

the Availability Digest™

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--- achieving 100% uptime

June 2015

The digest of current topics on Continuous Availability. More than Business Continuity Planning.

BCP tells you how to *recover* from the effects of downtime.

CA tells you how to *avoid* the effects of downtime.

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We begin with a risk analysis for each application to determine its importance.

We help you to establish RTOs (recovery time objectives) and RPOs (recovery point objectives).

We then guide you into the proper availability configuration for each application.

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The Leap Second Has Landed

On Tuesday, June 30th, at midnight UTC, the leap second hit us once again. Leap seconds are added periodically and sporadically to make up for variations in the earth's rotational speed so that our clocks remain synchronized with the solar day. Leap seconds have only been added – a second has never been eliminated. So far, the earth is slowing down at an average rate of about two milliseconds per day. Over the last forty years or so, twenty-five leap seconds have been added to our clocks.

The last leap second was added on June 30, 2012. It seems that this should be an innocuous event that should hardly be noticed. But it can wreak havoc with systems that are unprepared for it. The last leap second caused many systems running Linux to lock up, and they had to be rebooted. Linus Torvalds, the creator of Linux, commiserated that “almost every time we have a leap second, we find something.”

Leap seconds can be a significant availability issue, and we are interested in covering these in our seminars on high availability. If you know of any problems that were caused by this year's leap second, please let us know.

Dr. Bill Highleyman, Managing Editor

Never Again

A Massive Attack on the U.S. Government

Starting in mid-2014, a sophisticated cyberattack began siphoning sensitive personal information from the computers of the U.S. Government's Office of Personnel Management. By the time the attack was discovered one year later, the personal information of an estimated 4 million current and former federal employees had been compromised.

OPM is tasked with conducting background investigations on all federal employees. It provides these checks not only for the U.S. Department of Defense but also for over one-hundred other federal agencies.

Though ardently denied, all technical fingerprints point to attackers in the People's Republic of China.

In testimony given before a congressional committee, the OPM director stated that it is not feasible to implement effective security on its aged systems. Yet Congress has not provided financing to OPM to replace them.

This problem is not OPM's alone. An audit last year criticized lax security at the Internal Revenue Service (which recently suffered its own breach), the Nuclear Regulatory Commission, the Energy Department, the Securities and Exchange Commission (SEC), and yes, even the Department of Homeland Security.

[--more--](#)

Best Practices

Boeing 787 Could Lose All Power

The 787 Dreamliner is The Boeing Company's newest addition to its fleet. Unfortunately, a software bug recently discovered by Boeing could cause the loss of all electrical power, potentially shutting down both engines.

A major goal of Boeing in the development of the 787 was to improve fuel efficiency. To achieve this objective, Boeing replaced many mechanical components with electrical systems to save weight. For instance, control services such as the ailerons, elevator, and tail that previously were pneumatically operated are now electrically operated.

Boeing recently discovered a software error in the generator control unit. The error could result in a total loss of electrical power to the aircraft with a consequent loss of airplane control. The condition occurs if electrical power is left on for 248 days without being turned off.

Fortunately, according to Boeing's records, the electrical power for all 787s currently in service has been turned off as part of routine maintenance approximately every four months. The problem of electrical power loss has never been experienced by a 787. The FAA has now mandated that the electrical power of all 787s be recycled at least every 120 days, and Boeing is correcting the problem.

[--more--](#)

Availability Topics

VSI Releases First New Version of OpenVMS

VMS Software, Inc. (VSI) has just released its first version of an upgraded OpenVMS operating system under its agreement with HP, reached a year ago. VSI's OpenVMS version 8.4-1H1 is compatible with HP Integrity servers running the Intel Itanium 9300 and 9500 processors.

In June, 2013, HP's roadmap indicated the ultimate termination of support for OpenVMS. With thousands of installations of OpenVMS supporting major applications, there resulted a worldwide outpouring of anguish from companies that simply could not replace these mission-critical applications. In response, HP made a U-turn and executed an exclusive license with VSI for perpetual support of OpenVMS.

According to Duane Harris, VSI's CEO, VSI is not focusing at this time on selling new licenses for OpenVMS. It is mainly selling upgrades to the existing customer base because there is only a limited market for new Itanium systems.

However, this will change dramatically when VSI ports OpenVMS to HP's x86 blades. With a significantly improved price/performance point and the move to commodity technology, the expectation is that the market for new OpenVMS systems will open up. Thanks to VSI, OpenVMS is alive and well and will be a force for the foreseeable future.

[--more--](#)

Recommended Reading

Targeted – *The Story of a Pathological Serial Work Place Bully*

Bullying doesn't just happen on the school ground. It happens in the workplace also. In his recently published book Targeted: *The Story of a Pathological Serial Work Place Bully* (June 28, 2015), Robert Richardson relates his frightening story of being bullied throughout his later professional career by a persistent and aggressive bully whom he names "Mario." Mario eventually ruined Richardson's career at three different companies.

Richardson is very open about his experiences, even to the point of identifying the companies at which the bullying took place – First Data Corporation, Westinghouse, and Federated Investors.

Richardson's book is a quick read – about an hour or two. It is an excellent book to read if you have ever been the subject of workplace bullying, whether minor or intense. Even if you think you may be a bully, it is worthwhile reading this book to try to get a feel for the other side of the picture. Furthermore, Richardson offers good advice if you should ever be the subject of bullying.

[--more--](#)

Tweets

@availabilitydig – The Twitter Feed of Outages

A challenge every issue for the Availability Digest is to determine which of the many availability topics out there win coveted status as Digest articles. We always regret not focusing our attention on the topics we bypass.

Now with our Twitter presence, we don't have to feel guilty. This article highlights some of the @availabilitydig tweets that made headlines in recent days.

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