the Availability Digest

@availabilitydig – Our January Twitter Feed of Outages
January 2017

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.

The 10 Biggest Cloud Outages of 2016

Cloud Outages: Less Common, More Damaging. The frequency of outages and their durations are decreasing as cloud providers gain operational experience and more mature technologies. That's the good news. But the flip side is that enterprises and the population at large are increasingly vulnerable from downtime. As modern applications and data sources become more and more distributed, and our reliance on them to manage nearly every aspect of our lives grows, the potential for harm, or at least intense frustration, is greater than ever.

https://t.co/YQgmL8zqBP

That is pretty, er, Nimble. Storage firm claims 'six nines' availability

Nimble says its storage arrays (all-flash and hybrid) have reached six "nines" availability. That means less than 25 seconds downtime a year, with the measured availability - according to the storage firm - being 99.999928 per cent. "Five nines" used to be considered a good standard of availability. With Nimble offering its "six nines" as standard, other array suppliers will have to do their best to match that.

https://t.co/AaCjdcC27u

Nine Steps Your Organization Can Take to Mitigate Downtime

An unplanned outage is one of the worst things that can happen to a data center – and to your business According to a 2016 Ponemon Institute study, a data center outage costs businesses an average of $8,851 per minute. The report also found that since 2010, the average total cost of a data center outage is up 38 percent – to $740,357. Although it's impossible to completely eliminate outages, you can take steps to mitigate the consequences of downtime.

https://t.co/iVCDtupyoQ

Banking on e-cash

While the idea of a cashless or less-cash society is appealing, given that it would help bring more money into the banking system, the challenges of implementation are huge. While using less cash, as 'e-cash' technologies proliferate, is a natural progression for any economy, what has skeptics worried is whether the new narrative is being spun as an excuse for not being able to replenish the cash pulled out of the system.

https://t.co/vfsiHUH8ow

Thousands still powerless in SA

Tens of thousands of South Australians were without power more than a day after a destructive storm hit the state in late December and badly damaged its electricity grid. The storm brought with it strong winds and heavy rainfall. It was the state's third major blackout in four months.

https://t.co/SKCH1zJp8M

Paytm app suddenly taken down from Apple App Store

At a time when mobile payments have taken off explosively in India, the Paytm app has been delisted for iPhone and iPad users. The Apple App Store no longer offers the mobile wallet after Paytm found technical issues such as bugs. The company worked hard to produce an update to iron out the problems and was awaiting Apple's approval at the time of the writing of this article. The temporary removal of the mobile payments application occurred on the heels of a service outage.

https://t.co/cKCBpt8A3B

New Microgrid Testing Facility in Colorado to Offer Flexible Plug-And-Play

A new private microgrid testing facility in Colorado will offer a pay, plug-and-play alternative to government labs that it hopes will attract innovators worldwide. Managed by MRIGlobal, GridNXT is slated to open in the first quarter of 2017 on 1,900 acres near Denver. With infrastructure improvements totalling $1.5 million, the facility will offer innovators an opportunity to interconnect and test new battery technologies, advanced inverters, component interoperability and grid management systems.

https://t.co/hGeAQfQk8E

Digest Oldie but Goodie: "Why Are Active/Active Systems So Reliable?"

Active/active systems achieve their high availabilities because of their failover characteristics. Not only do they fail over very quickly compared with active/backup and cluster configurations, but they are relatively immune from failover faults. In fact, active/active systems do not really fail over. They simply resubmit the failed work to a known operating node. Resubmission may be done externally by the client or internally by the system. The bottom line is that active/active systems achieve their high availabilities via the philosophy of *Let it fail, but fix it fast*.

https://t.co/g0AaGCssGh

Scrooge is clearly an ATO tech guy

The ATO (Australian Taxation Office) has moved to absolve itself of any deficiency in IT operations management skills after ruining Christmas for the nation's tax accountants with an unprecedented three-day outage. Beginning 12 December, the ATO's critical customer facing ATO systems were down for three days in what Commissioner of Taxation Chris Jordan admitted in a statement was the 'worst unplanned system outage in recent memory.'

https://t.co/ejxVgezHrF

5 backup mistakes you might be making

High availability does not a business strategy make. The continued survival of a business is not just about protecting against downtime but ensuring data redundancy should disaster strike. And yet, despite how fundamentally important maintaining and protecting data is, businesses continue to make these five common mistakes. The first one is not backing up often enough.

https://t.co/McFZZUqlmt

Cyberattack suspected in Ukraine power outage

Security experts are investigating whether a power outage that affected parts of the Ukrainian capital, Kiev, and the surrounding region in late December was the result of a cyberattack. If confirmed, it would be the second blackout caused by hackers in Ukraine

https://t.co/ALYsVPxQ0U

Three Quarters of IT Applications Cannot Tolerate a Typical Unplanned Downtime Incident

Stratus Technologies, the leading provider of continuous availability solutions, recently revealed the results of its Highly-Available and Fault-Tolerant Infrastructure Considerations Survey. The research revealed that the vast majority of production servers and services are not intended to tolerate the length of an average unplanned downtime incident, which was reported at 87 minutes. For organisations with critical business applications, each minute of unplanned downtime can have severe repercussions on the company, from lost revenue to not meeting service level agreements (SLAs) to brand reputation damage. This becomes even more concerning when 53 percent of applications cannot handle more than 15 minutes of downtime, and yet 80 percent of downtime incidents are reported to last more than 15 minutes.

https://t.co/gqWuwQPd5T

Digest Oldie but Goodie: "Calculating Availability – Failover Faults." Failovers can fail, too

Failover times measured in minutes or more can have a profound effect on the availability of a system that was otherwise designed to be highly available. Only if failover times can be kept to a few seconds are extremely available systems such as active/active configurations relatively immune to failover time. However, the effect of failover time on availability is only half the story. The problem is that failover doesn't always work. When it doesn't, the system often goes down and has to be recovered. Instead of a few seconds or minutes of failover time, there now may be hours of system recovery time. In this article, we look at the effect of these failover faults on system availability.

https://t.co/QXAuSHpE1C

NAB sent 60k customer details to the wrong email

The National Australia Bank accidentally sent personal information of around 60,000 customers to the wrong email account, the bank revealed in late December. The details - including names, addresses, and banking information like BSB and account numbers - belonged to a group of people migrating to Australia who had set up new accounts with the bank. When emailing the migrant banking customers to confirm their new account, the bank also sent another email to an "incorrect" address. It did not specify the incorrect address. The bank blamed "human error" for the bungle.

https://t.co/i70dvZyqr6

How technology is helping save the NHS

The NHS, one of the world's largest employers, defines itself by the humanity of its dedicated and tireless staff. But the reality is that the future of the health service will probably be decided by smartphones and digital technology.

https://t.co/opguMbzoi6

UK's National Health Service database crashes after staff member accidentally sends email to 1.2 million people

Accidentally hitting "reply-all" to an email might lead to awkward responses or some laughs in the workplace – but it's unlikely it will cause your entire system to shut down, which is exactly what happened to the UK's National Health Service emails in December. An IT contractor at the NHS sent a blank test email to the entire staff database, consisting of 1.2 million recipients. The email prompted a flurry of response emails, most questioning why they were placed on the list and what the purpose of the email was. Due to the sheer number of responses in a short time frame, the email system crashed. One NHS IT worker said in a tweet that he estimated there to be almost 300 million "unwanted emails" in the system.

https://t.co/CyKjQseTgp

The 6 biggest enterprise tech stories of 2016

A lot happened in enterprise technology in 2016. Disruption has become the norm, and companies now realize they must innovate to survive. As a year's end wrap up, CIODive gathered some of their most-read stories of 2016, highlighting what the stories may reflect for the future.

https://t.co/6rDv0h0N5m

Demonetisation: Going cashless without preparation is a dangerous opportunity for digital fraud

The recent demonetisation of Indian currency notes is a welcome move for dealing with black money. However, the replacement of the demonetised notes has become long-drawn, given the chaos at ATMs and banks. The elusive Rs.500/- note has only added to the woes of the common man. The result of this move, whether intended or unintended, is a shift to cashless transactions. The suddenness of the demonetization move has led to a spurt of digital payments, including among people with little or no knowledge of the risks involved. The rush towards digital payments is unfortunately a huge opportunity, which cybercriminals will certainly cash in on.

http://bit.ly/2iEbE2x

With no electricity or network, Tamil Nadu's cashless economy continues to struggle

Radha Manalan, a media entrepreneur from Chennai, had gone cashless over the last month. Judiciously using cash only when required, he was coping fine with demonetisation — until Cyclone Vardah struck the shores of Tamil Nadu.

https://t.co/Z3MbYK32t0

Paytm users saw an outage of services yesterday night due to system upgrade

Digital wallet company Paytm faced an outage due to system upgrade by the website post 8 pm on 15 December. The payments company, which claims to have 160 million users using the service both online and offline, saw an outage of services across mobile application, website and linked transactions such as Uber, where Paytm is the only wallet partner. The outage lasted close to an hour, indicating the system was up for `cleansing'. The company says after the government move to push digital transactions in November, it has been processing over 5 million transactions daily.

https://t.co/Idl9FHXFAM

How Yahoo's 1 billion account breach stacks up with the biggest hacks ever

More than a billion Yahoo user accounts were hacked in 2013. That comes in addition to the 500 million user accounts that were stolen in 2014, a breach that was announced in September 2016. At the time, that attack was regarded as the largest-ever single-source data hack in history. Then on Wednesday, 14 December, the company announced a second hack that more than doubled the record.

https://t.co/Q1eWLwAiIR

Tesco Bank left itself vulnerable to fraud by using sequential card numbers

Tesco Bank may have left itself open to fraud by issuing debit cards with sequential numbers, according to a report by the FT. Criminals in November drained £2.5 million from 9000 current accounts at the supermarket chain's banking operations in a hack that was described as "a systematic, sophisticated attack" and was billed as "unprecedented in the UK" by the country's banking watchdog.

https://t.co/l6AS2udvXP

An Availability Digest Oldie but Goodie from 2010: "Military GPS Disabled by Upgrade"

The U.S. Air Force planned to deploy a new GPS satellite system to replace the aging system now in service. In anticipation of this deployment, the Air Force upgraded the software in its GPS ground-control systems in early 2010 to be able to handle signals not only from the current GPS satellites but also from the new satellites. The software in the 800,000 military GPS receivers in service at the time also was upgraded to be compatible with both satellite systems. To everyone's dismay, when the new ground-control systems were brought into operation, 10,000 of the Air Force's GPS receivers wouldn't work. The systems they supported were effectively down. It took two weeks to come up with a temporary fix and months to test and deploy a permanent fix.

https://t.co/AITGvmIYat

An article from February 2016: "World dodges GPS bullet"

It happened in the blink of an eye. Less than a blink. Far less, actually. Slightly more than one one-thousandth of an eye blink, according to calculations. In that amount of time, one of your eyelashes traverses 10 micrometers on its journey toward your lower eyelid. And yet it was long enough to throw computers and communications systems around the world out of whack, generate thousands of alarms, and pull engineers from their beds at 2 a.m. One occurrence might have been enough to do all that. But it kept happening over and over again.

https://t.co/d9o1boFakL

One petabyte of ATO data could be lost after tech crash

The Australian Taxation Office has restored access to some of its online services, but concerns remain that large amounts of data have been lost after it suffered a "world-first" technical glitch to equipment from Hewlett Packard Enterprise. The tech disaster comes hot on the heels of the Australian Bureau of Statistics and IBM failing to manage the 2016 Census and raises further questions about the ability of government departments to deliver modern online systems properly.

https://t.co/lJdAF7BFN8

DNS provider ChangeIP cites MySQL database crash for days-long outage

ChangeIP, which refers to itself as a "rockstar, low-cost and high-touch web host," hit a sour note with customers in mid-December. The company reported that it "suffered a system-wide DB failure that cascaded to all of our DB systems. Restore has been ongoing since yesterday [Sunday, Dec. 11]." ChangeIP said that due to the size of its MySQL database, recovery was taking longer than anticipated; and it was hard to say when a total restore would take place.

https://t.co/WVyTJQriIH

ATO outage result of 'world first' HPE storage issue

The Australian Taxation Office (ATO) has called in its external service provider Hewlett Packard Enterprise (HPE) to help it resolve hardware issues that have been plaguing its online services, portals, and website since Monday morning, 12 December. The outages relate to a new hardware storage solution that was upgraded in November 2015. The ATO's primary backup systems, that should have kicked in immediately, were also affected.

https://t.co/yumDuUb34V

A Digest Oldie but Goodie: "2015 - The Year of the Leap Second"

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.

https://t.co/haehkzhXD6

Computers Will Deal with 2016's Leap Second by "Smearing Time"

If you can't wait for 2016 to be over, I have some bad news; it's going to be a little bit longer than expected. In July of this year, the International Earth Rotation and Reference Systems Service (IERS)—which regulates the international clock—announced that 2016 will end in a leap second. An extra tick will be inserted into the year to make up for unpredictable variations to the Earth's rotation. It means that before we hop into 2017, the clock will strike an unusual 23:59:60.

https://t.co/PjwBnOjqO7

Because This Year Hasn't Felt Long Enough, 2016 Will Last One Second Longer

The deaths of great artists, global tragedies, an acrimonious U.S. presidential campaign — these events have made many of us eager to get the seemingly interminable nastiness that was 2016 over with, once and for all. But thanks to the precision of modern timekeeping, we'll have to wait one additional second on New Year's Eve before we can welcome what hopefully will be a better 2017.

https://t.co/MDNQgPnzvD

HPE Intros a Micro Datacenter on Wheels

Hewlett Packard Enterprise (HPE) has introduced what it calls a Micro Datacenter — an equipment rack-sized cabinet that's meant to be a modular piece of a data center. The concept is as simple as it sounds; it's a shard of the data center put into a form that's physically easy to move to where it's needed (relatively speaking). It even has wheels.

https://t.co/C9UIzmLbJc

Hyperconvergence: what businesses need to know

As companies grow, their IT systems tend to expand in a way that can lead to them becoming unwieldy and hard to control. Hyperconvergence is about simplifying things by consolidating the IT infrastructure into a virtualised system. Essentially it's a software-defined architecture that merges storage, networking and other resources on a single system based on commodity hardware. The benefits include being able to manage the whole thing as a single system via a common tool set.

https://t.co/iliIp13i60

Do You Have a Plan for When Your ISP Goes Down?

It can happen to anyone—everything in your facility is working as intended; and suddenly, without warning, all your company's activities come grinding to a halt. Somewhere outside your facility, a cable has been cut; and the end result is that your Internet service provider (ISP) is down. In the event that you're hit with an outage caused by an unexpected incident, it's essential that you have a clear, established response process that includes the following:

https://t.co/9CWaYXKvVa

The 5 biggest hacks of 2016 and the organizations they crippled

CIO Dive's picks for the five biggest hacks in 2016 are notable not only for their size and scope but for the perpetrators' ability to use new approaches or twists to reach the end goal of disrupting networks and systems on which we've all come to rely.

https://t.co/Oxxm2XTHGx

Gas plants, not wind, may have been at fault in South Australia blackout

The role of ageing gas-fired generators may have been part of the problem in the events leading up to the state-wide blackout in South Australia in September. Experts say that the outage could perhaps have been avoided if the gas generators had been replaced by inverter linked renewables and storage.

https://t.co/6S4NUXWVTH

The Machine prototype finally unveiled by HPE

Hewlett Packard Enterprise has finally revealed a working prototype of The Machine, a research project first announced in 2014 that hoped to "reinvent the fundamental architecture of computing." The achievement is bittersweet, though, as it seems that HPE no longer plans to commercialize The Machine as a complete solution. Instead, bits and pieces of the project will filter down into other commercial HPE servers and technologies.

https://t.co/AzsCe0ZLzN

Tesla and SolarCity Empowered an Entire Island with Solar Energy

In early December, Tesla Motors acquired SolarCity, which is a solar energy service provider. The founders of SolarCity, Peter and Lyndon Rive, are Elon Musk's cousins. Both these companies have similar objectives, and hence it comes as no surprise that the acquisition took place. In fact, the companies already have begun a solar project together. Tesla and SolarCity will provide solar energy technology to an entire island. The Ta'u Island in American Samoa only has a population of around 600 people. Tesla and SolarCity will provide nearly 100 percent of the power required through solar energy to all the people residing here. This will be a great step to promote the use of renewable energy as a major source to cut down on the carbon emissions.

https://t.co/iklGL8Ekg7

Nearly one million Android phones infected by hackers

Hackers have gained access to more than 1.3 million Google accounts -- emails, photos, documents and more -- by infecting Android phones through illegitimate apps. That discovery comes from computer researchers at Check Point, a cybersecurity firm. The hackers have managed to steal digital "tokens" that give them access to Google services, like a person's email and photo collection. But according to Google, hackers have not yet tapped that information and stolen it.

https://t.co/aHbxPH0mLM