

the Availability Digest™

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--- achieving 100% uptime

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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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A New Insight into High Availability

It's seldom that a new architecture is conceived to obtain high availability in IT systems. But this is exactly what Dr. Bruce Holenstein, CEO of Gravic, Inc., recently achieved. He noted that in a redundant system comprising two or more identical servers, the probability of failure of each is the same. Therefore, when one system is likely to fail, so is the other system.

But what, he supposed, would happen if the two servers were started at different times? Then the probabilities of failure would not line up, and the failure of one server would likely occur at a time when the other server was unlikely to fail. This simple procedure can significantly improve availability of a redundant server farm. Called 'staggered starts,' Dr. Holenstein's strategy is explored in our article "Improving Availability via Staggered Systems."

This article is an example of the stories we write for the Digest and for others. If you have an article, a case study, or a white paper that you would like written, come talk to us. We also provide consulting services and seminars on high- and continuous availability. We'd be glad to help you.

Dr. Bill Highleyman, Managing Editor

Case Studies

Dr. Timothy Chou Keynote Speaker at NSTBC on the Internet of Things

Dr. Timothy Chou presented a keynote address at the recent 2016 NonStop Technical Boot Camp, held last November in San Jose, California, U.S.A. His topic was the Internet of Things (IoT). While a Thing could be a toaster or a Fitbit, Dr. Chou focused his talk on the machines that are the backbone for the planet's power, water, food, and healthcare infrastructures – things like combine-harvesters, wind turbines, submergible pumps or blood analyzers.

Dr. Chou received his PhD in Electrical Engineering from the University of Illinois. Before striking out on his own, he worked at Tandem Computers, Oracle, and Reasoning, Inc. Tandem was his first job out of University. He began as a programmer, left as a director twelve years later, and earned the following praise from his boss Jimmy Treybig: Tim has “always been at the cutting edge of technology.” From 1999 to 2005, Dr. Chou served as President of Oracle on Demand. The company focused on enterprise applications delivered as a cloud service.

Dr. Chou is a worldwide keynote speaker and teaches at Tsinghua University in Beijing, China, and at Stanford University, where he has been active since 1982. He started Stanford's first course on cloud computing.

[--more--](#)

Best Practices

The Zero Outage Industry Standard Association

The Zero Outage Industry Standard Association (www.zero-outage.com) is focused on minimizing the risk of users suffering from IT outages. It creates IT standards that will help users to confidently make use of systems and services that are less likely to be affected by crashes and outages.

Launched in November, 2016, the association is headquartered in London, United Kingdom. Its founding members include Brocade, Cisco, Dell EMC, Hitachi Data Systems, Hewlett-Packard Enterprise, Juniper, NetApp, SAP, SUSE, T-Systems, and IBM.

IT failures can result from technical defect, human error, or flawed, inconsistent, or ineffective organizational processes. Zero Outage is currently in the process of defining what is required to achieve a zero-outage IT environment. It is providing a Zero Outage framework of best practices to enable the delivery of secure, reliable, and highly available end-to-end services and solutions. The goal is to develop a common standard for IT processes, platforms, people, and security to safeguard quality and reliability at all levels and to maximize the availability and customer satisfaction with IT services by improving stability and security.

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Recommended Reading

The High Availability Design Spectrum – Part 3

[Editor's Note: In his book "High Availability IT Services," Dr. Terry Critchley lists twenty-three areas that can have an impact on the availability of IT business services. In this multipart series, and with his permission, we publish his observations. In Part 1 of this series, we reviewed his first four reflections - his Parts A through D. In Part 2, we examined his next nine considerations – his parts E through M. In this Part 3, we publish his six observations N through S.]

Dr. Terry Critchley: Most of the documentation on HA/DR I have come across majors on hardware, mainly redundant or fault-tolerant, and, to some extent software. My thesis is that the spectrum of activity needed to design, implement and maintain a high availability business IT system and recover from failures small and large (DR) is much, much greater. Below, I have listed 23 areas (A to W) that can have an impact on the availability of business services that are IT-based. I am sure it will be evident that these areas can have a significant impact on the availability and non-availability of any service or system.

Remember, focusing on availability and focusing on avoidance of non-availability are not the same thing if you think about it.

[--more--](#)

Geek Corner

Improving Availability via Staggered Systems

The reliability of a redundant system is optimized by minimizing the probability that both systems will fail simultaneously. If they both have the same failure probability distribution, one system will fail when the other system is most likely to fail.

By staggering the system starting times so that their probability distributions are not aligned, the time that the two systems are most likely to fail will be different. When one system is most likely to fail, the probability that the other system will fail is reduced significantly. Therefore, the probability of a dual system failure is reduced. Redundant system reliability can be greatly enhanced by staggering the starting times of the two systems. This strategy applies both to hardware failures and to software failures.

In this article, we analyze the improvement in availability that can be obtained via staggered starts.

[--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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