*the* **Availability Digest**

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# Continuous Availability Featured at HPTF 2009
June 2009

Continuous availability is a major topic at this year's HP Technology Forum and Expo (HPTF&E), (www.hptechnologyforum.com) to be held in Las Vegas from June 15th through the 18th. Dr. Bill Highleyman, Managing Editor of the Availability Digest, will be contributing with two talks on active/active systems – "Eliminating Planned Downtime in Active/Active Networks" and "Achieving Century Uptimes with Active/Active Systems."

There are several other excellent presentations and SIGs (Significant Interest Groups) dealing with continuous availability and high availability, many highlighting active/active technology. Abstracts focusing on continuous availability and the titles of sessions dealing with high availability are listed below.

Of particular interest to many of you is HP's announcement of its new TMF (Transaction Management Facility) Synchronous Gateway,[1] which lets a third-party replication engine join a TMF transaction. Sessions 3111, 4621, and 4106 will show you how third parties are striving to bring synchronous-replication engines to your applications.

See you in Las Vegas.

## Continuous Availability Sessions - NonStop

***Achieving Century Uptimes with Active/Active Systems***
*Dr. Bill Highleyman, Managing Editor, Availability Digest*
*Session 4422 – Wednesday 2:30 PM*

This session will describe how active/active systems work and why they work. Their availability will be compared to active/backup configurations and clusters. The session will explain data-replication techniques to keep the distributed database copies that are so important to active/active systems, and it will review currently available replication products. Examples showing how to perform cost/benefit analyses of active/active systems will be given. Finally, active/active concepts will be exemplified by a case study.

In today's 24x7 environment, the continuity of business functions is paramount. This means IT systems that never fail, even in the presence of disasters that may wipe out a data-processing center. Furthermore, disaster recovery is insufficient—recovering from a data-processing fault can take hours and can cost an enterprise dearly. What is required is disaster tolerance. Ideally,

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[1] HP's NonStop Synchronous-Replication Gateway, *Availability Digest*; June 2009.

users should be unaware that there has been an IT failure; or at least they shouldn't be inconvenienced.

Disaster tolerance is the realm of continuous availability. Continuous availability is being achieved today with active/active systems that have been in production for years without an outage. Though coming out of the HP NonStop world, active/active technology is equally applicable to the broad range of HP systems, including HP-UX and OpenVMS.

### Eliminating Planned Downtime in Active/Active Networks
*Dr. Bill Highleyman, Managing Editor, Availability Digest*
*Session 2561 – Tuesday, 5:00 PM*


The session will describe the procedures for eliminating downtime in active/active systems. Several case studies of systems currently in production will be described. Active/active systems comprise multiple processing nodes using replicated database copies to cooperate in a common application. These systems are capable of attaining availabilities in excess of six 9s, or an average downtime of less than 30 seconds per year. Therefore, there is no time available for a system to be taken down for maintenance for any reason whatsoever. However, planned downtime can be eliminated in active/active systems by rolling upgrades through the system node-by-node. Since a node can be removed from service and subsequently reliably restored, this process is completely transparent to the users of the system.

The techniques described in this session are also applicable to active/backup systems that are properly configured.

The procedures that will be discussed in this session are extremely important in today's 24x7 IT environments, where planned downtime can be as costly to a company as unplanned downtime. In the past, planned downtime was needed to migrate to new hardware, new operating system versions, new database management versions, and new application versions, as well as to install new applications. However, gone are the days of a two-hour maintenance window over the weekend. Today, systems must be continuously available. Planned downtime is not possible.

### NonStop Server Business Continuity Update
*Wendy Bartlett, Distinguished Technologist, HP*
*Session 3111 – Tuesday, 11:45 am*

At this session, you will hear about the latest improvements to the full product set for HP's NonStop disaster-tolerance solution: Remote Database Facility (RDF) 1.9, Transaction Management Facility (TMF) 3.6, AutoTMF and AutoSYNC updates, and SQL Data Definition Language (DDL) Replicator, plus the new TMF Synchronous Gateway for use in active/active replication by partners. All these products run on all the latest HP NonStop platforms, and RDF 1.9 will be available for all currently supported server types, from the S series to the new HP Integrity BladeSystems. The session will also review highlights of the expanded RDF System Manual, with guidelines for achieving the fastest switchover and takeover. In addition, it will discuss ongoing interest in HP NonStop active/active replication environments.

### How AOL Migrated 40 Sybase Databases to NonStop With No Downtime
*Rob Lesan, Principal DBA, AOL*
*Session 3076 – Wednesday, 1:15 PM*

This session is targeted at anyone interested in migrating databases to the HP NonStop platform. The discussion will cover the processes and products AOL used to migrate 40 active Sybase databases to a single NonStop table hosted on four systems with bidirectional replication between the systems. AOL had no outages for the database consumers during the entire

process. The session will highlight how the databases were migrated, what was migrated, and how the project was managed to avoid impact on users.

### Time-Sensitive Applications in Virtualized Environments
*Jack Di Giacomo, Product Manager, TANDsoft*
*Session 3068 – Wednesday, 10:30 AM*

This session explores the available time-simulation solutions that allow production and backup systems to support worldwide virtualized environments without affecting normal system operation. These solutions become all the more important as increasing numbers of businesses consolidate their IT environments onto fewer systems or into a virtual data center. While delivering many benefits—significant savings, improved service levels, enhanced speed and reliability, reduced network complexity, and more—consolidation also brings challenges. Companies often become so focused on the benefits that they fail to adequately anticipate and prepare themselves for the issues they must resolve.

One such challenge is that of addressing time-sensitive applications. Companies now consolidate many applications serving worldwide locations onto a set of servers at a single processing environment. However, doing so creates the dilemma of how these time-sensitive applications run under their own local clocks, in their own time zones. Today's businesses use one system to host multiple applications with different date/time requirements. As a result, problems arise with having to provide each application with its own clock and calendar for development, testing, production, disaster recovery, and quality assurance activities. Time-simulation solutions address these challenges.

### Optimizing Multi-Node Configurations for Performance and Indestructibility
*Randall Becker, R&D Programme Manager, Nextbridge*
*Session 3661 – Wednesday, 10:30 AM*

This session will examine the challenges that can arise when taking advantage of the HP NonStop platform's unique ability to distribute data and business service layers seamlessly and in a linearly scalable fashion. The session will introduce a number of suggestions for organizing data for performance, including the use of geo-technical proximity (how close it is on the Internet to the user), SQL/MX partitioning, and service allocation. Active/passive and active/active configurations will also be presented and compared as options for improving performance. Finally, the session will examine various approaches for improving performance in non-failure, failure, and maintenance operating scenarios.

### Shadowbase Data-Replication Solutions, Including State-of-the-Art Active/Active Architectures
*Paul J. Holenstein, Executive Vice President, Gravic*
*Session 4621 – Thursday, 9:15 AM*

This session presents Shadowbase solutions for common business problems, including advanced active/active architectures. The session will also include a discussion of the upcoming synchronous replication capability enabled by the newly released HP Transaction Management Facility (TMF) Synchronous Gateway API.

Shadowbase, Gravic's real-time data-integration and synchronization product, is used in homogeneous and heterogeneous replication projects, including business continuity/disaster recovery, zero-downtime migrations, data warehouse feeds, and real-time business intelligence.

### NonStop Business Continuity SIG
*Michael Heath, Moderator*
*Session 4106 – Wednesday, 5 PM*

Join the Connect NonStop Business Continuity Special Interest Group's annual meeting. During this session you can join others in discussing current status and your priorities for improvements to be shared with HP. This session is open to all attendees interested in this topic.

## Continuous Availability Sessions - OpenVMS

### OpenVMS Disaster-Tolerance Update
*Keith Parris, Systems/Software Engineer, HP*
*Session 3049 – Wednesday, 2:30 PM*

This session provides an update on new technical capabilities, directions, and trends in the field of disaster tolerance, as well as recent user experiences in the area of disaster-tolerant OpenVMS Clusters.

### OpenVMS Clusters Over TCP/IP
*Nilakantan Mahadevan, Technical Expert, HP*
*Session 4023 – Thursday, 8:00 AM*

HP OpenVMS clustering technology, a proven clustering technology, known as "gold standard" for DT, hailed for its security and reliability, is adopted by HP's major customers for whom downtime is never an option. OpenVMS clusters provide unique distinct advantage with 99.998% availability and lower TCO, according to a Techwise survey This session introduces the OpenVMS cluster over TCP/IP feature, which is part of the upcoming OpenVMS 8.4. OpenVMS cluster over TCP/IP enables the use of IP for OpenVMS Cluster Communication in addition to 802 LAN for Cluster Communication. This will enable multisite OpenVMS Cluster customers to have the ability to use TCP/IP services, which are now becoming a defacto standard.

### Evolving OpenVMS Environments: An Exercise in Continuous Computing
*Robert Gezelter, Principal, Robert Gezelter Software Consultant*
*Session 3178 – Wednesday, 3:45 PM*

### Using Shadowsets With More Than Three Members
*Keith Parris, Systems/Software Engineer, HP*
*Session 3033 – Tuesday, 10:30 AM*

This session describes applications for a new capability anticipated in OpenVMS Version 8.4. This capability will allow Host-Based Volume Shadowing shadowsets of up to six members.

This session will show how current and coming OpenVMS features, including OpenVMS on HPVM (HP Virtual Machine), can be used to achieve higher levels of uninterrupted availability while decreasing expenses and risk. While the ongoing need to operate more efficiently with fewer assets and lower risk would seem to complicate hardware and software upgrades, this session will show that the opposite is true.

## Continuous Availability Sessions - Other

### Defining High Availability and Disaster Recovery with Virtualized Storage
*George Wagner, Product Marketing Manager, HP*
Session 3265 – Tuesday, 10:30 AM, and Wednesday, 3:45 PM

This session is ideally suited for attendees who have recently begun or are looking to implement high availability (HA) or disaster recovery (DR) solutions. The presenter will talk about business continuity as a spectrum—at one end is HA, which means no downtime and no data loss due to a

disaster or failure. On the other end is DR, which almost always involves downtime, lost access to data, or data loss.

Until recently, HA and DR were often out of reach for small and midsize companies. However, virtualization is bringing the cost down and making it easier for any company to implement and automate HA and DR across the organization in a simple and affordable way. This session will highlight the advancements that are helping midsize companies achieve true HA and DR.

### Tips and Tricks on Building VMware ESX 3.5 with HP c-Class Blades, Virtual Connect, and HP EVA.
*Yuri Magalif, Systems Engineer, Total Tec Systems*
*Session 2984 – Wednesday, 5:00 PM*

This tips-and-techniques session is best for systems administrators looking to implement VMware ESX 3.5 on HP c-Class Blades, Virtual Connect, and HP StorageWorks Enterprise Virtual Arrays (EVAs). The session will focus on real-world examples of VMware and HP best practices. For example, participants will learn how to double their storage I/O; how to make Virtual Connect really "connect" to Cisco Internet Protocol (IP) switches in a true active/active fashion; how to configure Virtual Local Area Networks (VLANs) for the Virtual Connect modules and VMware Virtual Switches; and how to solve the firmware headaches with Virtual Connect. Further, participants will receive valuable VMware and Virtual Connect cheat sheets to use during their design and implementation. A basic understanding of VMware ESX and HP c-Class blades is recommended.

### Connect Business Continuity SIG Meeting
Michael Heath, Moderator
*Session 4161 – Thursday, 3:45 PM*

Join this session to meet with other attendees to discuss business continuity in the course of Connect's Business Continuity Special Interest Group's annual meeting. During this session, you will have a chance to discuss current status and your priorities for improvements to be shared with HP. This session is open to all attendees interested in this topic.

## High-Availability Sessions

### Using Virtualization for High Availability and Disaster Recovery
*Jeffrey Kight, Solution Architect, HP*
*Session 2481 – Tuesday, 3:45 PM, and Wednesday, 3:45 PM*

### Removing the Storage Roadblocks to Unlock the Full Potential of Virtualization
*Chris McCall, Manager, Product Marketing, Unified Storage, HP*
*Session 3224 – Tuesday, 2:30 PM, and Thursday, 10:30 AM*

### Implementing HP Serviceguard Storage Management Suite for HP-UX 11i
*James Melton, Americas Escalation Team, HP; Iman Roodbaei, Global Support Eng.*
*HW_Analyst ,Teradata; Asghar Riahi, Sr. Technical Consultant, HP*
*Session 1481 – Wednesday, 2:30 PM*

### Virtualize Your Enterprise and Cut Costs with Oracle Virtual Machine and HP StorageWorks
Wiekus Beukes, Application Engineer, Oracle; Tommy Burke, HP
*Session 3176 – Wednesday, 3:45 PM*

***Overview of HP/EDS Mainframe Modernization Program and HP-UX Infrastructure Considerations***
*Chuck Weir, Solutions Architect, HP; Ken Hutchinson, Solution Architect, HP*
*Session 2548 – Wednesday, 8: 00 AM, and Thursday, 11:45 AM*

***Adaptive Infrastructure Solution Showcase—an Executive Overview of AI***
*Richard Warham, Solutions Architect, HP; Paul Mantey, Enterprise Architect Presales Organization, HP*
*Session 1321 – Tuesday, 11:45 AM, and Wednesday, 5:00 PM*

***Accelerating Oracle RAC with HP Platforms and InfiniBand***
*Brian Forbes, Director, Technical Alliances Manager, Voltaire*
*Session 4461 – Thursday, 8:00 AM*

***Provisioning and Managing Microsoft Exchange 2007 with HP Insight Orchestration and Insight Dynamics – VSE***
*Joe Sullivan, System Engineer, HP*
*Session 2293 – Wednesday, 1:15 PM*

***HP Oracle Database Machine, powered by Exadata***
*Raghunath Nambiar, Performance Architect, HP; Hamid Djam, Principal Product Manager, Oracle; Richard Palmer, Dir. Technology Strategy – ISS, HP; Jean-Pierre Dijcks, Senior Principal Product Mgr, Oracle*
*Session 2547 – Tuesday, 3:45 PM, and Wednesday, 8:00 AM (2.25 hours)*

***Virtual Desktop—Storage Best Practices***
*Adam Carter, Product Manager, HP*
*Session 3540 – Thursday, 10:30 AM*

***Virtualize with HP***
*John Richard, Virtual Infrastructure Solution Engineer, HP*
*Session 2343 – Tuesday, 2:00 PM, Wednesday, 8:00 AM, Wednesday, 2:00 PM, Thursday, 8:00 AM (4-hour lab)*

***Configuring the HP BladeSystem GbE2C and 10Gb BL-c Ethernet Switches for Interoperability and Availability***
*Richard Jessop, Director - HP Engineering, HP/BLADE; Scott Irwin, Network Solutions Architect, Blade Network Technologies*
*Session 3164 – Tuesday, 10:20 AM, Tuesday, 1:15 PM, Wednesday, 8:00 AM, Wednesday, 1:15 PM, Wednesday, 3:45 PM (2-hour lab)*

***Implementing ProCurve Distributed Trunking for Advanced Data Center Solutions***
*Kevin Meany, Network Architect, Versatile Communications*
*Session 2702 – Tuesday, 2:00 PM, Wednesday, 8:00 AM, Wednesday, 2:00 PM (4-hour lab)*