

INFORMOSPHERE

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Tape Robot Robustly Runs 'Round the Clock

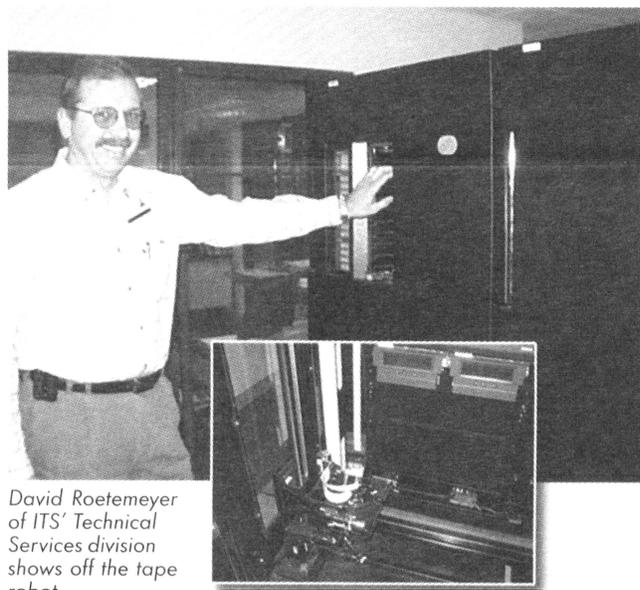
Located in the Operations Center at the Rock Quarry Center, the Integrated Technology Services (ITS) Tape Robot performs daily backups of patient healthcare data for the Health Sciences Center and is the core of the Enterprise Wide Backup Solution. The Tape Robot is connected to an AIX server running a backup utility called Tivoli Storage Manager (TSM) and a program called the library manager control program. Together, they synchronize the commands necessary to execute successful daily data backup.

The robot which resembles a big, black refrigerator is more than six feet tall, six feet wide and four feet deep. Windows on each end permit viewing of the robot in action. The TSM server possesses a 133 megahertz (MHz) (MHz is the clock speed) 604e processor, 640 megabytes (640 million bytes; a byte equals one character) of memory (think of it as being able to store approximately 6,720 novels running at about 100,000 words a book) and 85 gigabytes (a gigabyte equals one billion bytes) (space for 912,645 novels) of disk space. The 3,494 tape library consists of the Library Manager (a PC that controls the robot movements), four tape drives and over 900 tapes. (The tapes look similar to an eight-track music tape).

The daily backup process for all the clients begins at 5 p.m. each day, running throughout the night. Each client runs a scheduler process and checks in with the TSM server to determine its starting time for the daily backup process. At its scheduled time, the client scans all the files on its system. When the backup process finds a file that has changed since the last successful back, a copy of the file is sent across the network to the TSM server and placed in the 50 gigabyte disk storage pool. This process continues on each client until all of the files have been examined and backed up.

Eleven a.m. is the busiest time for the robot each day. This is the scheduled time when the files that are in the disk storage pool are transferred to the tapes in the tape library. The Library Manager receives commands from the 'library manager control program' on the TSM server and controls all of the operations in the tape library. It moves the accessor and picker (robotic arm) to the slot where the tape is located, picks the tape and loads it into the appropriate tape drive. Files being copied to tape are not randomly placed in the tape library; each client's files are placed on as few tapes as possible to speed up the retrieval of any files that need to be restored.

The significance of the tape robot is the volume of work it is capable of performing and its compact nature. "We used to back up each computer system individually, visiting each system,



David Roetemeyer of ITS' Technical Services division shows off the tape robot

loading the tapes, running the backup and unloading the tapes," said David Roetemeyer, Systems Administrator, ITS. "The robot has four tape drives that perform the backup for 125 systems. This includes thirty-five Netware servers, sixty-one NT servers, five VMS servers and twenty-four Unix servers."

Storing Legacy Data

The Science of Managing and Storing Electronic Patient Data

Patient data that originates from a replaced or obsolete system is called "legacy" or "historical" data. All legacy data must be stored, and at the same time remain accessible.

In the early 1980's University Hospital and Clinics purchased a healthcare computer system called Patient Care System (PCS) or BETA as it became commonly known. In the mid 1990's it was decided to replace the PCS legacy mainframe system. With Y2K looming around the corner and a goal to go to an electronic health care record, on December 31, 1999 the PCS Mainframe computer system was shutdown for the last time. An enterprise-wide system called Patient Centered Care

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Dr. Hewett Wins Distinguished Scholar Award

John Hewett, Ph.D., director of the Biostatistics Group in the Division of Research and Education Support, Integrated Technology Services, has been awarded the Distinguished Scholar Award from the Association of Rheumatology Health Professionals (ARHP). He received this award and a check for \$2,500 at the national scientific meeting of the ARHP in Boston and was also featured in a poster display.

"This recognition is a great honor for our Health Sciences Center," said Joyce Mitchell, Ph.D. "It is well deserved by Dr. Hewett."

ARHP Distinguished Scholars must demonstrate exceptional academic achievement in the rheumatic diseases. The annual award is given to an ARHP member recommended by three or more colleagues, then selected by an ARHP committee.



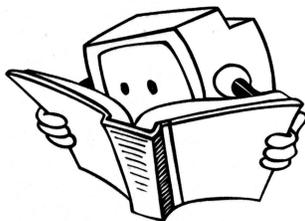
Hewett learned about the award through a phone call in May from a colleague in Boston. "I waited until I received the formal notification, since it wasn't a local award," Hewett said. "I only told my wife. When I received the formal award in August, it became public knowledge."

For more information on Dr. Hewett's award and research please visit <http://www.muhealth.org/~arthritis/spotlight/hewett.html>.

Health Management and Informatics February Noon Seminars

The Informatics Seminars for February have been scheduled and are available for viewing at <http://www.hmi.missouri.edu/hmi/seminars/seminars.htm>.

Faculty and fellows from both HMI and other departments will present topics in the informatics world. The seminars begin at noon; please bring a sack lunch.



Storing Legacy Data Continued from Page 1

On-line (PCCO) was installed to replace the PCS legacy mainframe system. The PCS legacy data must now be stored and accessible.

During the PCCO planning process a decision was made to convert only demographic (name, social security, address, county, etc.) patient information to the new computer systems. The remaining data—patient management, visit history, chart request, abstracting (a summary about the patient), coding, procedures, and account receivable patient notes—were migrated to an Oracle Data Warehouse, which contains approximately 45 gigabytes of data. (One gigabyte equals one billion bytes.)

Medical records and several other departments have the capability to view legacy patient data in one of two ways: by using an in-house web client called Medical Records Management Systems (MRMS) currently being tested by Fairview and Green Meadows clinics and the hospital medical records departments; the other is to use a data-reporting tool called Crystal Reports. The data, which must be saved for approximately 7 years, may be queried by entering a patient name or medical record number.

Future plans include not only putting other legacy data online, but migrating data from the current operational Cerner/IDX systems (PCCO) to a data "warehouse" for reporting, knowledge management, discovery and medical research. "The Health Sciences Center will reap great rewards with the data-warehousing concept," says Wesley Seidt, Manager, Data Administration & System Integration.

STAR Numbers Report (as of December 1999)

STAR (System for Text Archive and Retrieval) allows physicians to access real-time patient information from remote locations.

Total Logins	10,363
Number of different users	461
Total documents accessed	33,930
Number of different documents accessed	25,985
Total patients accessed (estimate)	17,738
Number of different patients accessed	8,792
Total documents printed	8,212
Number of locations used to access STAR	854

What lies behind us and what lies ahead of us are tiny matters compared to what lives within us.

Oliver Wendell Holmes

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Contributors

Rebecca Graves, Health Sciences Library Column, Alan Arnold, The Network Detective Nancy Burnett, Stuart Dummit, Help Desk Column

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From the J. Otto Lottes Health Sciences Library

New Webpage Feature Eases Your Search Woes

Check out the new search feature available on our web page! Now, instead of hunting for specific information or wondering where it is located, click on our "Search Our Site" link. Enter the words that you are looking for, click the "Word Search" button and a list of all the pages that fit your query will be generated. "Search Our Site" is located near the upper right hand corner of the web page.

Improved Access to Library Web Resources

Current faculty, staff, and students who live out of town or who use America Online or other commercial internet providers, can get access to select databases and journals by using the MERLIN proxy server. The proxy server acts as a security guard between the user's workstation and licensed resources. Its function is to provide MU authentication which will allow valid users access to otherwise restricted online resources such as the Journal of Biological Chemistry. The proxy server authenticates users by comparing Social Security Numbers and MERLIN PINs to patron records to verify each user's status.

MedLine/CINAHL/PsycINFO/Internet Workshop Schedule

February

MEDLINE	Thursday 3	3:30 - 5:00
CINAHL	Thursday 10	3:30 - 5:00
Internet Searching	Thursday 17	3:30 - 5:00
PsycINFO	Thursday 24	3:30 - 5:00

March

MEDLINE	Tuesday 7	10:00 - 11:30
CINAHL	Wednesday 15	10:00 - 11:30
Internet Searching	Tuesday 21	3:30 - 5:00
PsycINFO	Wednesday 22	3:30 - 5:00

April

MEDLINE	Wednesday 5	3:30 - 5:00
CINAHL	Tuesday 11	3:30 - 5:00
Internet Searching	Wednesday 19	10:00 - 11:30
PsycINFO	Tuesday 25	10:00 - 11:30

You can search journal literature othe OVID system using Windows or Web. These workshops focus on Windows; you may request Web instructions. Enrollment is limited to eight each. Special dates available. Call 882-6141 or go to <http://www.hsc.missouri.edu/~library/docs/wsreg.html> to register or for more information.

In addition to Ovid, the proxy server allows access to other databases, electronic journals, and textbooks, including Scientific American Medicine, Health Reference Center, Clinical Pharmacology, Journal of Biological Chemistry, and the Proceedings of the National Academy of Sciences.



The MERLIN proxy server is designed for distance learners, commuters, and those who connect to the internet through commercial internet providers. Those who use MU as their internet provider should not use the proxy server to save searches run on the Ovid database, or if you receive SDI (Selective Dissemination of Information - a type of news reader service) database updates by email.

To connect to the proxy server, you will need to set the options or preferences on your internet browser. For complete instructions, go to <http://www.hsc.missouri.edu/~library/docs/proxy.html>. If you have any questions, call us at 882-6141.

Ask an Information Question Request an Interlibrary Loan

Request an Expert Search Search MERLIN and Ovid Databases

Register for an Ovid workshop Register for HSLNET

All of these services are available from our website:

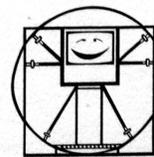
<http://www.hsc.missouri.edu/~library>.

Cyber Tips

Defragmenting Drives in Win98

In a previous tip, we taught you how to free up space on your hard drive. Another type of maintenance to help your system run most efficiently is "defragging." Defragging increases your system's speed by rearranging files closer to the front of the drive. You may defrag one or multiple drives at a time.

Start the Defragmenter by clicking the Start button, pointing to Programs, Accessories, System Tools and selecting Disk Defragmenter. To defrag one drive only, highlight that drive. To defrag all hard drives scroll down to the bottom of the list (in the Select Drive dialog box) and select either the single drive you want to defrag or choose All Hard Drives. Click OK and the process begins.



Y2K is AOK

One business day after the Y2K rollover found the University Hospital and Clinics (UHC) taking care of business as usual and no trouble on their hands. It is one month later; all is still calm.

Mike Lynch, manager of business and administrative systems, UHC, believes that all of the hard work and attention to detail have paid off. "We have had only a few minor Y2K related issues arise that have had no impact on patient care," Lynch said. "I



would like to extend my thanks to all staff members who helped move the UHC to Year 2000 compliance."

Please visit the Y2K website to read about Y2K issues and activities <http://www.hsc.missouri.edu/~y2k/main.html>.

Help Desk Q and A

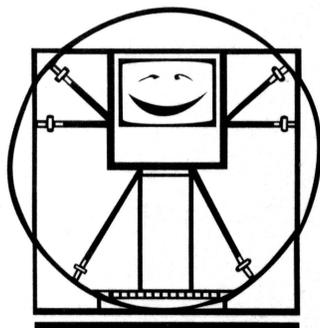
Q: When I try to install an older DOS program, it insists that it install at "C:/Program" folder, rather than Windows' "C:/Program Files" folder. How can I correct this?

A: The problem stems from the fact that the DOS program does not recognize long file names and stumbles over the space in "Program Files." Instruct the program to install itself in the C:/Program Files folder by using the proper DOS folder abbreviation when prompted to choose the installation location type C:PROGRA~1/

The program will install to the Program Files folder without further complaint.



Jack Hammer, Network Detective by Alan Arnold




Say, **Jack**, how'd you fare with the **Y2K bug**? Did it eat your **lunch**?

Nope. I didn't have **one single problem** that I could **tie back** to the **Y2K bug**. The **rollover** was as smooth as **silk**.




Wow, that's **incredible**. Congrats. So, what are you going to do now that **Y2K** has passed?

Well, we're **scrambling** to finish a **comprehensive inventory** of our entire **networking infrastructure**. You know, PCs, servers, switches, hubs... **everything**. Once we get **that** done, we'll get an **assessment** for the current **market price** so we can start looking for a **buyer**.




What? You're **selling** your **whole network**? Have you **lost** it?

Listen, pal. We've got to **pay** for all of that **Y2K preparation** somehow, now, **don't we?**



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