Disk Management Case Study

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Over the past five years, broad band communications provider Cox Communications has doubled in size. With no limit in sight, Cox needed to find a way to manage disk storage space and stall the purchase of new DASD. Cox deployed S4i DASD-Plus to automatically manage DASD for 12 databases and is now able to accurately predict future disk capacity requirements.

Atlanta-based Cox Communications Inc., is among the largest broadband communications companies in the U.S. From an initial cable TV core business, the company has expanded into high-speed data, local and long-distance telephony, and now provides electronic communications services to 3.8 million customers from 26 cable sites, or service locations, nationwide.

Over the past five years, the company doubled in size and expects to double again in the next three. Mergers, rapid growth, and constant system upgrades meat that, without uniform, regular management of disk storage space, purchases of additional DASD would grow unreasonably. A move to centralize its computer services provided Cox an opportunity to gain control over it.

According to James Wright, iSeries technical support specialist, the IBM iSeries is the processing platform of choice, which runs Cox' core billing systems, including billing for services, new installations, work-orders, trouble calls, etc. Initially, separate iSeries were located at its remote cable sites.

Three years ago, the company centralized its billing system databases in a single data center in Atlanta, with communications to and from the cable sites via an asynchronous transfer mode (ATM) circuit over T-1 lines. "The intent was to move our systems–hardware, software and people–to a central location in one consolidated resource that would give us more control over our computing environment," Wright says.

Increased control was necessary because of the rate at which Cox was growing. Upgrades to its computing environment are ongoing–seven times since 1997. "We're a beta test site for IBM," Wright says. "We get the latest and greatest, and by the time that's generally available, we're already looking ahead at what's next."

Today, Cox runs eight iSeries including a couple of 595's. Billing system databases for multiple cable sites reside on separate systems, four or five libraries per database, and an average of 12 databases running on each machine, with 3.74 terabytes total DASD.

"Consolidating, we needed a product to manage disk storage space," Wright says. "Since we're constantly upgrading and adding DASD and memory, if we didn't have a tool to manage existing DASD, we would likely double or triple future DASD purchases."

Cox chose DASD-Plus, a tool that automates management of disk storage space on the iSeries. DASD-Plus performs up to 25 different routines including clearing history logs and resizing libraries, clearing job queues and reorganizing files–tasks that can be performed automatically and on a regular basis.

In addition, DASD-Plus includes disk analysis functions that collect information about disk-space utilization and provide a variety of analytical reports. In addition, trend reports forecast future disk needs based on historical DASD trends.

Before acquiring DASD-Plus, managing disk space was cumbersome. "I'd spend hours trying to go through it, finding out the last time this report was used, or when that outqueue was cleaned," Wright says. "We were looking for a product to help us manage the outqueues and logs. It was a labor intensive, manual process. We wanted to find a software solution to support that function."

Cox uses DASD-Plus regularly to reclaim disk space and for periodic analysis. According to Wright, the company already has a good idea of what trends to expect.

"Now, we know where we're headed and what we're doing when we acquire a new cable site, for example," Wright says. "We can tell what it's going to take in terms of resources to maintain it and what the file growth is likely be. We can handle that. The real problem is one of disk analysis: What's out there? Has someone left something out there that's eating up DASD? What is it, and when was it last used?"

The disk analysis function is run once a month. Regular disk clean up, such as clearing outqueues and removing spool files, is done every day, seven days a week.

In Wright's view, in addition to avoiding the unnecessary purchase of additional DASD, the immediate benefit of DASD-Plus has been to allow the iSeries support team to concentrate on more productive tasks. In a company that is growing as rapidly as Cox, without it, adding more support staff would have been unavoidable.

"To me, the benefit is time," Wright says. "It has made my job easier. We have four people who work on the iSeries side. We support the end-users when their terminals or keyboards don't work, or when they have a problem doing whatever they are trying to do. Having to also manage DASD would take away from that level of end-user support."

The alternative would be hiring additional staff just to manage the disk space. "If we didn't have this product, it would essentially require another person for our nine machines," Wright says.

"We're a company that has done well," he adds. "We're into technical areas other companies only talk about. We don't sit still–we're constantly asking: What's next? We need products like this to move us ahead and accomplish our goals."