DiskSavvy

DISK SPACE ANALYZER

User Manual

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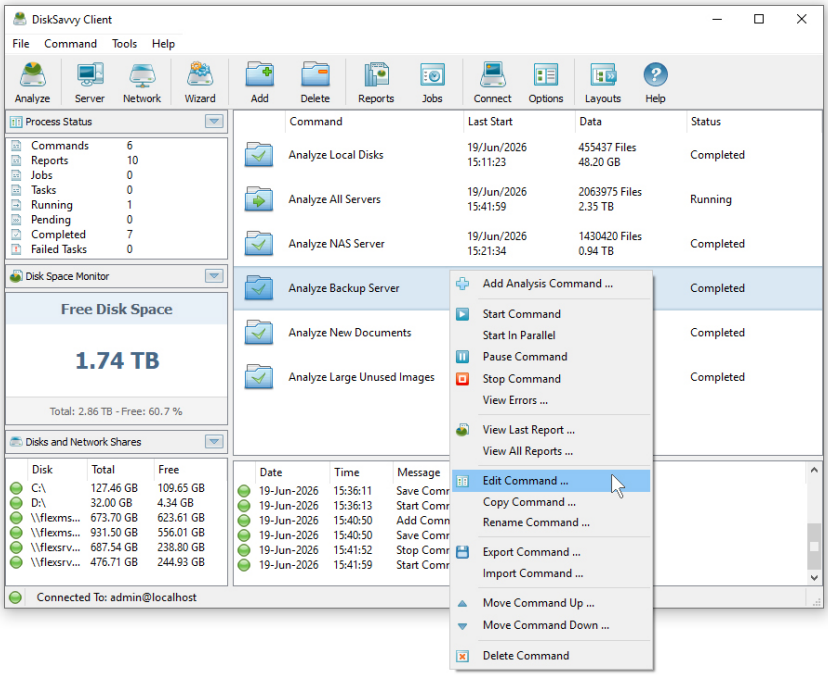
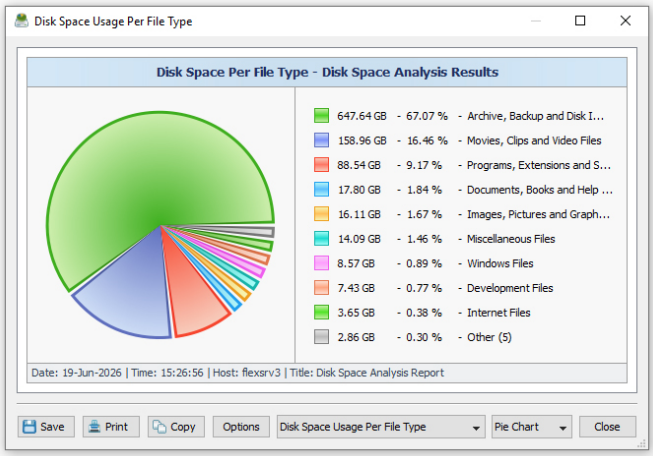
1 Product Overview

DiskSavvy Server is a powerful disk space analysis solution allowing one to analyze disks, network shares, NAS storage devices and enterprise storage systems. The user is provided with the ability to analyze one or more disks, directories or network shares, detect directories and files using significant amounts of the disk space, generate various types of pie charts, save disk space usage reports and perform disk space usage history trend analysis operations.

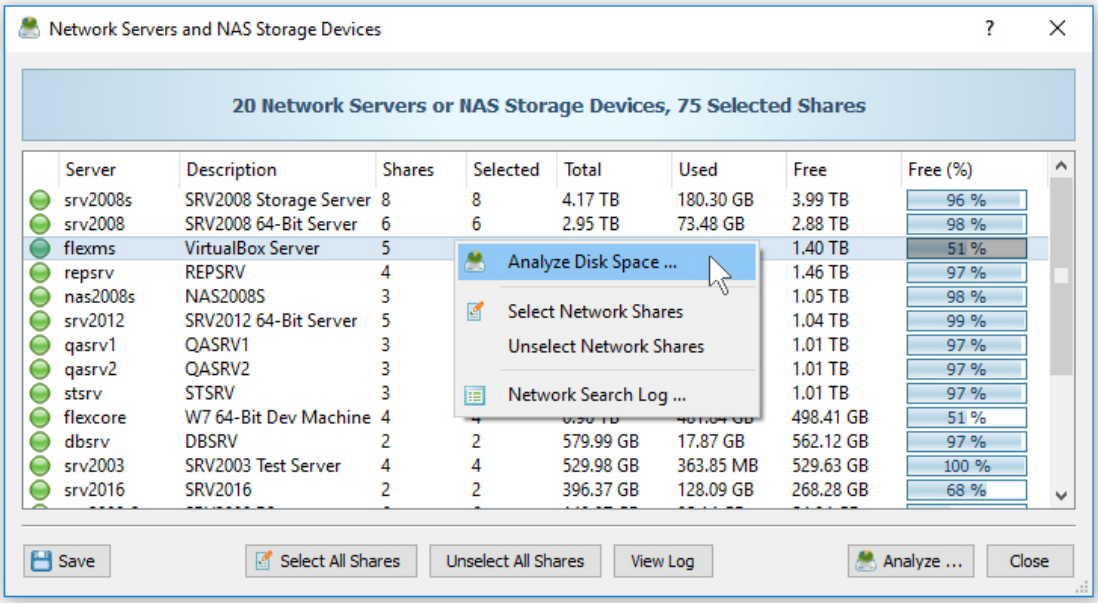


In addition, DiskSavvy provides built-in file classification capabilities allowing one to classify and categorize files using a number of file classification plug-ins capable of recognizing more than 3,500 types of files and showing disk space usage per file type, category, file extension, user name, creation, last modification and last access time, etc. Users are provided with the ability to perform different types of file management operations on disk space analysis results, specific types of files or file categories.

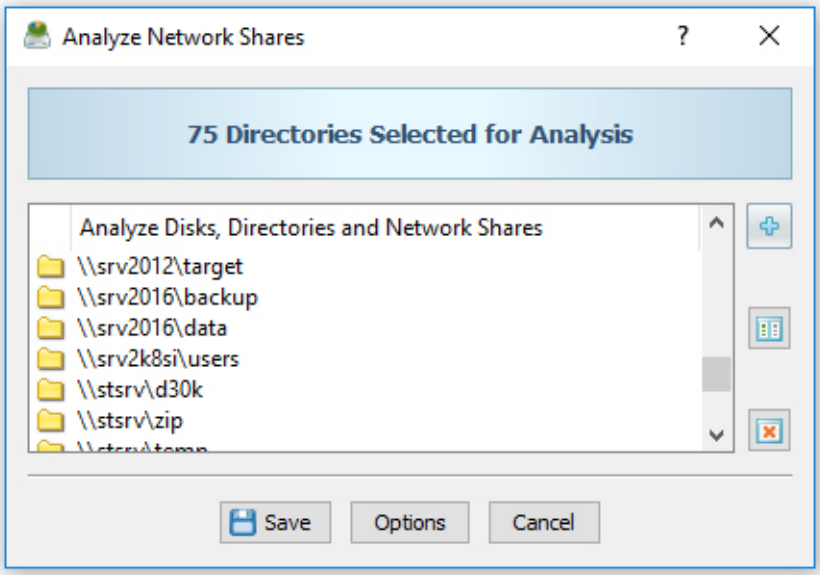


DiskSavvy allows one to save disk space analysis results to a number of standard formats including HTML, PDF, Excel, JSON, XML, CSV, text and the native DiskSavvy report format. In addition, IT and storage administrators are provided with the ability to export disk space analysis results from multiple servers and/or NAS storage devices to a centralized SQL database and then perform advanced disk space usage history trend analysis operations and display disk space usage per server and disk space usage per user.

DiskSavvy allows one to scan the network, discover network servers and NAS storage devices, automatically detect all accessible network shares and analyze disk space usage in hundreds of network servers and NAS storage devices. In addition, the user is provided with the ability to export the list of detected servers and NAS storage devices (including lists of network shares for each server) into HTML, PDF, text, JSON and CSV reports.

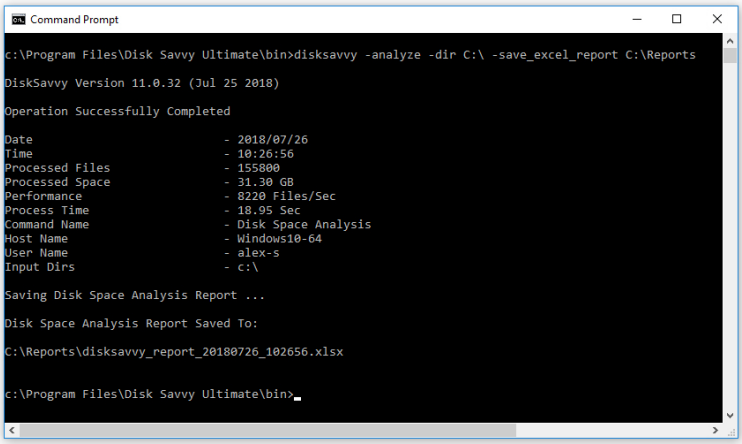


In order to analyze one or more servers or NAS storage devices, press the 'Network' button located on the main toolbar and wait while DiskSavvy will scan the network and show a list of detected network servers and NAS storage devices. On the network servers and NAS storage devices dialog, select the required servers and press the 'Analyze' button.

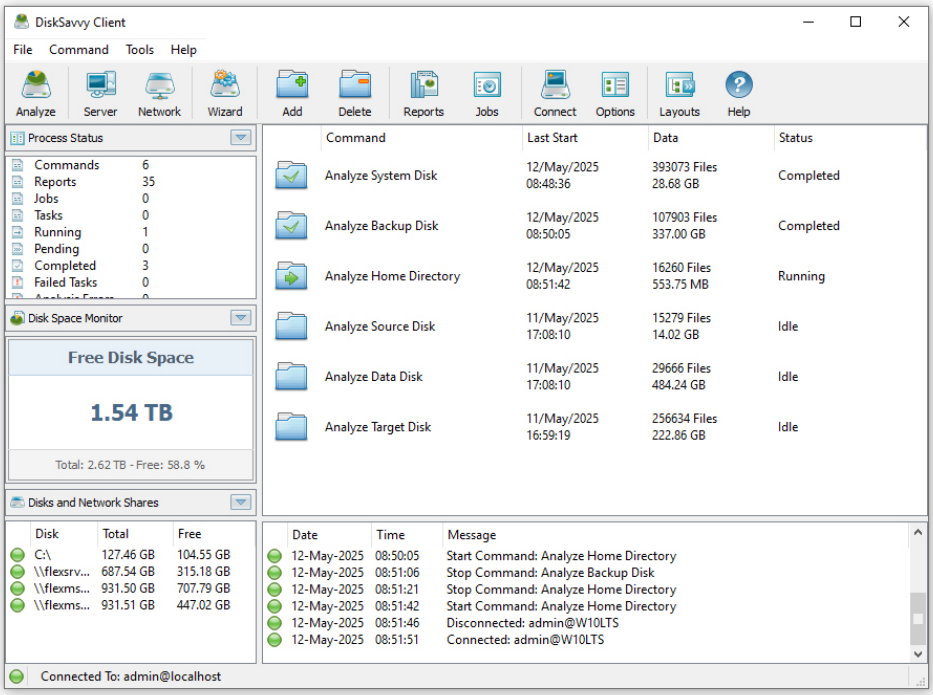


DiskSavvy will show all network shares hosted on the selected servers and NAS storage devices allowing one to analyze disk space usage and save various types of disk space analysis charts and reports. In addition, DiskSavvy provides a large number of advanced disk space analysis options allowing one to tune and customize disk space analysis operations for user specific needs and hardware configurations.

In addition to the DiskSavvy Server GUI application, IT administrators are provided with a command line utility allowing one to perform disk space analysis operations, save disk space usage reports and export disk space analysis results to an SQL database. The DiskSavvy command line utility may be used to automate disk space analysis operations and integrate disk space analysis capabilities into user-custom batch files and shell scripts.

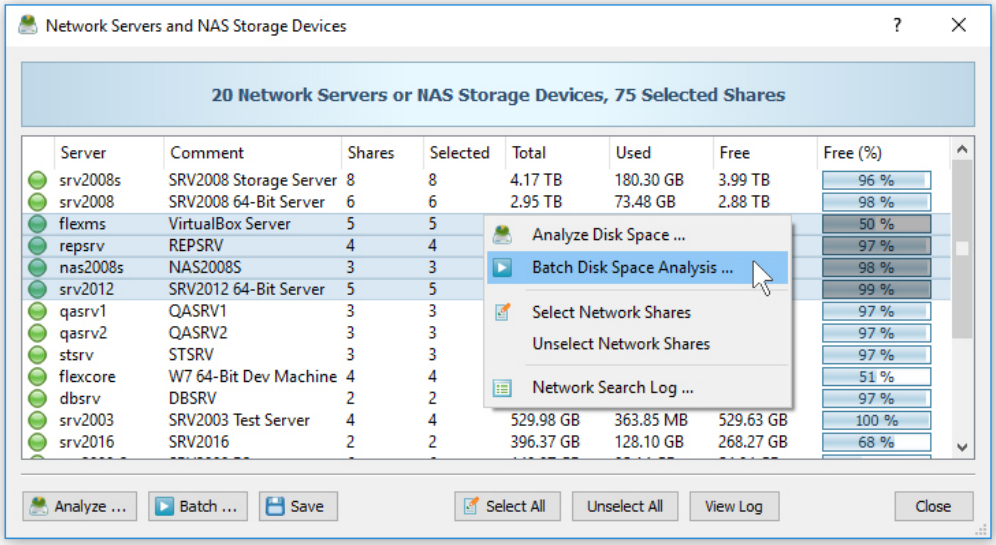


Finally, enterprise customers are provided with DiskSavvy Server, a server-based product version, which runs in the background as a service and allows one to analyze a number of servers or NAS storage devices simultaneously, schedule periodic disk space analysis operations, submit disk space analysis reports from multiple servers to a centralized SQL database, perform advanced disk space usage history trend analysis operations, analyze disk space usage per server, analyze disk space usage per user and execute conditional, rule-based disk space analysis actions.

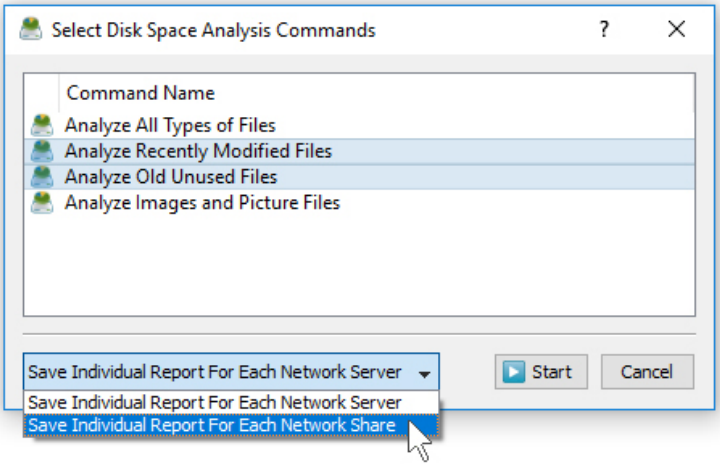


DiskSavvy Server may be controlled using a full-scale client GUI application locally or via the network. The client GUI application provides all features available in the desktop product version and additional capabilities allowing one to analyze multiple servers and/or NAS storage devices simultaneously, schedule periodic disk space analysis operations and perform advanced disk space usage history trend analysis operations. In addition, to the client GUI application, DiskSavvy Enterprise provides a web-based management interface, which can be used to control one or more DiskSavvy Servers using a regular web browser.

DiskSavvy Server and DiskSavvy Enterprise provide the ability to scan the network, detect all network servers and NAS storage devices, execute one or more pre-configured disk space analysis commands on hundreds of network servers and NAS storage devices and generate an individual report for each analyzed server, NAS storage device or network share.



In the simplest case, just press the 'Network' button located on the main toolbar, search all network servers and NAS storage devices on the network, select one or more servers to be analyzed, press the right mouse button and select the 'Batch Disk Space Analysis' menu item. DiskSavvy will show a list of pre-configured disk space analysis commands allowing one to select one or more commands to be executed on all selected network servers and NAS storage devices.



Depending on the selected configuration, DiskSavvy will save in the built-in reports database an individual disk space analysis report for each analyzed network server, NAS storage device or network share. Once the batch disk space analysis is completed, the user will be provided with the ability to open saved disk space analysis reports, review disk space analysis results, generate various types of pie charts and export reports to a number of standard formats including HTML, PDF, Excel, text, JSON, CSV and XML.

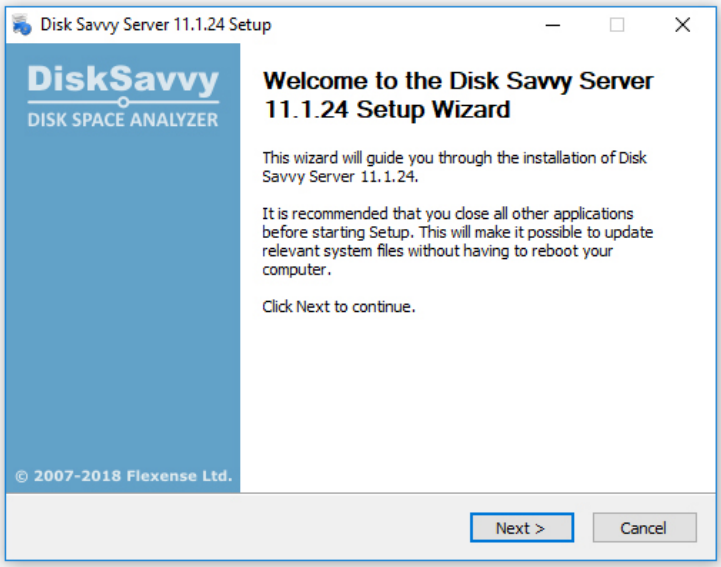
2 Product Versions

Features	Server	Enterprise
Maximum Number of Files	100 Million	Unlimited
Maximum Amount of Disk Space	100 TB	Unlimited
Maximum Number of Input Directories	100	Unlimited
Maximum Number of Analysis Profiles	100	Unlimited
Support for Unicode File Names	**Yes**	**Yes**
Support for Long File Names	**Yes**	**Yes**
Support for UNC Network Path Names	**Yes**	**Yes**
Built-In File Management Operations	**Yes**	**Yes**
Pie Charts and Bars Charts	**Yes**	**Yes**
HTML, PDF, Excel, Text and JSON Reports	**Yes**	**Yes**
Option to Analyze Specific Types of Files	**Yes**	**Yes**
Multi-Threaded Disk Space Analysis	**Yes**	**Yes**
Built-In Data Wiping Capabilities	**Yes**	**Yes**
Rule-Based Disk Space Analysis Actions	**Yes**	**Yes**
SQL Database Integration	**Yes**	**Yes**
Custom File Classification Plug-ins	**Yes**	**Yes**
Command Line Utility	**Yes**	**Yes**
Runs in the Background as a Service	**Yes**	**Yes**
Periodic Disk Space Analysis Operations	**Yes**	**Yes**
Analyze Disk Space Usage Per Server	**Yes**	**Yes**
Analyze Disk Space Usage Per User	**Yes**	**Yes**
Built-In Disk Space Monitor	**Yes**	**Yes**
Consolidated Disk Space Analysis Reports	x	**Yes**
Disk Space Usage History Trend Analysis	x	**Yes**
Batch Disk Space Analysis Operations	x	**Yes**
Web-Based Management Interface	x	**Yes**
Support For Multi-User Configurations	x	**Yes**
OS Native User Authentication	x	**Yes**
OEM Product Version	x	**Yes**
License	**$250**	**$450**

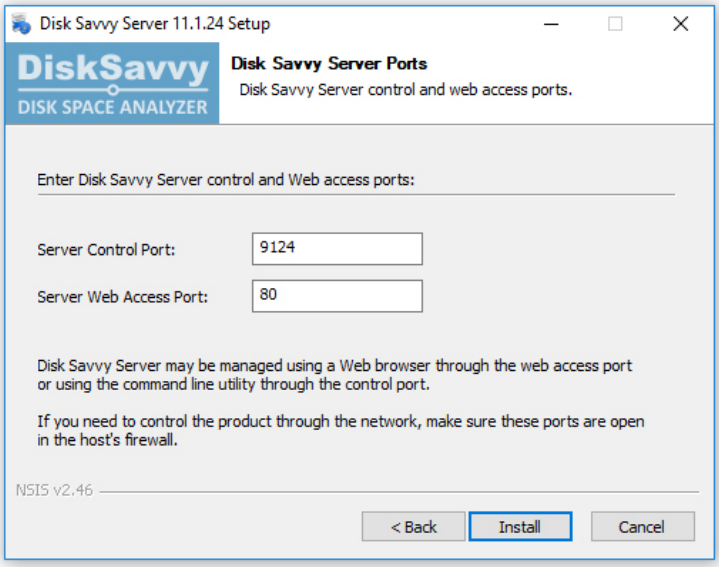
* Product features, prices and license terms are subject to change without notice.

3 Product Installation Procedure

DiskSavvy Server is especially designed to be as simple as possible. The product does not require any third-party software applications and may be installed and configured within a couple of minutes. A fully functional 30-days trial version of DiskSavvy Server may be downloaded from the following page: https://www.disksavvy.com/downloads.html.



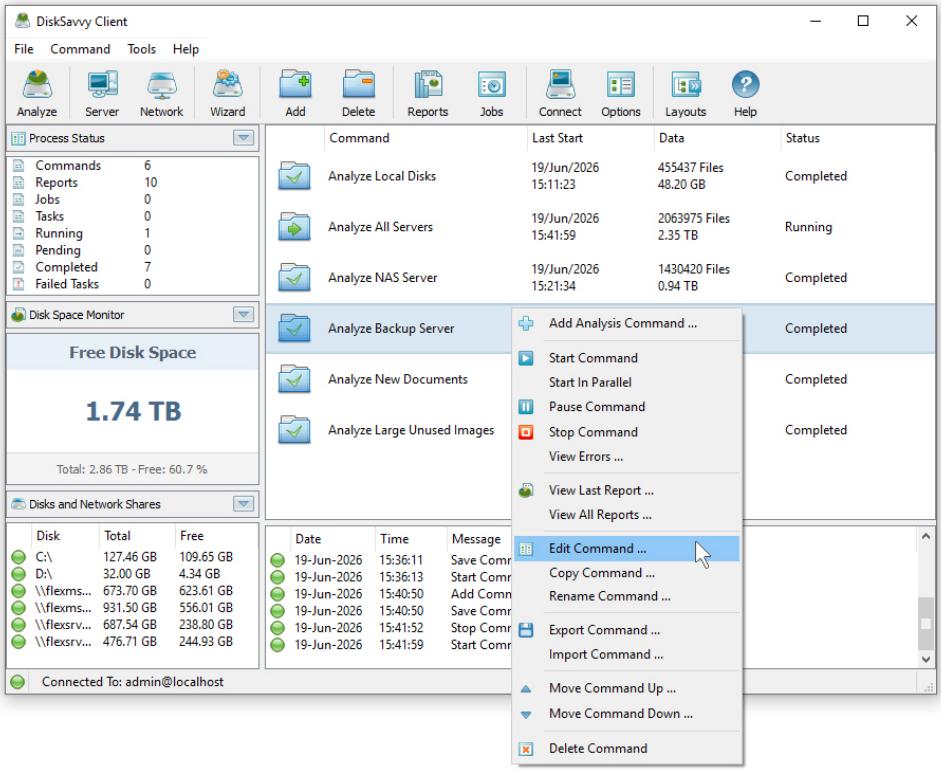
The installation package is very small, approximately 15 MB depending on the target operating system, and the product requires just 100 MB of the free disk space on the target server. In order to install DiskSavvy Server, start the setup program, select a destination directory and press the 'Next' button.



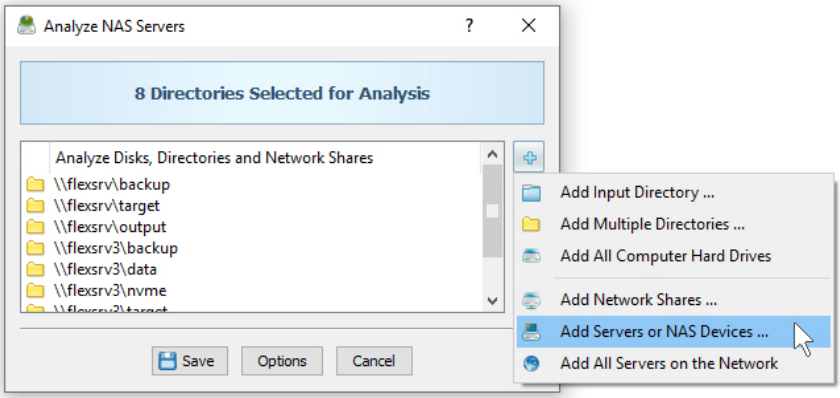
Optionally, enter custom server control and/or web access ports. The server control port is used by the DiskSavvy client GUI application and the command line utility to connect to the DiskSavvy Server. The web access port is the port for the web-based management interface allowing one to control DiskSavvy Enterprise using a standard web browser. If DiskSavvy Server should be controlled remotely through the network, make sure one or both of these ports are open in the server's firewall.

4 DiskSavvy Server GUI Application

The DiskSavvy Server GUI application allows one to connect to the DiskSavvy server locally or through the network, configure disk space analysis operations, schedule periodic disk space analysis operations, review disk space analysis results, generate charts and save various types of reports. Normally, the DiskSavvy client GUI application connects to the DiskSavvy server using the default user name and password (admin/admin), but the user is provided with the ability to change the user name and password on the DiskSavvy Server options dialog.

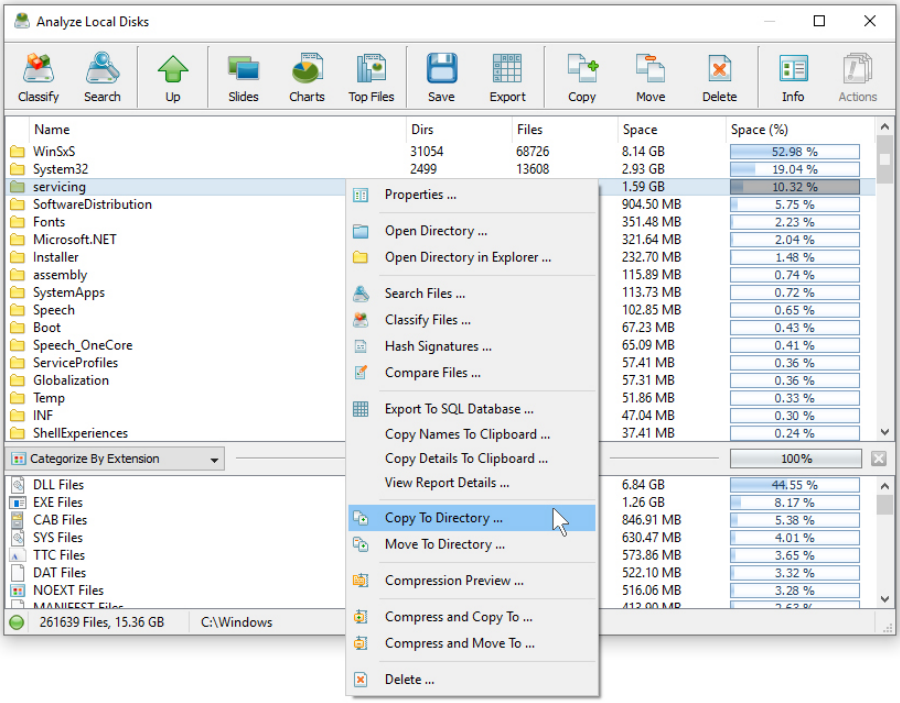


All communication messages sent between the DiskSavvy client GUI application and the DiskSavvy Server are always encrypted using the AES-256 encryption algorithm and all the transferred information is fully protected from unauthorized access. Once the DiskSavvy client GUI application is connected to the DiskSavvy server, it shows the list of configured disk space analysis commands and provides the ability to start/stop disk space analysis operations, review disk space analysis results and save various types of disk space analysis reports.

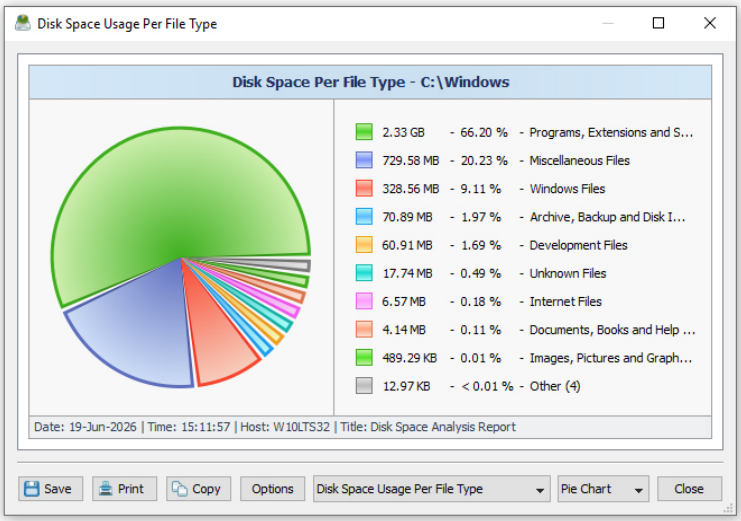


In addition, the DiskSavvy client GUI application allows one to scan the network, automatically detect all network servers and NAS storage devices, discover all accessible network shares and analyze disk space usage in hundreds of servers and NAS storage devices on the network.

In order to perform a simple disk space analysis operation using the DiskSavvy client GUI application, press the 'Analyze' button located on the main toolbar, add one or more disks, directories or network shares to analyze and press the 'Analyze' button. For advanced disk space analysis options press the 'Options' button located on the 'Analysis' dialog.

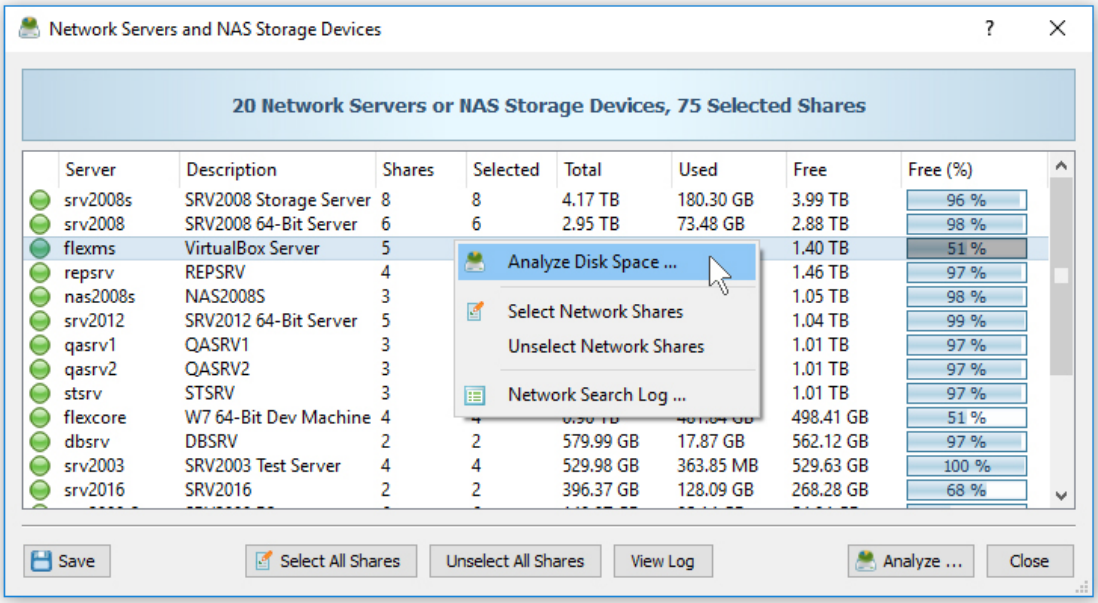


When the disk space analysis process will be completed, DiskSavvy will display the disk space analysis results dialog showing the analyzed disks, directories and network shares sorted by the amount of the used disk space. In addition to the disk space usage results displayed in the top view, the bottom view will show categories of files according to the currently selected file categorization mode.

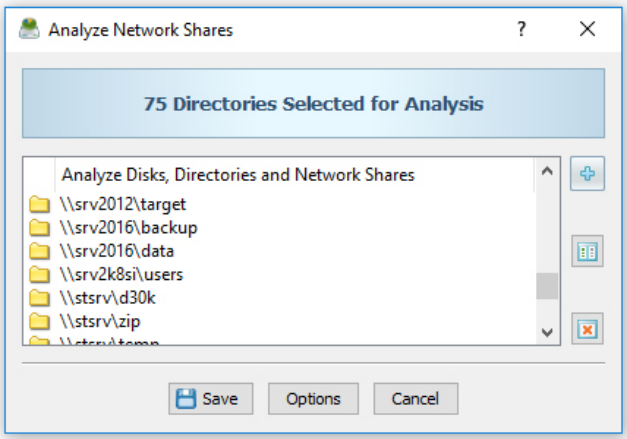


DiskSavvy is capable of categorizing disk space analysis results by the file type, extension, creation, last modification and last access dates, user name, etc. In order to change file categories displayed in the bottom view, click on the file categories drop box and select an appropriate file categorization mode. In addition, the DiskSavvy client GUI application allows one to filter disk space analysis results by the file category, extension, user name, etc., save various types of disk space usage reports, generate pie charts and perform file management operations on files or categories of files.

In order to simplify analysis of network servers and NAS storage devices, the DiskSavvy client GUI application provides the ability to scan the network, detect servers and NAS storage devices and then analyze all accessible network shares in one or more servers or NAS storage devices. In order to detect network servers and NAS storage devices, press the 'Network' button located on the main toolbar and wait until DiskSavvy will finish scanning the network.



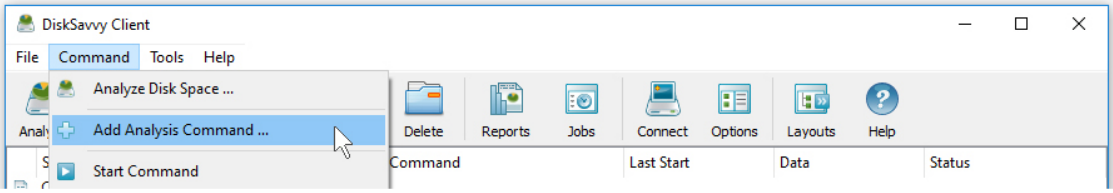
Once the network scanning process is complete, DiskSavvy will show the list of detected servers and NAS storage devices. For each network server or NAS storage device, DiskSavvy will show the server name, the server comment, the number of accessible network shares, the total amount of disk space, the amount of used disk space and the amount of free disk space. In order to see the list of network shares for a network server, click on the server item in the network servers view. In order to analyze one or more servers or NAS storage devices, select the required servers in the network servers view and press the 'Analyze' button.



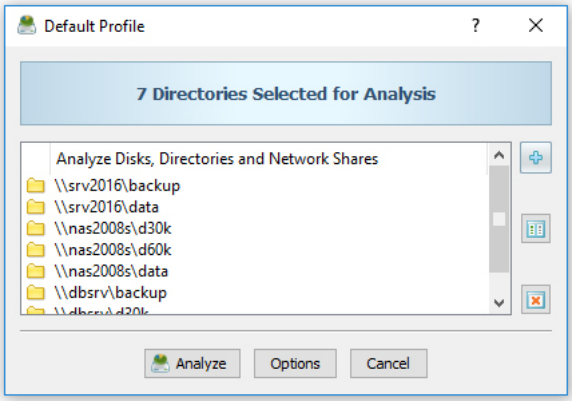
The DiskSavvy client GUI application will automatically create a new disk space analysis command, add all accessible network shares hosted on the selected network servers and NAS storage devices to the list of network shares to be analyzed and start the disk space analysis operation. Once the disk space analysis process will be completed, DiskSavvy will display the disk space analysis results dialog showing disk space usage for all analyzed network shares and allowing one to generate various types of disk space usage charts and save disk space usage reports into a number of standard report formats including: HTML, PDF, Excel, XML, CSV and plain text.

5 Managing Disk Space Analysis Commands

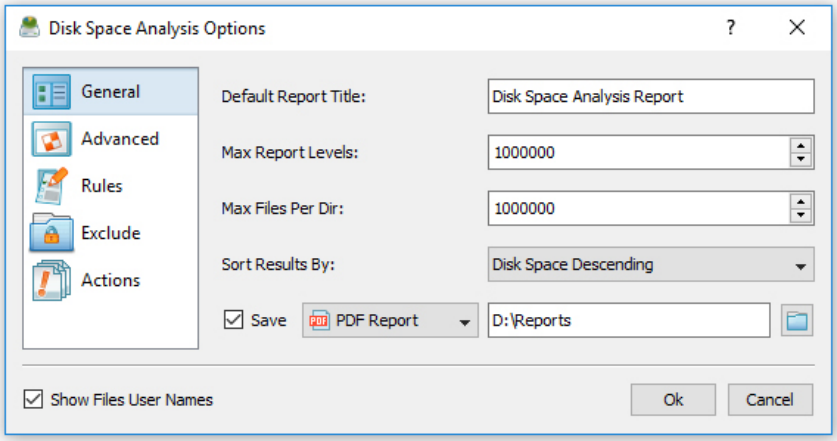
DiskSavvy Server allows one to configure multiple disk space analysis commands with each one capable of processing a number of disks, directories or network shares. In order to add a new disk space analysis command, press the 'Add Command' button located on the DiskSavvy Server home page, specify a unique command name, enter one or more disks, directories or network shares to analyze and press the 'Save' button.



In addition, the user is provided with the ability to exclude one or more directories from the disk space analysis process, add one or more file matching rules specifying which types of files to analyze and/or add one or more disk space analysis actions capable of sending E-Mail notifications or automatically generating reports when one or more directories are matching user-specified rules and conditions.

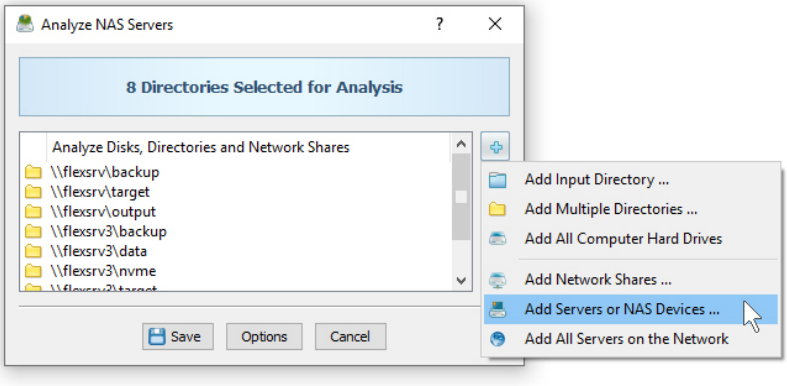


Finally, users are provided with numerous advanced disk space analysis options allowing one to set a custom report title, configure how many history reports to keep for each disk space analysis command, select a disk space analysis performance and directory scanning modes and/or automatically generate HTML, PDF, Excel, XML, CSV or text disk space analysis reports in a user-specified directory.

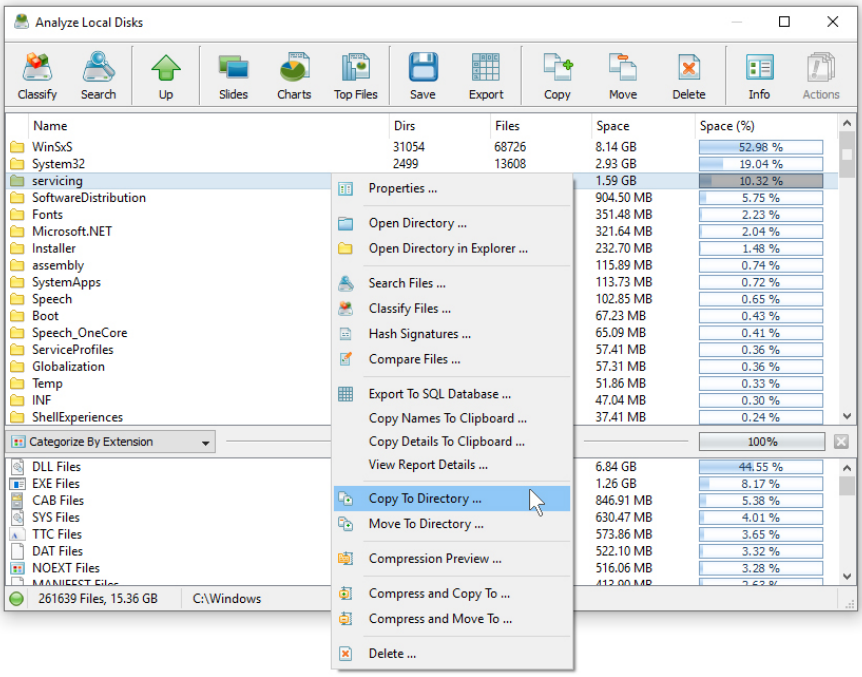


6 Analyzing Disks, Directories or Network Shares

In order to analyze disk space usage in a disk or directory, press the 'Analyze' button located on the main toolbar, specify the directory to analyze and press the 'Analyze' button. In order to analyze multiple directories, disks and/or network shares, press the 'Add' button and add all disks, directories and/or network shares that should be analyzed. Depending on the number of files that should be analyzed, the disk usage analysis process may take from a couple of seconds for thousands of files to a few minutes for large file systems containing millions of files.



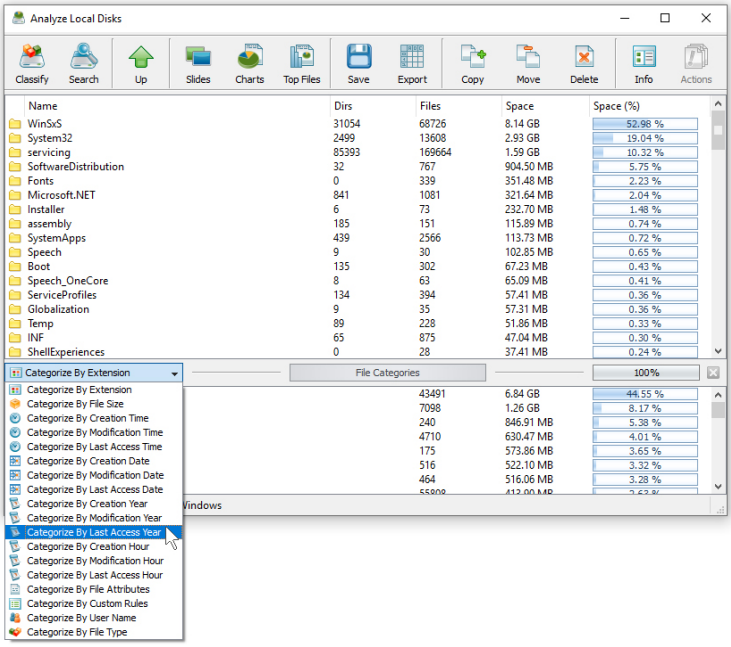
During the disk space analysis process, DiskSavvy will display the progress of the disk space analysis operation showing the total number of processed files and the amount of processed disk space. Once the disk space analysis process is completed, DiskSavvy will display a hierarchy of analyzed disks, directories and files sorted by the amount of the used disk space. For each directory, DiskSavvy will show the name of the directory, the total number of files in the directory and all subdirectories and the total amount of the disk space used by all files in the directory and all subdirectories.



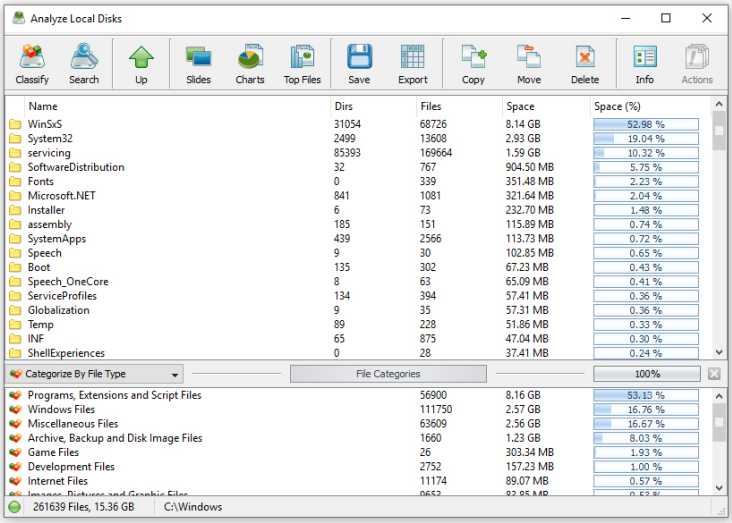
Press the 'Charts' button to display a pie chart showing disk space usage statistics for the current directory view and selected file categories. Click on a directory item to open the directory and show nested subdirectories and files. Select one or more directories and/or files and press the right mouse button to perform a file management operation on the selected items. For example, select one or more files, press the right mouse button and select the 'Copy To Directory' menu item to copy the selected files to another location.

7 Using File Categories and File Filters

DiskSavvy Server allows one to categorize and filter disk space analysis results by the file type, file size, file extension, user name, creation time, last modification time and last assess time. After finishing analyzing the specified disks and directories, DiskSavvy displays the disk space analysis results in the top results view and file categories in the bottom results view according to the currently selected file categorization mode.

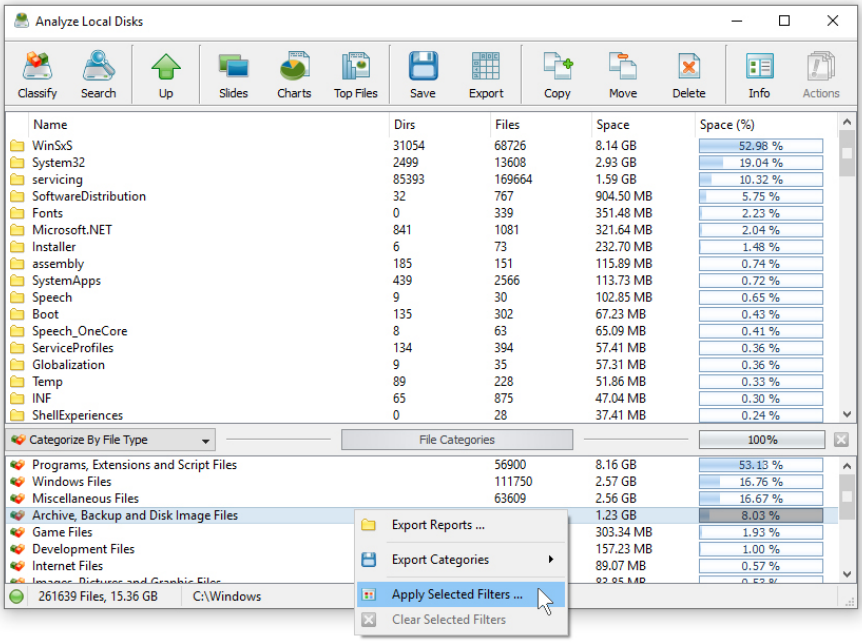


By default, DiskSavvy categorizes disk space analysis results by the file extension and shows a list of all detected file extensions sorted by the amount of used disk space. For each category, DiskSavvy shows the number of files, the amount of used disk space and the percentage of the used disk space relative to other file categories. Use the 'Categories' combo box to categorize files by the file type, creation time, last modification time, last access time, etc.

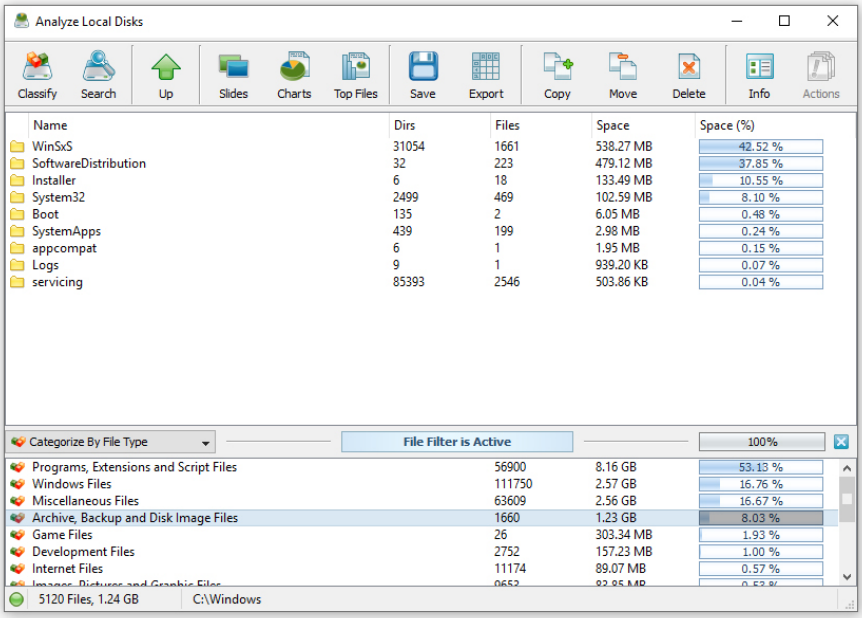


For example, set the file categorization mode to 'Categorize By File Type' and DiskSavvy will display types of files in the currently open directory. When the user opens a subdirectory, DiskSavvy automatically updates the file categories view and shows statistics according to the currently open directory. Moreover, all types of pie charts and disk space analysis reports will be generated according to the currently open directory and the selected file categorization mode showing disk space usage statistics in reports and pie charts.

One of the most powerful features of DiskSavvy is the ability to filter disk space analysis results by one or more specific file categories using file filters and then save reports, generate pie charts and perform file management operations on files matching the selected file filters.

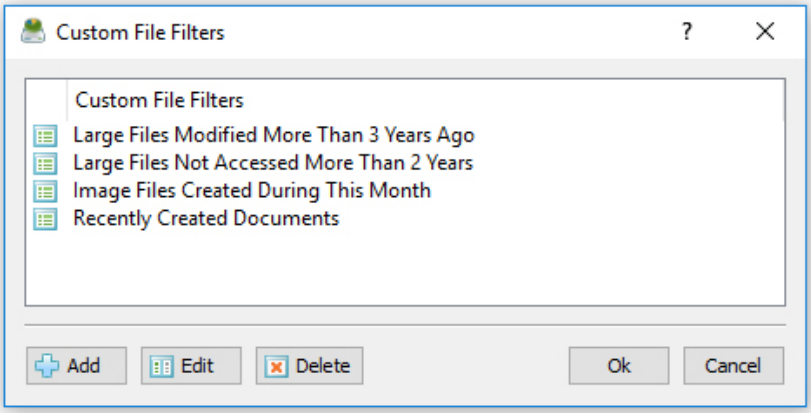


For example, in order to display disk space usage statistics for all types of programs and DLL libraries, categorize disk space analysis results by the file type, select the 'Programs and Extensions' category in the file categories view, press the right mouse button and select the 'Apply Selected Filters' menu item. DiskSavvy will filter disk space analysis results in the currently open directory by the selected file filters and display disk space usage statistics for all types of programs and DLL libraries.

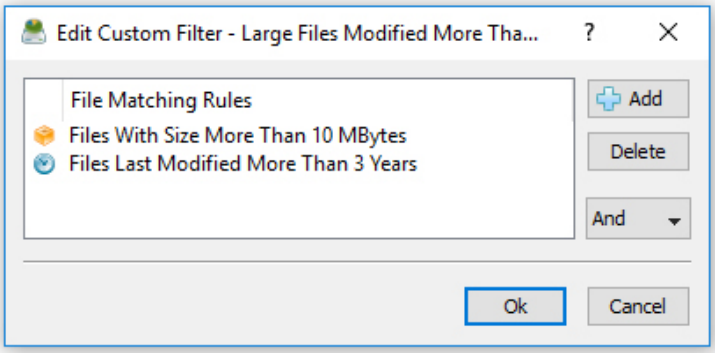


When the user opens a directory with an active file filter, DiskSavvy will automatically filter files in the directory and display files matching the selected file filter. Moreover, all types of pie charts and disk space analysis reports will be generated according to the currently open directory and the selected file filter allowing one to generate different types of disk space analysis reports using different types of file categories and filters and showing disk space usage statistics from different points of view.

In addition to the built-in file filters, DiskSavvy provides the ability to pre-configure one or more custom file filters according to user-specific needs and requirements. In order to add a custom file filter, select the custom file filters view, press the right mouse button over the filters view and select the 'Edit Custom Filters' menu item.



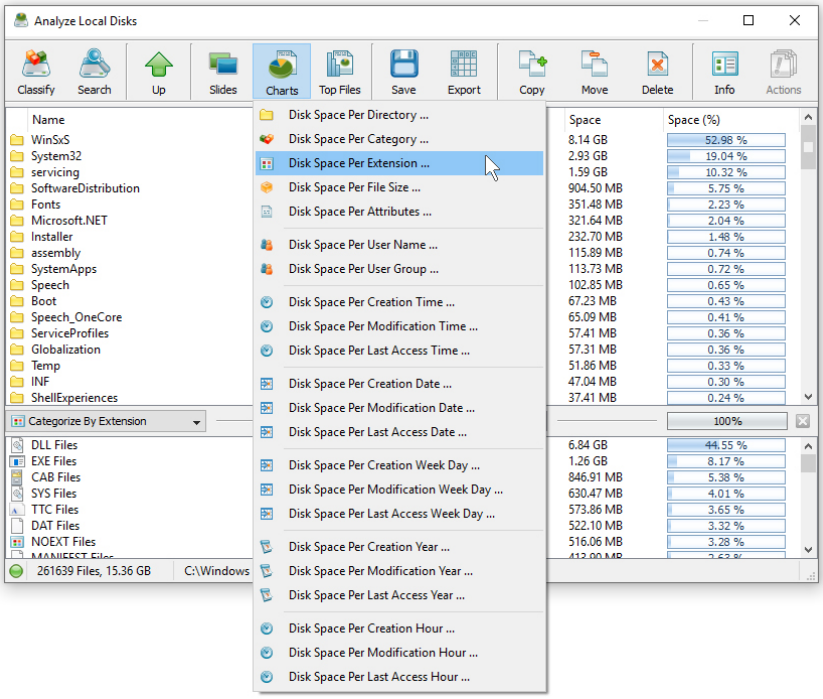
In order to add a new custom file filter, press the 'Add' button, enter a unique filter name and configure one or more file matching rules specifying which types or groups of files to display. In order to edit a custom file filter, select the filter in the custom file filters dialog and press the 'Edit' button.



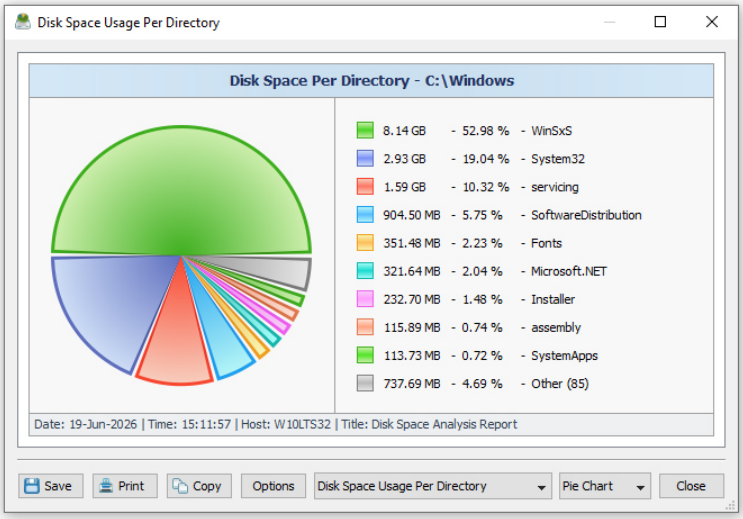
Once finished configuring custom file filters, close the filters dialog and DiskSavvy will analyze the currently displayed disk space usage results and show the list of user-specified custom file filters sorted by the amount of data and the number of files matching the specified file filters. In order to filter the currently displayed disk space usage results by one or more custom file filters, select the required custom file filters in the filters view, press the right mouse button and select the 'Apply Selected Filters' menu item. DiskSavvy will apply the selected custom file filters and display the amount of data and the number of files matching the selected file filters.

8 Disk Space Usage Charts

The DiskSavvy disk space analyzer provides multiple types of statistical pie charts and timeline charts capable of showing the amount of disk space usage and the number of files per directory, file extension, file type, file size, file owner, creation, modification and last access time. In order to open the charts dialog, press the 'Charts' button located on the main toolbar and select an appropriate chart type.

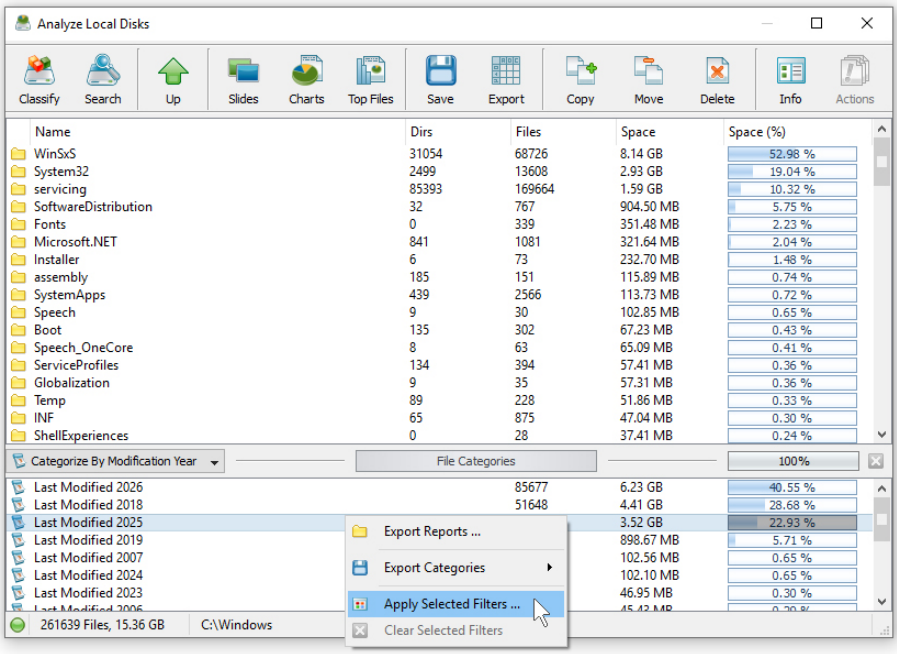


By default, the charts dialog shows the amount of disk space usage and the number of files for the current file system location. For example, in order to open a chart showing the disk space usage and the number of files per file category in the current directory, press the 'Charts' button located on the main toolbar and select the 'Disk Space Usage Per Category' chart type.

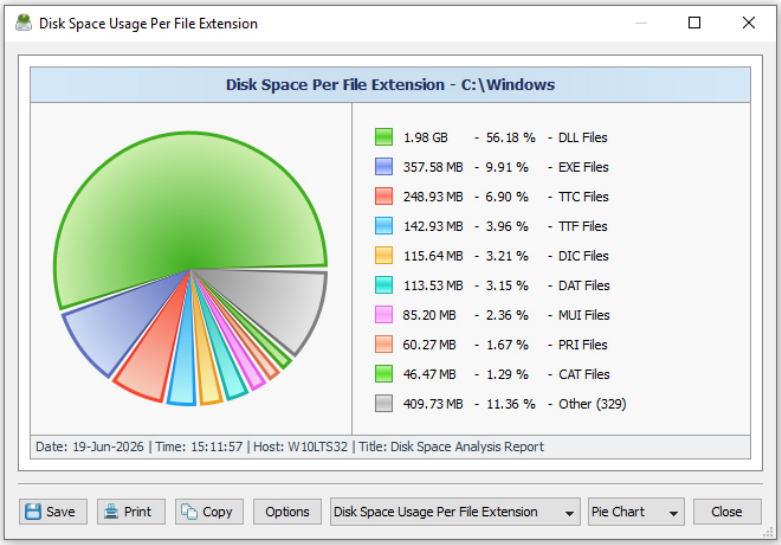


In addition, the charts dialog provides the user with the ability to export the chart data to a number of different formats and copy the displayed chart image to the clipboard allowing one to easily integrate DiskSavvy charts into user's documents and presentations. In order to customize the chart's description, press the 'Options' button and specify a custom chart title, host name, date or time.

One of the most powerful features of the DiskSavvy disk space analyzer is the ability to filter disk space analysis results using one or more user-specified filters and then categorize filtered results and display statistical pie charts. For example, in order to display a pie chart showing the amount of disk space per file extension for files that were modified during the last two years, set the file categorization mode to 'Categorize By Modification Year', select one or more years to show the information for, press the right mouse button over the file filters view and select the 'Apply Selected Filters' menu item.

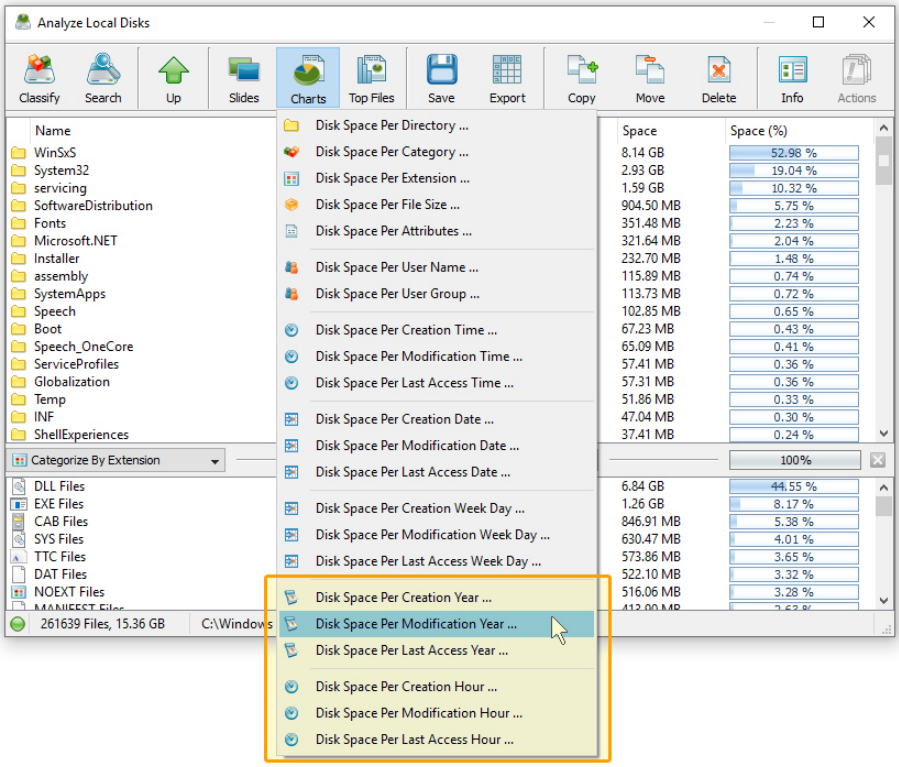


DiskSavvy will filter the disk space analysis results and display files that were modified during the selected years. Now, press the 'Charts' button located on the main toolbar and select the 'Disk Space Usage Per Extension' menu item. DiskSavvy will categorize the filtered disk space analysis results and display a pie chart showing the amount of disk space usage per file extension for files that were modified during the selected years.

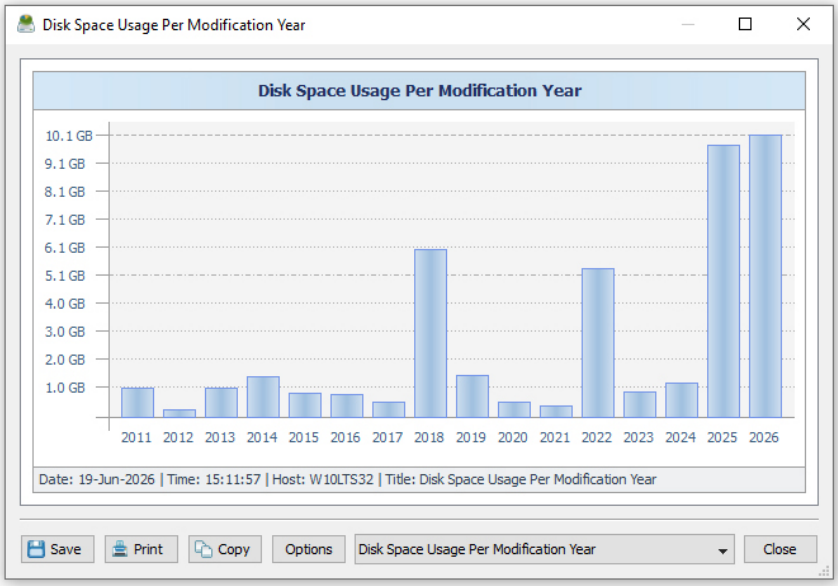


In a similar way, the user can filter disk space analysis results by file type, size, user name, file attributes, creation, modification and last access dates and then display various types of charts showing the disk space usage or the number of files according to user-specific needs.

Another powerful capability is the ability to display the disk space usage timeline charts for all or filtered disk space analysis results. In the simplest case, press the 'Charts' button located on the main toolbar and select the 'Disk Space Usage Per Modification Year' menu item.

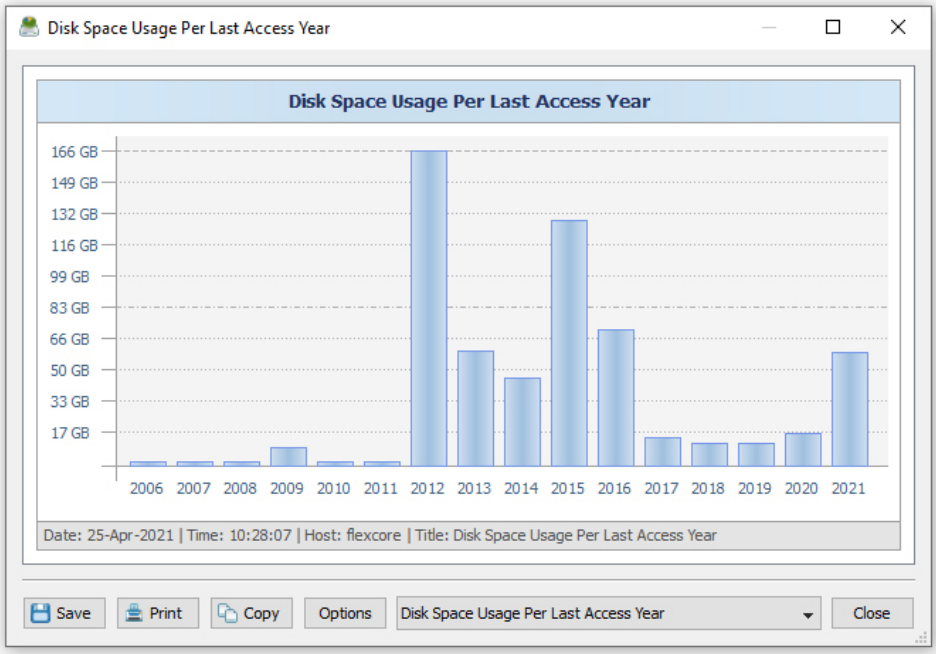


DiskSavvy will display a time line chart showing how much data was modified per year. In order to display how many files were modified per year, set the chart mode to 'Number Of Files Per Modification Year'.

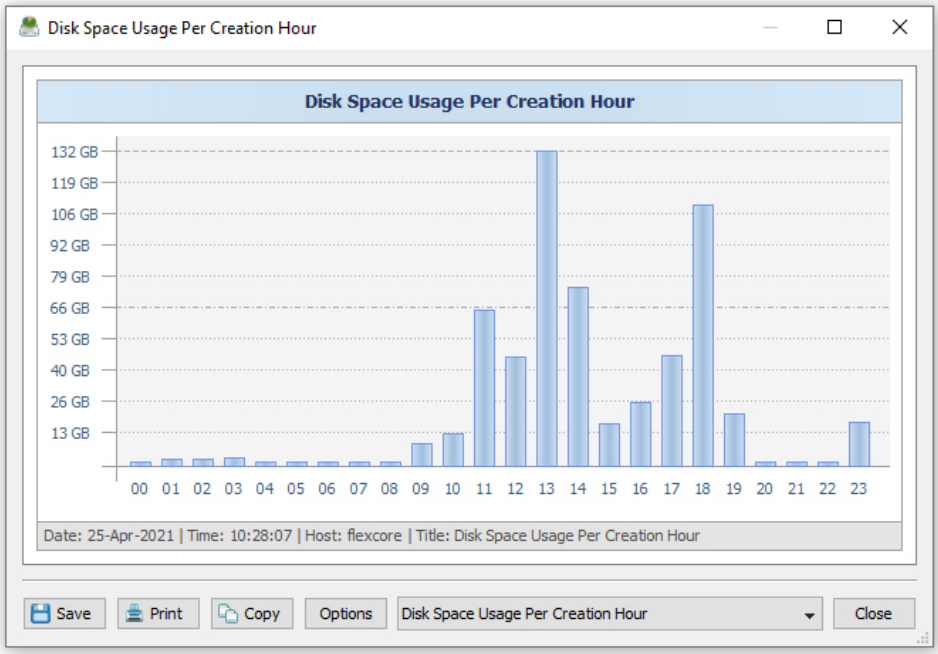


In addition, the user is provided with the ability to display timeline charts for filtered disk space analysis results. For example, in order to display how many documents were created per year, set the file categorization mode to 'Categorize By File Type', select the 'Documents, Books and Help Files' file category, press the right mouse button and select the 'Apply Selected Filters' menu item. Now, press the 'Charts' button located on the main toolbar, and select the 'Disk Space Usage Per Creation Year' menu item.

One of the easiest ways to assess how much of the used disk space can be freed by archiving old, unused files is to display the last access year timeline chart. The timeline chart shows how much disk space is used by files which were last accessed during the last 15 years allowing one to easily identify the proportion of recently accessed files and old, unused files.

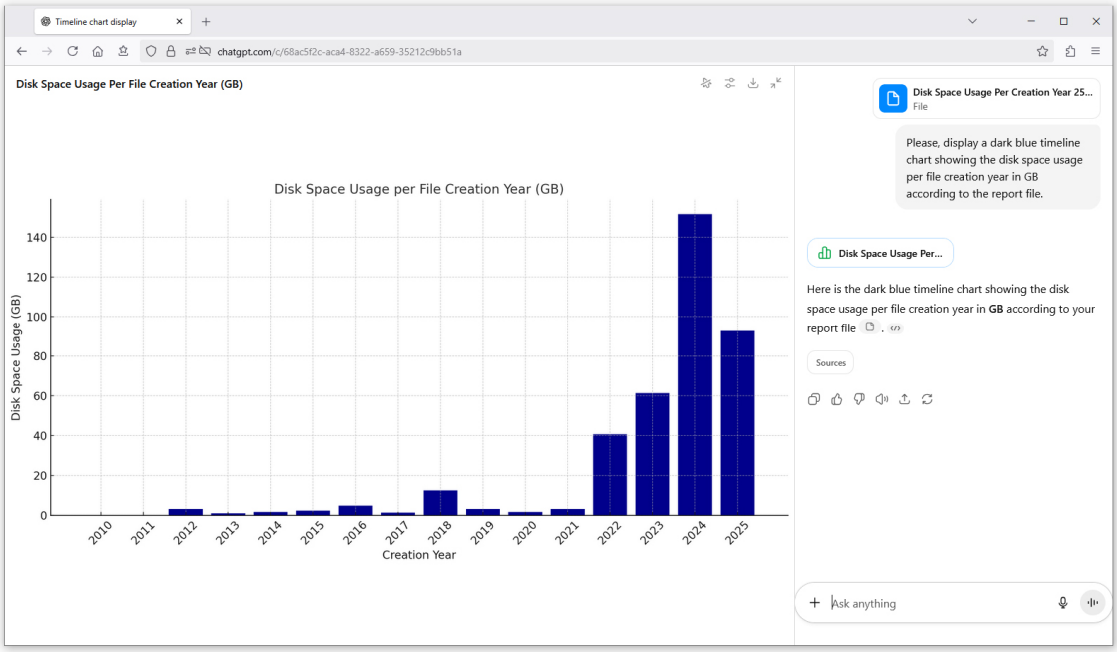


In order to identify which time of the day is the best time to perform backup operations, the user can display the 'Number of Files Per Creation Hour' or 'Number of Files Per Modification Hour' timeline charts.

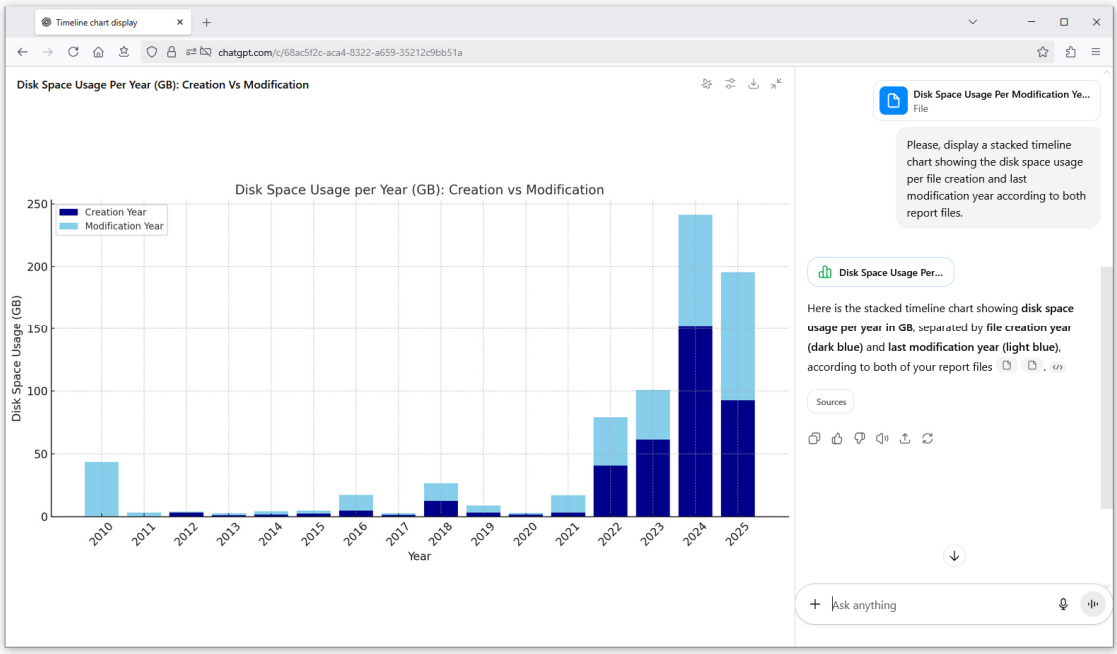


The 24-hours timeline chart shows how much disk space and how many files were created or modified during each hour of the day allowing one to easily select the time for backup operations. In order to save, a time line chart, press the 'Save' button, select an appropriate chart format, enter a file name and press the 'Save' button.

One of the most powerful capabilities of the DiskSavvy disk space analyzer is the ability to export disk space analysis results to AI-friendly file formats allowing one to easily import disk space analysis results to various AI platforms, perform advanced analysis operations and generate user-custom charts.



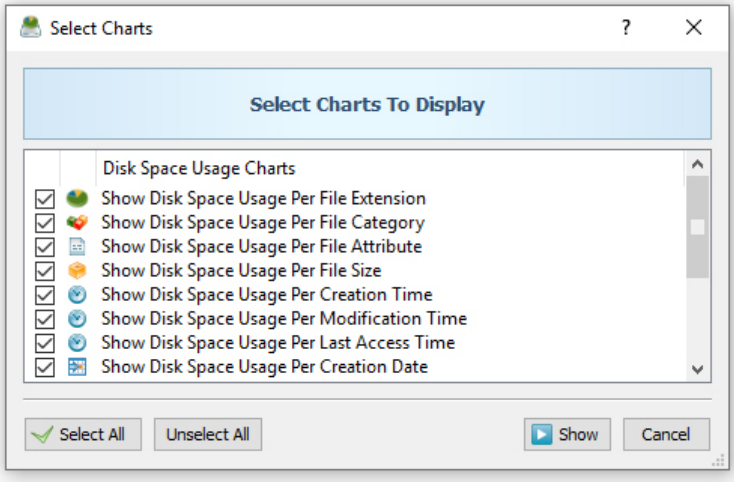
For example, in order to generate a timeline chart showing the disk space usage per file creation year using the ChatGPT AI platform, press the 'Charts' button located on the main toolbar, select the 'Disk Space Usage By Creation Year' chart type, export the chart data to the JSON file format, import the JSON file to the ChatGPT AI platform and ask ChatGPT to display a timeline chart according to the uploaded JSON report file.



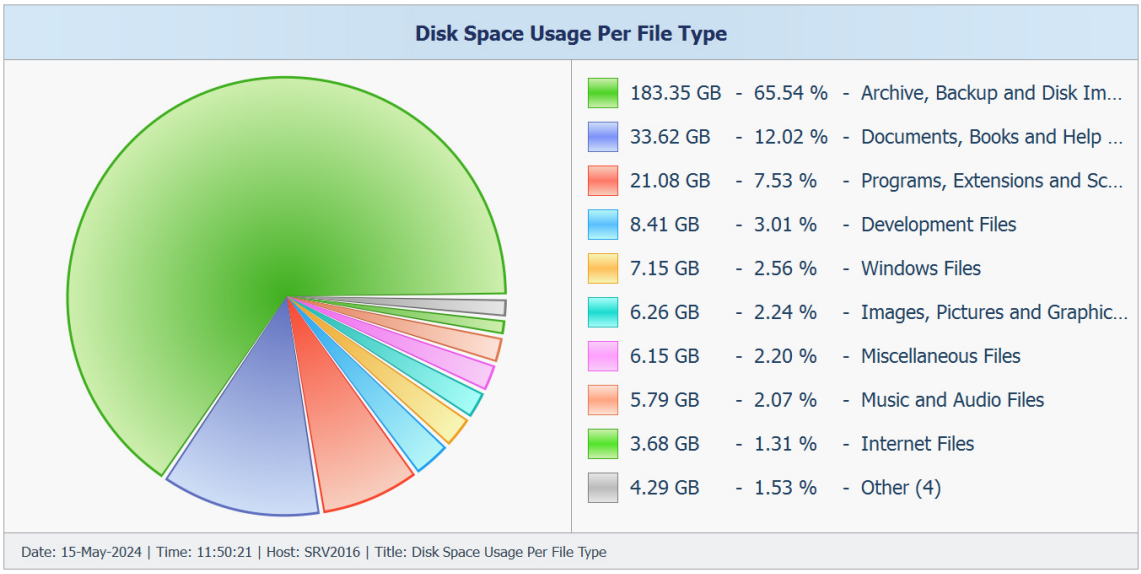
In order to display a consolidated, stacked timeline chart showing the disk space usage per file creation and last modification year, open the DiskSavvy GUI application, press the 'Charts' button located on the main toolbar, select the 'Disk Space Usage By Modification Year' chart type, export the chart data to the JSON file format, import the second JSON report file to the ChatGPT AI platform and ask ChatGPT to display a stacked time line chart.

9 Disk Space Analysis Slides

IT professionals are provided with the ability to display full-screen presentations on projectors or large screens showing user-selected disk space analysis charts. In order to start a presentation, perform a disk space analysis operation or open a disk space analysis report and then press the 'Slides' button located on the main toolbar.



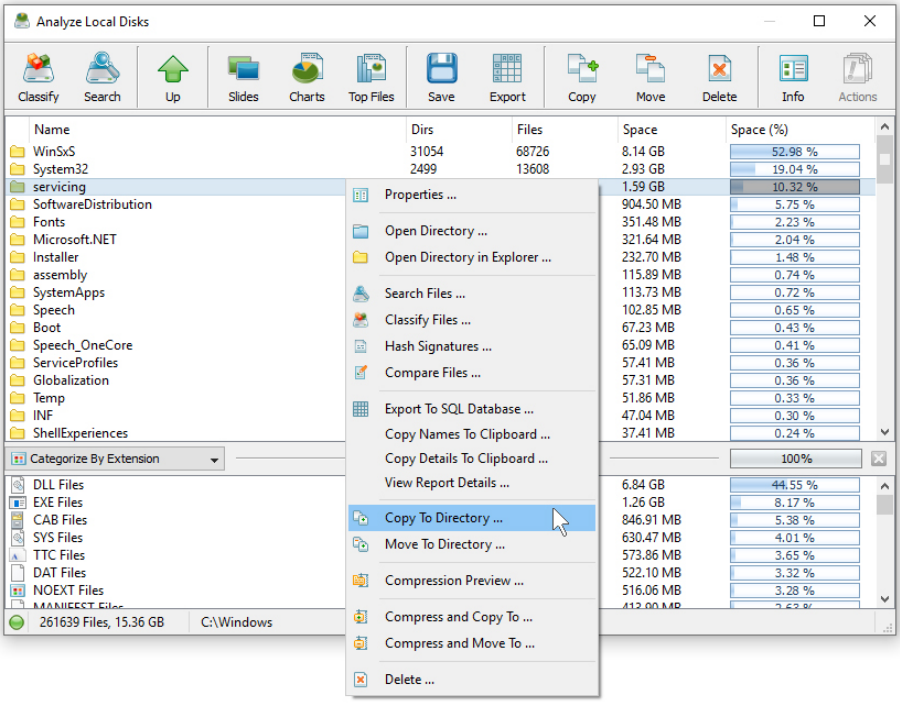
On the charts select dialog, select the charts to be displayed in the presentation and press the 'Show' button. The user is provided with the ability to display pie charts showing the disk space usage per file extension, file type, file attribute, file size, file user, etc. In addition, DiskSavvy allows one to display bars chars showing the disk space usage per file creation year, last modification year and last access year.



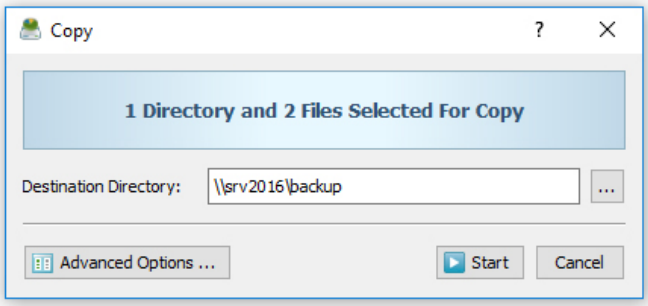
In order to move to the next slide, press the 'Next' button or press the 'Right' arrow on the keyboard. Press the 'Previous' button or press the 'Left' arrow on the keyboard to move to the previous slide. In order to save the current slide, press the 'Save' button, select an appropriate report format and specify a file name to save the report to.

10 Using Built-in File Management Operations

DiskSavvy Server provides the user with the ability to perform a number of file management operations on disk space analysis results including file copy, move, compress, compress and copy, compress and move and delete. In addition, DiskSavvy allows one execute programs, open files and start the Windows Explorer application in the current directory or in the directory where the currently selected file or directory is located in.



In order to copy one or more directories or files, select the required directory and/or file items in the disk space analysis results view, press the right mouse button and select the 'Copy To' menu item. If a file copy operation is performed with an active file filter, DiskSavvy will copy only files matching the currently selected file filter.

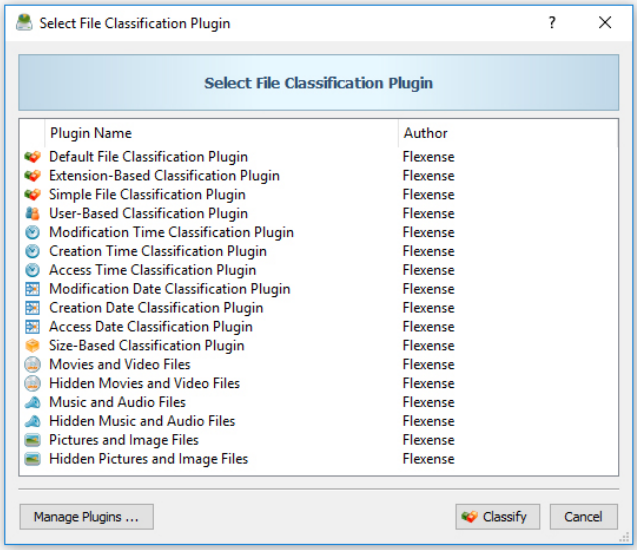


DiskSavvy provides a large number of advanced file copy options allowing one to control which types of files to copy, how fast to perform the file copy operation and how many parallel file copy threads to use. In order to open the 'Advanced Copy Options' dialog press the 'Advanced Options' button located on the 'File Copy' dialog.

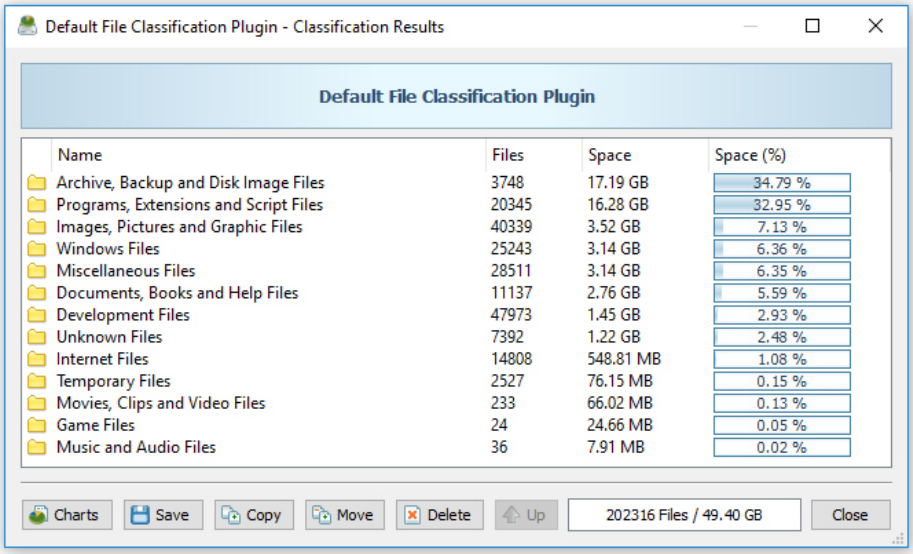
In order to delete one or more files or directories, select the required items in the disk space analysis results view, press the right mouse button and select the 'Delete' menu item. If a file delete operation is performed with an active file filter, DiskSavvy will delete only files matching the currently selected file filter. In addition, IT administrators and power computer users are provided with advanced file delete options allowing one to securely wipe data on the disk, select which types of files to delete, control the speed of the file delete operation, etc.

11 Using Built-in File Classification Capabilities

One of the most powerful features provided by the DiskSavvy disk space analyzer is the ability to classify disk space analysis results by the file type, extension, user name, size, last access, last modification and creation dates, etc. DiskSavvy provides a number of built-in file classification plug-ins capable of recognizing more than 3,500 types of files and allowing one to perform a number of different types of file classification operations.



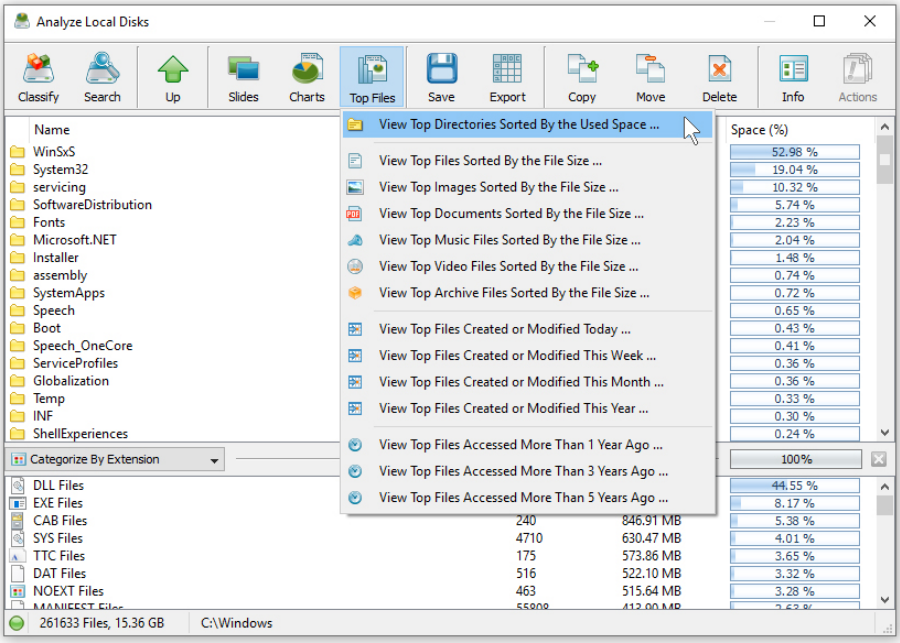
In order to classify files in a disk or directory, select the directory in the disk space analysis results view, press the right mouse button and select the 'Classify' menu item. On the file classification plug-ins dialog, select an appropriate file classification plug-in and press the 'Classify' button. DiskSavvy will classify files located in the directory and display a hierarchy of file categories, groups and file classes sorted by the amount of used disk space. In order to open a file category, just click on the file category item in the file classification results dialog.



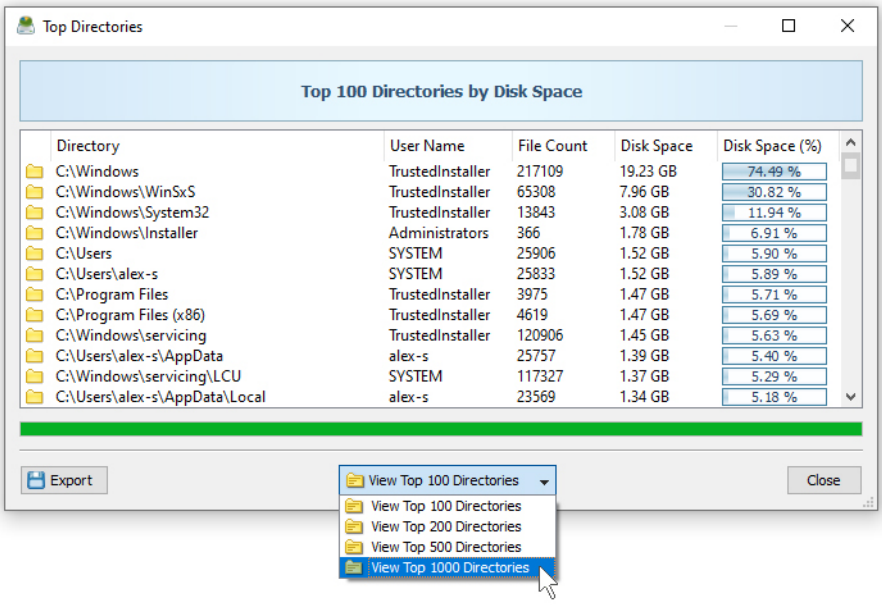
The file classification results dialog allows one to save file classification reports, display pie charts showing disk space usage per file category and perform file management operations such as file copy, move and delete on categories of files and individual files. For example, in order to delete all types of document files, select the 'Documents Files' category, press the 'Delete' button and DiskSavvy will delete all types of document files.

12 View Top Directories by Disk Space Usage

By default, DiskSavvy shows a structured hierarchy of analyzed directories sorted by the used disk space and allows one to browse subdirectories in order to identify which subdirectories and files are using significant amounts of the disk space. In addition, DiskSavvy provides the ability to display a flat list of top directories sorted by the amount of the used disk space.



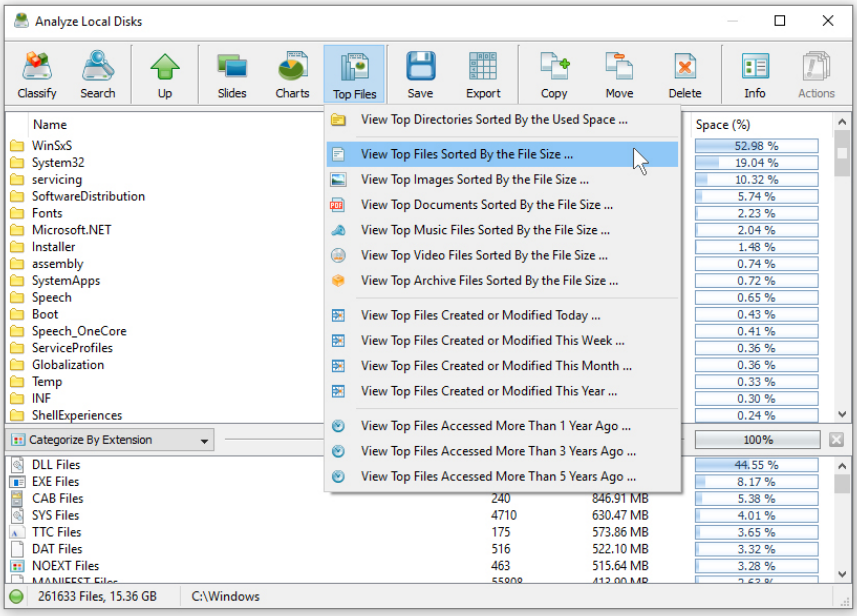
In order to display the list of top directories, analyze one or more disks or network shares, press the 'Top Files' button located on the main toolbar and select the 'View Top Directories' menu item. For each directory, the list of top directories shows the full directory name, the user name, the total number of files in the directory and all subdirectories and the total amount of the used disk space for the directory and all subdirectories.



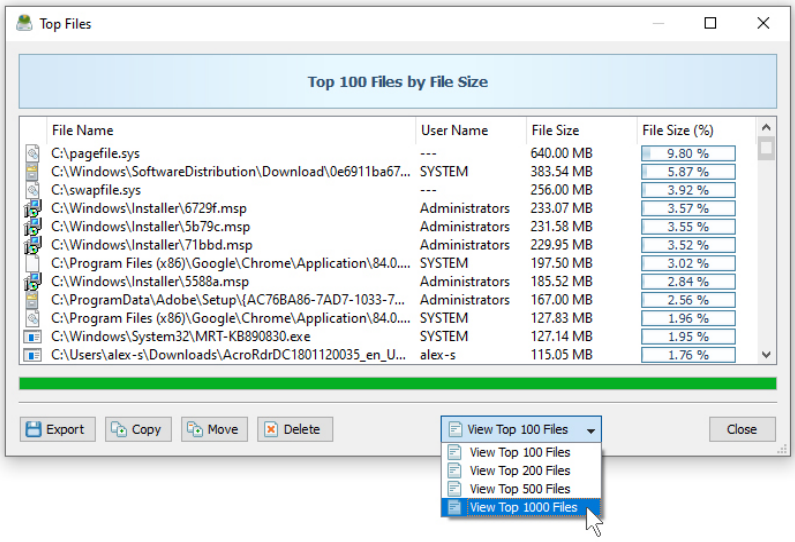
In order to export the list of top directories to a report file, press the 'Export' button located on the top directories dialog, select an appropriate report format, enter a file name to export the report to and press the 'Save' button.

13 View Top Files by File Size

Normally, DiskSavvy displays an hierarchy of analyzed directories and files sorted by the used disk space and allows one to browse subdirectories in order to identify which subdirectories and files are using significant amounts of the disk space. In addition, DiskSavvy provides the ability to display a flat list of top files sorted by the file size. In order to display the list of top files, analyze one or more disks, directories or network shares, press the 'Top Files' button located on the main toolbar and select the 'View Top Files' menu item.



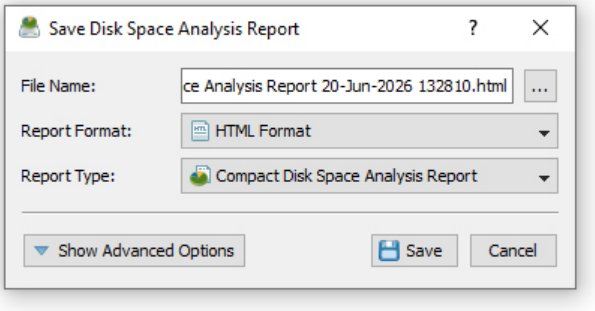
For each file, the list of top files shows the full file name, the user name and the file size. By default, DiskSavvy shows all types of files in the currently displayed location. In addition, the user is provided with the ability to show top files for specific types of files or file categories. For example, in order to display top programs and executable files in the Windows system directory, analyze the system hard disk, navigate to the Windows system directory, double click on the 'Programs and Executable Files' file filter in the filters view and then select the 'View Top Files' menu item.



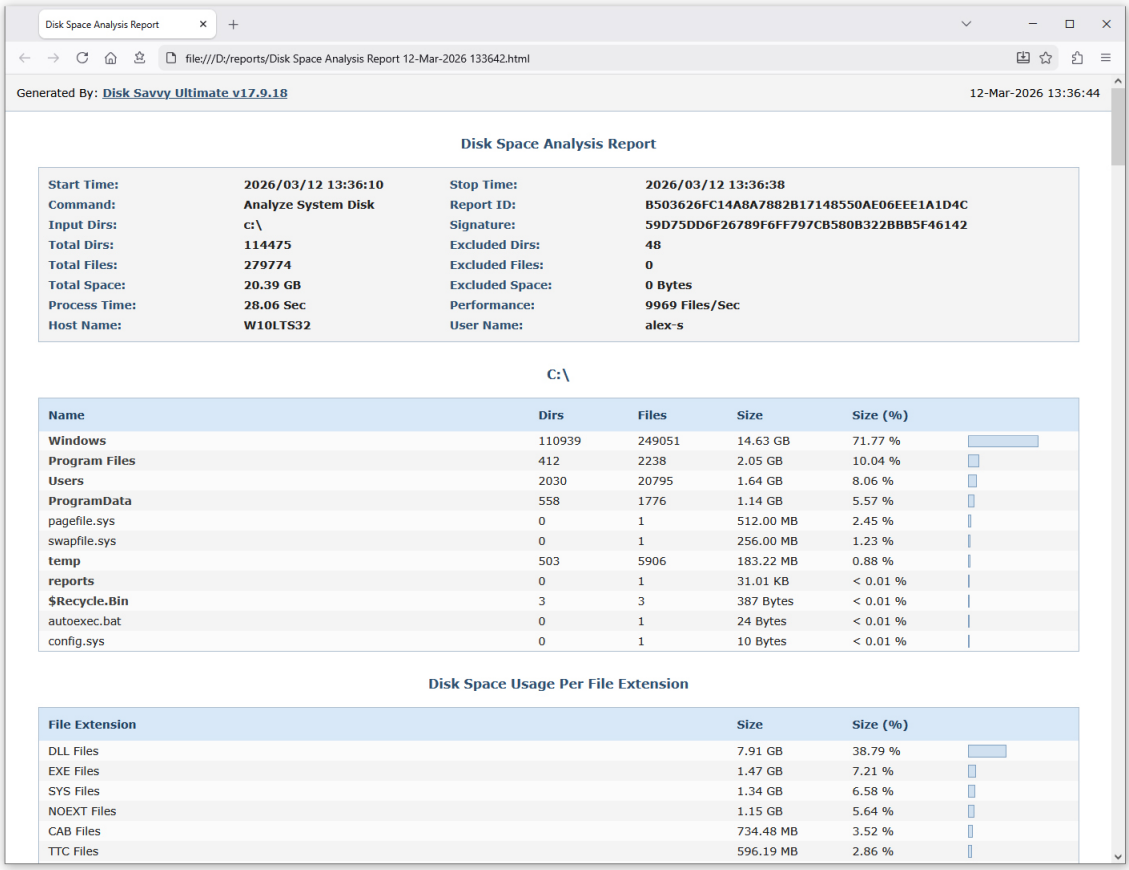
Finally, DiskSavvy provides the ability to export the list of top files to a number of report formats including HTML, PDF, Excel, text and CSV. In order to export the list of top files, press the 'Export' button located on the top files dialog, select an appropriate report format enter a file name to export the report to and press the 'Save' button.

14 Saving Disk Space Analysis Reports

DiskSavvy Server allows one to save disk space analysis reports into a number of standard report formats including HTML, PDF, Excel, XML, text, JSON and CSV. In the simplest case, perform a disk space analysis operation and press the 'Save' button located on the main toolbar. On the save report dialog, select an appropriate report format, enter a report file name and press the 'Save' button.

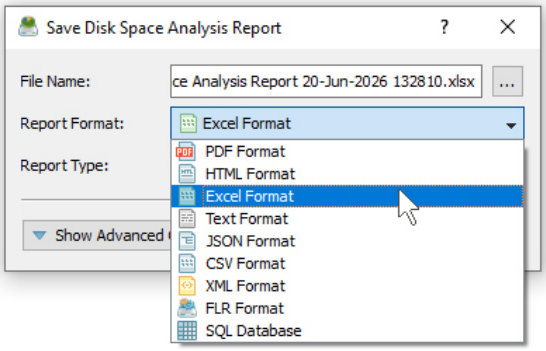


For the HTML, PDF, Excel, text, JSON, CSV and XML report formats, the user is provided with the ability to save a short summary report or a longer detailed report, which may be very long for large file systems containing millions of files. By default, DiskSavvy will save a short, summary disk space analysis report in the HTML report format, which will include a top-level view of analyzed disks or directories and a list of tables showing the disk space usage and the number of files per file extension, file type, user name, etc.

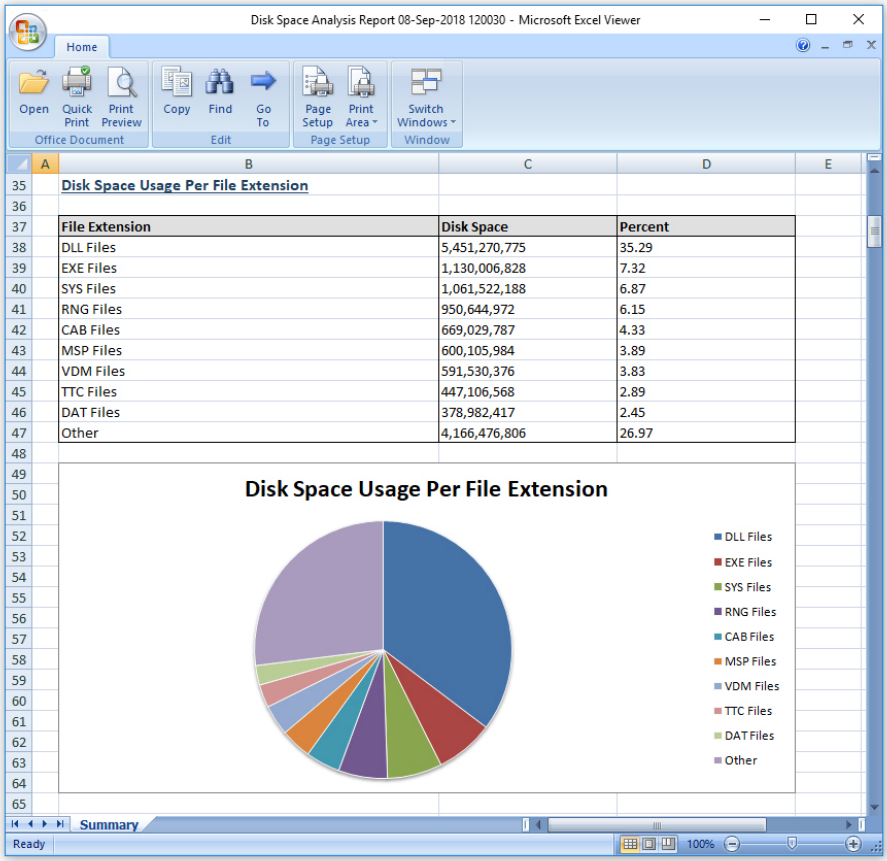


In addition, the user is provided with the ability to save disk space analysis results to the DiskSavvy native report format, which preserves all information related to each specific disk space analysis operation and may be loaded at any time by using the DiskSavvy GUI application.

Sometimes, it may be required to perform additional analysis of disk space usage results using external tools such as Microsoft Excel. In order to export disk space analysis results to the Excel report format, perform a disk space analysis operation, press the 'Save' button located on the main toolbar, select the 'Excel Summary' report format for a short summary report or the 'Excel Report' format for a detailed disk space analysis report.



A summary Excel report includes a top-level list of analyzed disks and directories and a number of tables with pie charts showing the used disk space and the number of files per file extension, file category, file creation time, last modification time, user name, etc.

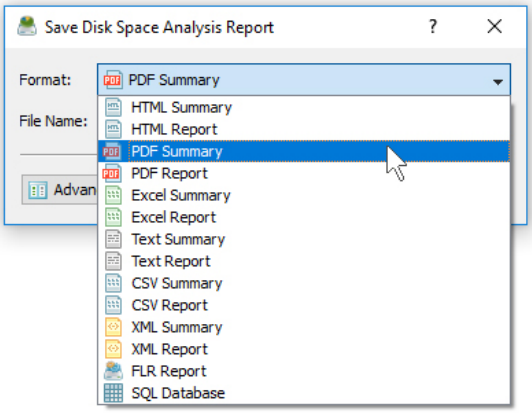


File Extension	Disk Space	Percent
DLL Files	5,451,270,775	35.29
EXE Files	1,130,006,828	7.32
SYS Files	1,061,522,188	6.87
RNG Files	950,644,972	6.15
CAB Files	669,029,787	4.33
MSP Files	600,105,984	3.89
VDM Files	591,530,376	3.83
TTC Files	447,106,568	2.89
DAT Files	378,982,417	2.45
Other	4,166,476,806	26.97

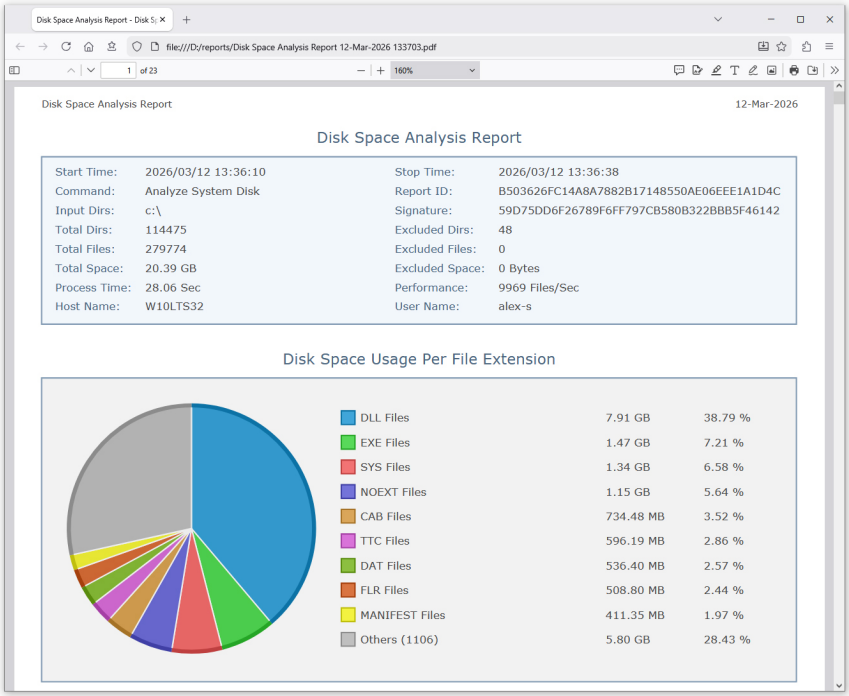
A detailed Excel report includes a list of file categories according to the currently selected file categorization mode and an hierarchy of directories and files sorted by the amount of the used disk space, which may be very long for large file systems containing millions of files. In order to control how many directory levels and how many files per directory are exported in the detailed report, press the 'Advanced Options' button located on the 'Save Report' dialog and customize the disk space analysis report for your specific needs.

15 Graphical PDF Reports

One of the most useful ways to export disk space analysis results is to use the PDF summary or the PDF report formats. Both of these report formats include various types of graphical pie charts showing disk space usage and the number of files per file extension, file category, creation time, last modification time, user name, etc. In order to save disk space analysis results to a PDF report file, press the 'Save' button located on the main toolbar and select the 'PDF Summary' report format for a short, summary report or the 'PDF Report' format for a detailed disk space analysis report.



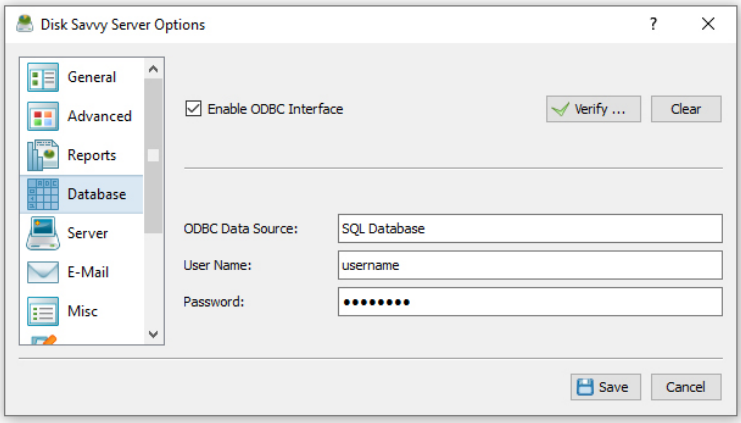
A summary PDF report includes a top-level list of analyzed disks, directories or network shares sorted by the amount of the used disk space followed by a number of pie charts showing the disk space usage and the number of files per file extension, file category, file creation time, last modification time, user name, etc. A detailed PDF report includes an hierarchy of directories and files sorted according to the used disk space, which may be very long for large file systems containing millions of files.



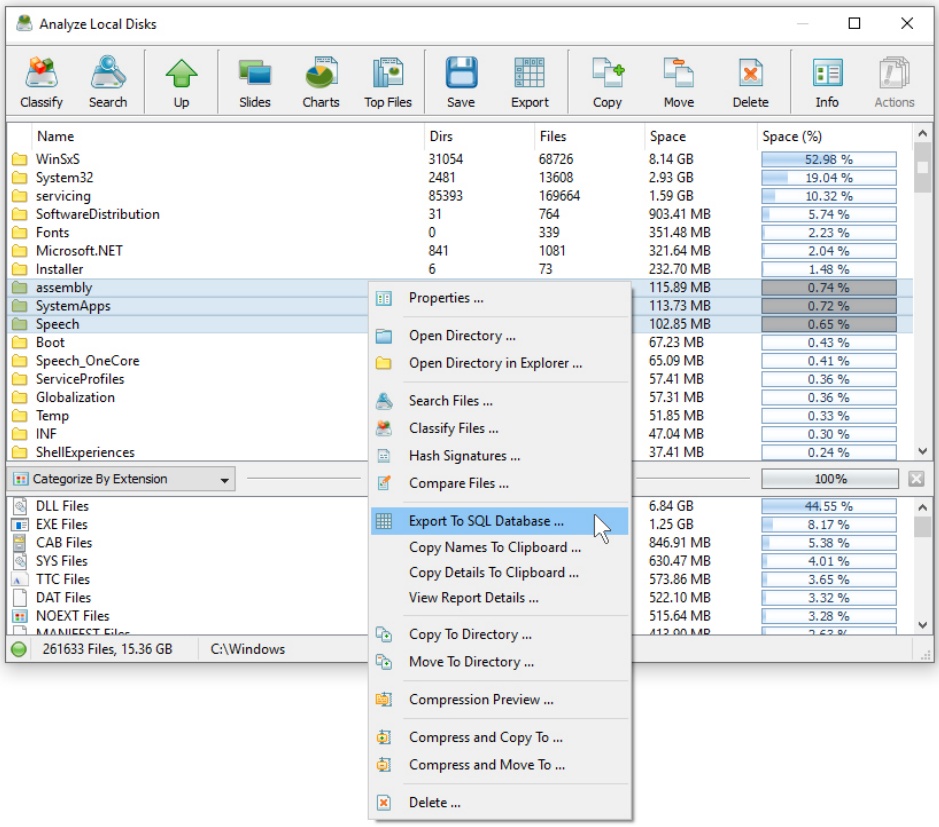
In addition to the directory tree sorted by the used disk space, detailed PDF reports include pie charts showing the disk space usage per file category and the number of files per file category according to the currently selected file categorization mode. For example, if the second-level file categories mode is set to categorize disk space analysis results by the file extension, the PDF report will display pie charts showing the used disk space and the number of files per file extension.

16 Exporting Disk Space Analysis Results to an SQL Database

DiskSavvy Server and DiskSavvy Enterprise provide the ability to export disk space analysis results to an SQL database via the ODBC database interface. In order to be able to export disk space analysis results to an SQL database, the user needs to configure the ODBC database interface on the main options dialog.

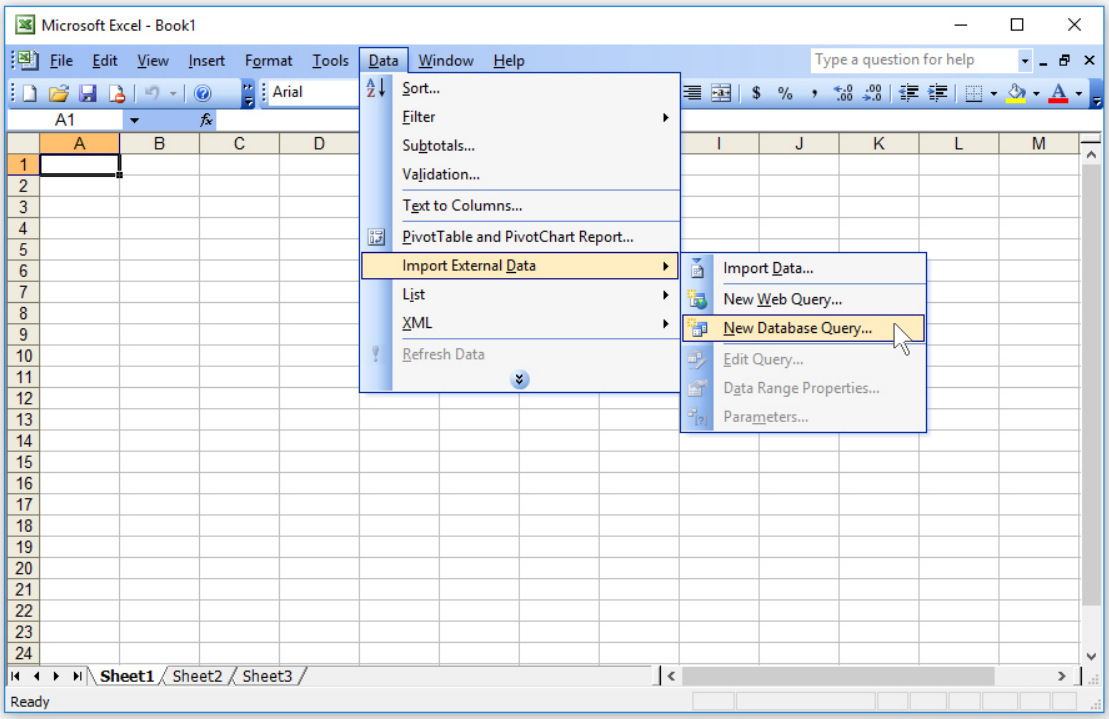


In order to configure the ODBC interface, open the main options dialog, select the 'Database' tab, enable the ODBC database interface, enter the ODBC data source name, the ODBC user name and password to use to connect to the SQL database and then press the 'Verify' button to check the specified ODBC interface.

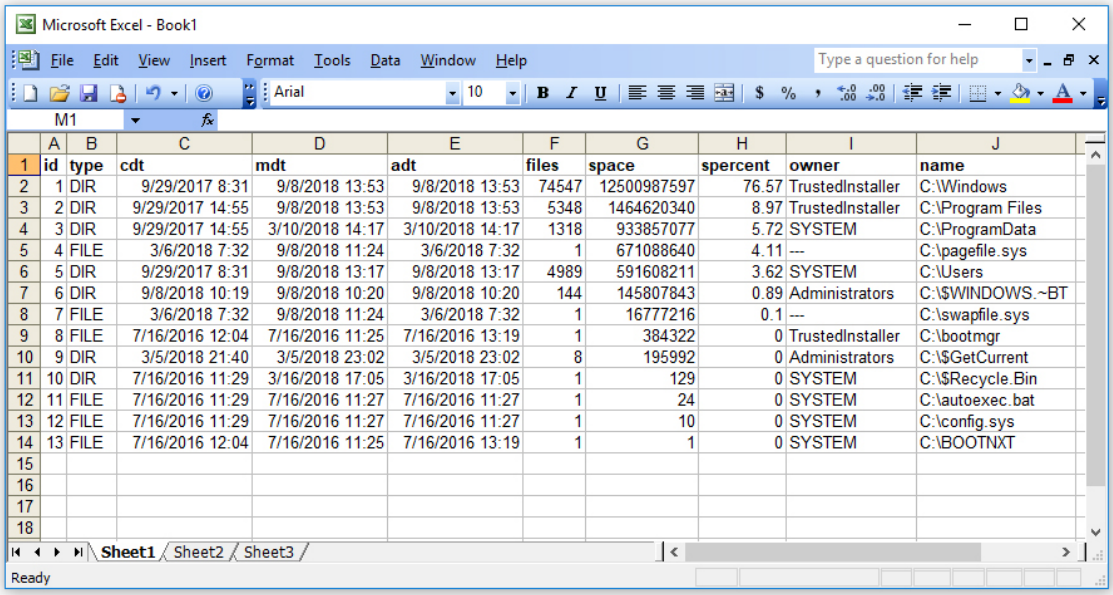


Once finished configuring the ODBC database interface, select one or more directories and/or files, press the right mouse button, select the 'Export To SQL Database' menu item and enter the name of the SQL database table to export disk space analysis results to. DiskSavvy will connect to the specified SQL database and export the selected disk space analysis results to the specified SQL database table.

In order to import disk space analysis results from an SQL database to Microsoft Excel, select the menu 'Data - Import External Data - New Database Query' menu item, select the ODBC data source to import the data from, select the SQL database table name that was specified during the export operation, select SQL database table columns to be imported, optionally select the data sorting mode and press the 'Finish' button.



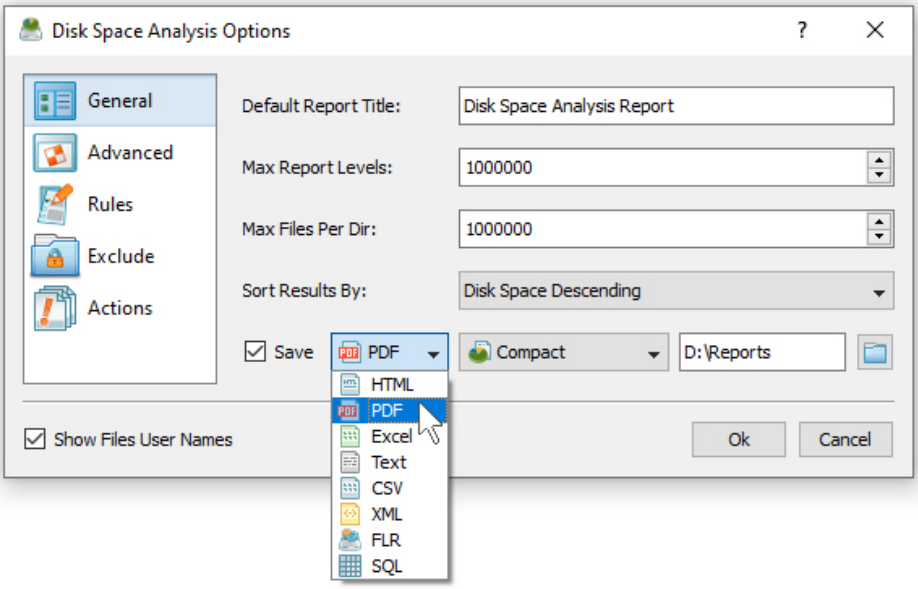
For each disk space analysis result, DiskSavvy exports to the SQL database the following columns of data: a unique result ID, the type of the result (DIR or FILE), the creation date, the last modification date, the last access date, the total number of files in a directory, the total size of all files in the directory, the percentage of the disk space used by all files in the directory, the user name of the file or directory and the full name.



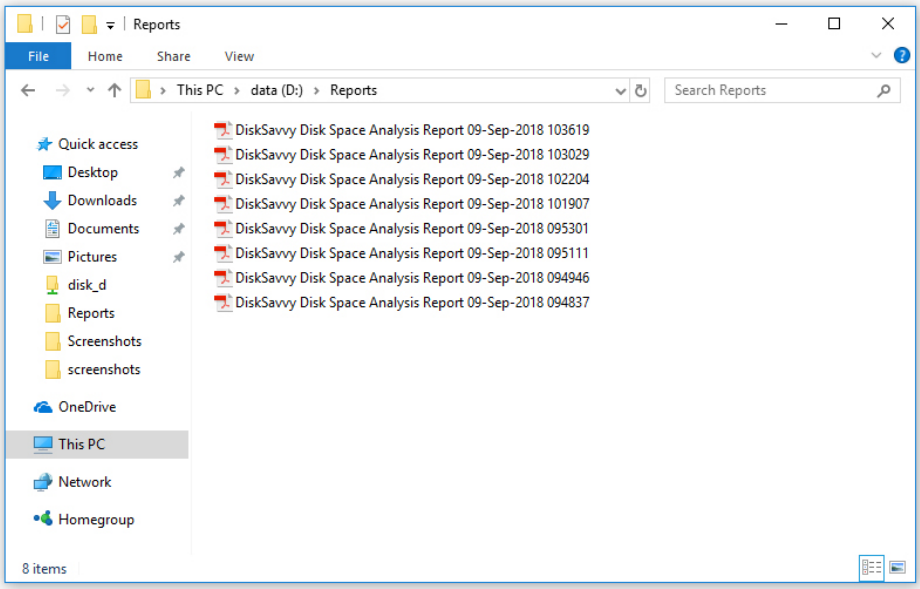
id	type	cdt	mdt	adt	files	space	spercent	owner	name
1	DIR	9/29/2017 8:31	9/8/2018 13:53	9/8/2018 13:53	74547	12500987597	76.57	TrustedInstaller	C:\Windows
2	DIR	9/29/2017 14:55	9/8/2018 13:53	9/8/2018 13:53	5348	1464620340	8.97	TrustedInstaller	C:\Program Files
3	DIR	9/29/2017 14:55	3/10/2018 14:17	3/10/2018 14:17	1318	933857077	5.72	SYSTEM	C:\ProgramData
4	FILE	3/6/2018 7:32	9/8/2018 11:24	3/6/2018 7:32	1	671088640	4.11	---	C:\pagefile.sys
5	DIR	9/29/2017 8:31	9/8/2018 13:17	9/8/2018 13:17	4989	591608211	3.62	SYSTEM	C:\Users
6	DIR	9/8/2018 10:19	9/8/2018 10:20	9/8/2018 10:20	144	145807843	0.89	Administrators	C:\$WINDOWS.~BT
7	FILE	3/6/2018 7:32	9/8/2018 11:24	3/6/2018 7:32	1	16777216	0.1	---	C:\swapfile.sys
8	FILE	7/16/2016 12:04	7/16/2016 11:25	7/16/2016 13:19	1	384322	0	TrustedInstaller	C:\bootmgr
9	DIR	3/5/2018 21:40	3/5/2018 23:02	3/5/2018 23:02	8	195992	0	Administrators	C:\$GetCurrent
10	DIR	7/16/2016 11:29	3/16/2018 17:05	3/16/2018 17:05	1	129	0	SYSTEM	C:\$Recycle.Bin
11	FILE	7/16/2016 11:29	7/16/2016 11:27	7/16/2016 11:27	1	24	0	SYSTEM	C:\autoexec.bat
12	FILE	7/16/2016 11:29	7/16/2016 11:27	7/16/2016 11:27	1	10	0	SYSTEM	C:\config.sys
13	FILE	7/16/2016 12:04	7/16/2016 11:25	7/16/2016 13:19	1	1	0	SYSTEM	C:\BOOTNXT

17 Automatic Generation of Disk Space Analysis Reports

In addition to the ability to save disk space analysis reports manually, DiskSavvy Server and DiskSavvy Enterprise allow one to automatically save HTML, PDF, XML, text, Excel CSV or SQL database reports for each performed disk space analysis operation. This capability is especially useful for pre-configured, periodic disk space analysis operations and allowing one to keep track of disk space usage trends over time.



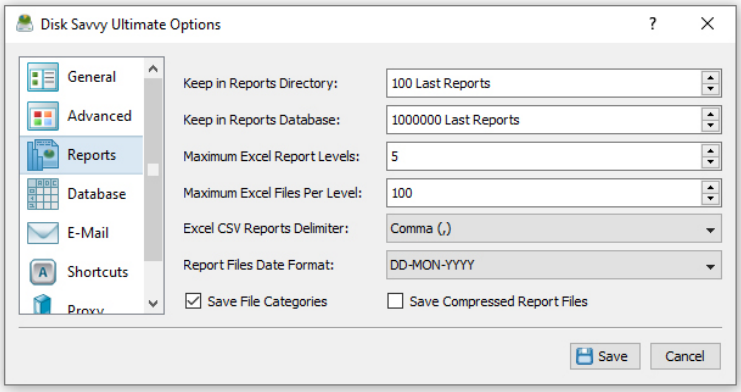
In order to configure automatic report generation for a disk space analysis operation, open the disk space analysis options dialog, select the 'Advanced' tab, enable the 'Save Report' option, select an appropriate report format and specify a directory to save reports in. Every time the disk space analysis operation will be executed, DiskSavvy will save a report in the specified directory with an automatically generated file name, which will include the date and time of the report.



In addition, in order to prevent excessive disk space usage, the user is provided with the ability to automatically delete old report files from the reports directory while keeping a user-specified number of latest disk space analysis reports for future review and analysis.

18 Advanced Report Management Options

DiskSavvy allows one to keep a user-specified number of reports in a reports directory or an SQL database while automatically deleting old reports and freeing up the used disk space. These features are especially useful for fully automated disk space analysis operations when the user needs to keep a history of report files in a reports directory or a history of reports in the SQL database.



The '**Keep in Reports Directory**' option is applicable to HTML, PDF, text, Excel CSV, XML and DiskSavvy native reports saved in a reports directory using the DiskSavvy GUI application or the DiskSavvy command line utility. After saving each new report file, DiskSavvy will check if there are too many reports of the same type (HTML, PDF, XML, CSV, etc.) in the reports directory and delete old reports according to the user-specified configuration.

The '**Keep in SQL Database**' option is applicable to reports submitted to an SQL database using the DiskSavvy GUI application or the DiskSavvy command line utility. After saving each new report to the SQL database, DiskSavvy will check if there are too many reports from the same host computer, for the same set of input disks and directories and delete old reports according to the user-specified configuration.

The '**Maximum Excel Report Levers**' and the '**Maximum Excel Files Per Leve**l' options protect Excel reports from reaching the maximum number of rows allowed in an Excel sheet, which is limited by Microsoft to 1,000,000 rows.

The '**Excel CSV Reports Delimiter**' option provides the ability to customize the Excel CSV reports field delimiter. Normally, CSV reports are saved with the comma ',' character as the field delimiter, but the comma character is a valid file name character and therefore file names containing the comma character will span multiple data fields in an Excel CSV datasheet. In order to properly export file names containing the comma character to CSV reports, the user needs to change the Excel CSV reports field delimiter to the Tab character, which cannot be used in file names.

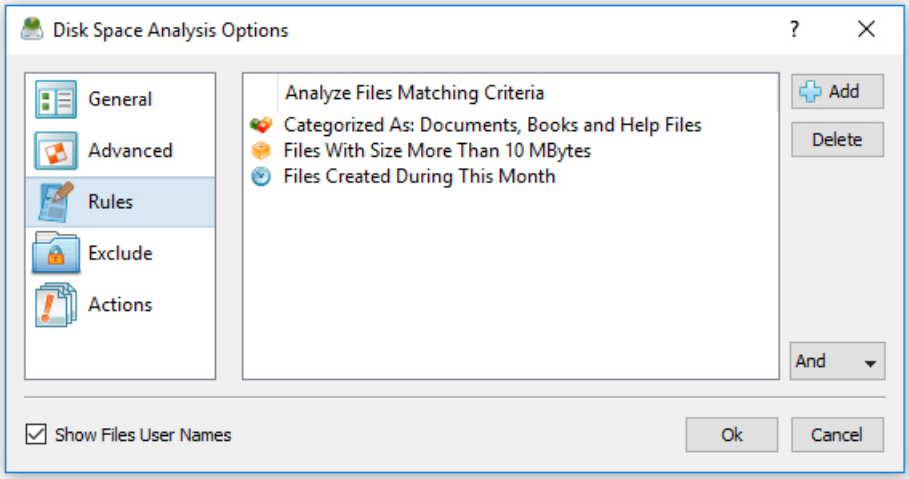
The '**Report Files Date Format**' option provides the ability to customize the reports date format. By default, DiskSavvy uses an easily readable date format. In addition, the user is provided with a number of alternative date formats and allowing one to sort disk space analysis results by the last modification date in Excel CSV reports.

The '**Save File Categories**' option allows one to enable/disable exporting of file categories to HTML, PDF, text, Excel CSV and XML reports. The second-level file categories are available when reports are saved using the DiskSavvy GUI application manually. Automatically generated reports or reports saved using the DiskSavvy command line utility always saved without file categories. When the 'Save File Categories' option is enabled, DiskSavvy GUI application will save second-level file categories to HTML, text, Excel CSV and XML reports.

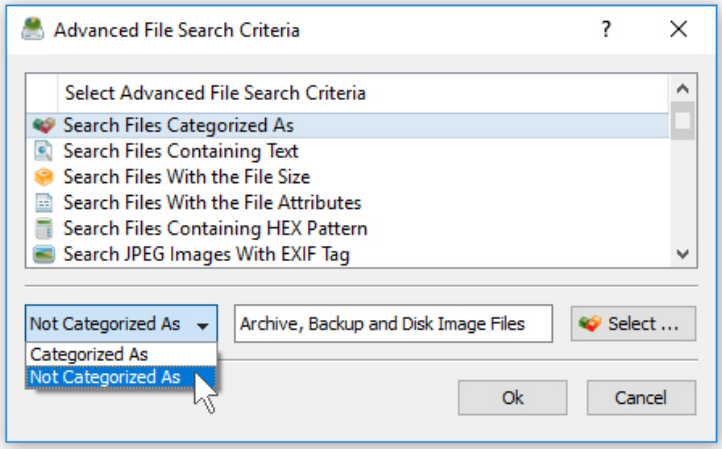
The '**Save Compressed Report Files**' option allows one to save automatically generated HTML, text, Excel CSV and XML reports as GZ compressed archive files.

19 Analyzing Disk Usage for Specific Types of Files

DiskSavvy Server provides power computer users with the ability to perform disk space analysis for specific file types according to one or more file matching rules. For example, the user may specify to analyze disk space usage for all types of image files with the file size more than 10 MB that were modified more than 3 months ago.

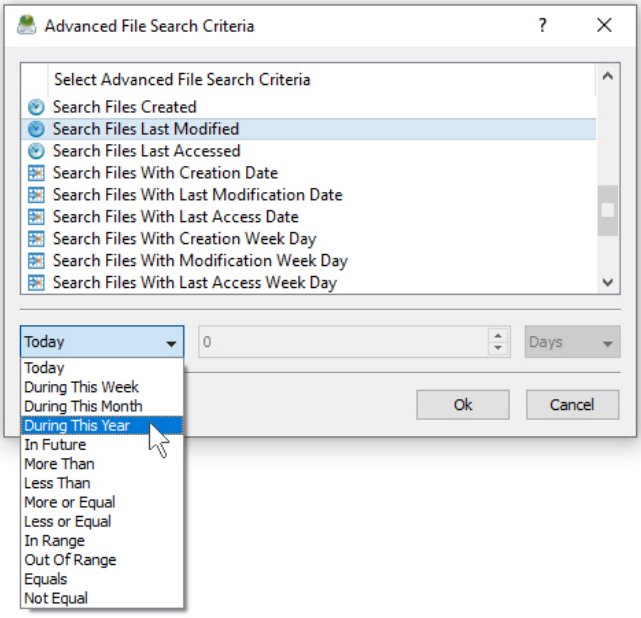


In order to add one or more file matching rules, open the profile dialog, select the 'Rules' tab and press the 'Add' button. On the 'Rules' dialog select an appropriate rule type and specify all the required parameters.

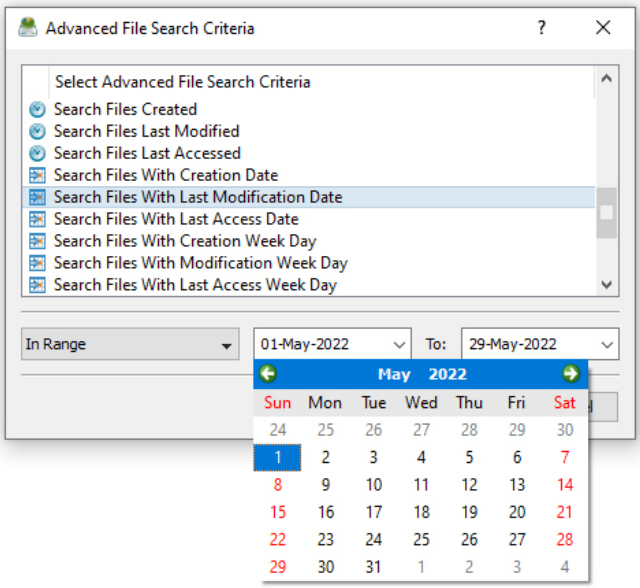


During the disk space analysis process, DiskSavvy Server will process all the entered input directories and apply the specified file matching rules to all the existing files. Files not matching the specified rules will be skipped from the disk usage analysis process and the results view will contain user-selected files only.

Another very useful analysis rule provides the ability to analyze the disk space usage by the creation, last modification or the last access date. For example, in order to analyze files modified during the last year, select the rule named 'Search Files Last Modified' and set the rule operator to 'During This Year'.



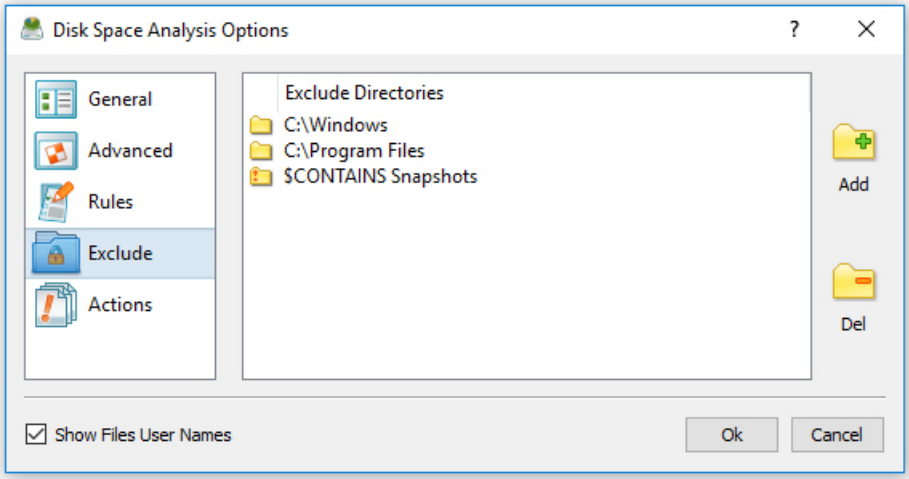
In addition, there are analysis rules to match files by the number of days, months, years, hours, minutes or seconds since the creation, last modification or the last access time allowing one to precisely select which files to analyze. Finally, the user is provided with the ability to analyze files created, last modified or last accessed before or after a specific date or a date range. For example, in order to analyze files by a modification date range, select the rule named 'Search Files With Last Modification Date', set the rule operator to 'In Range' and then select the start date and the end date.



In advanced analysis operations the date and time rules may be combined with other types of file matching rules allowing one to view the disk space analysis results according to the user-specific needs. For example, in order to free the disk space, the user may display analysis results showing the disk space usage for all types of backup files with the file size more than 100 MB which were created more than a year ago.

20 Excluding Subdirectories from Disk Space Analysis Process

Sometimes, it may be required to exclude one or more subdirectories from the disk space analysis process. For example, if you need to analyze a disk excluding one or two special directories, you may specify the whole disk as an input directory and add the directories that should be skipped to the exclude list.



In order to add one or more directories to the exclude list, open the disk space analysis profile dialog, press the 'Options' button, select the 'Exclude' tab and press the 'Add' button. All files and subdirectories located in the specified exclude directory will be excluded from the disk usage analysis process. In addition, advanced users are provided with a number of exclude directories macro commands allowing one to exclude multiple directories using a single macro command.

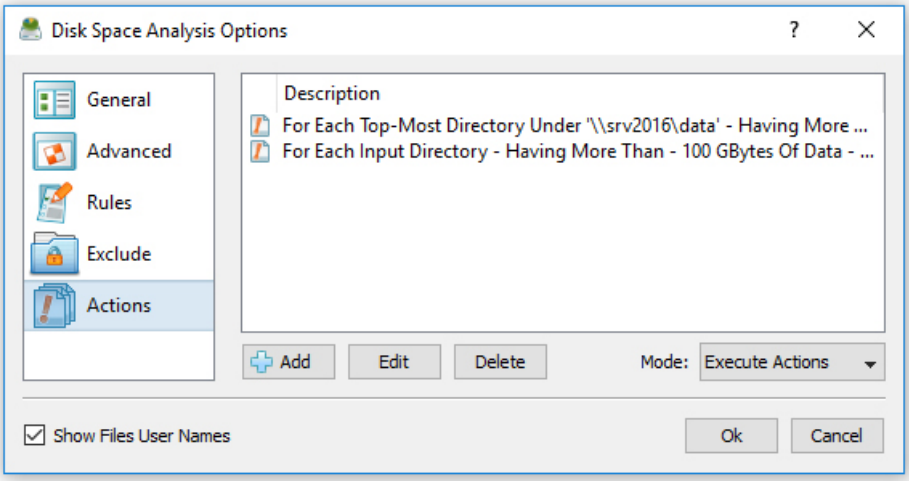
DiskSavvy provides the following exclude directories macro commands:

- **$BEGINS <Text String>** - this macro command excludes all directories beginning with the specified text string.
- **$CONTAINS <Text String>** - this macro command excludes all directories containing the specified text string.
- **$ENDS <Text String>** - this macro command excludes all directories ending with the specified text string.
- **$REGEX <Regular Expression>** - this macro command excludes directories matching the specified regular expression.
- **$DIRLIST <File Name>** - this macro command excludes all directories listed in the specified text file.

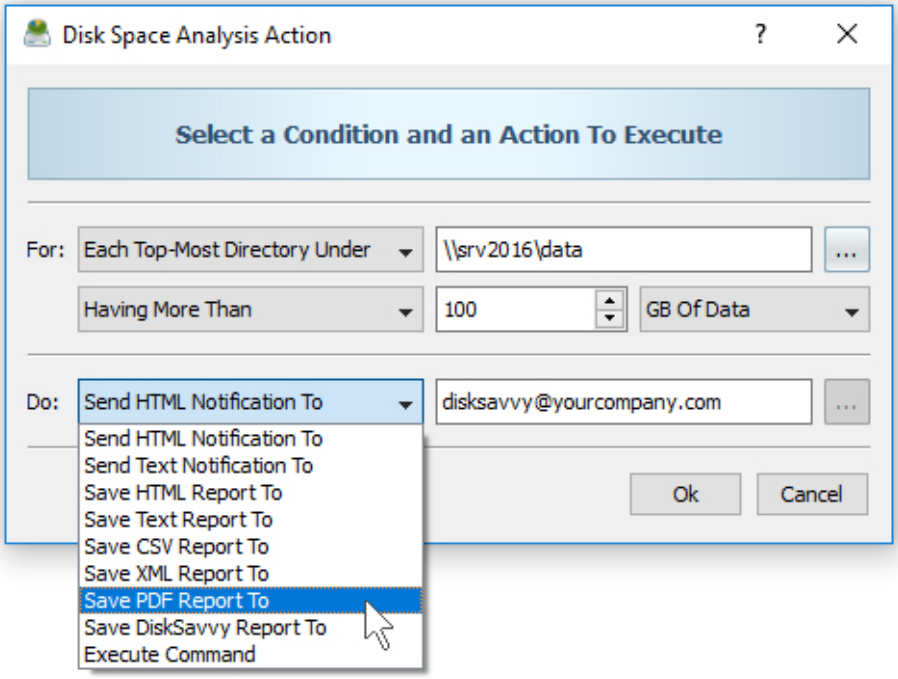
For example, the exclude macro command '$CONTAINS Temporary Files' will exclude all directories with 'Temporary Files' in the full directory path and the exclude macro command '$REGEX \.(TMP|TEMP)$' will exclude directories ending with '.TMP' or '.TEMP'.

21 Executing Disk Space Analysis Actions

DiskSavvy Server and DiskSavvy Enterprise provide power computer users and IT professionals with the ability to define multiple conditional disk space analysis actions that should be executed when user-specific conditions are met.

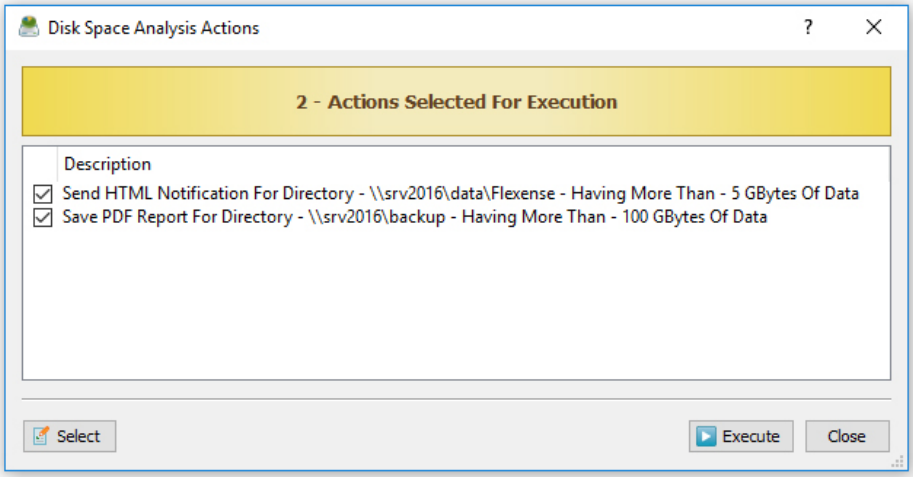


For example, DiskSavvy allows one to send e-mail notifications, save disk space analysis reports and/or execute custom commands when there are too many files, too much space is consumed or the free space is below a specified limit in one or more disks or directories.

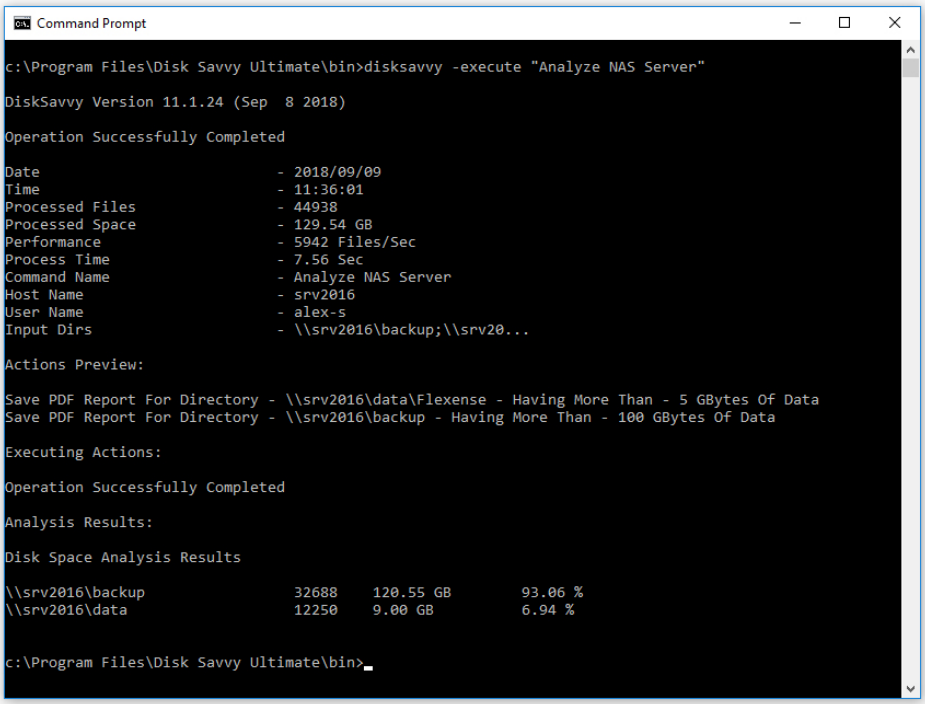


In order to add one or more storage analysis actions, open the profile dialog, select the 'Actions' tab, press the 'Add' button and specify the condition to be met and the action to execute.

After finishing analyzing input disks or directories, DiskSavvy will process all the specified disk space analysis actions and display the 'Actions Preview' dialog. In order to execute one or more actions, select the actions to be executed and press the 'Execute' button.

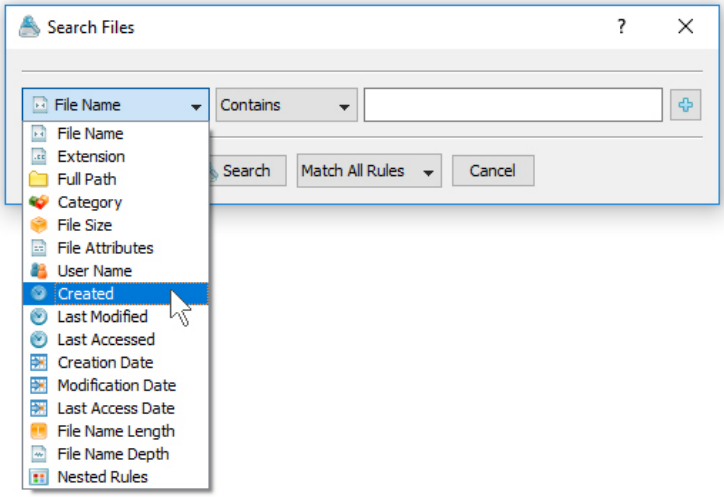


In order to execute disk space analysis actions fully automatically, in an unattended mode, change the actions mode from 'Preview' to 'Execute' and use the DiskSavvy command line utility, which will process all the input directories and execute the specified storage analysis actions fully automatically.

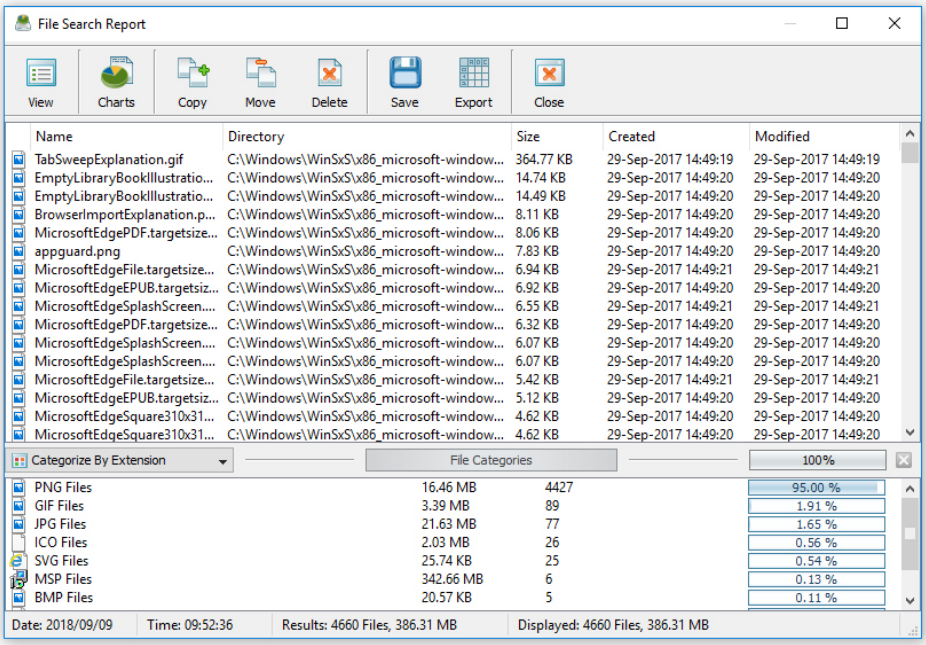


22 Searching Files in Disk Space Analysis Results

DiskSavvy provides the ability to search files in disk space analysis results by the file name, extension, full path, file category, file size, file attributes, creation, last modification and last access dates. In order to start a file search operation, analyze one or more disks or directories and press the 'Search' button located on the main toolbar.



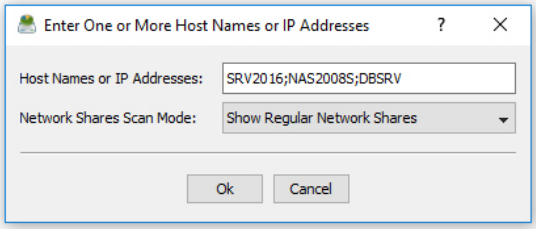
By default, the search operation will be performed on all disk space analysis results. In order to search files in a specific disk, directory or network share, select one or more directories in the disk space analysis results view, press the right mouse button and select the 'Search Files' menu item. DiskSavvy will search in the selected directories and display the file search results dialog showing a list of files matching the user specified criteria.



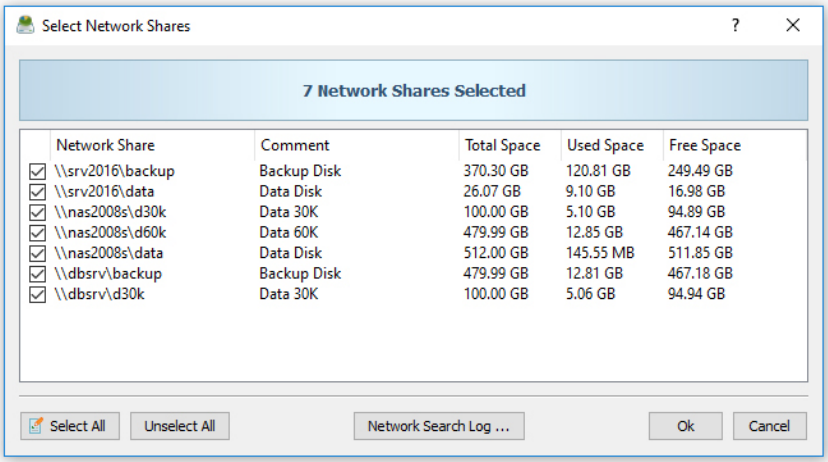
The search results dialog allows one to filter and categorize file search results, display various types of pie charts, copy, move and/or delete files, export file search results to a number of standard report formats including PDF, HTML, Excel, text, CSV and XML. In addition, advanced users are provided with the ability to export file search results to an SQL database.

23 Analyzing Network Servers and NAS Storage Devices

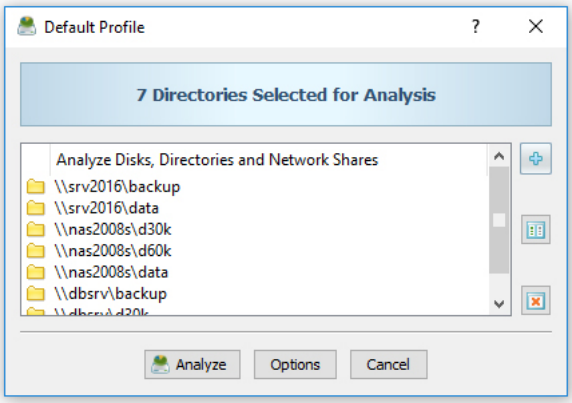
DiskSavvy allows one to analyze disk space usage in all network shares of one or more servers or NAS storage devices on the network. In order to analyze one or more servers, open the disk space analysis dialog, press the 'Add' button located on the right side of the list of analysis locations, select the 'Analyze Servers or NAS Devices' mode and enter one or more host names or IP addresses separated by the semicolon (;) character.



DiskSavvy will scan the network and show a list of network shares detected in the specified servers and NAS storage devices allowing one to select one or more network shares that should be analyzed. In order to be able to use this feature, the user needs to have permissions to access network shares.

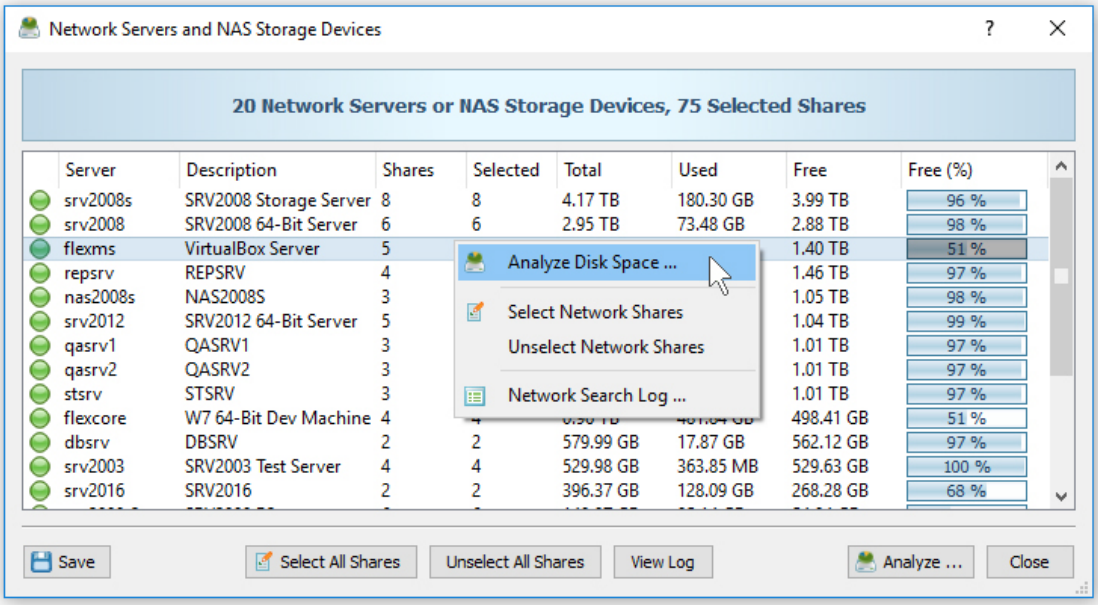


The network shares scanning operation may be performed multiple times for different servers and NAS storage devices and an unlimited number of network shares from different servers may be added to the disk space analysis operation. During runtime, DiskSavvy will analyze all the specified network shares in parallel using all CPUs and/or CPU-cores available in the host computer DiskSavvy is running on.

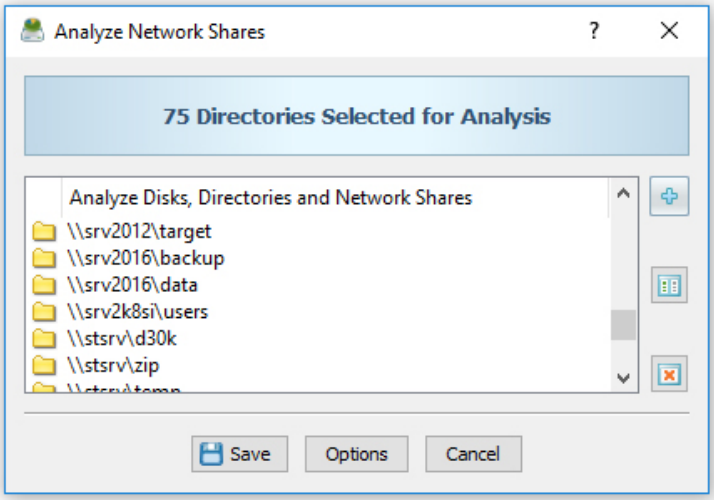


24 Discovering Network Servers and NAS Storage Devices

DiskSavvy allows one to scan the network, discover network servers and NAS storage devices, automatically detect all accessible network shares and analyze disk space usage in hundreds of network servers and NAS storage devices. In addition, the user is provided with the ability to export the list of detected servers and NAS storage devices (including lists of network shares for each server) into HTML, PDF, Excel, text, CSV and XML reports.



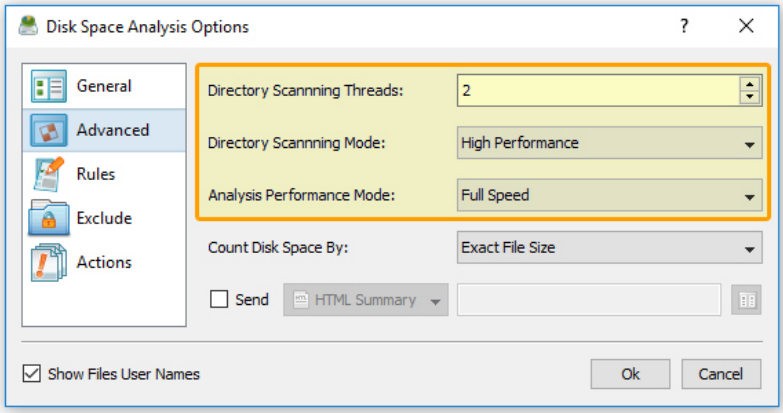
In order to discover all network servers and NAS storage devices on the network, press the 'Network' button located on the main toolbar and wait while DiskSavvy will scan the network and show a list of detected network servers and NAS storage devices. In order to analyze disk space usage in one or more servers or NAS storage devices, select the required servers and NAS storage devices and press the 'Analyze' button.



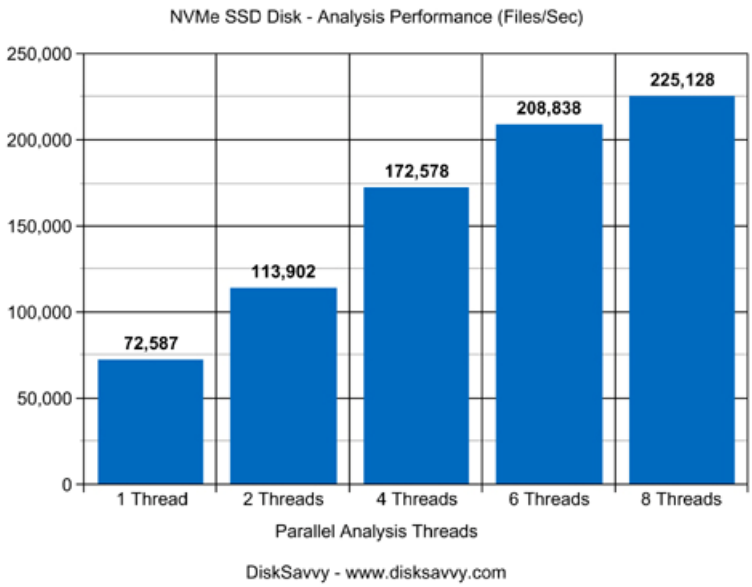
DiskSavvy will show all accessible network shares hosted on the selected servers and NAS storage devices allowing one to analyze disk space usage and save various types of disk space analysis charts and reports. In addition, the user is provided with the ability to customize a large number of advanced disk space analysis options allowing one to tune disk space analysis operations for user specific needs and hardware configurations.

25 Disk Space Analysis Performance

DiskSavvy is optimized for modern multi-core and multi-CPU systems and is capable of analyzing multiple disks, directories or network shares in parallel using all CPUs installed in the computer. DiskSavvy provides a number of different performance optimization options allowing one to tune the disk space analysis operations for user-specific hardware and storage configurations.

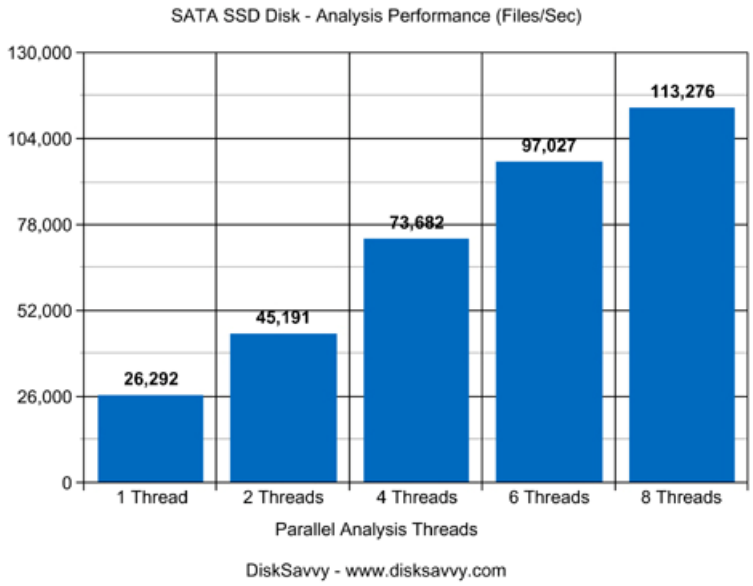


In order to customize the disk space analysis performance optimization options, open the disk space analysis operation dialog, press the 'Options' button and select the 'Advanced' tab. The 'Dir Scan Threads' option controls how many parallel disk space analysis threads are used to scan input disks, directories and network shares. In the 'Fault-Tolerant' directory scanning mode, DiskSavvy uses an individual processing thread for each input disk, directory or network share, but limits the maximum number of parallel scanning threads to the specified value. In the high-performance directory scanning mode, DiskSavvy always uses the specified number of parallel directory scanning threads even when processing a single input disk, directory or network share.

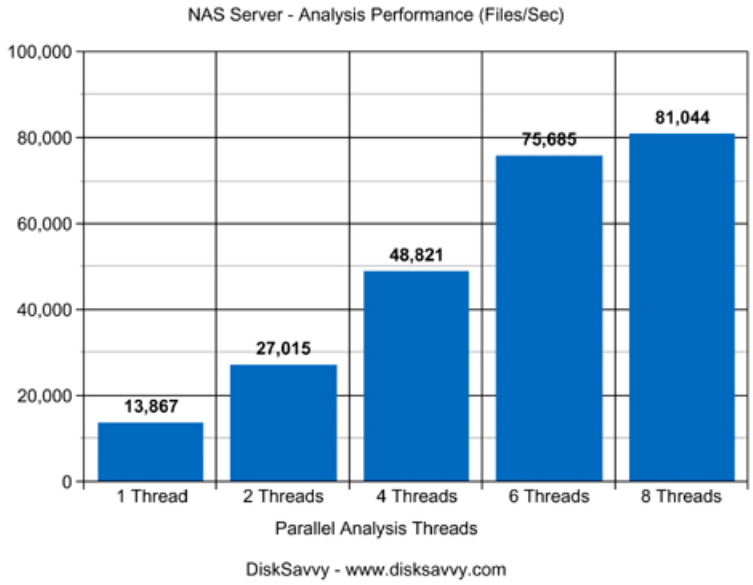


For example, when analyzing files stored on a high-speed NVMe SSD disk, DiskSavvy reaches up to 72,000 files/sec using a single disk space analysis thread. With two parallel analysis threads, the performance scales up to 113,000 files/sec and with four parallel analysis threads, the performance increases up to 172,000 files/sec showing a very good level of multi-threaded performance scalability. With six processing threads the analysis performance reaches up to 208,000 files/sec and with eight processing threads the performance increases up to 225,000 files/sec, which makes it possible to analyze 10 millions files within one minute.

When analyzing files stored on regular SATA SSD drives, which are significantly slower then NVMe SSD drives, the performance of the disk space analysis process reaches up to 26,000 files/sec using a single processing thread and scales up to 73,000 files/sec with four parallel analysis threads. With eight parallel analysis threads, the performance reaches up to 113,000 files/sec, which allows to analyze huge numbers of files relatively fast.

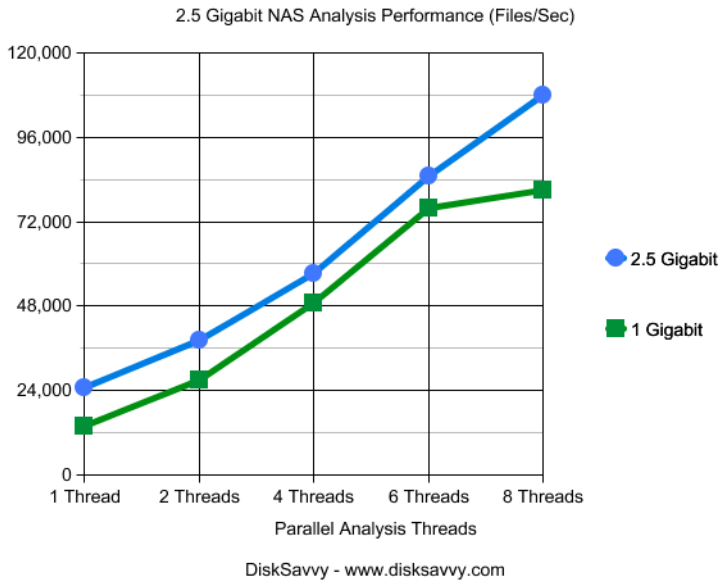


Analyzing files stored on NAS storage devices via a network is more complicated because the user needs to take into account the speed and the latency of the network. If the computer, on which DiskSavvy is installed, is connected to the NAS storage device via a high-speed, low-latency network, the performance of the disk space analysis operations may reach up to 13,000 files/sec with one processing thread, scale up to 48,000 files/sec with four parallel processing threads and increase up to 81,000 files/sec with eight parallel analysis threads.

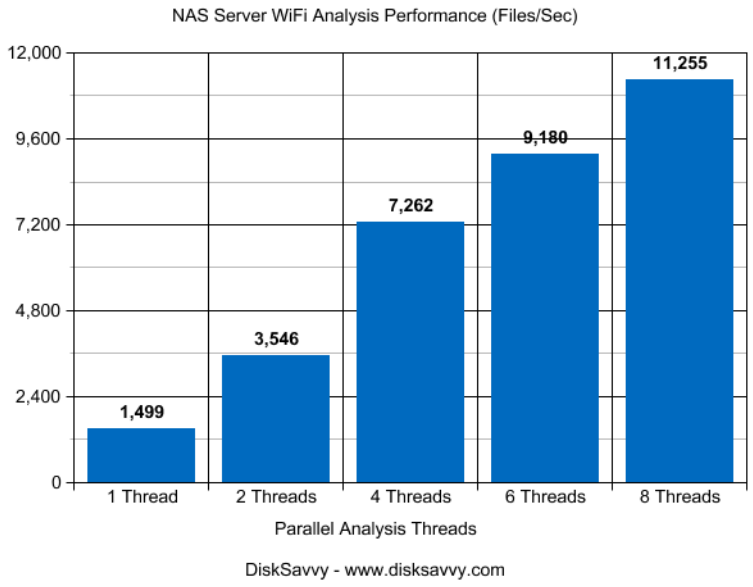


On the other hand, if DiskSavvy will need to access network shares via the Internet or via a long-distance, high-latency network, the performance of the disk space analysis operations will be relatively slow. One of the options to increase the performance of the analysis operations in such configurations is to set the 'High-Performance' directory scanning mode and increase the number of parallel directory scanning threads to 16 or even 32 disregarding how many CPUs are actually installed on the computer.

Analyzing large file systems distributed across a number of NAS servers may be a very time consuming operation and one of the ways to speed-up the disk space analysis process is to perform the analysis operation via a 2.5 Gigabit Ethernet network. With 2.5 Gigabit Ethernet the performance of the DiskSavvy analysis operations continues to scale up to 108,000 Files/Sec with 8 parallel disk space analysis threads, which represents a 25% improvement compared to the standard Gigabit Ethernet.

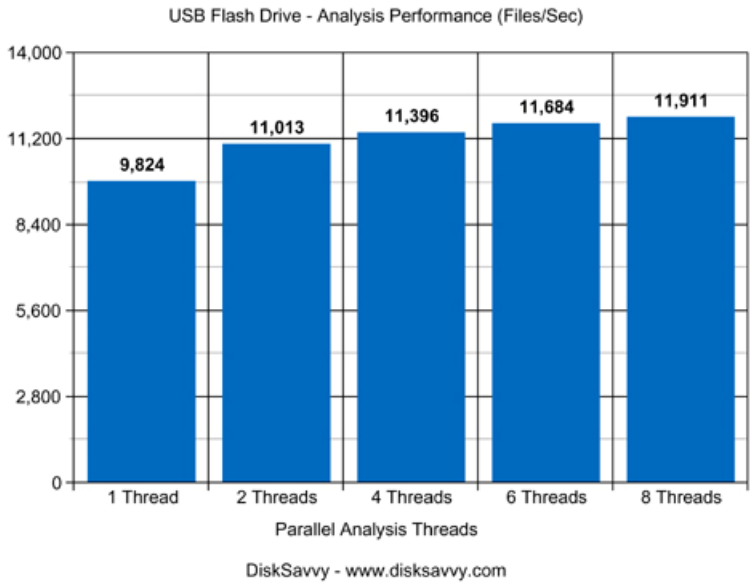


Due to a very wide adoption of laptops and NAS servers with built-in WiFi network interfaces, many users may consider analyzing NAS servers via the wireless network. But, the latency of the wireless network is much higher and therefore it will take much more time to complete the disk space analysis operation via the wireless network. The question is how much longer the user will need to wait and if it will save any significant amount of time via a wired network.

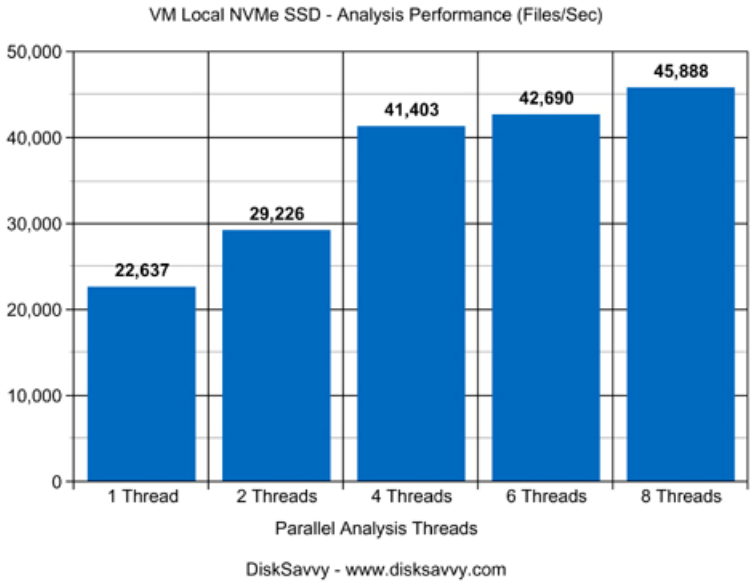


Based on our benchmarks, via a 5 GHz wireless network, DiskSavvy reaches up to 1,500 Files/Sec with a single disk space analysis thread and scales up to 11,000 Files/Sec with 8 parallel disk space analysis threads, which is approximately 7 times slower compared to the standard Gigabit Ethernet and 10 times slower when compared to the 2.5 Gigabit Ethernet. So, if the user needs to analyze up to 1 million files, it is possible to use a wireless network. On the other hand, if the user needs to analyze a large NAS server with many millions of files, a low-latency Gigabit Ethernet or 2.5 Gigabit Ethernet is required.

Modern USB flash drives provide plenty of the storage space and are reasonably fast allowing one to store vast amounts of data for backup purposes. Sometimes, it may be required to analyze a USB flash drive in order to free the used disk space. When analyzing files stored on a USB flash drive, DiskSavvy can reach up to 9,000 files/sec with a single disk space analysis thread. With two parallel disk space analysis threads, the performance increases up to 11,000 files/sec, which is good, but more than two parallel analysis threads improve the performance of the disk space analysis operations very slightly.



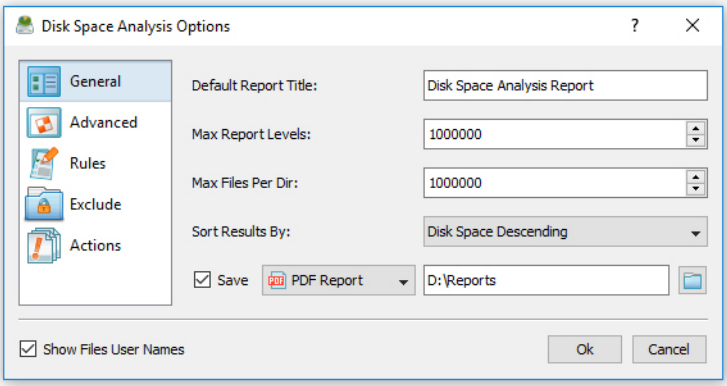
Today, modern IT environments widely deploy virtual servers and/or virtual workstations. Most of the popular virtualization platforms provide a high level of performance, but anyway some performance degradations are inevitable when a task is executed on a guest virtual machine compared to the same task executed directly on the host computer.



For example, when a virtual machine with 4 virtual CPUs is stored on an NVMe SSD disk and analyzing files stored on a virtual local disk drive, which is physically stored on the same NVMe SSD disk, the performance of the disk space analysis operations reaches up to 22,000 files/sec using one disk space analysis thread. With two parallel analysis threads, the performance of the analysis operations increases up to 29,000 files/sec and with four parallel analysis threads, the performance of the disk space analysis operations scales up to 41,000 files.

26 Advanced Disk Space Analysis Options

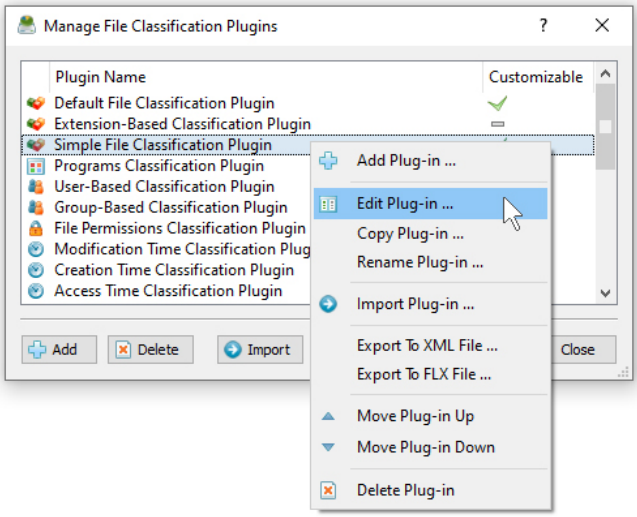
By default, DiskSavvy performs disk space analysis using generic settings, which should be appropriate for most users. In addition, power computer users are provided with a number of configuration options allowing one to customize the disk usage analysis process for user specific needs. In order to customize the disk space usage analysis process, open the disk space analysis profile dialog and press the 'Options' button.



The 'General' tab allows one to control the default report title, the disk space counting mode, the results sorting mode, the disk space analysis performance mode and the file scanning mode. The 'Rules' tab provides the ability to define one or more file matching rules specifying which types or groups of files to analyze. The 'Exclude' tab allows one to exclude one or more directories from the disk space analysis process. The 'Actions' tab provides the ability to define one or more conditional disk space analysis actions to be executed when the number of files or the used disk space in a directory rises above or drops below user-specified limits.

27 Managing File Classification Plug-ins

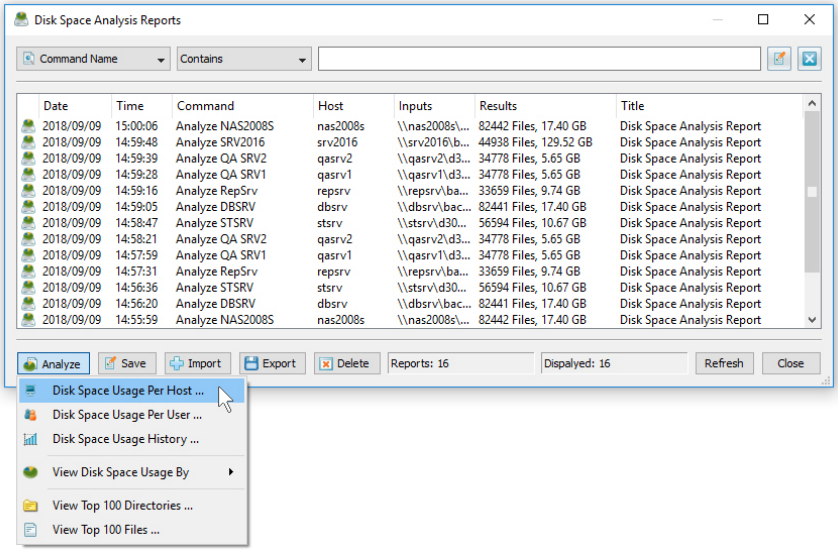
A standard DiskSavvy installation includes the 'Default File Classification Plug-in', which is capable of recognizing more than 3,500 of the most popular file types and formats and allows one to organize them into a logical file hierarchy. In addition, a number of advanced file classification plug-ins are available for registered users of DiskSavvy Server.



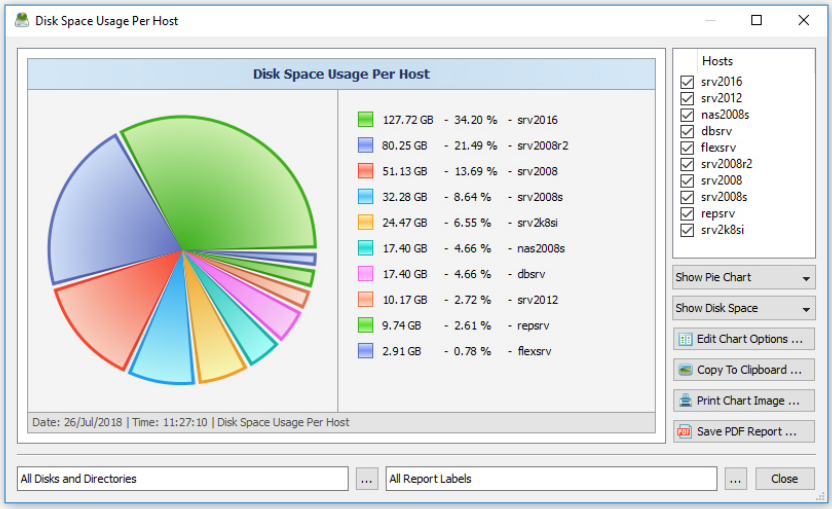
Finally, DiskSavvy Server allows one to add custom XML file classification plug-ins designed according to the DiskSavvy XML format specification. In order add a custom XML plug-in, select menu 'Tools - Manage Plug-ins ...', press the 'Add' button and select the XML plug-in file that should be added to the product configuration.

28 Analyzing Disk Space Usage per Host

DiskSavvy Server and DiskSavvy Enterprise provide the ability to show the amount of the used disk space and the number of files per host allowing one to gain an in-depth visibility into the disk space usage statistics across the entire enterprise. In order to perform the hosts analysis, analyze disk space usage in a number of servers or NAS storage devices, press the 'Reports' button located on the main toolbar, press the 'Analyze' button and select the 'Disk Space Usage Per Host' menu item.



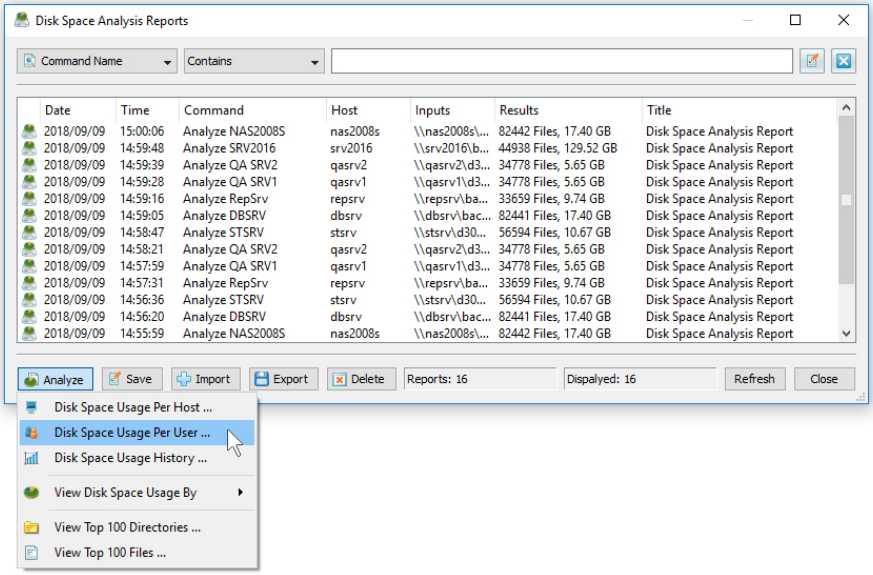
In order to be able perform the hosts analysis, the user needs to configure disk space analysis commands to analyze one or more servers and/or NAS storage devices through the network using UNC network names. In the simplest case, configure a single disk space analysis command, press the 'Network' button located on the main toolbar to search all servers and NAS devices on the network, select one or more servers to analyze, press the 'Batch' button and select the previously configured disk space analysis command to be executed on all selected servers and NAS storage devices.



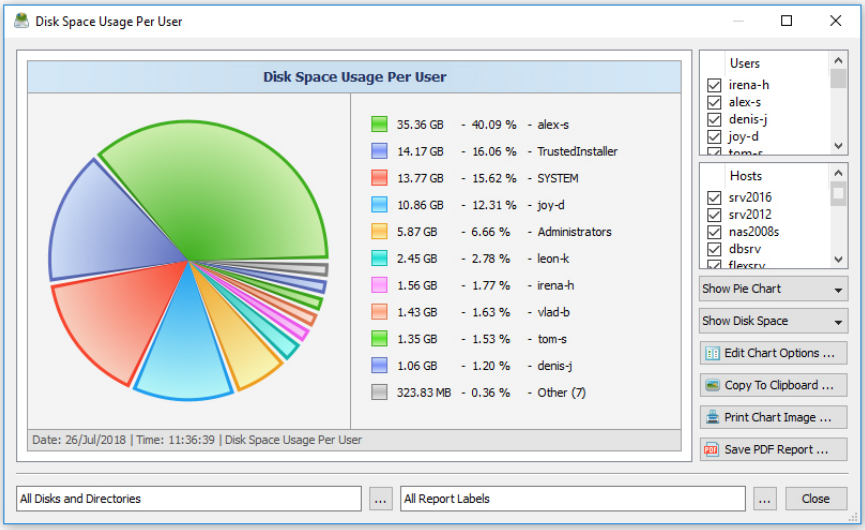
The hosts analysis dialog shows disk space usage per server according to disk space analysis reports saved in the reports database. The right-side hosts view provides the ability to select/unselect specific servers to be included in the chart. The bottom disks and directories selector allows one to select which network shares should be included in the chart. In order to copy the chart image to the clipboard, press the 'Copy To Clipboard' button located on the right side of the hosts analysis dialog.

29 Analyzing Disk Space Usage per User

DiskSavvy Server and DiskSavvy Enterprise provide the ability to analyze files owned by multiple users on one or more servers or NAS storage devices and display charts showing the amount of the used disk space and the number of files per user. In order to perform the users analysis operation, press the 'Reports' button located on the main toolbar, press the 'Analyze' button and select the 'Disk Space Usage Per User' menu item.



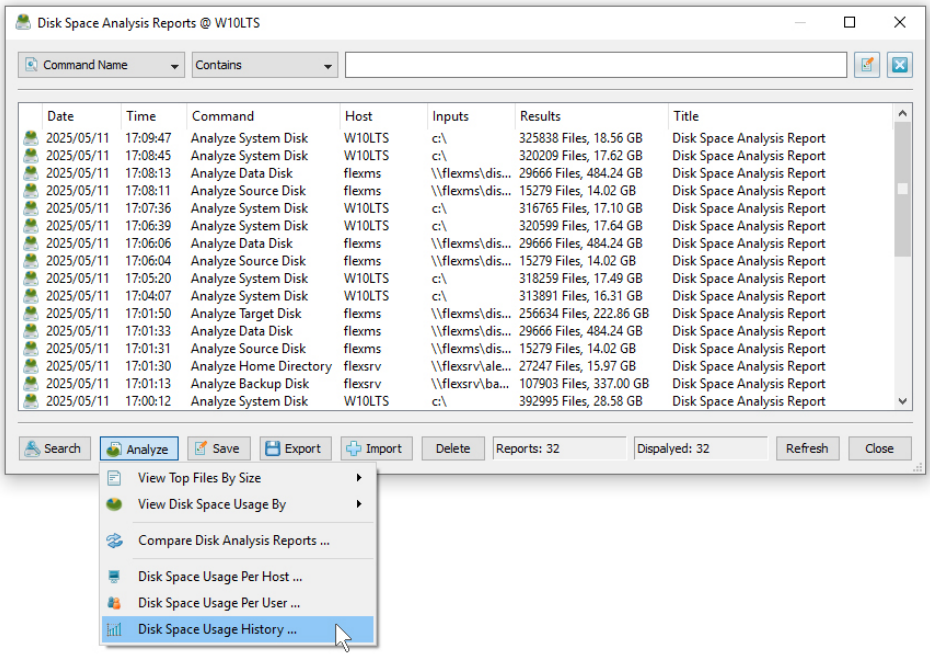
In order to be able to perform the users analysis operation, create a disk space analysis command, open the command dialog, press the 'Options' button, select the 'General' tab and enable the **'Show and Process User Names'** option. Now, press the 'Network' button located on the main toolbar to search all servers and NAS devices on the network, select one or more servers to analyze, press the 'Batch' button and select the previously configured disk space analysis command to be executed on all selected servers and NAS storage devices.



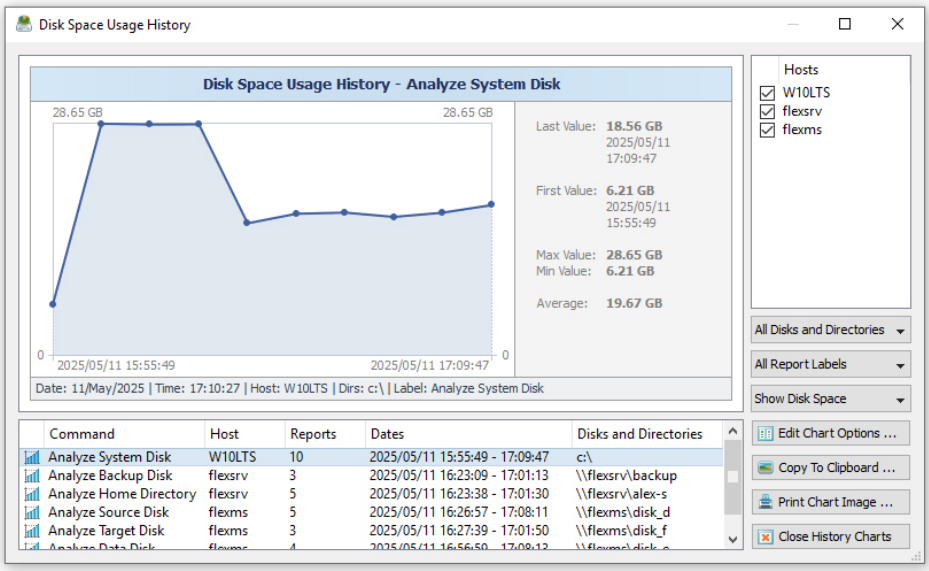
The users analysis dialog shows disk space usage per user according to disk space analysis reports saved in the reports database. The right-side users view provides the ability to select/unselect specific user names to be included in the chart. The bottom disks and directories selector allows one to select which network shares should be included in the chart. In order to copy the chart image to the clipboard, press the 'Copy To Clipboard' button located on the right side of the users analysis dialog.

30 Analyzing Disk Space Usage History Trends

System and storage administrators are provided with the ability to analyze how disk space usage is changing over time. In order to be able to perform the disk space usage history trend analysis, the user needs to setup one or more periodic disk space analysis commands or manually perform multiple disk space usage analysis operations over time.



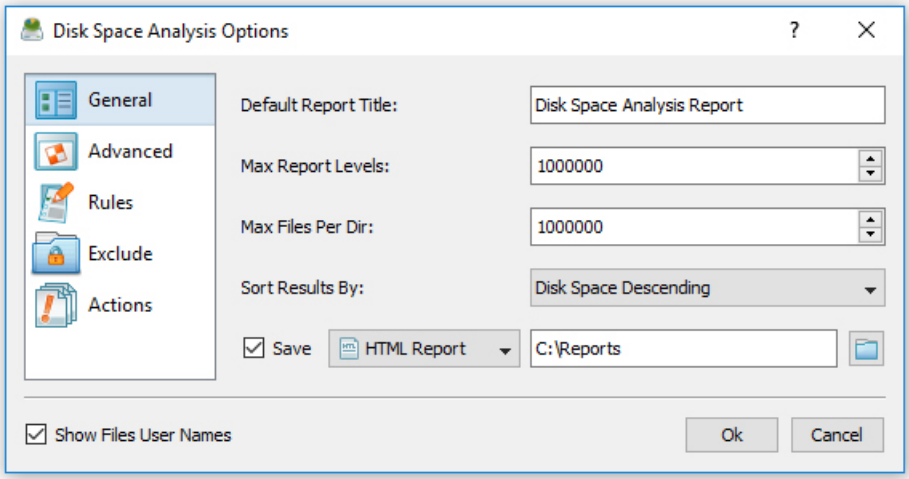
With multiple disk usage reports saved in the report database, press the 'Reports' button located on the main toolbar, press the 'Analyze' button, select the 'Analyze Disk Space Usage History' menu item. DiskSavvy Server will generate a list of charts with one chart for each set of directories or network shares in each analyzed server and/or NAS storage device.



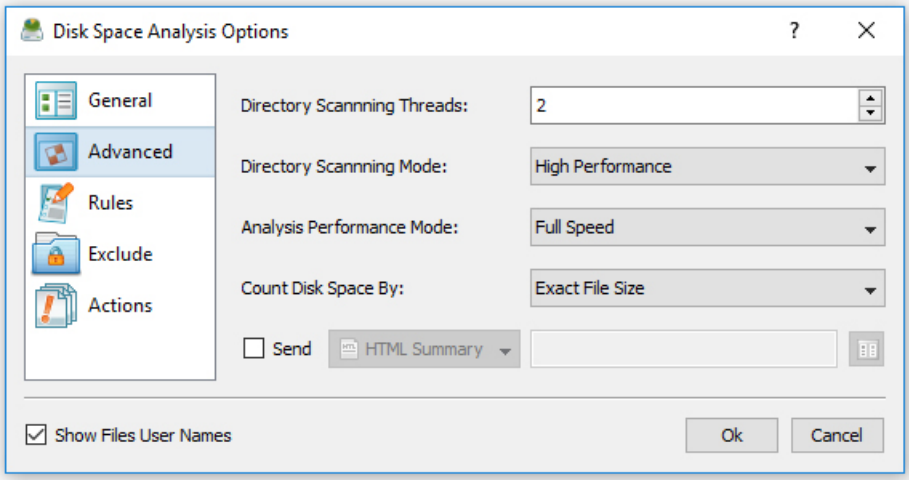
The top-left side of the disk space usage history analysis dialog shows the currently selected disk usage history chart. The top-right side shows a list of analyzed servers and NAS storage devices allowing one to select which servers should be displayed. The bottom-side view shows the list of report sets for each set of analyzed directories or network shares and allows one to select which disk usage history chart should be displayed.

31 Advanced Disk Space Analysis Options

For regular disk space analysis operations, the default disk space analysis options are good enough and there is no need to change any configuration parameters. But, for advanced users, DiskSavvy Server provides a large set of disk space analysis configuration options allowing one to customize disk space analysis operations for user-specific needs and hardware configurations.



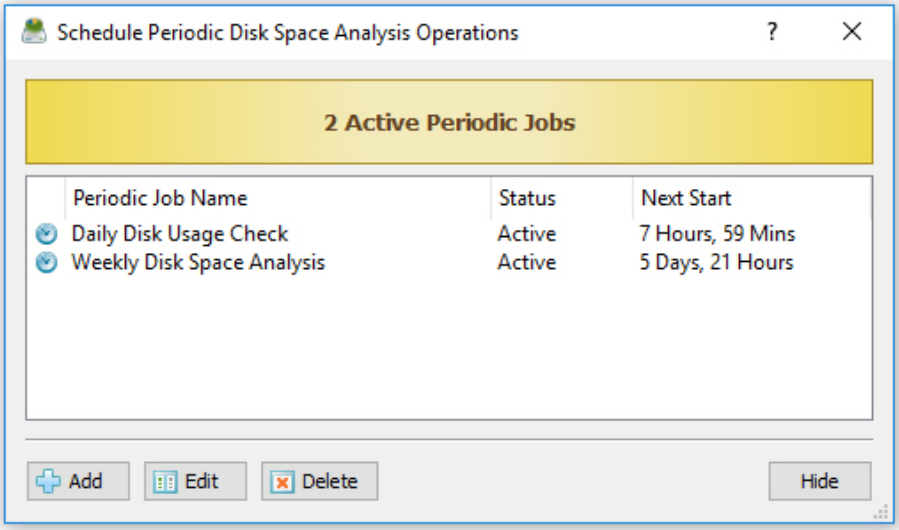
In order open the advanced disk space analysis options dialog, open the disk space analysis command dialog and press the 'Options' button. The '**General**' tab provides the ability to change the default report title, the maximum number of report levels, the maximum number of files per directory, the results sorting mode and enable/disable display of files' user names in all types of disk space analysis reports.



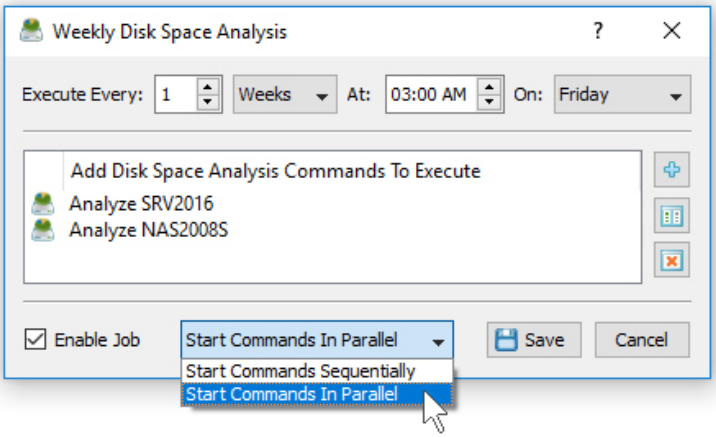
The '**Advanced**' tab allows one to change the number of parallel directory scanning threads, the directory scanning mode, the disk space analysis performance mode and the disk space counting mode. In addition, the user is provided with the ability to enable automatic generation of HTML, PDF, XML, Excel, CSV, text or SQL database reports after each completed disk space analysis operation.

32 Periodic Disk Space Analysis Operations

DiskSavvy Server allows one to setup a number of periodic disk space analysis jobs with each one configured to perform one or more disk space analysis commands at specific time intervals. In order to add a periodic disk space analysis job, press the 'Jobs' button located on the main toolbar and press the 'Add' button.



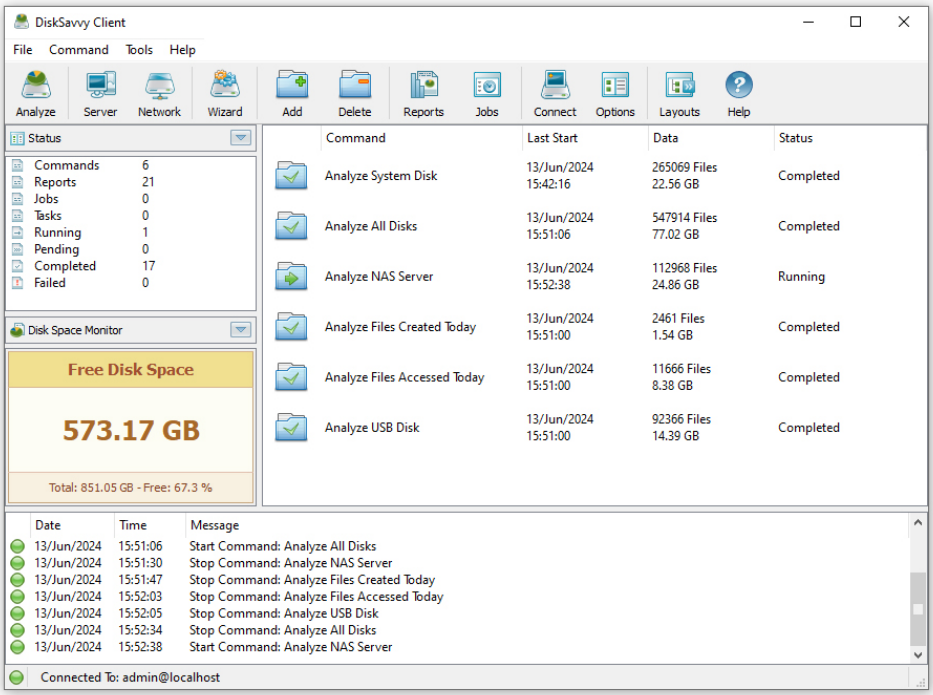
On the periodic job dialog, specify the time interval and select one or more disk space analysis commands to execute. By default, in order to reduce the CPU load and memory usage on the server, DiskSavvy Server performs scheduled disk space analysis operations sequentially, one after one while saving reports and executing conditional disk space analysis actions if required. In addition, advanced users are provided with the ability to configure periodic jobs to execute a number of disk space analysis commands in parallel thus reducing the time required to analyze a number of servers and/or NAS storage devices.



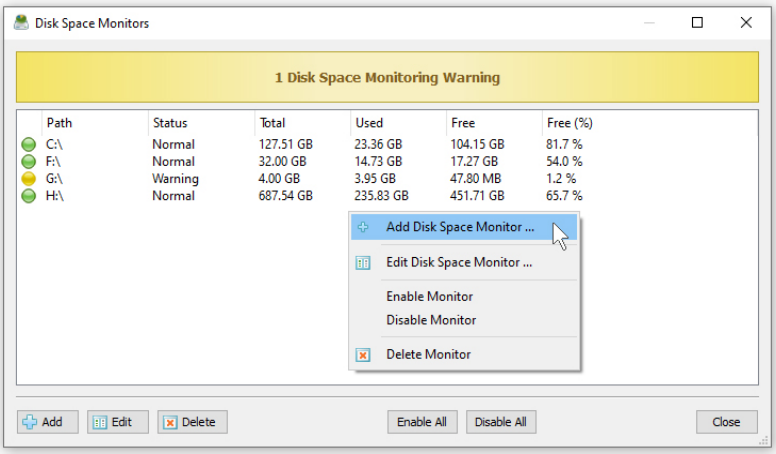
Finally, the user is provided with the ability to intentionally slow down disk space analysis operations, in order to completely eliminate performance impact on production servers. To slow down a disk space analysis operation, open the disk space analysis command dialog, press the 'Options' button, select the 'Advanced' tab, select the 'Low Speed' performance mode and press the 'Save' button.

33 Using Built-In Disk Space Monitor

DiskSavvy Server and DiskSavvy Enterprise include a built-in disk space monitor allowing one to monitor the free disk space in a number of disks, directories or network shares and provides the ability to send E-Mail notifications including disk space analysis reports showing recently created or modified files and/or execute custom actions when the amount of the free disk space drops below or rises above a user-specified limit.

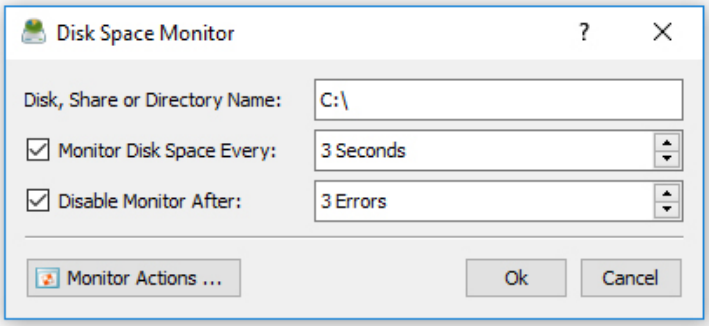


The disk space monitor can be displayed in any of the left-side tool panes of the DiskSavvy client GUI application. By default, the disk space monitor shows the status of all local disks in the server. In order to open the disk space monitors dialog, double click on the disk space monitor tool pane. For each disk, the disk space monitors dialog shows the disk name, the total amount of the disk space, the amount of the free disk space and the disk status according to the configuration of the disk space monitor.

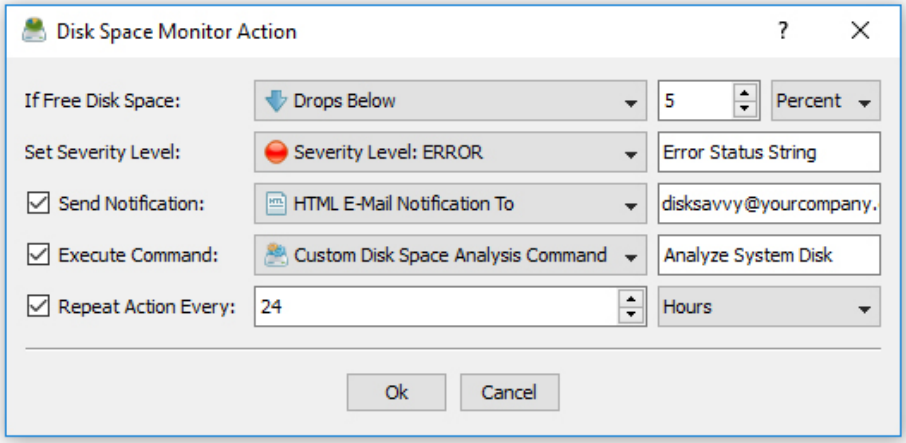


In order to add an additional disk or network share to the disk space monitor, press the right mouse button over the disk space monitor pane, specify the name of a disk, directory or network share to monitor and press the 'Ok' button. In order to change the configuration of a previously created disk space monitor, select the required disk item in the disk space monitor pane, press the right mouse button and select the 'Edit Monitor' menu item.

For each monitored disk, the disk space monitor allows one to control the disk space monitoring frequency, the maximum number of monitoring errors and disk space monitoring actions and/or E-Mail notifications. Sometimes, when monitoring the disk space usage in remote servers or NAS storage devices via the network, a network server or NAS storage device may be temporary offline due to unexpected connectivity or hardware problems. In this case, the disk space monitor will mark such a disconnected device as 'Offline' and continue to monitor the server according to the user-specified maximum number of errors. On the other hand, if a network server or NAS device was permanently disconnected from the network, the disk space monitor will disable monitoring of the disconnected server after the user-specified number of monitoring errors.



In order to automatically send an E-Mail notification and/or execute a custom action when the amount of the free disk space drops below a user-specified limit, the user needs to configure one or more disk space monitoring actions. Open the disk space monitor dialog, press the 'Monitor Actions' button, specify the minimum amount of the free disk space to trigger the action, select the 'Send Notification' option, select an appropriate notification format and specify an E-Mail address to send the notification to. In addition, in order to enable E-Mail notifications, the user needs to open the main options dialog, select the 'E-Mail' tab and configure an E-Mail server to use to send E-Mail notifications.

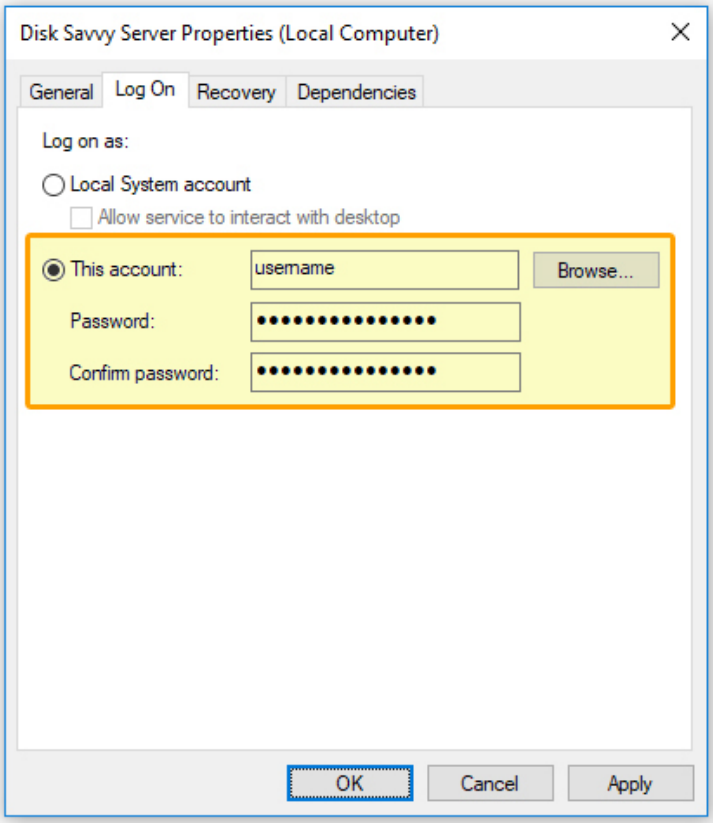


In addition to E-Mail notifications, the user is provided with the ability to automatically analyze files that were created or modified during the last 24 hours and send a disk space analysis report showing recent changes in the monitored disk to the specified E-Mail address. If the user selects the 'Default Disk Space Analysis Command' option, the disk space monitor will automatically create a disk space analysis command configured to analyze all files that were created or modified during the last 24 hours and send the disk space analysis results to the specified E-Mail address. If the user selects the 'Custom Disk Space Analysis Command' option, the disk space monitor will execute the user-configured disk space analysis command. Finally, if the user selects the 'User Command, Script or Batch File' option, the disk space monitor will execute the user-custom command, script or batch file.

34 Using DiskSavvy Server to Analyze Network Shares

DiskSavvy Server runs in the background as a service and allows one to analyze disks, directories and network shares when no users are logged in. By default, the DiskSavvy service is configured to run under the local system account, which is good to analyze local disks and directories. On the other hand, the local system account does not have permissions to analyze network shares and NAS storage devices.

In order to enable DiskSavvy Server to analyze network shares and NAS storage devices, the DiskSavvy service should be configured to run under a user account with permissions to access files and directories located on the required network shares.

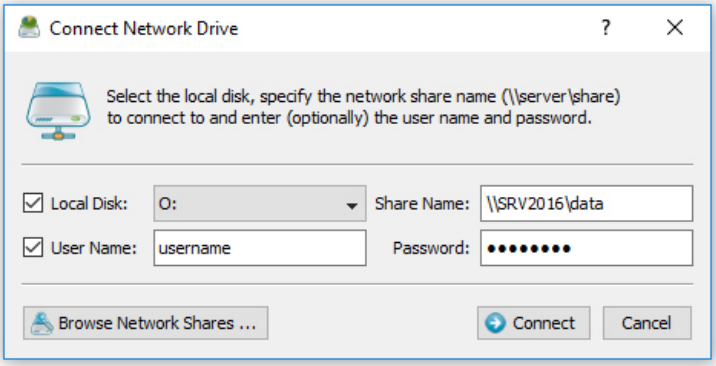


The configuration is very simple and may be performed within a couple of seconds using the following step-by-step guide:

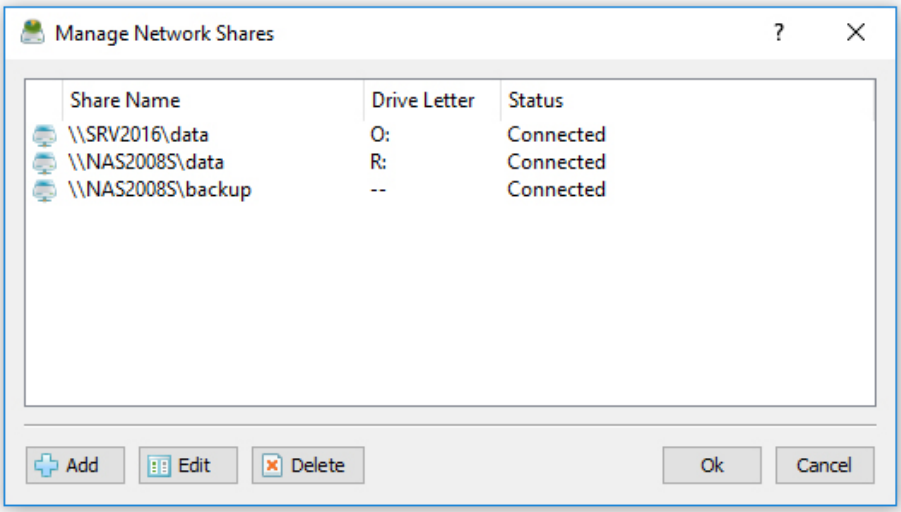
1. Open the Windows control panel and click on the 'Administrative Tools' utility.
2. Open the Services control center and find here the 'Disk Savvy Server' service.
3. Open the 'Disk Savvy Server' service, select the 'General' tab and stop the service.
4. Select the 'Log On' tab and specify a user account to use for the service.
5. Select the 'General' tab and start the ' Disk Savvy Server' service.

Now, the DiskSavvy service will run under the specified user account and will have exactly the same permissions as the specified user account when accessing network shares and NAS storage devices.

Sometimes, it may be required to analyze multiple network shares and NAS storage devices in different domains using different user accounts. In order to connect to a network share with a custom user name and/or password, select the menu 'Tools - Connect Network Drive', enter the name of the network share to connect to and specify the user name and password to use.



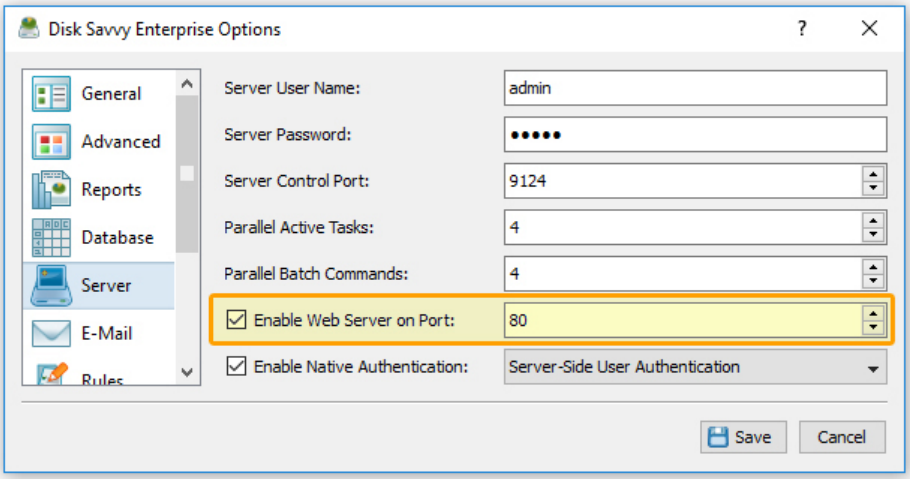
When analyzing tens of network shares and NAS storage devices, it may be not convenient to assign a drive letter for each connected network share just because there may be not enough letters to assign to all the required network shares. For such cases, the user is provided with the ability to connect network shares without assigning drive letters. In order to connect a network share without assigning a drive letter, unselect the 'Local Disk' check box on the network share configuration dialog.



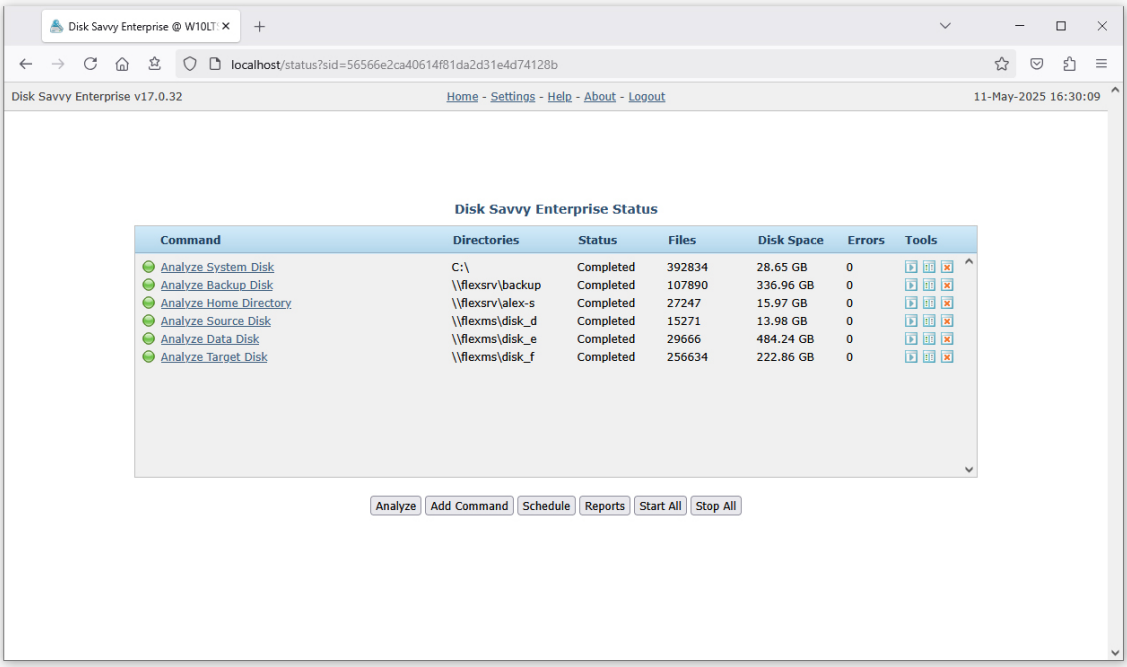
DiskSavvy Server provides the ability to configure periodic disk space analysis operations to be executed fully automatically in the background. In order to enable automated periodic analysis of network shares and NAS storage devices, DiskSavvy allows one to pre-configure a list of network shares to be automatically connected during the server startup. The user is provided with the ability to specify an unlimited number of network shares to connect to and optionally configure custom login credentials for each specific network share. In order to pre-configure one or more network shares, select the 'Tools - Manage Network Shares' menu item, press the 'Add' button and specify all the required parameters.

35 Using Web-Based Management Interface

In addition to the DiskSavvy client GUI application and the command line utility, DiskSavvy Enterprise provides a web-based management interface allowing one to control one or more servers using a regular web browser locally or via the network. The web-based management interface allows one to perform disk space analysis operations, save various types of reports, perform disk space usage history trend analysis operations and schedule periodic disk space analysis operations.



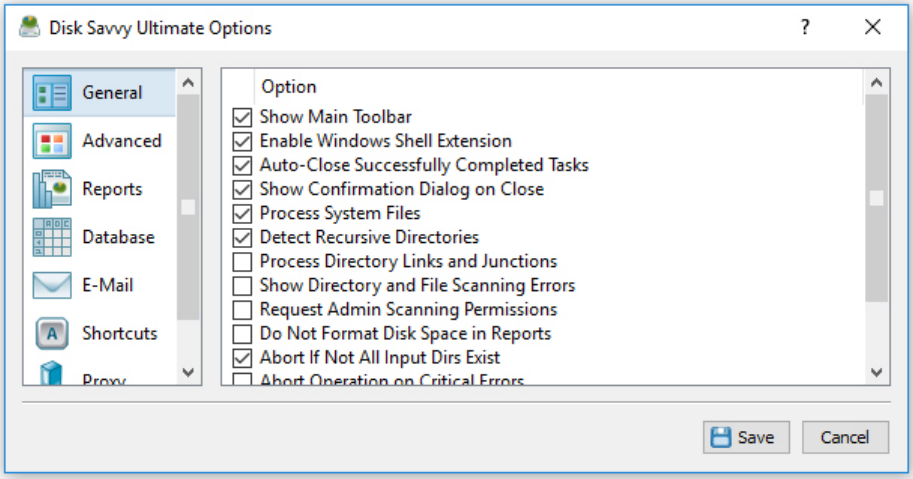
By default, the web-based management interface is disabled and in order to enable the web-based management interface, open the DiskSavvy client GUI application, connect to a server, open the 'Options' dialog, select the 'Server' tab, select the 'Enable Web Server' option and press the 'Save' button.



In order to connect to the DiskSavvy Enterprise web-based management interface, open a regular web browser, type the host name or an IP address of the server to connect to and login to the DiskSavvy Enterprise using the default (**admin**/**admin**) user name and password.

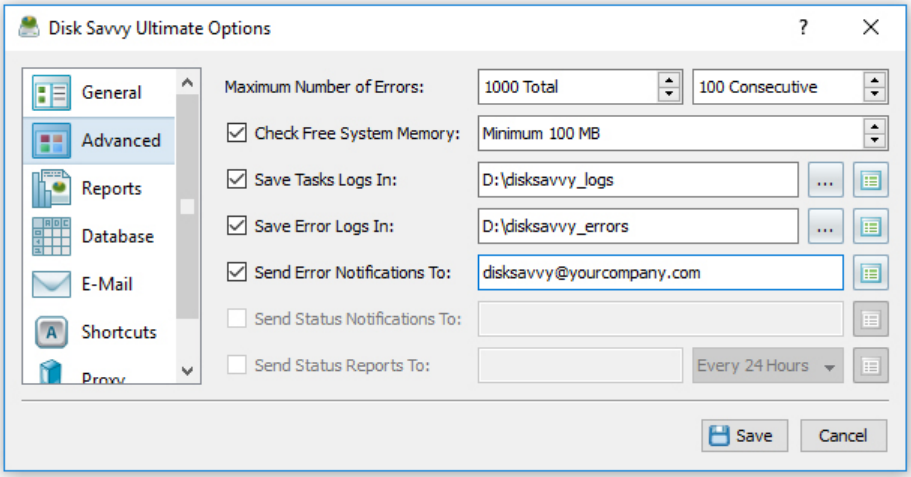
36 Configuring DiskSavvy Server

DiskSavvy Server provides a large set of configuration options allowing one to customize product features and easily integrate the product into a user-specific network environment. In order to open the main options dialog, press the 'Options' button located on the main toolbar. The '**General**' tab includes a set of general purpose options allowing one to customize the product for user-specific needs.



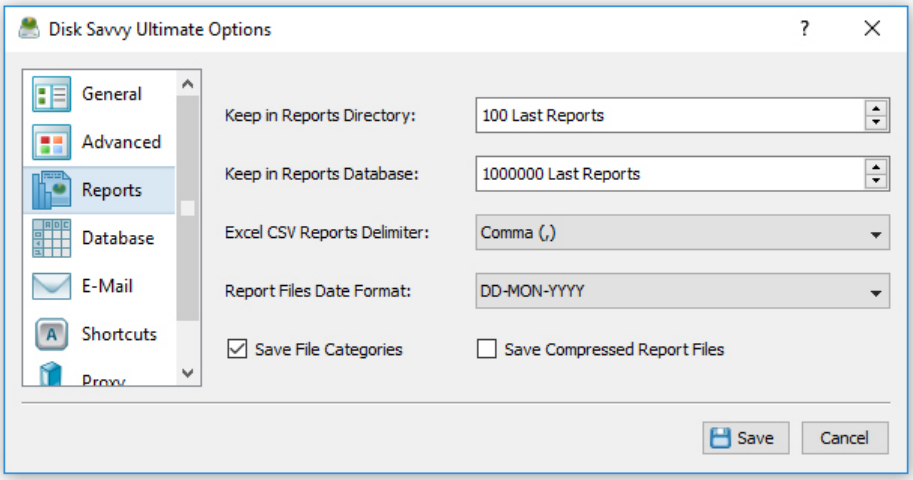
- **Process System Files** - this option enables scanning and analysis of system and hidden directories and files.
- **Detect Recursive Directories** - this option enables automatic detection of potentially recursive directory structures which can result in endless directory scanning loops.
- **Process Directory Links and Junctions** - this option enables scanning and analysis of directory links and junctions. By default, in order to prevent repeated analysis of directories with multiple entry points, this option is disabled.
- **Show Directory and File Scanning Errors** - this option enables display of additional error messages for directory and file scanning errors.
- **Scan Hidden Network Shares** - this option enables search and discovery of hidden network shares in network servers and NAS storage devices.
- **Request Admin Scanning Permissions** - this option enables administrative permissions for directory scanning operations allowing one to scan and analyze protected directories.
- **Do Not Format Disk Space In Reports** - this option disables formatting of disk space in disk space analysis reports.
- **Abort Operation on Critical Errors** - this option aborts disk space analysis operations when a directory scanning error is detected. By default, this option is disabled and all directory scanning errors are just logged in the error log.
- **Show Verbose Debug Messages** - this option enables additional verbose debug and error messages.
- **Enable Crash Log File** - this option enables a special crash log file to be continuously saved during the disk space analysis process in order to help to identify root causes of critical bugs and problems. By default, this option is disabled and in normal circumstances there is no need to enable this option.

The '**Advanced**' options tab provides the ability to configure the maximum number of total errors, the maximum number of consecutive errors, the minimum amount of the free system memory, the disk space analysis tasks logs directory, the disk space analysis errors logs directory, the error e-mail notifications address and periodic status reports notifications.

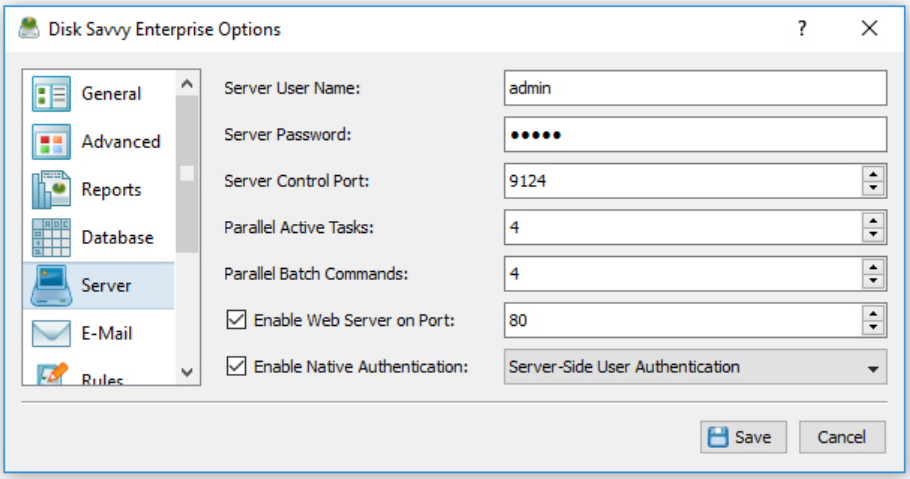


- **Maximum Number of Total Errors** - this option controls the maximum number of total directory and file scanning errors for a disk space analysis operation. If a disk space analysis operation will reach the maximum number of total errors, the analysis operation will be aborted.
- **Maximum Number of Consecutive Errors** - this option controls the maximum number of consecutive directory and file scanning errors for a disk space analysis operation. If a disk space analysis operation will reach the maximum number of consecutive errors, the analysis operation will be aborted.
- **Minimum Amount of Free System Memory** - this option enables monitoring of the free system memory during the disk space analysis process. If the amount of the free system memory will drop below the specified minimum, all disk space analysis operation will be aborted. This option prevents excessive memory usage when analyzing huge file systems containing tens and hundreds of millions of files.
- **Tasks Logs Directory** - this option enables disk space analysis tasks log files to be saved in a user-specified directory.
- **Errors Logs Directory** - this option enables disk space analysis error log files to be saved in a user-specified directory.
- **Error E-Mail Notifications** - this option enables error E-Mail notifications to be sent when a disk space analysis operation fails. The user needs to specify an E-Mail address to send notifications to and configure an SMTP server to use on the 'E-Mail' tab.
- **Status Reports E-Mail Notifications** - this option enables periodic status reports to be sent to a user-specified E-Mail address.

The '**Reports**' tab provides the ability to control and customize various types of disk space analysis reports. The 'Keep in Reports Directory' option controls how many report files for each disk space analysis command are kept in the reports directory when automatic generation of HTML, PDF, XML, Excel CSV or text reports is enabled. When the number of report files in the reports directory reaches the specified limit, DiskSavvy Server will automatically delete oldest report files. The 'Keep in SQL Database' option controls how many disk space analysis reports for each disk space analysis command are kept in the SQL database when automatic generation of SQL database reports is enabled.



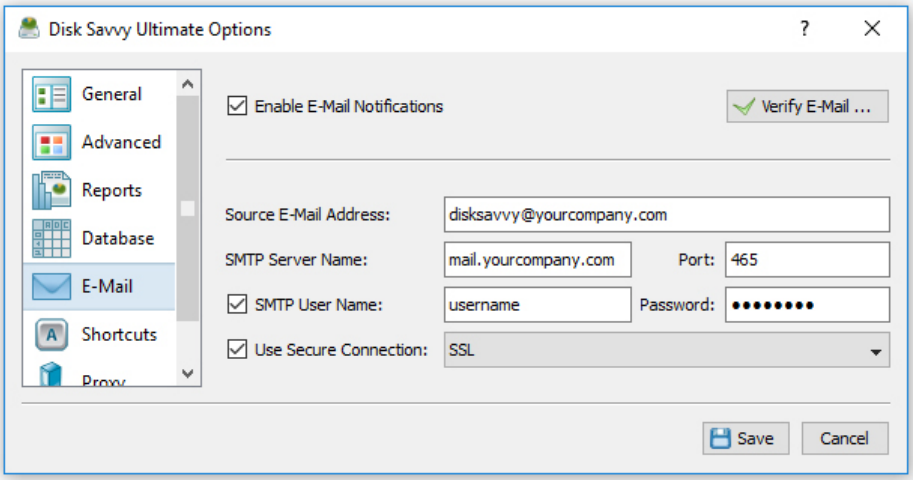
The 'Excel CSV Reports Delimiter' option provides the ability to set a custom field delimiter used to save Excel CSV reports. The 'Report Files Date Format' allows one to customize the date format used in disk space analysis reports. The 'Save File Categories' option enables export of second-level file categories in disk space analysis reports. The 'Save Compressed Report Files' option enables compressed report files for HTML, CSV, XML and text reports.



The '**Server**' tab allows one to change the DiskSavvy Server user name and password (default is admin/admin) used by the DiskSavvy client GUI application and the DiskSavvy command line utility to login to DiskSavvy Server. In addition, the user is provided with the ability to change the default TCP/IP port used by the DiskSavvy server. Finally, DiskSavvy Enterprise provides the ability to enable a web-based management interface allowing one to control disk space analysis operations and review disk space analysis results using a regular web browser locally or through the network. In order to be able to control DiskSavvy via the network, the server control port and/or the web-based interface port should be open in the server's firewall.

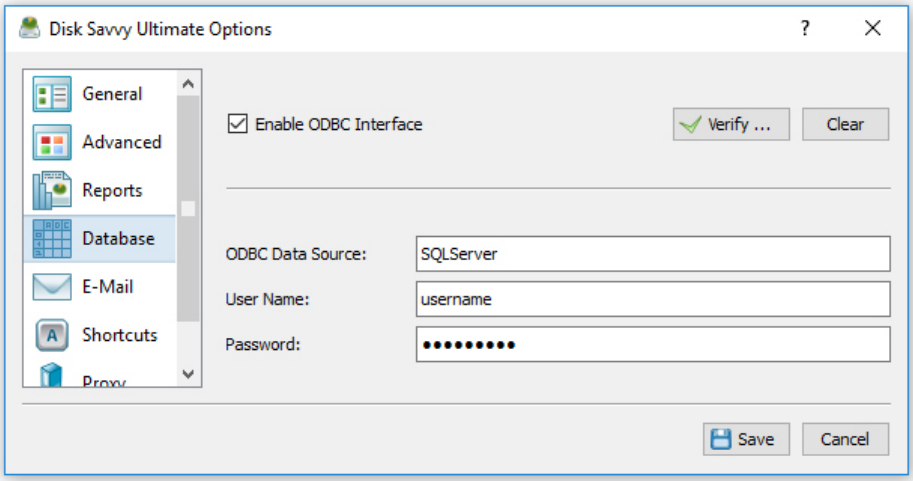
37 Configuring E-Mail Notifications

DiskSavvy Server provides the ability to send E-Mail notifications when a user-specified disk space analysis rule is triggered for one or more disks or directories. In order to configure an SMTP E-Mail server to use to send E-Mail notifications, open the main options dialog, select the 'E-Mail' tab, enter the SMTP server host name, SMTP server port, SMTP user name, password and the source E-Mail address to use to send E-Mail notifications.



38 Configuring SQL Database Integration

DiskSavvy Server provides the ability to save disk space analysis reports to an SQL database allowing one to keep a history of reports for future review and analysis. In order to enable automatic SQL database reports for a disk space analysis command, open the disk space analysis command dialog, press the 'Options' button, select the 'Advanced' tab, enable the 'Save Report' option, select the 'SQL Database' report format and press the 'Save' button.



DiskSavvy Server exports SQL database reports through the ODBC database interface, which should be configured to operate properly. In order to configure the ODBC database interface, open the main options dialog, select the 'Database' tab, enable the ODBC database interface, specify the ODBC data source, ODBC user name and password to use to save reports to the SQL database.

39 DiskSavvy Server Command Line Utility

In addition to the DiskSavvy client GUI application, DiskSavvy Server provides a command line utility allowing one to control one or more DiskSavvy Servers locally or via the network. The DiskSavvy command line utility is located in **<ProductDir>/bin** directory.

DiskSavvy Server Command Line Syntax:

disksavvy -server_show_commands

Shows disk space analysis commands configured in DiskSavvy Server.

disksavvy -server_start_command <Command Name>

Starts the specified disk space analysis command.

disksavvy -server_start_all_commands

Starts all inactive disk space analysis commands.

disksavvy -server_stop_command <Command Name>

Stops the specified disk space analysis command.

disksavvy -server_stop_all_commands

Stops all active disk space analysis commands.

disksavvy -server_command_status <Command Name>

Shows the current status of a disk space analysis command.

disksavvy -server_command_errors <Command Name>

Shows process errors for a disk space analysis command.

disksavvy -server_delete_command <Command Name>

Deletes the specified disk space analysis command.

disksavvy -server_delete_all_commands

Deletes all disk space analysis commands.

disksavvy -server_show_reports

Shows disk space analysis reports saved in the DiskSavvy Server reports database.

disksavvy -server_export_reports -reports_dir <Directory>

Exports disk space analysis reports to the specified directory.

disksavvy -server_import_reports -reports_dir <Directory>

Imports disk space analysis reports from the specified directory.

disksavvy -server_archive_old_reports -reports_dir <Directory>

Archives old disk space analysis reports to the user-specified directory.

disksavvy -server_archive_all_reports -reports_dir <Directory>

Archives all disk space analysis reports to the user-specified directory.

disksavvy -server_delete_old_reports

Deletes old disk space analysis reports from the DiskSavvy Server reports database.

disksavvy -server_delete_all_reports

Deletes all disk space analysis reports from the DiskSavvy Server reports database.

disksavvy -server_status

Shows the current DiskSavvy Server status.

disksavvy -server_debug_log

Shows the DiskSavvy Server debug log.

Miscellaneous Commands:

disksavvy -v

Shows the product major version, minor version, revision and build date.

disksavvy -help

This command shows the command line usage information.

Command Line Options:

-host <Host Name>

Specifies the host name or an IP address of DiskSavvy Server to connect to. If not specified, the command line utility will connect to the local host.

-port <Port Number>

Specifies the TCP/IP port to connect to. If not specified, the command line utility will connect to the default DiskSavvy Server TCP/IP port 9124.

-user <User Name>

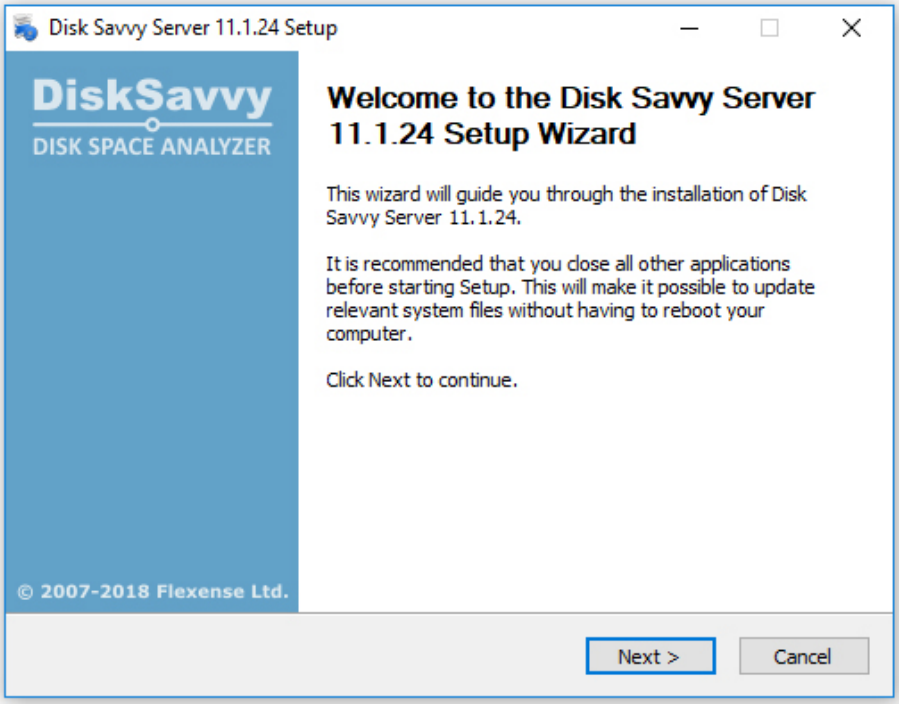
Specifies a user name to login to DiskSavvy Server. If not specified, the command line utility will login using the default "**admin**" user name.

-password <Password>

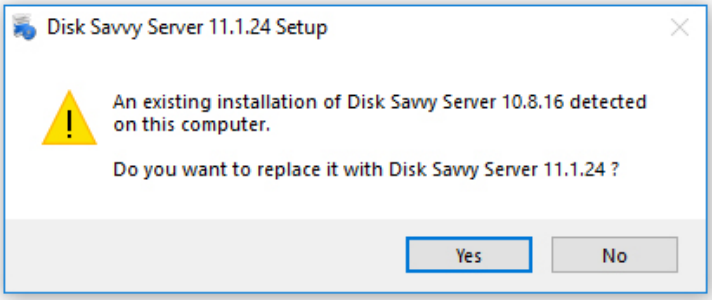
Specifies a password to login to DiskSavvy Server. If not specified, the command line utility will login using the default "**admin**" password.

40 Updating DiskSavvy Server

DiskSavvy Server is developed using a fast release cycle with minor product versions, updates and bug fixes released almost every month and major product versions released every year. New product versions and product updates are published on the product web site and may be downloaded from the following page: http://www.disksavvy.com/downloads.html.



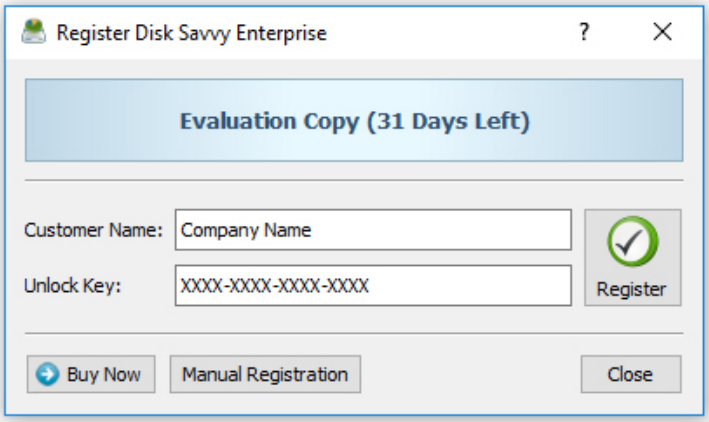
Due to the fact that the product is especially designed for servers running in production environments where stability is a major decision factor, DiskSavvy Server updates should be manually installed by the user. In order to update an existing product installation, download the latest product version and just start the setup program.



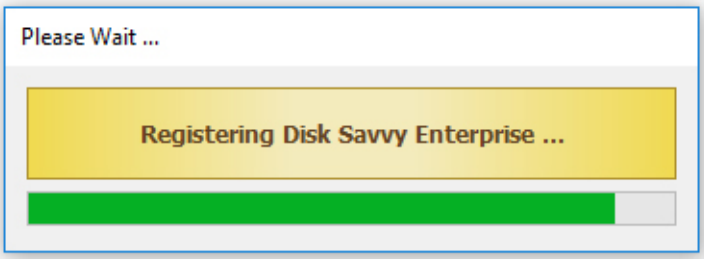
The DiskSavvy Server setup program will properly shutdown the running DiskSavvy service, update the product and restart the DiskSavvy service after finishing the update procedure. All product configuration files, saved disk space analysis operations, disk space analysis reports and product registration will remain valid and there is nothing to reconfigure or manage after the update.

41 Registering DiskSavvy Server

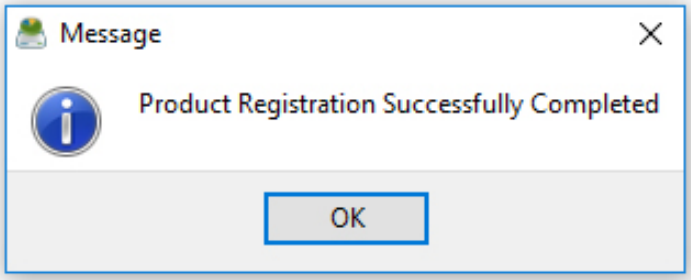
Within a couple of hours after purchasing a product license, the customer will receive two e-mail messages: the first one confirming the payment and the second one containing an unlock key, which should be used to register the product. If you will not receive your unlock key within 24 hours, please check your spam box and if the unlock key is not in the spam box, please contact our support team: **support@flexense.com**.



If the computer where DiskSavvy Server is installed on is connected to the Internet, start the DiskSavvy client GUI application, connect to the DiskSavvy server, press the 'Register' button located in the top-right corner of the main window, enter your name or your company name, enter the received unlock key and press the 'Register' button.



If the computer is not connected to the Internet, press the 'Manual Registration' button, export the product ID file and send the product ID file to **register@disksavvy.com** as an attachment. Within a couple of hours, you will receive an unlock file, which should be imported in order to finish the registration procedure.



42 Supported Operating Systems

- Server 2025
- Server 2022
- Server 2019
- Server 2016
- Server 2012 R2
- Server 2012
- Server 2008 R2
- Server 2008
- Server 2003
- Windows 11
- Windows 10
- Windows 8.1
- Windows 8
- Windows 7
- Windows Vista
- Windows XP

43 System Requirements

Minimal System Requirements

- Supported Operating System
- 2 GHz dual-core CPU
- 4 GB of system memory
- 100 MB of free disk space

Recommended System Configuration

- 64-Bit Operating System
- 2+ GHz quad-core CPU
- 4 GB of system memory
- 400 MB of free disk space

DiskSavvy Enterprise System Requirements

- 64-Bit Operating System
- 2+ GHz quad-core CPU
- 8 GB of system memory
- 1 GB of free disk space