

# **Extending the Life of your HP e3000 SCSI is SCSI – or is it?**

John Burke  
Burke Consulting  
[john@burke-consulting.com](mailto:john@burke-consulting.com)  
[www.burke-consulting.com](http://www.burke-consulting.com)

# Presenter Biography

## John Burke – Burke Consulting

- 25+ years experience in IT and IT management, most using the HP 3000
- Over 13 years experience writing monthly about all things HP 3000, first for HP Professional, and then (since 1995) for The 3000 Newswire
- Current Co-Chair SIGMPE and Vice-Chair MPE Forum
- Consultant to HP e3000 community
- Candidate for OpenMPE Board of Directors
- Adjunct Professor of Mathematics at Sierra College and Folsom Lake College
- [www.burke-consulting.com](http://www.burke-consulting.com) (hosted on an HP e3000)
- [john@burke-consulting.com](mailto:john@burke-consulting.com)

# Extending the life of your HP e3000 SCSI is SCSI – or is it?

- This presentation is based upon an article of the same name that appeared in the April 2003 issue of The 3000 Newswire, later give and take with HP as well as non-HP experts in the field, and several follow-up items that appeared in The 3000 Newswire ([www.3000newswire.com](http://www.3000newswire.com)).
- This presentation is aimed at the SMB either planning to homestead or, even if planning to migrate, expecting to run its HP e3000(s) past 12/2006.

# What prompted "SCSI is SCSI"?

Even before November 14, 2001,

- "We have an old HP6000 SCSI SE disk rack. It has been running 4 2gig drives for a long time. One of the drives recently failed and we are looking at our options for not only replacing the lost storage but also increasing our available disk space. We are a small company so we are looking for relatively inexpensive options." – from HP3000-L
- Reluctance to crack open the case to add storage
- Search for inexpensive disk-to-disk backup

Now, since 11/14/2001, organizations are also considering how to keep their (older) systems going both in the short term and past 2006.

# What should you be doing?

- Join OpenMPE ([www.openmpe.org](http://www.openmpe.org)), your best hope for the survival of MPE-IMAGE in a maintainable form past 2006. (and vote in the current election for 5 seats on the 9-person Board of Directors – voting continues through April 6.
- If you are planning to run your HP 3000 past 12/2006, start NOW qualifying third party hardware and software support organizations.
- Develop a storage strategy for both tape and disk. You want to get your system on the newest, most highly available, most maintainable equipment possible. Why? Because disk and tape are electro-mechanical devices and are most prone to failure.

# Tape Strategy

- Ideally, use an external DLT drive/drives for backup purposes. DLT media is longer lasting and higher capacity and DLT drives have a better record of reliability and longevity than DDS drives and, are generally faster. If you have an autoloader or library and the software to control it, even better.
- You need at least one DDS drive (software media from HP is distributed only on DDS). Do NOT rely on DDS-2 and/or the internal DDS drive on your system. DDS-2 drives are notoriously failure-prone. Replacing an internal drive requires a complete shutdown of the system.
- Note: LTO tape drives are “supported” on N-Class systems with appropriate patches using certain third party backup software.

# Tape Strategy (continued)

- Urban Legend 1: You can only do an OS upgrade or system install from an internal tape drive.
  - FALSE! Just change the secondary boot device to the appropriate path.
- Urban Legend 2: Even with an external drive(s), you must shutdown the system to replace the drive.
  - Generally FALSE. If you have one or more tape drives on a SCSI bus, and these are the only things on the bus, you can usually replace a drive by first downing all the devices, powering them off, replacing the drive(s), powering the devices back up and, finally upping all the devices.

# Disk Strategy

- Urban Legend #3: LDEV 1 must be an internal disk drive.
  - FALSE! Just change the primary boot device to the appropriate path. Unless space is absolutely critical, do not use internal disk drives for anything critical. A good use would be for disk-to-disk backup.
- Mirror/iX vs. Hardware RAID
  - In my opinion, there is no competition. Mirror/iX was a good product in its time, but its time is past. Chief among its deficiencies is that you cannot mirror the system volume set. Even if you already own Mirror/iX, retire it in favor of hardware RAID for the long haul.

# Disk Strategy (continued)

- A-/N-Class systems:
  - SAN in a can (HP XPnnn or EMC Symmetric, for example)
  - HP VA7x10 – “awesome performance on N-Class and reasonably priced” – Gilles Schipper (attend the talk by Walt McCullough later today on configuring the VA7x10)

# Disk Strategy (continued)

- Mid-size and larger 9x7, 9x8, 9x9, 99x production systems, or smaller systems where RAID protection is deemed necessary:
  - AutoRAID 12h (must be forced to RAID 1 by allocating less than 50% of the disk space); more expensive than the model 20; only 1 FW-SCSI interface.
  - Model 20 (solidly built and parts availability should be good well after 2006 – many consultants and third party hardware and support vendors have experience configuring these devices – HP3000-L also contains a lot of configuration advice); supports 2 FW-SCSI interfaces

# Disk Strategy (continued)

## Representative Mod 20 Configs/Costs

Model 20 with dual SP620 controllers – in plentiful supply on the used market (but be sure to buy a couple of spare disk modules)

- 20 4 GB disk modules (80 GB raw/40 GB RAID 1)
  - \$2,000
- 20 8.8 GB disk modules (176 GB raw/88GB RAID 1)
  - \$5,000
- 20 18 GB disk modules (360 GB raw/180 GB RAID 1)
  - \$8,000 (about \$45 per gigabyte RAID 1)

Pricing courtesy Robert Epperson  
([roberte@genisyscorp.com](mailto:roberte@genisyscorp.com)), Genisys Corp  
([www.genisyscorp.com](http://www.genisyscorp.com))

# Disk Strategy (continued)

- Small 9x7, 9x8, 9x9 systems where RAID protection is deemed unnecessary, too costly (even after seeing the previous slide) or requiring too much space:
  - Urban Legend #4: You can only use drives listed in IODFAULT.PUB.SYS
  - Urban Legend #5: You need to use only HP-branded storage peripherals.
  - Urban Legend #6: Just because you are using older technology systems, you are stuck using both old technology, and just plain old, disk drives.

# Disk Strategy (continued)

- Urban Legend #4: You can only use drives listed in IODFAULT.PUB.SYS
  - Actually, you can use anything that is close.
  - In fact, for SCSI disk drives that attach to the HP e3000, there is the need for only three generic IDs: SE, HVD, and LVD (for the LVD PCI card(s) in the A-/N-Class systems.

# Disk Strategy (continued)

- Urban Legend #5: You need to use only HP-branded storage peripherals. Some issues:
  - This used to be true, when HP made disk drives, but is mostly untrue now.
  - But, you say, all your disk drives have an HP label on them, so they must be HP drives.
  - Try to buy a 4 GB or 9 GB 50-pin HP branded disk drive for your 9x7, 9x8 or 9x9. HP does not sell them anymore, and used market drives are expensive.
  - No one makes new FW-SCSI (HVD) drives anymore of any size.
  - Even if you pay the money to buy used HP branded drives they are both used and old technology.
  - SCSI is SCSI

# Disk Strategy (continued)

- Urban Legend #6: Just because you are using older technology systems, you are stuck using both old technology, and just plain old, disk drives.
  - With appropriate intermediate hardware, you can connect new LVD disk drives to SE-SCSI interfaces.
  - Seagate currently makes new technology 18 GB (ST318418N) and 36 GB (ST336918N) disk drives with the old technology 50-pin SE-SCSI interface.
  - Paralan ([www.paralan.com](http://www.paralan.com)), and others make FW-SCSI (HVD) to LVD converters that allow you to connect a string of LVD drives to a FW-SCSI (HVD) interface.
  - Crossroads Systems ([www.crossroads.com](http://www.crossroads.com)) makes a storage router device that allows you to connect from one to four FW-SCSI (HVD) adaptors to up to two Fibre Channel resources (i.e. SAN)

# Disk Strategy (continued)

## Possible challenges

- Heat dissipation for the newer drives
- Firmware on FW-SCSI (HVD) cards.
- Low-level formatting on generic drives purchased on the Internet.
- Drive header information (UNKNOWN).
- Disk drive firmware on non-HP branded drives.

*Thank you.*  
*- John Burke*

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