

# Survival Means Being Prepared

by Pat Fitzsimmons



**UPSTREAM's facility will perform complete system backups of an entire disk, including all operating system information, as well as all files regardless of their open or "in-use" state.**



**D**isaster Recovery...Business continuance... Business continuity...who can survive is what it's called! These phrases certainly conjure up images that differ for everyone, and these can be or mean different things...from a user that can't access their email or their application on the LAN; to a downed server; to a physical problem such as a fire or flood. A common thought that many people have is "nah...it wouldn't happen to us!" Murphy's Law exists for a reason.

There were the fires of California, and the and the floods of Nevada and NJ. Industry experts still warn of the serious lack of preparedness of most corporations as we approach an age where most corporations' storage exceeds multiple Terrabytes.

Storage and LAN administrators are the keepers of the company jewels, and they need to have the latest tools and also spend time preparing and testing the Disaster Recovery scheme in order to keep the corporate assets protected and prepared. **Tape rotation** doesn't mean using the "other" tape in the drawer and **off-site vaulting** is not something the local banker performs. And just because your company has the way cool remote mirror software, like EMC's SRDF and other similar products, it doesn't mean you don't still need backups! New Storage arrays and RAID devices are extremely reliable systems that very seldom get hardware errors and fail. SRDF is a great facility that can save a considerable amount of time and resources, but in some ways the RAID devices and SRDF promotes a false sense of complacency. Because of the high hardware reliability and the remote copy feature, users don't feel the compelling need to do backups. But user error can and still does occur. And frequently! People have been working hard spending long hours, someone deletes the master catalog, or just gets distracted and puts down the wrong volume and guess what, they're both toast! And let's not forget the "Melissa" and the "I love you" viruses.

Innovation Data Processing, the makers of the FDR line of products and a leader in storage management since 1972 has several products that can make Storage and LAN administrators jobs easier and more importantly successful!

## OS/390 Resident Data

IDC (International Data Corp, Framingham Mass) estimates that 70% of all business data is stored in OS/390 mainframes and Innovation Data Processing's products can help protect and recover that data.

ABR is an OS/390 storage management product providing the highest performance available to OS/390 shops! FDRABR full-volume restores can be enhanced with FDRCLONE, and is particularly beneficial if you are backing up to high-capacity tape, like the IBM Magstar or StorageTek 9840. FDRCLONE allows you to restore only the data sets that are required at a disaster/recovery site or a test system, instead of restoring all data sets including those that will never be used on that system. FDRCLONE restores data sets from ABR backups on demand, as they are needed.

FDRCLONE also **maximizes** your investment in new tape technology and minimizes down time by restoring data quicker with a **minimum** of tape mounts. FDRCLONE with its FDRDRP feature processes multiple full-volume recovery tasks in parallel and mounts input tapes a minimum number of times. It manages usage of the backup tapes required for those restores, so that each backup tape is mounted a minimum number of times, **usually one mount per tape volume**. This will greatly reduce the elapsed time required to recover the volumes and eliminate most extra tape mounts.

## The other guys...Open Systems Data

According to The Gartner Group, among the Fortune 1000, less than half of business continuity plans include networks and only a quarter cover PC LANS. As an answer to this need, FDRSOS and FDR/UPSTREAM were created.

FDRSOS was designed for high speed backup/restore of open systems data that resides on an EMC Symmetrix DASD array. FDRSOS features an almost totally non-disruptive physical image backup for SCSI disk devices at the level of the Symmetrix logical disk volume. Recovery for multiple volumes in parallel, independent of operating systems or networks is also an additional valuable feature. The compelling benefit of FDRSOS is its high performance!

UPSTREAM/SOS provides FDRSOS users with logical file Backup/Restore support, Job Scheduling and Coordination between the mainframe and UNIX/LAN/PC Systems, providing Reporting and Administrative control. FDRSOS and UPSTREAM/SOS work together to provide a total backup solution for your LAN/UNIX systems.

FDRSOS and UPSTREAM/SOS utilize special I/O techniques to read the Open Systems volumes in the Symmetrix and transmit backup data across the S/390 channel for storage to the OS/390 Server. The ESCON S/390 channel is preferred to slower network links like SNA/APPC or TCP/IP and provides high speed performance.

For companies that don't have open systems data on an EMC array, there is FDR/UPSTREAM. FDR/UPSTREAM is an automated storage management product for backup/restores, and management of PC/LAN/UNIX and also OS/390 UNIX data that uses the services of the OS/390 server. Everyday backup/restore needs can be performed either by the OS/390 operations group or by the distributed LAN/UNIX department and UPSTREAM provides volume, logical file, and physical disk support through a ISPF, GUI or JAVA interface.

FDR/UPSTREAM provides a complete backup, restore and disaster recovery solution for Windows NT/Windows 2000 Servers and Workstations. FDR/UPSTREAM for Windows NT/2000 has the capability of backing up the critical system information in a Windows NT and Windows 2000 system and can be run as an Application or Service and allows you to perform selective registry restores. FDR/UPSTREAM also supports the Windows 2000 Active Directory and also supports a number of Window NT/2000 features that include hard links, mount points, compressed files, sparse files, encrypted files, and user quotas.

### More than backup... Physical Disk Support

FDR/UPSTREAM can be used to perform physical disk backups and restores. This is not a replacement for standard logical backups but is meant to be an extension of them. This will allow for high-speed disaster recovery restores by performing physical disk backups whenever you make significant system upgrades. UPSTREAM's facility will perform complete system backups of an entire disk, including all operating system information, as well as all files regardless of their open or "in-use" state. Even if you can't replace the

hardware with the same configuration as before the disaster, UPSTREAM has the capability to restore to disks with differing geometries and disk management software.

Physical disk and FDRSOS backups are ideal for disaster recovery; indeed, that is their primary purpose. If you lose a disk on your workstation or server, these facilities can make complete system recovery simple. However, if you rely just on logical file backups and lose the boot disk of your workstation or server, you have to reinstall the operating system, device drivers, communications support, etc. before you can run FDR/UPSTREAM to perform the restore.

To simplify this process, FDR/UPSTREAM supports a single disk recovery restore facility for all LAN operating systems including Windows NT. It uses the powerful ULtra (UPSTREAM LAN Transport) facility which allows backups and restores of LAN attached workstation using TCP/IP, NetBIOS or IPX/SPX protocols and also allows you to pre-create the bootable diskette. When disaster strikes the process is:

- Replace the hardware with the same configuration as existed before the disaster.
- Boot the machine with the pre-created bootable disk.
- From a working FDR/UPSTREAM machine, bring up the physical disk restore dialog.
- Select the most recent physical disk backup from the failed machine, specify the ULtra LAN workstation name.
- Begin the restore.

### Planning for Disaster

For example, in Disaster Recovery planning, FDR/UPSTREAM's vaulting facility can be used to create a secondary tape copy for DR to be stored in an off-site vault to be used for on-site recovery if primary backups are damaged or unavailable. When the "vaulted" tapes are made, UPSTREAM copies its OS/390 database info onto the last dataset on the last tape of the tape set. In a real disaster where you lose the UPSTREAM database, simply get the vaulted tapes and perform a utility operation, repopulating the database quickly. This makes these tapes ready to perform restores. You then can perform logical file, logical volume, or physical disk recovery. UPSTREAM's use of compression, duplicate file backup & restore support, and local backup disk make it an intelligent restore tool!

### Houston...This is not a Test

Disaster Recovery in today's fast paced business environment is often a crazed time when an organization is trying to recover its mainframe applications and also the distributed data as quickly as possible. One major issue that confronts most Disaster Recovery is a scheduling conflict where companies are trying to bring up multiple systems and applications simultaneously. This can create a bottleneck in the recovery operation, thus making either the mainframe or LAN/UNIX restore wait.

Innovation has helped minimize the recovery bottleneck problem with FDR/UPSTREAM's Stand-Alone Restore! UPSTREAM SAR is a new feature of FDR/UPSTREAM where you can use a Windows NT SCSI attached tape drive to perform disaster recovery restores **without** UPSTREAM/MVS component or data communications being active. UPSTREAM SAR allows restores of backups for any system including UNIX systems, with file level or physical disk restores with a browser based interface that allows remote administration. There is no tape preparation required, just pop the tape in and your restore immediately begins. You can also restore in locations where you do not have mainframe access. SAR is also Multi-tasking: if you have multiple SCSI attached tape drives you can run multiple simultaneous restores.

UPSTREAM SAR runs as a single task on your Windows NT machine servicing a web-browser based console as well as multiple inquiries and restores. UPSTREAM SAR does not maintain a database of the files on the backup; it does a sequential scan whenever a client request is made. As a result you can begin your restore immediately without a database recovery step.

### Survivors

You're the storage administrator, the clock's ticking, someone is standing over your shoulder counting the dollars in lost revenue. This is what they mean when they speak of pressure...the sweat is dripping in your eyes and 60 minutes can seem like 60 hours if you don't have the right tools, a well thought out procedure and plenty of practice.

Don't play a game of Survivor without Innovation's storage management products and expect to be the last one left on the island.

For more information on FDR/UPSTREAM and the complete family of FDR storage management products, contact **Innovation Data Processing at (973) 890-7300**, or visit us at <http://www.innovationdp.fdr.com> ●