# BITUG SPRING 2015 NEWSLETTER

www.bitug.com

**This year's Little SIG is on Tuesday 12th may. It will be held on board one of the largest and most powerful light cruisers ever built: HMS Belfast.**


## NONSTOP DIARY DATES

**BITUG Little SIG**

12th May

HMS Belfast, London

**NonStop Technical Boot Camp**

16-18th Nov

Fairmont Hotel, San Jose, CA, USA

**BITUG Big SIG Education Day**

3rd Dec, HP Offices, Wood Street, London

**BITUG Big SIG**

4th Dec

Trinity House, London

## CHAIRMAN'S CHAT

### Welcome to the Spring 2015 BITUG Newsletter

Welcome to the BITUG Spring newsletter. After the successful events of last year, we have a new venue this year. On Tuesday the 12th May we will be hosting the Little SIG on HMS Belfast. This ship is a museum run by the Imperial War Museum and is moored on the south side of the Thames between London Bridge and Tower Bridge. We have access to three rooms not normally accessed by the Public. The Ward room and Ante room, this is where we will have the meals and tea/coffee. The Ship's Company Dining Room will be where we will be doing our presentations.

We have been working on a full agenda and expect to have more details about the new X86 system from HP for the NonStop. The agenda for the event is elsewhere in this newsletter, as always you can...

**...get the latest Little SIG Agenda by looking on our website where the link to the registration page can also be found.**

On the 4th December we will be running our Big SIG, this is so that we can follow on from the HP Discover being held in Docklands (London) on the 1st to the 3rd December, we will be returning to Trinity House for this event as it has good transport links to HP Discover event. Further details again can be found on WWW.BITUG.COM as well as other international HP NonStop events.

Hope to see you on the 12th May at HMS Belfast.

Neil Barnes
Chairman,
BITUG

# BITUG LITTLE SIG

## 12th May 2014
## HMS Belfast, London

The Little SIG is free to attend for all BITUG members. This year's event is one not to miss thanks to it happening on board the Imperial War Museum HMS Belfast.

To register for a ticket you need to visit www.bitug.com and follow the link on the Little SIG page.

## About HMS Belfast

Built Harland & Wolff of Belfast in 1936, HMS Belfast was immediately called into service patrolling the northern waters in efforts to impose a maritime blockade on Germany. However, disaster struck after only two months at sea when HMS Belfast hit a magnetic mine. There were few casualties but the damage to her hull was so severe she was out of action for three years.

On rejoining the home fleet in 1942 she was still the largest and most powerful cruiser in the Royal Navy and most importantly she was equipped with the most advanced radar systems. HMS Belfast played a crucial role in protecting the arctic convoys, Russia's supply route throughout the war. Most notably in her role during the Battle of North Cape which saw the sinking of the German battle cruiser Scharnhorst. HMS Belfast remained protecting the arctic convoys until 1944 when she spent five weeks supporting the D-Day landings and reportedly fired one of the first shots on D-Day itself.

After the Second World War HMS Belfast played an active role in the Korean War from 1950-1952 working with other Allied Forces to support the retreating American and South Korean troops. Her final years were spent performing peace-keeping duties until she was retired from service in 1963.

As early as 1967 the Imperial War Museum had been investigating the possibility of preserving a Second World War cruiser. This led to the formation of a trust, headed up by one of HMS Belfast's former captains Rear-Admiral Sir Morgan Morgan-Giles. After some years HMS Belfast was brought to London opening to the public on Trafalgar Day, 21 October 1971. Today she is the last remaining vessel of her type.

## MINECRAFT ON NB56000!

**Make sure you visit the Anti room to chat to the sponsors/ vendors and to have a taste of Damian's various Minecraft worlds running on an NB56000 via VPN to HP Germany!**

## Agenda

This agenda is subject to change. For the latest agenda and event news please visit www.bitug.com

| Start Time | End time | Presentation | Presenter |
|---|---|---|---|
| 09:30 | 09:40 | Welcome and AGM | Neil Barnes |
| 09:40 | 10:40 | The New IT & Futures | Clive freeman |
| 10:40 | 11:20 | IBM MQ Update | David Ward/John Kinchen |
| 11:20 | 11:40 | Coffee break | |
| 11:40 | 12:20 | Shadowbase vs RDF | Dave Sly |
| 12:20 | 13:00 | Samba on HP NonStop | Dave Smith |
| 13:00 | 14:00 | Lunch break | |
| 14:00 | 14:40 | HP Update | Iain Liston Brown |
| 14:40 | 15:20 | Web services | Damian Ward |
| 15:20 | 15:40 | Coffee break | |
| 15:40 | 16:20 | NB -> NX differences | Vince Cooper |
| 16:20 | 16:30 | Roundup and Prizes | Neil Barnes |

## Presentation Previews

Clive Freeman has been in many roles at HP and in recent years was the Account General Manager for Lloyds Bank. Clive is new Chief Technical Officer for HP's UK&I Enterprise Group which consists of servers, storage, networking and software. Clive's keynote will talk about the general industry directions for the new style of IT in the areas which make up HP Enterprise Group and will be on the radar of CIOs for the future.

Keith Charters and Vince Cooper are well known to the NonStop community having been HP Technical Consultants providing NonStop services for many years. They focus on installations and configuration, communications and also backup solutions. Keith and Vince will provide an summary for the NB to X differences between NonStop i and NonStop X systems including J and L series operating systems.

Dave Sly is well known in the NonStop community as an HP Technical Consultant delivering Performance and Tuning and Business Continuity DR services over many years. Dave will be talking about HP Shadowbase Replication and Integration solutions and contrasting with RDF.

BP's Dave Smith has spent over 20 years working on NonStop as a developer, tester, system and project manager. Currently the Technical manager of BP Oil's multi-national fuel card back office system. His 'Samba on NonStop' presentation will give a guide to the configuration and use of the OSS based file sharing system now pre-installed on NonStop.

Iain Liston-Brown is the HP Team Leader for NonStop Presales Consultants in EMEA. Iain with be providing a NonStop update with hardware and software roadmaps.

IBM will follow up on the previous BITUG meetings with the latest update on IBM Websphere MQ 8 for HP NonStop and support for existing versions of WMQ on HP NonStop. John Kinchen has worked at IBM for over 30 years in a variety of development, test, project management and customer-facing roles across multiple platforms and products. His current role is as the development manager for IBM MQ Light, MQ NSS & MFT. Although. David Ward has worked in IT for 30 years in systems design and development roles on IBM mainframes and distributed systems. He has been with IBM for 11 years in MQ development and is the architect and development lead for MQ on HP NonStop.

Damian Ward is the NonStop Architect at VocaLink and current vice chair for BITUG. Damian will be discussing the use of RESTful API's, JSON and Web services, how and why corporations are using them and how this relates to HP NonStop. Damian will also discuss running a standard Minecraft server on the HP NonStop Java platform. The Minecraft demo will be available to view and play at Little SIG via a VPN link into the HP demo centre Germany.

BITUG will be voting on the proposed change to the bylaws as part of the Little SIG conference.

# WHITE PAPERS

### IMPLEMENTING A MOBILE STRATEGY USING YOUR MISSION-CRITICAL DATA

Get familiar with trends in mobile and learn how to leverage your NonStop data to implement or improve your company's mobile strategy. This white paper outlines several trends in technology and discusses how you can easily prepare your NonStop department to take advantage of new technology.
www.nuwavetech.com/mobile-strategy-white-paper

### NONSTOP SQL DATABASE MANAGEMENT

As a Database Administrator (DBA), it can become overwhelming to think of all of the tasks I am responsible for; designing databases, extracting data, managing performance (both programs and tables), not to mention I have to do all of this manually. If your job is anything like mine, you know a DBA is always being pushed to do more in less time which makes for stressful days.

This white paper takes a look at new database tools and technologies allow you to do more in less time, reduce your error rates, eliminate the need to remember the exact syntax to accomplish rare operations and you can automate those repetitive, tedious and complex tasks. Read the full paper at www.bitug.com/s/NonStop-SQL-Management.pdf

# BITUG BIG SIG 2014

## Post event review

It seems like such a long time ago now, although looking outside the window this March day it does seem more like winter than ever and brings memories of a very snowy BIG SIG back in 2011.
Fortunately BIG SIG 2014 was free from blizzards delayed flights and some of the other knock on effects of a British stow storm.

In a departure from recent years BIG SIG 2014 was held at the 1 Great George Street London, this is a fantastic venue and general feedback was very good.

## Education Day

(Modernizing backup and archiving approaches on NonStop)
The Education day hosted by HP in their Wood Street offices and presented by given by Phil Menzies of ETINet. Phil is a Product Manager with ETINet and gave a deep dive Education day relating to the ETINet range of virtual tape products and integration into dedup technologies that have recently been added to the HP NonStop portfolio.

## Big SIG Conference and Vendor Fair

"The future of NonStop…" – Keynote Mark Pollans, Worldwide Senior Product Manager, Mission Critical Systems, Hewlett Packard. Mark presented (simultaneously with HP's flagship event, Discover, in Barcelona), the very latest news on the NonStop move to an X86 (Xeon) architecture and some interesting ideas for the NonStop product roadmap related to HP converged infrastructure strategy. Mark presented a compelling and strong roadmap for the NonStop product line. With the removal of the "Itanium" issue NonStop can no longer be considered a platform without a credible long term roadmap, well done HP.

"The peaks and troughs of building an effective Capacity Management Process" - Darren Coffey, Capacity Manager, Worldpay. Capacity Management isn't just about presenting pretty CPU and DISK graphs. It's a correlation of networks, multiple platforms, tools (and their limitations), data sources, people expectations, reports, recommendations, pro-active engagement and translation of IT terminology into the Service language that Business stakeholders understand. Daren presented the human and stakeholder management journey that must be followed by capacity managers when considering not just the HP NonStop but the enterprise as a whole.

"Migration of Lloyds Banking Group ATMs from NS16200 to NB56000 including a DC move" - Neil Barnes Senior Infrastructure Delivery Manager, Lloyds Banking Group Peter Booth Technical Specialist, Lloyds Banking Group. This session described Lloyds product ATM system migration from the NS16200 systems to NB56000C2 systems and how also performing a DC move can help the process especially when given an unmovable date by the board.

"Nonstop vs Mission Critical Linux TCO" - Iain Liston-Brown, Presales Consultant, HP. The session will considered the architectures and cost of ownership for purchase and support when running the same OLTP payments applications on either a Mission Critical Linux cluster or on HP NonStop infrastructures. Iain presented an eye opening TCO presentation that challenged the often touted but seldom substantiated NonStop is expensive dogma.

BIG SIG Member feedback received…
"I liked the new BITUG venue very much and was a nice location, being near the Houses of Parliament. Lots of space for presentations. Was very good and attended nearly every presentation, plus having Mark Pollans there was nice as he's always interesting."


### One Great George St...

...was designed by James Miller and is the headquarters of the Institution of Civil Engineers (ICE), the world's first professional engineering body.

It first opened on Monday, 25th October 1910 and celebrated its 100th birthday in 2010 when a time capsule and plaque were revealed to commemorate the centenary.

# WILL THIS HYBRID FLY?

## BY RICHARD BUCKLE

In my last article for this publication I wrote of NonStop X, InfiniBand (IB) and Hybrids, and with the first model of the NonStop X family released (by the time you read this article), the picture for NonStop is a lot clearer. When you consider architectures, with its fortieth birthday firmly in the rear view mirror NonStop has proved not just its popularity, but it's relevance as well. By my own observation, who would have guessed after the passing of all these years that it would be NonStop that's left standing when you look at all that was on offer in the 1970s. Remember the original IBM mainframe S/360 architecture brought to life by the legendary Gene Amdahl?

I believe I may have covered this before in posts or commentaries to other publications, but for all the years I lived in Australia – in the lovely suburb of Lilly Pilli tucked away on the shores of Port Hacking, I had an office that was adorned with some interesting artifacts. Working with my father who had both electronic knowledge as well as construction skills, we mounted the front console panels from an IBM 360/65 (from QANTAS, no less) as well as from an IBM 370/138 (from 3M) that I purchased from a 3rd party leasing company as these consoles headed out the door for scrap. Total purchase price was a carton of Victoria Bitter – 24 cans of beer in all. Not a bad trade? Well, when it came time to sell the home in Lilli Pilli, it proved almost impossible to remove the consoles so I left them in place – goodness knows what the new owner made of them, but as I was flying to California, there was no way I was going to pay to air freight them to my new residence in Cupertino. I truly valued these reminders of systems past, but only so much – perceived value can fade pretty quickly.

On the other hand, in my Boulder home the consoles may have ended up looking right at home. In terms of scale and sheer complexity, nothing from the NonStop world provided the same appeal and so, after all these decades, I have nothing to remind me of earlier NonStop systems. And perhaps that is not all bad as NonStop was never into the flashy presentation that IBM mainframes exhibited. Instead, NonStop was all adjunct to something else – networked to ATMs, POSs, sensors and alarms, and even time clocks, not to mention those vulnerable IBM mainframes with their flashing lights and rows of toggle switches. There may have been occasions where a company has committed to an all NonStop solution, but they have been the exception, as in almost all instances NonStop systems have occupied a position best categorized as a transaction switch, or an intelligent hub.

The news from HP NonStop development of an agreement with Gravic for their ShadowBase product offerings has intrigued me, to say the very least. With a background in GoldenGate I had an appreciation for all the benefits data integration and replication products could provide, particularly when different database implementations were involved. However, following Oracle's purchase of GoldenGate it seemed almost inevitable that HP NonStop development would align more closely with another vendor and the choice of Gravic seems more than ideal. With bi-directional replication between NonStop systems and NonStop and Oracle databases as well as Microsoft SQL Server, in addition to uni-directional replication to MySQL and IBM's DB2, ShadowBase helps cement NonStop as a switch or a hub in the eyes of many users.

However, this recognition is perhaps strongest among those NonStop users who are seeing the potential from deploying hybrid configurations featuring NonStop. Having data maintained on different systems and kept synchronized opens the door to better aligning application engagement with the needs to lower the overall costs of transaction processing. In today's world, where transaction volumes are climbing at escalating rates, not all transactions have the same value to an enterprise. Many years ago, this was clearly demonstrated by the mix of NonStop with NS SQL/MX and Linux with My SQL at Sabre – a model known at the time as the look-to-book model. For every reservation made for airplane travel there were ten and often hundreds look-ups of flight schedules and processing on NonStop only made sense when the "purchase transaction" was initiated.

Having a replication capability that ensured data was kept synchronized across multiple, yet different, platforms was paramount to the success of this model and with ShadowBase a part of the HP NonStop product offering I believe we will see renewed interest in this model. But wait, there's more for those who see value in this model. For the past couple of months I have been involved with HP NonStop solutions architects as we revisited the potential of the InfraSoft maRunga product. A production version of the demonstration developed for HP Discover 2013, it was InfraSoft who stepped up to take the demo and implement its concept as a product, but the beauty of what it supports is only now beginning to gel with IT architects.

You may recall how the initial emphasis of maRunga was the cloudburst – being capable of detecting stress on a NonStop and wrapping transactions beneath a maRunga API, such that it could execute the transaction almost anywhere including Clouds. When the stress levels (think of Mother's Day and Flower purchases, Valentine's Day and Chocolate purchases and the sales that happen in the New Year) subside, the transactions offloaded to the Cloud would return to NonStop. So here's the twist – with HP providing hybrids – NonStop and Linux, say – and with ShadowBase keeping the databases in synch, not only do we have the data moving but the business logic as well and not just in an ad hoc or left to your own devices manner, but rather still with the oversight of Pathway (or BASE24) that now will allow instances of Pathway serverclasses to execute on nodes apart from NonStop. Cool?

And the point is twofold – as combinations of middleware become available to make hybrids a reality, then the cost of the overall solution can be fine-tuned to better meet financial criteria of an enterprise, even as a buffer is created that can ensure SLA "availability" is maintained despite workloads exceeding planned thresholds. But will this fly? Will this attract advocates and champions? Gartner has begun promoting the concept of the Payments Services Hub and almost everyone who has looked at what such a hub entails, believes NonStop is an ideal candidate for being the hub as described by Gartner. However, as the word hub implies, there are other systems likely to be involved, but Gartner leaves the door open as to how these apparent hybrids would function better than a giant homogeneous system. Well, with a combination of NonStop X and Linux, leveraging the new IB Switches and where ShadowBase and maRunga are deployed, stepping away from depending on a giant homogeneous system seems realistic and indeed, more than an ideal answer for what Gartner proposes.

Will it fly? It did for many years at Sabre even as the implementation included a considerable amount of home-grown technology, but today it will fly a lot more smoothly as a decade later middleware vendors have stepped up to providing productized solutions where before none existed. The announcement of the first model in the NonStop X family will certainly garnish a lot of attention but in the end, it will all come down to what we do with NonStop X that will sway enterprises to embrace NonStop on the Intel x86 architecture and I for one foresee a lot more attention being paid to some pretty clever, if not intriguing, middleware software options all of which will only help confirm their value for many more years to come.

# NEWS

## Redefining Mission Critical Servers for x86

From March 2015 HP has announced the availability of the HP Integrity NonStop X server family as the NonStop deliverable against HP's project Odyssey. Like previous generations of HP NonStop servers this is 100% fault tolerant from the most stringent SLAs for mission critical computing and near linear scalability.

The HP Integrity NonStop X server family will be initially introduced with a BladeSystem architecture utilising x86 Xeon Blades with 4 cores enabled. The blades will install into an HP C7000 BladeSystem enclosure with each Blade being a logical CPU. These Xeon x86 Blades are half height meaning a 2X increased density and 50% less data centre floor space requirements than previous NonStop servers with 16 CPUs in a single BladeSystem enclosure.

In addition the Blades support larger memory configurations (64GB, 128GB and 196GB per CPU) for improved application performance. Up to a 50% performance increase from previous NonStop server generations will enable higher transaction volumes to be handled. In addition to the adoption of Xeon x86 Blades the new Integrity NonStop X server uses a standard Infiniband interconnect. As well as removing any proprietary hardware components Infiniband has the advantage or a 25X bandwidth increase compared to previous generation HP NonStop servers based upon Intel Itanium and ServerNet. This increased bandwith allows the NonStop X server to take more advantage of Solid State Disks (increasing the number supported per CLIM) as well as providing 10GbE communications controllers. In addition more CLIM IO modules can be connected than to previous NonStop server generations increasing the scalability per server.

HP will continue to develop and offer the HP Integrity NonStop i (Intel Itanium) product line but NonStop X offers customer choice of mission critical, fault tolerant, scalable compute platform for the right economics.

"Since deploying the HP Integrity NonStop BladeSystem a few years ago, we have had 100% availability to keep our applications running. The system consistently delivers the performance, scalability, and end-to-end transaction integrity that are essential in our industry." — Gregor Pirc, IT Manager, Bankart

"When people look at the true value of HP NonStop, it's doing something very complex in a simple, elegant way. That's how NonStop has always offered continuous business value, and NonStop X will drive new levels of availability and efficiency for a new generation of users."— Marc Solomon, SVP of Sales, BPC Banking Technologies

## HP Shadowbase

HP Shadowbase is more than a disaster recovery solution, it is a data replication and integration solution. HP Shadowbase provides a solution to the following problems for IT Service Delivery teams and architects:

1. An asynchronous data replication solution between HP NonStop servers. This can be Active – Standby, Sizzling Hot Takeover or Active – Active
2. Data replication between HP NonStop and other databases (DB2, Oracle, MySQL, Sybase, SQL Server and flat files)
3. Data replication between non-NonStop platforms and their databases (Unix, Linux, Windows)
4. Data Integration with data transformation capabilities and application integration
5. Compare utilities

In the future HP Shadowbase will offer a revolutionary Active - Active data replication solutions between HP NonStop servers where the data replication is synchronous allowing Business Continuity with RPO = 0 and RTO = 0.

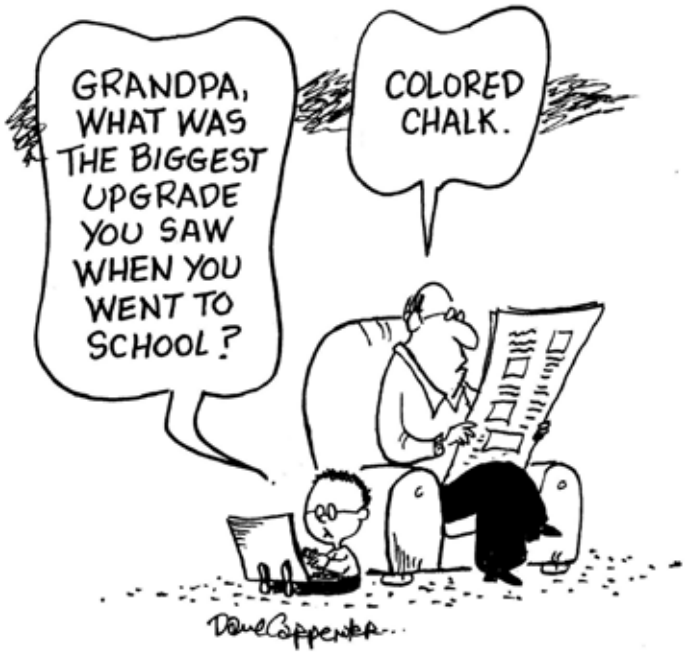
HP Shadowbase provides an excellent option for customers who need to go beyond the functionality of RDF and is fully supported by HP and HP Services and is available now.

## Development Tools

The latest version of the NSDEE IDE is 5.0 supporting Eclipse Kepler 4.3 and CDT 8.3. It has improved the integrated debugger and has functions such as FileOpens view. Local or Remote development is available for C/C++ and Cobol. Local development requires Native cross compilers. Java is supported natively by Eclipse. Eclipse supports plugins for solutions like revision management, code quality, security etc. Customers who already have the NSDEE IDE for Eclipse with the integrated debugger licensed can upgrade to version 5.0 at no additional cost through taking the latest SPRs.

## Voltage

HP has acquired the Voltage Security company and will integrate into the HP Software Division. Voltage produces security products that run on heterogeneous platforms and provides Format Preserving Encryption and Secure Stateless Tokenization which is relevant to all industries who need to protect sensitive personal data. This is particularly relevant to the Payment Industry to assist complying with PCI-DSS regulation 3.4. Voltage can be used via a non-disruptive intercept library or by using a software development kit to integrate into applications. The Xygate Data Protection tool already implements Voltage SecureData for HP NonStop servers.



BITUG
SPRING 2015
NEWSLETTER

# WILL THE 2015 LEAP SECOND BITE YOU?

## BY BILL HIGHLEYMAN

There is a reason that there will be no space launches on June 30 or July 1, 2015. Scientists do not want to risk a computer malfunction due to a leap second being added at midnight. The rate of the Earth's rotation is slowing down. The solar day is getting longer. To account for this, one second is added on occasion to the UTC time to synchronize it with the solar day. This is the leap second. Leap seconds were introduced in 1972. However, leap seconds do not occur with regular frequency. They cannot be predicted because of irregularities in the Earth's rotation. Nine leap seconds were added in the eight years from 1972 to 1979. No leap seconds were added in the seven years from 1999 to 2005. The last leap second was added on June 30, 2012. The next leap second will be added at midnight UTC on June 30, 2015.

During the time from 1999 to 2005 when there were no leap seconds, cloud services and multiprocessors came into existence. Many facilities were implemented by software programmers who didn't even know that leap seconds existed. The programmers were incapable of allowing for the fact that the addition of a leap second makes the time appear to go backward.

The 2012 leap second caused a myriad of problems, mainly with systems locking up and needing rebooting. Most sites running Linux had problems, as did those running Solaris. Web sites suffering Linux problems included LinkedIn, Reddit, Mozilla, Yelp, Gawker, and StumbleDown. Java also had its problems. Reddit suffered an outage with its database, Apache Cassandra. Mozilla had a problem with Hadoop, as did Gawker with its Tomcat server. Cassandra, Hadoop, and Tomcat are all built with Java. Perhaps the issue of most concern is whether Linux is now prepared for this year's leap second. Linus Torvalds, the creator of Linux, commiserates that:

> "Almost every time we have a leap second, we find something. It's really annoying, because it's a classic case of code that is basically never run and thus not tested by users under their normal conditions."

Red Hat has posted information on its Customer Portal concerning the readiness of its Red Hat Enterprise Linux (RHEL) operating system (https://access.redhat.com/articles/15145). It states in a January 10, 2015, blog posting that "Red Hat is aware of the upcoming June 30, 2015 leap second and is working to address it."

In 2011, Google came up with a unique way to handle leap seconds, a method that could be adopted by others. On the day on which the leap second is to be added, Google periodically adds one millisecond to its clocks. This means that it adds one millisecond every 86 seconds or so, there being 86,400 seconds in the day. Thus, when leap-second time arrives, Google's clocks are already in synchronism. This strategy worked fine for Google for the 2012 leap second. Google dubs this method leap smear.

The leap second is such an erratic and infrequent occurrence that it is likely that many systems have not been built to account for it. Those that have may not have been thoroughly tested for the condition. This is the rational for everyone to monitor their systems carefully as the leap second approaches at midnight on June 30th.

With the Earth slowing down, do we have to worry about its rotation stopping? Probably not. At its current deceleration, it will take about 2.6 billion years to stop, if it stops at all.

More information on the leap second is provided in the Availability Digest article, "2015 – The Year of the Leap Second," which can be found at http://www.availabilitydigest.com/public_articles/1002/leap_second.pdf.



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On behalf of the BITUG Committee we hope you find this edition of the Newsletter both interesting and informative. Your feedback is appreciated, if you would like to contribute an article for the Newsletter or have any suggestions on how it could be improved please do not hesitate to contact your Newsletter Coordinator Kevin Poultney: kpoultney@bitug.com