

Weather and climate information stored in optical library

Institute for 'Meteorology and Climate Research' utilizes Fixed Content Server, an integrated storage solution based on an optical library combined with HDD Raid. Bingen/Garmisch-Partenkirchen, Germany, May 23 / May 2005.

The Institute for 'Meteorology and Climate Research' (IMK-IFU) of the Research Center Karlsruhe, located in Garmisch Partenkirchen is using a Fixed Content Server (FCS) of the manufacturer DISC GmbH for their long term data archive.

Since early 2005 the Research Center is storing app. 500GB per month on the FCS system. The stored data includes the source code of weather/climate research simulation software, historical and current weather information as well as results from climate research and simulations. The DISC FCS combines a Disk Drive RAID system and an optical library for long term mass storage of fixed (= unchangeable) content.

While the mass storage is residing on optical media, users have high performance access through the means of S-ATA RAID to data in use, in this application this high performance read cache has a capacity of 2TB. The write process to the double sided DVD media is supported by a HDD based write cache and six DVD Multi Recorder drives. The optical library has 615 dual sided DVD-RAM media in online access. On top of this app. 6TB on line accessed data, 750 offline media are in use utilizing the DISC offline technology (15 media magazine). This patented magazine technology allows to keep the filenames and directory structure to stay in cache, providing online search for the offline files. Upon successful online search of the file, the location of the magazine containing the offline media is provided. Each DVD-RAM has a capacity of 9,4 Gigabyte.

The IMK-IFU decided for the DISC Fixed Content Server (FCS), because storage media for long term storage are utilized. The applied optical storage technology DVD uniquely provides for many years (>30) of safe storage without additional backup or migration requirements and is using standard media (DVD) and a standard file system (UDF). Another prerequisite for the implementation of the FCS system was the lowest cost of ownership in the industry for a long term archive with high performance access. The FCS matches the requirement for a competitive acquisition cost with a very low cost of administration. Currently app. 100 researchers work with the Fixed Content Server. „The concept of utilizing the advantages of two different technologies, RAID and optical technology, convinced us immediately. We did not have to weigh or live with the advantages/disadvantages of one technology. The information is archived safely meeting regulatory requirements while accessible at a very low access time” comments Project MGR Frank Homburg of the IMK/IFU institute.

While searching for the best storage solution, the FCS showed the advantage of a rather simple integration into the existing IT infrastructure. The FCS is now integrated into a Linux cluster environment with 100 nodes, a SGI Irix mainframe, NetAPP HDD NAS as well as app. 200 Solaris-, Irix-, Linux- and WIN clients. Here the FCS showed its strengths to provide concurrent and high performance access. The growing demand



for storage can be met easily by the FCS system since it allows further growth for the archive capacity or the cache capacity independent of each other – allowing a well tailored long term archive system for years to come. An extension to 3 NSM7000 as well as a S-ATA cache extension is planned already.

The FCS is a comprehensive storage system allowing remote administration access for most operating systems and network topologies. It is a 'best-practice-solution' for mass storage due to its unique combination of safe long term storage and fast access, avoiding the issues of high administration cost for DISC/Tape or DISC/DISC based archive systems. The FCS truly applies the 'Archive First' concept, meaning the immediate safe archive and the parallel high performance access capability.

The Fixed Content Server is also available with the innovative PDD technology based on the Blue Laser. The PDD optical storage has a five times higher storage density compared to DVD, driving the capacity the FCS up to app. 50TB in its top model.

About DISC GmbH:

The DISC GmbH develops and manufactures optical storage devices and archive systems up to 50TB at the company HQ in Bingen /Germany. DISC is the industry leader for optical libraries based on the bare media technologies DVD and PDD. The integration of optical technology with HDD RAID is a significant step towards high performance and mass storage archives while achieving a breakthrough in product cost of ownership. The HDD + optical solution proves to meet the needs of companies with high storage and archive demands. DISC is a world leader in archive storage technology. Since May 2005 DISC extended its local presence in the US by opening a branch office in Santa Clara, CA.