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Nov – Dec 2015 { Volume 36, No. 6 }

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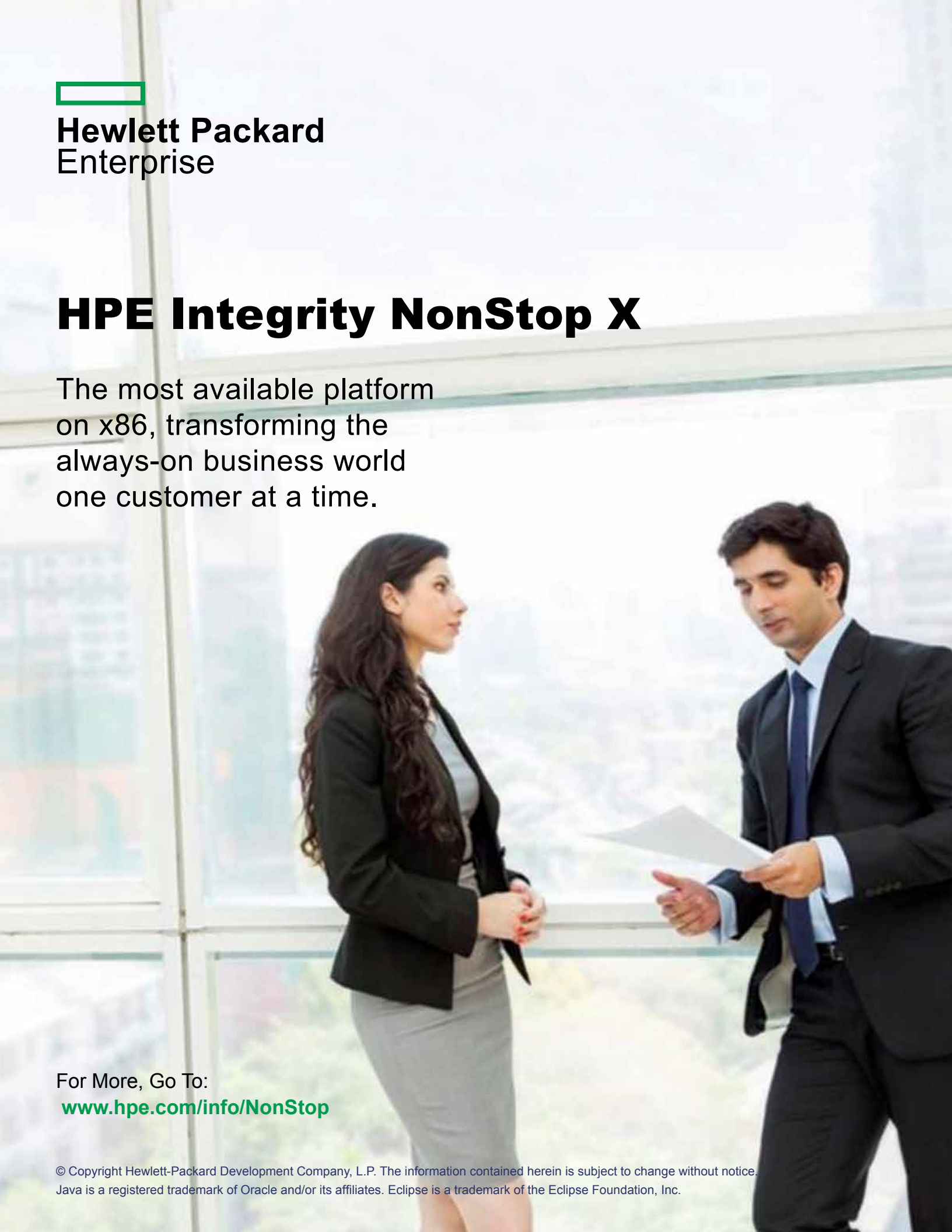

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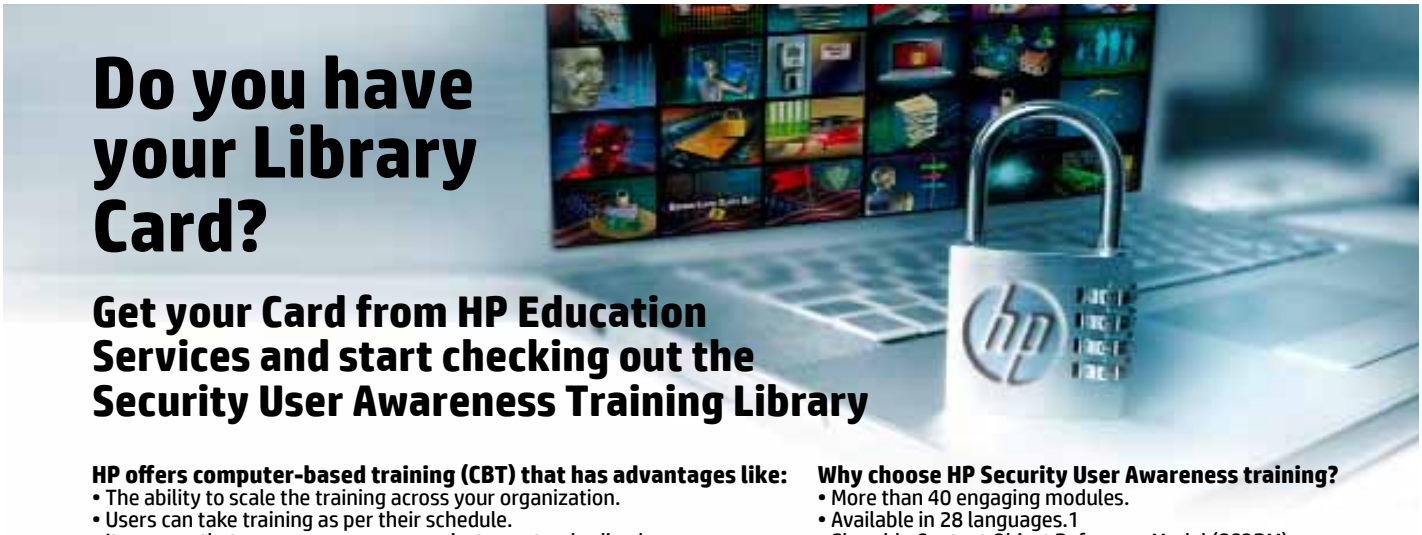

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News from HPE's NonStop Enterprise Division

In today's fast paced world not being able to process a payment, access funds through an ATM or make a mobile call can have serious consequences for companies, including loss of revenue, customers and reputation. The HPE NonStop platform is the ideal choice to support those mission-critical workloads that have zero tolerance for downtime.

This time last year we announced the new HPE Integrity NonStop X line, the only fully-integrated, 100% fault-tolerant compute on x86. This new product line enables customers to support escalating transaction volumes as it delivers 25 times broader system interconnect capacity and 50% higher performance than prior generations of NonStop. Customers can lower their data center footprint and cost and achieve breakthrough efficiency, with two times the NonStop blade density allowing 16 processors in a single enclosure. With this announcement, HPE redefined x86 application availability and scalability.

This year we extended the NonStop X product line with a new entry-class system, the HPE Integrity NonStop X NS3 X1. This system combines the economies of standards-based, modular computing with the trusted 24x7 fault-tolerant availability and data integrity that customers expect from the NonStop architecture. The NS3 X1 is targeted for emerging markets, customers with standalone applications who need a cost effective solution for their Mission Critical needs and small to mid-size enterprise businesses. In addition, with this entry-class system customers can now have a development environment that runs the same software as our HPE Integrity NonStop X NS7 X1.

For customers that need to expand their mission critical applications and Big Data processing beyond the boundaries of a single NonStop X system, we introduced the new HPE NonStop X Cluster Solution (NSXCS), enabling InfiniBand clustering for the HPE Integrity NonStop NS7 X1 systems. This clustering solution allows up to 24 nodes per cluster and from 1 to 3 zones to create larger environments up to 384 NS7 CPUs operating as a single system.

We also provided new core-licensing levels for the NS7, with options for 2 and 6-cores per processor in addition to the 4-core option already available. After installation, customers can upgrade their core count from 2 to 4 or 6-cores per processor nearly instantaneously without any downtime to meet their future growth demands.

You can read more about the latest developments in the HPE Integrity NonStop X product line in Senior Product Manager Mark Pollans' article. As you'll see, it's off to a great start and looking forward we'll continue to extend its value to customers looking for continuous availability on x86 for their mission critical compute. Also in this issue Justin Simonds, HPE Master Technologist, gives a view of future trends in Healthcare and Big Data, and the key role NonStop can play in this exciting area.

Finally, I hope you're able to join us at Discover London 2015, our first one as Hewlett Packard Enterprise (HPE). While you're there, be sure to join Alain Andreoli, myself and the rest of the executive team as we uncover The Confidence You Need to Accelerate with HPE Servers. I look forward to seeing you there, or at one of our other upcoming regional events!

Randy Meyer
VP & GM, Mission Critical Solutions
HP Servers

CTUG
Conference 2015

This year's CTUG conference on October 21st, 2015 was "The best one yet!", with record attendance for the 2nd year in a row. We were pleased and privileged to have **Jimmy Treybig**, the visionary founder of ***Tandem Computers*** as our guest speaker. His presentation, *The Importance of Users Groups to Customers* was of great interest to our audience. Something new this year, was a successful live broadcast of the morning sessions to 28 out-of-province attendees in Quebec, Manitoba and British Columbia.

Education Day enrolment was filled to capacity for the ***Introduction to SQL/MX*** course, by Serg Koren. We received complimentary feedback such as, *"It's definitely well run, and has wonderful content."; "a great show"*, from vendors, attendees and HP delegates.

Tom Moylan (Director, Americas NonStop Enterprise Division) provided opening remarks and introduced **Bob Kossler** (Director, WW Operations, Technology and Planning Mission Critical Solutions, HP). His presentation on "HP NonStop WW Strategy" was most informative. Our guest speaker **Michelle West** (TD Bank), spoke about "Tokenization on TD Bank's Nonstop Servers" which complemented this year's theme, "A new style of IT ". The Q and A session was attended by Tom Moylan, Bob Kossler , Dan Marshall (Director with the Presales Group at HP Canada) and Claudia Cress (VP Sales, Business Critical Systems Canada)

All vendor booths were allocated and we were pleased to have 2 new vendors, ***Integrated Research and Lusis***. All 9 vendor tracks were well attended. A brief and informative update was given by ***CONNECT's*** **CEO Kristi Elizondo**.

A reception was held after the conference where vendors and attendees were able to socialize with Jimmy and his wife Drew. There was also a nostalgic Tandem reunion, held at a separate location where long-time / retired "Tandemites" were able to meet and greet Jimmy and his wife. It was wonderful to share stories about experiences with the Tandem family, spanning more than 3 decades.

ADVOCACY

Meet the New ITUGLIB

Dr. Bill Highleyman >> **Managing Editor** >> Availability Digest

ITUGLIB has been a cornerstone of the Tandem/HP NonStop community for decades. It is a repository of open source and Guardian programs contributed by users. However, it has always been difficult for users to make a contribution to ITUGLIB. This is about to change, as we will describe. But first, a little history.

Back in 1978, Tandem users banded together to form the International Tandem Users Group, or ITUG. From almost the very beginning, ITUG has maintained a library of user-contributed freeware. This library is ITUGLIB. Pre-ITUGLIB started out as a few bits and pieces of user-contributed utilities collected by Tandem and known as TUGLIB. Being independent of Tandem, ITUG wanted the library to be independent as well.

ITUGLIB was born in 1982 and was housed on computers at the University of Colorado's Health Science Center Medical Computer Laboratory. It was maintained by Bill Braithwaite ('83 ITUG president). Tom Kimball took over as ITUGLIB Librarian from Bill, followed by Ted Wade and Emil Hollingsworth. Following Emil, Bill Honaker ('96 ITUG president) of XID Business Solutions became ITUG Librarian and retains that position today. It is a volunteer assignment and at times can be very demanding.

ITUGLIB was initially distributed on magnetic tape. The early fee structure for a copy of the entire library was:

$0	**if contributing, else**
$150	**if an ITUG member ($50 for an update)**
$300	**if not an ITUG member ($200 for an update)**
$10	**shipping charge for U.S.**
$25	**shipping charge for non-U.S.**
$25	**if a tape was not provided**

In 1988, ITUG changed its policy and made ITUGLIB available only to members. The fee structure then became:

Download one or more programs for free.
Receive the entire ITUGLIB on tape for $340 or an update for $140.

A major contribution was made in 2002 when HP added more than 100 OSS utilities to ITUGLIB.

In 1984, ITUG engaged Smith Bucklin & Associates, a large association management company, to manage ITUG. In 2006, SBA created an ITUG web site, ITUG Online; and ITUGLIB was moved to that web site. At this point, tape distribution was discontinued; and ITUGLIB contributions were distributed over the Internet. ITUGLIB became available to ITUG members and non-members alike at no charge.

When ITUG was absorbed into the overall HP user community organization, Connect, in 2008, the management relationship with SBA was terminated. SBA shut down the ITUG web site, and ITUGLIB was lost. Fortunately, backups had been made of ITUGLIB; and Bill Honaker rebuilt the library on XID's Web Server (Windows Server 2003) computers.

A significant change took place in 2010. At the HP Technology Forum and Expo held in Las Vegas in 2009, a wild idea emerged from some members of the Open SIG. The SIG leadership noted to HP that NonStop was a viable platform for Open Systems. So why not offer the new ITUGLIB on a NonStop server? The NonStop division agreed and generously donated a four-processor NS2000 for use by the ITUGLIB team.

In addition, Bill Honaker's company, XID, volunteered to house the NS2000 system at XID's facility in Texas. Several HP partners contributed required software products.

For four years, XID provided power, connectivity and cooling for the server. Connect paid the HP fees for maintenance and support. However, as time went on, the power and cooling fees increased in XID's offices; and XID asked other NonStop partners to help with the fees. None stepped forward until Yash Kapadia, CEO of OmniPayments Inc., offered to host the system in one of his data centers. OmniPayments now hosts ITUGLIB in San Jose, California, and absorbs the HP maintenance fees.

Today, ITUGLIB is managed by the ITUGLIB Committee, whose members include Bill Honaker, Randall Becker, Mike Kilpatrick, Ron Erlich and Joachim Schmitz. Unfortunately, contributing to ITUGLIB has been very cumbersome since the tape options were discontinued. A contribution has to be emailed to the ITUGLIB Committee, which in itself is simple. However, what to email was never clear to users. There were no specifications on how to package the material, what to include as a license, and so on. Defining this was a big effort, which the Committee did not have time to do correctly. Furthermore, once the package was received by the Committee, it had to make whatever tweeks to the code were necessary to run the program on NonStop. As

a result, there have only been a handful of new submissions over the past two years that have not been made by the Committee.

That is now about to change. The committee has ported the open-source repository manager git to NonStop Itanium and NonStopX, and ITUGLIB contributions will be managed by git. Contributors will be able to make contributions much more simply. Initially, only access to open source ITUGLIB programs will be via git. Eventually, "legacy" Guardian programs will be made available in this way. At that time, any ITUGLIB program will be accessible and downloadable via git, and git will make available the entire history of changes to the program.

Under the new procedures, new submissions will be reviewed with respect to what has changed if this is a modification to a prior submission. Further checks will include licensing (is it legal for the submitter to contribute this package), completeness (does it include tests and does it pass the tests on the ITUGLIB system), and authentication (is the submitter a Connect member in good standing). Criteria for approval will be published, and contributions will not be rejected for any other reason than those that have been published.

Randall Becker will publish a follow-on Connection article explaining in detail how to contribute and how to access ITUGLIB programs with these new facilities.

ITUGLIB now contains over 850 Guardian packages and more than 280 open source packages, with multiple versions of many of them. Because of open-source licensing requirements, all open-source packages on ITUGLIB are available to everyone for free, whether a Connect member or not. Legacy Guardian programs will be available to Connect members only but still at no charge.

For over thirty years, ITUGLIB has been a cornerstone of the NonStop experience. As technology evolves, access to ITUGLIB undergoes evolution as well. git will increase the opportunities for more software contributions and as a result will offer ITUGLIB users a much larger collection of resources.

The library is about to expand. Stay tuned.

"My thanks to Bill Honaker for his extensive input for this article."

Dr. Bill Highleyman is the Managing Editor of The Availability Digest (www.availabilitydigest.com), a monthly, online publication and a resource of information on high- and continuous availability topics. His years of experience in the design and implementation of mission-critical systems have made him a popular seminar speaker and a sought-after technical writer. Dr. Highleyman is a past chairman of ITUG, the former HP NonStop Users' Group, the holder of numerous U.S. patents, the author of Performance Analysis of Transaction Processing Systems, and the co-author of the three-volume series, Breaking the Availability Barrier.

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NonStop Innovations

NonStop Innovations Deep Dive: TCM Keeps Tandem in the Family

Gabrielle Guerrera >> NuWave Technologies

TCM, one of the largest HP NonStop (Tandem) managed service providers, celebrates two decades of providing NonStop services to their customers worldwide.

I recently had the pleasure of chatting with Tony and Daniel Craig, a father-son duo that are a major force behind TCM. Offering on-site and remote managed services for HP NonStop users worldwide, TCM's wide range of services helps customers cost-effectively manage their HP NonStop environments and ensure sustainable support and resourcing.

Today, TCM is investing in the next generation of NonStop support consultants and Tony is also joined by his son, Daniel Craig, who joined the company following the completion of his project management degree. Daniel works on TCM's quality assurance programs and with the project teams on a range of service requirements, from complex NonStop migrations to delivering NonStop system audits and health checks.

Gabrielle: ***Hi, guys. Could you give us some history on your company?***

Tony: We started in 1996; I was an ex-Tandem person at the time, working on service quality management, and I saw an opportunity to provide a range of managed services for Tandem users. At that time, customers were struggling to retain the wide range of skills required to support their Tandem systems at an affordable cost. We saw a need for managed service solutions, so we starting delivering a range of services to help customers manage their systems. We won our first contract with the Bank of Scotland in 1996 and that service grew to the point that we were providing everything to do with their Tandem systems: applications support, systems management, operations, hardware support and supply, and all their projects. From there, we developed different services, and word-of-mouth brought new customers to us. Today we still look after the Bank of Scotland and have a long customer list. Over the last few decades, we have provided the full range of NonStop services; we have never lost a customer, we have never failed a customer, and we are very proud of that.

Gabrielle: ***What does TCM stand for?***

Daniel: That is a heavily guarded secret.

Tony: The funny thing is, we won our first project so quickly that we had to come up with a company name on the fly. TCM just stood for "Tandem Computer Management" because it's what we did.

Gabrielle: ***Tony, when did you decide to make TCM a family business?***

Tony: When I worked with Tandem, on the weekend I would catch up in the office and Daniel used to come with me as a young boy--he loved the office. So I would work and he would run around and find things to amuse himself with.

Tony Craig, CEO of TCM

Daniel: As a young child I used to find it quite entertaining to go and charge around an empty office. I would draw pictures and photocopy my hand and that sort of stuff—I loved it.

I would head for the conference room whiteboard, which as a kid is one of the most incredible things you could ever see, to be able to draw on a big, white surface and then wipe it away and start again. I remember one instance where there was a new whiteboard and I expressed my artistic, 5-year-old talents in earnest but unbeknownst to me at the time, the new white board was actually a large new projector screen.

Tony: It didn't come to light until a few days later. We had some important customers coming in for a presentation; they were all seated comfortably in the board room, and down came the projector screen. No matter what we did, drawings of cars and animals showed clearly through every slide presentation, so that was comical.

Daniel: That was my introduction to the world of Tandem, but as a kid it was just a big playground. I have quite fond memories, and the company always seemed to have a family focus. I remember going to the Christmas parties and knowing a lot of my dad's colleagues at the time. Now I still bump into them because obviously in the NonStop community there is that closeness and togetherness.

As I went along on my journey and studies at college, TCM was always a big part of my life: I was always interested in my dad's work and what he was doing. He would tell me stories from work, so I was somewhat involved when TCM was born. When I was a few years out of college, I started to chip in.

After a while, it became apparent that it was best for me to come on board to help with project management and business development, which I studied in college, as well as operations. For me, it's been very encouraging since Tandem and TCM have been a part of my life for as long as I can remember.

Gabrielle: ***That's a great story! So how big is TCM now, and how many locations do you have?***

Daniel: We are 50 strong; we have offices in Scotland, England, and Ireland; we also work in Europe, India, and the States. Our services can be delivered remotely, so we allow the opportunity to provide our services anywhere in the world, which is a model we have developed for customers who want to reduce the costs of in-house teams. Our "Center of Excellence" is our centralized pool of expert resources that manage our customer's systems, operations, and so on. It gives our customers and us great flexibility and resilience because experts are always available.

Gabrielle: ***Could you give us a summary of the services you provide?***

Tony: We basically provide two types of services. The first is complete managed services, which is where we are responsible for the end-to-end delivery of a service through strict service level agreements (SLAs), to ensure that a customer can deliver their business requirements. It's normally a fixed cost, year-on-year service and takes away the management and resourcing issues customers face around Nonstop. The service is either delivered on-site or remotely, or a mix of both.

The second type is consultancy services, which are normally assignments for a particular piece of work. We provide this service for anything related to NonStop; for example, a customer might want an audit, a health check, or a migration project. They might require systems management on a day-to-day basis for a short period of time. We do back-fill work when a NonStop employee goes on holiday or medical leave, and they need somebody to get embedded into their team quickly. It really is the full range of services and our customers say it's cost effective for them.

Gabrielle: ***What's the most popular service you provide?***

Tony: Systems management can be all encompassing, so it covers a lot of the other specialties. That would be our biggest service provision at the moment.

Daniel: A lot of the standalone services could fold into that; they are the kinds of things any user has to do. They're not offered by many other providers at a realistic price, which our Center of Excellence allows us to deliver.

Gabrielle: ***What makes TCM different from other service providers?***

Daniel: Our experience, our guarantee, our low costs, our quality processes, and our proven record. Some NonStop customers use suppliers or contractors to help complete their projects, but it's difficult for customers to control those resources, and what happens if they fail? We take full responsibility and provide fixed-cost managed services, paid only upon successful completion. We feel this gives customers an increased degree of flexibility and security. We guarantee availability since we aren't relying on one or two people. We give the customer complete assurance and failsafe service; whatever they need done will get done. For the last 20 years, we have been 100% successful in doing that.

Gabrielle: ***How many projects would you say you've completed over the life of the company?***

Tony: Hundreds. We do so many projects, from large multi-month system upgrades to small one-week projects. We have some great reference material, fortunately.

Gabrielle: ***You guys said TCM has always been a family-oriented company, but could you go into more detail about the company culture?***

Daniel Craig, Business Operation Manager at TCM

Tony: My background and the backgrounds of the people who work here have that deep-rooted Tandem way of doing things. We love that culture because it's open and has a flat management structure. I've been fortunate that the consultants who work with us at TCM all feel like a part of it. They all feel a responsibility, and they all want to see things develop, improve and grow. They embed themselves very quickly into that type of culture: they say, "What can we do? How can we improve things?" We don't seem to have anyone who comes in at 9am and leaves at 5pm.

Daniel: We've built a team culture. We grew up around each other, so there's never someone who goes, "well that's your problem". Everybody is always willing to pitch in and help, run through a scenario, answer questions, and so on. That's how we've always managed to learn and grow, because of that idea of sharing and pushing each other. It's a supportive and encouraging place to work, and I hope all the people who work here feel that way.

We also spend time on fun events: getting everyone together, playing games--sorry, they call it "team building"--with bricks, logs, toys, rafts, quad bikes, fancy dress, treasure hunts, and a host of other activities thrown together with some fine dining for the TCM "away days" (a few days off-site for all employees and their families).

Gabrielle: ***Did you attend the Payments Knowledge Forum (PKF) in London recently?***

Tony: We attended the first day at the invitation of one of our partners.

Daniel: We are selective about the events we choose to attend. We attend events to try and understand our customer business better and let people know we are out there if they need help.

Tony: Our business development has been done by word of mouth. One of our customers told us, "You're the world's best kept secret in NonStop. Nobody knows about you." This is because we don't have salespeople; we're all service and techies, and I think that's why we work well together. Some of us are very senior in our experience, and Daniel keeps us on track from an operational perspective, so we are very focused on delivering great solutions.

Gabrielle: ***Which conferences are you planning to attend for the rest of the year?***

Daniel: The next big one will be Boot Camp in San Jose, and then BITUG in London.

Gabrielle: ***I like it! I noticed you have two different segments on your website: one for NonStop and one for healthcare. Are you targeting a lot of healthcare companies that don't have NonStop systems?***

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NuWave TECHNOLOGIES

Tony and Daniel Craig infuse a family-oriented spirit into the heart of their business and company culture.

Tony: In 2004, the National Health Service (NHS), which is the government-run healthcare system in Britain, commenced a national program for IT. At the time, it was one of the biggest IT projects in the world. Britain was split into areas and contracts were awarded to multinationals to provide IT services to these areas. In London, BT won the contract to provide a modernized IT solution for patient care. The core application BT chose for patient care and records was called Carecast, which ran on a Tandem, and that's how we got involved. BT approached HP as the platform provider and GE/IDX as the application provider. In turn, both HP and GE/IDX approached TCM for assistance, from providing 24 x 7 operations support for HP, and project management, system and application development for GE/IDX. We also started working with BT providing NonStop-based services.

Two years down the line, BT decided to change the application, and the replacement application didn't run on a Tandem. We assumed our services would no longer be required, but BT came to us and said, "We like you as a company, we like your staff, we want to know if you would be interested in cross-training your employees on the new environment and just keep doing what you're doing today." So they paid for the cross-training of our team, and we moved into a different application and hardware space, and that's how we ended up in non-Tandem healthcare.

Daniel: We started providing a whole range of healthcare IT services after that. There are good parallels as healthcare IT is also very much "critical" IT.

Gabrielle: ***What's your plan for the next 12 months?***

Tony: It is no secret that the NonStop community is getting older, and today, as Daniel mentioned earlier, TCM is investing in the future of NonStop through its Centre of Excellence,. We have a lot of experienced Nonstop staff and customers will want that reassurance. There are a lot of NonStop users who can be supported by a complete remote service solution, and it can be very cost effective and far less of a risk for them. Today, they are dependent on employed experts, key employees who could up and leave tomorrow. We want to lower that risk.

Gabrielle: ***Thank you so much for your time! This has been great.***

Daniel: We have enjoyed it, thanks.
Tony: Thank you!

Gabrielle Guerrera is the author of the NonStop Innovations blog, which is located at www.nuwavetech.com/hp-nonstop-innovations. The blog focuses on the latest products, services, partnerships, and other news in the HP NonStop space. Some of the most recent topics were: the shift in payments security, a comparison of XDP and SecureData, and a recap of recent NonStop conferences.

comForte Simplifies PCI DSS Compliance for Getnet with Tokenization

Thomas Gloerfeld >> VP Marketing >> comForte 21 GmbH

Executive Summary

The Payment Card Industry Data Security Standard (PCI DSS) requires that payment data is rendered unreadable anywhere it is stored—but it does not describe how organizations can address this requirement in an efficient way. When the decision makers at Getnet SA were looking for a better way to safeguard consumer data and ensure compliance, they turned to comForte. With comForte SecurData, the company could protect information in their HP NonStop environments, while incurring minimal cost and performance overhead.

The Challenge

Based in Brazil, Getnet offers innovative payment processing services for merchants and banks. Getnet led the way in delivering virtual telephony-based recharging services in Brazil and was also the first vendor to provide Wi-Fi and broadband-based sales terminals in the country.

In delivering its services, Getnet is entrusted with critical payment information. To fulfill its charter, it is critical that the company employ strong safeguards around this sensitive information, and ensure it is managed in a way that meets PCI DSS requirements.

"Our chief concern was to secure the sensitive customer data in our core systems," said Jeferson Prevedello, CSO, Getnet. "At the same time, we needed to provide administrative users with the flexibility they needed to do their jobs effectively."

However, the IT organization encountered significant obstacles when it came to addressing these security and business requirements in HP NonStop environments. Initially, the security and operations teams had implemented several compensating controls that were intended to protect the files that housed sensitive data. However, these controls were manually implemented, which meant that they required a great deal of administrative effort and imposed a lot of complexity on the business.

The security team initially looked into using a "classic cryptography" product which uses symmetric cryptography. However, they found that the encryption product they tested introduced a significant performance hit, making it impractical to implement in their processing-intensive environments. In discussions with several independent security consultants and also with VISA and Mastercard, they learned that Tokenization is extremely secure and is much faster than "classic encryption".

As a result, the security and operations teams set out to find a tokenization product to protect their sensitive payment data in HP NonStop environments, yet to do so in a way that minimized any cost, administrative effort, and performance degradation.

The Solution

In order to determine the best path forward, the staff at Getnet worked with many security consultants and card-issuer representatives. Through these discussions, the leadership at Getnet began to find that tokenization could provide a compelling alternative to encryption, offering the potential to establish strong protections around payment data while avoiding the performance and operational impact associated with many encryption alternatives.

"After talking with many security consultants and representatives from Visa and MasterCard, we came to realize that tokenization offered a promising alternative, one that was extremely secure and fast," Prevedello explained.

After exploring the offerings available, they discovered a strong solution that was well suited to their specific requirements: SecurData from comForte. SecurData offered Getnet a number of distinct advantages:

- **Native HP NonStop integration.** Alternative solutions that were considered introduced a great deal of complexity. For example, one alternative was reliant on an external server, which would have forced the team at Getnet to lose some of the NonStop capabilities

they were using. On the other hand, SecurData was developed for the HP NonStop platform and runs entirely in this environment. The solution offers format-preserving, field-level protection of data in Enscribe and SQL databases.

- **High performance.** SecurData offers a patent-pending tokenization scheme that associates tokens with a stateless, pre-generated token table that can be cached in memory. Through this approach, SecurData delivers optimized performance and minimizes system impact.
- **Maturity.** SecurData is a mature, robust solution that has been proven in a number of NonStop environments. Other solutions lacked the maturity of SecurData.
- **Transparent implementation.** In order to be implemented in NonStop environments, other solutions required a significant amount of application code changes. By contrast, SecurData's format-preserving tokenization minimizes implementation effort and operational impact. SecurData can be deployed quickly and efficiently within HP NonStop environments, enabling Getnet to tokenize sensitive data, without having to make any changes to application code.
- **Support for enterprise tokenization.** SecurData gives the team at Getnet a great deal of flexibility in integrating remote systems into their overall security strategy. While the main components of SecurData focus on the HP NonStop platform, SecurData supports the integration of cross-platform tokenization engines. It also can interact with remote systems in a very flexible way, for instance by placing a PGP-encrypted file on a remote system without the need to install any special software on that system.

The Results

By leveraging SecurData, the team at Getnet has been able to realize several key benefits:

- **Improved security.** Through SecurData, Getnet is able to minimize the systems and users that can gain access to sensitive payment details, significantly reducing the organization's risk of data breaches.
- **Enhanced PCI DSS compliance and cost efficiency.** By leveraging SecurData, Getnet can eliminate the labor-intensive compensating controls that were required to gain PCI DSS compliance. Further, they can employ the security mechanisms needed—without having to undertake the costly and time-consuming efforts associated with modifying applications to accommodate encrypted data. As a result, they can address PCI DSS requirements much more consistently and cost effectively.
- **Improved services.** By deploying SecurData, Getnet is able to more easily retain transaction records, without introducing risk. As a result, the organization can provide improved back-office services to its customers. "Now, because transaction files are tokenized, we can keep these files in our online systems for longer," said Prevedello. "As a result, we can perform better back-office operations—and do so faster."
- **Enhanced staff efficiency and productivity.** By eliminating complex compensating controls and leveraging a sophisticated, centralized platform, Getnet's security and operations staff can work much more efficiently, and spend more time focusing on the organization's most strategic efforts. As Prevedello mentioned, "Due to the elimination of manual procedures, we were able to significantly reduce the demands being placed on our personnel."

Conclusion

In deployment for nearly 2 years, the SecurData solution has been proven to offer significant dividends. Based on this success, the team at Getnet is looking to make comForte and its solutions an increasingly integral and strategic part of the business moving forward.

"Based on the success we've enjoyed thus far, we plan to expand our relationship with comForte to integrate SecurData in our corporate tokenization strategy," Prevedello stated. "We are planning to begin using tokens to secure our purchasing systems, and comForte solutions will be an important part of our architecture."

About Getnet Tecnologia SA

Getnet is a payment company, part of the Santander Group, and provides a comprehensive POS network service in Brazil.

Getnet deploys the state of the art technology to provide the best in merchant experience for its more than 500.000 customers.

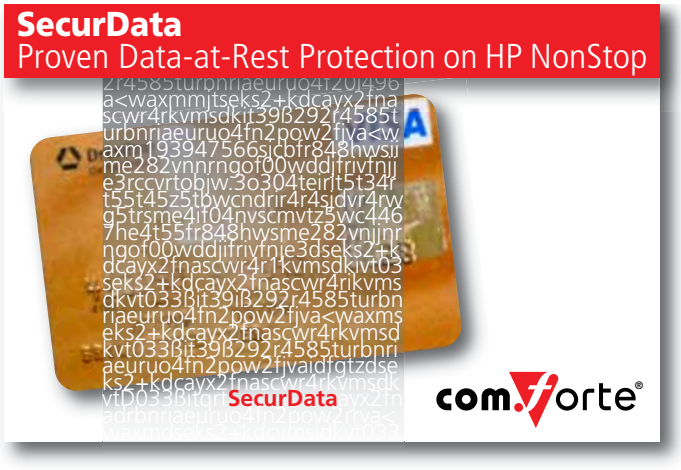
For more information please visit http://www.Getnet.com.br

About comForte

comForte provides proven and innovative middleware, connectivity, modernization, and security solutions for users of HP NonStop systems. With customer value in mind, it is comForte's goal to deliver best-in-class products and solutions and to provide customers with the best support possible.

For more information please visit http://www.comforte.com/. .

Thomas Gloerfeld, VP Marketing at comForte, has been associated with the NonStop community for over 20 years. Before joining comForte, he held various management positions at ACI Worldwide both in Germany and the UK. Thomas Gloerfeld can be contacted at t.gloerfeld@comforte.com.



With 100% Uptime, Do I Need a Business Continuity Plan?

Dr. Bill Highleyman >> **Managing Editor** >> Availability Digest

As we have discussed in past articles, active/active application networks are capable of incredible availabilities – uptimes measured in centuries. In an active/active system, two or more nodes are actively participating in the application. Their databases are kept synchronized via data replication. Whenever one system makes a change to the application database, that change is immediately replicated to all of the other application databases. Thus, a transaction can be sent to any node in the application network and be processed properly. Should a node fail, further transactions are routed to surviving nodes. Recovery from a failure is measured in seconds.

One might well question the need for a Business Continuity Plan if the system is never going to go down. No assumption could be more fallacious. Extreme availability does not mean an absolute 100% uptime. Even if our calculated uptime is in the thousands of centuries, that means that on the average there will a system failure during that interminable time. And as random events go, that failure could be tomorrow. We might not expect another one for 10,000 years, but we had better be able to deal with tomorrow's failure. That is why we always need a good Business Continuity Plan. How is the business going to survive tomorrow's failure?

It is true that an active/active application network will protect us from a myriad of faults. Hardware faults, software faults, operator errors, environmental problems – these generally will only affect one node. The same is true for most natural and man-made disasters. Should a node go down, users quickly can be switched to other nodes. That is what active/active is all about.

However, there is a wide range of faults that, though highly unlikely, could take down your entire application network. This is why a good Business Continuity Plan is a must. What is the probability that a second node could fail before the first failed node is repaired, thus leaving the system with not enough capacity to maintain the business? No matter how small the probability that you calculate, you may have two nodes down simultaneously someday. And that someday might be soon.

Does your system have network-wide commands that could cause wide-spread damage if used improperly by your operators? Hopefully, you have put in safeguards to prevent this; but have you really covered all of your bases?

Are you susceptible to site failures due to natural disasters – floods, fires, earthquakes? Do you have a remote backup site? Are your nodes and database copies distributed widely enough so that the equivalent of the 2004 Northeast blackout in North America will not take down all nodes?

What is the chance that a massive network failure could disconnect all users from their nodes? Can a software bug propagate through the network? (Do you remember the software bug that propagated through the ATT network in 1990 and took down the entire network, thus denying telephone service to subscribers for hours? A decade earlier, a similar bug collapsed the ARPAnet.)

What about a health crisis like the SARS and Avian flu scares? Fortunately, they didn't become an epidemic, though it was within the last century (1918 to 1919) that the Spanish flu killed 20 million to 40 million people worldwide. This could decimate your operations staff. What if your buildings housing your systems were quarantined by a similar epidemic and could not be entered?

Is your operations staff unionized? What happens in the event of a strike? Can your supervisory staff and others less trained in the operations carry on service?

And, of course, there is always the present danger of attacks by viruses, worms, hackers, and denial-of-service attacks.

No matter how smart you are at protecting your site from such outside dangers, there is always a hacker who is smarter. Furthermore, don't forget the easiest way for your system to become infected – one of your people innocently bringing in his or her infected notebook and logging onto your system.

Consequently, there must be in place a plan directing the efforts of all concerned so that your business can recover from such disastrous occurrences. Simply having an extremely available system is not good enough. One must plan how to recover from a highly unlikely, but not impossible, total system outage.

This plan is, of course, the Business Continuity Plan; and it is the subject of much literature today. Though proper business continuity planning is beyond the scope of this article, there is much in the way of good literature concerning these plans.

What better way is there to learn about what should go into a good Business Continuity Plan than to peek at the handbook that the auditors use. The booklet entitled "Business Continuity Planning: IT Examination Handbook," published by the FFIEC (the Federal Financial Institutions Examination Council),[1] is just that. It is complete, concise, and easy to read. Also, there are many significant consulting services being offered to help you write your plan (offered by, among others, IBM and HP). Without a good Business Continuity Plan, one cannot say that one has approached 100% uptime because otherwise that one-time failure of the system could have disastrous consequences.

Of course, any Business Continuity Plan must be kept up-to-date and practiced periodically. A Business Continuity Plan that does not reflect the current business or IT environment, or a plan that is flawed or is unfamiliar to the people who must implement it, is no more valuable than the dust that covers it. A common problem with Business Continuity Plans is that they are not tested. To thoroughly test such a plan, it may be necessary to take the production system down in order to attempt recovery. Thus, an unplanned outage may occur if the Plan doesn't work. As a consequence, many companies do not test their Plans or only test them partially. Rather, they are depending upon hope and faith when recovery becomes necessary.

Though needed for an active/active system, Business Continuity Plans are generally associated with "highly available" systems such as clusters in which occasional outages are expected. This leads to an important distinction between these plans and Continuous Processing Architectures. A Business Continuity Plan is used to recover from the effects of an outage. A Continuous Processing Architecture is used to avoid the effects of an outage. However, continuously available systems are generally deemed to be those with availability is excess of six 9s. Therefore, they too can fail and must be backed by a good and well-tested Business Continuity Plan.

[1] Business Continuity Planning: IT Examination Handbook, Federal Financial Institutions Examination Council; http://www.ffiec.gov/ffiecinfobase/booklets/bcp/bus_continuity_plan.pdf.

Dr. Bill Highleyman is the Managing Editor of The Availability Digest (www.availabilitydigest.com), a monthly, online publication and a resource of information on high- and continuous availability topics. His years of experience in the design and implementation of mission-critical systems have made him a popular seminar speaker and a sought-after technical writer. Dr. Highleyman is a past chairman of ITUG, the former HP NonStop Users' Group, the holder of numerous U.S. patents, the author of Performance Analysis of Transaction Processing Systems, and the co-author of the three-volume series, Breaking the Availability Barrier.

Healthcare 2015

Justin Simonds >> Master Technologist >> Americas Enterprise Solutions

This October (2015) the 9th annual Sino-US Symposium on Medicine (http://med.stanford.edu/sino-us.html.html) took place at Stanford University. I had been fortunate enough to receive an invitation to this event. This symposium is a conference between top medical professionals and institutions from China and the United States. The purpose to share information on Healthcare. The theme of this conference was 'Big Data and Healthcare'. The conference was much more about medicine and treatments than it was on analytics but it was fascinating even for a non-doctor. There were many excellent speakers including Nobel Laureate Michael Levitt, PhD.

The talks were quite broad in scope - cardiovascular disease, various cancers, diabetes, brain abnormalities, and skin disease along with many other topics (go to the website for the complete agenda). I thought one of the speakers made a profound point when he started his presentation with the observation that until recently what they had all been practicing was sick-care but now, with the advances in genomics, they were finally at the very beginning of practicing healthcare. Many of the speakers were studying genomics and its effect on disease, especially chronic disorders. As I was reading eight out of 10 older Americans are faced with the health challenges of one or more chronic diseases (http://www.cdc.gov/aging/index.html). Chronic diseases are responsible for 60% of deaths worldwide and account for three-quarters of America's direct health expenditures (http://www.who.int/features/factfiles/chp/01_en.html). People with chronic diseases cost 3.5 times as much to serve compared with others, and account for 80% of all hospital bed days and 96% of home care visits. So work in this area not only benefits the population in general in terms of health and quality of life but has profound financial benefits as well.

The work of many of the doctors presenting at the conference was around the pursuit of genomic mappings for disease. Although some amazing work has been accomplished we are clearly on the threshold of this effort. The original genomic mapping was commissioned in 1990 and was expected to take 15 years. Thanks to computer advances a rough mapping had been completed by 2000 and was declared complete in 2003. So roughly 13 years and a few billion dollars to map the first genome. At the conference they said mapping could be done today in 48 hours for $1,000.00. That is amazing progress and makes the mapping and testing of patients practical and affordable. And of course the speed will continue to increase as the price continues to fall. This is important and shows that the healthcare industry is embracing technology in very new and interesting ways, most especially concerning analytics. The Healthcare industry has traditionally been a laggard in terms of technology adoption. Big Data and the Internet of Things is having a pronounced effect on technology adoption. We are seeing the healthcare industry start to embrace technology in three main areas; data collection, data sharing and analytics. Data collection began in earnest with the establishment of EMR (Electronic Medical Records). In 2004 HIMSS (Healthcare Information Management Systems Society) published EMRAM (Electronic Medical Records Adoption Model) which was a framework for measuring the industries advancement and use of electronic records. Now that the industry has been collecting these records a method for sharing needed to be established. Obviously information sharing was the theme of the conference I attended but now we are speaking of actual data sharing of patient information. The proposed HIE (Health Information Exchanges) are charted to do specifically that. However, there does not exist anything similar to EMRAM to track advancement and usage. The bigger problem with HIE is funding. Who pays for these exchanges? Since the transfer is primarily medical information not a financial transaction getting someone to foot the bill for the transfer remains an issue. This brings us to my favorite, analytics. We've collected information how do we use it to make Healthcare a data driven enterprise and convert from a sick-care industry to healthcare? Interestingly an analytic framework for Healthcare has been developed. It really took the framework for EMRAM as the basis and is more a methodology for tracking the advancement and use of analytics. It is a nine level model (see figure 1).

Healthcare Analytics Adoption Model

As we go up the levels of the model more information is added at each level. In addition less and less latency can be tolerated. Level 8, tailoring patient care, if we begin talking

Figure 1: Healthcar Analytics Adoption Model

about wearable technology and sensor data that data will need to be processed in near real-time. Like OnStar reporting information on vehicles, most of the information is repetitive and predictable but every now and again special sensors go off – accident alert, air bags deployed, etc. Similarly we hope most information delivered from a remote patient is repetitive and predictable, but not always. There was an old HP video called "Cool Town" and it lives on at https://www.youtube.com/watch?v=U2AkkuIVV-I . Toward the end there is a dramatization of a healthcare emergency and response which, looking at the new wearables was quite prophetic. It does demonstrate possibilities but only if information is constantly being streamed and analyzed in real time.

For those that might have seen my Internet of Things presentation you might remember my car accident use case. A driver trying to avoid a child running into the street swerves and flips his vehicle. He and his two passengers need medical attention. In the not too distant future alerts from sensors are sent out and directed to 'smart city' 911 services. A first responder is alerted and provided with up to the second best routing to get them to the accident. Smart street lights can flash along the proper route and even change color as the first responder vehicle approaches (smart cities). While the first responder is on the way medical information is collected from wearable technology on the three victims and transmitted to the first responder and to the hospital where the driver and passengers will be taken. In the hospital medical history is also acquired, family contacts and primary care physicians are alerted to the situation. Health insurance information is collected and begins pre-registration of the driver and passengers at the hospital. The first responder arrives and while the accident victims are being transported high resolution cameras allow the emergency room staff to get their first look at the injuries and develop a plan and a medical team before the patients arrive. Now much of the technology already exists for all of this today. What doesn't exist is the communication infrastructure and standards for sharing all this information. But it's coming. And which parts in the above use case are critical?

This patient data collection through werables or sensors is all about a new term being used in healthcare called Remote Patient Monitoring (RPM). "Remote monitoring is extremely important and probably in the forefront of mobile technologies now," explains David Lee Scher, MD, FACC, a Harrisburg, Pennsylvania cardiologist and mobile-tech consultant, "because of its potential importance in decreasing hospital readmission rates, which are a big headline because they are responsible for penalties that the Centers for Medicare and Medicaid Services (CMS) is now imposing on hospitals that have readmissions within 30 days for certain diagnoses." (see: http://medicaleconomics.modernmedicine.com/node/384265?page=full). At the conference many of the studies that were being started involved remote monitoring and data collection. For example MYHeart is an application developed at Stanford to collect information from the general public. Only available with Apple at the moment but take a look at https://med.stanford.edu/myheartcounts.html.

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In the future we can get a sense of the combining of one's genetic information with day to day (second to second) monitoring. The future view is the capability of detecting very early warning signs based on your genetic predispositions for certain diseases. Imagine getting a 5 year warning about your heart with a list of what to do to prevent it?

NonStop will continue to have an important role in this exciting area. NonStop OS has always been a perfect match for OLTP type applications. The remote patient monitoring – regular, structured information coming in almost continually is not dissimilar to OLTP. Additionally NonStop has always excelled at message-switching type applications. As the flood of information starts coming in from a patient demographic NonStop can be used to process highlighted/emergency information. Additionaly this information can be switched in near real-time to backend systems for additional processing. NonStop supplies a high degree of security in that the vulnerability list is extremely low which is perfect for a very concerned healthcare industry consumed with privacy regulations. As the Internet of Things rolls out in healthcare NonStop continues to be the preferred platform for the Internet of mission-critical things that require immediate uncompromised attention.

As the healthcare industry moves toward digital healthcare and as consumer based/patient sensors become the norm (smart pacemakers, insulin pumps, dialysis, etc.) more and more analytics will be required to understand what is normal and what constitutes a pending emergency. The Hewlett Packard Enterprise Big Data Reference Architecture (BDRA http://h30507.www3.hp.com/t5/Servers-The-Right-Compute/The-HP-Big-Data-Reference-Architecture-It-s-Worth-Taking-a/ba-p/6795401?jumpid=reg_r1002_usen_c-001_title_r0002#.Vi2zIZjruM8) will become important for the deep analysis, genetic profiling and social trending to understand patients. NonStop will be required for the "911" alerts identified by these deep and predictive analytics.

Justin is a Master Technologist for the Americans Enterprise Solutions and Architecture group (ESA), a member of the HP IT Transformation SWAT team, and a member of the Mainframe Modernization SWAT team. His focus is on real-time, event-driven architectures, business intelligence for major accounts and business development. Most recently he has been involved with modernization efforts, Data Center management and a real-time hub/Data Warehouse system for advanced customer analytics. He is currently involved with HP Labs on several pilot projects. He is currently working on cloud initiatives and integration architectures for improving the reliability of cloud offerings. He has written articles and whitepapers for internal publication on adaptive enterprise, TCO/ROI, availability, business intelligence, and the Converged Infrastructure. He is a featured speaker at HP's Technology Forum and at HP's Executive Briefing Center. Justin joined HP in 1982 and has been in the IT industry over 34 years.

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Americans Finally Say "Hello" to EMV

Luther Martin >> **Distinguished Technologist** >> Hewlett Packard Enterprise

Chip and PIN has finally come to the US. How secure is this technology? And does this mean that we will not need to worry about protecting cardholder data anymore?

Chip and PIN, otherwise known as EMV, is a global standard for payment cards that was established in 1994 by Europay International, MasterCard and Visa. Today the standard is managed by EMVCo, a joint venture of American Express, JCB, MasterCard and Visa. Unlike older cards that use a magnetic stripe to store information, EMV cards use a secure microcontroller to carry out cryptographic operations that make transactions secure.

As of October 1, merchants in the US that have not upgraded their card readers to ones that are able to accept EMV transactions will generally be responsible for fraud from card-present transactions based on the older magnetic stripe cards. Previously, the bank that issued the card used in this type of transaction was generally responsible for this type of fraud.

Both the hardware and software that provide the security of EMV cards are proven technologies. The secure microcontrollers are particularly impressive and are designed to protect against an impressive range of physical attacks. They may zeroize the protected memory where they store cryptographic keys if the input voltage to the microcontroller is either too high or too low, if the clock input to the microcontroller is either too high or too low or if the microcontroller is exposed to light.

They also may be designed to thwart many types of side-channel attacks, where a hacker can work around the protection provided by cryptography by cleverly exploiting physical measurements of a microcontroller while it is carrying out cryptographic operations – things like the time required to perform certain calculations, the power consumed by the device or electromagnetic emanations from the device.

EMV cards require the use of a PIN to control use of the cryptographic keys that they store. Using a PIN greatly reduces fraud losses. According to research by the US Federal Reserve,[1] in 2008 the losses in the US from signature-based card transactions were 0.13 percent of transactions by dollar volume while the losses in the US from PIN-based card transactions were 0.035 percent of transactions by dollar volume. This strongly suggests that PIN-based transactions are more secure that signature-based transactions are. But it also suggests that PIN-based transactions are still not perfectly secure, so even after US merchants fully deploy EMV, there will probably be some card-present fraud.

This is exactly what we see in other countries that have already deployed EMV: the amount of card-present fraud decreases, but it continues to exist in significant amounts because the adoption rate of EMV never gets to 100 percent.[2] In Western Europe (EMV's Europe Zone 1), the adoption rate is 83.5%. In Eastern Europe (EMV's Europe Zone 2) the adoption rate is 40.4%. In Asia Pacific the adoption rate is only 25.4%. Even the best cryptographic technology does not help you if you do not use it.

And EMV does essentially nothing to reduce card-not-present fraud. In the US there is no single entity that collects and reports data about payment card fraud, so the estimates for it can vary depending on which organization is estimating the amount of fraud, but an estimate that is probably not too far off is that about 40 percent of payment card fraud in the US is from card-not-present transactions. It is common for card-not-present fraud to increase after EMV is deployed as cybercriminals move their efforts from the harder target to the easier target. The net result is that the total amount of fraud continues to increase over time after EMV is deployed.[3]

Because EMV does little to address card-not-present fraud, it seems unlikely that moving to it will eliminate the need for complying with industry standards for protecting cardholder data. This means the need to either encrypt or tokenize sensitive cardholder data will not be going away any time soon. And because the amount of card-not-present fraud can increase dramatically after EMV is deployed, the need to encrypt or tokenize sensitive cardholder data may increase after this happens. Look for industry rules to reflect this unfortunate reality before too long.

[1] D. King, "Chip-and-PIN: Success and Challenges in reducing Fraud," Retail Payments Risk Forum Working Paper, Federal Reserve Bank of Atlanta, Jan. 2012.
[2] https://www.emvco.com/documents/EMVCo_EMV_Deployment_Stats.pdf
[3] Mercator Advisory Group, "EMV Adoption and Its Impact of Fraud Management Worldwide," Jan. 2014.

Luther Martin is a Distinguished Technologist with HPE Security – Data Security. You can reach him at luther.martin@hpe.com.

XYGATE SecurityOne™ – The Next Generation of NonStop Security

Steve Tcherchian, CISSP >> CISO >> XYPRO Technology

Jimmy Treybig, founder of Tandem Computers, reminded everyone of his secret to success last month while presenting at CTUG in Toronto.

"Innovation and Change, without those, you have no success."

Criminals are constantly finding new and clever ways to exploit security defenses. Security providers must drive the innovation necessary to counter these attacks to protect business operations and data. The strategy that worked yesterday probably won't work tomorrow. That's why XYPRO is looking beyond what's there today. To innovate and develop the solutions that protect you and your business from threats – today and tomorrow.

In a recent article by Tara Seals of Infosecurity Magazine, Sue Barsmian, SVP of Enterprise Security Products at Hewlett-Packer Enterprises pointed out that technologies enabling disruption and innovation also introduce new challenges for enterprise security. These challenges demand a new approach to security that goes beyond simply protecting the perimeter. It's really an approach of protecting users, applications and data and securing the interactions between them.

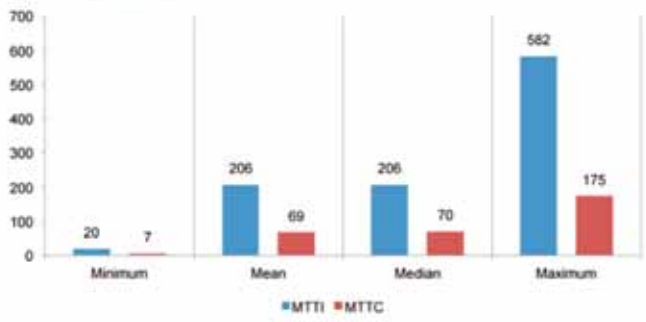
XYPRO Technology has been a software partner of Tandem and now Hewlett Packard Enterprise since 1983. Our focus has been almost exclusively on security of the NonStop operating system, applications, and data – since 1990 when our founder Dale Blommendahl recognized that security was going to be one of the single most important parts of technology going forward. Dale's visionary approach has certainly been proven true.

In their 2015 Global Cost of Data Breach Study, the Ponemon Institute pointed out the continual rise in cyber attack frequency and the costs associated with resolving cyber incidents. As such, security teams need greater visibility and proactive analysis of their data to enable faster detection and increase response times to avoid a high impact cyber incident. A defensive security posture is no longer a sustainable security strategy.

The same Ponemon study also pointed out that the mean time to detection of a cyber security incident is currently over 200 days. This is mostly due to manual detection and discovery methods used to investigate security incidents. This tends to be a very time consuming and expensive process, often sending security teams down rabbit holes and wasting resources. Attackers have learned that blending their activities in as innocuous user behavior hides their actions as they move around the system. This is the concept of "low and slow".

Mission critical systems like the HPE Integrity NonStop servers house an organization's most valuable applications and assets and must be protected against a variety of threats. Although the NonStop has unique security features not typically seen on other enterprise systems, it is still

Figure 17. Mean time to identify and contain data breach incidents (in days)
Consolidated view (n = 350)



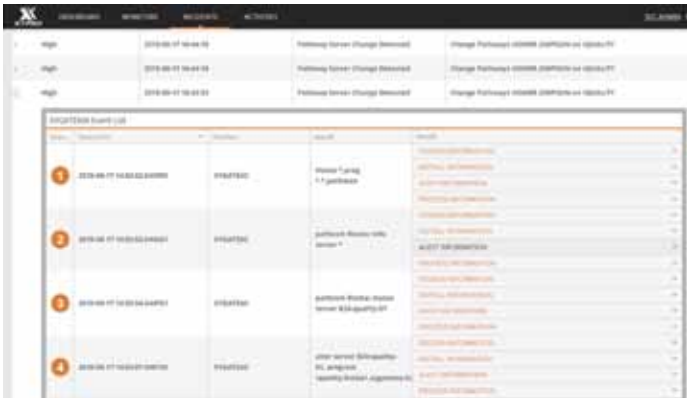
at risk from insider and outsider threats, misuse, non-compliance and security breaches. As systems grow larger, faster and more economical, the amount of data generated, and thus put at risk, exponentially increases. Keeping track of what is happening to that data and those systems becomes a very expensive and inefficient exercise for system operators. Without proactive control and visibility into their NonStop infrastructure, organizations expose themselves to greater risk. Current solutions do not provide the specialized NonStop security intelligence and contextualization to paint the correct picture for this purpose.

XYPRO is proud to announce XYGATE SecurityOne™. A brand new product that provides a comprehensive, single pane of glass approach to control and contextualize NonStop security through policy management, data protection and security analytics. The result? Meaningful reduction in the Mean Time To Detection.

XYGATE SecurityOne™ introduces an intelligence platform never seen before for the HPE Integrity NonStop Server. Leveraging existing native HPE NonStop Security information, all of the XYGATE suite's extensive security data information and extensive new functionality,

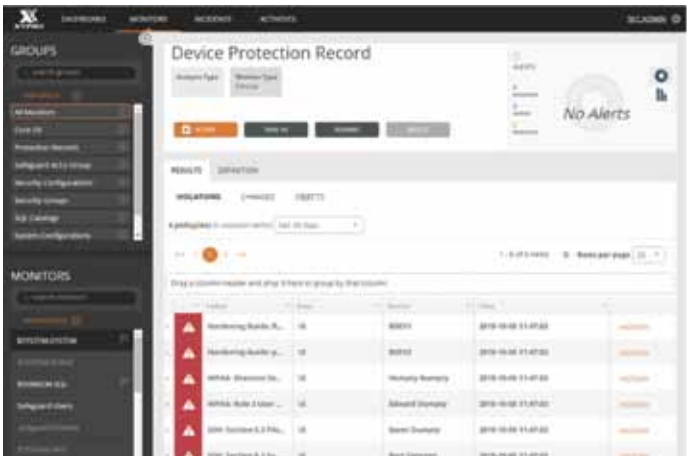
XYGATE SecurityOne incorporates multiple NonStop security intelligence data feeds into a single, easy to use, browser interface for a single-view visibility of your NonStop Systems' security.

Using our patent pending technology, XYGATE SecurityOne™ gathers data from multiple disparate NonStop server sources and uses specialized security intelligence algorithms to correlate, contextualize and analyze events. For example, combining application data, user behavior, file operations, network data, command input and other sources to paint a detailed security incident picture in real time for the NonStop, enabling security operators to hone in on and detect security events before they culminate into an "incident". XYGATE SecurityOne™ draws your attention and alerts you to the items you need to be aware of, allowing you to effectively prioritize your response and countermeasures.



With its summary/detail dashboards and customizable, easy to use browser interface, XYGATE SecurityOne™ enables you to manage security configurations, harden your system security based on NonStop best practices, measure and enforce compliance and policies on a global level, take the guess work out of audit and forensic investigations, intelligently analyze your NonStop security data and much more.

This combination of data protection, application security and threat intelligence greatly reduces the likeliness of undesirable and costly post-breach data recovery actions.



A key feature of XYGATE SecurityOne™ allows the newly generated NonStop specific data to participate with the rest of the enterprise security picture by integrating its data contextually into a SIEM such as HPE ArcSight. No longer will NonStop data be categorized into buckets for binary alerting and reporting. With XYGATE SecurityOne™, you can now send rich, contextualized incident data to your SIEM to allow the NonStop to participate in the big picture of enterprise security.

Key Features of XYGATE SecurityOne™

- Single platform for security management and analysis
- Patent pending technology
- Security Intelligence profiles and prioritizes security incidents
- Real-time incident detection and alerting
- Contextualize and prioritize incidents
- Modern browser application Interface
- Summary/detail dashboards for complete environment visibility
- Automate policy management, compliance and reporting
- Simplify forensic investigations
- Interpret keystroke command audits for context
- Integrate multiple sources of NonStop data for security analysis
- Visibility into system, network and user activity
- User behavior profiling
- Incorporate NonStop data intelligently into the rest of the enterprise
- Integrate with SIEMs and other security solutions (ArcSight, QRADAR, Splunk and others)
- Quickly highlight critical information

All of these features, not previously available for the highly-available, reliable and scalable HPE NonStop server, allow us to bring that groundbreaking server technology, responsible for so much of the Payments, Financial, Telecom and Retail infrastructure around the world, to a place where the ability to monitor the security of the environment is as rock-solid as the performance of the server itself.

Key Benefits

- Faster threat detection
- Meaningful reduction in Mean Time to Detection
- Improved incident response times
- Increased operational efficiency
- Simplified security operations
- Improved compliance and policy management
- Differentiation of noise from actionable incidents
- Minimize the impact of a breach by identifying it in its earliest stages

As threats evolve, the next generation of security solutions to actively identify these threats and protect the systems our organizations critically depend on need to evolve with them. XYPRO has been focusing its research and development efforts creating the tools and solutions needed to actively protect the HPE Integrity NonStop Servers from the next generation of threats, increasing the NonStop operators' efficiency by focusing their security efforts to items on which they should be focusing and ultimately reduce an organization's Mean Time to Detection. With over 30 years in NonStop Security, XYPRO is the one source positioned to solve the security challenges of the NonStop industry; today and tomorrow.

To get more information please visit www.XYPRO.com.

Steve Tcherchian, CISSP, PCI-ISA, PCIP is the CISO and SecurityOne Product Manager for XYPRO Technology. Steve is on the ISSA CISO Advisory Board and a member of the ANSI X9 Security Standards Committee. With almost 20 years in the cybersecurity field, Steve is responsible for XYPRO's new security product line as well as overseeing XYPRO's risk, compliance, infrastructure and product security to ensure the best security experience to customers in the Mission-Critical computing marketplace.

NonStop: A System as Resilient as Its Community

Richard Buckle >> **CEO** >> Pyalla Technologies, LLC

The holiday season is just around the corner and shortly, for many of us, there will be surprises as envelopes are opened and wrapping paper is pulled from packages. It's not unreasonable to expect that many of the things we had worked hard at when it comes to dropping hints to family members will come true – fulfilling wishes after all goes two ways, as those granting the wishes are just as much a part of the excitement as those who become the recipients. As we look back over the year, for just as many of us, what has transpired in our work lives has been very much as big a gift as anything we can expect to receive from family and friends.

HP NonStop systems celebrate another year and in so doing, to the best of my knowledge, trail only a few other systems in terms of longevity. IBM's z Systems (the latest iteration of the venerable System 360 architecture) and Power Systems (a follow on to the AS/400 and a modern interpretation of what first arrived as the System 3) may predate NonStop, but few can argue about the benefits of NonStop system's backwards compatibility to the extent HP can boast with NonStop. There are often stories circulated of the solution first written for a NonStop II that's still running today on the latest NonStop blade system, unchanged. And yes, not forgetting too that this old solution is as every bit as fault tolerant today as it was all those years ago. There's a robustness, indeed resilience, in NonStop technology that doesn't just apply to the solutions running on systems but touches all involved with NonStop. This continuity of investment in all things NonStop continues to separate the community from all others and is why all these years later the belief in NonStop computing remains as strong as it does today.

In celebrating another year NonStop has welcomed an additional family member and the proof that major investments in NonStop systems continue under the stewardship of Hewlett Packard Enterprise (HPE). If you haven't notice of late, the email addresses of all participants in the new HPE organization began changing well before I wrote this article and by now, with November 1st behind us, the new HPE organization should be a familiar entity to all members of the NonStop community. This too is worth celebrating as it's a separation of consumer focused from enterprise focused missions and I believe that this has considerable upside for the NonStop community and to reach a place where the product portfolio for the Mission Critical Servers group continues to invest in and sell NonStop systems is just one more *cause celebre!*

As I look back on the year the highlights for me have a lot to do with the markets, the technology and the partnerships embraced by NonStop. There continues to be downward pressure on the numbers of NonStop systems deployed, but having spent more time this year among the NonStop community at user events across the country, there's a sense that the numbers of NonStop users is steadying and there's no doubt at all that the introduction of the second member of the NonStop family, the NonStop X blade systems based on the Intel x86 architecture, has sent a very positive message reverberating through the industry. I recall the headlines that came out following the news several years ago that NonStop was being supported by Blades, essentially bringing industry standard packaging to NonStop processors, but the news that NonStop was supporting x86 proved to be even bigger news and this completes a long journey for NonStop, as it has successfully navigated a path to where it now fully supports industry standard hardware and open software.

This has truly affected the marketplace for NonStop. Market segments committed solely to the x86 had effectively locked out NonStop from any further participation. A chassis today that houses half-height industry-standard blades interconnected via industry-standard InifinBand (IB) represent a level of compatibility, indeed recognition, that makes it almost indistinguishable from other systems housed in chassis up and down the data center alleys. Indeed, so much so that at 2015 HP Discover one enthusiastic yet seasoned HP salesman mistook the NonStop X system for a Superdome X and didn't take too kindly to my gentle correction of the system's mistaken identity. Could any of us have imagined this outcome for NonStop just a few short years ago?

It tells us a lot about the marketplace as well. Increasingly, what CIOs are demanding is technology that delivers revenues

more rapidly and it's not just the top line but the bottom line as well. In other words, driving down the costs of initial purchase as well as the operational costs over the life of the system are now every bit as important as any new capability of feature of the platform. In the article I wrote for the Nov – Dec 2011 issue of The Connection, ***New Product Choices Appear in NonStop Data Replication Marketplace***, I referred to my participation in an InNUG user event held in India. I wrote of how, in presentation by HP's Managing Director of India, Ms. Neelam Dhawan had exhorted the participants about how technology must deliver, and of how IT has become both a builder and a broker of services. "Business leaders don't care anymore about what IT elects to do or of the choices they make; what's important is the reduced time to revenue," she hammered home to the NonStop community all those years ago.

What constitutes a modern system are certain characteristics and the support of x86, IB, together with the compatibility to key languages, middleware and tools including Java, JavaScript, SQL and SOA / Web services including HTML5, JSON, etc. are just part of the equation. Looking back at what I wrote in last month's issue of The Connection, ***It's bright! It's shiny! But is it modern?*** I went as far as to suggest that for any system to be considered modern, it might all come down to the combination of Total Cost of Acquisition (TCA) and with it, utilization of industry standard, open, commodity building blocks. Access to a large pool of developers is important too and with that, the recognition that modern systems support a variety of popular languages and frameworks. Few today can mount much of an argument to suggest NonStop isn't modern and with that proposition firmly put to bed, the marketplace for NonStop systems is exhibiting early signs of rebounding as exemplified by the number of new orders for the entry level NonStop X system, the HP Integrity NonStop NS3 X1 system.

When it comes to the technology none stood out more brightly than Project YUMA – announced early this year but selectively introduced to a few key partners much earlier. Essentially, this will bring NonStop into greater consideration in areas where previously it may have escaped the attention of CIOs. YUMA? It's going to make it so much easier to deploy hybrid systems in the future that include NonStop even as they allow transactions to execute on the most appropriate cost effective system. In my column, Back for more … that is included in this issue of The Connection I was moved to write of how in a classic case of "when they see it, they will know what to do," NonStop management pushed through this project and for me, (Project YUMA) is really a big highlight of the year that cannot (nor should it) be ignored. Make sure all our CIOs grasp the significance of this capability and the extension to NonStop opportunities it represents. In other words, there are instances where all the market research in the world may not help you, so go ahead, build it and yes, they will come!

It's not very often in the history of NonStop that its technologists and executives have made such a bold move and from the little post-YUMA research I have done (and yes, the sample size is small and limited to just the community members I have talked to), I have a strong sense that HP is onto a winner. There have been a couple of well-documented instances of solutions vendors building their own hybrid systems but now, it's going to be a whole lot easier to do. HP Product Management cautions the community about the value that comes with the API they are providing and that, if you aren't familiar with the IB verb set you may not want to consider and yet, in talking to the NonStop vendor community, I expect to see more than a few of them drilling down deep into verb usage as that is what they do best. No matter what is chosen – verbs or API - expect to see frameworks and tools becoming available shortly that will further ease the usage of NonStop in hybrid configurations housed in a common chassis!

For some time now I have viewed the partnerships within the vendor community as, at best, challenging. It's proven to be very difficult to get vendors to cooperate in any way and for any one vendor to "pre-req the deployment of another vendor's product," a limiting factor when it comes to sales. No vendor feels comfortable ever mandating a product or feature from anyone other than themselves. Even at the height of their influence in the marketplace, Insession Technologies never attempted to integrate the products in their portfolio as the intricacies of testing grew too difficult to manage. However, with more and more vendor products appearing on the HP NonStop price book, former preconceived notions are beginning to fade, with more vendors growing comfortable with working with other HP partners whose products can be bought directly from HP.

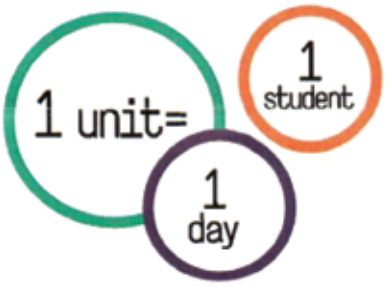
The availability of products on HP price book from Idelji, comForte, Gravic and so forth means that other vendors

Hewlett Packard Enterprise

HPE Training Credits for NonStop Services (HF388E/A1)

Hewlett Packard Enterprise Education Services [US/Canada]

With HPE Training Credits for NonStop Services, purchasing and managing training is easier than ever. Be sure to include NonStop Training Credits with your order.



With HPE Training Credits for NonStop Services, one unit is equal to one day of training for one student in an open enrollment training course. NonStop Training Credits are priced at $700 USD/ $770 CAD per unit. Exceptions may apply.

HPE Training Credits for NonStop Services (HF388E/A1)

Benefits

- **Flexible**—Attend training as you need it. There is no need to know student names, dates or even locations in advance.
- **Practical**—Lock in budget dollars by pre-purchasing Training Credits while funding is available.
- **Convenient**—Minimize the time and effort spent on purchasing and managing training. A single purchasing transaction sets up your HPE Training Credits. Once your Training Credits are in place, students simply enroll for classes as needed—no additional funding, purchase orders or approvals are required.

Features

- Training Credits are valid for 12 months from the date of activation.
- HPE sends a welcome letter with each purchase—so you will know exactly how to select courses, enroll in classes, and redeem your Training Credits.
- Training Credits can be used to attend any training offered by HPE Education Services in the US or Canada, including open enrollment classes at HPE Education Centers, live, virtual, instructor-led classes delivered via VILT, and dedicated onsite classes.
- Training Credits units are priced at $700 USD/$770 CAD per day—the cost for one student to attend one day of public, open enrollment HPE NonStop training.
- If you choose to use HF388E (Fixed)/HF388A1 (Flexible) outside of the NonStop curriculum, then the dollar value of the courses will be redeemed rather than the number of days.

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and partners can focus on their core competencies – smaller vendors like DataExpress now can rely on SSL from comForte being present even as much bigger solutions vendors can opt to spend less time and resources in areas where HP has "plugged the hole". I expect this level of cooperation to only grow in the coming months as HP NonStop Product Management relies even more greatly than at any time in the past on its thriving vendor community. But there's still a lot of room for improvement here and the barriers to cooperation among the vendor community haven't fallen completely. Competition still thrives and in nearly every segment where a third party thrives there are frequently now two or more competitors and while that's good news for the user community, when it comes to the NonStop marketplace overall, I see further allegiances forming in the new year whereby collections or groupings of vendor products leveraging each other will likely become more prevalent.

The end of year celebrations are now only a matter of weeks away and with the celebrations that are bound to be taking place everywhere on the globe, will be hard to miss. Yes, the work lives of all of us working with NonStop have also been given a reason to celebrate. Other platforms may be trending down in ways few of us may have anticipated even a year ago, but NonStop isn't among those in free-fall. The resilience of the community is undeniable. Indeed, with the investments being made by HP and the NonStop community, its value to markets of all sizes is beginning to attract a new generation of advocates. It still may be premature to pop the champagne corks or set off the fireworks but how we are ending this year is so much better than in times past and with that, perhaps a small toast is in order. To greater market participation by NonStop as we look forward to a prosperous new year! 2015 has proved to be an exciting turning point for everyone in the NonStop community!

Richard Buckle is the founder and CEO of Pyalla Technologies, LLC. He has enjoyed a long association with the IT industry as a user, vendor, and more recently, as an industry commentator. Richard has over 25 years of research experience with HP's NonStop platform, including eight years working at Tandem Computers, followed by just as many years at InSession Inc. and ACI Worldwide.
Well known to the user communities of HP and IBM, Richard served as a Director of ITUG (2000- 2006), as its Chairman (2004-2005), and as the Director of Marketing of the IBM user group, SHARE, (2007-2008). Richard provides industry commentary and opinions through his community blog and you can follow him at www.itug-connection. blogspot.com, as well as through his industry association and vendor blogs, web publications and eNewsletters.
The quotes come from some of Richard's clients including HP, Integrated Research, comForte, DataExpress, WebAction, Inc., InfraSoft, and OmniPayments, Inc.

From applications to infrastructure, enterprises and governments alike face a constant barrage of digital attacks designed to steal data, cripple networks, damage brands, and perform a host of other malicious intents. HP Enterprise Security Products (ESP) is the answer to these threats and attacks

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HPE Integrity NonStop X Introduces the NS3 and More

Mark Pollans >> **WW Sr. Product Manager** >> Hewlett Packard Enterprise

Overview

Two years ago, Hewlett Packard Enterprise (HPE, formerly known as Hewlett-Packard Co.) announced a strategy to bring the HPE Integrity NonStop solution to the Intel® x86 architecture (x86). This announcement generated tremendous excitement throughout the IT industry including industry analysts, the press, partners and customers alike. One year later on 30 March, 2015, HPE announced the availability of the HPE Integrity NonStop X NS7 X1 (or NS7 for short), the first system in this new **NonStop X** product line based upon x86. Bringing the NonStop environment to x86 represented a major milestone in the evolution of the NonStop solution. The NS7 product announcement made our 'NonStop on x86' strategy a reality as we redefined continuous availability and scalability for x86. The introduction of the NonStop X systems based upon Intel Xeon® processors, along with the industry-recognized HPE Integrity **NonStop i** systems based upon the Intel Itanium® architecture, provides customers with the flexibility and choice of an unparalleled portfolio of HPE Integrity NonStop fault-tolerant systems for high-value business workloads and customer-facing applications - each with the same NonStop fundamentals.

HPE delivered the software for the NS7 through a new L-series software product line. The first release delivered the NS7 with all the NonStop fundamentals of fault tolerance, availability, and scalability that our NonStop customers have come to expect and depend upon from HPE NonStop. Five months later on 17 August, HPE announced the first NonStop X (x86-based) entry-class system dubbed the HPE Integrity NonStop X NS3 X1 (NS3 for short). Bringing the NonStop X entry-class product to the x86 architecture represents yet another major milestone in the evolution of the NonStop X portfolio. The NS3 product announcement rounds out our 'NonStop on x86' strategy as we continue to redefine continuous availability and scalability for the Intel x86 architecture. Along with the NonStop X entry-class platforms, HPE announced some exciting new features for the NonStop X portfolio (see the Additional new NonStop X features section below).

Now shipping (as of September), the NS3, together with the NS7, create a robust portfolio of NonStop systems using x86 chips. These NonStop X systems, alongside the industry-recognized HPE Integrity NonStop i systems, each with the same NonStop fundamentals, continue to provide customers with the flexibility and choice of an unparalleled portfolio of HPE Integrity NonStop fault-tolerant systems. HPE is delivering the software for the NS3 and the NS7 through the NonStop OS L-Series RVU; the same software runs on both platforms. The L15.08 version of the NonStop OS brings to market both the NS3 platform and new NS7 features (see figure 3).

Inside the NS3

The new NonStop X entry-class systems (NS3) are packaged in preconfigured, easy to customize bundles and support both two and four NonStop CPU configurations per system. Memory sizes of either 32GB or 64GB per NonStop CPU are supported with a total single system (node) maximum memory capacity of 256GB (see figure 3). The NS3 supports specific configurations of up to eight entry-class I/O controllers for connectivity to SAS drives including Solid Sate Drives (SSDs) for internal storage, SAN attached storage (e.g. HPE XP7) and tape via Fibre Channel. The NS3 also provides industry standard networking with Gigabit Ethernet.

Leveraging some of the NS7's building blocks, the NonStop X entry-class systems (the NS3) are based upon the HPE BL460c server blade using Intel Xeon® E5-2600 v2 series of microprocessors. These blades are housed in a standard HPE c7000 enclosure specifically configured for the NonStop entry-class systems. This is the first NonStop entry-class system designed around the c7000 infrastructure.

Similar to the NS7, the NS3 uses our new system interconnect based upon industry standard InfiniBand (IB) 4X Fourteen Data Rate (FDR) running at 56Gbps. This IB infrastructure provides tremendous interconnect capacity among

Figure 2 - The HPE Integrity NonStop X NS3

the NonStop CPUs and to the direct-attached I/O while also considerably reducing system interconnect latency.

Another feature introduced with the NS3 is entry-class I/O controllers for communications and storage, which we refer to as Entry-class CLIMs. These Entry-class CLIMs leverage the I/O architecture from the NS7 and the NonStop i (Itanium-based) NonStop systems for cohesive I/O connectivity across all current Integrity NonStop platforms. The number of CLIMs that can be connected to a NonStop X entry-class system has been increased[1] to a maximum of eight per system.

The new Entry-class CLIMs have been specifically designed to work exclusively with the NS3 systems. Similar to the NS7, the NS3 supports three different models of the Entry-class CLIMs: the Entry-class IP CLIM, the Entry-class Storage CLIM, and the Entry-class Telco CLIM.

The Entry-class IP CLIM provides Gigabit Ethernet (GbE) connectivity with speeds up to 1 Gbps.

The Entry-class Telco CLIM uses similar connectivity to provide support for the M3UA, Diameter, and Session Initiation Protocol (SIP) Telco protocols.

The Entry-class Storage CLIM provides drive and tape storage connectivity. Up to one-hundred Internal SAS drives (including SSDs) can be directly connected to the NS3 Entry-class Storage CLIM. The Entry-class Storage CLIM also provides Fibre Channel connectivity for SAN attached storage (e.g. the HPE XP7 Storage) and tape storage.

Additional NonStop X features

The introduction of the NonStop X entry-class product, the NS3, is a significant milestone by itself, however there also are a number of significant new features. For the first time in the history of NonStop, HPE has introduced and made available software core-licensing on an entry-class product. You can purchase an NS3 with a 1-core software license today and then upgrade to a 2-core software license anytime within the system's lifetime and do so in the same system footprint without hardware changes or downtime (see figure 3) . If you were to take advantage of this upgrade from an NS3 1-core software license to an NS3 2-core software license, you could nearly double[2] the performance capacity of your NS3.

While the NS3 was getting increased flexibility with the software core-licensing feature, HPE added similar features to the NS7. Originally, the NS7 was released with the L15.02 RVU and came with a fixed 4-core software license. With the L15.08 RVU that runs on both the NS3 and NS7, an NS7 can now be software licensed for 2, 4, or 6-cores. On the NS7, upgrades are supported from 2- to 4- or 6-core software licenses and from 4- to 6- core software licenses. A customer who has an NS7 running NonStop OS L15.02 can upgrade to L15.08 and maintain the same software core-licensing count of 4-cores or they can also take advantage of this new feature and enable two additional cores per NonStop CPU by relicensing the software at 6-cores instead of the previous 4-cores. As with the NS3, the NS7 can be upgraded to a higher core level (if available) to increase the system's performance capacity at any time within the system's lifetime and in the same system footprint without hardware changes or downtime. Upgrading core-licensing counts is an online action.

Another new and key feature recently introduced for the NonStop X NS7 platform is the NonStop X Cluster Solution (NSXCS). NonStop systems are well-known for supporting sophisticated out-of-the box clustering solutions that simplify deploying applications on a fault-tolerant, share-nothing system that scales up to 16 CPUs. By clustering individual NonStop X NS7 systems, customer can create a single system image for a large processing entity with potentially up to hundreds of CPUs distributed on up to 24 systems (nodes).

HPE Integrity NonStop X systems
Powered by Intel Xeon E5-2600 V2 series processors

Feature	Nonstop X NS3 X1	NonStop X NS7 X1
NonStop CPUs per system	Minimum 2, maximum 4	Minimum 2, maximum 16
Software core-licensing	1 or 2-core software license	2, 4, or 6-core software license
RAM	Per CPU: • Minimum 32 GB, maximum: 64 GB Per system: • Maximum: 256 GB	Per CPU: • Minimum 64 GB, maximum 192 GB Per system: • Maximum: 3 TB
NonStop OS	L-Series	L-Series
System Interconnect	4X FDR InfiniBand	4X FDR InfiniBand
Clustering	Expand-over-IP	Expand-over-IP NonStop X Cluster Solution
I/O controllers (CLIMs) Ethernet	Maximum: 8 1 GB Ethernet (1 GbE)	Maximum: 56 10 GB Ethernet (10 GbE)

Hewlett Packard Enterprise

Figure 3 - HPE Integrity Nonstop X System Comparison

[1] As compared to the HPE Integrity NonStop i entry-class systems
[2] Comparison of an NS3 1-core software licensed system vs. an NS3 2-core software licensed system based upon HPE's internal Order Entry benchmark. Customer application performance may vary

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- **HPE Shadowbase Data Replication** software enables active/passive, sizzling-hot-takeover (SZT), and fully active/active business continuity architectures to suit any application needs, providing rapid recovery from unplanned outages in times ranging from minutes to immediate, from disaster recovery to disaster-tolerant continuous availability.
- **HPE Shadowbase Data and Application Integration** software enables low-latency, real-time data and event distribution between heterogeneous systems, databases, and applications, providing data warehouse feeds and enabling rapid development of new business services to achieve competitive advantage.
- **HPE Shadowbase Zero Downtime Migration (ZDM)** software provides the means to eliminate planned downtime, keeping your business services online while routine system maintenance or complex and disruptive upgrades and migrations are performed.
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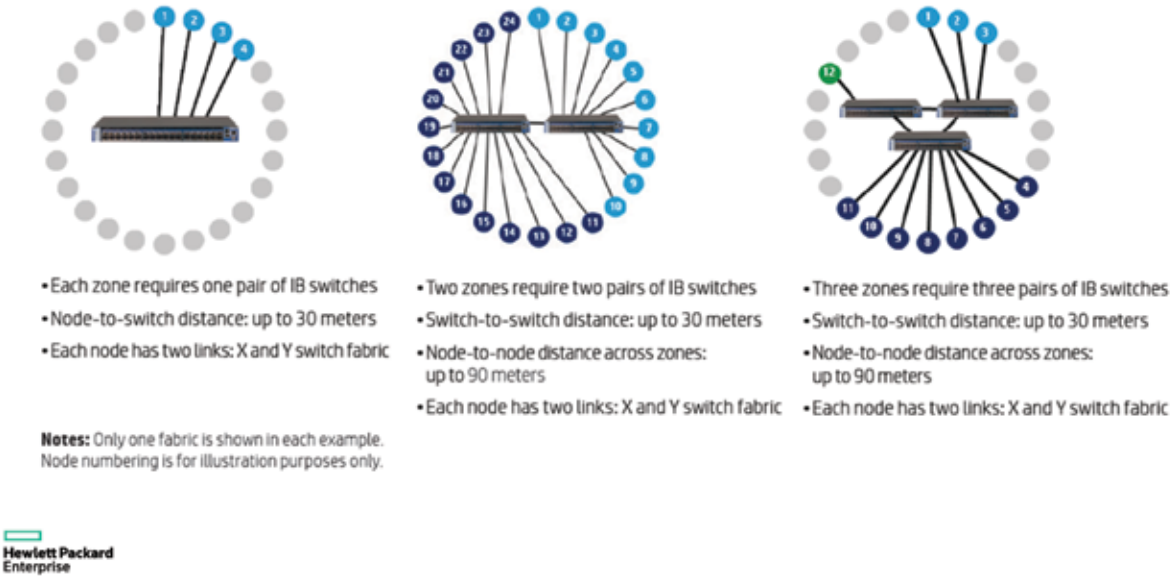

Figure 4 - NSXCS Sample Topologies

With the NSXCS solution, NS7 systems can be clustered through Expand via IB, the same technology that powers the internal system interconnect. The NSXCS is made up of both hardware and software components. A pair of HPE NonStop 4X FDR IB Cluster Switches provides the foundation of a fault-tolerant, dual-fabric, IB cluster solution for the NS7 system running the required L-Series L15.08 RVU or later. Each cluster can enable up to 24 nodes connected in one, two, or three zones with up to 16 NonStop CPUs per node for a cluster configuration of up to 384 NonStop CPUs.

Summary

This autumn, HPE added the first entry-class platform to its NonStop X (x86-based) product line. This represents a major milestone for the industry as HPE brings the NonStop fundamentals for fault tolerance, availability and scalability to an entry-class line based upon Intel x86 architecture. These entry-class platforms have been specifically designed for customers with: small to mid-sized enterprise businesses, stand-alone applications, and emerging markets; all whom expect and depend upon the same NonStop fundamentals as do customers of larger NonStop platforms.

At the same time, HPE also introduced software core-licensing for both the NS3 and the NS7 systems. This is the first time a NonStop entry-class system was designed for software core-licensing. With these new platforms and features, customers now have five platform levels to choose from in the NonStop X portfolio; the NS3 with either 1 or 2-core software licensing and the NS7 with either 2, 4, or 6-core software licensing.

Mark is Hewlett Packard Enterprise's (HPE) Worldwide Senior Product Manager responsible for the HPE NonStop systems portfolio, including the HPE Integrity NonStop X (Xeon® based) and the HPE Integrity NonStop i (Itanium® based) systems, drive storage (SSD, HDD, and SAN) and Business Continuity.
Most recently Mark introduced the NonStop X NS7 (high-end) and NS3 (entry-class) platforms. Prior to this, he orchestrated the release of two generations of the NonStop i BladeSystems and four generations of NonStop i entry-class systems. He continues to be a key interface to Enterprise Group core teams spanning various technologies.
Mark has years of experience at HPE (formerly known as Hewlett-Packard Company), largely in enterprise computing and networking. During his tenure at HP, he has held various management and engineering positions in R&D and marketing for hardware and software projects.

Back for More...

Richard Buckle >> CEO >> Pyalla Technologies, LLC.

It struck me while preparing for this year's final column that I could almost repeat what was published this time last year. Should you pick up a copy of the Nov – Dec, 2014, issue of The Connection you will find that I talked about the incongruity of it all, where I picked as a theme the implausibility of thinking that you can build a better fault tolerant system by adding more components, and with the passage of time I still run into those who argue vehemently that they can add enough redundancy to end any need whatsoever for NonStop.

And yet, with added components comes complexity and with complexity, problems. The sum of all these moving parts isn't greater reliability but less and this too has been the subject of numerous exchanges this past year – can we replace NonStop with clusters of industry standard components and leverage inexpensive open software middleware and solutions? New projects are challenging IT departments all the time and with these challenges there are always those who argue for something new but is new necessarily better? From every example I have seen put forward in social media the simple answer has been no, it's not turned out that way, or to quote the tag line of a series of commercials, not exactly!

This year we have seen the arrival of the NonStop X family of systems based on the Intel X86 architecture. There's been the original NonStop X offering, the HP Integrity NonStop NS7 X1 system that has now been joined by a lower cost, entry level system, the HP Integrity NonStop NS3 X1 system. Two members of a family that I anticipate seeing additional members added in time, but already doing more than enough to convince users that HP is making a serious investment in NonStop – a scenario that many of even the most fervent NonStop supporters had thought may never arrive. Only a few years ago it seemed that too much was stacked against further success of NonStop, so much so that its demise was being widely discussed.

And this is really the major highlight of the year. Not that we have the NS7 X1 and the NS3 X1, but that we have new NonStop systems at all. For as long as I have been following NonStop and providing posts and commentaries there were moments where I gave serious thought to whether I was writing in vain but this year we've seen a a turning point – not one, but two families of viable NonStop systems – the System i and the System X are proving popular to some of the biggest IT departments on the planet. The move to industry standard together with the push for greater support of open, even as the last bit of cost is squeezed from the product line, have proved that markets exist for NonStop systems.

But so much for sounding off and giving praise to NonStop, as deserved as it is, at this time of year. There's a far more serious side to these recent changes and it has to do with us, the NonStop community. In many enterprises the presence of NonStop isn't even on the radar screens of most CIOs – they have invested in the platform and there are mission critical applications dependent upon NonStop but that is not holding their attention. It's as if the decision to run NonStop has slipped from being of strategic importance to where it's more an operational reality. We run NonStop because it best meets the need of the solution we depend upon and it rarely / never gives us cause for concern. And yet, the absence of NonStop from the strategic goals of the CIO will eventually catch up with NonStop and for that scenario not to happen we, as a community, need to become a lot more vocal even as HP itself needs to develop programs to better ensure visibility of NonStop is achieved. It's no longer acceptable to be viewed as the hidden asset or the quiet achiever.

One of the more important aspects of the NonStop X family of systems is that across it's cabinet is a fairly sizable brushed nickel badge advertising that yes, indeed, this is a NonStop system. And it's quite readable by anyone walking past the system – a first for quite some time. The branding of NonStop has been less than ideal in the past, but now the latest NonStop systems where a badge and there's no escaping the presence of NonStop within the data center. And this is a very good thing in my opinion – a place to start in making sure the rest of IT recognizes the presence and indeed role of NonStop is to make it hard to miss! Getting the badge of NonStop once again, front and center of the new NonStop X chassis, is a real achievement and probably overlooked by many in the NonStop community and yet, it's simple symbols like this that go a long way in reinforcing just how committed HP is to NonStop systems.

It would be missing an opportunity not to praise all those who worked to bring the Yuma project to where it is today – hybrids are everywhere, whether CIOs are talking clouds or simply vast collections of servers in giant server farms. Making it really easy to plug NonStop into the world of Windows and Linux as Yuma is aiming to do is a godsend for the community as there's going to be a growing number of real world use case scenarios emerging in the coming months that will surprise many of us. The real news here is that HP management stuck to the guns and pushed through the Yuma project even when support in the marketplace could only be described as thin – in a classic case of "when they see it, they will know what to do" NonStop management pushed through this project and for me, this is really a big highlight of the year that cannot (nor should it) be ignored. Make sure all our CIOs grasp the significance of this capability and the extension to NonStop opportunities it represents.

And with that, like you, I too am going to be excited to be participating in the final event of the year, the NonStop Technical Boot Camp, and I am already imagining what more we will hear from those HP executives participating. However, there's little that can be said even now that can detract from just how significant 2015 has been for the NonStop community and I am looking forward to even more excitement to come – 2016 is only weeks away!

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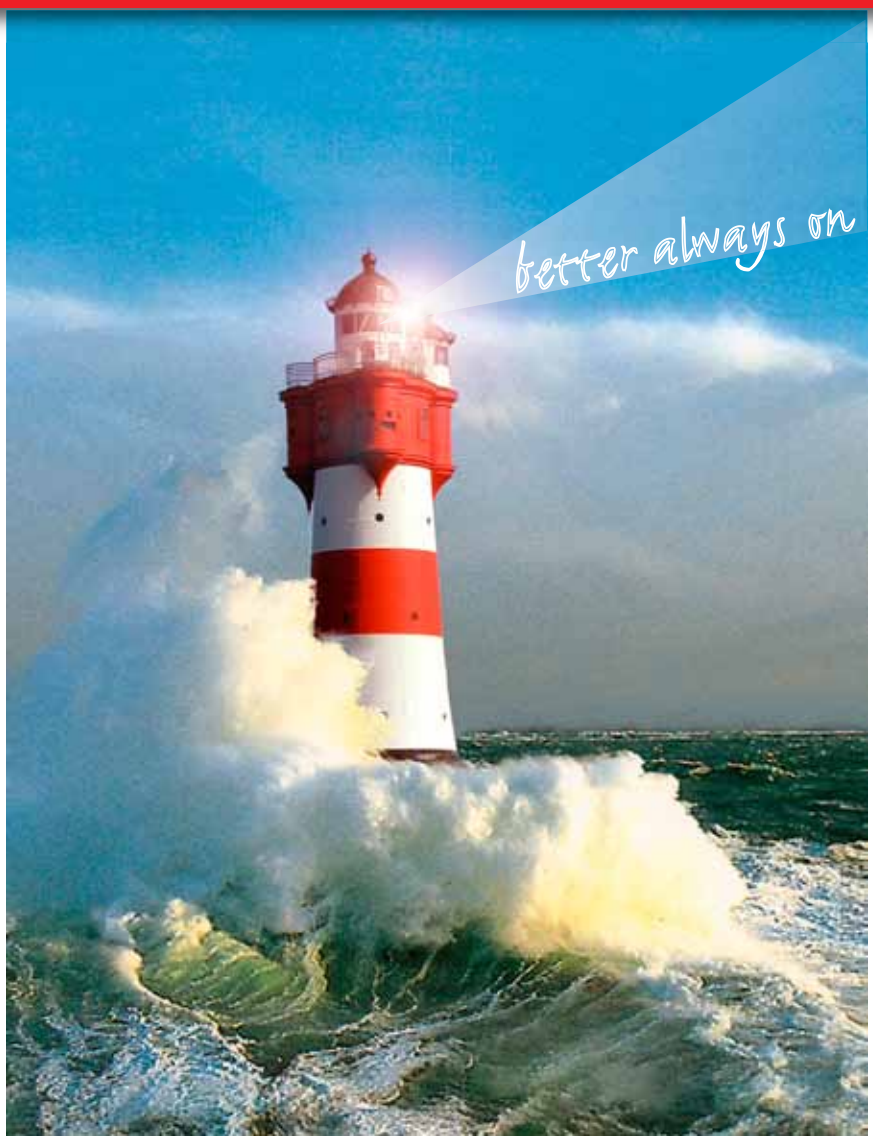

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