

Maximizing the use of your storage resources while helping minimize your overall storage costs



DFSMS Optimizer for MVS/ESA and OS/390

Highlights

Reduced overall costs

A variety of "what-if" simulators help you determine the most cost-effective ways to manage your data storage environment.

Platform independence

The DFSMS[®] Optimizer Version 1, Release 2 enables you to monitor your data management activities in a Java-based environment under OS/2[®], Windows 95, and Windows NT.

Support for SMS

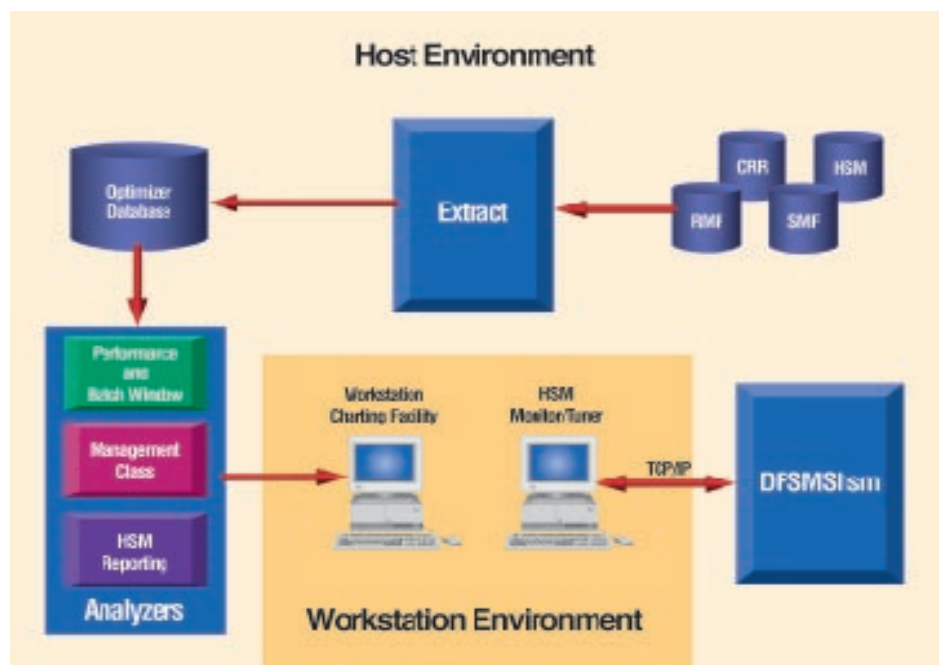
The DFSMS Optimizer fully supports both System-Managed Storage (SMS) and non-SMS environments throughout the entire storage hierarchy and includes powerful data filtering controls.

Automated HSM

You can use the DFSMS^{hsm}[™] Monitor/Tuner to keep track of multiple Hierarchical Storage Management (HSM) systems through an online TCP/IP connection.

Built-in graphics package

The DFSMS Optimizer features built-in reporting and charting facilities to help you analyze and record your data management activities.



Optimize your storage management

As new technologies emerge and business requirements change, your storage system environment continually evolves. As it does, one of your primary challenges is to effectively and proactively manage these changes. Whether you have data that is managed by SMS or non-SMS data, you need detailed information to analyze all the elements of a data management change.

Managing an OS/390[®] Sysplex installation in a dynamic business environment presents many challenges, most of which center around reducing data processing costs while increasing the efficiency of data storage and management. The days of short batch windows, extra processor cycles, and underutilized storage devices are over. Before you can begin to focus on truly optimizing your storage management, however, you need to ask yourself a few key questions.

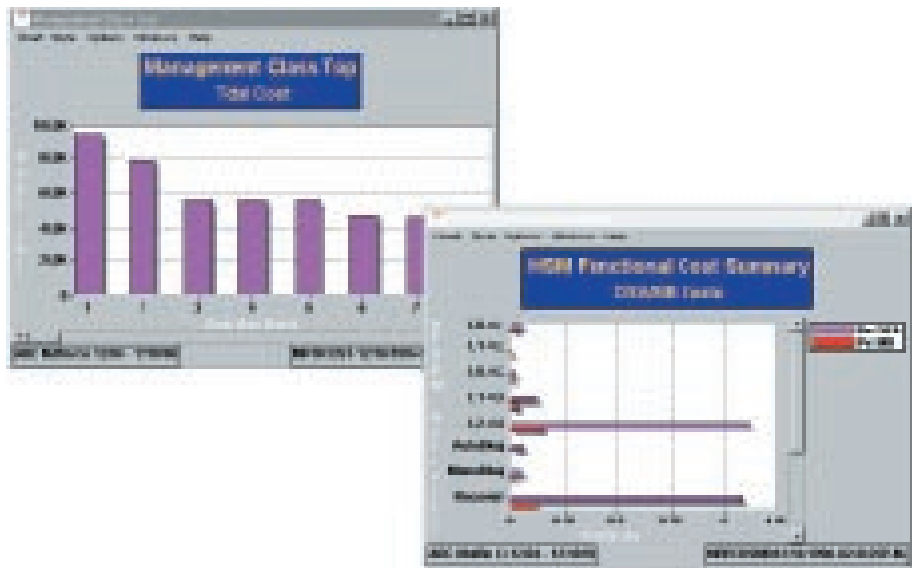
- Do you fully understand how you manage data today?
- What are your current data management costs?
- Can you predict the impact of change to your current data management policies?

IBM's DFSMS Optimizer is a software solution that can help you address these questions and many others. The DFSMS Optimizer provides full storage hierarchy analysis, cost-benefit analysis, and what-if simulation capabilities to help you make informed and timely data management decisions about your storage system environment. And now—with new Java-based support—you can access the world-class charting facility and the DFSMS Optimizer HSM Monitor/Tuner right from your desktop in the OS/2, Windows 95, and Windows NT environments.

Identify how you manage data today

The key to making cost-effective data management decisions depends on your understanding of how you manage data today. The DFSMS Optimizer uses historical data to provide an overall picture of data usage on each of your systems.

Historical data provides information about previous system activities, and it helps you predict future use. This historical data represents application data trends, including month-end processing, batch windows, backup intervals, and peak I/O usage. The DFSMS Optimizer processes statistics from each system in a Sysplex to create the DFSMS Optimizer database. This database can provide you with an array of what-is reports and a variety of key what-if simulations for performance, capacity planning, system tuning, and the application of DFSMS technology.



The DFSMS Optimizer calculates data management costs to help you identify more cost-effective use of your storage resources.

These statistics can help you identify data reference patterns for each system and enable you to perform the following tasks:

- **Analyze performance data:** When you react to a potential performance problem with a change to data management, you need to know the impact of that change. With the DFSMS Optimizer Performance Analyzer, you can analyze performance data for your subsystems, cache, non-volatile storage, back paths, volumes, and data sets. Using the data from the Performance Analyzer, you can determine the causes of performance problems sooner. You can also make more informed decisions about capacity planning, isolate I/O performance problems, and perform what-if cache simulations for systems throughout your Sysplex.
- **Isolate the cause of performance problems:** The DFSMS Optimizer provides extensive performance analysis at the subsystem, volume, and data set levels to help you isolate performance problems such as device skew, I/O bottlenecks, or I/O-intensive windows of time. The DFSMS Optimizer can help you analyze I/O statistics such as cache hit ratios, data set performance, and subsystem performance.
- **Identify storage class assignments:** If you are currently running SMS, the DFSMS Optimizer helps you identify the appropriate storage class policies to be used for data sets under DFSMS control. It also provides information to help you determine the proper storage class policies for data sets not currently under DFSMS control.
- **Track DFHSM system performance:** You can analyze your DFHSM workload by using system performance statistics such as bytes transferred, CPU elapsed time, and cost per MB and data set for each DFHSM function.
- **Identify potential DFHSM thrashing:** The DFSMS Optimizer identifies top recalled data sets in each management class that might indicate thrashing.

Determine data management costs

One of the keys to running a successful operation is learning how to manage your data in the most cost-effective way possible. The DFSMS Optimizer Management Class Analyzer provides cost-benefit analysis of management class policies, helping you determine the most cost-effective management class assignments for data sets you want to convert to SMS. Using your storage cost components, the DFSMS Optimizer calculates the costs of data management, including the following:

- Cache resource costs associated with storage class policies and the data sets to which those policies apply
- Cache costs for your top I/O activity data sets
- Management class costs such as data set backup costs, recall and recovery costs, DFHSM functional compaction costs, and data set migration costs

- DFHSM functional costs, sorted by cost per data set and cost per MB

Predict the impact of change

Once you understand your current data management costs, you can more easily predict how those costs will change over time—and better determine how change will affect your storage environment. The DFSMS Optimizer Management Class Analyzer analyzes production data and uses your cost components to simulate potential change to your current data management environment. Using the Management Class Analyzer, you can:

- Perform what-if simulations to determine the migration cost for each management class
- Simulate DFSMS free space requirements throughout all levels of the storage hierarchy

- Simulate memory and subsystem requirements—including the amount of expanded storage and cache needed—and determine the associated costs

- Perform what-if simulations of management class assignments for both SMS and non-SMS managed data sets

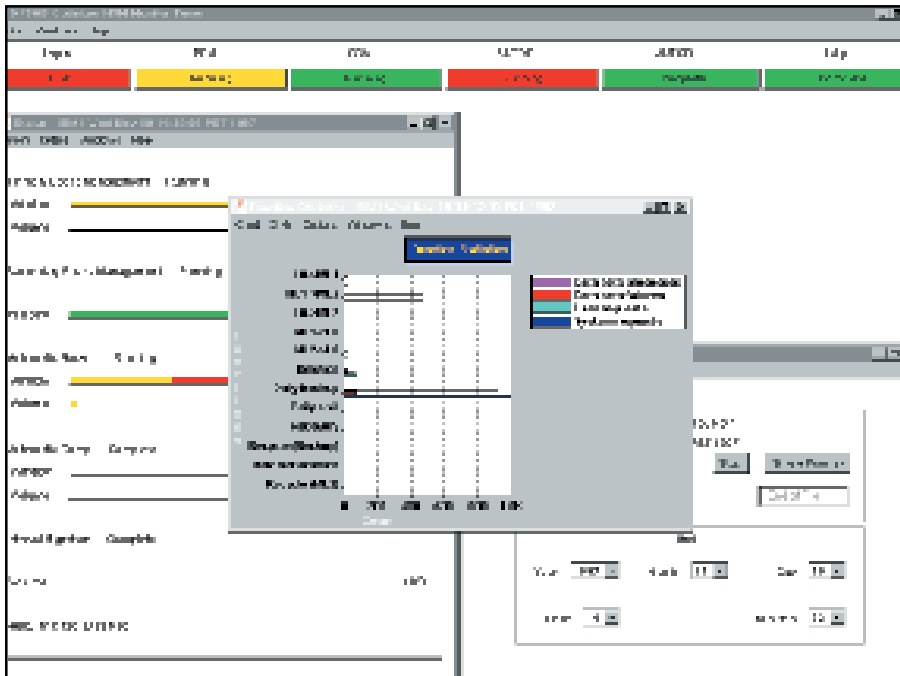
Track HSM systems

If your installation employs DFSMSHsm, the DFSMS Optimizer offers you a powerful client/server solution with a Java-based GUI for real-time monitoring of HSM automatic migration, backup, and dump functions; recall and processing statistics; and management work elements. Using this HSM Monitor/Tuner, you can monitor the activities of multiple HSM systems through an online TCP/IP connection to an active system or by playing back a log file previously created by a host DFSMS Optimizer HSM Monitor/Tuner session. You can also issue HSM commands, cancel HSM tasks, and modify the trigger thresholds that control HSM activity—right from your workstation.

In addition, the HSM Monitor/Tuner can automatically monitor and tune DFHSM and DFSMSHsm through the use of more than 150 trigger events that invoke REXX automation routines. You can customize these REXX execs to issue commands directly to the host that triggered the event—to issue NetView® alerts or other automated responses—as corrective actions.

Produce comprehensive reports for analysis

The DFSMS Optimizer provides a variety of tools to help you sort through all the statistics and performance data you collect. The DFSMS Optimizer Reporting Facility automatically generates report files for the Optimizer Charting Facility. You



The HSM Monitor/Tuner enables real-time monitoring of HSM functions, statistics, and management work elements.

can even export files to standard PC spreadsheet programs.

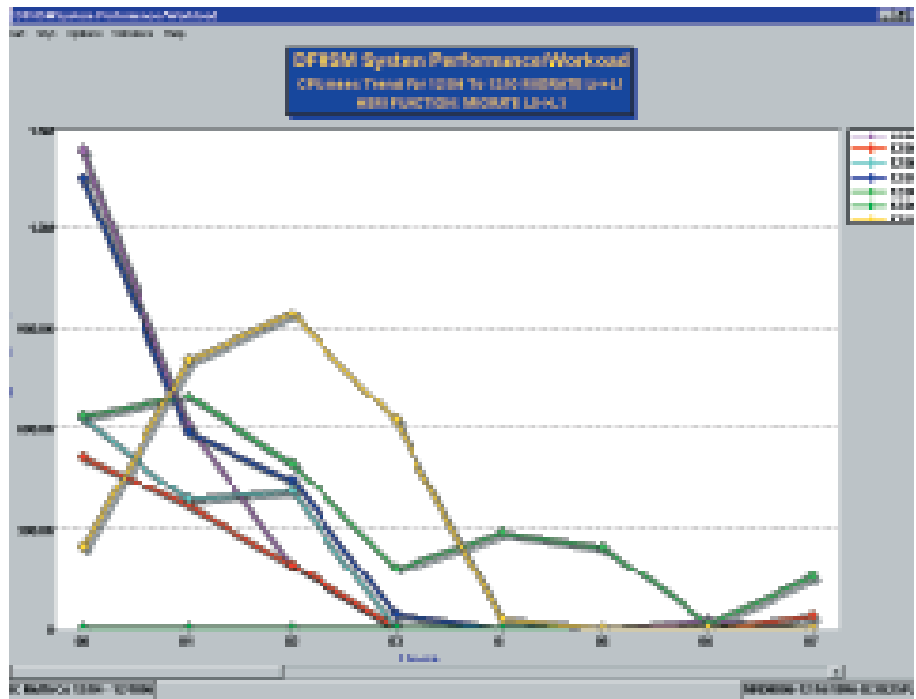
Using the Reporting Facility, you can create standard DFSMS Optimizer reports or use powerful filtering keywords to identify the data you need, eliminate unwanted data, and join different data elements for your tailored reports. You can also filter data elements based on data set name/size/organization, volume, storage control unit, storage group, SMS class, application, and date/time windows. Advanced filtering capabilities include analysis of unrelated elements. For example, you can request a filter on the job that created the data set and the account code submitted for the job.

Create quality presentation color charts

The DFSMS Optimizer also features the Optimizer Charting Facility, which enables you to create charts based on the information generated in your reports. The Java-based GUI provides an intuitive point-and-click interface to help you download files, and view and print color charts. The Charting Facility automatically expands your tailored report files into multiple charts—more than 200 different color charts in bar, pie, tabular, and 3D formats.

To order

DFSMS/MVS Optimizer Version 1, Release 2 (program number 5695-DF1) is a feature of DFSMS/MVS Version 1.2 and above. You can also order DFSMS/MVS



The built-in DFSMS Optimizer charting facility provides graphical representation of your environment.

Optimizer Version 1, Release 2 as a separate product (program number 5655-OPT). The functions are the same. If you have OS/390, order program number 5655-OPT.

Tell me more

To learn more about the DFSMS Optimizer Version 1, Release 2, contact your IBM representative or IBM Business Partner. In the United States, you can also call 1 800 IBM-CALL (1 800 426-2255). Internet: www.ibm.com/storage/optimizer



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