the Availability Digest

More Never Agains III
July 2009

This is yet another in our semiannual series of brief recaps of some of the many computing-system failures that have occurred over the last six months.[1] During this period, power, network, and cloud-computing faults shared equal responsibility for outages, each accounting for 20% to 25% of the failures.

Sitemeter Takes Down Thousands of Blog Sites with Software Bug
ConversionRater.com, August 1, 2008 – A good one we missed. Sitemeter provides free statistical measurements of web-site activity and is used by thousands of bloggers. On a Friday afternoon, Sitemeter developers made a software change in one of their servers in anticipation of an update and then went home for the weekend. The problem was that this change caused Internet Explorer browsers to crash. Thousands of bloggers were taken offline over the weekend until the Sitemeter staff returned after the weekend and were able to correct the problem.

US Airways Suffers Fiber Cut
StarNewsOnline, January 29, 2009 – About 100 US Airways flights were delayed nationwide when a fiber optic cable was cut near one of its data centers in Phoenix, Arizona. US Airways operates about 3,100 flights per day. The cable cut affected the airline's flight dispatch systems and some of its airport computer systems. Data-processing services were restored in about two hours.

Quickbooks Online Goes Offline
CNet News, February 3, 2009 – Another cloud failure. Intuit's Quickbook's Online went down for several hours, along with its credit-card processing service, Innovative Merchant Solutions (IMS). Quickbooks Online provides financial accounting for small to medium-sized businesses. The failure left these businesses without access to their financial records. Those merchants relying on IMS had to make authorizations manually over the telephone. Intuit extended its service hours to provide help to affected users.

Eight UK Hospitals Hit by Hardware Fault
Computerworld, February 17, 2009 – Eight hospitals in the UK's NHS (National Health Service) lost access to the central patient administration system for several hours after a hardware fault hit a data center run by CSC. Hospital staff had to resort to pen and paper to laboriously continue admissions. The fault struck first at the Ipswich Hospital in Suffolk and progressed to seven other hospitals. It was also reported that sensitive patient data was unprotected during the outage. In 2006, a CSC data center serving NHS hospitals was down for 45 minutes due to a power failure when a backup system failed, forcing 80 hospitals to return to pen and pencil. This cost CSC a penalty of £8.5 million.

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[1] So You Think Your System is Robust?, *Availability Digest*; August, 2007.
So You Think Your System is Reliable?, *Availability Digest*; January, 2008.
More Never Agains, *Availability Digest*; August, 2008.
More Never Agains II, *Availability Digest*; February, 2009.

Gmail becomes Gfail Once Again
IDG News Service, March 10, 2009 – In our March, 2009, article, entitled "Has Gmail Become Gfail?," we chronicled almost nine months of Google's Gmail email service failures and its steps to stem the tide. But just as that issue was being published, Gmail went down again - for almost 22 hours for some subscribers. The outage was aggravated by the failure of the backup system. The previous weekend, a Google glitch allowed some Google Apps files to be accessible to unauthorized users.

Microsoft's Azure Cloud Goes Down for a Day
Internet News, March 20, 2009 – Microsoft is entering the cloud-computing fray with its Azure service. Though it is available now in only a test version, Microsoft expects to make it publicly available in November, 2009. But maybe they have a bit of work to do yet. On Friday the 13th, Azure went down and stayed down for almost 24 hours. The problem started with a network issue that caused applications to time out and crash. A recovery service was tasked with moving failed applications to other servers, but the cascading recovery load caused it to crash. Microsoft has corrected this problem and is in the process of building data centers worldwide to support Azure when it is released.

London Ambulances Stall After Computer Crash
London Evening Standard, March 23, 2009 – London's ambulances are dispatched in response to 999 calls, and they must respond within 19 minutes to life-threatening emergencies 95% of the time. On Saturday night, March 21st, a two-hour system failure threw the ambulance service into chaos, forcing patients to wait for over an hour for medical help. During the outage, staff had to take messages by hand and use maps to communicate with paramedics. Even worse, calls made prior to the failure were irretrievable until the system was restored to service. Though no lives were lost, a similar fault in 1992 is claimed to have cost 10 to 20 lives.

Orange County Critical Services Taken Down by a Circuit-Breaker Failure
NBC, March 30, 2009 – A $1.2 million UPS system installed in an Orange County, California, data center failed just days later, taking down the entire data center. The outage, caused by a faulty circuit breaker, interrupted data-processing services provided by 800 different computer systems. Welfare, food stamp, tax, email, and toll-road services were all impacted. Even though the data center is powered by two separate electrical grids, neither failover to the backup grid nor to the backup battery power was successful.

Comcast Email Down for Hours
PC World, April 4, 2009 – Comcast's free email service stopped working early in the morning on Saturday, March 28th. Its fee-based email service was not affected. Comcast initially reported via Twitter that a power failure had taken down several servers. After repeated failures to restart them, service was finally restored in the late afternoon. At this time, email started flowing again; but the backlog took hours to clear. Comcast, with about 15 million email subscribers, claimed that no emails were lost.

Register.com Hit by Two-Day Denial-of-Service Attack
Washington Post, April 6, 2009 – Register.com is a major domain registration company. It also provides hosting, DNS (Domain Name Services), and email services to its customers. On Wednesday afternoon, April 1st, Register.com was hit by a massive distributed denial-of-service attack, in which hundreds of thousands of compromised PCs flood a target with so much junk traffic that it cannot respond to legitimate traffic. The attacks persisted intermittently for two days, after which Register.com was able to restore normal service to its customers. During this time, hosted web sites and email services were largely unavailable.

Cell-Phone Service Lost for Hours in Germany
Unstrung, April 22, 2009 – T-Mobile Deutschland suffered a massive network outage that left all of its 40-million customers without cell-phone and iPhone service during the afternoon and into

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the late evening hours. The problem was in the Home Location Registers (HLRs) that track subscribers' locations and maintain their profiles. Due to a software fault, the HLR databases had to be taken offline and rebooted, a process that took several hours. The problem was exacerbated because appropriate maintenance personnel could not be contacted by cell-phone! Estimates of revenue loss to T-Mobile ranged in the order of $100 million.

Earthlink Down for Hours
Orlando Sentinel, April 22, 2009 – Earthlink, a provider of email, Web hosting, VoIP, and Internet services, went down for several hours on Earth Day due to a power failure in Pasadena, California. An Atlanta-based company, Earthlink serves about 2.8 million customers who could not access their email or web sites hosted by Earthlink. The outage was so total that all communications with Earthlink were even severed because they use their own services. The Earthlink web site was down as were their telephones (after all, they use their own VoIP telephone services). They could not even be reached by email.

Network Fault Takes Down Free Phone Service
bizjournals, April 22, 2009 – Free phone services provided by Ooma (after the purchase of a $250 Ooma box) were lost for most of the day when Ooma lost connection to the Internet. Ooma blamed their ISP, Internap. This began a finger-pointing argument when Internap stated that they had not lost connectivity with any other customers in the area. Ooma claimed they had the network logs to prove their point. In any event, the lack of redundancy in the network doomed Ooma customers that day.

FBI Takes Down Data Center for Days
CBS 11 TV, May 2, 2009 – Without warning, the FBI raided two of the Dallas data centers of Core IP Networks, a web-hosting company, and confiscated millions of dollars worth of equipment. The FBI wasn't investigating Core IP Networks; they were investigating a company that had been (but no longer was) a customer of the company. It was days before the equipment was returned and restored to service. Talk about man-made disasters. The CEO of Core complained that the FBI can come into your data center at any time for any reason and take whatever they want.

Hawaiians Go Without the Internet for Almost an Hour
Honolulu Advertiser, May 2, 2009 – Over 400,000 Hawaiians get their Internet, telephone, and television service from Oceanic Time Warner Cable. On May 2nd, a power outage caused by a generator defect took down Oceanic's cable and broadband services, affecting over 200,000 subscribers. Backup batteries powered the system for a few minutes, but the backup diesel generator failed to start. Though service was restored in less than an hour, the outage reflects the fragility of the Internet for critical corporate communications.[2]

Access to Medical Records Lost for a Weekend
ABC, May 6, 2009 – Medical records in New South Wales, Australia, are scheduled to be fully electronic by the end of the year. But a trial in Sydney went awry over the weekend when a power failure took down the database systems, and the backups failed to come up. Doctors reverted to white boards for patient tracking, and patient records were kept on paper. Diagnostic tests could not be accessed – doctors were running to the Radiology Department to pick up hard copies of the x-ray films. It took 36 hours after the systems were restored to enter all of the patient data that had been hand-recorded. Fortunately, no compromise in patient care or safety was reported.

Hackers Take Down Hosting Service NaviSite for a Weekend
The Whir, May 6, 2009 – NaviSite provides hosting services for corporate computing and for software-as-a-service (SaaS) providers. On Friday afternoon, a hacker gained access by hacking one of NaviSite's primary servers and gained root access to the other 400 to 600 servers in the data center. Some servers were down for up to eight hours. NaviSite staff ignored warnings sent

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[2] The Fragile Internet, *Availability Digest*; May 2009.

by their customers and took no action for 48 hours. They then had to shut down their systems for 24 hours to thwart the hacker. NaviSite offers a four 9s SLA. So much for that claim.

Hotmail Follows in Gmail's Footsteps
Computerworld, May 12, 2009 – Following in the footsteps of Comcast, Gmail and Earthlink, as reported above, Microsoft's Hotmail email service experienced a global outage for over five hours. Twitter users were saying that they got a "Server is too busy" message when they tried to log on. Microsoft, with 375 million Hotmail users, has refused to comment on the nature of the problem. Taken in the context of the earlier Gmail, Comcast, and Earthlink failures, this failure raises the question: Is cloud computing ready for prime time?[3]

Tokyo Commodity Exchange Taken Down by Router
Securities Industry News, May 16, 2009 – The Tokyo Commodity Exchange (TOCOM), Japan's largest commodity market, had to suspend trading for over three hours when connectivity between its member firms and the floor was lost. The problem occurred just days after the exchange upgraded to a new technology platform from Nasdaq OMX Group. The fault was traced to a router that was showing a 99% load during a time that a 5% load was expected. The router was replaced; and connectivity was restored, allowing the Exchange to resume trading a half-hour before its daily close. The night session beginning two hours later was uneventful.

60,000 Trapped in Boston MBTA Tunnels by Control-System Outage
Boston.com, May 22, 2009 – Maintenance on a major power cable led to a total electric failure in Boston's subway and trolley system. The power cable was redundant, and one was taken down for testing. During testing, however, a central circuit breaker was tripped; this interrupted all power to the signaling and control systems in the tunnels and on the tracks. With the control center blinded, trains had to be controlled manually by employees sent to the tracks who communicated via radio with the control center. 60,000 riders were stuck on the trains for up to an hour. Fortunately, traction power was not affected; so car air conditioners still worked.

Kiwibank's Online Banking Down for Over a Day
NetGuide, May 22, 2009 – Early Wednesday morning, New Zealand's Kiwibank lost its web site that provided Internet online banking services to 200,000 of its customers. It provided only intermittent service, sometimes allowing a customer to complete a transaction, sometimes failing in the middle of a transaction, and sometimes not allowing a customer to even log in. It took until the following afternoon, more than 24 hours, to restore service. Kiwibank blamed the problem on an aging .ASP web site, which has become overburdened with rapid customer growth and expanded services. The bank is now in the process of moving to a new .NET web site

Philippine Pensioners Wiped Out by Overgrown Database
GMA News, May 27, 2009 – The Government Service Insurance System (GSIS) in the Philippines has not been able to give Philippine pensioners a date when they can restore normal service for pension processing. The system was taken down by a glitch in IBM software whose malfunction was blamed on a database that has grown too large. Particularly affected were first-time applicants for pensions. GSIS has extended its hours to 10 PM to try to manually provide services. It has assured pensioners that the database is backed up and that no data has been lost. GSIS legal counsel has said that it may sue IBM for the glitch.

Cell-Phone Service Lost for Several Days in India
Kangla Online, June 8, 2009 – Cell-phone service in the state of Manipur was disrupted for several days in early June. The main tower of the network that feeds fifty signal towers in the state's capital, Imphal, was shut down for unspecified reasons, resulting in complete silencing of the network in the state. The tower is located in a shopping center. Other mobile operators have reported network outages due to monetary demands or due to vandalism that resulted in the destruction of equipment.

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[3] The Fragile Cloud, *Availability Digest*; June 2009.

"Sorry, Gorgeous! Our site is currently having a bad hair day."
StorefrontBacktalk, June 10, 2009 – So said Sephora's web site when it became inaccessible on May 8th for three and a half hours. Sephora is a leading glamour-product retailer that hosts "the world's top beauty web site." But that beauty has paled in the eye of the beholder several times over the last few months. During the week of June 6th, Sephora's site was up and down like a see-saw, racking up over 16 hours of downtime. During the last quarter, Sephora's availability has been 97.8%. This translates to a whopping 48 hours of downtime over a three-month period. At three million visits per month, that's 70,000 customer visits that were lost. How much did that cost?

Lightning Zaps Amazon Cloud
CNet News, June 12, 2009 – Literally. A lightning strike damaged a Power Distribution Unit in one of Amazon's Availability Zones, disabling some EC2 (Elastic Compute Cloud) servers for seven hours. Only a subset of racks in the data center was affected, but all EC2 instances on those racks went down. Amazon has set up a network of Availability Zones, and Amazon told affected customers that they could launch replacement instances in any of the U.S. Region Availability Zones if they wanted. This is the first EC2 outage since the service went live in
October, 2008, though there were two outages the previous year during beta availability.

NYSE Trading Halted Due to Routing Problems
Crain's New York, June 12, 2009 – Trading on the floor of the New York Stock Exchange for 242 stocks, including American Express, Merck, General Electric, and Exxon, was halted at 10:43 AM when orders could not be routed to brokers on the floor. Eight of the 27 NYSE-traded stocks that make up the Dow Jones Industrial Average were affected. Though floor trading in these stocks was halted for several hours, electronic trading continued. The Dow was calculated from share prices that weren't being updated but that were corrected once floor trading resumed.

Barclay's ATMs Down for Hours Due to Hardware Fault
BBC, June 16, 2009 – Barclay's 3,500 ATM cash machines, online banking, and telephone banking services went down for several hours. Affected were customers in London and throughout southern England. Attempts to use credit cards at retail outlets or in ATMs provided by other banks were blocked. Service was restored in late afternoon when a problem with a "disk array" was corrected. This is not the first problem that Barclay's has had with the availability of its banking services. Earlier in the month, on June 7th, access to some online accounts was lost for a day. In 2005, 1,500 ATM cash machines went down.