the Availability Digest

www.availabilitydigest.com
@availabilitydig

@availabilitydig – Our March Twitter Feed of Outages

March 2015

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

$104 and 8 hours of Amazon's cloud computing is all it took to hack NSA's website

A group of researchers only needed $104 and 8 hours of Amazon's cloud computing power and, of course, FREAK to hack the NSA's website. The researchers used NSA's anti-encryption policies, which were the main reason for the newly disclosed internet flaw called FREAK, to make NSA's own website a guinea pig.

http://t.co/3gfqaU306l

www.fundinguniverse.com **- great site to research thousands of company profiles**.

William Foster founded Stratus in 1980. He worked @ HP in the '70s & declined an invite to join coworkers when they left to start Tandem

Computers made by Foster's rivals relied on *software* to provide their users with fail-safe operation. This had been the most economical way to design such a system, since parts, or hardware, had been very expensive. In the intervening years, however, the cost of hardware had come down. With this in mind, Foster and his cohorts set out to design a computer system that relied on duplication of *hardware* to ensure reliability.

http://bit.ly/18LsIwU

The Day the Sun Brought Darkness

On March 13, 1989, the entire province of Quebec, Canada, suffered an electrical power blackout. Hundreds of blackouts occur in some part of North America every year. However, the Quebec Blackout was different because it was caused by a massive solar storm.

http://t.co/EuXdjXqcHa

Tandem Computers, now HP NonStop: fault-tolerant, continuously available, slayer of single points of failure

The Threat Is Real: Billion Dollar NASA Mission To Study Blackout Risks to Power Grid

In mid-March, NASA launched its Magnetospheric Multiscale mission, a 2-year probe that will send four octagonal spacecraft flying in pyramid formation into the magnetosphere to record 3D images and collect massive amounts of data on magnetic reconnection. Magnetic **reconnection can create geomagnetic storms that send electric surges down to the earth's surface and into power grids, potentially shorting out those grids and causing blackouts.**

http://t.co/zDZEX6crG5

Ok, you're a cloud **expert. But do you know the story of why it's called "cloud" computing?**

Rewind to the early nineties: Computer scientists and engineers needed some way in their diagrams and slideshows to refer to "the network," that big grouping of computers and storage devices out there somewhere. In other words, they needed some way to refer to something that was, essentially, somebody else's problem. They settled on a "cloud."

http://t.co/Bd9nT1UoXp

Health Insurer Premera Blue Breached, 11M Customers' Information Exposed, Including Medical Records

On March 17th, Premera Blue Cross announced that a cyberattack may have exposed the private information belonging to its 11 million customers, including bank account numbers, Social Security numbers, birth dates, emails, addresses, phone numbers, and even claims and clinical information. The attack began on May 5, 2014, but it wasn't discovered until January of this year.

http://t.co/PLUiaY6rbS

Why Barclays Is Stockpiling 17 Filling Stations-Worth of Diesel in South Africa

Banks in South Africa, where the state electricity company is rationing supplies, are stockpiling fuel to run generators so that they can keep operating should power cuts worsen.

http://t.co/ZlXLbyIlBt

Report shows majority of cloud providers not hitting SLA targets

76% of organisations recently surveyed say at least one cloud vendor failed to meet their SLAs. Cloud services go down for a variety of reasons, from the preventable, such as a fat finger, to the less preventable, like adverse weather conditions. Yet if you claim a certain figure and can't match up to it, customers won't be happy.

http://t.co/qialFOeElf

The Dark Web's Top Drug Market, Evolution, Just Vanished

Evolution has simply, mysteriously vanished—with rumors swirling that its own administrators may have run off with many millions of dollars of its users' drug money.

http://t.co/e1YHcFFjh1

How Do Banks Maintain Financial Data? Mainframes

What sort of computer powers $23 billion of ATM transactions every year? Here's a clue: It isn't a white box server. Mainframes, with their speed, capacity, intelligence, and security capabilities, remain a core component of banking data practices.

http://t.co/0gluv4Nj0o

VMS Software (VSI) has assumed responsibility for official OpenVMS training from HP! Check out the course schedule

As of February 1, 2015, VMS Software assumed responsibility for officially providing training on using and developing on the OpenVMS platform. VSI has licensed all HP course materials. Additional original course content will be added by VSI and its partners going forward.

http://t.co/AxdLSrC45W

Revealed: the true scale of legacy IT

The scale of the reliance on legacy IT might shock you – 82.8% of health and services organizations in the U.S. run on legacy systems. In the UK, the world's largest centralised blood supply system runs on OpenVMS, an operating system that is over 30 years old. An estimated £480bn of UK government revenue is reliant on legacy IT, and 96 of the world's top banks run the S/360 descendants, with mainframes processing roughly 30 billion transactions per day.

http://t.co/3jVlpyZtKp

The Evolution of High Availability

The traditional view of designing for and achieving high availability systems has been concentrated on hardware and software as well as 'fat finger' trouble. However, there are other factors that are either not recognized, not understood, or even considered.

http://t.co/P9lvY70ArX

How This Battery Cut Microsoft Datacenter Costs By A Quarter

In yet another example of how distributed systems sometimes work better than centralized ones, the hardware engineers at Microsoft have come up with a new battery-backed power supply for their homegrown servers. It allows for massive – and expensive – battery rooms to be eliminated from the cloud giant's datacenters.

http://t.co/6Pv26ORZFb

NetDepot Data Center Outage Causes Prolonged Downtime for Customers

A NetDepot data center outage in Atlanta recently brought down servers in a prolonged period of downtime, which according to some customers, lasted for more than 20 hours. Customers took to Twitter to vent their frustrations not only with the protracted outage but also with what appeared to have been lackluster communication by the provider.

http://t.co/KFWnBZG82M

What happens when the world's biggest solar nation gets hit with a solar eclipse?

On March 20th, Europe will experience a total solar eclipse—the first in over a decade. What will be the impact on Germany's solar energy capacity, which derives 7% of its total power from its 1.4 million solar power systems and which makes up over a quarter of all solar capacity on the planet.

http://t.co/zTPVZTd4pE

What's the failover plan for this? Sun Triggers Radio Blackout After Monster X-Class Flare

On 11 March, the sun erupted with its first X-class solar flare of 2015. Shortly afterwards, Spaceweather.com reported a radio blackout over large swaths of the globe, including much of the Americas.

http://t.co/Jo0GLPi2B8

Off the availability path but still fascinating - Stephen Hawking counts on Intel communication technology

Stephen Hawking relies on a modified computer fitted with an infrared (IR) sensor that translates his cheek and eyebrow movements into letters and numbers. This computer, which allows him to communicate with the world, was recently upgraded by a team at Intel.

http://t.co/tYaSogP9YV

From Stratus Technologies @StratusAlwaysOn**, Availability for Dummies 2nd Edition Special eBook**

This downloadable ebook explains in layman's terms... ● the difference between failover and downtime avoidance ● how to calculate what downtime is actually costing your organization ● considerations and potential tradeoffs of the availability methods ● what availability option best matches your organization's needs ● and how virtualization and the cloud can impact availability.

http://t.co/QNk2iM8Wya

Something to tweet regularly. The Connection - bimonthly journal for HP NonStop users. Digest Mg Ed is contributor

The Connection is a print and digital publication that serves NonStop members of Connect, HP's Business Technology Group. www.connect-community.org. Consider individual or corporate memberships.

http://t.co/OgcvgZdmsJ

Apple says an internal DNS error is causing the App Store and iTunes outage

It took eight hours of downtime before Apple finally provided an explanation for the massive worldwide issues in its digital marketplace. Services were out for twelve hours and cost Apple an estimated USD $32 million in lost revenue.

http://t.co/hPbMMqXUbg

Basic Performance Concepts - Chap 4 in Highleyman's Performance Analysis of Transaction Processing Systems - a must read

Performance Analysis of Transaction Processing Systems is Digest Managing Editor Bill Highleyman's first book. It provides the practical tools necessary for an in-depth analysis of the performance of real-time and OLTP computer systems. University professors regularly refer students to Chapter 4's timeless description of basic performance concepts.

http://t.co/dS1w0uhG5z

Apple's iTunes Store, App Store hit by major outage

On 11 March, millions of Apple users around the world were unable to download or update apps or buy music from the company's Mac and iOS App Stores and iTunes Store. Apple, in a statement more than five hours into the crash, denied any foul play from a third-party, blaming an "internal DNS error."

http://t.co/edyPaH0zBC

How Google Avoids Cloud Downtime With VM Migration

Google has not had to bring down customer VMs running in its Compute Engine cloud since late 2013, when it introduced "transparent maintenance," or a way to do live VM migration from one host to another to tinker with the infrastructure.

http://t.co/tuqKkIIFba

Google Traces Sunday's Cloud Outage to Faulty Patch

Google Compute Engine, the company's Infrastructure-as-a-Service cloud, suffered its second outage in less than one month's time. Google identified a patch problem as the culprit for network egress issues. The configuration change was tested prior to deployment to production, but it still had a negative impact on some VMs when made live.

http://t.co/aD0LOOTvue

Availability versus Performance: You can have high availability, fast performance, or low cost. Pick any two

Increased availability does not usually come for free. There are hardware approaches that increase cost, and there are software techniques that reduce performance. Because of the tremendous improvements in system performance over the years as compared to the modest improvements in system availability, it is often desirable to trade off some of these performance gains for improved availability.

http://t.co/Yw994hwbd1

http://CurrentlyDown.com lets you check current status of a website and explore its outage history. Also on Twitter @downcurrently

Arizona outage highlights need for strong network design, monitoring capability in critical communications

When a single conduit housing multiple fiber lines was cut last week, much of northern Arizona was unable to access the Internet, call 911, use cellular devices, pay with credit cards or get cash from ATMs for about 15 hours. The episode should serve as a reminder of the necessity for reliability and diversity characteristics in critical networks that cannot afford downtime.

http://t.co/h41zBtzAs7

"Data Protection" breaks down into 3 subsets - data loss prevention, storage system recovery, and data security

Here is a high-level view of how to: protect data from getting lost, protect storage that houses the data, and protect data against intrusion.

http://t.co/T40Immt4kI

Read HP NonStop case study: Vodacom's One-Year Recovery

An explosion in August, 2013, nearly destroyed one of Vodacom's Tanzanian PPFE systems. It took Vodacom nearly a year to rebuild the damaged system using new hardware. Challenges included hardware problems due to smoke damage, software version issues, lengthy database loads, and limited staff hours. During this time, the PPFE system limped along as an active/passive SZT system with the damaged node providing erratic backup to the production node. Fortunately during this period, the fault-tolerant HP NonStop production node experienced no problems that required failover to the erratic backup system.

http://t.co/s5c5Bo9yFx

Rideout Memorial stung by EHR outage

Yuba City, California-based Rideout Memorial Hospital is recovering from the fallout of its long EHR outage. The outage was triggered when a High Volume Air Conditioning (HVAC) unit at its data center burned out, causing the McKesson Paragon EHR to go offline. The EHR was out for about a week after the HVAC unit died and caused a redundant unit also to overheat from the added load.

http://t.co/qI8R2jZiGL

Creating the energy Internet. Our power grids are based on early 20th century technology. That needs to change

It only takes a power outage of a few minutes in the middle of a busy workday to drive home the hazards of relying on an energy infrastructure rooted in the Industrial Age.

http://t.co/AaEoFYwxx9

Says Gravic's EVP, "There remains reluctance to move critical applications to the public cloud and for good reason"

According to Paul Holenstein, Gravic, Inc.'s Executive Vice President, tremendous incentives exist for organizations to move to cloud computing. There are few initial expenditures, and hiring new staff is unnecessary. However, the track record for clouds remains spotty. Major cloud failures routinely make the headlines, and security is an issue. Thus, executives are reluctant to trust their critical applications and data to the cloud. One potential solution? Data replication.

http://t.co/9ZuZOMVfT7

Check out this uptime calculator for determining the actual downtime allowed each year by your providers' SLAs

This clever calculator allows users to compute what contractually allowable periods of downtime lurk within different service level agreements.

http://t.co/cC2OYvecfS

Takeaway from an Availability Digest High-Availability seminar: "Lessons Learned from Failover Faults"

Failover procedures often are not thoroughly tested because such testing is expensive, disruptive, and risky. Of course, the alternative to testing is *faith and hope*.

http://t.co/d4szFtTWCo

Don't get cloud conned: Five questions to catch out the cloud charlatans

With technology, distinguishing true statements from bogus claims can be difficult. As a buyer, you know you need certain features – like reliability and compliance from your cloud service provider. There's usually no shortage of companies claiming to be experts. Dig deeper, however, and it becomes obvious some companies can't live up to their promises.

http://t.co/mTn5jZz9Ps

How Google avoids downtime

People may assume that Google aims for its services to be up and available 100% of the time. That's not the case. Google product managers don't have to be perfect - they just have to be better than their SLA guarantee. So each product team at Google has a "budget" of errors it can make. Basically, they can't make more mistakes than that for which the SLA allows.

http://t.co/fHDPEiO2Zv

'Ghost' vulnerability poses high risk to Linux distributions

A fault in a widely used component of most Linux distributions could allow an attacker to take remote control of a system after merely sending a malicious email. The vulnerability, nicknamed "Ghost," is in the GNU C Library known as glibc. Glibc is a C library that defines system calls.

http://t.co/JgebYVO9Ba

Why Climate Change Poses a Threat to the Internet

In January, thousands of Perth, Australia, residents discovered that the Internet had melted. Australia's second largest DSL Internet service provider, iiNet, had crumbled under soaring temperatures of up to 112 degrees. Far from being anything as ethereal as "the cloud" suggests, the Internet is constructed of wire and metal. Thus, it is as susceptible to physical damage from the elements as power stations or phone lines.

http://t.co/lelfYUdVIu

What happens when the Internet goes out? This Arizona town found out?

Computers, cellphones and landlines in the U.S. state of Arizona were knocked out of service for hours. ATMs stopped working, 911 systems were disrupted and businesses were unable to process credit card transactions — all because a vandal apparently sliced through a fiber-optic Internet cable buried under the desert.

http://t.co/QMkotnNJug

911's deadly flaw: Lack of location data

As water filled her sinking SUV, Shanell Anderson dialed 911 on her cellphone and told the operator exactly where she was. Because Anderson's call was routed through the nearest cellphone tower to a neighboring county's 911 system, the dispatcher couldn't get a fix on the cellphone's location. In an era when your mobile phone can tell Facebook, Uber or even video games where you're located and with amazing accuracy – 911 operators are often left in the dark.

http://t.co/ttihy1raEj

Ghana: Surfline 4G LTE network restores service after two weeks interruption

Ghana's first 4G LTE network restored services after a two-week interruption due to a fire outbreak at the company's data centre in Accra. The fire destroyed key components, causing a complete blackout to the network.

http://t.co/tT4AWqvw0R

Why 40-Year-Old Tech Is Still Running America's Air Traffic Control

At any given time, around 7,000 aircraft are flying over the United States. For the past 40 years, the same computer system has controlled all that high-altitude traffic—a relic of the 1970s known as Host.

http://t.co/XPeTVkVr6r

Google Compute Engine outage traced to network glitch

Google suffered a two hour and 40-minute outage for its Google Compute Engine last week. Though the impact was not as big in the U.S. as it happened after business hours, the global outage strained users in Europe and Asia. Investigations revealed that Google's virtual networking software stopped updating the network. Connectivity was eventually lost after routers deleted their caches.

http://t.co/wavobtFzkf

Why it's important to carefully understand cloud SLAs

Many of Microsoft's services come with a 99.9% uptime guarantee (three 9s). But being up for 99.9% of the year still allows for 8 hours and 45 minutes of downtime annually with no breach of the SLA. How would you feel if your workload is unavailable for 8 hours one day? This uptime calculator can help users predict how much downtime they should expect from their provider based on the SLA uptime guarantee.

http://t.co/boRZliuHHT

Defect in code' means bum Obamacare info for 800,000 taxpayers

The 800,000 Americans who have just received erroneous tax forms for their Obamacare subsidy can blame a HealthCare.gov glitch that used the wrong year's data for the calculations.

http://t.co/fQYAt8pZui

Super-sneaky malware found in companies worldwide

A shadowy hacking group has infected computers at companies, universities and governments worldwide with the sneakiest malware ever. That's according to a report by Internet security company Kaspersky, which described a hacking campaign "that exceeds anything we have ever *seen before."*

http://t.co/udDbNaM2YY

Businesses lose thousands after card payment system network crashed

Dozens of U.K. businesses lost thousands of pounds over Valentine's Day weekend after a technical problem left them unable to accept card payments. Problems with chip-and-pin card transactions started on Friday night and continued throughout Saturday because of issues with the network, run by Global Payments Inc.

http://t.co/WKPmUlFyHE

Undersea cable faults reportedly affect Internet connectivity across India

Multiple undersea cable faults connecting to Mumbai recently impacted Internet services throughout India. This isn't the first time internet connectivity throughout the country has been affected by cable faults. In fact, it is pretty common.

http://t.co/kzqfIIo7gd

Expired router cache sends Google Cloud Engine TITSUP

Google's Cloud Engine (GCE) recently experienced Total Inability to Support Usual Performance (TITSUP) for about two-and-a-half hours. According to Google's preliminary analysis: "The internal software system which programs GCE's virtual network for VM egress traffic stopped issuing updated routing information."

http://t.co/ArpQ8P9XmT

Google Compute Engine, AOL Mail Suffer Early Morning Outages

On 19 February, **Google Compute Engine** experienced a network issue that caused loss of connectivity to multiple time zones. The outage lasted roughly an hour. The same day, AOL suffered a widespread outage.

http://t.co/6ywmD7f1M6

Windows 7 mainstream support ended on January 13, 2015. All hail Windows 10

Shades of Windows XP. Extended support for Windows XP ended on April 8, 2014. XP users had to upgrade to Windows 7 or to Windows 8.1. Most upgraded to Windows 7 because of dissatisfaction with Windows 8.1. Now less than a year later, Windows 7 users have been told that they must upgrade to Windows 10. The good news is that users of Windows 7 and Windows 8.1 can upgrade to Windows 10 at no cost for one year after the general availability of Windows 10 later this year.

http://t.co/LMv2kzNDgV

The February 2015 Availability Digest has just been published. Check it out!

Sign up today for your free subscription to the Availability Digest. www.availabilitydigest.com. In February's issue: *Verizon Cloud Down for Forty Hours*; *2015 – The Year of the Leap Second*; *Windows 7 Mainstream Support Ends*; and *Reliability and Availability of Cloud Computing*.

http://t.co/AD8mkrsDkB

Google Looks to Inflate Balloon Internet in India

Google's Wi-Fi enabling balloons may soon dot Indian skies. The California-based Internet giant is in talks with telecommunications companies across the world, including in India, to partner in providing balloon-based Internet to rural and developing areas that don't have access to the Web.

http://t.co/JDAheQL1R3

Amazon Sites in Europe Suffer Outages, AWS Customers Not Affected

Amazon retail sites and streaming video services in Europe recently suffered a pair of outages. Sites impacted included amazon.co.uk, amazon.de and amazon.fr. Each of the outages occurred during prime evening hours and also brought down Amazon Prime and Amazon Fire Phones. While AWS hosting customers were not affected, Amazon received criticism for not communicating quickly or effectively with its customers.

http://t.co/RqqbR0QjoY

Destroying your hard drive is the only way to stop this super-advanced malware

A cyberespionage group with a toolset similar to ones used by U.S. intelligence agencies has infiltrated key institutions in countries including Iran and Russia. Utilized is a startlingly advanced form of malware that is impossible to remove once it has infected your PC.

http://t.co/RccctRjKlh