the *Availability Digest*

@availabilitydig – Our April Twitter Feed of Outages
April 2016

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.

This is what went wrong with Telstra's mobile network

Telstra's mobile network had four major outages during February and March. When you're a company that not only advertises its premium service but charges for it too, customers expect answers when it goes down. The telco is now taking steps to put forward a network-wide review with technology partners Ericsson and Cisco.

https://t.co/fo8qhriciF

The world is warming up to floating solar farms

Countries across the globe are investing millions each year on a wide array of renewable energy initiatives — solar-, wind- and hydro-based projects, just to name a few. One particular type of solar energy initiative has been making waves in multiple countries: floating solar panel installations. Here's a look at some recent happenings with this unique type of solar power build.

https://t.co/T1jniYgh1j

Do banks need IT expertise at the board level?

Technology is the most important agent of change today; hardly any industry is immune to both its value-creating and disruptive potential. However, in an April 2011 survey of corporate directors by McKinsey Quarterly, more than half said their boards had only one technology-related discussion a year or none at all. Since then, the situation has not improved much.

https://t.co/q42l9yeo7h

From the Availability Digest: "High-Voltage Transformers - The Power Grid's Achilles Heel."

A significant vulnerability to the U.S. power grid is the risk of destruction of an extra-high-voltage (EHV) transformer. Monstrous in size, a challenge to transport, and prohibitively expensive, a damaged EHV can take months to repair or replace. What's the solution? The RecX transformer.

https://t.co/LDws7queZv

911 System Done in by a Malfunctioning Air Conditioner

Erie County's (in U.S. state of New York) 911 system shut down for nearly four hours on a Wednesday morning in March – done in by a malfunctioning air conditioner. And the failures didn't stop there. The back-up system didn't work either, and more than half an hour passed before anyone realized it. County dispatchers headed to a secondary location in Cheektowaga only to discover that emergency calls that were supposed to be diverted there weren't coming in. Now lawmakers want answers about how this could occur after spending tens of millions of dollars in recent years on 911 equipment, maintenance, training and testing.

https://t.co/jYuLkjW7o6

Seeing no end to power crisis, Gazans turn to solar power

Faced with power blackouts lasting anything from eight to 12 hours a day, residents and businesses in Gaza are increasingly turning to the sun to supply their energy needs. Not only are solar panels more reliable and cheaper in the long run, but in some cases, including that of Tamer al-Burai, they have become essential to staying alive.

https://t.co/GaPW6VFqxY

Hospital cyberattack highlights health care vulnerabilities

A cyberattack that paralyzed the hospital chain MedStar in late March is serving as a fresh reminder of vulnerabilities that exist in systems that protect sensitive patient information. That attack came a month after a Los Angeles hospital paid hackers USD $17,000 to regain control of its computer system and more than a year after intruders broke into a database containing the records of nearly 80 million people maintained by the health insurer Anthem.

https://t.co/7bRQyTggYv

Amazon Cloud Turns 10: How It's Changed

Amazon Web Services emerged from being mere infrastructure for online bookselling on March 13, 2006, 10 years ago. That was the day the first AWS cloud service was announced, Simple Storage Service or S3. Quite a bit has changed since then. Amazon has not merely built an expanding universe out of its online e-commerce system. (Is there anything it doesn't sell today?) It's also made a profit center out of the AWS infrastructure that supports it.

https://t.co/P3dAempppy

Can you hear me now? Verizon outage swallows Southern California for several hours

Verizon, we have a problem. On 18 March, Verizon, the largest wireless telecommunications provider in the United States, suffered multiple outages across Southern California. The region was swallowed under a cloud of red on the map. The outages began around 1 p.m. and extended from Santa Barbara, California, south to San Diego, including Los Angeles, Orange and Ventura Counties, along with parts of the Inland Empire. Millions of customers were affected.

http://bit.ly/1Vl8vD1

Introducing a new approach to Branch IT

The lifeblood of many companies today depends on branch offices. Whether they are remote sites, retail outlets or manufacturing plants, they must be agile and able to quickly respond to ever-changing needs. Too often, however, branch offices operate as independent data centres that are difficult to support and protect. Services outages and data loss are a common occurrence and lead to productivity issues, including missed sales opportunities, customer churn, assembly-line stoppage and ultimately, lost revenues. The solution is a completely new approach to branch IT.

https://t.co/tFNYlCwUPV

Availability Digest Oldie but Goodie: "Anti-Virus - A Single Point of Failure?" McAfee's Nightmare Update in 2010

What do active/active systems, clusters, fault-tolerant systems, and standby systems have in common? They all avoid a single point of failure. True, fault-tolerant systems and clusters will not survive a site failure; and standby systems have been known not to come up when needed. But active/active systems are immune, right? On April 21, 2010, McAfee, one of the leading antivirus vendors, proved this conjecture to be wrong. It sent out an antivirus update that immediately took down hundreds of thousands – maybe millions – of computers worldwide. This one bad update could have stopped every node in an active/active system, and our "indestructible system" would have been destroyed – a single point of failure.

https://t.co/Ty3wfpraCd

AWS Service Migrates 1,000 Database Systems Into Cloud

Amazon Web Services announced that it has migrated 1,000 database systems into its cloud using the AWS Database Migration Service. The service was first announced Oct. 7 at Re:Invent 2015 in Las Vegas and after a five-month preview period became generally available March 15.

https://t.co/xxc4xo9vxg

Hackers Claim Breach Of Ku Klux Klan's Security Company

A website run by the Ku Klux Klan has been downed as part of what appears to be a significant breach of its host and security provider Staminus. The company, which promises to protect users from distributed denial of service (DDoS) attacks, was exposed by a crew going by the name of FTA, which leaked data online in mid-March.

http://onforb.es/1Vs4Dln

One of the nastiest Android bugs is back with a vengeance

The notorious Stagefright vulnerability that hung heavy over Android last year has reared its ugly head once again. The glitch - which Google eventually remedied with a software update - theoretically enabled hackers to hijack an Android device via malicious code buried in an MP3 or MP4 video file. These rogue video files can be hidden within seemingly innocuous apps to piggyback their way onto tablets and smartphones. A derivative of the bug called Metaphor has been discovered by Israeli security firm Northbit.

https://t.co/vWttNvMySq

Report: Almost Half of IT Migrations Doomed to Fail

Complex IT migrations, much like a house of cards, can crumble when a single weak link – hardware, legacy software and applications, or a poor choice of cloud vendor – throws the system out of whack. Even when downtimes are planned, nearly half the time systems are down longer than folks in the C-suite anticipate.

https://t.co/n8JvFRfma1

Survey: Tech execs under-prepared for downtime and extra costs during IT migrations

In a recent survey of 2,000 global IT executives, 44% responded that their organizations had failed at some type of IT migration. Around 70% of those surveyed also said they were not prepared for downtime and additional costs that occur with migration issues. When systems do go down, almost half of executives said the system outages lasted longer than high-level executives expect.

https://t.co/3fUaFej3Cv

Why do lights go out for Earth Hour? When is it?

Environmentally conscious people around the world switched off their lights between 8.30pm and 9.30pm EST on Saturday March 19 2016 as a symbol for their commitment to the planet.
Earth Hour is a huge grassroots movement that aims to unite people in a bid to raise awareness about the need to protect the planet. The event is organised by the World Wildlife Fund (WWF), which sees climate change as one of the biggest threats facing Earth.

https://t.co/7wR6S3sDSq

How to Avoid Storm Blackouts? Colleges Go Big With Microgrids

MIT and other top engineering institutions are showcasing ultra-efficient, innovative ways to produce their own energy. In the last year, several have unveiled plans to expand or build new campus plants; and Stanford's cutting-edge system uses mostly solar power—not fossil fuel. They're seeking eco-friendly freedom from the central power grid, which can be vulnerable to extreme weather or cyber attacks. While colleges have long embraced on-site power plants, aka microgrids, their interest accelerated after major storms—notably Sandy in 2012—knocked out power for extended periods for millions of people.

https://t.co/XM29jWi6hX

Telstra's problems in Australia continue with Amazon Web Services outage

Friday, 18 March, didn't start well for Australians already struggling with a huge mobile and Internet outage. Amazon Web Services, a cloud services platform that supports the websites and data storage of companies around the world, suffered issues on Friday morning following a nationwide Telstra outage.

https://t.co/3vPZPTNdvt

Entire D.C. Subway System to Shut Down For 29 Hours In Unprecedented Closure

Washington, D.C.'s (USA) subway system shut down for over a day in March as crews performed an emergency inspection of electrical cables for possible deterioration. The unprecedented closure was announced just hours before it took place. A fire at a rail station two days earlier triggered an investigation into the state of the jumper cables, which hadn't been inspected for a year.

https://t.co/o2qJzClURD

An Availability Digest Oldie but Goodie: "Poor Documentation Snags Google."

In February 2010, what should have been a ten-minute outage at a major Google data center hosting the Google App Engine turned into a two-and-a-half hour ordeal simply because of faulty failover documentation. Of course, the fact that the failover procedures were incorrectly documented also implies that they were never tested and that the staff was never trained.

https://t.co/R616skl9VP

National Grid to Test New Utility Microgrid Services

How will utilities make money as more customers generate their own electricity? That's one of the big looming industry questions, one that National Grid is trying to solve by testing new utility microgrid services. A *microgrid* is a local energy grid with control capability, which means it can disconnect from the traditional grid and operate autonomously. The utility plans to try out the services in Potsdam, New York, where it is installing a microgrid with Clarkson University, General Electric and Nova Energy Specialists.

https://t.co/qUkBjKOm4h

Bird poop apparently caused New York nuclear reactor outage

Bird poop was the likely cause of a December shutdown at a nuclear power plant outside New York City (U.S.) An Indian Point reactor safely shut down for three days starting Dec. 14 following an electrical disturbance on outdoor high-voltage transmission lines. An outside expert is analyzing whether what's technically called bird "streaming" was the culprit. In a report to the Nuclear Regulatory Commission last month, the New Orleans-based company said the automatic reactor shutdown was apparently from bird excrement that caused an electric arc between wires on a feeder line at a transmission tower. "If it has nowhere to send its electricity, the generator senses that and automatically shuts down."

https://t.co/yt2pQVRkbb

'Fairly catastrophic' SEPTA outage explained

Rail service on one of SEPTA's busiest lines died Thursday night 10 March. SEPTA is the Southeastern Pennsylvania Transportation Authority. It operates various forms of public transit services in and around Philadelphia, PA (USA). Hundreds of passengers stranded on trains had to be returned to the nearest station and taken to their destinations by bus. Many thousands more used roundabout routes to get home. The root of the problem was a weak spot developing in the catenary due to friction against a steady span wire. The age of the system, portions of which are a century old, was likely a factor.

https://t.co/06tj9VCbh5

How to Avoid the Outage War Room

Most IT pros have experienced the dreaded war room meeting that immediately starts after an outage to a critical application or service. But how do you avoid it? It's more than building redundancy and disaster recovery into systems.

https://t.co/HFBnuRhtHk

Predictive maintenance – increasing uptime in the transportation sector

For organisations within the transportation sector, the use of intelligent predictive maintenance platforms – connected to a variety of structured and unstructured data sources – can unleash some powerful business advantages. Case studies show that maintenance costs can be reduced by up to 30%, productivity can rocket by 25%, and downtime due to outage can be lowered by up to 45%.

https://t.co/oYh8o5zvzv

Seacom and WACS failures highlight the criticality of redundancy and failover

The West Africa Cable System (WACS) and Seacom cables going down simultaneously on 21 January 2016 was a bit of fluke – but it left many business owners wondering if they were sufficiently covered for similar risks. The short answer is: check with your provider.

https://t.co/RIdbPd5x0f

Amazon Suffers Unexplained Website Outage

Amazon services were back online after many of the company's top websites suffered an unexplained overnight outage in mid-March. The fault, which appears to have affected the main Amazon.com website as well as Amazon Web Services and Amazon Prime Music, left many customers unable to carry out their orders.

https://t.co/HgByj25BKs

Sri Lanka suffers worst blackout in 20 years

Sri Lanka suffered its worst nationwide power cut in 20 years Sunday, March 13, causing water shortages and transport and trade disruptions across the country. The national grid switched off early afternoon, and attempts to reconnect failed. It was the second major power failure in less than a month following a 3-hour disruption late February. The latest blackout was the longest since May 1996, when the entire country was without electricity for 4 days.

https://t.co/H2aVCnIKjs

How a hacker's typo helped stop a billion dollar bank heist

A spelling mistake in an online bank transfer instruction helped prevent a nearly $1 billion heist last month involving the Bangladesh central bank and the New York Federal Reserve. Unknown hackers still managed to get away with about $80 million, one of the largest known bank thefts in history. Four requests to transfer a total of about $81 million to the Philippines went through; but a fifth for $20 million to a Sri Lankan non-profit organization was held up because the hackers misspelled the name of the NGO, Shalika Foundation.

https://t.co/VE1xS3dOwf

HPE debuts "highest-performing" converged flash array on the market

The enterprise storage market appears to be witnessing yet another round of vendor one-upmanship, this time on the performance front. Less than two weeks after EMC Corp. pulled back the curtains on an all-flash system described as the fastest of its kind on the market, Hewlett-Packard Enterprise is introducing a platform that claims the same distinction over in the converged array category. It's the 3PAR StoreServ 20840.

https://t.co/pOZOfLawht

Apple iOS Glitch Causes Users to See 'Ghost Emails' Dated January 1, 1970

There is a new and strange iOS bug that causes the appearance of blank emails that are dated January 1, 1970. Many users are affected. The "ghost emails" do not have a sender, a subject or body. You can't even delete the "ghost emails." The bug seems to especially impact users that recently changed time zones while traveling. Fortunately, the bug does not cause any other issues to iOS devices.

https://t.co/KcSdKKb5Wo

The final countdown: How to prepare for migration from Microsoft SQL Server 2005

With 12 April fast approaching, there are ways to ensure a successful migration without forcing a choice between data loss and downtime.

https://t.co/RaEvgGBmah

TTC needs more reliable power to avoid chaos

The March 1st commuter chaos that crippled transit in downtown Toronto (Canada) is just another symptom of a complex system failure. Yet another underground power vault failed, cutting electricity to most of the city's downtown core subway and streetcar lines. Madness ensued. That Canada's most critical transit system can be put out of service by one small fire is evidence the Toronto Transit Commission (TTC) does not have an adequate business continuity plan. There should be redundant alternative sources of electricity for the transit lines.

https://t.co/1nR5Lqf4AG

Technicalities: Single Point of Failure

In its investigation of the October 2014 Virgin Galactic SpaceShipTwo crash, the U.S. National Transportation Safety Board (NTSB) determined that the probable cause of the accident was the failure of aircraft developer Scaled Composites to consider and protect against the possibility that a single human error could result in a catastrophic hazard. This failure set the stage for the copilot's premature unlocking of the feather system as a result of time pressure and vibration and loads that he had not recently experienced. It led to uncommanded feather extension and the subsequent aerodynamic overload and in-flight breakup of the vehicle.

https://t.co/S3vVW4pNSi

IRS Failing to Properly Handle Data Nearly 2 Years after Lois Lerner

The U.S. Internal Revenue Service (IRS) still doesn't know if its data backups are deleted or not created and doesn't test to ensure backups can be used if information is lost, even after a "significant" December 2014 incident.

https://t.co/EM4mH1ooMC

A new electric grid calls for new reliability rules

The lumbering, coal-fired power stations facing closure because of age and air emissions have been the workhorses of the U.S. high-voltage electric transmission grid. When the grid was stressed and frequency dropped, they ran harder. Now, as tomorrow's grid is reshaped with more wind farms, solar arrays and gas-fired plants, experts warn that new regulations will be needed to ensure that these new resources provide the frequency support and other essential services that the coal plants delivered. According to the North American Electric Reliability Corp. (NERC), those cleaner, greener sources of power provide a "significantly lower level of essential reliability services than conventional generation."

https://t.co/ftMjotOJHm

Inside the Cunning, Unprecedented Hack of Ukraine's Power Grid

The hackers who struck the power centers in Ukraine—the first confirmed hack to take down a power grid—weren't opportunists. They were skilled and stealthy strategists who carefully planned their assault over many months. Their success holds many lessons for power generation plants and distribution centers. The control systems in Ukraine, for instance, were surprisingly more secure than some in the US because they were well-segmented from the control center business networks with robust firewalls. But in the end, they still weren't secure enough.

https://t.co/p3juGBRe6m

Heat doesn't kill hard drives. Here's what does

At February's Usenix FAST 16 conference, researchers discussed their studies of how higher and more variable temperatures and humidity of free-cooling affect hardware components. They reached three key conclusions:
- Relative humidity, not higher or more variable temperatures, has a dominant impact on disk failures.
- High relative humidity causes disk failures largely due to controller/adapter malfunction.
- Despite the higher failure rates, software to mask failures and enable free-cooling is a huge money-saver.

https://t.co/djwTSyrVei

Storage Failure Brings Salesforce Down for Some in Europe

A storage hardware failure brought Salesforce down for some users in Europe in a lengthy outage Wednesday, 2 March. The outage made the popular cloud CRM software provider's service inaccessible for customers whose applications were running on the EU2 instance. Users didn't have full access to the instance for about 11 hours, starting around 3 pm GMT, although they could access their data in read-only mode from about 8 pm.

https://t.co/XocSUFyD87

Ransomware migrates to Apple Mac computers

Security researchers have uncovered what is believed to be the first active malware to encrypt Apple Mac computers and demand ransom to unlock them. Mac computers tend to be regarded as relatively safe from attack, but the migration of so-called ransomware targeting the Microsoft Windows operating system to Apple's Mac OS X is yet another indicator that things are changing.

https://t.co/PAyIc45Jcu

Shark attacks, shipwrecks, and earthquakes threaten global communications

Manmade and natural threats have damaged undersea fiber optic cables connecting ASEAN countries as well as Guam, Australia, and the United States, causing issues for some internet users.

https://t.co/CcHsADlWcZ

Syria reports nationwide electricity outage

The Syrian government reported a nationwide power outage Thursday, March 3rd -- the latest electricity problem in a country that has seen frequent outages during a five-year war involving the regime, rebels and terror groups.

https://t.co/2rFeD5XmxN

Power disruption downed GitHub

A short disruption to the power supply in open source repository Github's data centre was behind the outage last week that caused its services to become inoperational for users. In a post-mortem of the incident, Scott Sanders of GitHub's engineering department said the interruption in power meant just over a quarter of the repository's servers and several network devices rebooted. He said the front-end load balancers and application servers were unaffected but couldn't serve up requests as the backend systems went down.

https://t.co/IjzjFpILUZ

CenturyLinkVoice: Are Your Servers Comatose? Increase Efficiency with Public Cloud

Companies worldwide have invested billions of dollars in servers with the aim of supporting the peak capacity needs of their organizations. But peak capacity is rarely required—so a lot of that server hardware sits idle. One way to conserve energy in the data center is to decommission comatose servers.

https://t.co/TUHfUDjSrd

MIT, UMass Scientists to Study Solar-Powered Data Centers

Renewable energy is tricky to use in data centers, which have to operate around the clock, regardless of whether the sun is shining or the wind is blowing. For data center operators that have turned to renewable energy, the three answers have been a) using a combination of renewable generation and energy storage to supplement a data center's power supply, not replace it; b) investing in renewable energy generation for the same grid that feeds the data center – the grid that also has coal, nuclear, and other traditional energy sources; and c) simply buying Renewable Energy Credits equivalent to some or all energy a data center consumes. Researchers behind an experimental project in Massachusetts (U.S. state) hope to push the progress further by studying over time the performance of a solar-powered micro data center launched in February.

https://t.co/xkQDHrktsl

Can Underwater Data Centers Change Cloud Computing?

Between August and November of last year, technology giant Microsoft visited the Central Coast of California (U.S. state) to conduct research on the feasibility of submerging data centers underwater to lower system cooling costs and to increase Web speed one day for millions of users worldwide. Typically, electronics and water don't mix. But the company tested the viability of submerging sealed computing equipment, a test data center, in the ocean water off the Cal Poly Pier in Avila Beach.

https://t.co/gwGJGCuwAN

Worth the journey: Netflix completes 7-year cloud project

After seven long years, Netflix has finally completed the implementation of its cloud infrastructure. A global provider of streaming movies and TV series, the company decided to move to the cloud in August 2008, when it experienced a major database corruption. For three days, Netflix could not ship DVDs to its members.

https://t.co/wDYfZFhhFA

UK could face Ukraine-like cyberattack on its power infrastructure

A cyberattack like that on Ukraine's power utilities could be replicated in the UK, a member of the US team investigating the attack has said. "The way the Ukrainians set up the grid and type the equipment they are using is also the way a lot of other nations do it."

https://t.co/7kM0JKGnyt