



Report on Experiences with FDR/UPSTREAM

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Being part of the Oberfinanzdirektion (Regional Fiscal Office) Koblenz, the Fiscal Administration's Central Data Processing Center (ZDFin) runs the processes of the fiscal authorities in the German state of Rheinland-Pfalz. In addition thereto, ZDFin's mainframe is also used to run any other of the state's mainframe-based processes.

About 9,500 users are connected to the mainframe, with approx. 6,000 thereof using a Citrix Metaframe terminal server solution. The centralized office environment is used by more than 1,000 users, and another 5,500 office users are connected to the office environment via decentralized local servers.

In the mainframe area, an IBM z/890 computer with z/OS v1.6 operating system is being used with multiple LPAR's and several z/Linux guests under z/VM. It is intended to migrate to a z9 BC S07 2096-R03 in November 2006.

The storage system includes one EMC² Symmetrix DMX1000 and two Tetragon T2100 with an aggregate capacity of approx. 10 TB. Backup and archiving is performed using FDR/ABR in connection with an IBM VTS 3494-B20 tape robot system with J1A and E1A drives.

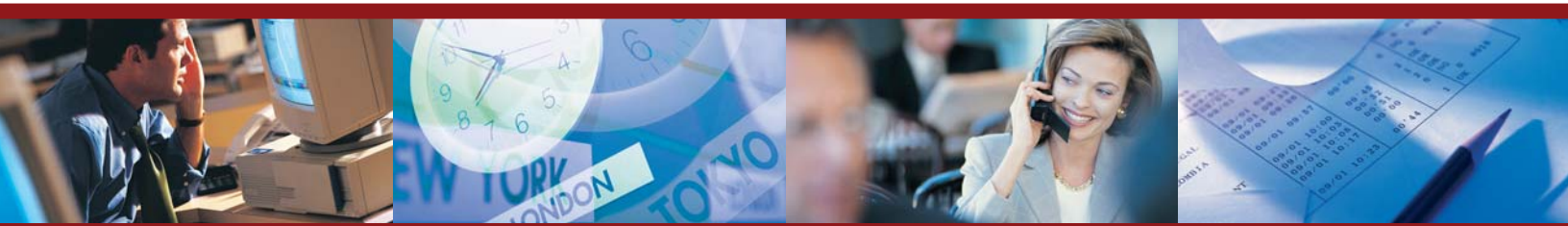
The server farm consists of more than 140 servers running Windows NT/2003, UNIX, and Linux as operating systems. The total data volume of about 5 TB is split up among the individual servers; backup and archiving of the server store is being performed manually using individual drives on each server. Currently a storage consolidation project is underway with the objective to map the store within a SAN/NAS environment on the Symmetrix system.

As the number of productive servers is continuously growing, a consolidation of the server backups has become imperative. Making server backups individually is expensive (drives, tapes), labor-intensive, and error-prone.

Potential solutions were either to purchase a backup robot system (plus related software) or to share in the use of the hardware already existing in the mainframe area.

An economic efficiency study was performed and resulted in a clear preference for the mainframe solution together with the use of the FDR/UPSTREAM backup software:

- No additional hardware required; backups are being performed via the in-house network and mainframe to the VTS tape robot;
- All batch procedures can be controlled and monitored using the TWS/OPC scheduling system existing within the mainframe area;
- Large storage volume by use of the IBM J1A drives with a capacity of currently 0.9 TB per cartridge and a relatively constant mainframe data volume;
- Cost-efficient FDR/UPSTREAM backup software;
- Many years of positive experience with products of Innovation Data Processing;
- No additional labor cost, as mainframe staff is able to cover this area, too.



Contractual negotiations with Innovation Data Processing went as smooth and efficient as usual; the FDR/UPSTREAM installation cartridge was received by us one week following the execution of the agreement.

The basic installation by our in-house system programming staff took one day; memorizing the brochures, setting up the profiles, and linking in the first server was done within one week.

We were able to adopt the existing backup/archiving concept in most respects. Full volume backups are being performed on the weekend, differential backups are made overnight.

Following staff training at Innovation's premises, we were able to switch the backup of the smaller data environments (i.e. up to 200 GB) of the productive servers to FDR/UPSTREAM within a few months. In addition thereto, image copies of the dedicated Linux servers are being created on the mainframe using FDR/UPSTREAM via a z/Linux guest.

Backups are running fully automated under the control of TWS/OPC; manual intervention is necessary only if the OPC reports an error. Furthermore, logs and system messages can be filed within the existing BETA92 environment in a fully auditable manner without any additional capital expenditure being necessary.

Performing those backups via the in-house 1 GBit backend and 10 GBit LAN networks is unproblematic even for the data volumes involved, because online periods are restricted within the public service area. As a result there are sufficient backup windows over night and on weekends.

In the course of the ongoing storage consolidation project, the file server environments will be consolidated on the Symmetrix DMX1000 system by means of a NAS gateway, and databases (i.e. Oracle, SQL) as well as other more large-size data storages will be consolidated on said system by use of a SAN connection. Subsequently, backup and archiving under FDR/UPSTREAM/FDRSOS will take place for file server data and large databases, too.

The expected cost savings in the fields of hardware, consumables, and labor have been fully realized:

- Open world system administrators, which are short and therefore expensive, can be replaced by mainframe operators after a short training;
- Use of the existing mainframe hardware, data media, and software (OPC, etc.) can be shared without any additional capital expenditure;
- The FDR/UPSTREAM product is easy-to-use, stable in operations, and cost-efficient in comparison with other products.

Even the open world systems administrators, who initially had been rather doubtful, are fully satisfied by the trouble-free and high-performance operation of FDR/UPSTREAM in connection with the mainframe infrastructure.

For More Information

For further information or for a **FREE Trial**, please call us at **(973) 890-7300** or send us an e-mail to **sales@fdrinnovation.com**



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