

# iSecurity DiskScope

User Guide  
Version 7.23

[www.razlee.com](http://www.razlee.com)

# Contents

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<b>Contents</b> .....	<b>2</b>
About this Manual .....	4
<b>First Steps with DiskScope</b> .....	<b>10</b>
<b>How this guide is organized</b> .....	<b>11</b>
<b>What is DiskScope? – Overview</b> .....	<b>12</b>
DiskScope Capabilities .....	13
What you can immediately perform after reading this book .....	14
Benefits of working with DiskScope .....	15
<b>Starting DiskScope</b> .....	<b>16</b>
Installing DiskScope .....	17
Entering the Product Authority Code .....	18
<b>DiskScope Quick Start</b> .....	<b>19</b>
Displaying the DiskScope main menu .....	20
The DiskScope/Report menu and the DiskScope/Improver menu .....	21
The DiskScope/Report major functions .....	23
Creating a set of library groups .....	24
To create a new SET .....	25
To remove a SET .....	26
To make a SET active .....	27
Creating/Updating library groups .....	28
To create a group .....	29
To update a group .....	33
To delete a group .....	34
To locate a group .....	35
Displaying lists of libraries .....	36
List of Libraries .....	36
List Libraries by Group .....	36
List Libraries not in Groups .....	36
List Libraries not on Disk .....	37

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Checking space usage .....	38
Loading objects and library sizes into the system .....	39
To load objects and library sizes .....	40
Comparison reports and status reports for Libraries .....	40
Comparison reports and status reports for Objects .....	42
Recovering space occupied by deleted records .....	43
The DiskScope/Improver major functions .....	45
Working with the Reorganization Scheduler .....	46
To specify a new file for reorganization .....	47
To modify selection criteria for reorganization .....	49
Allowing/Disallowing file reorganization .....	50
Scheduling reorganization .....	51
Running the reorganization .....	52
Working with the Reorganization History .....	53
<b>Common DiskScope Maintenance Functions .....</b>	<b>56</b>
Configuration .....	57
Maintenance menu .....	58
To remove old data .....	59
To remove file reorganization history .....	60
Considerations on running file reorganizations .....	61
To change job queue parameters on default job description ...	62
To change output queue parameters on default job descrip- tion .....	63
To modify a minimum object size (used by DSLOADSIZE) .....	64
Display submitted jobs .....	65
To display reports .....	66

## About this Manual

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This user guide is intended for system administrators and security administrators responsible for the implementation and management of security on IBM i systems. However, any user with basic knowledge of IBM i operations will be able to make full use of this product after reading this book.

Raz-Lee takes customer satisfaction seriously. Our products are designed for ease of use by personnel at all skill levels, especially those with minimal IBM i experience. The documentation package includes a variety of materials to get you familiar with this software quickly and effectively.

This user guide, together with the iSecurity Installation Guide, is the only printed documentation necessary for understanding this product. It is available in HTML form as well as in user-friendly PDF format, which may be displayed or printed using Adobe Acrobat Reader version 6.0 or higher. If you do not have Acrobat Reader, you can download it from the Adobe website: <http://www.adobe.com/>. You can also read and print pages from the manual using any modern web browser.

This manual contains concise explanations of the various product features as well as step-by-step instructions for using and configuring the product.

Raz-Lee's iSecurity is an integrated, state-of-the-art security solution for all System i servers, providing cutting-edge tools for managing all aspects of network access, data, and audit security. Its individual components work together transparently, providing comprehensive "out-of-the-box" security. To learn more about the iSecurity Suite, visit our website at <http://www.razlee.com/>.

## Intended Audience

The DiskScopeUser Guide document was developed for users, system administrators and security administrators responsible for the implementation and management of security on IBM® AS/400 systems. However, any user with a basic knowledge of System i operations is able to make full use of this document following study of this User Guide.

**NOTE:** Deviations from IBM® standards are employed in certain circumstances in order to enhance clarity or when standard IBM® terminology conflicts with generally accepted industry conventions.

This document may also serve for new versions' upgrade approval by management.

## Conventions Used in the Document

Menu options, field names, and function key names are written in **Courier New Bold**.

Links (internal or external) are emphasized with underline and blue color as follows: "About this Manual" on page 4.

Commands and system messages of IBM i® (OS/400®), are written in ***Bold Italic***.

Key combinations are in Bold and separated by a dash, for example: **Enter, Shift-Tab**.

Emphasis is written in **Bold**.

A sequence of operations entered via the keyboard is marked as

***STRDB > 81 > 32***

meaning: Syslog definitions activated by typing ***STRDB*** and selecting option: **81** then option: **32**.

## Data Entry Screens

Data entry screens include many convenient features such as:

- Pop-up selection windows
- Convenient option prompts
- Easy-to-read descriptions and explanatory text for all parameters and options
- Search and filtering with generic text support

The following describes the different data entry screens.

- To enter data in a field, type the desired text and then press Enter or Field Exit
- To move from one field to another without changing the contents press Tab
- To view options for a data field together with an explanation, press F4
- To accept the data displayed on the screen and continue, press Enter

The following function keys may appear on data entry screens.

- **F1: Help** Display context-sensitive help
- **F3: Exit** End the current task and return to the screen or menu from which the task was initiated
- **F4: Prompt** Display a list of valid options for the current field or command. For certain data items, a pop-up selection window appears
- **F6: Add New** Create a new record or data item
- **F8: Print** Print the current report or data item
- **F9: Retrieve** Retrieve the previously-entered command
- **F12: Cancel** Return to the previous screen or menu without updating

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# First Steps with DiskScope

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This guide is for people who use DiskScope for the purpose of monitoring disk space, selecting files for reorganization, scheduling file reorganizations, tracing file reorganization, securing files from reorganization, reporting the amount of disk space used and all kinds of action leading to a disk space recovery on IBM i computers.

It is intended for all types of users who want to be efficient using the major functions of the product without spending an important amount of time on reading documentation.

# How this guide is organized

---

This guide is divided into chapters beginning with a quick introduction to DiskScope capabilities, followed by information about using DiskScope major features in a minimum of time.

# What is DiskScope? – Overview

---

DiskScope is a monitoring tool providing the operation staff and everyone in charge of administrative tasks on the IBM i with a quick and efficient method of managing the disk space usage. It also supplies reporting facilities to help decision making about file reorganization and disk space recovery.

## DiskScope Capabilities

---

To help you perform all of its powerful functions, DiskScope provides, among other capabilities, the following:

- Disk space monitor.
- File reorganizer.
- Reorganization scheduler.
- Report Generator.
- File and job manager.
- Query tool.
- Administrator's tool.

And there is much more ...

## What you can immediately perform after reading this book

---

This book introduces the basics to enable you to perform the following:

- Install DiskScope.
- Display the DiskScope menu.
- Load objects and library sizes into the system.
- Select files/libraries for reorganization using selection criteria.
- Allow/Disallow file reorganization.
- Schedule reorganization.
- Build a History of reorganizations.
- Create sets of library groups.
- Check space usage using comparison reports and status reports.
- Recover space used by deleted records.
- List libraries using sort criteria.
- Configure and modify DiskScope global defaults.
- Remove old data and file reorganization history.
- Display submitted jobs and modify some of the job parameters.

## Benefits of working with DiskScope

---

DiskScope provides:

- Easier and automatic methods to monitor your disk space.
- An improved performance on your IBM i system.
- An automatic disk space recovery.
- A total management of your file reorganizations.
- Ad hoc comparison and status reports helping decision making about reorganization.

# Starting DiskScope

---

Before any use of DiskScope, you must install the product on the IBM i.

After inserting the installation tape, you must enter your Product Authority Code.



## Installing DiskScope

---

To install DiskScope from the installation tape, follow the instructions below:

1. Make sure no one is working on the products you want to install. Use the **WRKOBJLCK** command on the product library SMZD: **WRKOBJLCK SMZD \*LIB**.
2. Sign on as QSECOFR or as a user with equal authority rights (such as QPGMR or QSYSOPR) and enter **LODRUN TAPxx** (where **TAPxx** is the tape drive name).
3. After a short while, the **INSTALLATION MENU** is displayed.
4. Enter **1** next to **DiskScope** and select the products you need to install.
5. Type the Authority Code (if necessary) in the **Authority Code** column.

## Entering the Product Authority Code

---

The "Authorization Code" is a character string that releases DiskScope for operation on your IBM i.

To enter the authority code, follow the instructions below:

1. From your IBM i, display the **DiskScope main menu** by typing the **STRDS** command on the command line.
2. Select Option **81 – System Configuration**.
3. Press the **F22 – Authority Code key**, then enter the Authority Code.
4. Press the **Enter** key twice to return to the product menu.

# DiskScope Quick Start

---

DiskScope's two major features are the disk space monitor and the file reorganizer.

With DiskScope, you can also use common maintenance functions to modify defaults, remove old data and modify job parameters, and display submitted jobs.

At the end of this chapter, you will be able to use the major features, understand better the way your disk space is used, make the right decisions for reorganization, and recover your disk space, thus enhancing your I/O performance.

## Displaying the DiskScope main menu

---

In order to start using DiskScope, type the **STRDS** command on any command line.

The DiskScope main menu is displayed:

```
DSMENU                      DiskScope Menu          System: S44K1246

Select one of the following:

DiskScope Functions
  1. DiskScope/Report
  2. DiskScope/Improver

Maintenance
  81. Configuration
  82. Maintenance menu
  85. Display submitted jobs

Selection or command
===> _____

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel
F13=Information Assistant  F16=AS/400 main menu
```

From this screen, you can access the two major DiskScope functions:

**DiskScope/Report** and **DiskScope/Improver**.

Some other DiskScope functions, situated in the Maintenance area of the screen, can also be accessed either from the **DiskScope/Report main menu** or from the **DiskScope/Improver main menu**.

## The DiskScope/Report menu and the DiskScope/Improver menu

---

The **DiskScope/Report** function is designed to collect and analyze data related to disk capacity usage and to produce reports to help your decision making about reorganization.

To display the **DiskScope/Report** menu, select option **1**.

**DiskScope/Report** from the **DiskScope** main menu or type the **STRDSR** command.

The **DiskScope/Report** menu is displayed:

```
DSRPM                      DiskScope/Report Menu          System: S44K1246

Select one of the following:

Collect data                Grouping of libraries
 1. Submit load request     41. Sets of library groups
                           42. Libraries in group

Space usage reports        44. List of libraries
 11. Library/Group         45. List libraries by group
 13. Object
 15. Deleted records       48. List libraries not in groups
                           49. List libraries not on disk

Related Functions          Maintenance
 31. DiskScope/Improver   81. Configuration
                           82. Maintenance menu
                           85. Display submitted jobs

Selection or command
===> _____

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel
F13=Information Assistant  F16=AS/400 main menu
```

The **DiskScope/Improver** function selects files/libraries for reorganization and schedules the file reorganization.

To display the **DiskScope/Improver** menu, select option **2**.

**DiskScope/Improver** from the **DiskScope** main menu or type the **STRDSI** command.

The **DiskScope/ Improver** menu is displayed:

DSIMM

DiskScope/Improver Menu

System: S44K1246

Select one of the following:

Reorganize files

1. Deleted records report
2. Work with Reorganize Scheduler
3. Work with Reorganize History

Related Functions

31. DiskScope/Report

Maintenance

81. Configuration

82. Maintenance menu

85. Display submitted jobs

Selection or command

==>

---

F3=Exit F4=Prompt F9=Retrieve F12=Cancel  
F13=Information Assistant F16=AS/400 main menu

## The DiskScope/Report major functions

---

This topic describes the main functions you can perform with **DiskScope/Report**.

## Creating a set of library groups

---

This option allows you to create or to delete sets of library groups.

You can use it to define different SETS, each one of them containing different groups of libraries.

A SET can be a group of users, a group of programmers, a group of departments, a set of applications, etc.

- Select option **1. DiskScope/Report** from the **DiskScope main menu** or use the *STRDSR* command.
- Select option **41. Sets of library groups** from the **DiskScope/Report** menu.

The **Update Sets of Library Groups** screen is displayed:

```
Update Sets of Library Groups

Currently Active: TUTORIAL

Type options, press Enter.
4=Remove

Opt Set Name      Set Description
-   QPGMR         test
-   QSYSOPR      qsysopr test set
-   SUBJECT      Libraries grouped by subject.
-   TUTORIAL     DiskScope Tutorial

New set: _____ Text: _____

F3=Exit  F12=Cancel
```

**NOTE:** During the installation, a default SET called SUBJECT is created and its name is displayed in the **Currently Active** field.



## To create a new SET

Follow the instructions below:

1. Type the SET name in the **New set** field located on the bottom line of the screen.
2. Type an explanation text in the **Text** field next to the **New set** field.
3. Press **Enter** The new SET is added to the list of SETS.

## To remove a SET

1. Type **4** in the **Opt** column next to the selected SET name in the list.
2. Press **Enter** .
3. Confirm the removal of SET by pressing **Enter** again: the SET is no longer displayed in the list.

## To make a SET active

1. Type the SET name in the **Currently Active** field located on top of the screen.
2. Press **Enter**. The active Set name and Set description are displayed on the screen.

## Creating/Updating library groups

---

This option allows you to create or to update Groups of libraries.

You can use it to define different groups for the currently active set, each one of them containing a different list of libraries.

- Select option **42. Libraries in group** from the **DiskScope/Report** menu.

The **Update Library Groups** screen is displayed:

```
Update Library Groups

Active set: TUTORIAL          Start from: _____

Type options, press Enter.
 2=Update  4=Remove

Opt  Group Name  Group Description
-    GROUP1
-    GROUP2
-    GROUP3

New group: _____ Text: _____

F3=Exit
```

When you start to use DiskScope, there are no groups for the new active set, so you have to create a new group.

## To create a group

1. Type a new group name, such as **GROUP1**, in the **New group** field.
2. Type a text, such as **Group1** in **DiskScope Tutorial**, in the **Text** field.

**NOTE:**The **Start from** field located in the upper right part of the screen is useful when you have a long list of groups. If you want to position at a specific name in order not to browse through the whole list, simply type in the **Start from** field the group name you want the displayed list to begin with.

3. Press **Enter**. The Update Libraries in Group screen is displayed with the group name you have created:

```
Update Libraries in Group
Group: GROUP1      - Group1 in DiskScope Tutorial
Change library name to blanks to remove from group
Library      Text
-----
|
|
|
|
|
|
|
|
|
|
|
+
F3=Exit      F4=Prompt    F5=Refresh
```

To update the libraries in the group library list, select one of the two following methods:

## 1<sup>st</sup> method:

You can add libraries simply by keying their names (make sure the library name is an existing one and does not belong to another group) or remove libraries by blanking out their names (also valid with the 2<sup>nd</sup> method described below).

## 2<sup>nd</sup> method: (recommended on your first use of DiskScope)

1. Press **F4: Prompt** to display the **Specify Libraries** window.
2. Type a generic library name in the displayed **Specify Libraries** window such as: **Q\***, for example. (You can also type a specific library name, type **\*ALL** to specify all the libraries or type **\*ALLUSR** for all the users libraries.)

```
Specify Libraries

Type choice, press Enter.

Library . . . . . Q*_____ name, Generic*,
                                *ALL, *ALLUSR

F3=Exit      F12=Cancel
```

2. Press **Enter**. A list of library names beginning with **Q** is displayed.  
**NOTE:** If a library belongs to a group, the group name is also included in the list next to the library name it refers to.

```
List of Libraries

Type options, press Enter.
1=Select 11=Move

Sel Group      Name      Text
---           ---
---           QADM
---           QADMISTP
---           QAPD
---           QCA400W
---           QCA400Y
---           QCBL
---           QCBLLE
---           QCBLLEP
F3=Exit      F12=Cancel
```

3. Type **1** in the **Sel** column next to the required library or libraries.
4. Press **Enter**. The library list of the mentioned group is displayed with the new added library or libraries.

```
Update Libraries in Group

Group: GROUP1 - Group1 in DiskScope Tutorial

Change library name to blanks to remove from group

Library      Text
QADM
QADMISTP
QAPD
_____
_____
_____
_____
_____
_____
_____
_____
_____

F3=Exit      F4=Prompt      F5=Refresh
```

You can also move libraries from one group to another by typing **11** in the **Sel** column from the **List of Libraries** window.

**NOTE:**if an error occurs such as an invalid library name or a selected library that belongs to another group, the library name appears highlighted in the library list. To remove the libraries in error from the list, press **F5 – Refresh**.



## To update a group

1. Type **2** in the **Opt** column from the **Update Library Groups** screen next to the group you have selected.
2. Press **Enter**. The **Update Libraries in Group** screen is displayed:

Update Libraries in Group

Group: GROUP1 - \_\_\_\_\_

Change library name to blanks to remove from group

Library	Text
<u>QADM</u>	
<u>QADMISTP</u>	
<u>QAPD</u>	
_____	
_____	
_____	
_____	
_____	
_____	
_____	
_____	

+

F3=Exit    F4=Prompt    F5=Refresh

This screen displays the current group name and a list of all the libraries in the group with an explanation text next to the library names.

3. To add libraries to a group , select either of the methods described above in step 3 of "To create a group" on page 29.

## To delete a group

1. Type **4** in the **Opt** column from the **Update Library Groups** screen next to the group you selected.
2. Press **Enter**.
3. Press **F11** to confirm the deletion of the group.

## To locate a group

1. Type the first characters of the group in the **Start from** field from the **Update Library Groups** screen.
2. Press **Enter**. The group(s) whose name begins with the characters entered in the **Start from** field is/are displayed, followed by other group names in the collating sequence.

## Displaying lists of libraries

---

This feature covers four different DiskScope options. Each option produces a report listing the different types of libraries sorted according to specific sort criteria.

### 1. List of Libraries

Select option **44. List of libraries** from the **DiskScope/Report menu** to obtain a report titled “Libraries and groups”.

This report is sorted by library and displays a list of libraries associated to a group.

A batch job called “DSL1ST1” is submitted to produce a spool file of this report.

This three-column report displays from left to right:

- **Group Name**,
- **Library Name** for the library associated to the group,
- **Library Description** displaying additional information about the library.

### 2. List Libraries by Group

Select option **45: List libraries by group** from the **DiskScope/Report menu** to obtain a report titled “Libraries and groups”.

This report is sorted by group and displays a list of all declared groups and the list of all the libraries associated to each group.

A batch job called “DSL1ST2” is submitted to produce a spool file of this report.

This 3-column report displays from left to right:

- **Group Name**,
- **Library Name** for the library associated to the group,
- **Library Description** displaying additional information about the library.

### 3. List Libraries not in Groups



Select option **48. List libraries not in groups** from the **DiskScope/Report** menu to obtain a report titled “Libraries not in groups”. This report is sorted by library and displays a list of all the libraries not associated to a group.

A batch job called “DSNOTINGP” is submitted to produce a spool file of this report.

This 2-column report displays from left to right:

- **Library Name** for libraries not associated to the group,
- **Library Description** displaying additional information about the library.

#### 4. List Libraries not on Disk

Select option **49. List libraries not on disk** from the **DiskScope/Report** menu to obtain a report titled “Libraries not on disk”.

This report is sorted by library and displays a list of all the libraries associated to a group but no longer on your disk.

A batch job called “DSNOTONDSK” is submitted to produce a spool file of this report.

This 2-column report displays from left to right:

- **Library Name** for libraries not on disk,
- **Group Name** for the associated library group.

## Checking space usage

---

**Note:** All the report examples are based on demonstration data, therefore the sizes and data may not be accurate for your system.

Requires at least one load, preferably two loads on different days. You can produce reports on all libraries and reports on objects over a specified size. The default minimum size is set to 1 MB.

This function helps to identify the libraries and objects which size is large and/or rapidly increasing.

## Loading objects and library sizes into the system

Before producing reports using DiskScope/Report you have to load objects and library sizes into the system.

This option will load the data into the DiskScope database using the current date.

It submits a batch job called DSLOADSIZE to load objects and library sizes.

## To load objects and library sizes

1. Select option **1. Submit load request** from the **DiskScope/Report** menu. A **Submit job** window is displayed over the current screen and you are prompted to enter a load date and time. To modify the current parameters related to the job (such as job name, job description, job queue, and initial library) from this window, press **F10**.
2. Type a load date and time.  
You can choose the current date/time (**\*CURRENT**) or choose a convenient date/time as you please.
3. Press **Enter** when you are ready to submit the load job. This job takes some time to run as it gathers file and library information from the system.  
For this reason, it may be preferable to schedule it at night. For better results, it should be run on two different days to be able to compare results.

A message is displayed on the bottom line of the **DiskScope/Report** menu to tell you the load job was submitted.

Three options are available for space usage reports:

### 1. Comparison reports and status reports for Libraries

Select option **11. Library/Group** from the **DiskScope/Report** menu to produce reports on libraries and groups.

The **Print Libraries Reports** screen is displayed:

```
Print Libraries Reports

Type choices, press Enter.

Comparison report
Date . . . . . 14/12/98      F4=List
To date . . . . . 20/12/98   F4=List
Sorted by library size . . . . . N      Y, N
Sorted by library name . . . . . N      Y, N
Grouped by library groups - detailed . . N      Y, N
Grouped by library groups - totals only. N      Y, N

Status report
Date . . . . . 20/12/98      F4=List
Sorted by library size . . . . . N      Y, N
Sorted by library name . . . . . N      Y, N
Grouped by library groups - detailed . . N      Y, N
Grouped by library groups - totals only. N      Y, N

F3=Exit  F4=Prompt
```



You can sort the report by library size or library name, or group the report by library group.

The report by group can be detailed, including one line per library plus group totals, or summarized, including only group totals.

The displayed dates are the latest on which library/object size information was loaded.

If you need or wish to change the selection dates, follow the instructions below:

1. Press **F4** to display a window containing all the dates.
2. Type **1** next to the selected dates in the **Sel** column.
3. Press **Enter**.

For status reports, only one date is required.

For comparison reports, select two dates at the same time. The later selected date is used for status reports.

To compare library sizes collected on a different range of dates, follow the instructions below:

1. Press **F4** to display a window containing a list of all the dates when size information was loaded.
2. Type **1** next to the two selected dates in the **Sel** column.
3. Press **Enter**. The new selected date is displayed.

Then, to obtain the required report(s), type **Y** next to each appropriate option.

The following report is the **Library Comparison by Size** report:

```

17/01/99 Report: DSDCHLRB DiskScope V 04.0
Page 2 Library sizes on 14/12/98 and 20/12/98 DiskScope Tutorial
Sorted by Library size Total disk space: 12,000HB
-----
| Library | Library Description | Size (HB) | Size (HB) | Difference | Difference | Restore |
| Name | | 14/12/98 | 20/12/98 | (HB) | (C Z) | Date |
-----
| QPC5250P | | 5.3 | 5.3 | | | |
| QPC5250T | | 5.3 | 5.3 | | | |
| QGV | | 5.3 | 5.3 | | | |
| QADHDISTP | | 5.1 | 5.1 | | | |
| QTCPCGI | | 4.6 | 4.6 | | | |
| QPHHCS0 | | 4.3 | 4.3 | | | |
| QBRVLIB | | 4.0 | 4.0 | | | |
| QCBL | | 3.6 | 3.6 | | | |
| QHIM160 | | 3.4 | 3.4 | | | |
| QSVS2 | System Library for CPI's | 3.0 | 3.0 | | | |

```

The following report is the **Library Status by Size** report:

```

17/01/99 Report: DSDCHLRB DiskScope 0.04.0
Page 2 Library sizes on 20/12/98 DiskScope Tutorial
-----
Sorted by Library size Total disk space: 12,000MB
-----
| Library | Library Description | Size (MB) | | Restore |
| Name | | 20/12/98 | | Date |
-----
| OPC5250P | | 5.3 | | |
| OPC5250T | | 5.3 | | |
| QGV | | 5.3 | | |
| QHDHDIPT | | 5.1 | | |
| QTCPCGI | | 4.6 | | |
| QPHHC50 | | 4.3 | | |
| QQRWLIB | | 4.0 | | |
| QCBL | | 3.6 | | |
| QHTM160 | | 3.4 | | |
| OSV52 | System Library for OPI's | 3.0 | | |

```

## 2. Comparison reports and status reports for Objects

```

Print Object Reports

Type choices, press Enter.

Comparison report
Date . . . . . 14/12/98 F4=List
To date . . . . . 20/12/98 F4=List
Sorted by object size . . . . N Y, N
Sorted by library and object . N Y, N

Status report
Date . . . . . 20/12/98 F4=List
Sorted by object size . . . . N Y, N
Sorted by library and object . N Y, N

Print options
Double space . . . . . N Y, N

F3=Exit F4=Prompt

```

Select option **13. Object** from the **DiskScope/Report** menu. The **Print Object Reports** screen is displayed:

You can sort the report by object size or by library and object name.

The displayed dates are the latest on which library/object size information was loaded.

If you need or wish to change the selection dates, follow the instructions below:

1. Press **F4** to display a window containing all dates.
2. Type **1** next to the selected dates in the **sel** column.
3. Press **Enter**.

For status reports, only one date is required.

For comparison reports, select two dates at the same time. The later selected date is used for status reports.

To compare object sizes collected on a different range of dates, follow the instructions below:

1. Press **F4** to display a window containing a list of all the dates when size information was loaded.
2. Type **1** next to the two selected dates in the **sel** column.
3. Press **Enter**. The new selected date is displayed.

Then, to obtain the required report(s), type **Y** next to each appropriate option.

The following report is the **Object Comparison by Size** report:

```

17/01/99 Report: DSDCH08B                               DiskScope          V 04.0
Page    1                                               DiskScope Tutorial

                                Object sizes on 14/12/98 and 20/12/98
                                -----
Sorted by Object size                                     Total disk space: 12.000HB
-----
| Library | Object | Object | Object | Size (HB) | Size (HB) | Diff. |
| Name   | Name   | Type   | Description | 14/12/98 | 20/12/98 | (HB)  |
-----
| QSVS   | QADBIFLD | *FILE | Cross reference physical file | 53.8 | 53.8 | |
| QIAS   | QAZDGGCOL | *FILE | CATALOG - SVSCOLUMNS, COLUMN INFO | 43.1 | 43.1 | |
| QSPL   | Q04079M002 | *FILE | Spool Data Base File | 23.0 | 23.5 | .5 |
| QUSRSVS | Q00SDI1002 | *JRMRCV | JOURNAL RECEIVER FOR DIA FILES | 18.9 | 18.9 | |
| QSVS   | QCPFHSG | *MSGF | | 16.8 | 16.8 | |
| QDOC   | LMTS200050 | *DOC | | 15.4 | 15.4 | |
| QSVSIMG | H | *FILE | DATA BASE FILE FOR C INCLUDES | 15.3 | 15.3 | |
| QSPL   | Q04079M001 | *FILE | Spool Data Base File | 13.3 | 15.2 | 1.9 |
| QUSRSVS | Q00SDI0026 | *JRMRCV | Journal Receiver for DIA Files | 14.7 | 14.7 | |
| QUSRSVS | Q00SDI1001 | *JRMRCV | JOURNAL RECEIVER FOR DIA FILES | 14.7 | 14.7 | |

```

### 3. Recovering space occupied by deleted records

This option lists files with deleted records greater than the selection criteria.

1. Select option **15. Deleted records** from the **DiskScope/Report** menu. The **List Files with Deleted Records** screen is displayed:

List Files with Deleted Records

Type options, press Enter.

```
File . . . . . *ALL      Name, *ALL, Generic*
Library . . . . . *ALLUSR   Name, *ALL, *ALLUSR

Minimal terms to include
% deleted records . . . . 10
Relation . . . . . AND      AND, OR
MB of deleted records . . 1
```

F3=Exit

2. You can either accept the default selection parameters displayed on the screen or modify them by typing new values over the default as indicated below:
  - Type a file name which can be a specific file name, a generic file name or **\*ALL** if you want to specify all files.
  - Type a library name which can be a specific name, **\*ALL** for all the libraries or **\*ALLUSR** to indicate all the user's libraries.
  - You also have to type the selection criteria for a file to be reported, e.g. the minimum percentage of deleted records and/or the amount of deleted records in megabytes.
3. After you have modified the above parameters, press **Enter**.
4. Press **Enter** again to confirm.

After you have confirmed the selection parameters, the **Submit Job** window is displayed over the current screen, prompting you to type a schedule date/time for the job:

5. Type a specific date/time or type **\*CURRENT** for the current date/time.  
**\*CURRENT** is also the default value for both date and time.
6. To display or modify information related to the job to be submitted, press **F10** and type your modifications if any.
7. Press **Enter** when you are ready to submit the job.

You are returned to the **DiskScope main menu**.

A message on the bottom line of the screen is displayed indicating the job was submitted.

## The DiskScope/Improver major functions

---

**DiskScope/Improver** selects files/libraries for reorganization and schedules the file reorganization.

To use **DiskScope/Improver**, select either **31. DiskScope/Improver** from the **DiskScope/Report** menu, or option **2** from the **DiskScope main menu**, or use the *STRDSI* command.

The two **DiskScope/Improver** specific functions are the **Reorganization Scheduler** and the **Reorganization History**.

## Working with the Reorganization Scheduler

---

**Note1:** Only data files are reorganized. Files in system libraries are not reorganized unless scheduled specifically using the **\*SCD** frequency parameter.

**Note2:** The file names can be specific names, generic names, or all files belonging to the same library. If you use the **\*ALLUSR** parameter for library name (all users library), the file name must be a specific name.

- Select option **2. Work with Reorganize Scheduler** from the **DiskScope/Improver** menu.
- Type **QSECOFR** next to the password line.
- Press **Enter** .

The **Work with DiskScope File Reorganization** screen is displayed:

```
Work with DiskScope File Reorganization

Type options, press Enter.
1=Select  4=Delete  5=Schedule Entry

Opt File      Library  RGZ  Dlt%  MB /  NKD%  Run  -----Key File-----
_  DELDEMOF   SMZDDTA  10  0    0 /  0    /1  #FILE

Bottom

F3=Exit  F6=Add new  F10=Modify password  F12=Cancel
```

Two functions are available through this screen: you can either specify a new file for reorganization or modify selection criteria for reorganization.

## To specify a new file for reorganization

When the product is installed for the first time, there will be no entries in the list.

To create an entry in the list:

1. Press **F6 – Add new**: the **Add File Reorganization** screen is displayed:

```

                                Add File Reorganization
Type information, press Enter.
File . . . . . _____ Name, generic*, *ALL
Library . . . . . _____ Name, *ALLUSR
Reorganize allowed (Y/N) . . . . . _____
Frequency . . . . . MON      MON,...SUN, 1,...31, /1,.. /31,*SCD
Include if
  % Deleted . . . . . 10
  And/Or . . . . . A      A=And, 0=Or
  MB of deleted . . . . . 1
*OR
  % Not in Key Order (NKO) 0      0=Ignore
Key File
Logical file . . . . . *FILE     Name, *FILE, *NONE
Library . . . . . _____ Name

F3=Exit   F12=Cancel
```

2. Type the file name, library name (either a specific name or a generic name) and reorganization selection criteria in the corresponding columns.

As an example, you can type:

- **DELDEMOF** in the **File** field,
- **SMZDDTA** in the **Library** field,
- **10** in the **% Deleted** field,
- **Y** in the **Reorganize allowed** field,
- **/1** in the **Frequency** field,
  - **/1** means the reorganization will be run every day.
  - **/2** means on every second day.
  - **1** means on every first day of the month, **2** means on every second day of the month, etc.
- **O** in the **And/Or** field,
- **0** in the **MB of deleted** field.

Some reorganization parameters are already displayed as default values. To change these values, type new values over the default, then press **Enter**. You have the possibility to modify these entered values again and press **Enter**.

When you are satisfied with the displayed values, press **Enter** to confirm.

3. Press **Enter** twice.

The **Work with DiskScope File Reorganization** screen is displayed showing the new file in the list:

```

Work with DiskScope File Reorganization

Type options, press Enter.
 1=Select   4=Delete   5=Schedule Entry

Opt File      Library  RGZ  -- Include if--  Run  -----Key File-----
_ DELDEM0F    SMZDDTA  10 0   0   0   /1  #FILE

Bottom

F3=Exit   F6=Add new   F10=Modify password   F12=Cancel

```



## To modify selection criteria for reorganization

In the file list:

1. Type **1** in the **Opt** column next to the file and details you wish to modify.
2. Press **Enter** . The **Modify File Reorganization** screen is displayed:

```
Modify File Reorganization

Type information, press Enter.

File . . . . . DELDEMDF Name, generic#, *ALL
Library . . . . . SMZDDTA Name, *ALLUSR
Reorganize allowed (Y/N) . . . . . Y
Frequency . . . . . /1 MON,...SUN, 1,...31, /1,..31,*SCD
Include if
  % Deleted . . . . . 10
  And/Or . . . . . 0 A=And, 0=Or
  MB of deleted . . . . . 0
*OR
  % Not in Key Order (NKO) . . . . . 0 0=Ignore
Key File
Logical file . . . . . *FILE Name, *FILE, *NONE
Library . . . . . Name

F3=Exit F12=Cancel
```

3. You can type or modify selection criteria such as:
  - Percentage of deleted records (**% Deleted**).
  - Space in MB, used by deleted records (**MB of deleted**).
  - Percentage of records Not in Key Order (**NKO**).

You can use the reorganization feature for allowing or disallowing file reorganization or for scheduling the reorganization.

## Allowing/Disallowing file reorganization

If you type **Y** in the **Reorganize allowed** parameter in the **Modify File Reorganization** screen, reorganization is allowed for the specified file(s) in the **File** parameter.

To disallow reorganization, type **N** in the **Reorganize allowed** parameter.

If the **Reorganize allowed** parameter is marked **Y**, and its **Frequency** field is blank, no reorganization is scheduled but another reorganization entry, e.g. a generic entry, is allowed to reorganize the file.

## Scheduling reorganization

For scheduling purposes, you can specify a reorganization schedule by typing **Y** in the **Reorganize allowed** parameter and a selected schedule frequency in the **Frequency** parameter. (The **Frequency** parameter must be non-blank in order to allow the reorganization).

If the **Frequency** for an entry is blank and the **Reorganize allowed** parameter is marked **Y**, no reorganization is scheduled but another reorganization entry, e.g. a generic entry, is allowed to reorganize the file.

**Note:** If you type **\*SCD** for the **Frequency** parameter, the IBM i Job Scheduler will be used to schedule a reorganization of this entry.

For more information about the parameter values, refer to the **DiskScope User Manual**.

When your changes are completed, press **Enter**.

A message is displayed on the bottom line of the screen prompting you to modify data (if you need to make additional changes) or to press **Enter** (in order to confirm your changes).

## Running the reorganization

Now, you can run the reorganization:

1. Type the ***RUNDSRGZ*** command.
2. Press **Enter** .

The reorganization is normally run as a batch job overnight but can also be run interactively.

# Working with the Reorganization History

**Note:** A file scheduled for reorganization will appear in the history. If it does not meet the selection criteria for reorganization, the status is displayed as **OK**, but the number of members reorganized will be **0**.

1. Select option **3. Work with Reorganize History** from the **DiskScope/Improver** menu. The **Work with Reorganize History (WRKRGZHST)** prompt screen is displayed:

```

Work with Reorganize History (WRKRGZHST)

Type choices, press Enter.

File . . . . . *ALL      Name, generic*, *ALL
Library . . . . . *ALL      Name, generic*, *ALL
Job name . . . . . *ALL      Name, generic*, *ALL
User name . . . . . *ALL      Name, generic*, *ALL
Job number . . . . . *ALL      000000-999999, *ALL

From date and time:
Date . . . . . *CURRENT     Date, *CURRENT, *BEGIN
Time . . . . . *AVAIL       Time, *AVAIL

To date and time:
Date . . . . . *CURRENT     Date, *CURRENT, *END
Time . . . . . *AVAIL       Time, *AVAIL

End Status . . . . . *ALL      *ALL, *OK, *PARTIAL, *FAILED

                                                Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys
  
```

2. Type the **File** name and **Library** name. These names can be specific names or generic names using the **\*** as a wildcard. You can also specify all files in a specific library, a generic library or all the libraries.
3. Type details related to the job such as **Job name, User name** and **Job number**.
4. Type the **Date** and **Time** from which you want the reorganization history of the specified files.
5. You have to specify a range of dates/times in which the existing files will be reorganized. The default is **\*CURRENT**. You can specify a specific date/time or use the special values such as **\*AVAIL, \*CURRENT, \*BEGIN, \*END**.
6. Press **Enter** to select the reorganization history.

The **Work with DiskScope Reorganize History** screen is displayed showing the list of files matching the criteria you specified in the previous screen (**Work with Reorganize History**):

Work with DiskScope Reorganize History

End Status: \*ALL

Type options, press Enter.

1=Select

Opt	Date	Library	File	End Status	RGZ Time (mm:ss)	Previous Size (MB)	Size Recovered %	Recovered MB
-	07/01/99	SMZDDTA	DELDEMOF	*OK	:02		20	
-	07/01/99	SMZDDTA	DELDEMOF	*OK	:01			
-	07/01/99	SMZDDTA	DELDEMOF	*PARTIAL	:06			

Bottom

F3=Exit F5=Refresh F6=Un/Fold F12=Cancel F17=Subset

In the above screen, note the presence of the End Status column with its different values:

- **OK**, meaning the reorganization of the file(s) is completed successfully.
- **PARTIAL**, meaning one or more members could not be reorganized according to the parameters.  
Where it is possible, a file member is reorganized with key file as **\*NONE**, if the original parameters failed.
- **FAIL**, meaning the reorganization is not done or could not be done.

7. Press **F6** .

The **Work with DiskScope Reorganize History** screen is displayed again showing for each file an additional line indicating if a key file was used and the number of members reorganized:

Work with DiskScope Reorganize History

End Status: \*ALL

Type options, press Enter.

1=Select

Opt	Date	Library	File	End Status	RGZ Time (mm:ss)	Previous Size (MB)	Size Recovered %	Recovered MB
-	07/01/99	SMZDDTA	DELDEMOF	*OK	:02		20	
			Key file used: Y			#Mbrs RGZ:	1	
-	07/01/99	SMZDDTA	DELDEMOF	*OK	:01			
			Key file used:			#Mbrs RGZ:	1	
-	07/01/99	SMZDDTA	DELDEMOF	*PARTIAL	:06			
			Key file used: N			#Mbrs RGZ:	1	

Bottom

F3=Exit F5=Refresh F6=Un/Fold F12=Cancel F17=Subset

There are three possible values for the Key file used field:



- **Y (Yes)** : the reorganization is based on a key file.
  - **N (No)** the reorganization is run without using any key file.
  - blank:no key file is requested.
8. Type **1** in the **Opt** column next to the file(s) you want to select. To change the selection criteria in order to display a different subset of history records, press **F17** – Subset.
9. Press **Enter** .

The **DiskScope Reorganization History – File Details** screen is displayed:

```

_
          DiskScope Reorganization History - File Details
-
File . . . . . DELDEMOF
Library . . . . . SMZDDTA

Specifications Used for RGZ          Run Details

Generic File . . . . . DELDEMOF      End Status . . . . *OK
Generic Library . . . . . SMZDDTA     Key file used . . . Y
                                        RGZ Time (mm:ss) . . . :02
Include if                            # Members RGZ'd . . . 1
% Deleted . . . . . 10                Previous Size in MB
And/Or . . . . . 0
MB of deleted . . . . . 0              Disk Space Recovered
*OR                                     % Deleted Recs Size . . . 20
% Not in Key Order . . . 0             MB Deleted Recs .

Key File                               Job Details
Logical file . . . . . *FILE          Job Name . . . . . QPADEV0008
Library . . . . .                      User . . . . . CP
                                        Job Number . . . . 022452

Press Enter to continue.
F3=Exit  F12=Cancel

```

The above screen shows information related to the selected file(s) such as:

- file and library name,
- time taken for reorganization,
- previous size in MB,
- space recovered,
- number of members reorganized,
- job name and number
- user ID, etc.

# Common DiskScope Maintenance Functions

---



# Configuration

---

This option allows you to modify some DiskScope global defaults such as:

- installation settings,
- file reorganization overrides,
- factor for:
  - percentage of deleted records,
  - amount of deleted records in megabytes,
  - records not in key order,
  - etc.

You can also modify the Authority Code or view the release ID, the packaging date of the product, and your IBM i Model and CPU numbers.

1. Select option **81. Configuration** from any DiskScope menu.

The **Define DiskScope Global Defaults** screen is displayed:

```
Define DiskScope Global Defaults      7/01/99 20:43:18
DiskScope/Improver
File Reorganization Overrides
Overrides currently active . . . . N
Factor for % deleted records . . . 100 %          100=No Change
Factor for MB deleted records . . . 100 %
Factor for records not in key order 100 %

General
Customer name . . . . . Test Install of DiskScope
Enable accented letters . . . . . N              Y=Yes, N=No
Ignore Lower/Upper case differ. . . Y          Y=Yes, N=No
Install with demo data . . . . . Y              Y=Yes, N=No
Right to left system . . . . . N              Y=Yes, N=No
DBCS system . . . . . N                       Y=Yes, N=No
Release ID . . . . . 04.0 99/01/06 230
Authority Code . . . . . 009901302762 44K1246 S10 2118

F3=Exit   F12=Cancel   F22=Authority Code
```

2. Type **Y** (Yes) or **N** (No) for the default parameter you want to modify or type a number from **0** to **100** if a percentage is required.
3. Type your customer name if it needs to be changed. When you type a customer name, it appears on the report headings. To change the Authority Code, press **F22** then type the new code.
4. Press **Enter** to save the modifications.

## Maintenance menu

---

This option allows you to remove old data, to modify request attributes and to uninstall the product.

To **open the Maintenance Menu**, select **82. Maintenance Menu** from any DiskScope screen.

The **Define Maintenance Menu** screen is displayed:

```
DS0PRM                      Maintenance Menu          System: 544K1246

Select one of the following:

Remove old data              Demonstration
  1. Remove space usage data  31. Load demonstration Data
  2. Remove file reorganization history  32. Remove demonstration data

Modify attributes
  11. Change job queue
  12. Change output queue
  13. Change minimum object size

Schedule Jobs                Uninstall
  21. Schedule batch reorganization  91. Uninstall the product

Selection or command
===> _____

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel
F13=Information Assistant  F16=AS/400 main menu
```

## To remove old data

1. Select option **1. Remove space usage** data.  
It removes library and object size information created by the *DSLOADSIZE* job.
2. Press **Enter**. The **Remove Space Usage History Until Date** window is displayed, prompting you to type the end date to remove the old data.
3. Type the required date.
4. Press **Enter**. The **Submit Job** window is displayed, prompting you to type either a specific or the current schedule date/time for the job.  
To view or change additional information about the job, press **F10**.
5. To submit the job, press **Enter**.

## To remove file reorganization history

1. Select option **2. Remove file reorganization history**. Defaults are set to the most recent reorganization date.
2. Press **Enter**. The **Remove RGZ History Until Date** window is displayed, prompting you to type the end date to remove the reorganization.
3. Type the required date. To obtain a list of available dates, press **F4**.
4. Press **Enter**. The **Submit Job** window is displayed, prompting you to type either a specific or the current schedule date/time for the job. To view or change additional information about the job, press **F10**.
5. To submit the job, press **Enter** .

## Considerations on running file reorganizations

Entries with a Frequency value such as **\*SCD**, are run by the IBM i Job Scheduler.

Other entries will be checked and run if the frequency matches the day or date, every time the **RUNDSRGZ** command is run.

To schedule a nightly run of **RUNDSRGZ**, use option **21** on the **Maintenance** menu.

## To change job queue parameters on default job description

- Select option **11: Change job queue**.

## To change output queue parameters on default job description

- Select option **12. Change output queue.**

## To modify a minimum object size (used by DSLOADSIZE)

- Select option **13. Change minimum object size.**



## Display submitted jobs

---

This option allows you to display the result of jobs you have submitted in DiskScope and to obtain spool files of reports.

This option executes the **WRKSBMJOB** command allowing you to view the submitted jobs.

- Select option **85. Display submitted jobs** from any DiskScope menu.

The **Work with Submitted Jobs** screen is displayed:

```
Work with Submitted Jobs                    544K1246
Submitted from . . . . . : *USER            11/01/99 10:20:48

Type options, press Enter.
 2=Change  3=Hold  4=End  5=Work with  6=Release  7=Display message
 8=Work with spooled files

Opt Job      User      Type      -----Status-----  Function
-  DSDOCH    DS        BATCH     OUTQ
-  DSDOCH    DS        BATCH     OUTQ

Parameters or command                        Bottom
===>
F3=Exit  F4=Prompt  F5=Refresh  F9=Retrieve  F11=Display schedule data
F12=Cancel
```

## To display reports

1. Type **8** (Work with spooled files) in the **Opt** column next to the selected job.
2. Press **Enter**.

The **Work with Job Spooled Files** screen is displayed, showing a list of spooled files for the selected job:

```

Work with Job Spooled Files
Job:  DSDOCH      User:  DS      Number:  023188
Type options, press Enter.
  1=Send  2=Change  3=Hold  4=Delete  5=Display  6=Release  7=Messages
  8=Attributes  9=Work with printing status

Opt  File          Device or Queue  User Data  Status  Total Pages  Current Page  Copies
-   QPRINT         PRT01         DSDCHLRB  HLD     3             1             1
_   QPDSPSTS                               FIN

Parameters for options 1, 2, 3 or command
===>
F3=Exit  F10=View 3  F11=View 2  F12=Cancel  F22=Printers  F24=More keys
    
```

3. Type **5** (Display) in the **Opt** column next to the spooled file.
4. Press **Enter**.

The **Display Spooled File** screen displays a few lines containing report information and followed by the report itself:

```

Display Spooled File
File . . . . . :  QPRINT          Page/Line  1/2
Control . . . . . :  _____  Columns    1 - 78
Find . . . . . :  _____
*...+...1...+...2...+...3...+...4...+...5...+...6...+...7...+...
  11/01/99 Report: DSDCHLRB
  Page    1

Library sizes on 14/12/98 and 20/12/98
-----
Sorted by Library size                                Total disk spac
-----
| Library Name | Library Description | Size (MB) |
|-----|-----|-----|
| QSYS         | System Library     | 840.4     |
| QUSRSYS     |                    | 210.6     |
| QDOC        | Document library   | 166.8     |
| QRPLOBJ     |                    | 40.3      |
| QSPL        | Spool Library      | 75.1      |
| QIWS        |                    | 74.7      |
| QPFR        |                    | 64.0      |
|-----|-----|-----|
|                    |                    | More...   |
F3=Exit  F12=Cancel  F19=Left  F20=Right  F24=More keys
    
```