in January of 1999. Like nearly all certification programs, this one is designed to recognize those IT professionals who can demonstrate a certain level of competence in a given area.

The HP Certified program has two tiers: HP Certified IT Professional and HP Certified Advanced IT Professional.

The IT Professional certification is awarded to those who pass any of six computer based tests. The tests focus on different HP specific categories and include HP-UX System Administration, MPE/iX System Administration and UNIX/Windows NT Integration. Three OpenView oriented tests are available including Windows NT Server and Applications management, Network Management and UNIX Server and Applications Management.

These tests are administered by Sylvan Prometric (Baltimore, Md.), a third-party firm specializing in the administration of computer based testing for a variety of companies such as Novell, Microsoft and Cisco. Usually the tests are taken at a firm affiliated with Sylvan, such as a training facility.

The HP-UX System Administration test has 60 questions which must be completed in 90 minutes. A score of 70% is required to pass the test although all the individual sections must be passed with a score of at least 50%.

The Advanced IT Professional certification is a brand new program that uses hands-on testing to certify skills. This program is designed to recognize specialized skills in certain areas such as Performance & Capacity Management, Availability Management, HP-UX Operations, Configuration & Change Management, Problem Management and Help Desk. After achieving a "regular" IT Professional certification, someone may wish to continue and get one of the advanced certifications. These advanced tests are administered at the official HP Education Centers. They consist of both written and hands-on exams.

If you wish to pursue an HP certification, you have several options. If you think you know your stuff, you can simply take the tests. HP's certification web site (www.education.hp.com/hpcert.htm) lists the general requirements for each exam. For instance, for the HP-UX Systems administration test has topics such as "create and manage typical shell programs and user accounts" and "reconfigure the kernel." The Web site also features a set of practice exams that you can use to test your skills.

Another way to prepare is to take the recommended courses from the HP Education Centers. As part of the announcement of the certification programs, HP also introduced a new curriculum "that moves away from product-based coursework to a program built around job roles."

The new curriculum is an attempt to make the courses applicable to the day-to-day functions that people must perform. This approach should make the courses more accessible and more relevant. For the HP-UX System Administration certification, three courses are recommended: Fundamentals of the UNIX System and HP-UX Systems and Network Administration I and II. Each course is five days long.

I have always been a big proponent of certification. The IT industry seems to attract a lot of self-trained people, or people who are moving from one area to another. This seems to stem from the rapid pace of change in our industry and a lack of understanding by non-technology managers who don't realize that just because a person is a Windows NT expert doesn't mean they are an HP-UX expert. That isn't necessarily bad, it usually means that there are gaps in training.

Spending money on professional training or time on self-directed study is a wise investment on the greatest asset you have: your intellectual capital.

If you are a professional working in the HP arena, consider getting HP Certified. It may have a positive effect on your skills and your marketability. ◆

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Shout From The Rooftops

A FUNNY THING HAPPENED on the way to the millennium. For HP Channel Partners, we're seeing the convergence of two key trends: the commoditization of hardware and the impact of the Internet on the business of technology. Competing demands are pulling at the very fabric of sales and distribution channels.

HP needs to drive down the costs of doing business to maintain profitability and enhance shareholder value. But how does HP do this and still develop deeper relationships to create customer loyalty in a commodity driven marketplace? In response to these shifts, HP executives have been re-thinking channel strategies, questioning fundamental assumptions and principles.

A NEW CHANNEL

To that end, HP has introduced "Channel 2000", their new channels of distribution strategy, which is designed to address these key challenges (see *HP Professional*, April 1999). Channel 2000 is not just about how HP will work with resellers, which is what most customers think of when they think of Channel Partners. But according to the HP plan, this is an "All Channels" strategy, designed to re-engineer how HP and customers work with its own direct sales force, (now called the "on-payroll" sales force), the resellers (now called "off-payroll sales force") and HP's distributors.

Some key decisions have been announced: The number of HP 9000 distributors has been reduced from four to two: Tech Data (Clearwater, Fla.) and SBM (Atlanta, Ga). The number of HP3000 distributors from two to one: Client Systems (Denver, Colo.). And they have said that they intend to reduce the number of overall channel partners from over 1,000 to a couple of hundred at most. It all sounds good. But isn't there something wrong with this picture.

HP is attempting to fine tune an economic model — trying to balance supply and demand. But they're taking a conservative approach to solving a problem — the failure to focus on and demand excellence — that is more fundamental. During most of 1990's, HP gained market share and became the dominant "Open Systems" platform. Demand — in terms of sales force and market coverage — outstripped supply. Unfortunately, this has led to complacent and unaggressive sales and distribution channels.

Paul Sita
psita@persoft.com

IN SEARCH OF

Whether it applies to the direct sales force or to its Channel Partners, HP needs to commit to the highest caliber team representing its array of products, solutions and services. The same passion and devotion to excellence in product engineering which is synonymous with the name HP should be applied to all HP channels of distribution. HP needs to reward excellence and hold everyone representing it in the marketplace to the highest standards of knowledge, commitment and customer focus.

Find those kind of reseller partners, find those really enthusiastic sales reps and those logistics partners who are committed, not just to profit, but to excellence in solution selling. Back them with the best extended supply chain and logistics infrastructure in the industry. Break down the barriers between partners. And make it an extended team in every sense of the word.

This is what companies in other industries are doing to differentiate themselves and achieve competitive advantage. If HP believes that it is not a commodity technology supplier, then it needs a channel strategy, which accepts this fundamental premise and takes this message to the marketplace every day.

YOU TALKIN' TO ME ?

HP is always talking about how much they talk to their customers and partners. Now, I don't know if many of you have been asked by anyone at HP what improvements can be made in the channel; but I know I haven't. As these critical changes are planned and implemented, your voice and power as a customer has never been greater. Publications like *HP Professional* forums like *Interex* are vehicles for getting your voice heard. But take action, be vocal and let HP know what you want.

— Paul Sita is president of Perfect Software Solutions, Inc.

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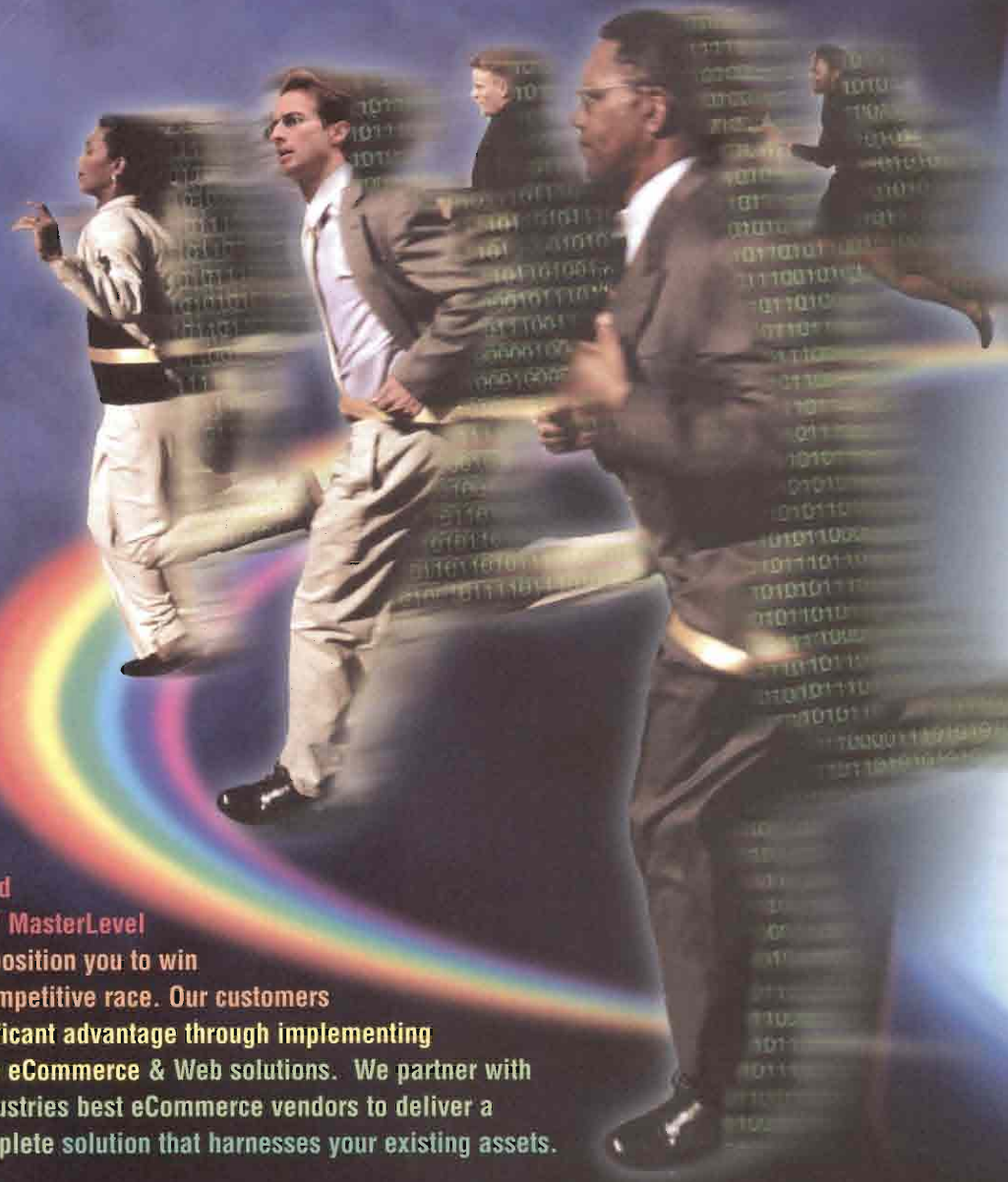

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A Peek Into History

ENTERPRISE NETWORK REPORTING is a historical performance review of your IT enterprise network. That should include network performance, system performance and key application performance. In doing all this you will have true service level reporting. Most IT managers would agree that an enterprise reporting solution would include automated data collection, analysis, and report generation in one simple-to-use solution. There are a number of solutions that meet those requirements such as HP OpenView NetMetrix, Concord Network Health and INS Enterprise Pro.

Charles T. Hebert
charles@southernview.com

All these products are worthwhile and can be very valuable — but in some cases are overkill. They consider themselves the "master" or authority" on your network. They assume nobody else is monitoring your network and poll everything. They also are notorious for short polling intervals and large volumes of data. Simply put, a lot of overhead network management traffic. As a network manager a few years ago I was always puzzled by why we needed another system to do polling on my network. I already had a management system, HP OpenView, banging away on my network polling and collecting SNMP data. Why can't my reporting system use what I already have and augment that if needed?

The exception to that is if your organization is looking to collect RMON performance data from network devices or network probes. For long term trending and analysis an enterprise reporting system as described above is a necessity. For everybody else, mainly those responsible for the fault management, those so-called enterprise-reporting packages can be quite expensive to buy and implement. So where does that leave us?

There are a number of ways to implement a reporting system that feeds information from your fault management system. If you are using HP OpenView Network Node Manager one of the easiest ways to do reporting is through the *trapd.log* file.

It's a little more complex with version 6 since the *trapd.log* file isn't created by default. Once you turn it on it works great. The idea is that if your "raw" events are in the log file, all you need to do is find or develop a program that gets the relevant fault data, compiles it and then reports on it. We have developed a number of these kinds of programs over the last few years — some more sophisticated than others.

Here is an example of a text report showing the number and different types of events from *trapd.log* for a one day period:

```
Total number of events:9983
Total number of events not in Event
Browser:9573
Event counts for events not sent to
Event Browser:
        Authentication failure
events:2252
        Duplicate IP address
events:80
        Other events:7241
```

```
Total number of events in Event
Browser:410
Average events per hour in Event
Browser:17
Event counts for events sent to Event
Browser:
        Interface events:198
        ISDN events:25
        Frame relay events:16
        Router down events:2
        Router unreachable events:2
        Duplicate IP address events:5
        IP.Check events:0
        Firewall failover events:0
        Messaging events:1
        Node unmanaged events:0
        Node added events:4
        Node deleted events:2
        Other events:28
```

This kind of information is great and most of you already have the raw data to produce these kinds of reports. The next two reports are using some of the same data but doing it graphically.

All of these reports and graphs were written in perl using information in the *trapd.log* file from HP OpenView network node manager. Most of the time these reports are e-mailed daily to key administrators. The final step is to archive and compress all old *trapd.log* files.

This gives you the data to do "historical" reporting. Once you have the data archived you can put a simple Web page together to access the historical reports. All the information is there. Give it a try and let me know how it turns out.

— Charles Hebert is President of Southernview Technologies, Inc.

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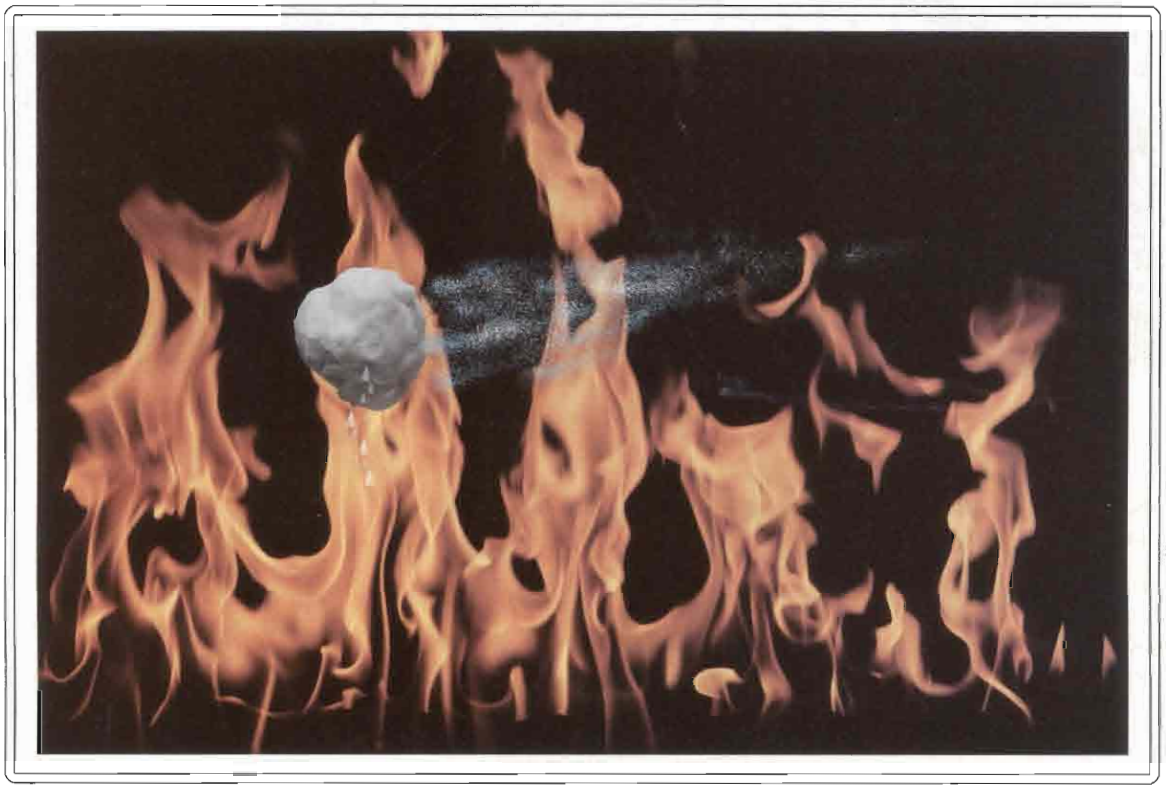

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JUST WILD ABOUT HARRY

George A. Thompson

EVERYONE IS WILD ABOUT HARRY. And Harry's wild about ... retiring. Well, maybe he's not that wild about it. But Harry Sterling, HP's long-time HP 3000 manager and cheerleader has decided that it's time to "get on with the next phase of my life." With 24 years at HP, most of them involved with some aspect of the HP 3000, Harry Sterling has been on a wild ride.

From his early days in manufacturing, to the launch of the first PA-RISC-based HP 3000 boxes, to his appointment as General Manager for the Commercial Systems Division, Harry has transformed himself from a "I thought I knew everything lab guy" to a consummate professional manager who listens to customers. Both Harry and the HP 3000 customers have benefited from it. So, has the entire HP 3000 market. And so has HP.

It's an unfortunate loss for the vocal but steadfastly loyal HP 3000 ISVs, customers and users. But there is good news too: Harry is passing the responsibility of managing and caring for the HP 3000 to Winston Prather, his R&D manager the past four years. Harry and Winston spent some time talking with George Thompson, *HP Professional's* Editor in Chief about their new roles and expectations for the future.

Editor's Note: The staff of HP Professional would like to thank Harry Sterling for the kind attention he has given to this magazine throughout his career. We all wish Harry well in his future endeavors, which we hope will include picking up a Tom Clancy novel and visiting his two favorite places — Venice, Italy and Sydney, Australia — for more than two days at time.

HP Pro: What was your first position with HP?
H.S.: I was a programmer at corporate working on a system we called Costis. A form of electronic messaging that predated our electronic mail system. Networking was very primitive then, but we had it.

HP Pro: Was that the e-mail system that eventually ran on the 3000?
H.S.: No. Actually, it was the predecessor to that. It was a 2100MX, which was a version of our real time 1000 system.

HP Pro: When did you first intersect with the HP 3000?
H.S.: Around 1978. I moved to what was then the General Systems Division (GSY) which is where the 3000 was manufactured. And I worked in the manufacturing organization. We basically took HP's corporate COBOL[-based] manufacturing systems on an IBM mainframe and we moved them to the 3000. We released a product in 1979 called MFG3000 and I worked on that port.

HP Pro: And you've been with the HP 3000 ever since?
H.S.: Yes. I have.

HP Pro: What would you say are the highlights of your career or of the HP 3000?
H.S.: That's a tough question. There are so many.

I guess — PA-RISC. I was in the

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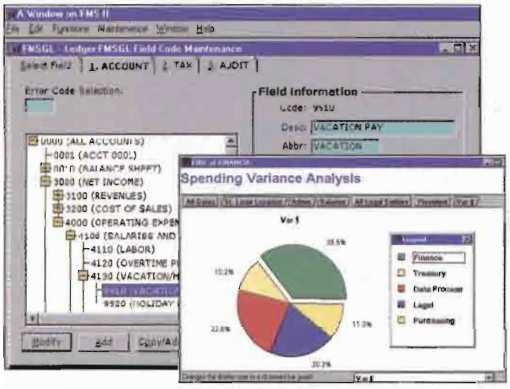
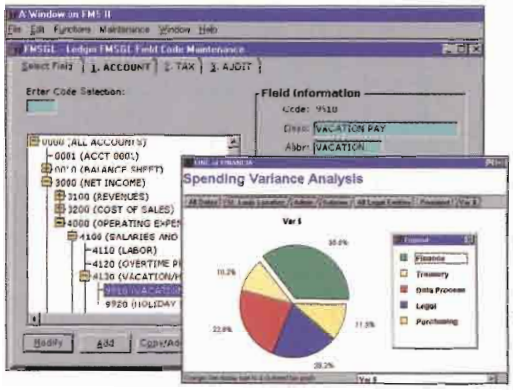


FMS II on the HP 3000



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MPE Lab when we released our first PA-RISC-based system. It was a terrible time and a wonderful time, if you know what I mean. We were working many long hours and weekends. But it was an exciting time. Having been part of that is something that I'll always remember.

And I think the whole shift from technology focus to customer focus. I've learned so much in that process — in taking people through a cultural change. And kind of shifting the values of what motivates us to do our jobs. It was a really huge learning experience for me. That whole management challenge — being successful with that — was one of the highlights for me. W.P. Actually Harry, I think that's going to be one of the legacies: The evolution to a customer-focused organization. But not only here for CSY [Commercial Systems Division] and the 3000 business. But now, a lot of other parts of HP have really picked up on that. And HP is trying to become a customer-focused company. Harry really had a lot to do with that starting here in CSY.

HP is trying to become a customer-focused company. Harry really had a lot to do with that starting here in CSY.
— Winston Prather

HP Pro: Winston, how long have you been working with Harry?
W.P.: It's been a long time. I joined HP in 1984. My entire career has been with the 3000. Prior to HP, I've worked on the 3000 in 9th grade. In my high school we had a 3000. At the University of Maryland we had 3000s. Then after college, I did a stint with a customer in Denver for awhile on a HP 3000. Then I came to HP.

At HP, I started on the support side. Supporting customers on the 3000 then [about 10 years ago] I made the leap to the R&D organization. I've joked with people in the past that I've played with, or have been paid to play with, the 3000 for over 20 years.
H.S.: Winston actually has more experience with the 3000 than I do.

HP Pro: So, Winston, you've been training for this position your whole life?
W.P.: Exactly. I've dreaming about this for a long time.

HP Pro: Winston, anything you want to say about working with Harry?
W.P.: Harry is a role model for working with customers. He has taught me a lot about how to look at our problems and our technology from a customer perspective. He always understood what the customers needed and put them first and foremost. Above even, running the business.

He was always pushing the organization to [ask the question], "How does this help our customers?" Or if they had a problem, sending us out in the field to experience their pain.

HP Pro: What's the time frame for your departure?
H.S.: My last day at HP will be December 3.

HP Pro: What part of the transition are you in now?
H.S.: I've handed everything over to Winston. Winston is now reporting to Janice [Janice Chaffin, VP and GM of HP's Business Critical Computing (BCC) Group. The CSY was integrated into HP's enterprise computing organization in July 1998.].

HP Pro: What lessons did you learn from your experiences with customers?
H.S.: I would have to say humility I learned that from the customers. They taught me that I don't have the answers — they do. I have to be able

to listen to their input to know what the best solution is for them. They taught me to go to those discussions with an open mind. That would have to be the big lesson I learned in the past five years.

It's time for me to pass the baton onto someone else. And for me to get on to the next phase of my life.

— Harry Sterling

HP Pro: Any parting thoughts?
H.S.: It was really a tough decision to come to this point in my life. Because I'm leaving behind so many wonderful people at Hewlett-Packard and a really tremendous career experience. And I've worked other places before joining HP. I still can't believe that the company is still as fantastic as it is.

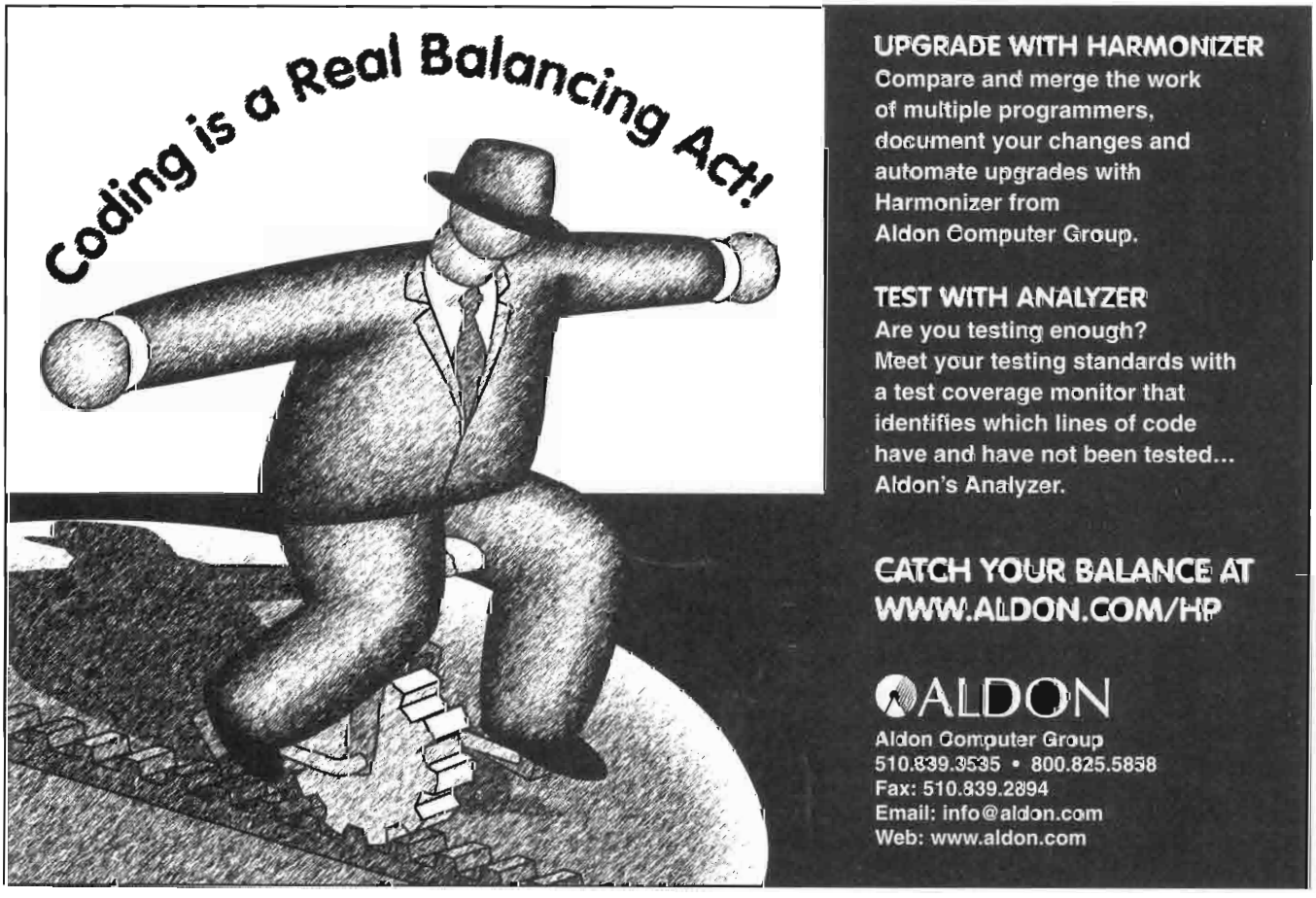
Letting go of that was really hard. And especially the people. The people are so fantastic. I'm totally amazed all the time when I meet with HP people: How bright they are. How cooperative they are. How willing they are to roll up their sleeves and do whatever it takes to get the job done. It's just a tremendous and exciting environment to be a part of.

It was really hard to make a decision to leave all of that and to leave such an exciting industry. But it's time for me to pass the baton onto someone else. And for me to get on to the next phase of my life.

HP Pro: Any particular plans?
H.S.: For the first year , I'm not making any commitments.

And I don't want to do anything other than make it through a whole year without setting my alarm clock. And catch up on some reading.

After a year or so, I'll probably end up doing some form of consulting. Or get involved with some volunteer work or something. I'm not the kind of person that can sit around and do nothing. I get too bored with that. ◆



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Contact ESRI, Redlands, CA at (800) 447-9778.

AppsCo Introuces AppsMart 1.5

AppsCo Software Limited announced AppsMart 1.5. Using AppsMart it is possible to start your design using a best-in-class analytic application template, iterate the application design to meet your requirements, and deploy the solution to Microsoft SQL Server 7.0. AppsMart will automatically populate the data mart with sample data and integrate OLAP Services, data transformation services (DTS) and Microsoft Office2000 platform. AppsMart 1.5 is fully integrated with Microsoft SQL Server 7.0 and the Microsoft Data Warehousing Framework

AppsMart 1.5 is available now. AppsMart consists of Domain Expert, which enables solution providers to create analytic application products, priced at $15,000, and Developer, which enables solution providers to use AppsMart to customize template solutions or deliver integration services, priced at $8,000. AppsMart works with Microsoft Windows NT and 95 operating systems, and fully supports Microsoft SQL Server 7.0. AppsMart is available through AppsCo's network of resellers and distributors.

Contact AppsCo Softeare, Bellvue, WA at (425) 957-4528.

DISASTER RECOVERY AND SECURITY

IMV Energy Systems Introduces SitePro For UPS Protection

IMV Energy Systems of America, Inc. has introduced SitePro, a family of three-phase, on-line, intelligent UPS systems for centralized power protection. SitePro features Redundant Parallel Architecture; remote monitoring, diagnostic and control capabilities; and power ratings from 10-500kVA. SitePro provides protections for mission critical installations including IT, telecommunications and infrastructure applications. SitePro has a menu-driven LCD screen and can also be linked into business management systems and managed networks through an intelligent dialogue interface on the basis of RS 232/422/485, SNMP and TCP/IP.

Multiple SitePro units can be installed in parallel to obtain ratings of several MW for high power applications. For RPA installations, SitePro offers the IEM (Intelligent Energy Management) software package, which, when activated and when utility power is stable, enables the RPA system to automatically reduce the number of UPSs online. SitePro is fully compatible with IMV's JUMP (Java UPS Management Platform).

Contact IMV Energy Systems of America, Roswell, GA at (770) 643-2537.

MESSAGING AND E-MAIL

NTP Software's Internet Manager 6.0

NTP Software has announced Internet Marketing Manager version 6.0 for Microsoft Exchange. Internet Marketing Manager is a software product that provides target e-mail and list management capabilities, allows users to connect to databases, extract e-mail addresses, attach documents and send customized messages to their target audiences. With version 6.0, these capabilities are no longer just available for products that run under UNIX, but are now available for Exchange and Windows NT.

Internet Marketing Manager 6.0 also includes the IMM Query Wizard for quick and easy creation of an SQL query to extract desired e-mail addresses, enhanced mail merge capabilities, support for distribution lists stored in either the Global Address Lists (GAL) or Personal Address Book (PAB), the ability to use more than one recipient container in addition to the one in Microsoft Exchange, enhanced list

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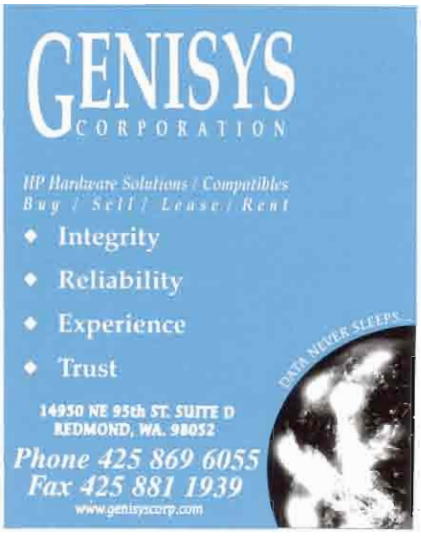
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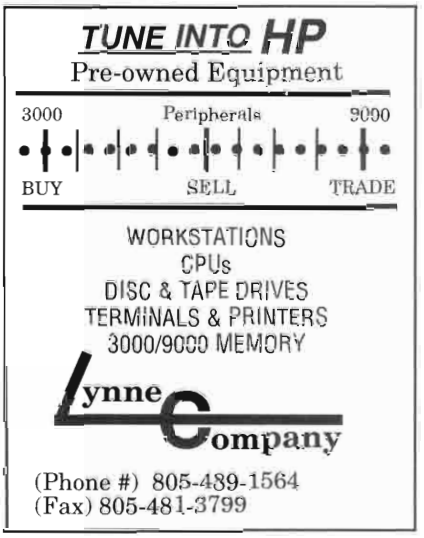
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Local.Net Helps

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tomers. System resources are prioritized, as previously described, to ensure that priority transactions, such as purchasing, are given precedence over general browsing.

Even among the most prominent service sites today, there exists security gaps. Solving these concerns was a priority for Local.Net. One can gauge the need for "industrial-strength" handling of security from *govtstore.com.*

Another element of the technology solution answers the need of companies to streamline and automate tax and shipping calculations. Government legislation for taxing Internet purchases has as much potential impact on e-commerce as the 1996 deregulation of the telecommunication industry did, and businesses want to build systems now with the flexibility to adapt if that happens.

To improve customer service, a company weighs the cost of its investments in e-commerce technology (i.e., the client-server hardware, back-office software, databases, and network management tools) with service costs it ultimately asks customers to pay. Local.Net sees a unique niche that was not previously cost-effective to serve. By configuring the right mix of Web-enabled technology, it's supporting a range of Web hosting services at commensurately graduated costs.

The approach will clearly appeal to a wide spectrum of companies who want to refine their e-business processes, beyond basic web site development and hosting, and take steps forward with features for Quality of Service, online store designs, order fulfillment, and credit card clearing.

We've looked at some sophisticated operating features of Web sites based on HP WebQoS and, ordinarily, one would think these are targeted primarily to medium-size and larger companies. But the Internet is for everyone, and Local.Net took steps to support the many smaller companies that are just acquiring online, e-business capabilities. Local.Net developed an on-line Web-design application.

Using this hosted application, newcomers to e-commerce can bypass the delay and cost of an agency to do Web design and setup (users select from graphic templates and are prompted for part numbers, description, prices, etc.) For about the cost of a regular e-mail account with Compuserve or AOL, a business can now open an on-line store in a matter of a few hours.

In the year 2000, virtually no industry will forgo e-commerce opportunities. It's just too important to miss. Companies will need to have an e-commerce presence to remain competitive and those who find more profitable ways to make their Web sites work will be ahead of the game. Using differentiated provisioning is one more way to sell online services while providing exceptional treatment to preferred customers — all while improving the shopping experience for consumers. ◆

How Media General Became

Continued from page 18

see another improvement; during peak load periods, the technology permits display of a timer showing how long they'll wait to entering the site.

Providing reliable and responsive Web sites is the foundation of Media General's further efforts at optimizing Internet capabilities and services. One of the next steps is to enable customizing of Web sites to be able to establish customer classes, recognize "preferred customers" and, when appropriate, provide differentiated services. This acknowledges a business fact-of-life that not all customers are equal. It's similar in concept to airline's frequent flier programs to which the public is now well accustomed.

Preferred Customer Service

Defining a preferred customer will vary from business to business. A preferred customer might, for example, be a Web site visitor who has provided background or demographic information. Or, for a more specific example, MGIG is planning to use this customizing next year when they begin implementing registration, personalization and dynamic content. Preferred customers will be those who have given their registration information, providing MGIG with new and valuable information for targeting ads more directly.

For similar benefits, MGIG is pursuing methods to differentiate service levels among various Internet users. Let's use the frequent flier analogy again. While all frequent flier members meet the criteria for a preferred customer, those flying 100K+ miles a year warrant the offering of premium levels of service above the usual services afforded to fliers with fewer miles.

Similarly, if a person or enterprise has a history of high-volume purchases from one of Media General's hosted sites, then rewarding these customers with enhanced levels of service would be a distinct marketing advantage. WebQoS software and routing equipment does this by marking Internet Protocol (IP) packets with special flags that make it possible for a web site owner to provide various levels of service to the gamut of customers.

Media General has just finished moving all of their Web sites to the recently deployed HP servers. The next steps will maximize the use of the capabilities inherent in the HP server platform and the WebQoS technology. While user surveys such as those conducted by Opinion Research Corporation International suggest that negative reviews of Web sites spread very quickly among visitors, Media General has already taken swift and sure steps to be sure their Web sites reward and please users.

The features that MGIG implemented with HP WebQoS translate directly into less wait time for business clients and end-customers alike. And with the ability to customize the system and prioritize classes of preferred users, Media General more accurately aims its e-business promotions with confidence, knowing they won't lose a transaction or make a premier customer wait. ◆

import and export capabilities, enhanced alert function, the ability to assign multiple owners of a mailing list, and full support for the Microsoft Outlook client.

Internet Marketing Manager 6.0 will be available in the fourth quarter of 1999 and is priced at $5,510 per server. It includes three user seats and one year of maintenance.

Contact NTP Software, Manchester, NH at (800) 226-2755, (603) 622-4400.

NETWORK INTEGRATION

Cyclades Adds Cyclades-PR4000 To Power Router Family

The Cyclades-PR4000 is a powerful, stand-alone Remote Access Server that allows Internet Service Providers and Enterprise Network Managers to terminate both analog and digital calls and provide network access to remote offices, telecommuters and home users. The PR4000 connects to the LAN using an auto-sensing 10/100BT Ethernet interface and terminate one or two T1/E1 or ISDN PRI lines. It features built in digital modems and CSU functionality, and provides a high level of integrations, minimizing the need for external cabling and equipment. The PR4000 comes with a built in Ethernet port to support multiple LANs, optional Serial WAN port and 100% downloadable modem software. It is also equipped with a PowerPC CPU in dual-processor architecture.

The Cyclades-PR4000 is currently available and begins at $5573 for the Cyclades-PR4000 with 2 T1/E1 and an 8 modem card.

Contact Cyclades Corp., Fremont, CA at (510) 770-9727.

Compatible Systems Adds Windows 2000 Client Capability

Compatible Systems Corp. announced that it has added VPN client software for Microsoft Windows 2000 to its IntraPort family of Virtual Private Networking (VPN) Access Servers. The client software for Windows 2000 joins existing clients for Sun's Solaris, Windows 95, 98, NT, Intel Linux and MacOS to provide the widest range of client support of any VPN vendor. The IntraPort family of VPN Access Servers provides Internet-based remote access and LAN-to-LAN solutions ranging in size from 64 simultaneous client connections to more than 40,000 simultaneous sessions.

Contact Compatible Systems, Boulder, CO at 800-356-0283. ◆

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APPLICATION DEVELOPMENT

Active Software And HP Offer Cross-Application Process Management Solutions

HP and Active Software, Inc. announced an alliance to offer a cross-application process. HP and Active Software will develop a Changengine Adapter that will provide the connection between Changengine and ActiveWorks, equipping customers with a comprehensive Enterprise Integration (EI) solution. The combined EI solution will create a seamless flow of information between Changengine business processes and the broad scope of applications the ActiveWorks platform supports, including SAP R/3, PeopleSoft, Siebel, Clarify, Vantive and Kenan.

The HP Changengine and Active Software solution is slated to be available in the fourth quarter of 1999, and can be licensed directly from HP.

url: www.hp.com or www.activesw.com.

LAPTOPS AND DESKTOPS

New HP Pavilion Notebook PC For The Retail Market

HP announced its entrance into the retail notebook PC marketplace with the introduction of the HP Pavilion notebook PC ($1,399; estimated U.S. street price). The HP Pavilion notebook PC features an 433MHz Intel Celeron CPU , 4GB hard drive, 32MB SDRAM, Silicon Motion Lynx Video Graphics Accelerator, 12.1-inch HPA display, 24X CD-ROM drive and a 56K v.90 worldwide-capable modem. A second configuration, expected to sell for $1,699 (estimated U.S. street price), features 64MB SDRAM and a 12.1-inch TFT display. features an all-in-one design that incorporates a hard drive, floppy-disk drive and CD-ROM drive.

It has the added benefit of external CD controls, allowing users to play music CDs without powering up the notebook. Located in slightly flared acoustic chambers at the sides of the wrist pad, the notebook's dual speakers and 16-bit Sound Blaster-Pro compatible stereo sound offer advanced audio performance. A built-in 56Kbps modem provides Internet access. Pre-loaded software includes AT&T, AOL and CompuServe browsers, Quicken Basic 99 and Microsoft Money 99; Microsoft Encarta Encyclopedia 99; Microsoft Works; Efax.com; Rand McNally Route Planner; and Outlook Express.

The HP Pavilion notebook PC is available at Best Buy and CompUSA.

url:www.hp.com/notebooks.

HP Brio Internet Center With AT&T WorldNet Service Delivers Fast, Easy Access To The Internet

HP announced an agreement with AT&T WorldNet Service to provide small- and medium-business customers with fast, easy access to the Internet. The alliance with AT&T delivers a strong Internet-access package for the HP Brio Internet Center, providing small and medium businesses with an end-to-end solution — from initial connection to creating a Web site and online store. The agreement follows HP's recent announcement of a new HP Brio Business PC line with the HP Brio Internet Center.

The HP Brio Internet Center is bundled on all new HP Brio PCs, providing small and medium businesses with a single access point to easy-to-use Internet capabilities — from setting up an Internet connection to creating a Web site and selling online. With AT&T WorldNet Service, HP Brio PC customers receive free Internet connection for one month, six e-mail accounts and AT&T's 24-hour online and phone support. Users also benefit from AT&T's fast, reliable network and 600 access numbers, providing a local access number to customers throughout the U.S.

The new line will be supported by award-winning HP service, which includes free 24-hour phone support and a three-year limited warranty.

AT&T's Internet connection services range from just $9.95 per month for 10 hours of access to $21.95 per month for unlimited access. The new HP Brio Business PCs are available immediately through the HP Business Store, located at www.bstore.hp.com and through HP resellers.

NETWORK INTEGRATION

HP Delivers 1000Base-T Ethernet Switch Module At Less Than One-third The Cost Of Fiber

HP shipped the industry's first 1000Base-T Ethernet-over-copper switch module. The HP ProCurve 1000Base-T switch module has the ability to use easy-to-install copper cable at a price point roughly one-third of current HP fiber-optic Gigabit connections. The HP ProCurve 100/1000Base-T switch module extends the capabilities of the HP ProCurve Switch 8000M, 4000M, 1600M and 2424M. The new module supports Gigabit Ethernet over category five twisted-pair connections, as defined by the recently ratified IEEE 802.3ab Gigabit Ethernet standard. It comes with a lifetime limited warranty for as long as the customer owns the product.

The HP ProCurve 100/1000Base-T switch module (HP J4115A) has an estimated street price of $299 and is available now through HP's worldwide network of authorized computer dealers, resellers and distributors.

url: www.hp.com/go/procurve.

Reduced Prices On HP ProCurve Products

Effective Oct. 1, HP reduced the price of its HP ProCurve Switch 2424M. The HP ProCurve Switch 2424M, which was $2,139, now is $1,899. Additionally, HP lowered prices on its HP ProCurve Switch 8000M from $3,999 to $1,999; the 1600M from 2,399 to $1,599 and the 10/100 Hub 24 from $799 to $649.

The above HP ProCurve products include free end-user phone support, as well as a lifetime limited warranty for as long as the customer owns the product. In many parts of the world, HP also provides next-business-day advance product replacement at no additional cost as part of the standard warranty.

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