DiskSavvy

DISK SPACE ANALYZER

User Manual

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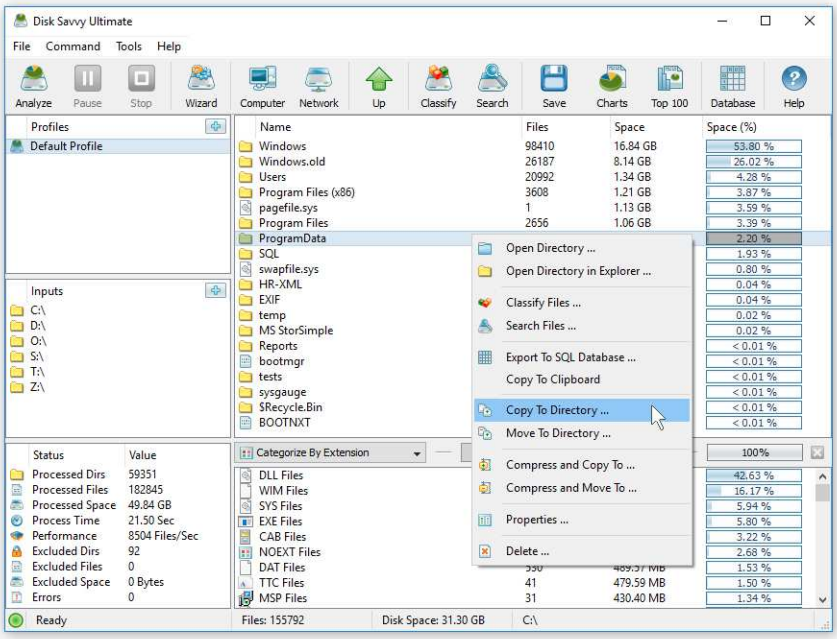
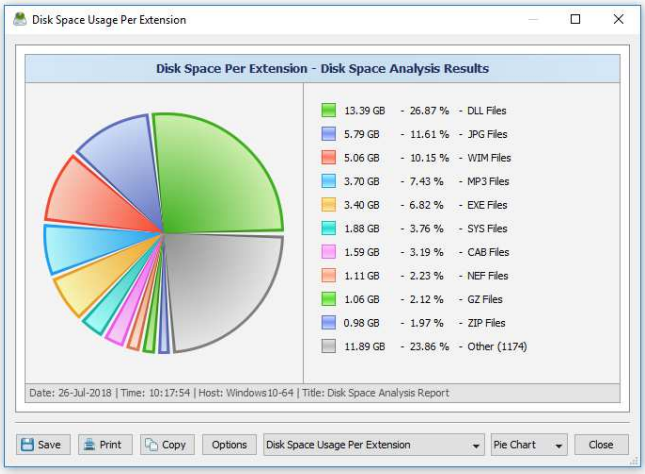
1 Product Overview

DiskSavvy is a powerful disk space usage analyzer 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.

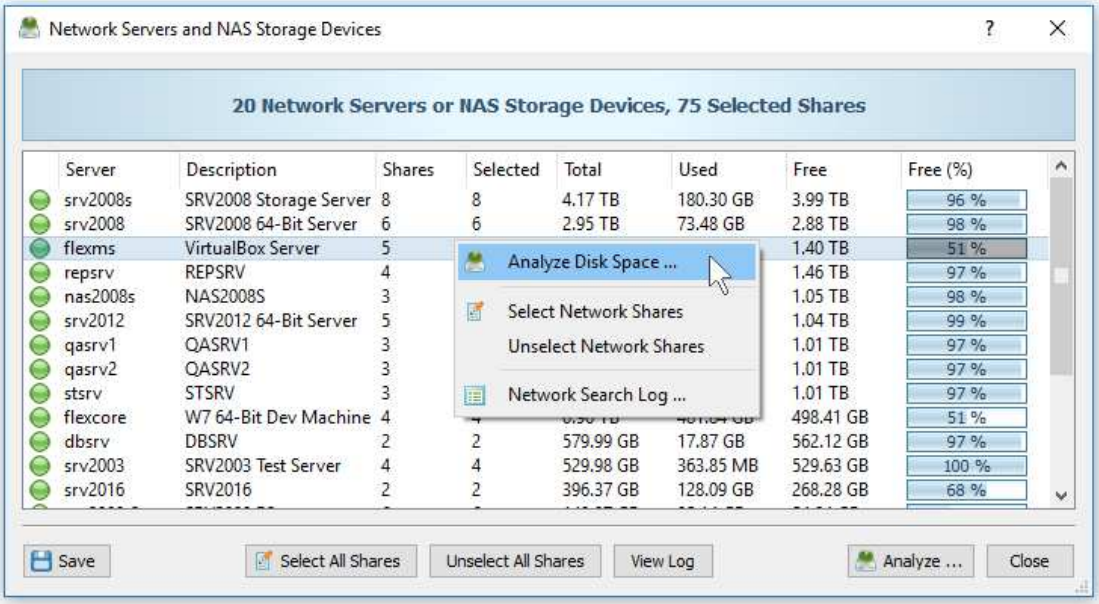


In addition, DiskSavvy provides built-in file classification capabilities allowing one to classify and categorize files using a number of file classification plug-ins capable of recognizing more than 3,000 types of files and showing disk space usage per file type, category, file extension, user name, 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.

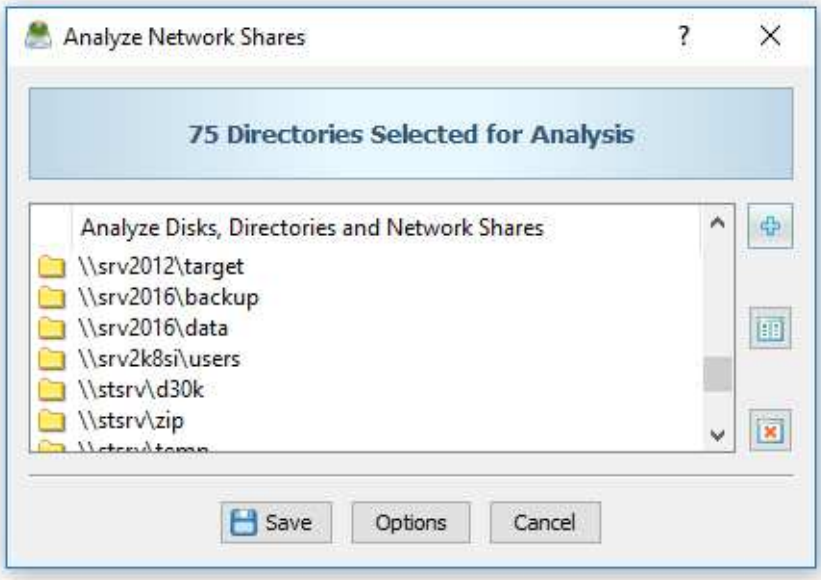


DiskSavvy allows one to save disk space analysis results to a number of standard formats including HTML, PDF, Excel, XML, CSV, text and the native DiskSavvy report format. In addition, IT and storage administrators are provided with the ability to export disk space analysis results from multiple servers 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 and CSV reports.

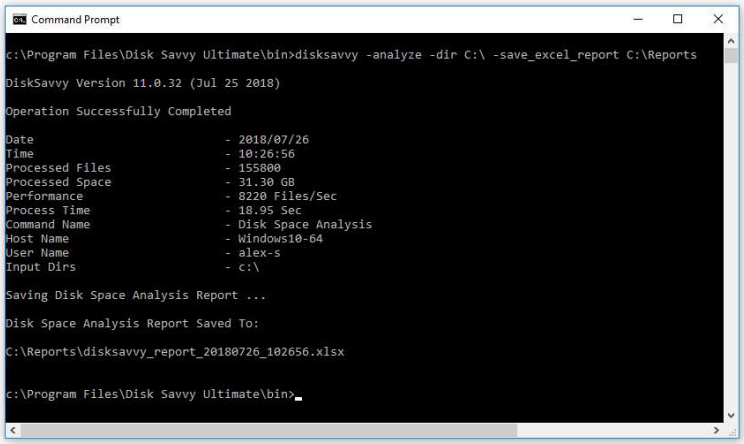


In order to analyze one or more servers or NAS storage devices, press the 'Network' button located on the main toolbar and wait while DiskSavvy will scan the network and show a list of detected network servers and NAS storage devices. On the network servers and NAS storage devices dialog, select the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

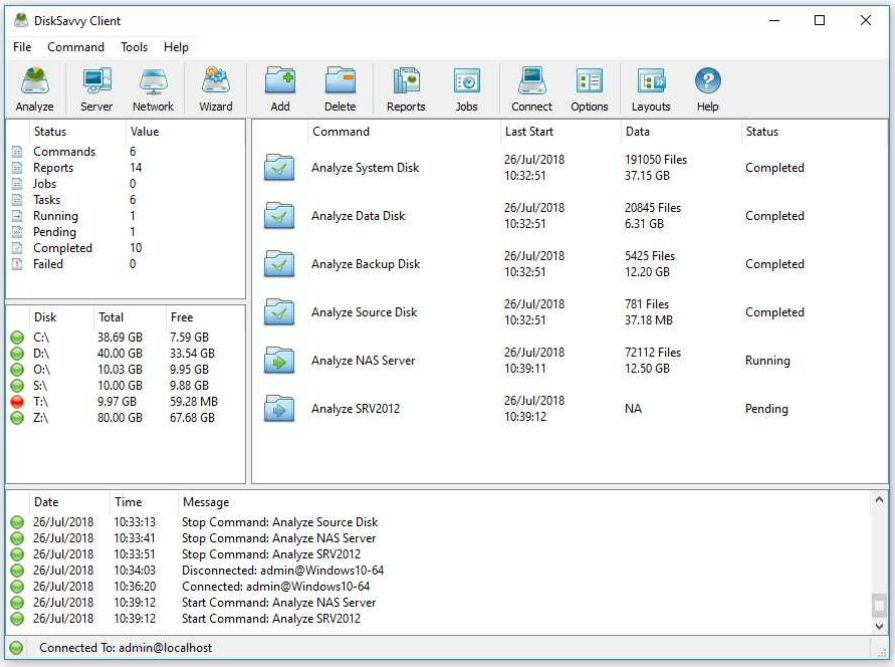


DiskSavvy will show all network shares hosted on the selected servers and NAS storage devices allowing one to analyze disk space usage and save various types of disk space analysis charts and reports. In addition, DiskSavvy provides a large number of advanced disk space analysis options allowing one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

In addition to the DiskSavvy desktop 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.

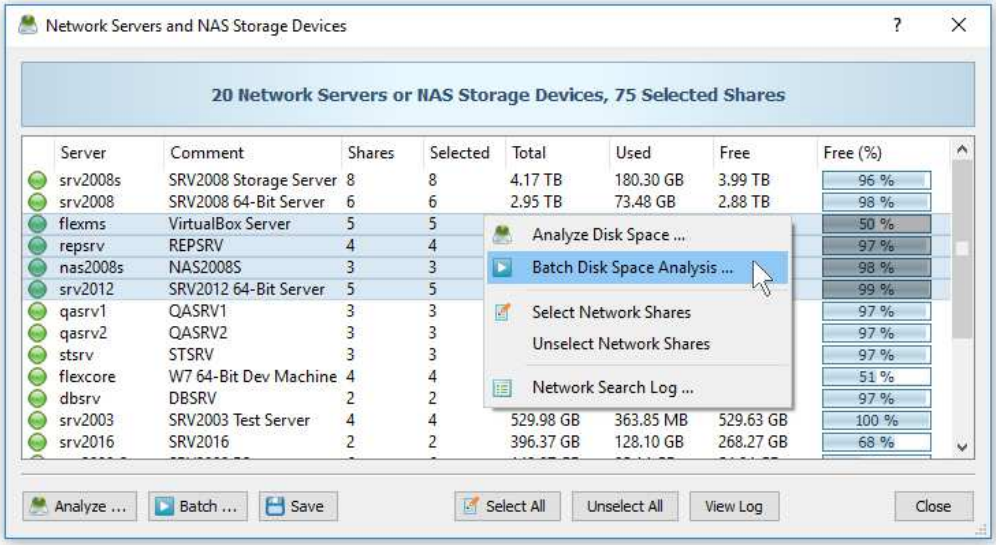


Finally, enterprise customers are provided with DiskSavvy Server, a server-based product version, which runs in the background as a service and allows one to analyze a number of servers or NAS storage devices simultaneously, schedule periodic disk space analysis operations, submit disk space analysis 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.

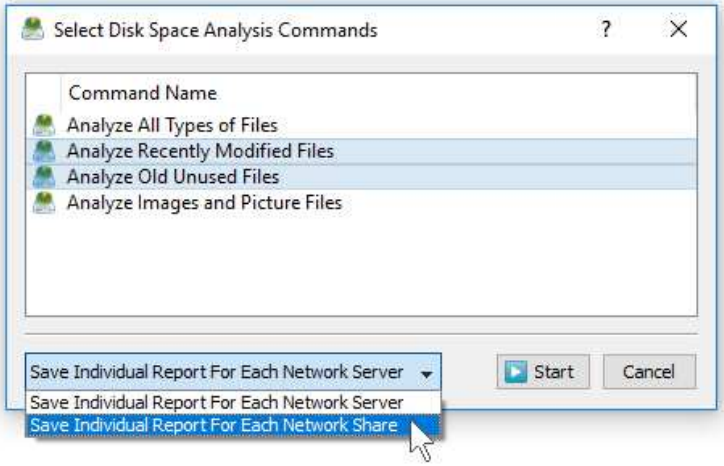


DiskSavvy Server may be controlled using a full-scale client GUI application locally or via the network. The client GUI application provides all features available in the desktop product version and additional capabilities allowing one to analyze multiple servers and/or NAS storage devices simultaneously, 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, CSV and XML.

2 Product Versions

Features	Free	Pro	Server	Enterprise
Maximum Amount of Disk Space	2 TB	25 TB	100 TB	Unlimited
Maximum Number of Files	1 M	25 M	100 M	Unlimited
Maximum Number of Input Directories	10	25	100	Unlimited
Maximum Number of Analysis Profiles	3	25	100	Unlimited
Support for Unicode File Names	Yes	Yes	Yes	Yes
Support for Long File Names	Yes	Yes	Yes	Yes
Support for UNC Network Path Names	Yes	Yes	Yes	Yes
Built-In File Management Operations	Yes	Yes	Yes	Yes
Pie Charts and Bars Charts	Yes	Yes	Yes	Yes
HTML, PDF, Excel, Text and XML Reports	Yes	Yes	Yes	Yes
Option to Analyze Specific Types of Files	No	Yes	Yes	Yes
Multi-Threaded Disk Space Analysis	No	Yes	Yes	Yes
Built-In Data Wiping Capabilities	No	Yes	Yes	Yes
Rule-Based Disk Space Analysis Actions	No	Yes	Yes	Yes
SQL Database Integration	No	Yes	Yes	Yes
Custom Classification Plugins	No	Yes	Yes	Yes
Command Line Utility	No	Yes	Yes	Yes
Runs in the Background as a Service	No	No	Yes	Yes
Periodic Disk Space Analysis Operations	No	No	Yes	Yes
Analyze Disk Space Usage Per Server	No	No	Yes	Yes
Analyze Disk Space Usage Per User	No	No	Yes	Yes
Built-In Disk Space Monitor	No	No	Yes	Yes
DiskSavvy Client GUI Application	No	No	Yes	Yes
Disk Space Usage History Trend Analysis	No	No	No	Yes
Batch Disk Space Analysis Operations	No	No	No	Yes
Web-Based Management Interface	No	No	No	Yes
Support For Multi-User Configurations	No	No	No	Yes
OS Native User Authentication	No	No	No	Yes
OEM Product Version	No	No	No	Yes
License	**Free**	**$125**	**$450**	**$850**

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

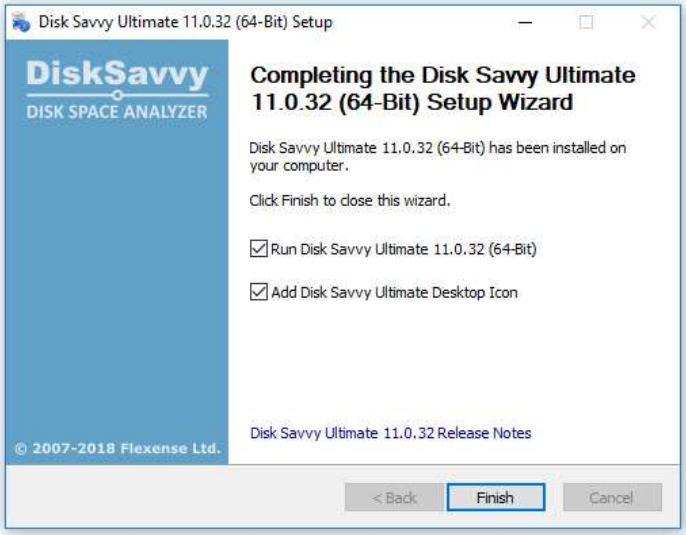
3 Using Desktop Versions

3.1 Product Installation Procedure

DiskSavvy is available as a free download from our web site page and from a large number of software directories from around the world. To be sure you are getting the latest product version check here: http://www.disksavvy.com/downloads.html

DiskSavvy is especially designed to be as simple as possible. The installation procedure is very simple, requires no special knowledge and may be completed in less than 30 seconds. There is no need for any additional software. Just download the DiskSavvy installation package, run the setup program and you are done.

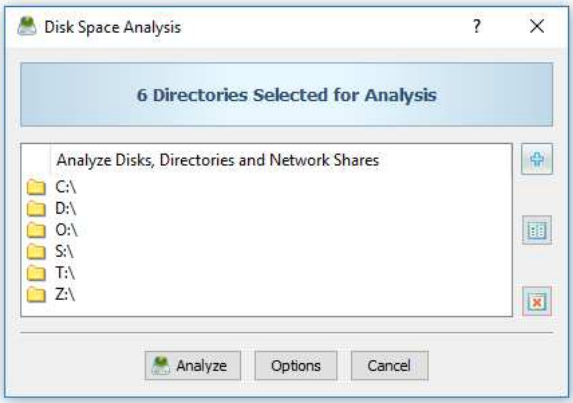
On the 'Welcome' screen press the 'Next' button. Read the end-user license agreement and press the 'I Agree' button if you agree with the license terms or the 'Cancel' button to stop the installation process.



Select the destination directory, press the 'Install' button and wait for the installation process to complete. That's all you need to do to install the DiskSavvy disk space analyzer utility on your computer.

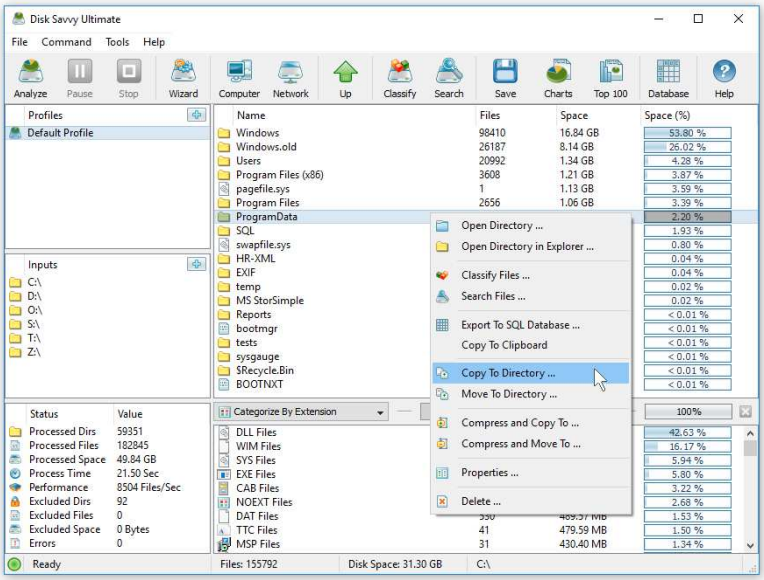
3.2 Analyzing Disk Space Usage in a Directory

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.

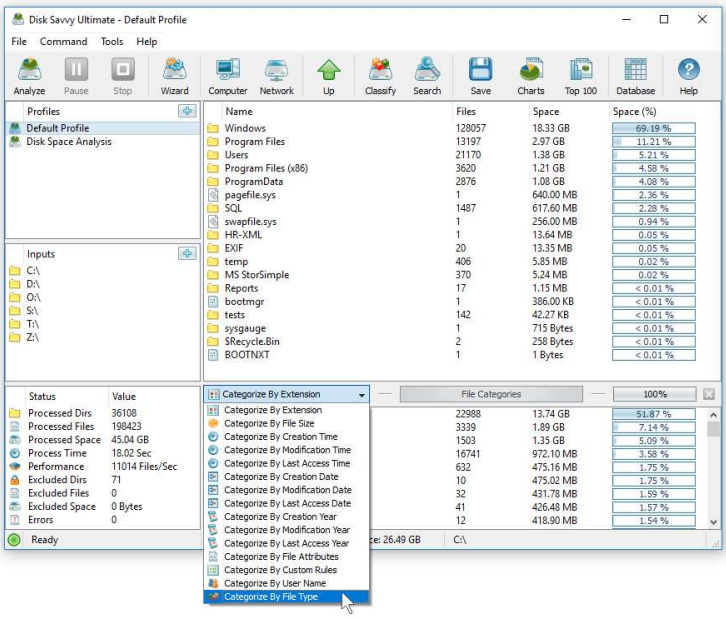
Once the disk space analysis process is completed, DiskSavvy will display a hierarchy of analyzed disks, directories and files sorted by the amount of the used disk space. For each directory, DiskSavvy will show the name of the directory, the total number of files in the directory and all subdirectories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



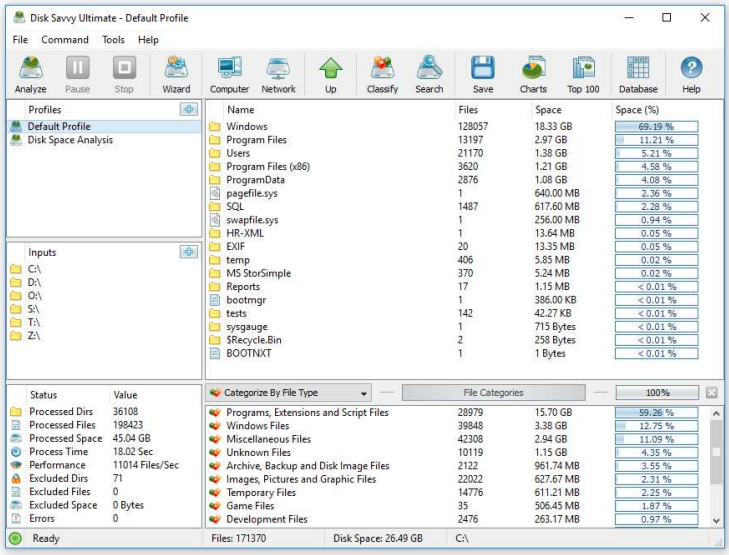
Press the 'Charts' button to display a pie chart showing disk space usage statistics for the current directory view and selected file categories. Click on a directory item to open the directory and show nested subdirectories and files. Select one or more directories and/or files and press the right mouse 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.

3.3 Using File Categories and File Filters

DiskSavvy 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.

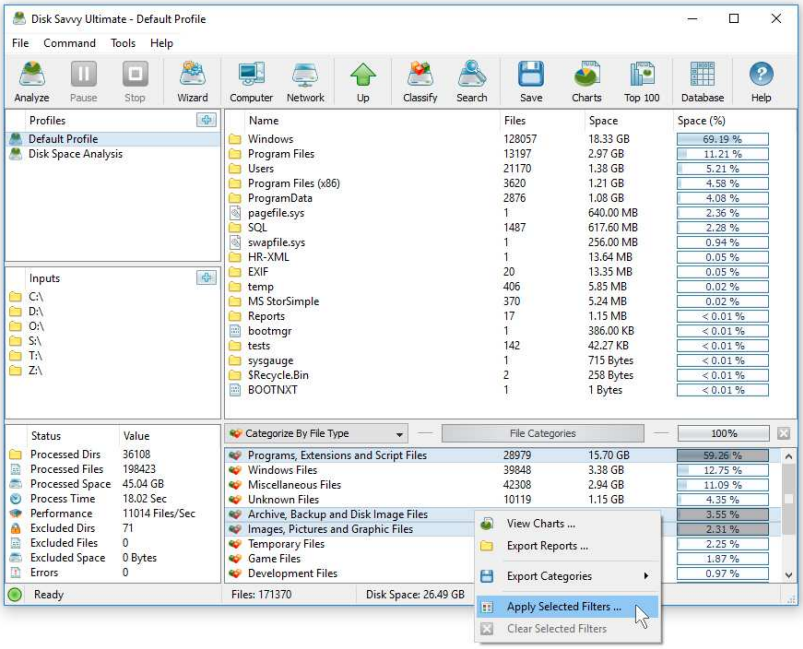


By default, DiskSavvy categorizes disk space analysis results by the file extension and shows a list of all detected file extensions sorted by the amount of used disk space. For each category, DiskSavvy shows the number of files, the amount of used disk space and the percentage of the used disk space 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.

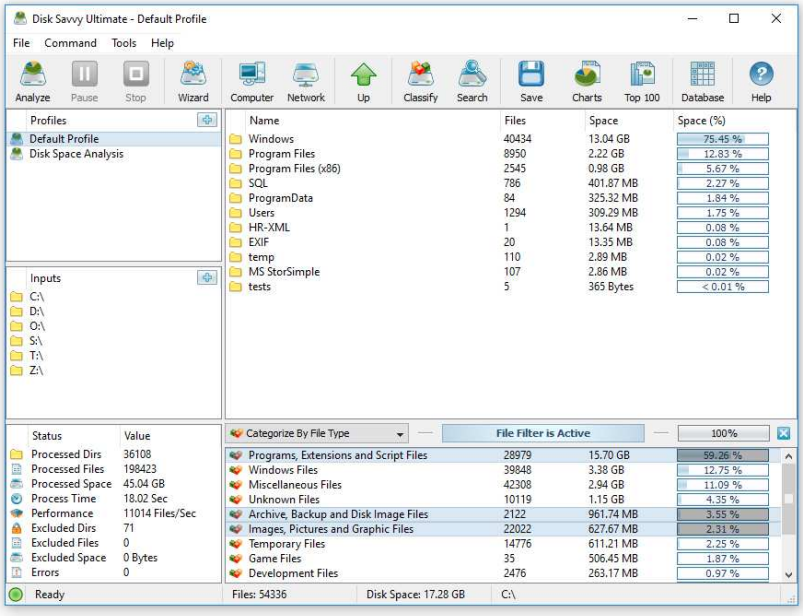


For example, set the file categorization mode to 'Categorize By File Type' and DiskSavvy will display types of files in the currently open directory. When the user opens a subdirectory, DiskSavvy automatically updates the file categories view and shows statistics according to the currently open directory. 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.

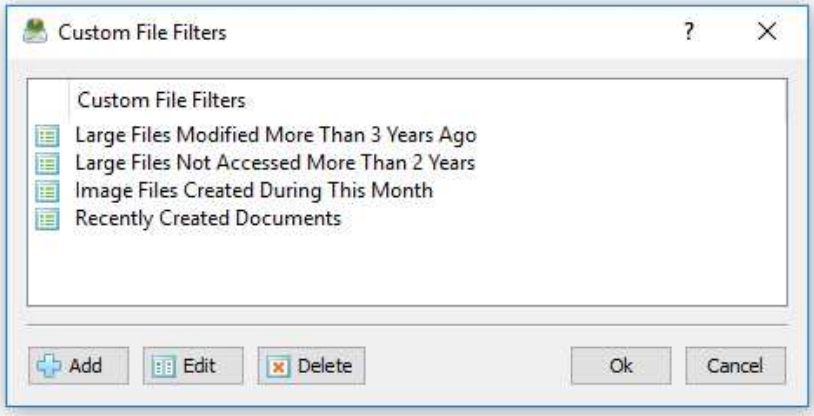


For example, in order to display disk space usage statistics for all types of programs and DLL libraries, categorize disk space analysis results by the file type, select the 'Programs and Extensions' category in the file categories view, press the right mouse button and select the 'Apply Selected Filters'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

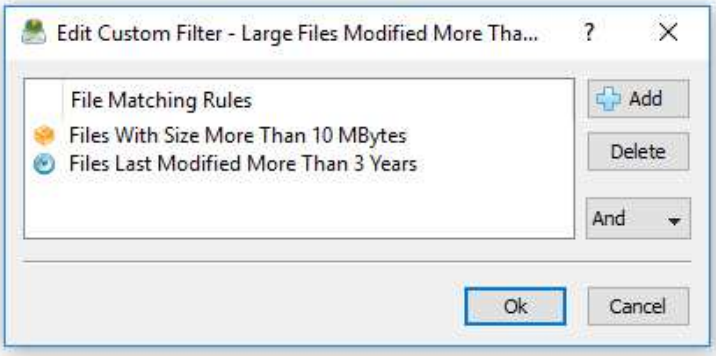


When the user opens a directory with an active file filter, DiskSavvy will automatically filter files in the directory and display files matching the selected file filter. Moreover, all types of pie charts and disk space analysis reports will be generated according to the currently open directory and 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.



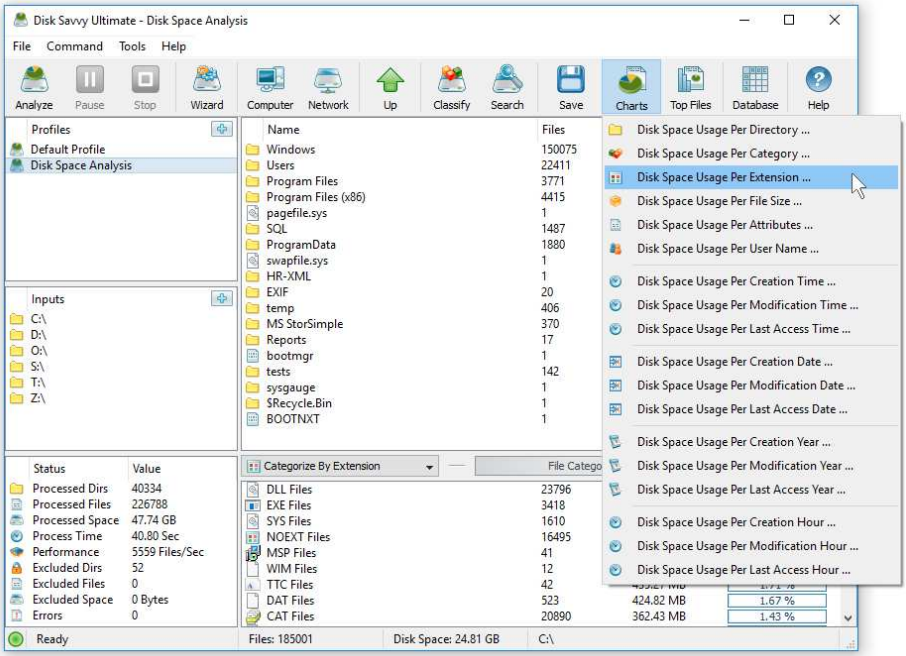
In order to add a new custom file filter, press the 'Add' button, enter a unique filter name and configure one or more file matching rules specifying which types or groups of files to display. In order to edit a custom file filter, select the filter in the custom file filters dialog and press the 'Edit'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



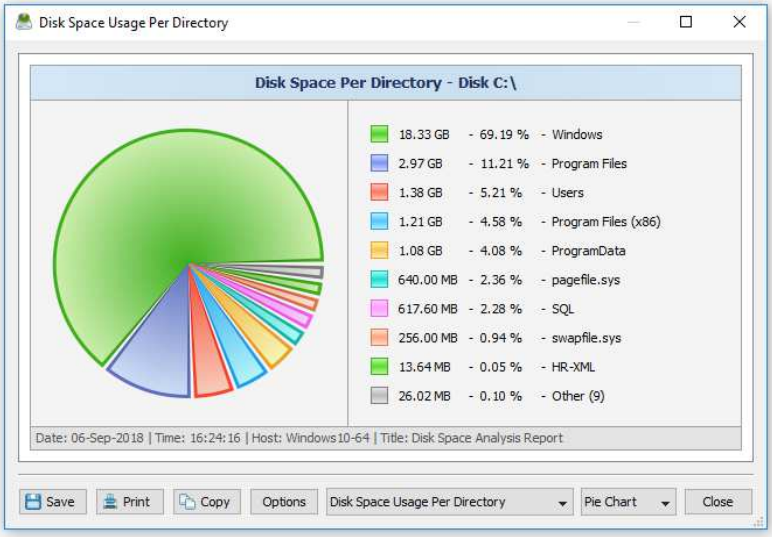
Once finished configuring custom file filters, close the filters dialog and DiskSavvy will analyze the currently displayed disk space usage results and show the list of user-specified custom file filters sorted by the amount of data and the number of files matching the specified file filters. In order 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.

3.4 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.

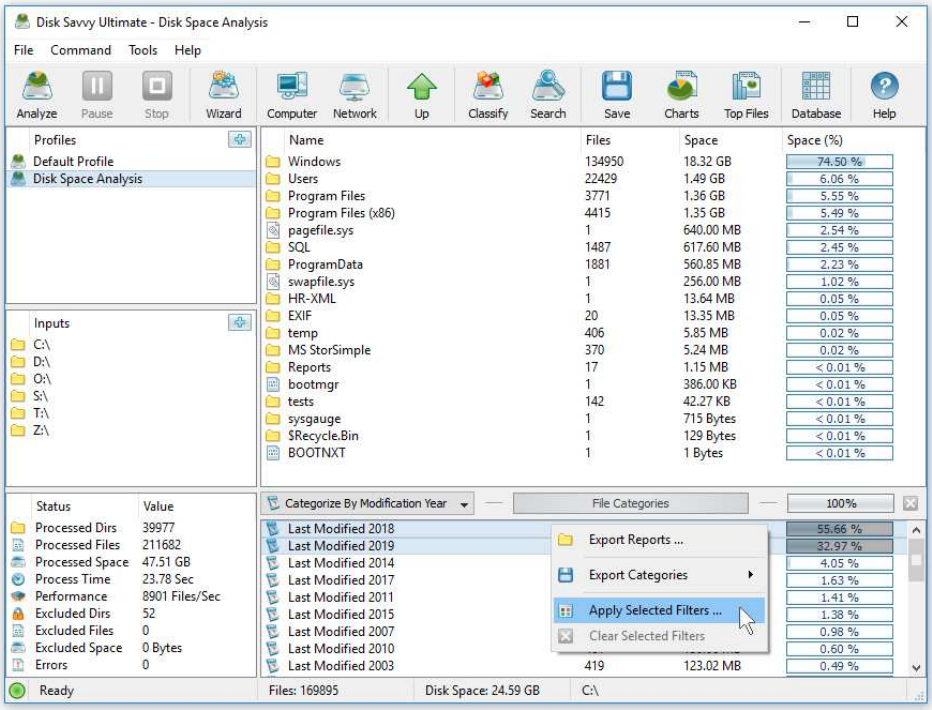


By default, the charts dialog shows the amount of disk space usage and the number of files for the current file system location. For example, in order to open a chart showing the disk space usage and the number of files per file category in the current directory, press the 'Charts' button located on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

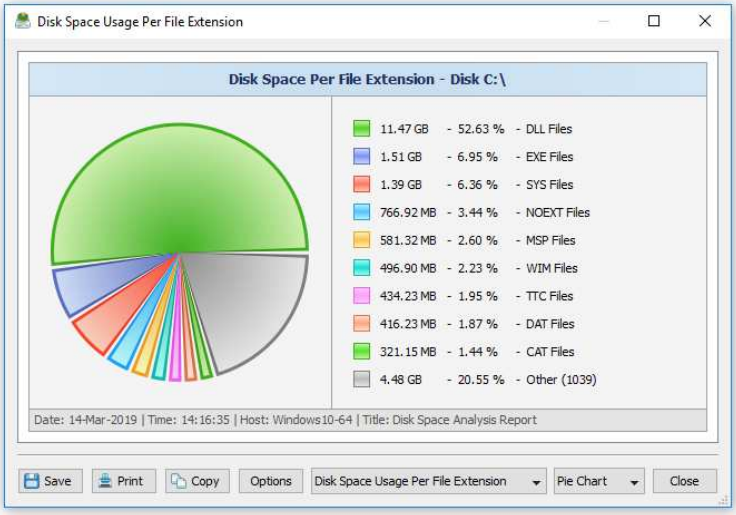


In addition, the charts dialog provides the user with the ability to export the chart data to a number of different formats and copy the displayed chart image to the clipboard allowing one to easily integrate DiskSavvy charts into user's documents and presentations. In order to customize the chart's 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.

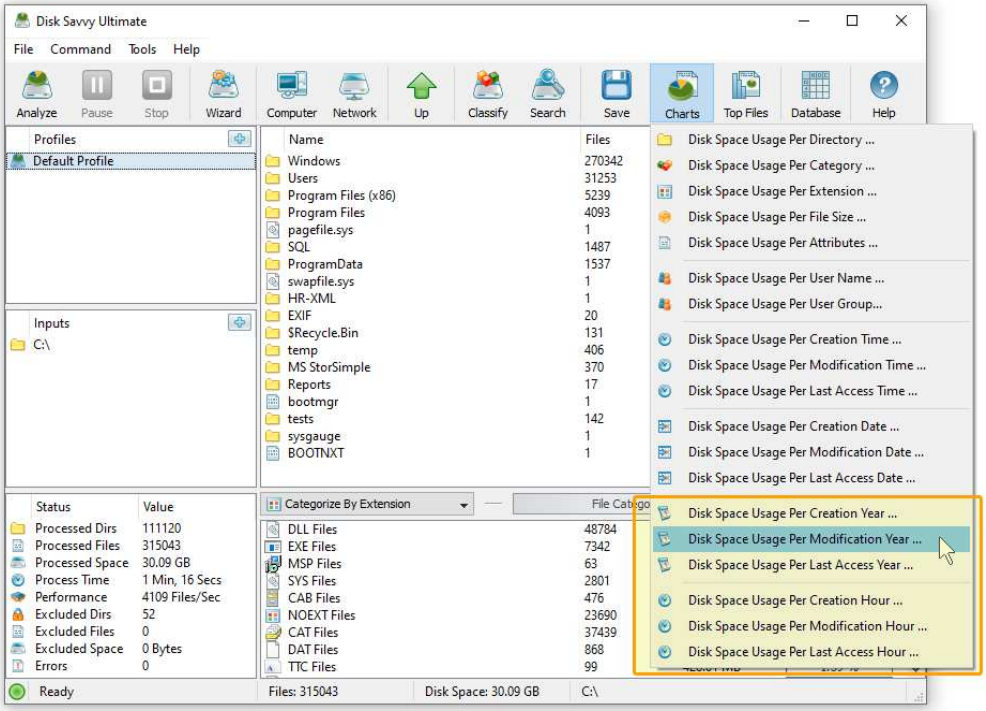


DiskSavvy will filter the disk space analysis results and display files that were modified during the selected years. Now, press the 'Charts' button located on the main toolbar and select the 'Disk Space Usage Per Extension' menu item. DiskSavvy will categorize the filtered disk space analysis results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

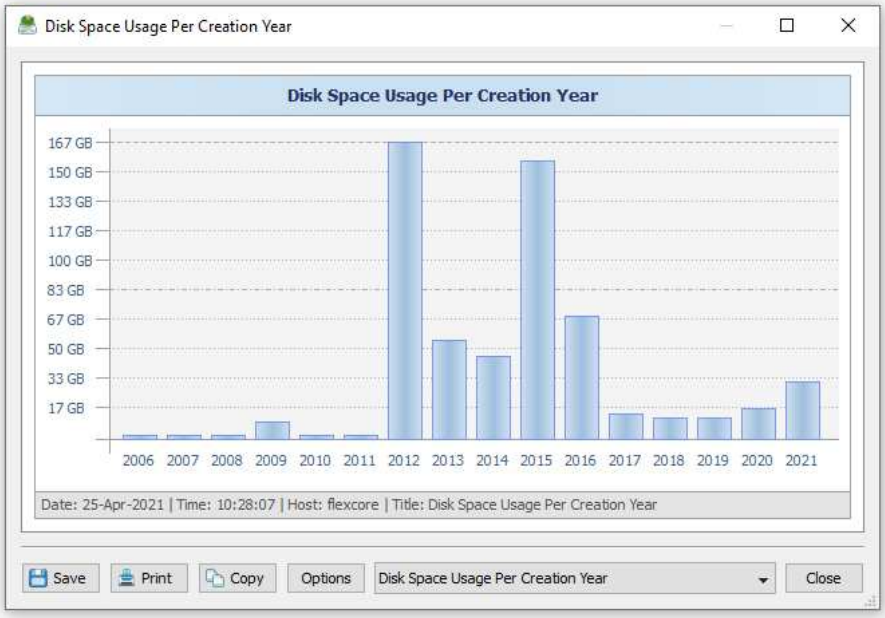


In a similar way, the user can filter disk space analysis results by file type, size, user name, file attributes, creation, modification and last access dates and then display various types of charts showing the disk space usage or the number of files according to user-specific needs.

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.

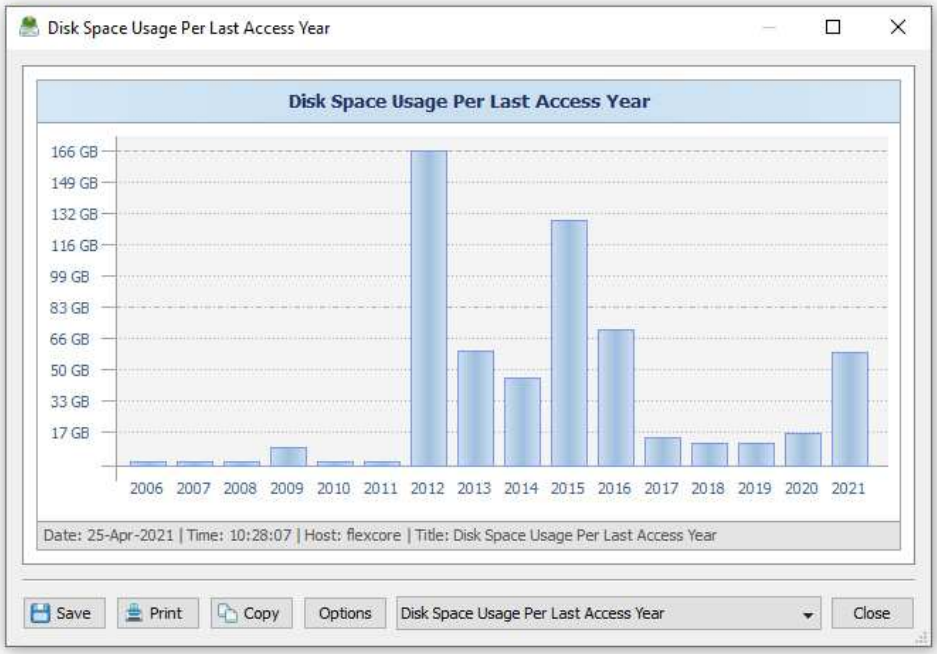


DiskSavvy will display a time line chart showing how much data was modified per year. In order to display how many files were modified per year, set the chart mode to 'Number Of Files Per Modification Year'.

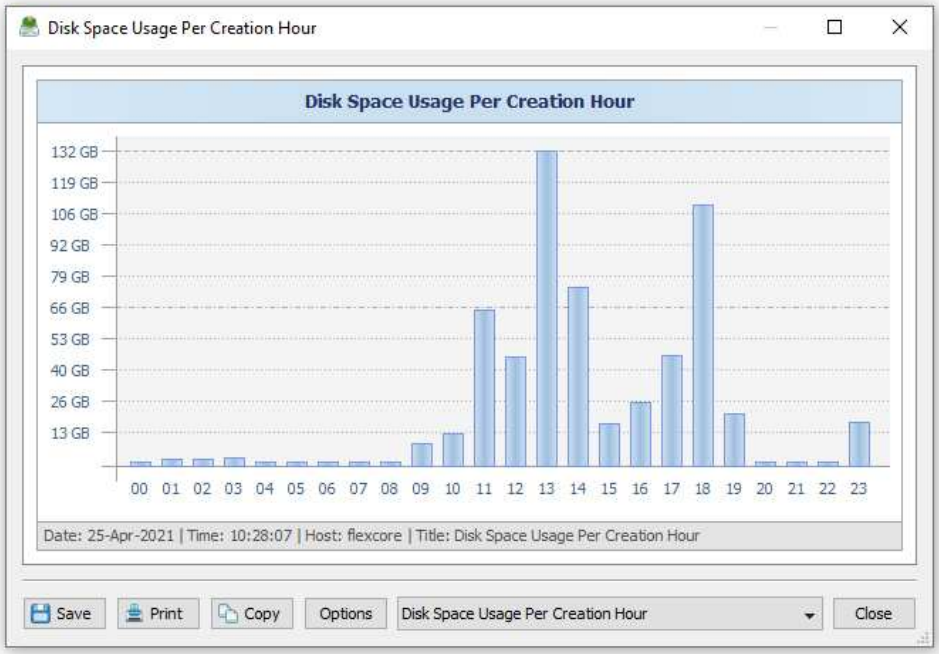


In addition, the user is provided with the ability to display timeline charts for filtered disk space analysis results. For example, in order to display how many documents were created per year, set the file categorization mode to 'Categorize By File Type', select the 'Documents, Books and Help Files' 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.



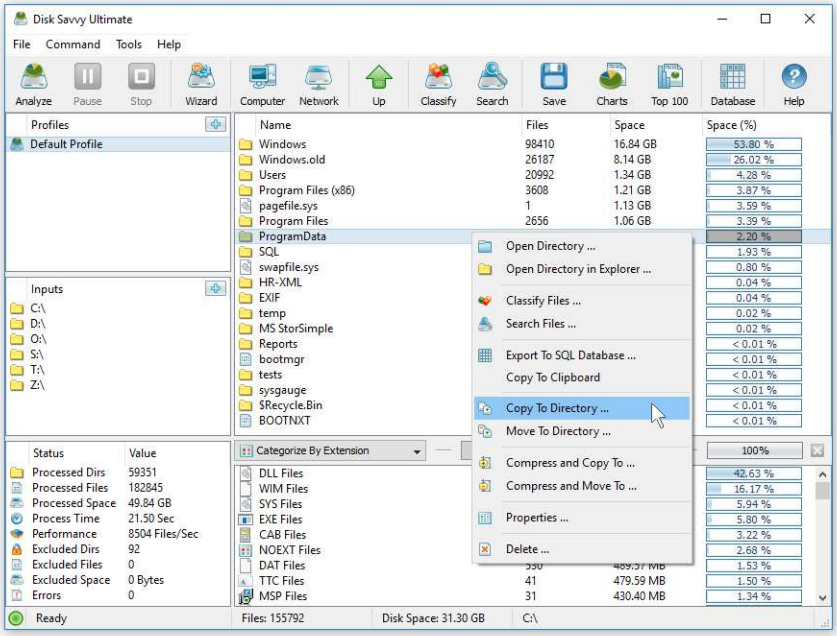
In order to identify which time of the day is the best time to perform backup operations, the user can display the 'Number of Files Per Creation Hour' or 'Number of Files Per Modification Hour' timeline charts.



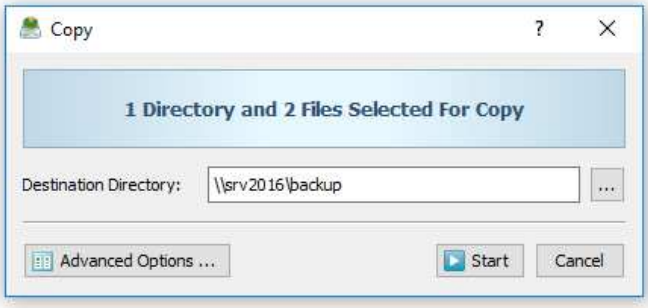
The 24-hours timeline chart shows how much disk space and how many files were created or modified during each hour of the day allowing one to easily select the time for backup operations. In order to save, a time line chart, press the 'Save' button, select an appropriate chart format, enter a file name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

3.5 Using Built-in File Management Operations

DiskSavvy 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.

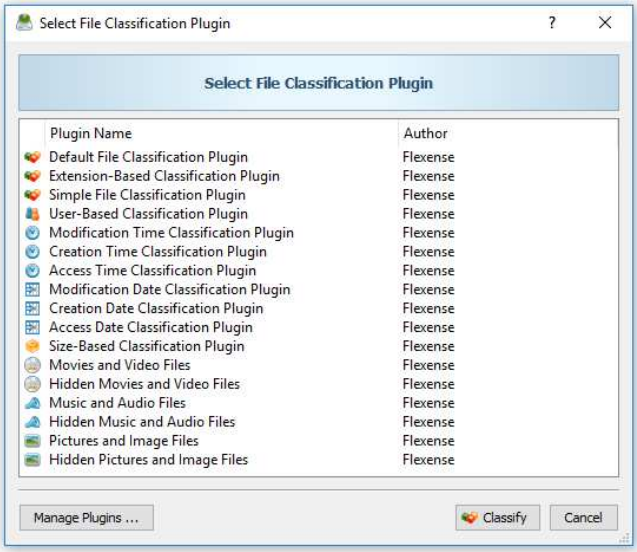


DiskSavvy provides a large number of advanced file copy options allowing one to control which types of files to copy, how fast to perform the file copy operation and how many parallel file copy threads to use. In order to open the 'Advanced Copy Options' dialog press the 'Advanced Options' button located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

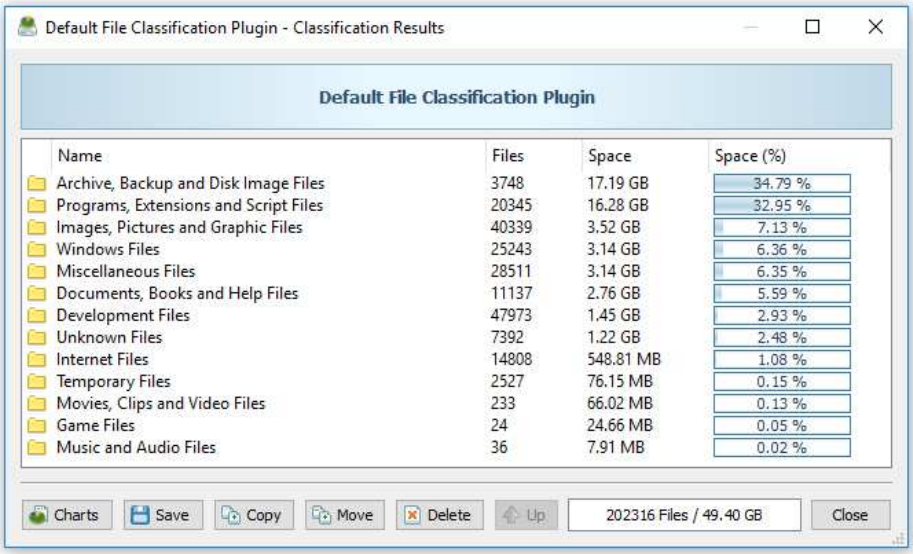
In order to delete one or more files or directories, select the required items in the disk space analysis results view, press the right mouse button and select the 'Delete' menu item. If a file delete operation is performed with an active file filter, DiskSavvy will delete only files matching the currently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

3.6 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.



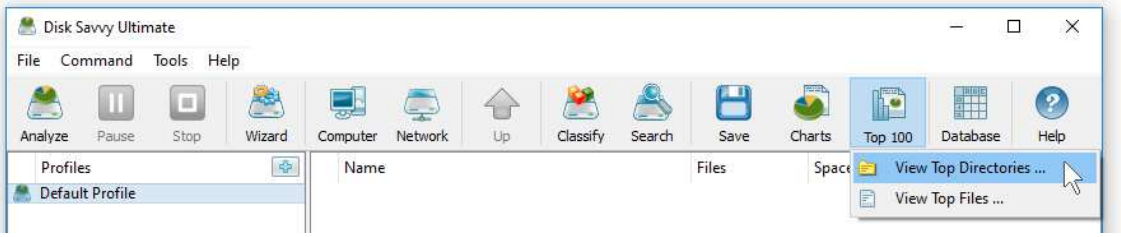
In order to classify files in a disk or directory, select the directory in the disk space analysis results view, press the right mouse button and select the 'Classify' menu item. On the file classification plug-ins dialog, select an appropriate file classification plug-in and press the 'Classify' button. 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.



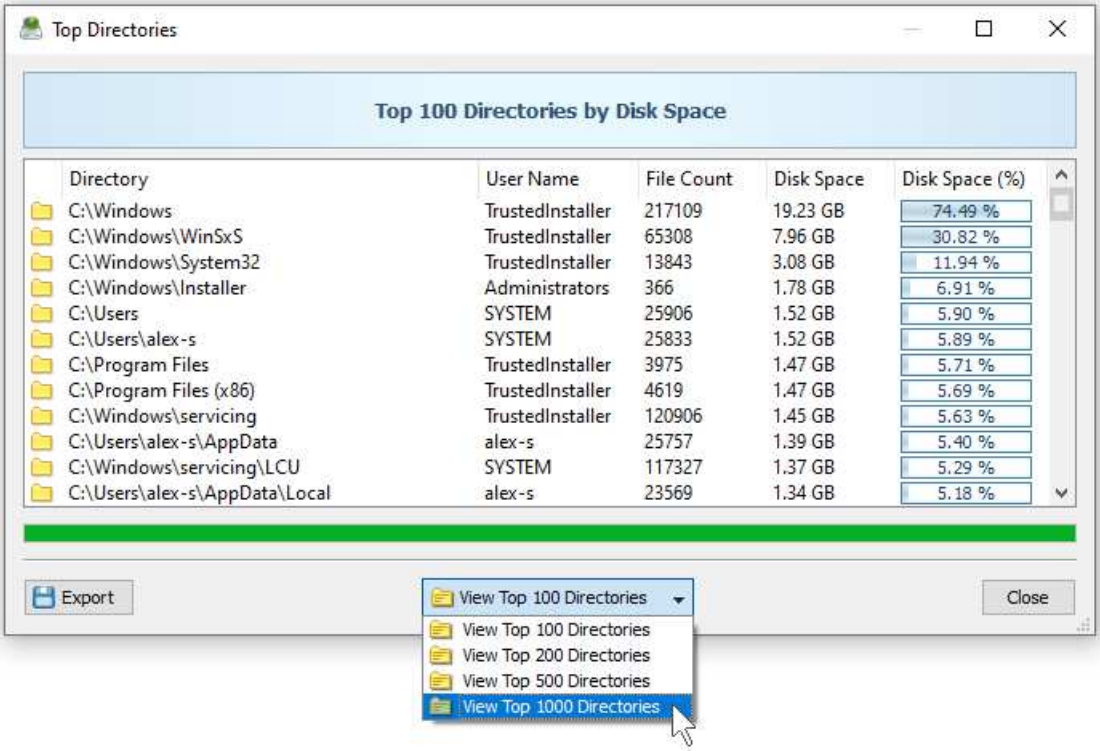
The file classification results dialog allows one to save file classification reports, display pie charts showing disk space usage per file category and perform file management operations such as file copy, move and delete on categories of files and individual files. For example, in order to delete all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

3.7 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.



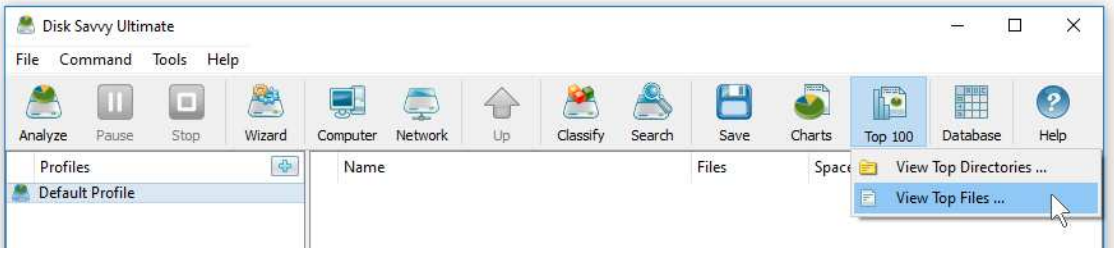
In order to display the list of top directories, analyze one or more disks or network shares, press the 'Top Files' button located on the main toolbar and select the 'View Top Directories' menu item. For each directory, the list of top directories shows the full directory name, the user name, the total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



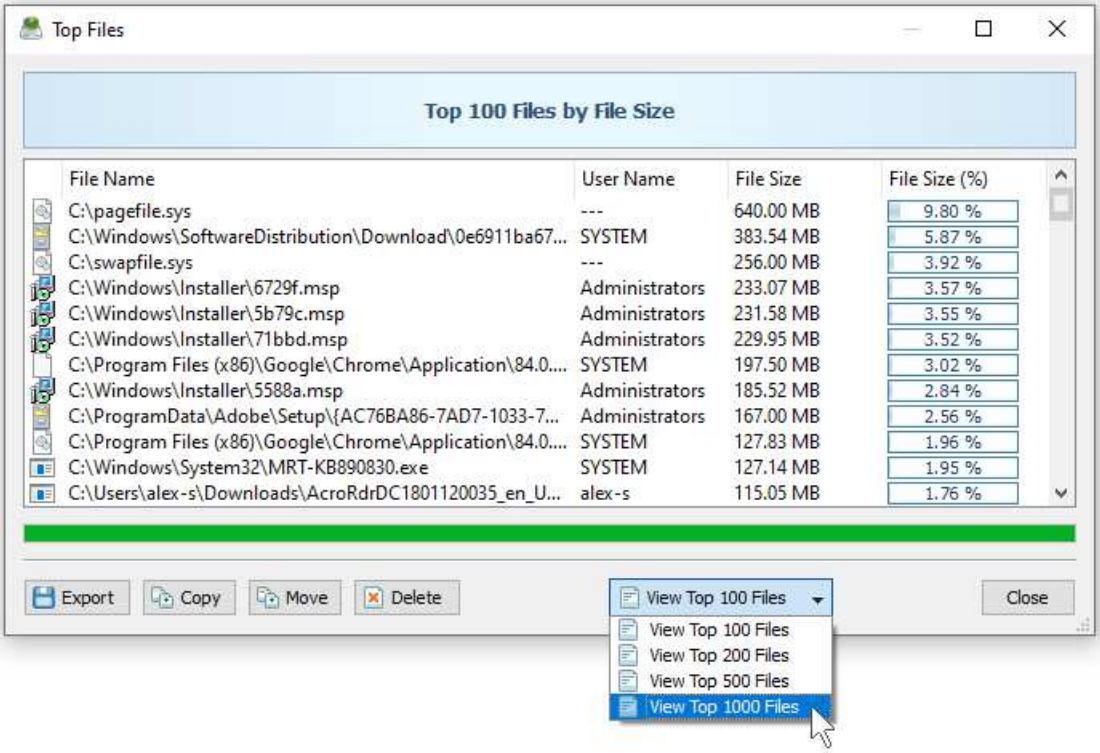
In order to export the list of top directories to a report file, press the 'Export' button located on the top directories dialog, select an appropriate report format, enter a file name to export the report to and press the 'Save' button.

3.8 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.

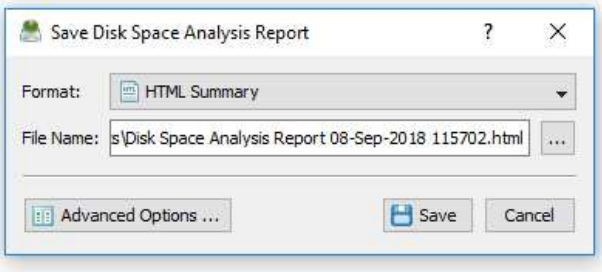


By default, DiskSavvy shows all types of files in the currently displayed location. In addition, the user is provided with the ability to show top files for specific types of files or file categories. For example, in order to display top programs and executable files in the Windows system directory, 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.

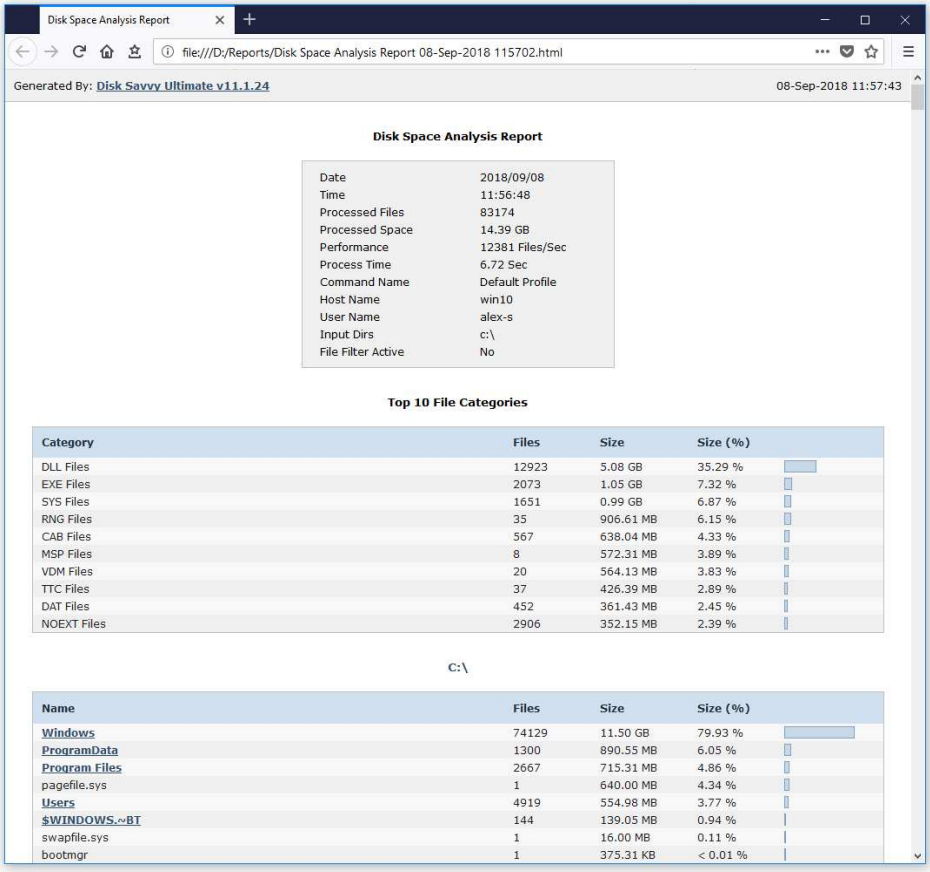
Finally, DiskSavvy provides the ability to export the list of top files to a number of report formats including HTML, PDF, Excel, text and CSV. In order to export the list of top files, press the 'Export' button located on the top files dialog, select an appropriate report format enter a file name to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

3.9 Saving Disk Space Analysis Reports

DiskSavvy allows one to save disk space analysis reports into a number of standard report formats including HTML, PDF, Excel, XML, text 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.

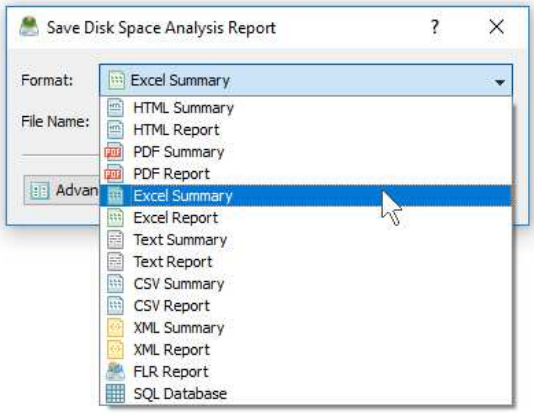


For the HTML, PDF, Excel, text, CSV and XML report formats, the user is provided with the ability to save a short summary report or a longer detailed report, which may be very long for large file systems containing millions of files. By default, DiskSavvy will save a short, summary disk space analysis 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.

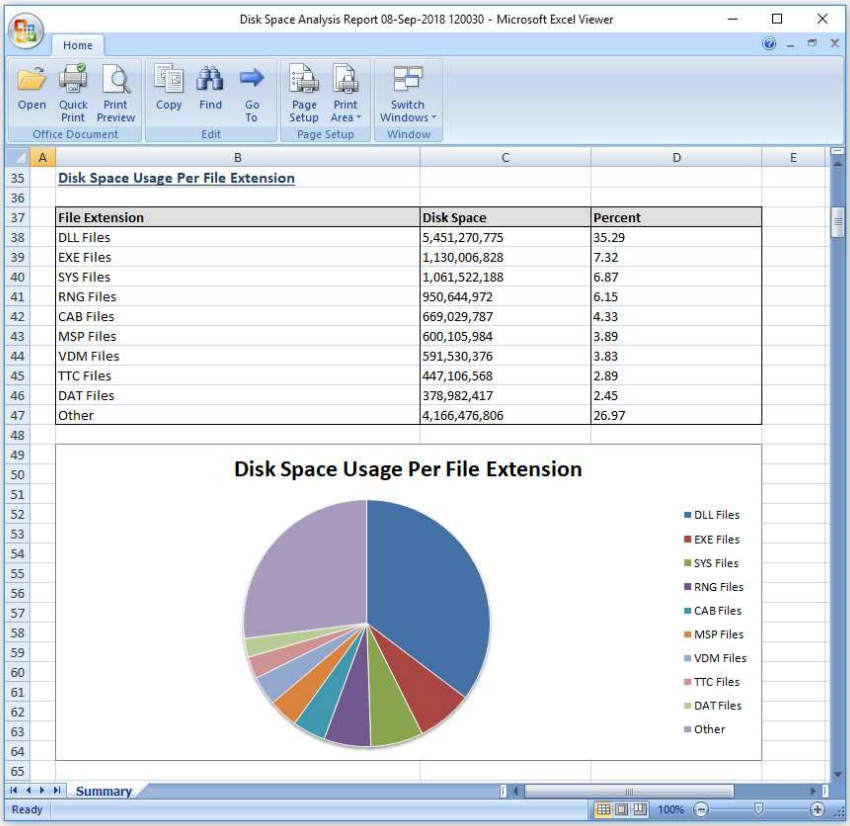


In addition, the user is provided with the ability to save disk space analysis results to the DiskSavvy native report format, which preserves all information related to each specific disk space analysis operation and may be loaded at any time by using the DiskSavvy GUI application.

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.



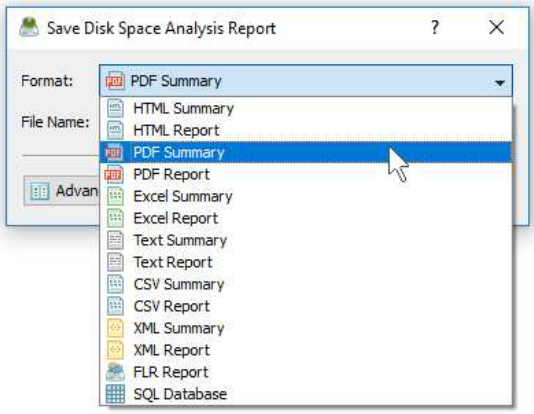
A summary Excel report includes a top-level list of analyzed disks and directories and a number of tables with pie charts showing the used disk space and the number of files per file extension, file category, file creation time, last modification time, user name, etc.



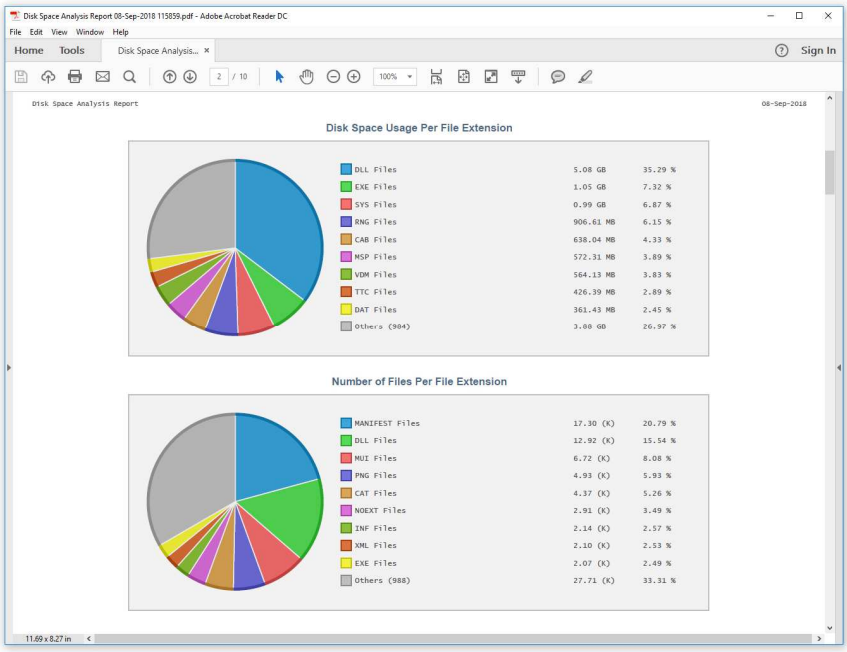
A detailed Excel report includes a list of file categories according to the currently selected file categorization mode and an hierarchy of directories and files sorted by the amount of the used disk space, which may be very long for large file systems containing millions of files. In order to control 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.

3.10 Saving 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.



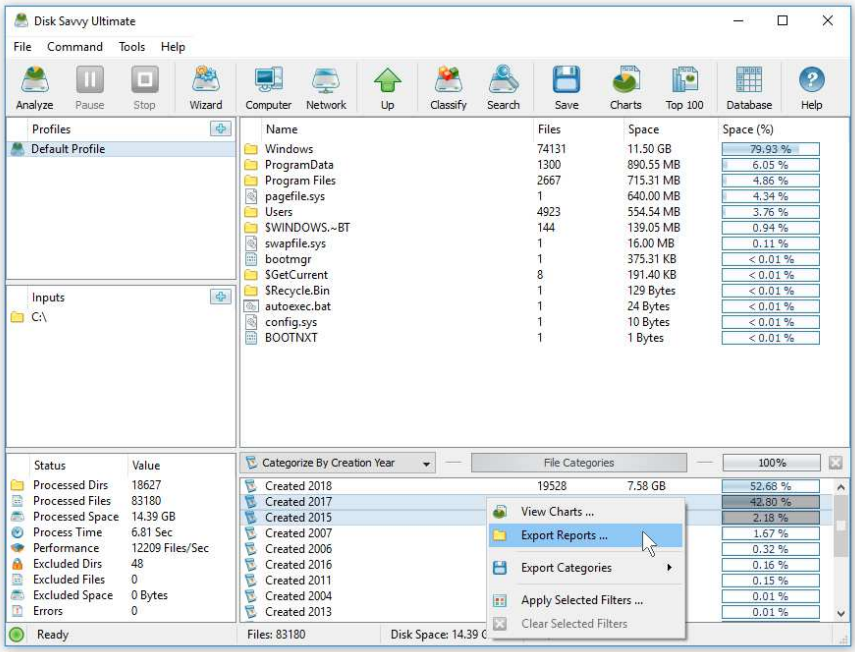
A summary PDF report includes a top-level list of analyzed disks, directories or network shares sorted by the amount of the used disk space followed by a number of pie charts showing the disk space usage and the number of files per file extension, file category, file creation time, last modification 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.



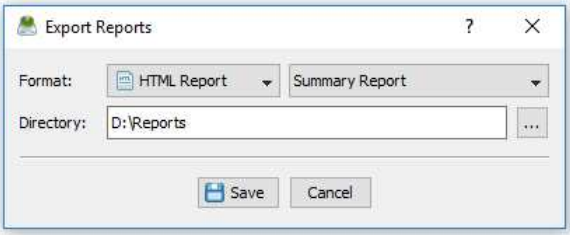
In addition to the directory tree sorted by the used disk space, detailed PDF reports include pie charts showing the disk space usage per file category and the number of files per file category according to the currently selected file categorization mode. For example, if the second-level file categories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

3.11 Batch Disk Space Analysis Reports

DiskSavvy allows one to save batches of disk space analysis reports according to the currently selected categories of files with each report showing the number of files per directory and the disk space usage for a corresponding category of files. For example, let's assume that we need to save disk space analysis reports for the last 10 years with each report showing the number of files per directory and the disk space usage for all files that were created during each year.



In order to generate such reports, set the file categorization mode to 'Categorize By Creation Year', select all years for which you need to generate analysis reports in the file categories view, press the right mouse button and select the 'Export Reports' menu item. On the 'Export Reports' dialog, select an appropriate report format and report mode, specify a destination directory to export reports to and press the 'Save' button.

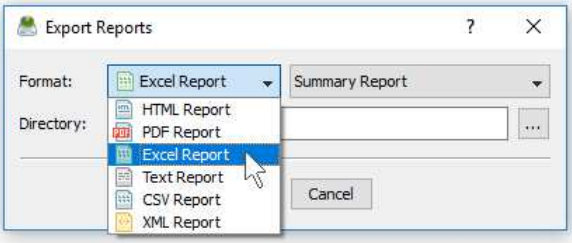


For each selected year, DiskSavvy will filter disk space analysis results by the file creation year and save an individual disk space analysis report in the specified destination directory with each report file name and report title containing the corresponding file creation year.

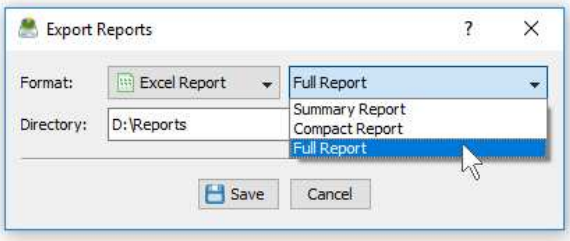
In the same way, the user can generate batches of analysis reports showing the number of files per directory and the disk space usage per user, last modification date, last access date, file attributes, file size, top directory or user-custom categories pre-configured using flexible file matching rules.

For example, in order to export individual disk space analysis reports for all users, set the file categorization mode to 'Categorize By User Name', select all the required users, press the right mouse button and select the 'Export Reports' menu item. Now, the destination directory will contain a series of disk space analysis reports with each report showing the number of files per directory and the disk space usage for the corresponding user.

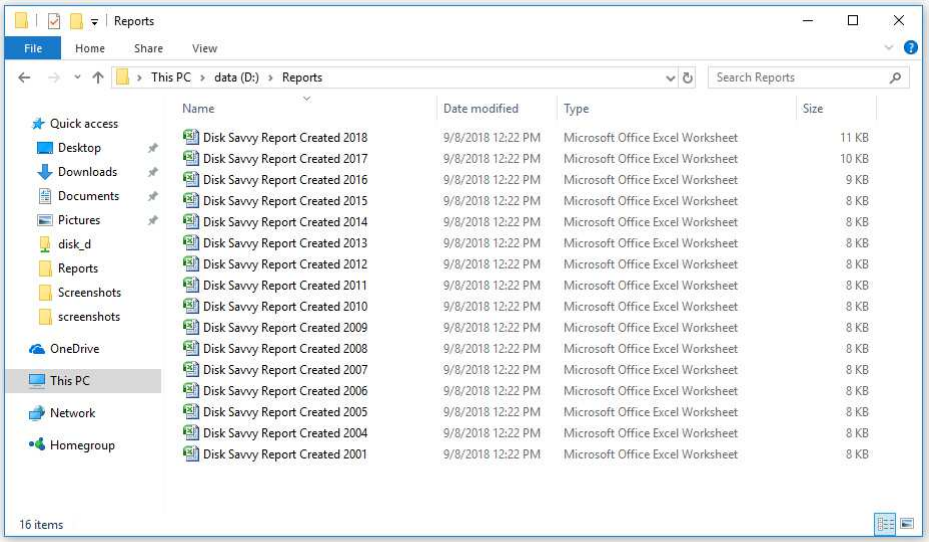
The batch reports dialog provides the ability to export reports to a number of standard report formats including: HTML, PDF, Excel, text, CSV and XML. Depending on the selected report format and report mode, each report will include a summary table showing statistics about the report and a list of tables showing disks, directories and files sorted by the amount of used disk space.



In addition, the batch reports dialog allows one to select one of the following report modes: summary report, compact report or full report. When the summary report mode is selected, each report will include a summary table and up to 3 levels of directories sorted by the amount of used disk space. When the compact report mode is selected, each report will include a summary table and up to 5 levels of directories with up to 20 files per directory sorted by the amount of used disk space. When the full report mode is selected, each report will include a summary table and a complete list of directories and files sorted by the amount of used disk space.

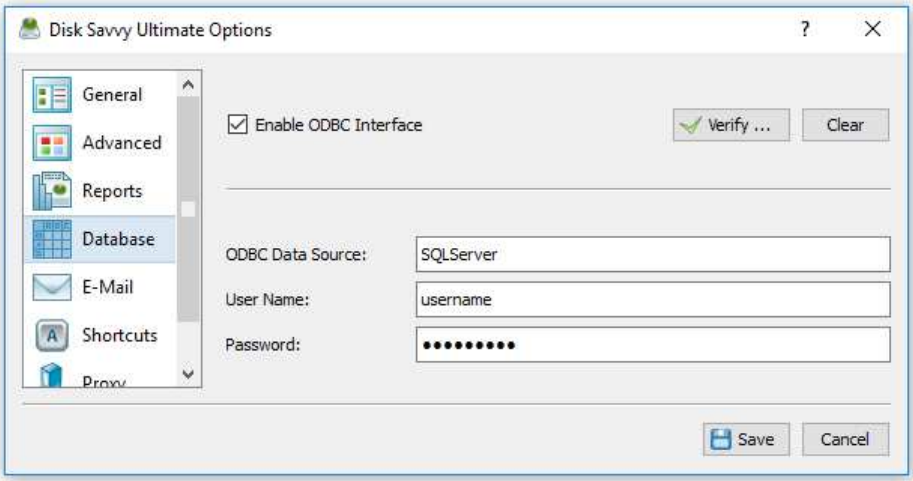


Once the export operation will be completed, the specified destination directory will contain a number of disk space analysis reports according to the selected file categorization mode, selected categories of files and the selected report format.

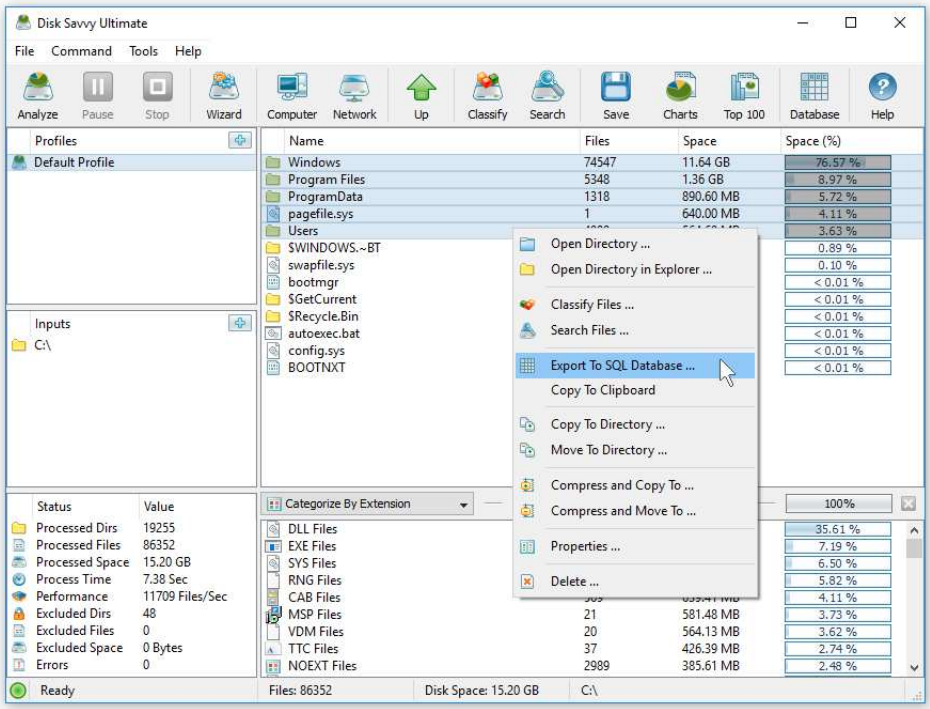


3.12 Exporting Disk Space Analysis Results to an SQL Database

DiskSavvy Pro and DiskSavvy Server 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.

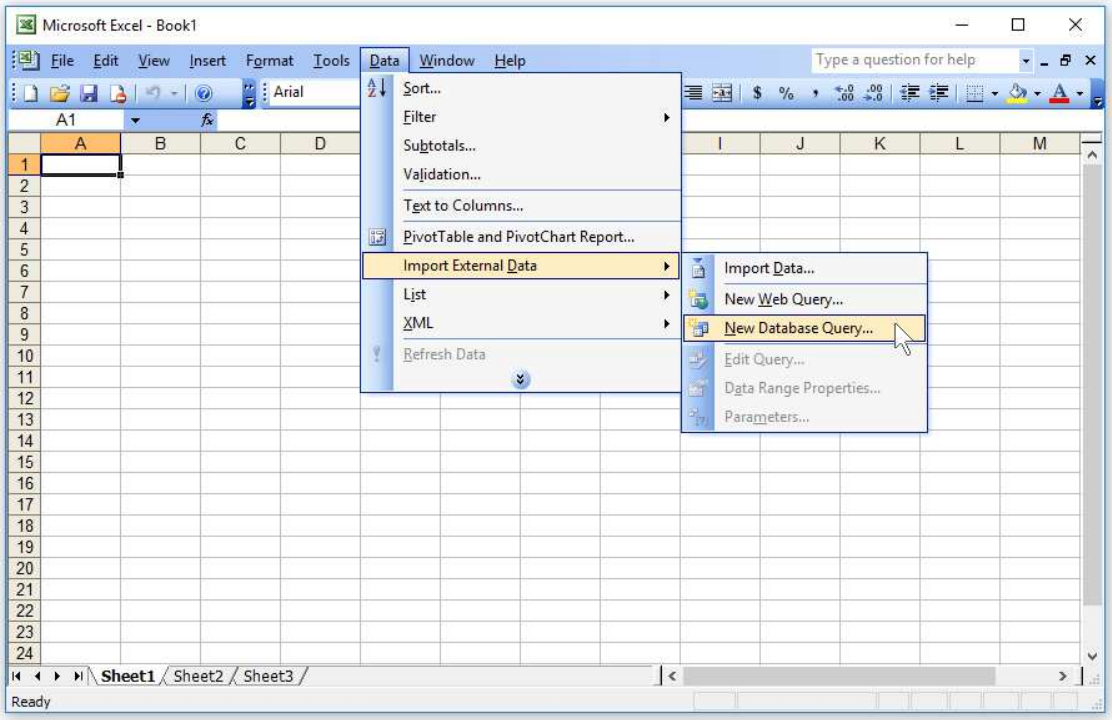


In order to configure the ODBC interface, open the main options dialog, select the 'Database' tab, enable the ODBC database interface, enter the ODBC data source name, the ODBC user name and password to use to connect to the SQL database and then press the 'Verify' button to check the specified ODBC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

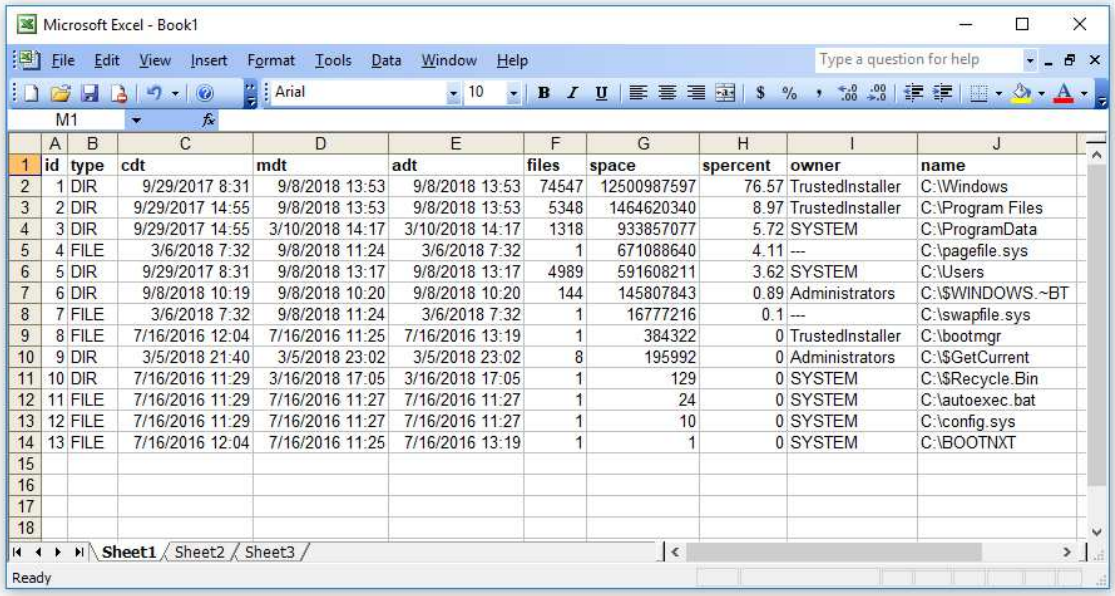


Once finished configuring the ODBC database interface, select one or more directories and/or files, press the right mouse button, select the 'Export To SQL Database' menu item and enter the name of the SQL database table to export disk space analysis results to. DiskSavvy will connect to the specified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



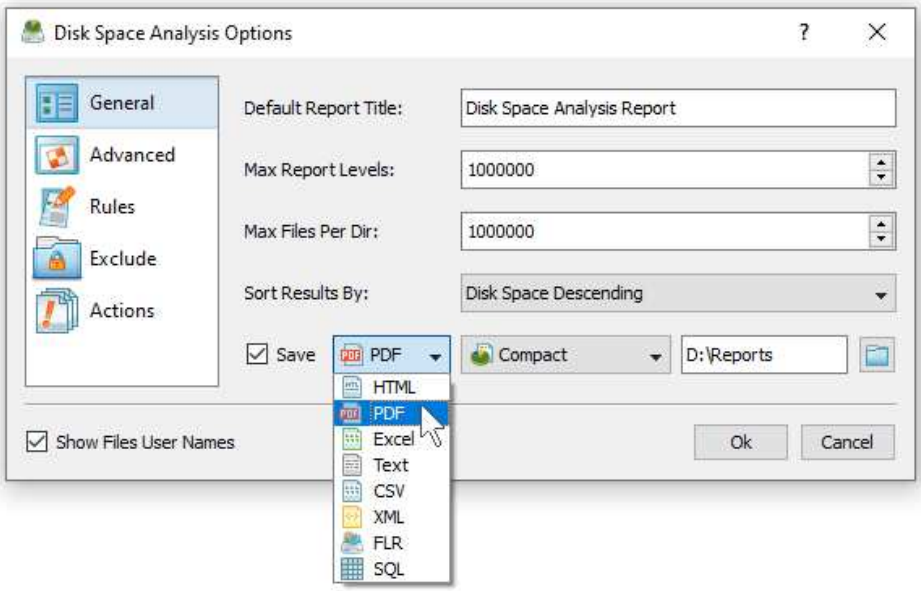
For each disk space analysis result, DiskSavvy exports to the SQL database the following columns of data: a unique result ID, the type of the result (DIR or FILE), the creation date, the last modification date, the last access date, the total number of files in a directory, the total size of all files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



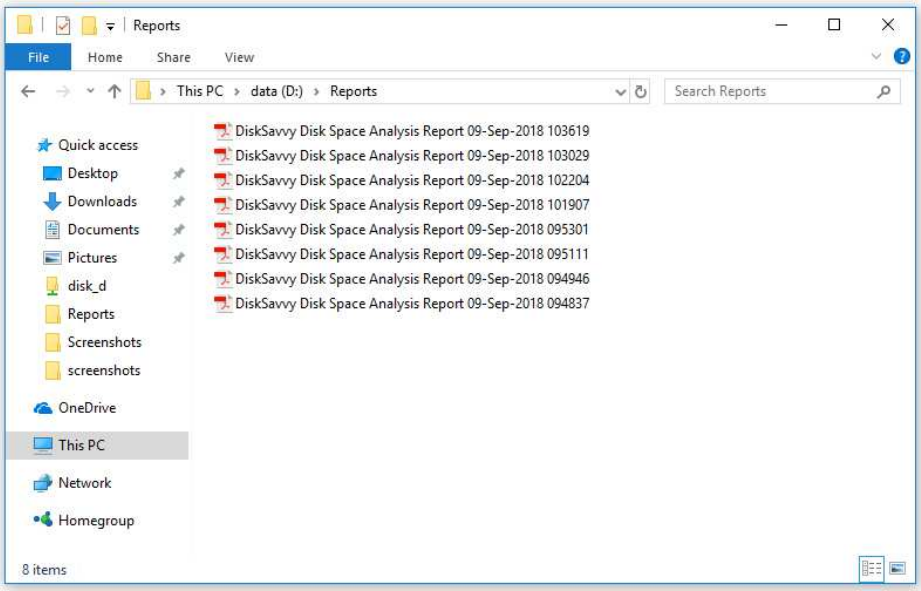
id	type	cdt	mdt	adt	files	space	spercent	owner	name
1	DIR	9/29/2017 8:31	9/8/2018 13:53	9/8/2018 13:53	74547	12500987597	76.57	TrustedInstaller	C:\Windows
2	DIR	9/29/2017 14:55	9/8/2018 13:53	9/8/2018 13:53	5348	1464620340	8.97	TrustedInstaller	C:\Program Files
3	DIR	9/29/2017 14:55	3/10/2018 14:17	3/10/2018 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

3.13 Automatic Generation of Disk Space Analysis Reports

In addition to the ability to save disk space analysis reports manually, DiskSavvy Pro and DiskSavvy Server 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.



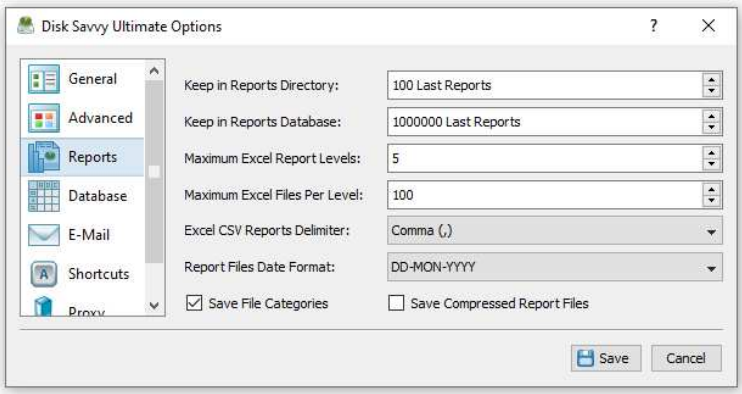
In order to configure automatic report generation for a disk space analysis operation, open the disk space analysis options dialog, select the 'Advanced' tab, enable the 'Save Report' option, select an appropriate report format and specify a directory to save reports in. Every time the disk space analysis 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.

3.14 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.

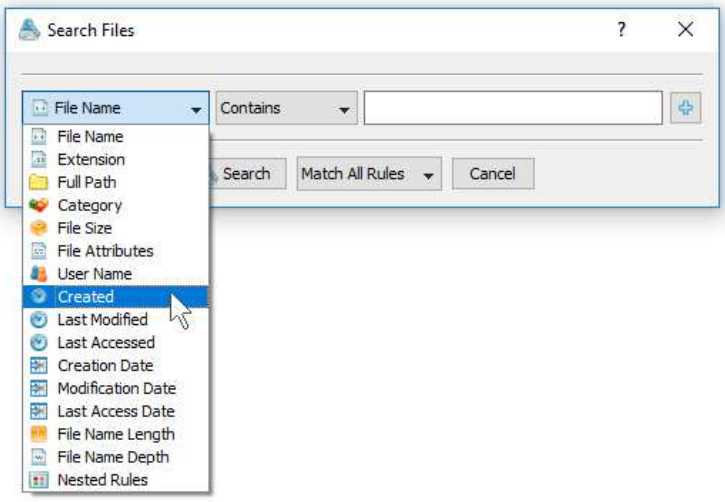
The '**Report Files Date Format**' option provides the ability to customize the reports date format. By default, DiskSavvy uses an easily readable date format. In addition, the user is provided with a number of alternative date formats and allowing one to sort disk space analysis results by the last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

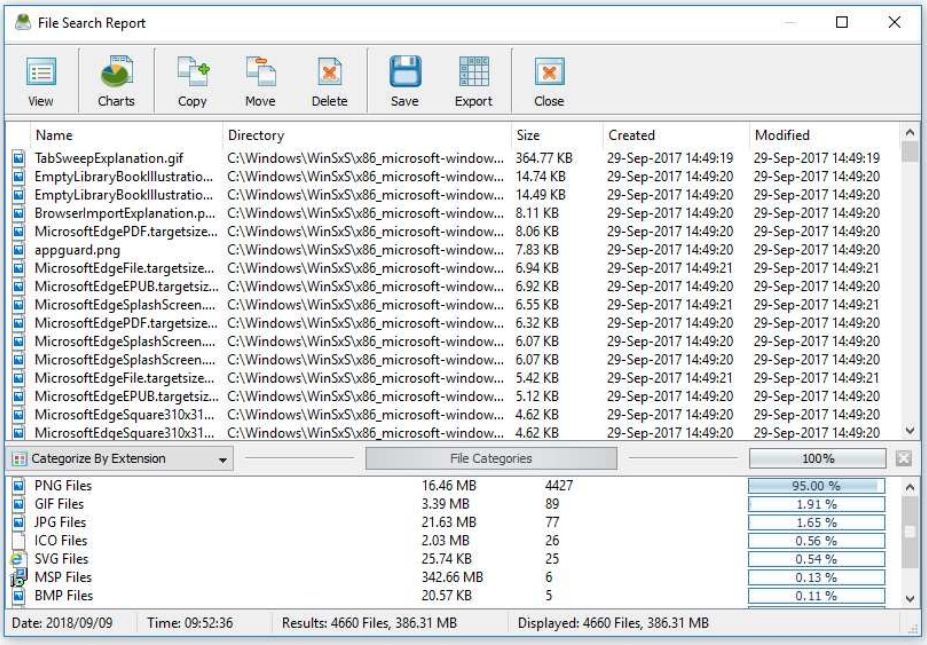
The '**Save Compressed Report Files**' option allows one to save automatically generated HTML, text, Excel CSV and XML reports as GZ compressed archive files.

3.15 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.



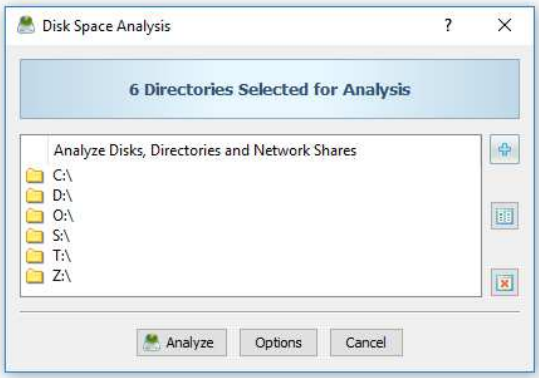
By default, the search operation will be performed on all disk space analysis results. In order to search files in a specific disk, directory or network share, select one or more directories in the disk space analysis results view, press the right mouse button and select the 'Search Files' menu item. 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.

3.16 Analyzing Multiple Disks or Directories

DiskSavvy is capable of performing disk usage analysis in a number of disks, directories or network shares simultaneously. In order to analyze multiple locations, open the disk space analysis profile dialog, press the 'Add' button located on the right side of the list of analysis locations and add all the disks, directories and/or network shares that should be analyzed.

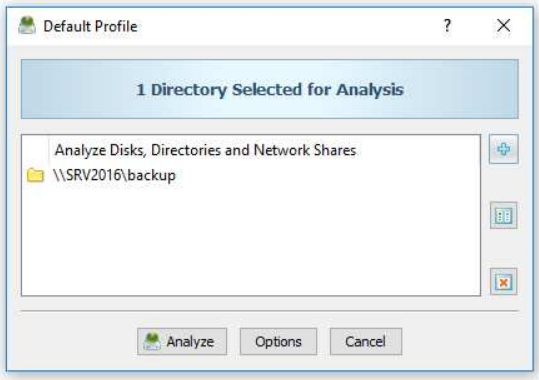


DiskSavvy is optimized for modern multi-CPU and multi-core systems and is capable of analyzing multiple disk, directories and/or network shares in parallel. In order to enable parallel analysis of multiple disks and directories, open the disk space analysis options dialog, select the 'Advanced' tab and specify the number of parallel processing threads to use to scan disks and directories.

3.17 Analyzing Network Shares Using UNC Path Names

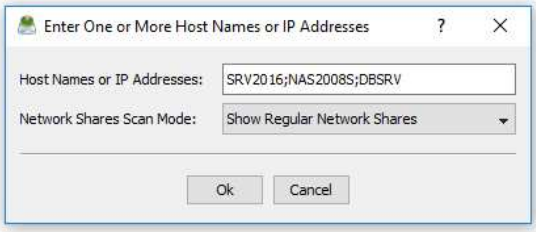
In order to simplify the disk space analysis process for networked computers and/or NAS storage devices, DiskSavvy allows one to specify network shares and directories that should be processed using UNC path names without mounting each network share as a local disk.

When working with UNC path names, it is important to keep in mind that all file management operations such as copy, move and delete will be performed using UNC path names and the user should have appropriate permissions on each specific network share and/or NAS storage device.

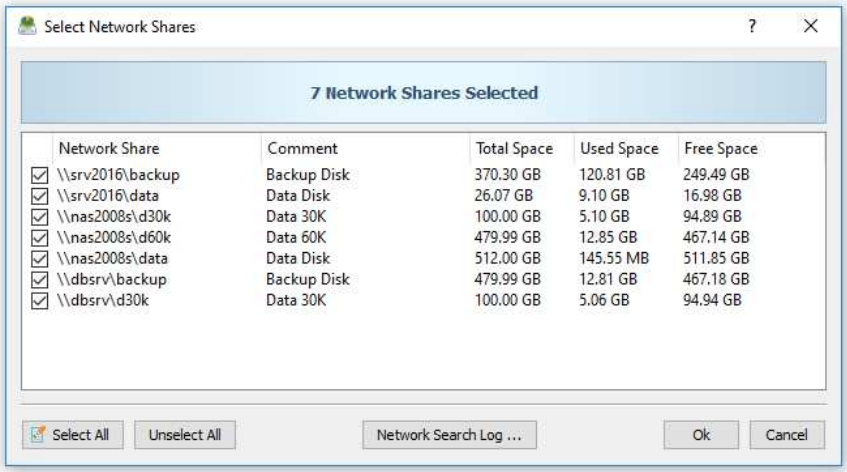


3.18 Analyzing Network Servers and NAS Storage Devices

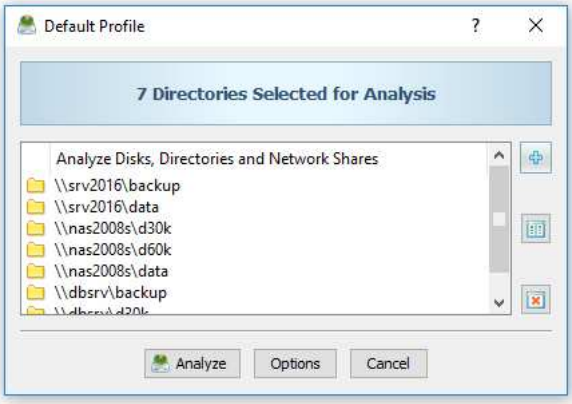
DiskSavvy allows one to analyze disk space usage in all network shares of one or more servers or NAS storage devices on the network. In order to analyze one or more servers, open the disk space analysis dialog, press the 'Add' button located on the right side of the list of analysis locations, select 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.

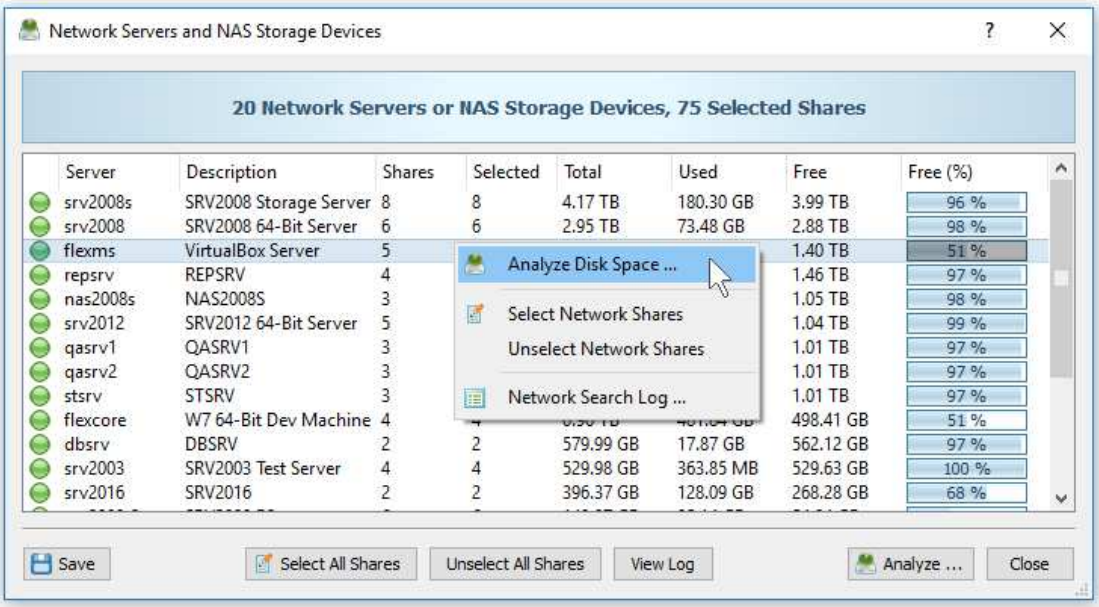


The network shares scanning operation may be performed multiple times for different servers and NAS storage devices and an unlimited number of network shares from different servers may be added to the disk space analysis operation. During runtime, DiskSavvy will analyze all the specified network shares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

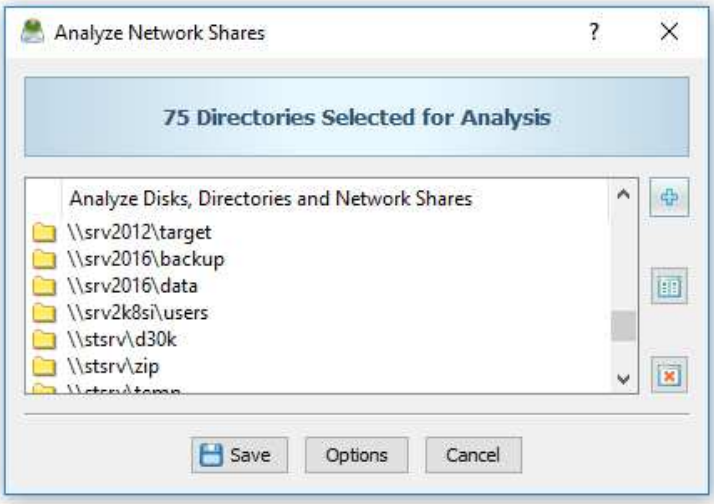


3.19 Discovering Network Servers and NAS Storage Devices

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.



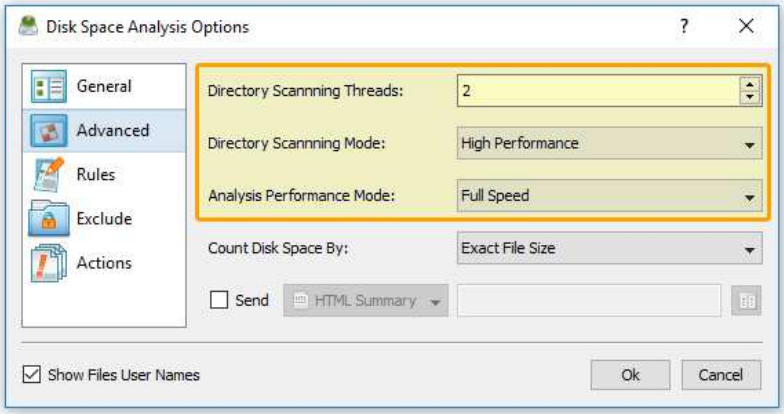
In order to discover all network servers and NAS storage devices on the network, press the 'Network' button located on the main toolbar and wait while DiskSavvy will scan the network and show a list of detected network servers and NAS storage devices. In order to analyze disk space usage in one or more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



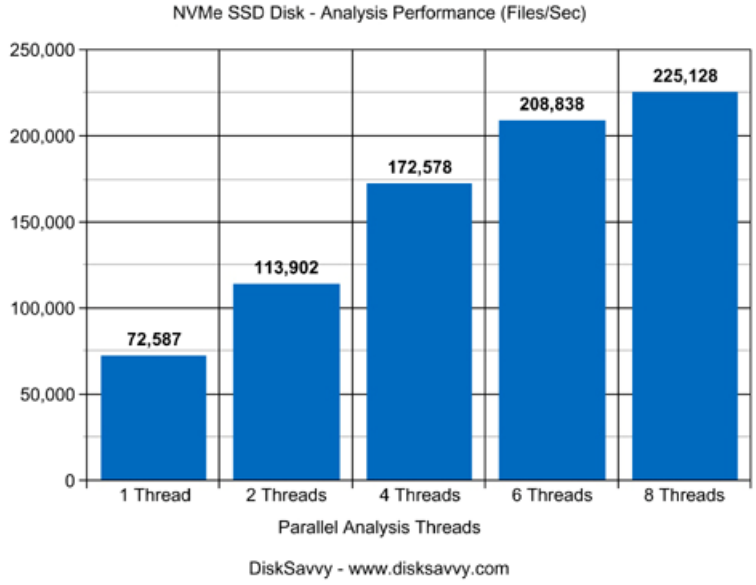
DiskSavvy will show all accessible network shares hosted on the selected servers and NAS storage devices allowing one to analyze disk space usage and save various types of disk space analysis charts and reports. In addition, the user is provided with the ability to customize a large number of advanced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

3.20 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.

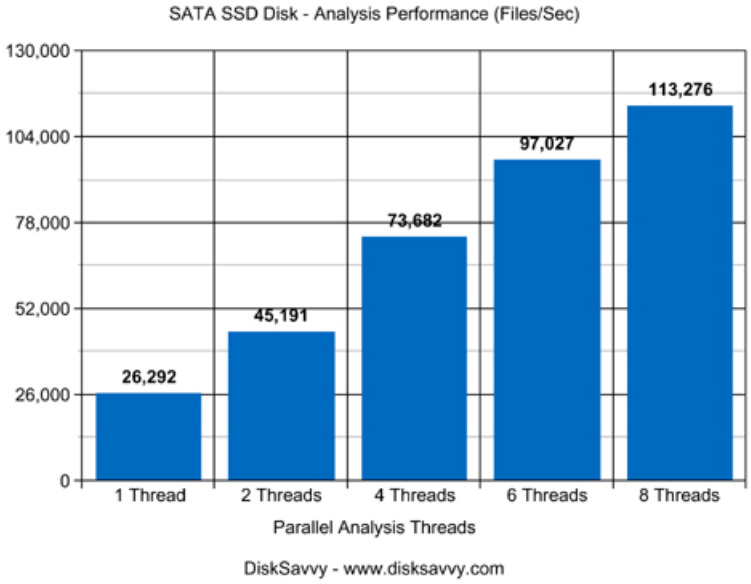


In order to customize the disk space analysis performance optimization options, open the disk space analysis operation dialog, press the 'Options' button and select the 'Advanced' tab. The 'Dir Scan Threads' option controls how many parallel disk space analysis threads are used to scan input disks, directories 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.

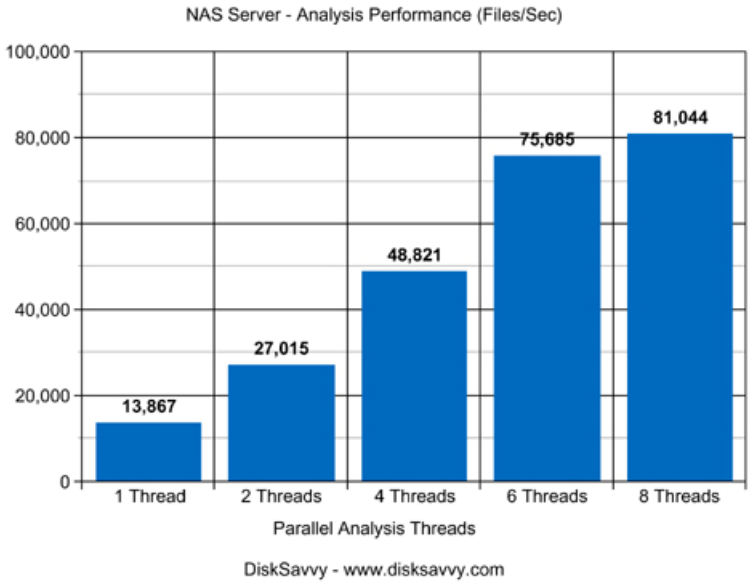


For example, when analyzing files stored on a high-speed NVMe SSD disk, DiskSavvy reaches up to 72,000 files/sec using a single disk space analysis thread. With two parallel analysis threads, the performance scales up to 113,000 files/sec and with four parallel analysis threads, the performance increases 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.

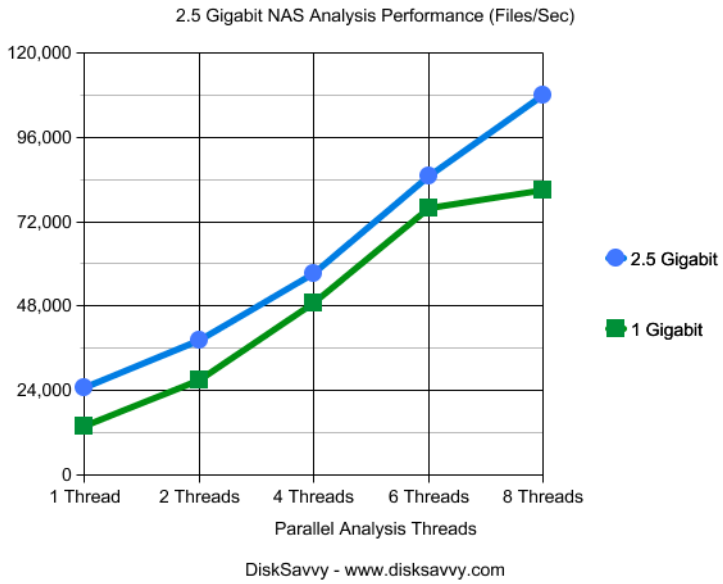


Analyzing files stored on NAS storage devices via a network is more complicated because the user needs to take into account the speed and the latency of the network. If the computer, on which DiskSavvy is installed, is connected to the NAS storage device via a high-speed, low-latency network, the performance 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.

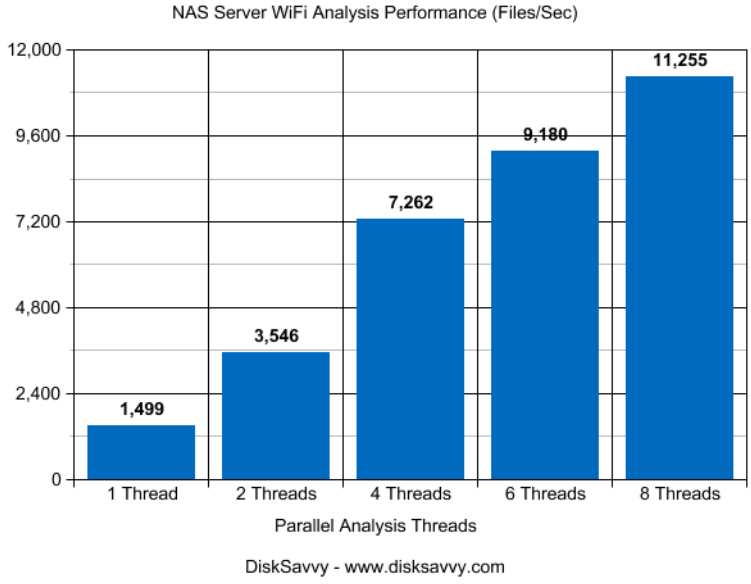


On the other hand, if DiskSavvy will need to access network shares via the Internet or via a long-distance, high-latency network, the performance of the disk space analysis operations will be relatively slow. One of the options to increase the performance of the analysis operations in such configurations 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.

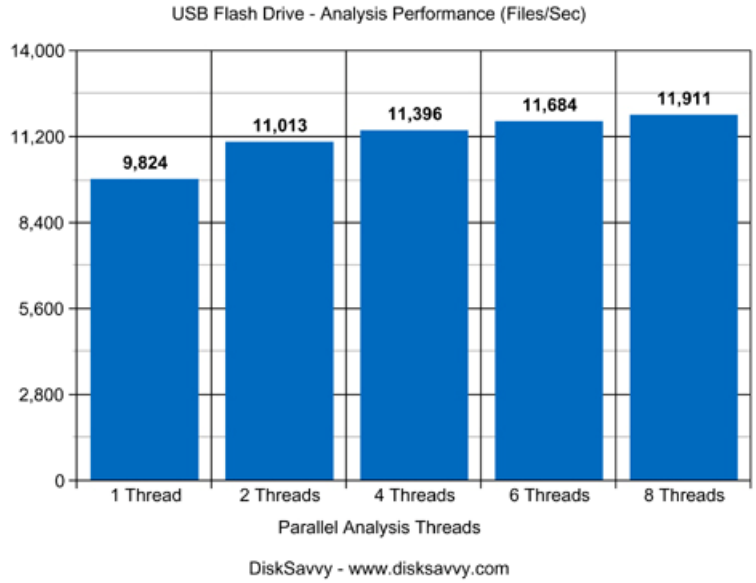


Due to a very wide adoption of laptops and NAS servers with built-in WiFi network interfaces, many users may consider analyzing NAS servers via the wireless network. But, the latency of the wireless network is much higher and therefore it will take much more time to complete the disk space analysis operation 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.

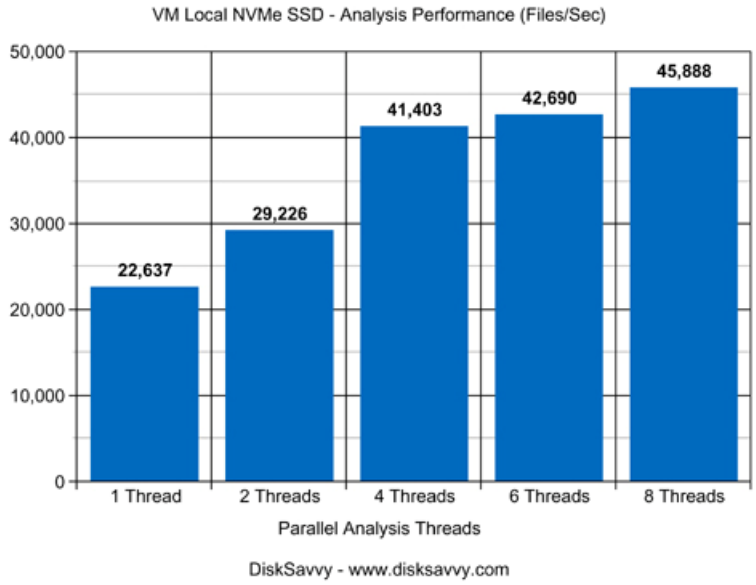


Based on our benchmarks, via a 5 GHz wireless network, DiskSavvy reaches up to 1,500 Files/Sec with a single disk space analysis thread and scales up to 11,000 Files/Sec with 8 parallel disk space analysis threads, which is approximately 7 times slower compared to the standard Gigabit Ethernet and 10 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.



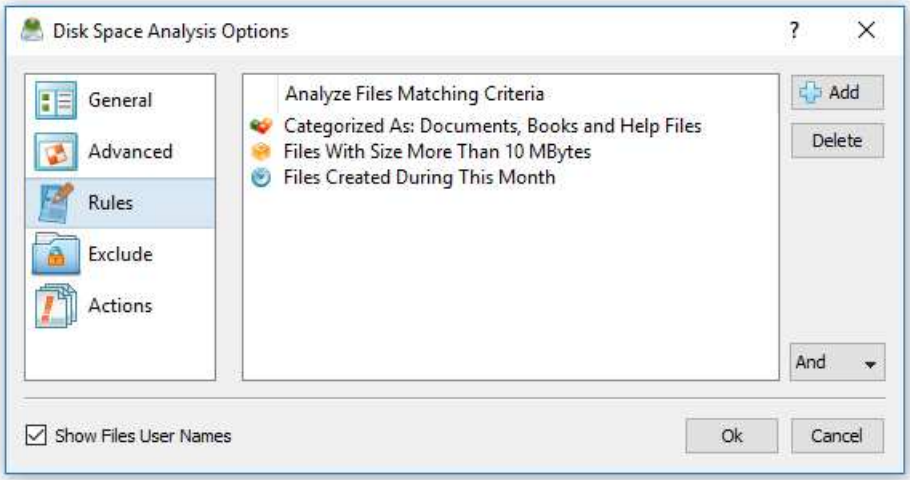
Today, modern IT environments widely deploy virtual servers and/or virtual workstations. Most of the popular virtualization platforms provide a high level of performance, but anyway some performance degradations are inevitable when a task is executed on a guest virtual machine compared to the same task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



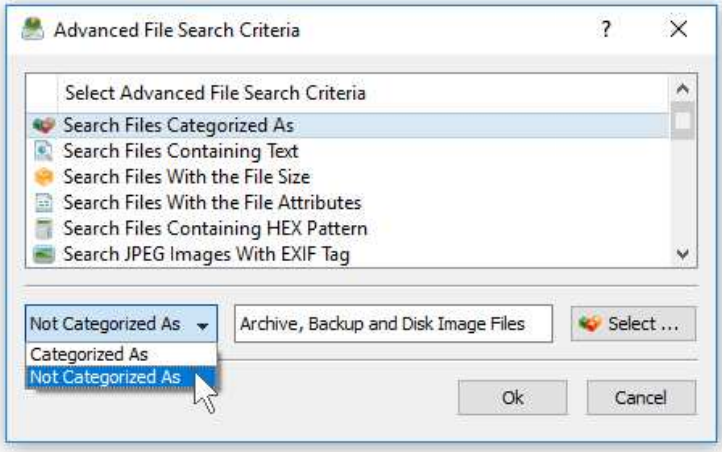
For example, when a virtual machine with 4 virtual CPUs is stored on an NVMe SSD disk and analyzing files stored on a virtual local disk drive, which is physically stored on the same NVMe SSD disk, the performance of the disk space analysis operations reaches up to 22,000 files/sec using one disk space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

3.21 Analyzing Disk Usage for Specific Types of Files

DiskSavvy Pro 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.

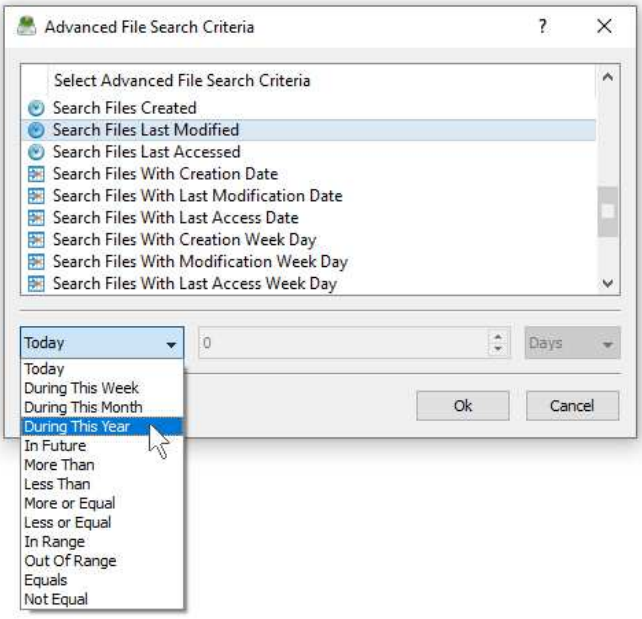


In order to add one or more file matching rules, open the profile dialog, select the 'Rules' tab and press the 'Add' button. On the 'Rules' dialog select an appropriate rule type and specify all the required parameters.

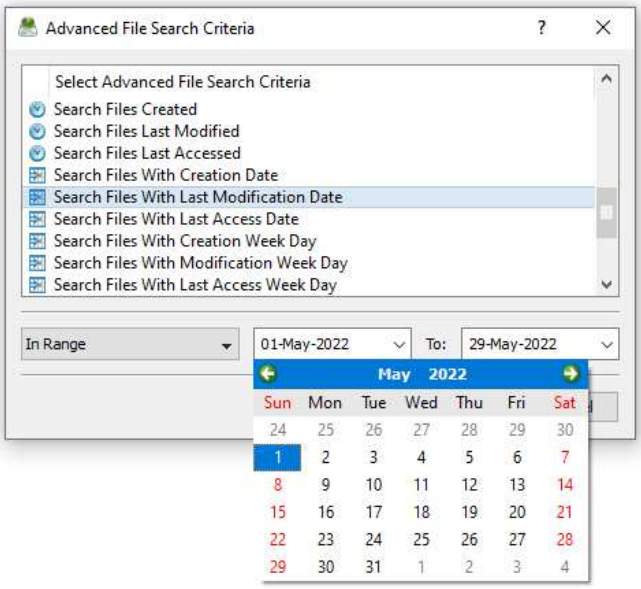


During the disk space analysis process, DiskSavvy Pro will process all the entered input directories and apply the specified file matching rules to all the existing files. Files not matching the specified rules will be skipped from the disk usage analysis process and the results view will contain user-selected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



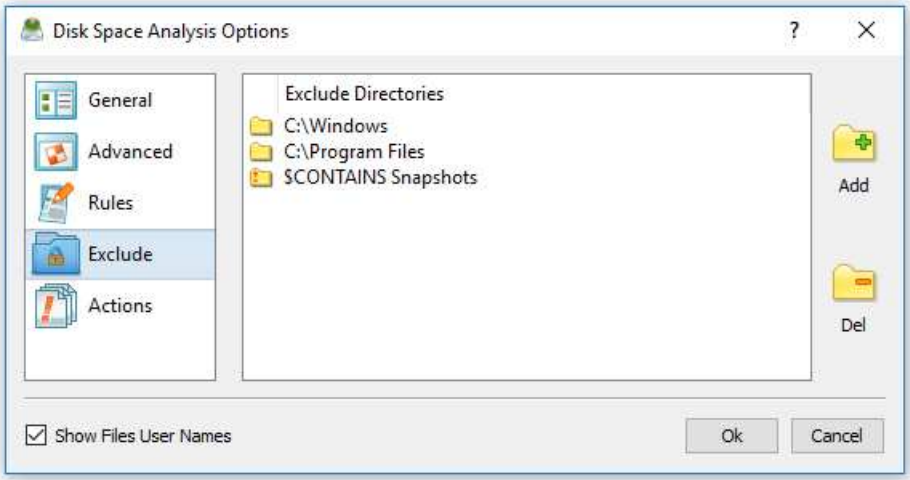
In addition, there are analysis rules to match files by the number of days, months, years, hours, minutes or seconds since the creation, last modification or the last access time allowing one to precisely select which files to analyze. Finally, the user is provided with the ability to analyze files created, 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.

3.22 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.

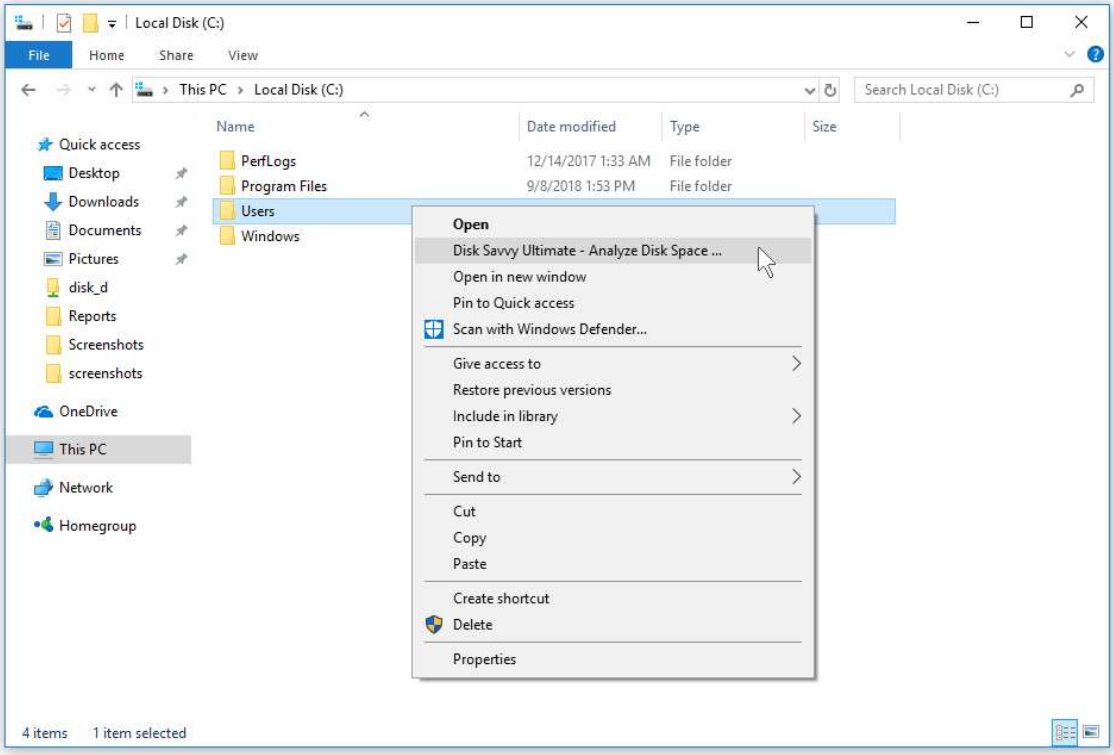
DiskSavvy provides the following exclude directories macro commands:

- **$BEGINS <Text String>** - this macro command excludes all directories beginning with the specified text string.
- **$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.

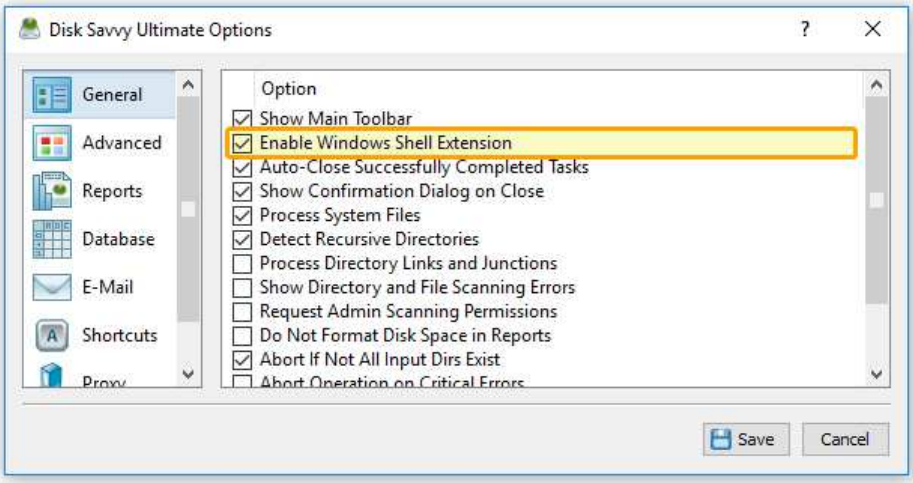
For example, the exclude macro command '$CONTAINS Temporary Files' will exclude all directories with 'Temporary Files' in the full directory path and the exclude macro command '$REGEX \.(TMP|TEMP)$' will exclude directories ending with '.TMP' or '.TEMP'.

3.23 Windows Shell Extension

DiskSavvy provides a Windows shell extension allowing one to analyze disk space usage directly from the Windows Explorer application. In order to analyze one or more disks or directories, select the required disks or directories in the Windows Explorer application, press the right mouse button and select the 'DiskSavvy - Analyze Disk Space' menu item.

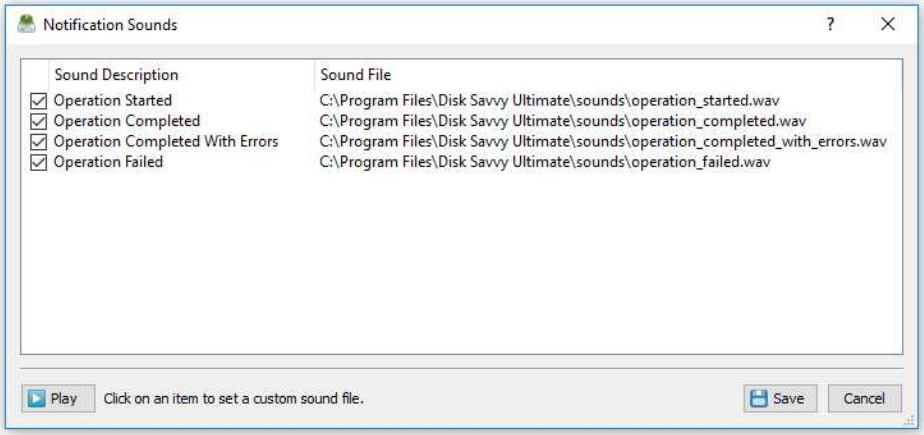


In most cases, the Windows shell extension is a very useful feature, but sometimes, when the user have too many installed shell extensions, the Windows context menu may become too cluttered. In order to remove the DiskSavvy entry from the Windows context menu, open the options dialog, select the 'General' tab and disable the Windows shell extension.

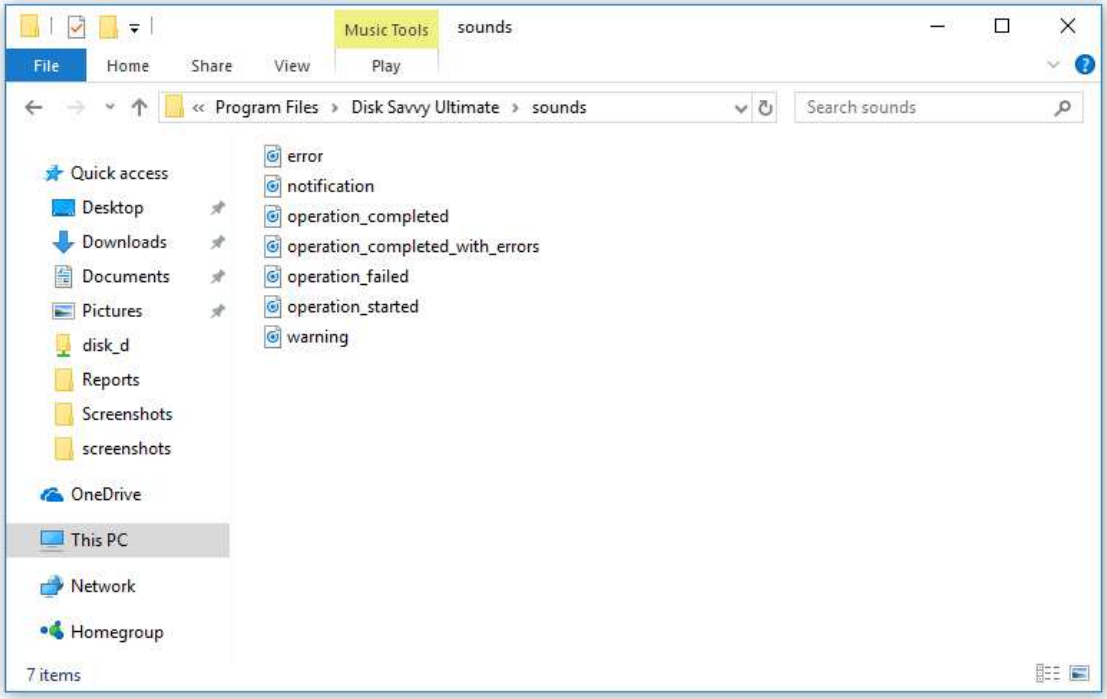


3.24 Sound Notifications

DiskSavvy provides the ability to play notification sounds when a disk space analysis operation is started, completed or failed. In addition, the user is provided with the ability to enable, disable or customize all types of sound notifications.



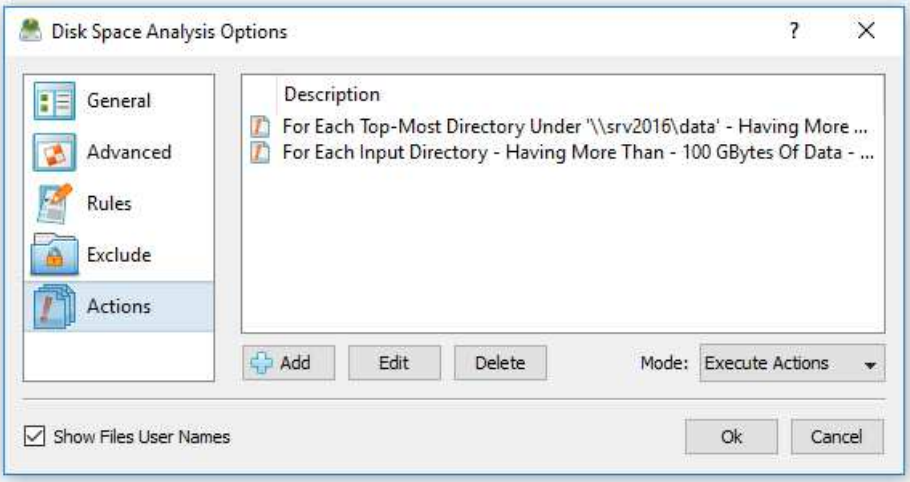
In order to open the 'Notification Sounds' dialog, select the 'Tools - Notification Sounds' menu item. The 'Notifications Sounds' dialog shows all the available sound notifications and allows one to enable or disable specific sound notifications.



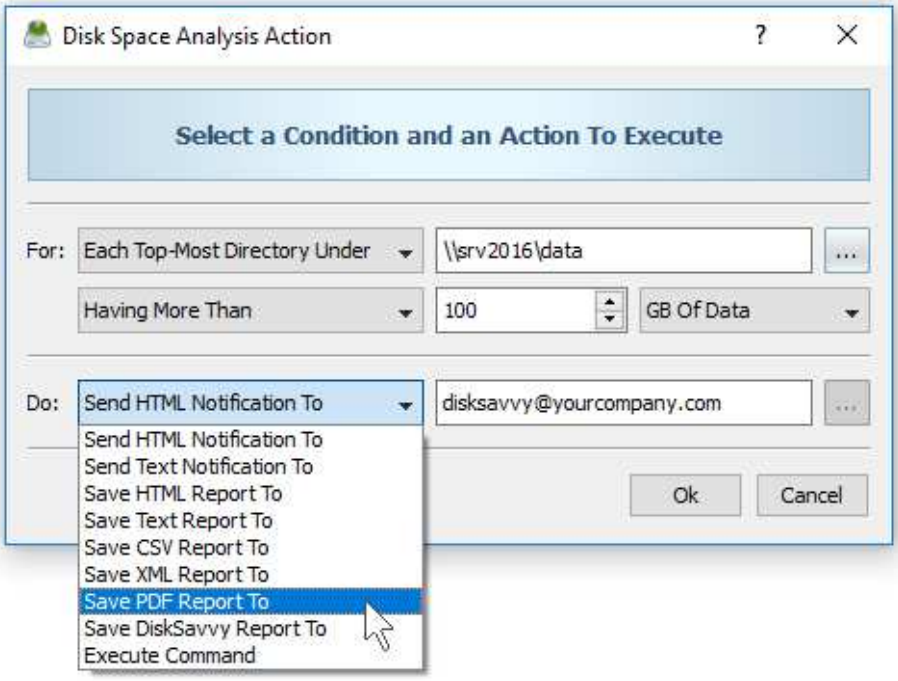
In order to select a custom notification sound file, click on a notification sound item in the sounds list and select a custom WAV file. In order to play a notification sound, select the required notification sound in the sounds list and press the 'Play' button.

3.25 Executing Disk Space Analysis Actions

DiskSavvy Pro and DiskSavvy Server 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.

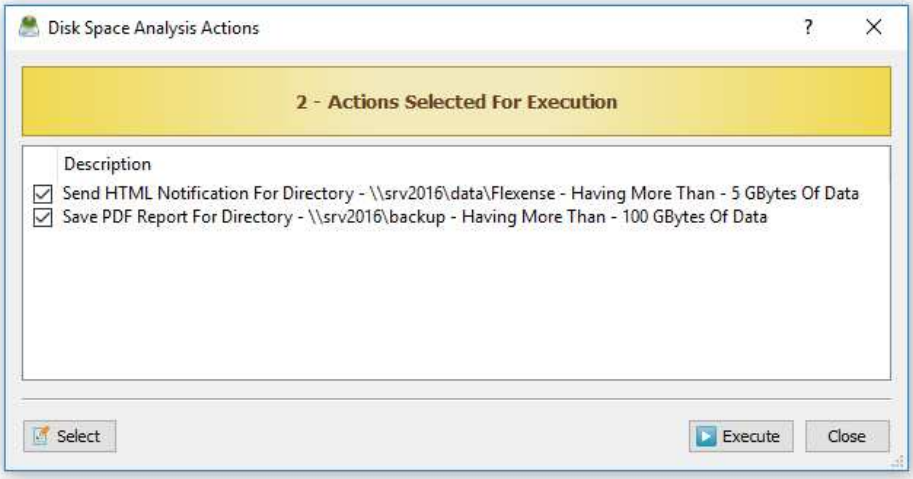


For example, DiskSavvy allows one to send e-mail notifications, save disk space analysis reports and/or execute custom commands when there are too many files, too much space is consumed or the free space is below a specified limit in one or more disks or directories.

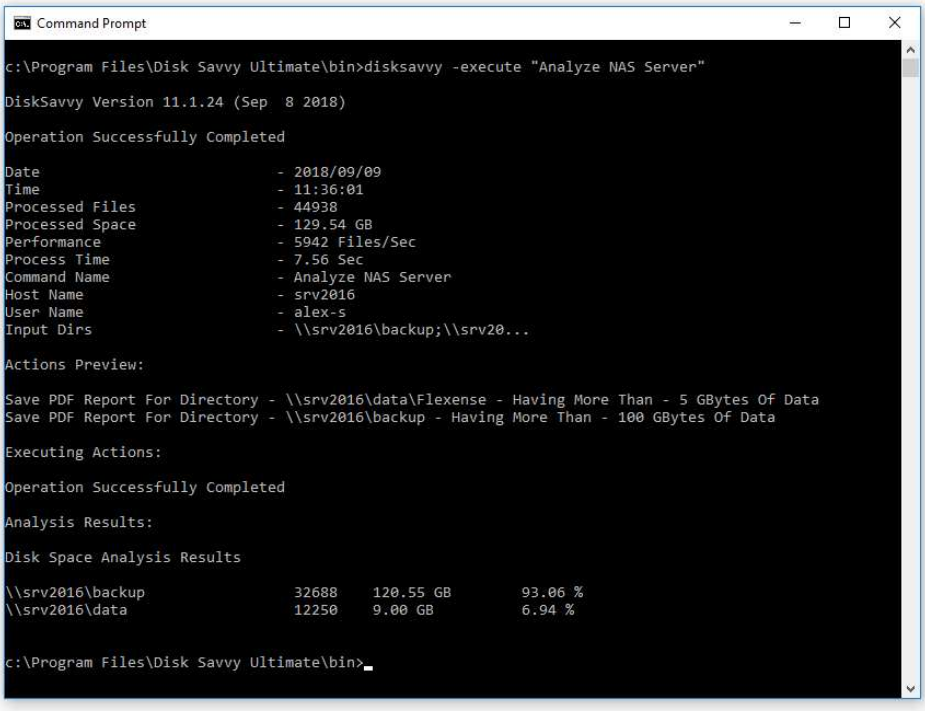


In order to add one or more storage analysis actions, open the profile dialog, select the 'Actions' tab, press the 'Add' button and specify the condition to be met and the action to execute.

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.

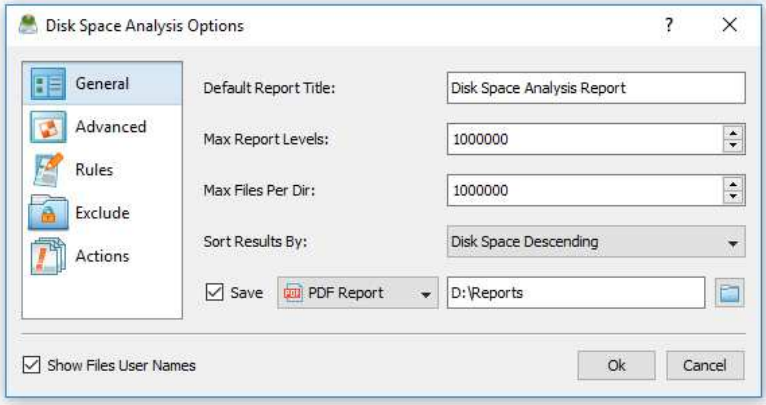


In order to execute disk space analysis actions fully automatically, in an unattended mode, change the actions mode from 'Preview' to 'Execute' and use the DiskSavvy command line utility, which will process all the input directories and execute the specified storage analysis actions fully automatically.



3.26 Advanced Disk Space Analysis Options

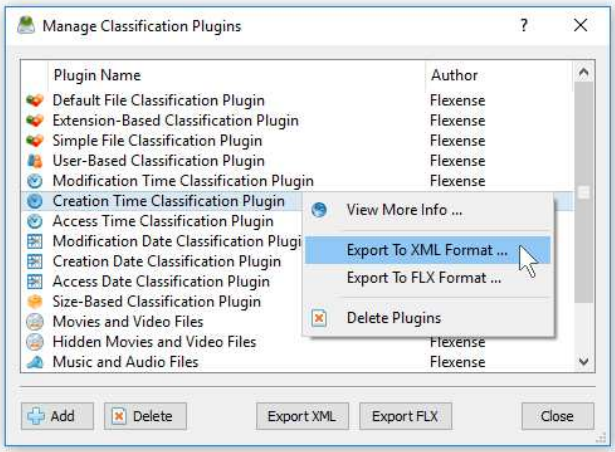
By default, DiskSavvy performs disk space analysis using generic settings, which should be appropriate for most users. In addition, power computer users are provided with a number of configuration options allowing one to customize the disk usage analysis process for user specific needs. In order to customize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

3.27 Managing File Classification Plug-ins

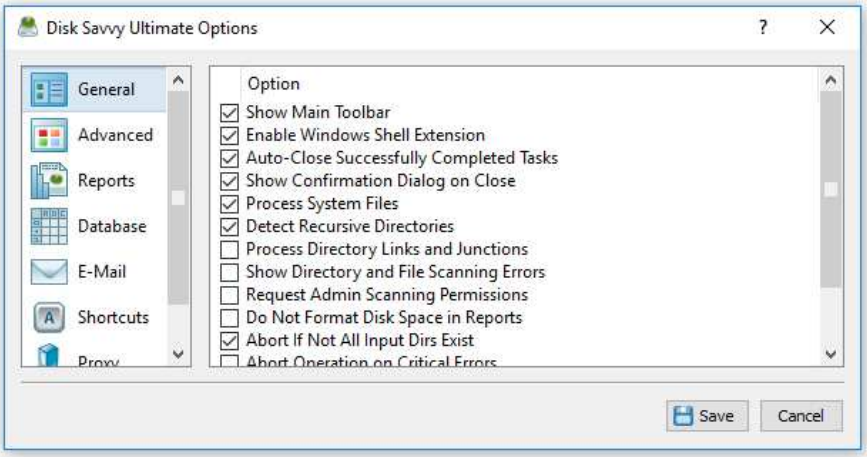
A standard DiskSavvy installation includes the 'Default File Classification Plug-in', which is capable of recognizing more than 2500 of the most popular file types and formats and allows one to organize them into a logical file hierarchy. In addition, a number of advanced file classification plug-ins are available for registered users of DiskSavvy Pro.



Finally, DiskSavvy Pro 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.

3.28 Configuring DiskSavvy GUI Application

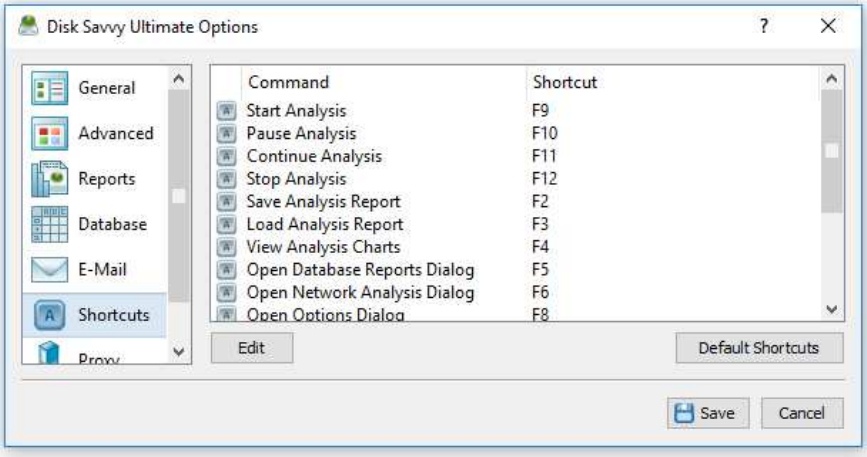
Select the 'Tools - Advanced Options' menu item to open the options dialog.



The '**General**' tab allows one to control the following options:

- Show Main Toolbar - Enables/Disables the main toolbar
- Always Show Profile Dialog Before Start - This option instructs DiskSavvy to show the profile dialog before starting the analysis process.
- Auto-Close Successfully Completed Tasks - select this option to automatically close the process dialog and show analysis results.
- Automatically Check For Product Updates - select this option to instruct DiskSavvy to automatically check for available product updates.
- Show Scanning Access Denied Errors - select this option to see error messages when DiskSavvy is prevented to scan files in a directory
- Process System Files - select this option to analyze system files and directories
- Abort Operation On Critical Errors - by default DiskSavvy is trying to process as many files as possible logging non-fatal errors in a process log. Select this option to instruct DiskSavvy to abort operation when encountering a critical error.

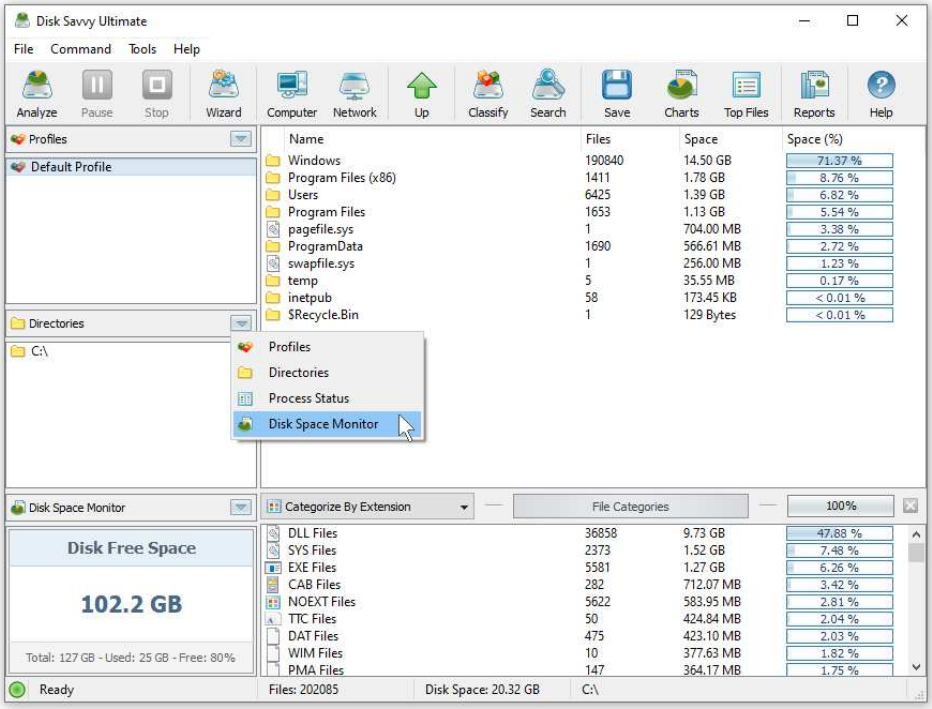
The '**Shortcuts**' tab provides the user with the ability to customize keyboard shortcuts. Click on a shortcut item to edit the currently assigned key sequence. Press the 'Default Shortcuts' button to reset all keyboard shortcuts to default values.



The '**Proxy**' tab provides the user with the ability to configure the HTTP proxy settings. DiskSavvy uses the HTTP protocol in order to inquire whether there is a new product version available on the web site.

3.29 Customizing DiskSavvy GUI Application

The main DiskSavvy GUI application includes a side-bar allowing one to select different types of status views and customize the GUI application. The user is provided with the disk space analysis profiles view, the current profile view, the disk space analysis process status view and the disk space monitor status view. In order to select a different status view, click the status menu button located in the top-right corner and select a required status view type.



The disk space analysis profiles status view displays the list of configured disk space analysis profiles and provides the ability to add, edit and delete disk space analysis profiles. In addition, the user is provided with the ability to perform disk space analysis operations, export and/or import disk space analysis profiles. For example, in order to add a new disk space analysis profile, click the right mouse button over the profiles view and select the 'Add Profile' menu item.

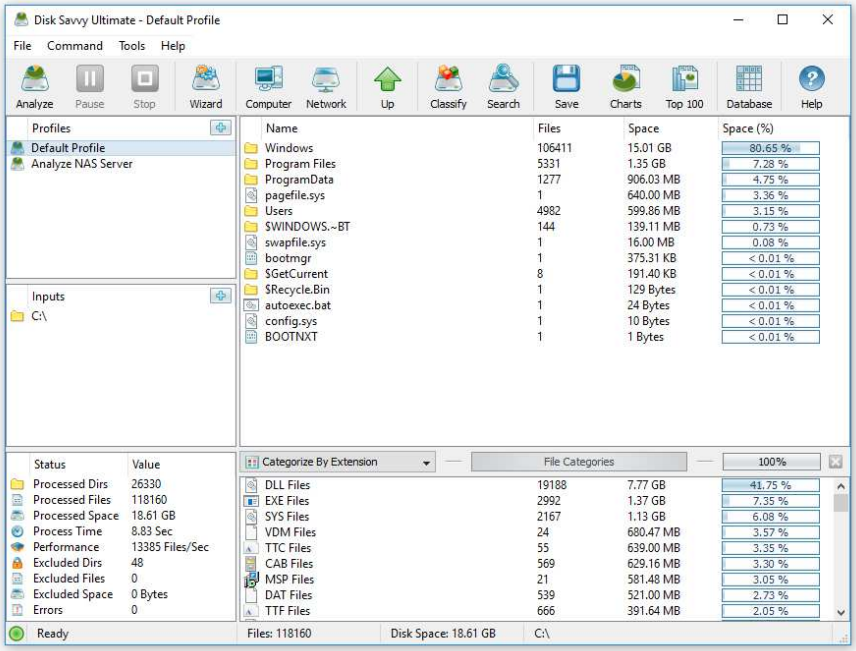
The current disk space analysis profile view, shows the list of disks, directories and network shares configured to be processed during the disk space analysis operation. The current profile view allows one to add, edit and delete input directories, disks and network shares. For example, to add a directory to the current disk space analysis profile, click the right mouse button over the current profile view and select the 'Add Input Directory' menu item.

The disk space monitor status view displays the amount of the free disk space in all disks installed in the computer or a specific disk selected by the user. In addition, the status bar of the disk space monitor shows the total disk space, the used disk space and the percentage of the free disk space. When the amount of the free disk space changes, the disk space monitor displays a disk space change notification showing the amount of the changed disk space. In order to set a specific disk drive to be displayed, click the right mouse button over the disk space monitor and select the required disk.

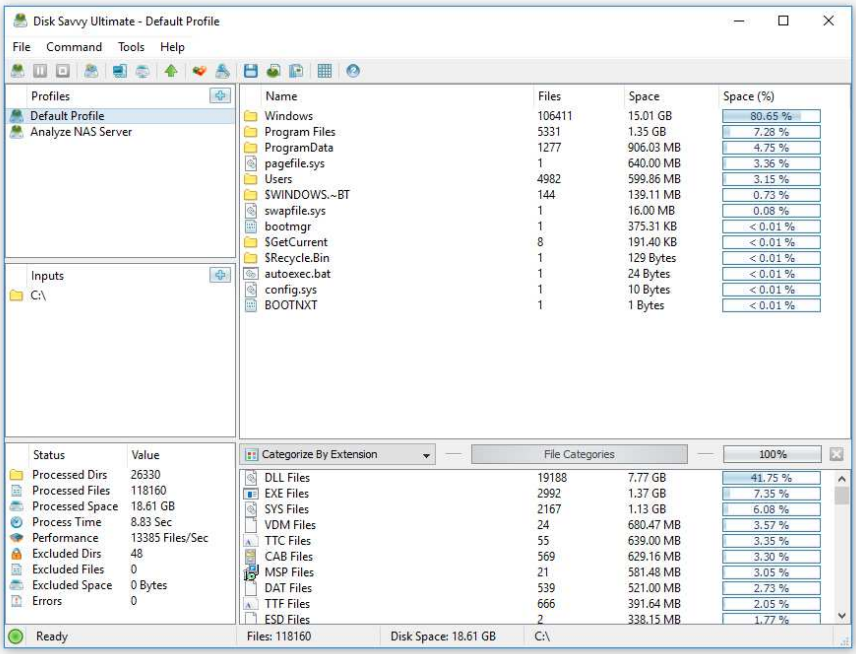
The process status view displays statistics about the current or the last performed disk space analysis operation including the total number of processed directories, the total number of processed files, the total amount of processed disk space, the disk space analysis process time, the performance of the disk space analysis process, the number of excluded directories, the number of excluded files, the amount of excluded disk space and the number of directory scanning and disk space analysis errors.

3.30 Using DiskSavvy GUI Layouts

In order to improve GUI usability, the DiskSavvy main GUI application provides three user-selectable GUI layouts. Press the 'Layouts' button to switch the GUI application to the next GUI layout.



The first (default) GUI layout displays large toolbar buttons with descriptive text labels under each button and shows the directories entry and the profiles combo box under the main toolbar. The second GUI layout displays small toolbar buttons with descriptive text labels beside each button and shows the directories entry and the profiles combo box under the main toolbar.



The third GUI layout displays small toolbar buttons without descriptive text labels and shows the directories entry and the profiles combo box as a single toolbar.

3.31 DiskSavvy Command Line Utility

In addition to the GUI application, DiskSavvy Pro includes a command line utility allowing one to execute disk space analysis commands from an OS shell window. The DiskSavvy command line utility is located in **<ProductDir>/bin** directory.

Command Line Syntax:

disksavvy -execute <Profile Name>

This command executes the specified disk space analysis command.

disksavvy -analyze -dir <Directory 1> [... Directory X]

This command analyzes disk space usage in the specified directories, disks or network shares.

disksavvy -analyze -server <HostName1;HostName2;HostNameX>

This command analyzes disk space usage in all network shares in the specified servers and/or NAS storage devices. Multiple host names or IP addresses should be separated by the semicolon (;) character.

disksavvy -analyze -network

This command analyzes disk space usage in all network shares in all servers and/or NAS storage devices available on the network.

Parameters:

-dir <Directory>

This parameter specifies an input directory, disk or a network share for the storage analysis command. In order to ensure proper parsing of command line arguments, directories containing space characters should be double quoted.

-server <HostName1;HostName2;HostNameX>

This parameter specifies one or more host names or IP addresses of servers and/or NAS storage devices to analyze. Multiple host names or IP addresses should be separated by the semicolon (;) character.

Options:

-save_pdf_summary [File Name]
This option saves a PDF summary disk space analysis report to the specified file.

-save_pdf_report [File Name]
This option saves a detailed PDF disk space analysis report to the specified file.

-save_excel_summary [File Name]
This option saves an Excel summary disk space analysis report to the specified file.

-save_excel_report [File Name]
This option saves a detailed Excel disk space analysis report to the specified file.

-save_html_summary [File Name]
This option saves an HTML summary disk space analysis report to the specified file.

-save_html_report [File Name]
This option saves a detailed HTML disk space analysis report to the specified file.

-save_text_summary [File Name]
This option saves a text summary disk space analysis report to the specified file.

-save_text_report [File Name]
This option saves a detailed text disk space analysis report to the specified file.

-save_csv_summary [File Name]
This option saves an CSV summary disk space analysis report to the specified file.

-save_csv_report [File Name]
This option saves a detailed CSV disk space analysis report to the specified file.

-save_xml_summary [File Name]
This option saves an XML summary disk space analysis report to the specified file.

-save_xml_report [File Name]
This option saves a detailed XML disk space analysis report to the specified file.

-save_report [File Name]

This option saves a native DiskSavvy report to the specified file.

-save_to_database

This option saves a report to an SQL Database using the ODBC interface configured in the DiskSavvy GUI application options dialog.

-title <Report Title>

This option sets a custom report title.

-label <Report Label>

This option sets a custom report label.

-levels <Levels>

This option sets the number of file system hierarchy levels to export (default is 3).

-files_per_dir <Files Per Directory>

This option sets the number of files per directory to export (default is 20).

-compress

This option instructs to export a compressed report.

-perf <FULL | MEDIUM | LOW>

This parameter controls the speed of the storage analysis process.

FULL - Full-speed storage analysis
MEDIUM - Medium-speed storage analysis
LOW - Low-speed storage analysis

-v

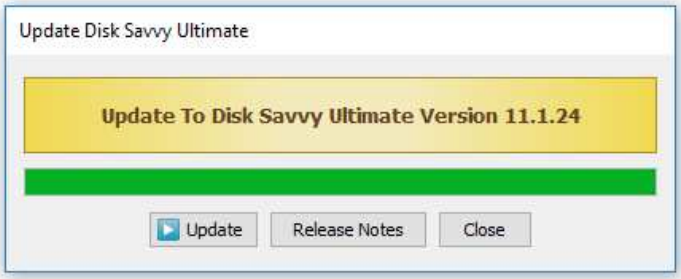
Shows the product major version, minor version, revision and build date.

-help

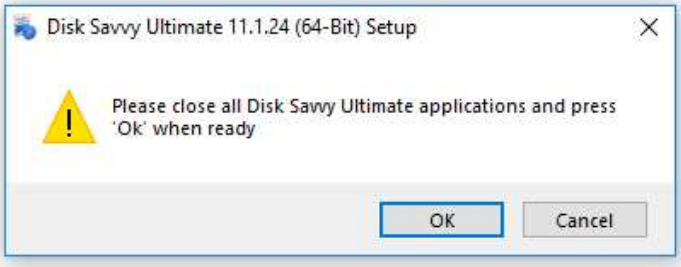
This command shows the command line usage information.

3.32 Product Update Procedure

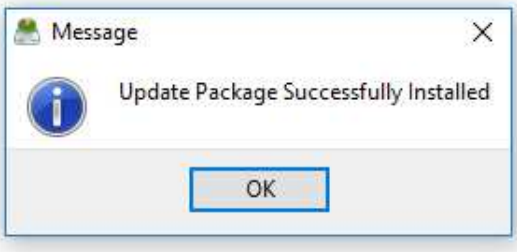
Almost every month, Flexense releases bug fixes and product updates for the DiskSavvy disk space analyzer. These product updates are uploaded to the product web site and may be applied to any installed product version. Each time DiskSavvy is started, the update manager checks if there is a new product version available. If there is a new product update available, the user will see an 'Update' link in the right-most corner of the status bar.



In order to manually verify that the currently installed product version is up-to-date, select menu 'Help - Check For Updates' on the main menu bar. The update manager will connect to the update server and check if there is a newer version of the product available for download. If there is a new product version available, the update dialog will show the version of the new product update and two buttons: the 'Release Notes' button and the 'Install' button. Press the 'Release Notes' button to see more information about what new features and bug fixes are included in this specific product version. Press the 'Install' button to download and install the new product version.



After pressing the 'Install' button, please wait while the update manager will download the new product version to the local disk. The update package will be downloaded to a temporary directory on the system drive and automatically deleted after the update manager will finish updating the product.



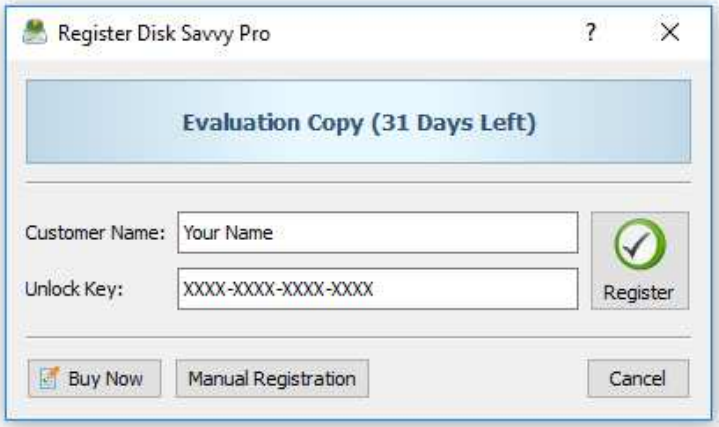
After download is completed, close all open DiskSavvy applications and press the 'Ok' button when ready. If one or more DiskSavvy applications will be open during the update, the operation will fail and the whole update process will need to be restarted from the beginning. After finishing the update process, DiskSavvy will show a message box informing about the successfully completed operation.

3.33 Registering DiskSavvy Pro

DiskSavvy Pro licenses and discounted license packs may be purchased on the following page:

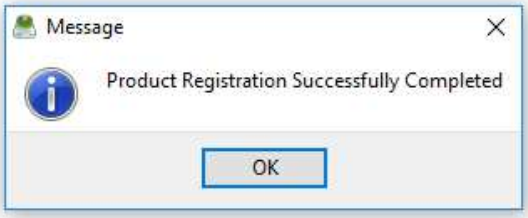
http://www.disksavvy.com/purchase.html

After finishing the purchase process, wait for the following two e-mail messages: the first one with a receipt for your payment and the second one with an unlock key. If you will not receive your unlock key within 24 hours, please check your spam box for e-mail messages originating from support@flexense.com and if it is not in the spam box, contact our support team.



After you will receive your unlock key, start the DiskSavvy GUI application and press the 'Register' button located in the top-right corner of the window. On the register dialog, enter your name (or your company name), the received unlock key and press the 'Register' button to finish the registration procedure.

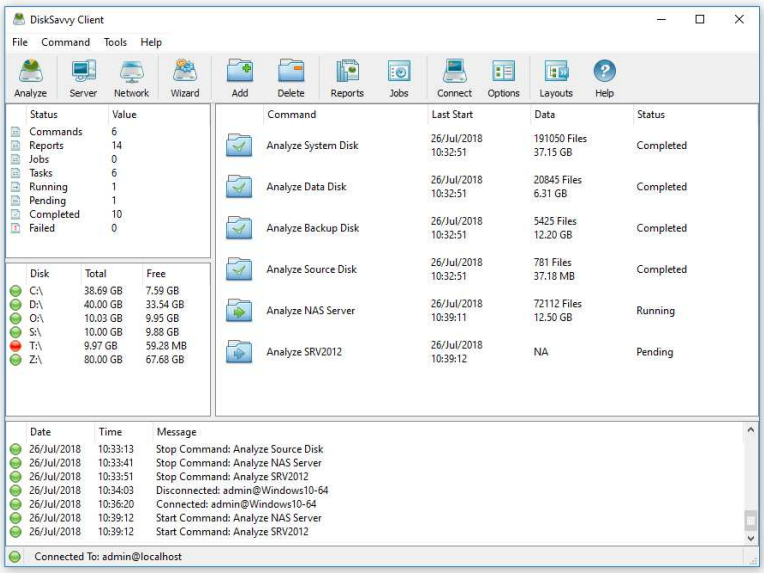
The online registration procedure requires an active Internet connection and usually takes approximately 1 minute. If the computer is not connected to the Internet, press the 'Manual Registration' button and follow the displayed manual product registration instructions.



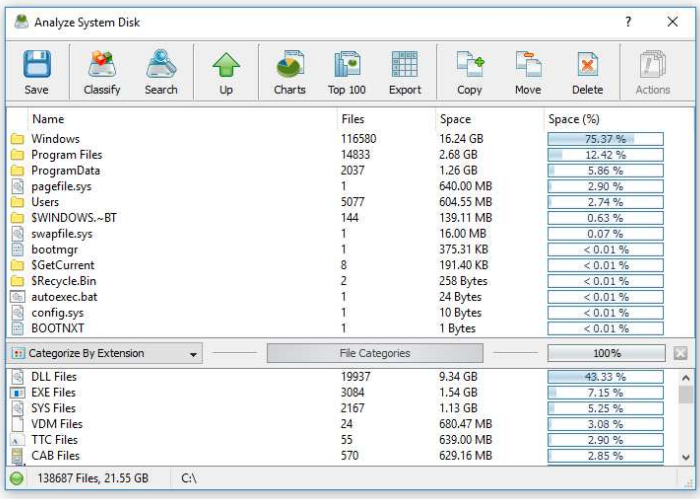
4 Using DiskSavvy Server

4.1 DiskSavvy Server Overview

DiskSavvy Server is a server-based product version, which runs in the background as a service and is capable of performing multiple disk space analysis operations, save disk space analysis reports, generate various types of disk space usage pie charts, schedule periodic disk space analysis operations, submit reports to a centralized SQL database and perform disk space usage history trend analysis operations.



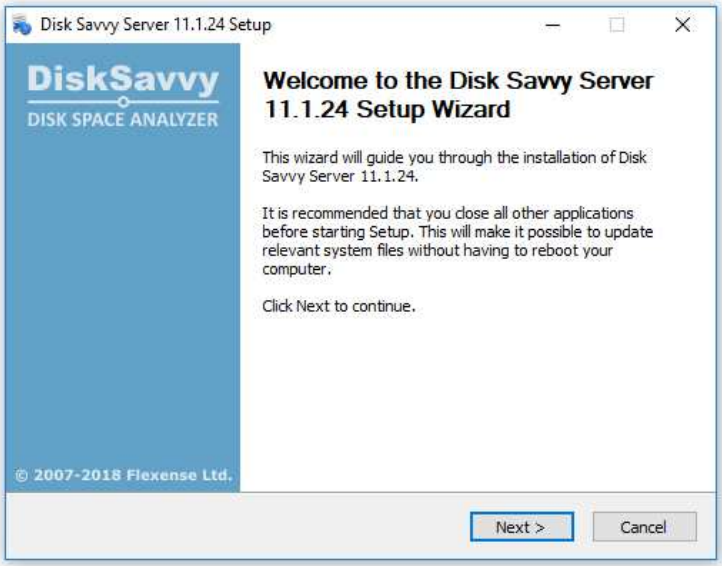
DiskSavvy Server provides a full-scale client GUI application and a command line utility, which can be used to control one or more DiskSavvy Servers locally or through the network. The DiskSavvy client GUI application provides all features available in the desktop product version and additional capabilities allowing one to perform multiple, parallel disk space analysis operations, schedule periodic disk space analysis operations and perform disk space usage history trend analysis operations.



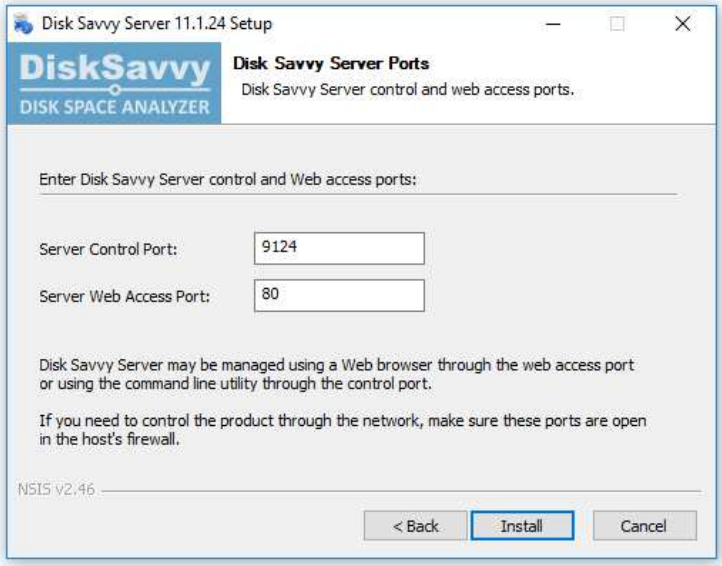
In addition, DiskSavvy Enterprise provides a complete web-based management interface allowing one to configure, control and manage the product using a regular web browser. The web-based management interface allows one to setup one or more disk space analysis operations, schedule periodic disk space analysis jobs, review disk space analysis results and save reports into a number of standard formats such as HTML, PDF, Excel, XML, CSV and text.

4.2 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: http://www.disksavvy.com/downloads.html.



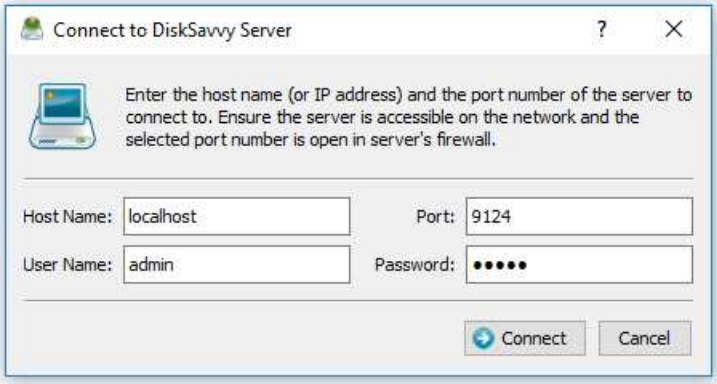
The installation package is very small, 5MB - 6MB depending on the target operating system, and the product requires just 20MB of the free disk space on the target server. In order to install DiskSavvy Server, start the setup program, select a destination directory and press the 'Next' button.



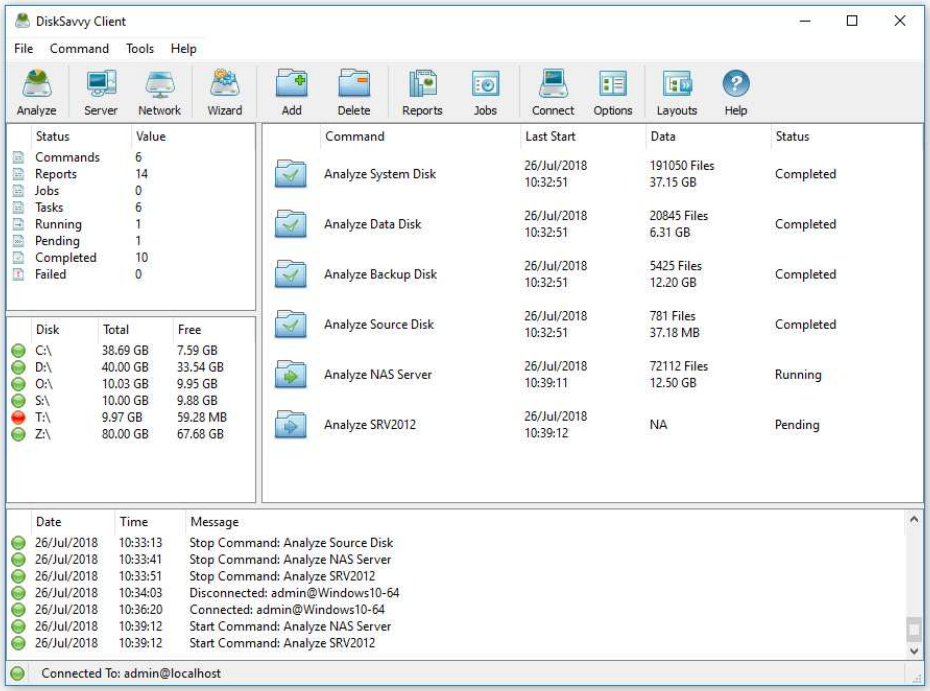
Optionally, enter custom server control and/or web access ports. The server control port is used by the DiskSavvy client GUI application and the command line utility to connect to the DiskSavvy Server. The web access port is the port for the web-based management interface allowing one to control DiskSavvy 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.

4.3 Using DiskSavvy Client GUI Application

The DiskSavvy client 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.

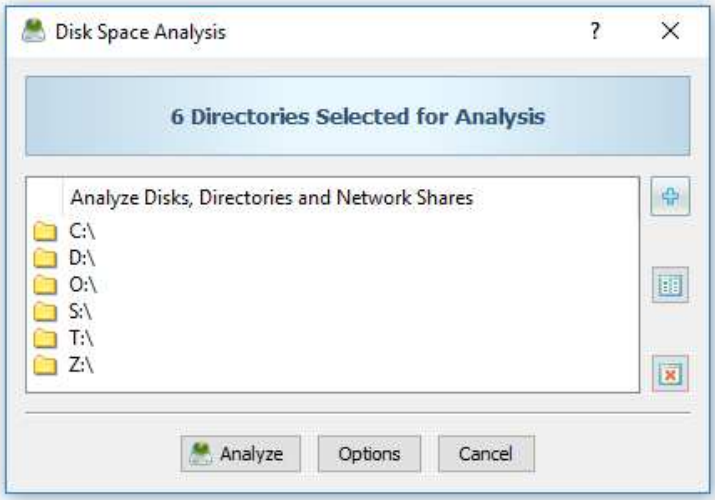


All communication messages sent between the DiskSavvy client GUI application and the DiskSavvy Server are always encrypted using the AES-256 encryption algorithm and all the transferred information is fully protected from unauthorized access. Once the DiskSavvy client GUI application is connected to 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.

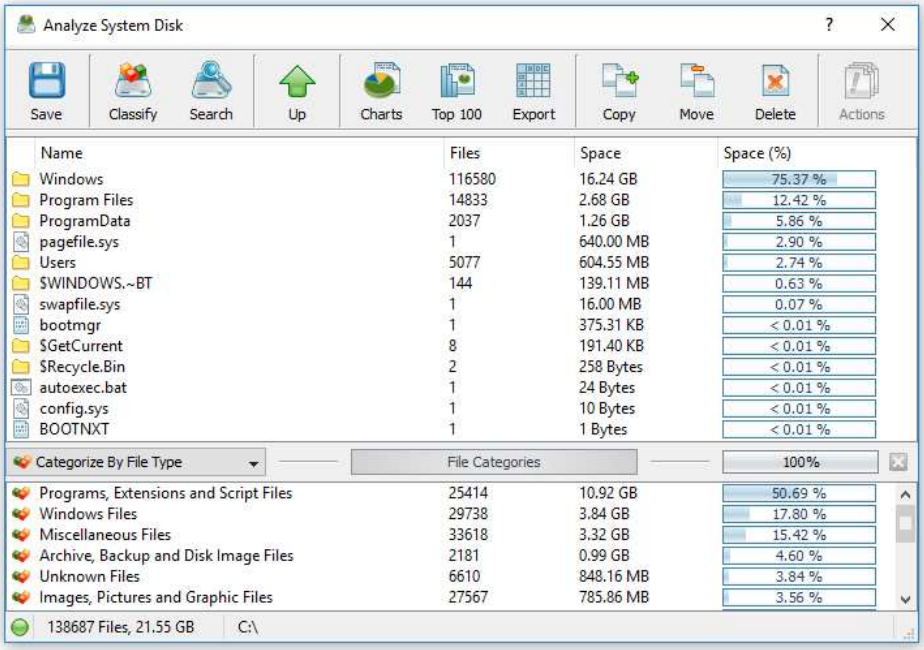


In addition, the DiskSavvy client GUI application allows one to scan the network, automatically detect all network servers and NAS storage devices, discover all accessible network shares and analyze disk space usage in hundreds of servers and NAS storage devices on the network.

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.

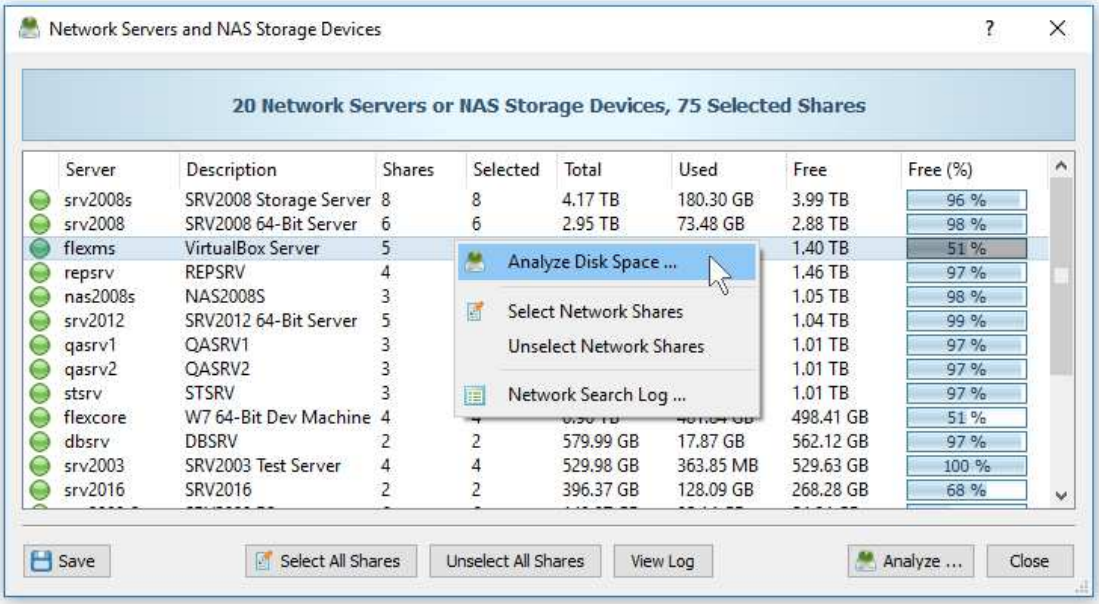


When the disk space analysis process will be completed, DiskSavvy will display the disk space analysis results dialog showing the analyzed disks, directories and network shares sorted by the amount of the used disk space. In addition to the disk space usage results displayed in the top view, the bottom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

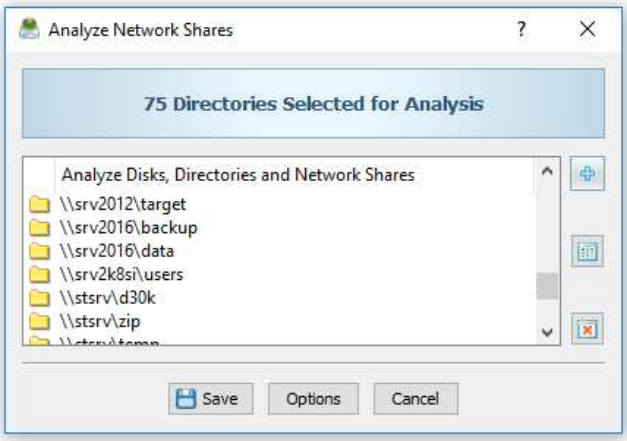


DiskSavvy is capable of categorizing disk space analysis results by the file type, extension, creation, last modification and last access dates, user name, etc. In order to change file categories displayed in the bottom view, click on the file categories drop box and select an appropriate file categorization 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.



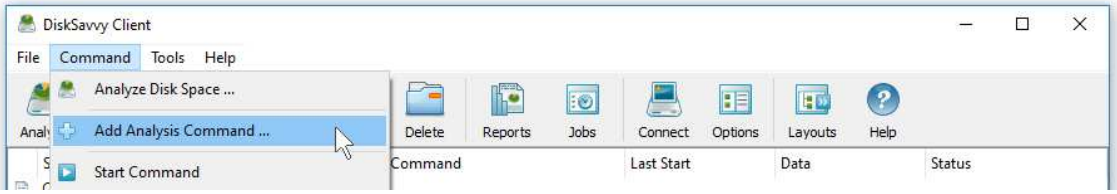
Once the network scanning process is complete, DiskSavvy will show the list of detected servers and NAS storage devices. For each network server or NAS storage device, DiskSavvy will show the server name, the server comment, the number of accessible network shares, the total amount of disk space, the 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.



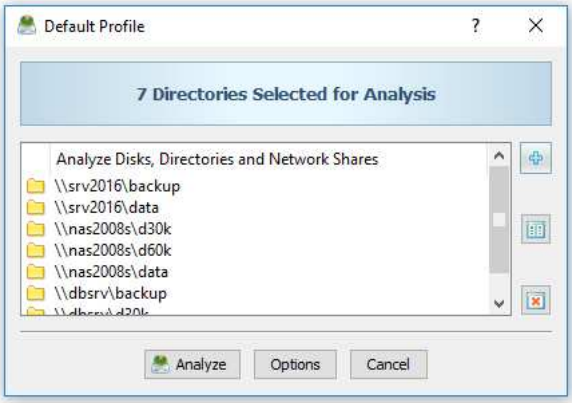
The DiskSavvy client GUI application will automatically create a new disk space analysis command, add all accessible network shares hosted on the selected network servers and NAS storage devices to the list of network shares to be analyzed and start the disk space analysis operation. Once the disk space 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.

4.4 Managing Disk Space Analysis Commands

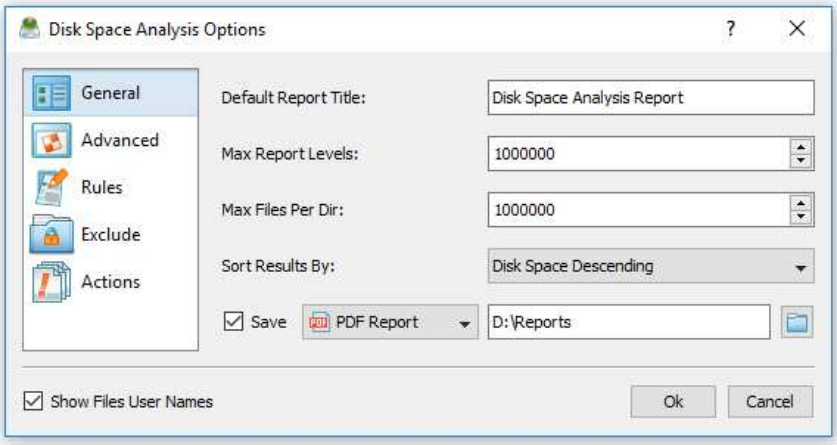
DiskSavvy Server allows one to configure multiple disk space analysis commands with each one capable of processing a number of disks, directories or network shares. In order to add a new disk space analysis command, press the 'Add Command' button located on the DiskSavvy Server home page, specify a unique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

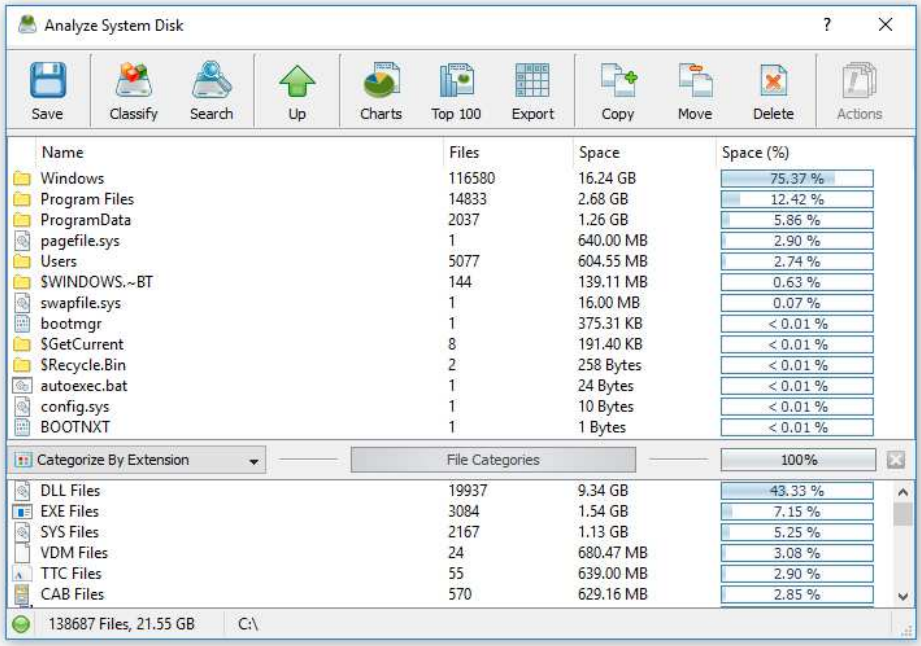


Finally, users are provided with numerous advanced disk space analysis options allowing one to set a custom report title, configure how many history reports to keep for each disk space analysis command, select a disk space analysis performance and directory scanning modes and/or automatically generate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

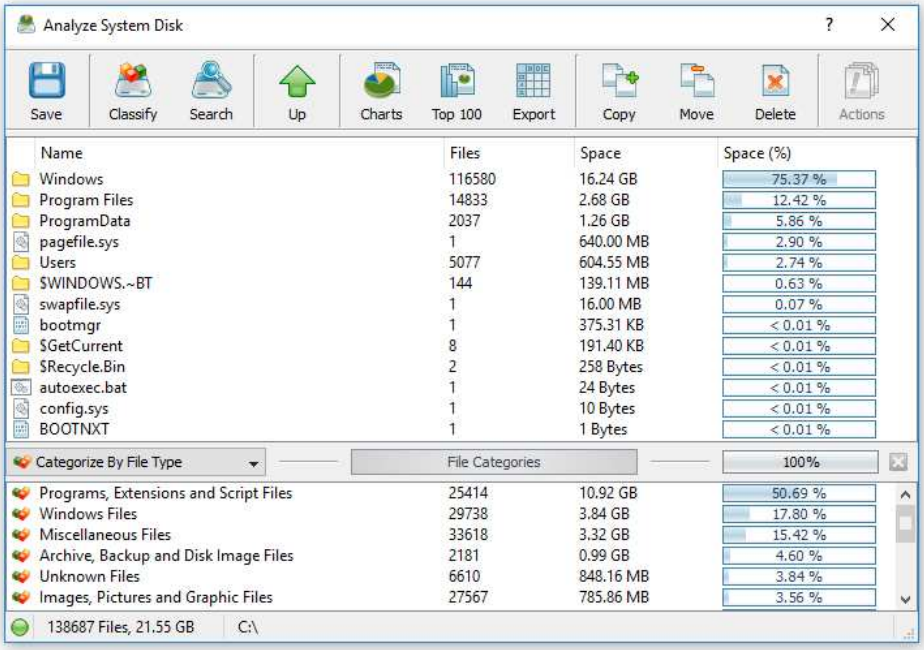


4.5 Disk Space Analysis Results

For each disk space analysis operation, DiskSavvy Server saves an individual disk space analysis report in the built-in reports database. In order to open the last disk space analysis report, just click on the required disk space analysis command item in the commands view.



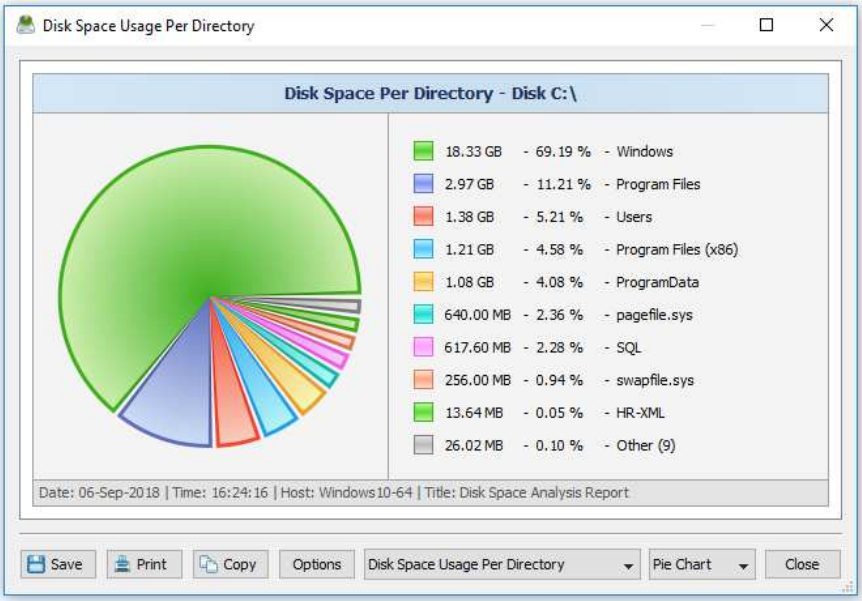
The disk space analysis results dialog shows processed disks, directories and files sorted by the amount of the used disk space. In order to open a subdirectory, just click on the directory item in the results view. In order to go back to the parent directory, press the 'Up' button located on the toolbar.



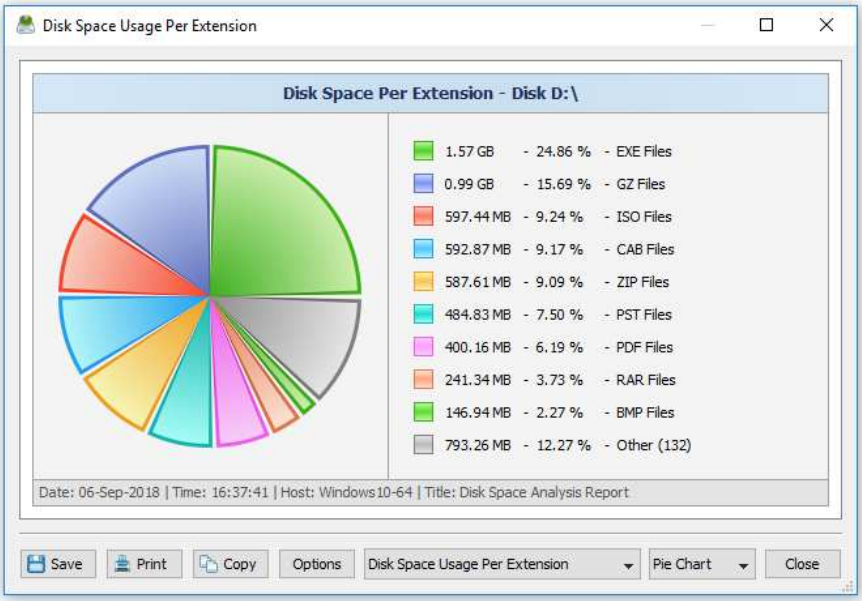
DiskSavvy Server provides the ability to export disk space analysis results to a number of standard formats such as HTML, PDF, Excel, XML, CSV and text. In order to export a report file, press the 'Save Report' button and select an appropriate report format.

4.6 Disk Space Analysis Charts

DiskSavvy Server provides multiple types of disk space analysis charts allowing one to display the amount of used disk space per directory, the percent of used disk space per directory, the number of files per directory and the percent of files per directory.



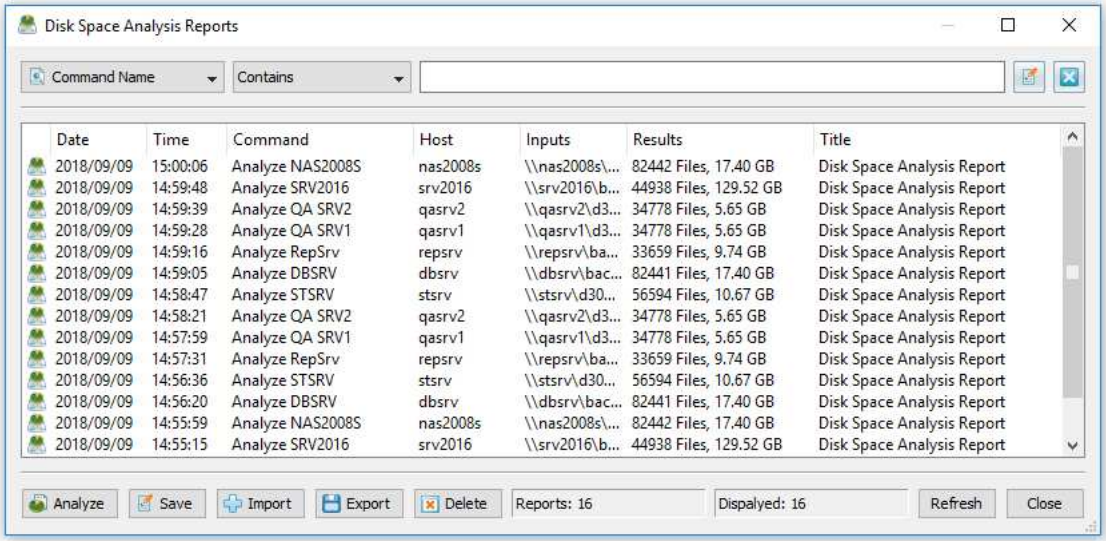
In order to change the currently displayed chart, click on the chart type selector located under the chart and select an appropriate type of the chart. For each disk space analysis report, DiskSavvy Server saves the currently selected chart type and displays the selected chart when the user browses the disk space analysis report.



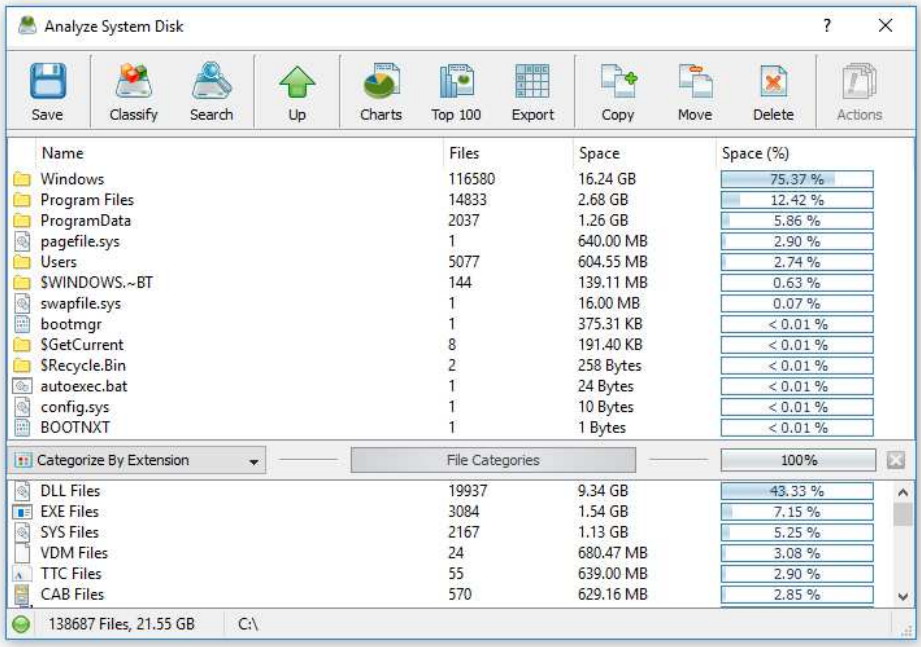
In addition, the charts dialog provides the user with the ability to copy the displayed chart image to the clipboard allowing one to easily integrate DiskSavvy charts into user's documents and presentations. In order to customize the chart's description, press the 'Options' button and specify a custom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

4.7 Disk Space Analysis Reports

For each disk space analysis operation, DiskSavvy Server saves an individual disk space analysis report in the built-in reports database. In order to open the last report for a disk space analysis command, click on the required disk space analysis command item in the commands view. In order to browse all previously saved disk space analysis reports, press the 'Reports' button located on the main toolbar.

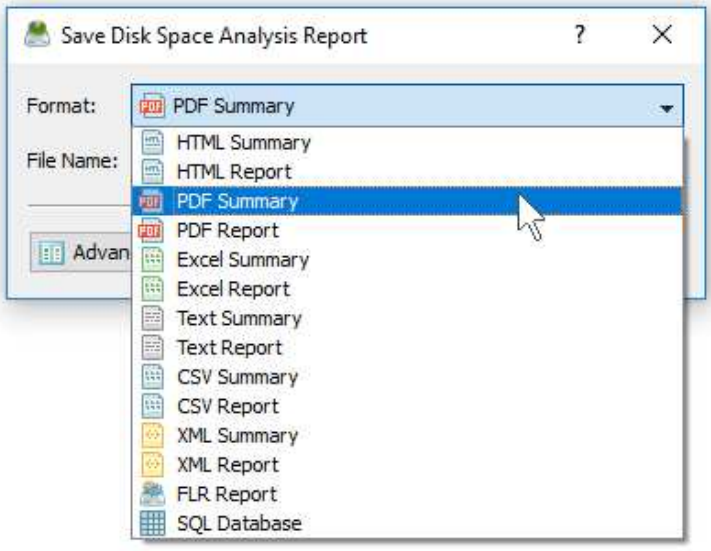


DiskSavvy Server allows one to filter disk space analysis reports by the command name, host name, date and input directories. In order to filter disk space analysis reports, select an appropriate filter located on the top side of the reports dialog and then enter a filter value.

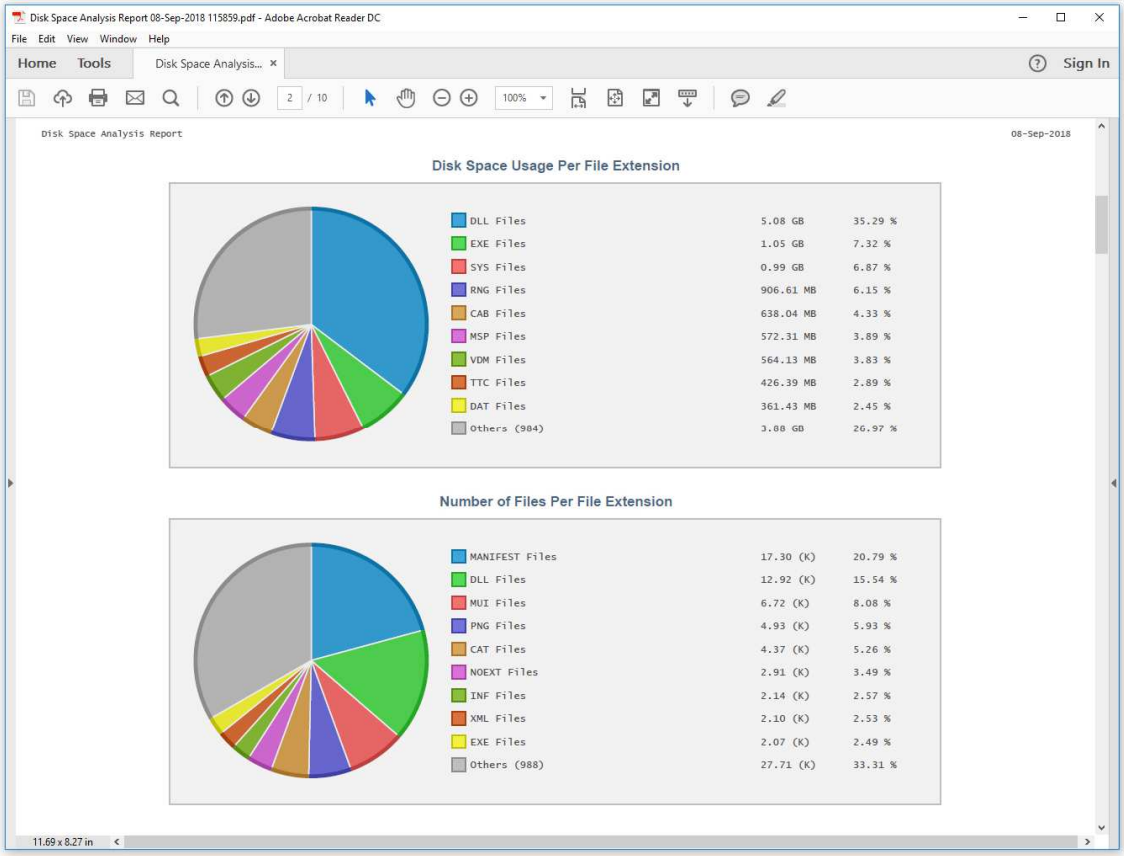


When a report filter is active, DiskSavvy Server displays the number of filtered reports on the reports dialog and shows reports matching the selected report filter in the reports view. In order to reset the currently selected report filter, press the 'Reset Filter' button located in the top-right corner of the reports dialog.

By default, DiskSavvy Server keeps a history of 100 last reports for each disk space analysis command. Reports are saved in the reports directory, which may be configured on the options dialog 'Reports' tab. In order to open a disk space analysis report, click on the required report item in the reports view.

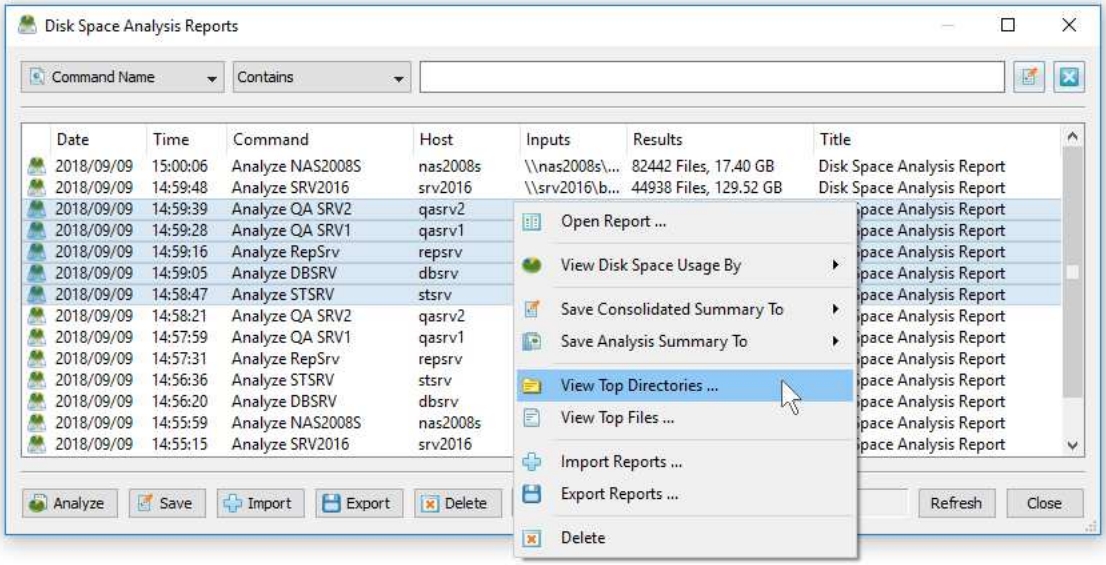


DiskSavvy Server provides the ability to export disk space analysis reports to a number of standard formats such as HTML, PDF, XML, Excel CSV and text. In order to export a report to one of the standard formats, open the disk space analysis results dialog, press the 'Save' button, select an appropriate report format, enter a file name and press the 'Save' button.

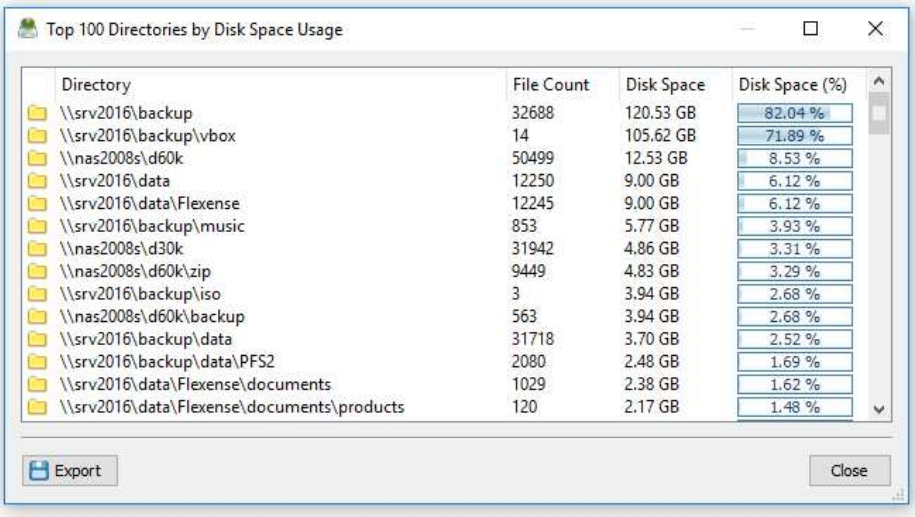


4.8 Viewing Top 100 Directories By Used Disk Space

DiskSavvy Server provides the ability to display a flat list of the top 100 directories sorted by the amount of the used disk space for one or more disk space analysis reports saved in the built-in reports database. This capability allows one to display a consolidated report showing the top 100 directories sorted by the amount of the used disk space for a number of servers or NAS storage devices.



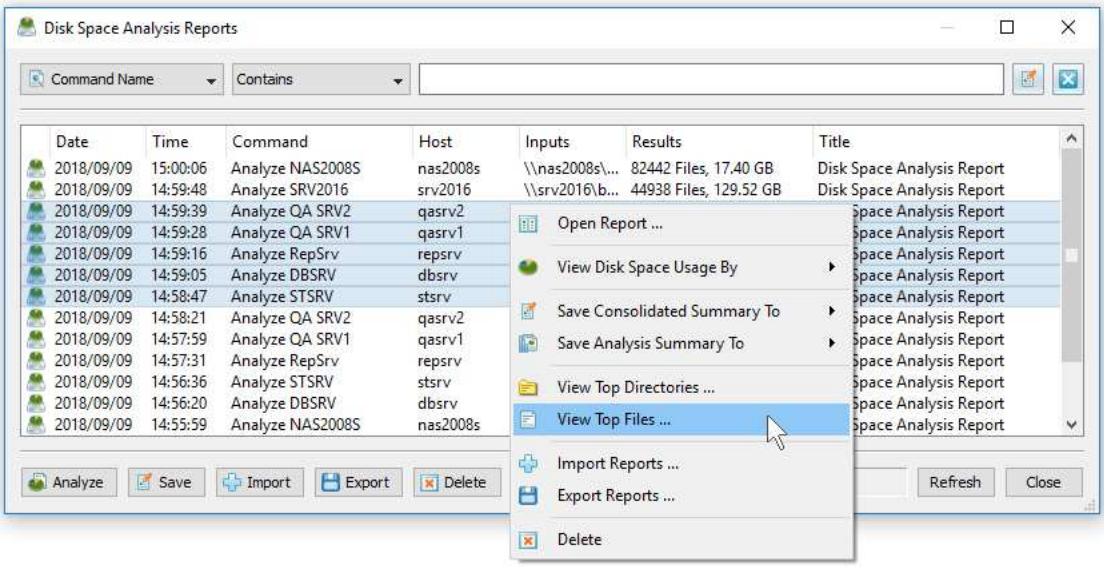
In order to display the top 100 directories, press the 'Reports' button located on the main toolbar, select a number of disk space analysis reports, press the right mouse button and select the 'View Top Directories' menu item. For each directory in the list, the top 100 directories dialog shows the full directory name, the name of the server or NAS storage device the directory is hosted on, the total number of files in the directory and all subdirectories and the total amount of the disk space used by files in the directory and all subdirectories.



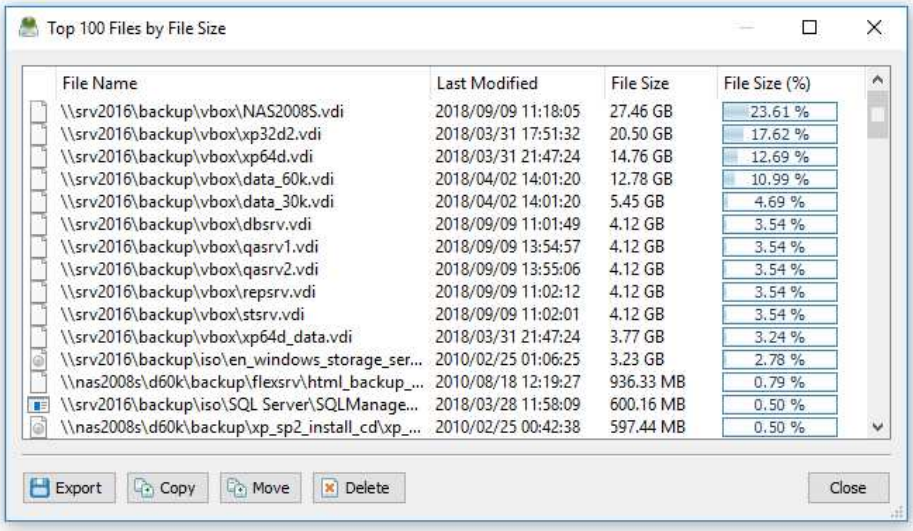
In addition, DiskSavvy Server allows one to save the list of the top 100 directories to a text report file. In order to save the list of the top 100 directories, press the 'Export' button located on the top 100 directories dialog, enter a file name to export the report to and press the 'Save' button.

4.9 Viewing Top 100 Files By File Size

DiskSavvy Server provides the ability to display a list of the top 100 files sorted by the file size for one or more disk space analysis reports saved in the built-in reports database. This capability allows one to display a consolidated report showing the top 100 files sorted by the file size for a number of servers or NAS storage devices.



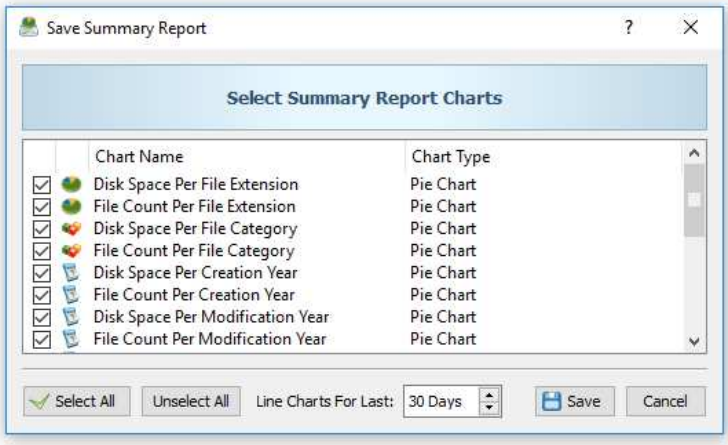
In order to display the top 100 files, press the 'Reports' button located on the main toolbar, select a number of disk space analysis reports, press the right mouse button and select the 'View Top Files' menu item. For each file in the list, the top 100 files dialog shows the full file name, the name of the server or NAS storage device the file is hosted on and the file size.



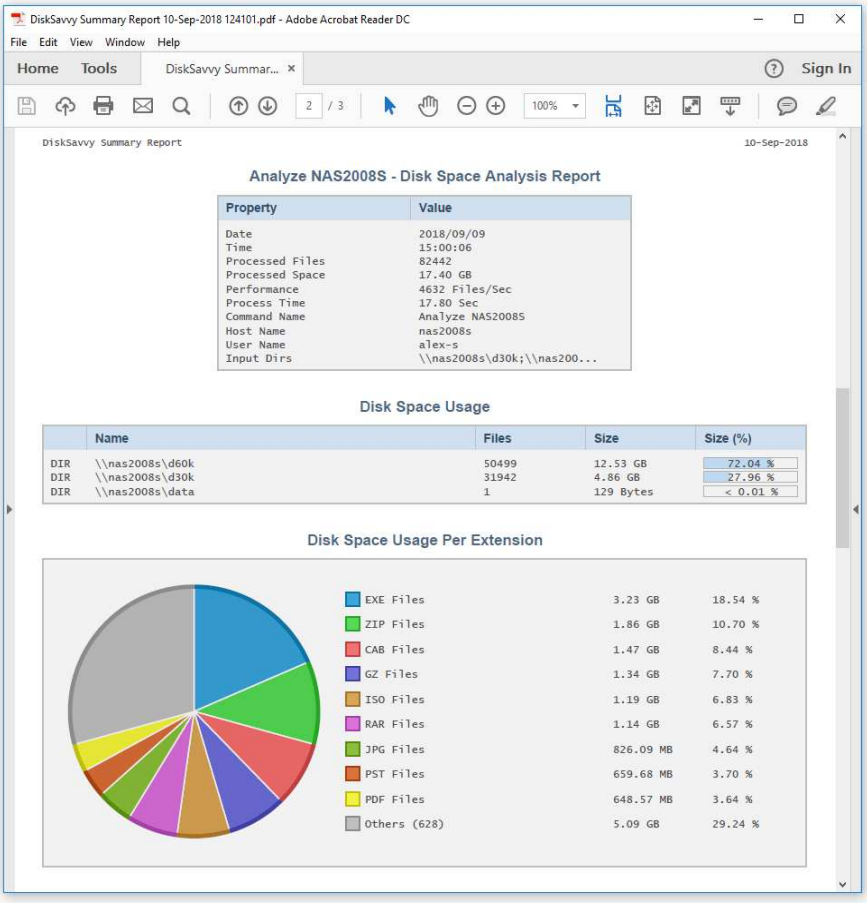
In addition, DiskSavvy Server allows one to save the list of the top 100 files to a text report file. In order to save the list of the top 100 files, press the 'Export' button located on the top 100 files dialog, enter a report file name to export the report to and press the 'Save' button.

4.10 Saving Graphical Summary PDF Reports

In addition to individual disk space analysis reports, DiskSavvy Server provides the ability to save consolidated graphical summary PDF reports for a number of disk space analysis reports saved in the built-in reports database. A graphical summary PDF report includes a short summary and a number of different pie charts and line charts for each disk space analysis report. This capability is especially useful when the user needs to save a consolidated disk space usage report for a number of servers and/or NAS storage devices.

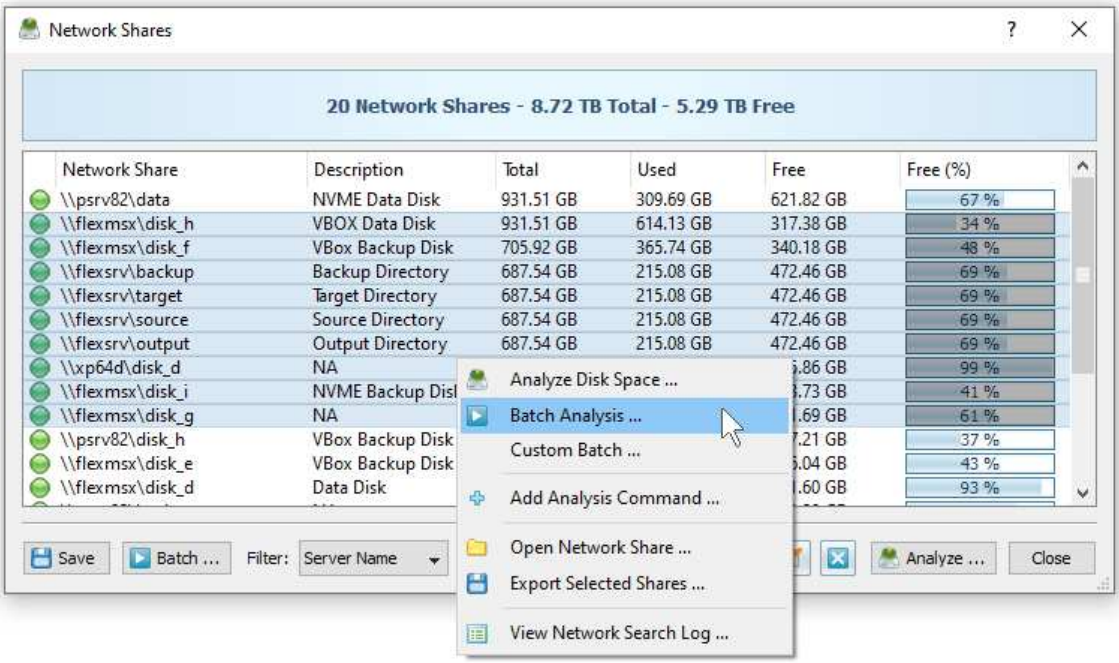


In order to save a graphical summary PDF report, press the 'Reports' button located on the main toolbar, select a number of disk space analysis reports, press the right mouse button and select the 'Save Summary Report' menu item. On the summary report dialog, select all the pie and line charts that should be included in the summary report and press the 'Save' button.

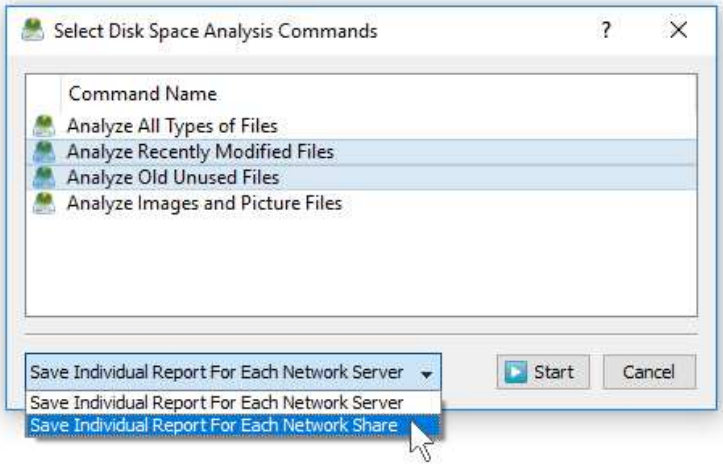


4.11 Batch Disk Space Analysis Operations

DiskSavvy Server and DiskSavvy Enterprise provide the ability to search the network, detect all network servers and NAS storage devices available on the network, 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.



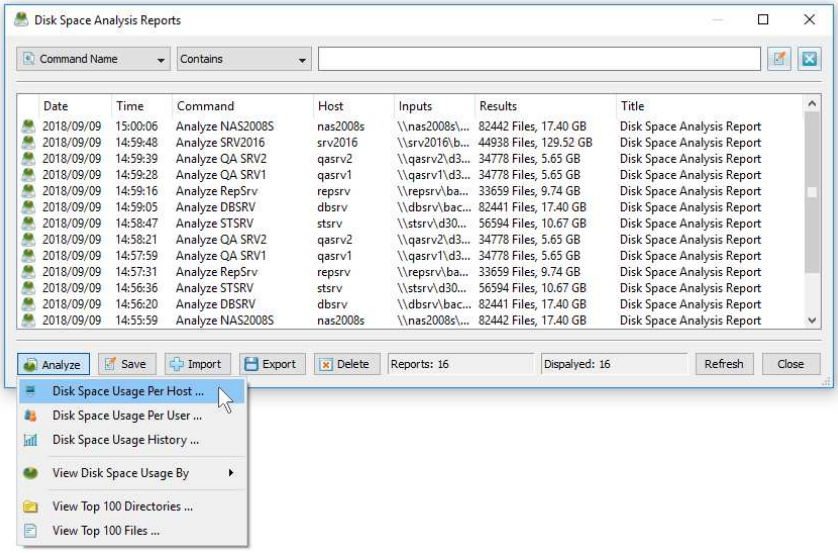
In the simplest case, open the DiskSavvy client GUI application, press the 'Network' button located on the main toolbar, search all network servers and NAS storage devices on the network, select one or more servers to be analyzed, press the right mouse button and select the 'Batch Disk Space Analysis' 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.



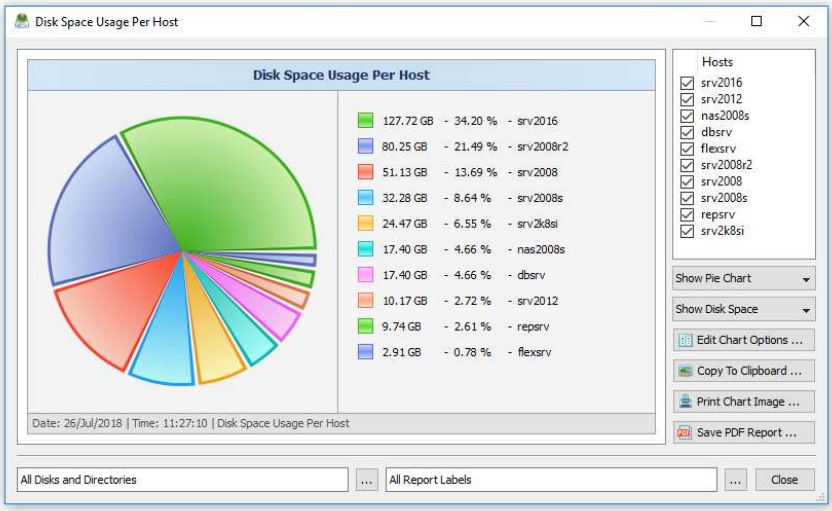
Depending on the selected batch analysis mode, DiskSavvy Server will save in the built-in reports database an individual disk space analysis report for each analyzed network server, NAS storage device or network share. Once the batch disk space analysis operation is completed, the user will be provided 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, text, Excel, CSV and XML.

4.12 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.



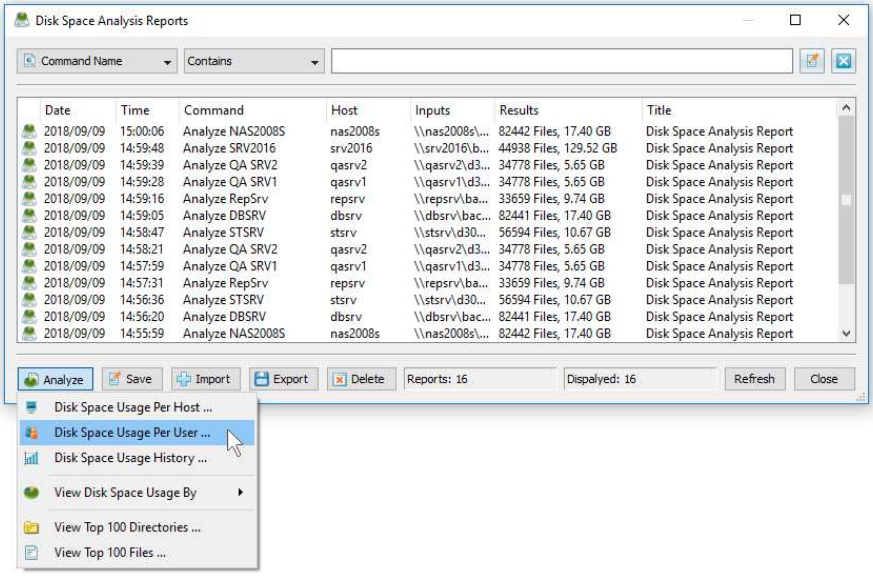
In order to be able perform the hosts analysis, the user needs to configure disk space analysis commands to analyze one or more servers and/or NAS storage devices through the network using UNC network names. In the simplest case, configure a single disk space analysis command, press the 'Network' button 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.



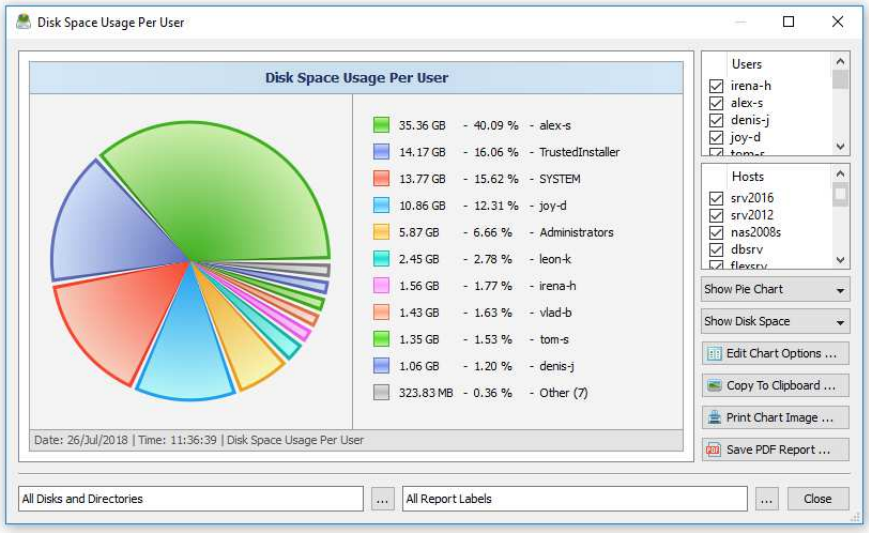
The hosts analysis dialog shows disk space usage per server according to disk space analysis reports saved in the reports database. The right-side hosts view provides the ability to select/unselect specific servers to be included in the chart. The bottom disks and directories selector allows one to select 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.

4.13 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.



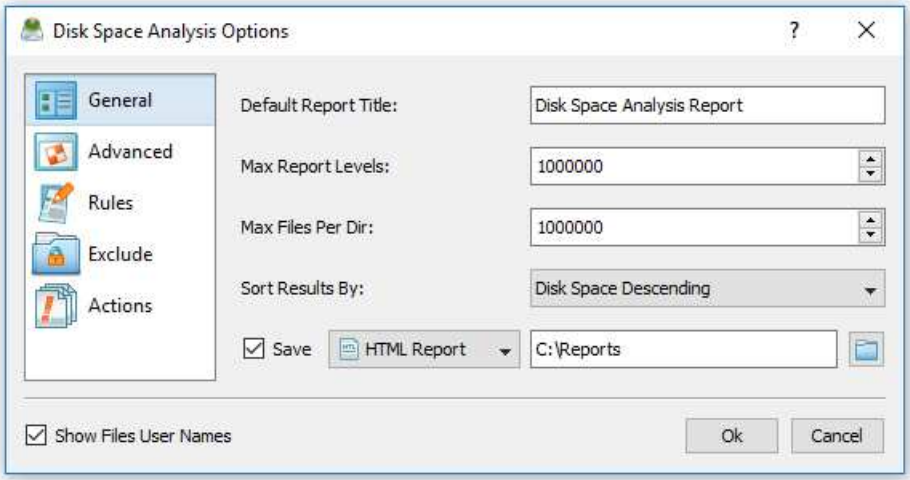
In order to be able to perform the users analysis operation, create a disk space analysis command, open the command dialog, press the 'Options' button, select the 'General' tab and enable the **'Show and Process User Names'** option. Now, press the 'Network' button located on the main toolbar to search 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.



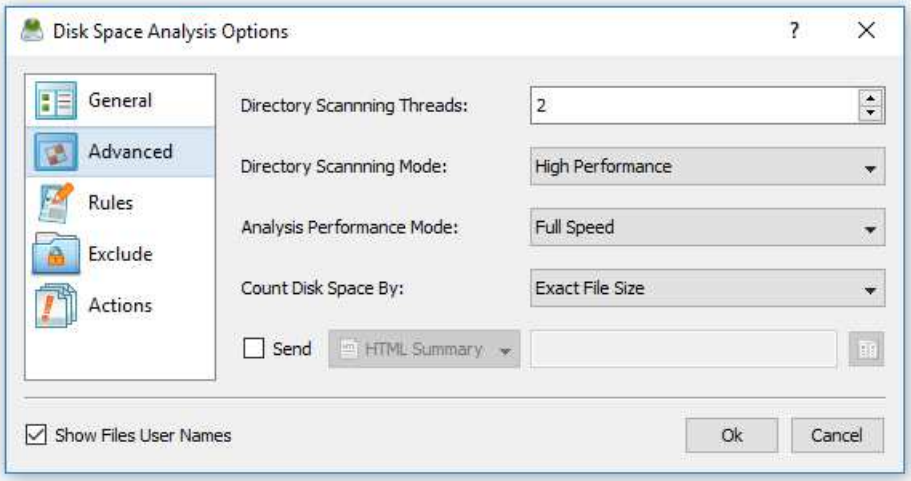
The users analysis dialog shows disk space usage per user according to disk space analysis reports saved in the reports database. The right-side users view provides the ability to select/unselect specific user names to be included in the chart. The bottom disks and directories selector allows one to 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.

4.14 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.



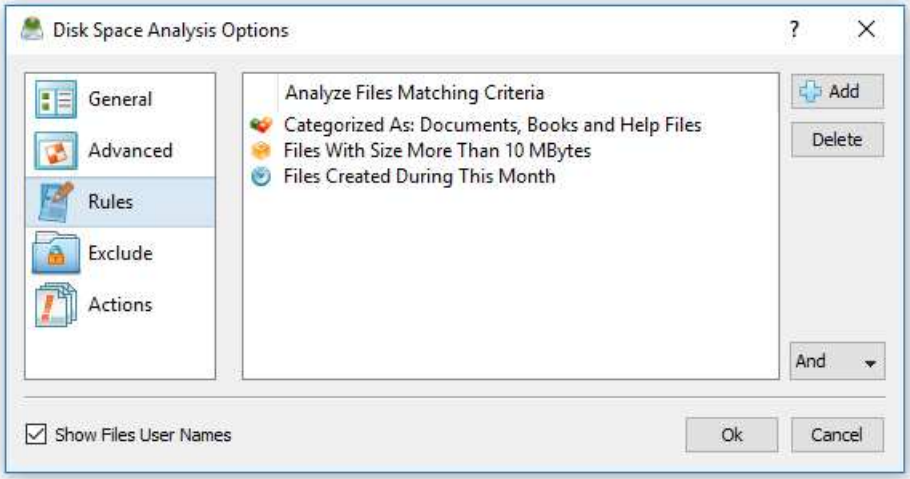
In order open the advanced disk space analysis options dialog, open the disk space analysis command dialog and press the 'Options' button. The '**General**' tab provides the ability to change the default report title, the maximum number of report levels, the maximum number of files per directory, the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



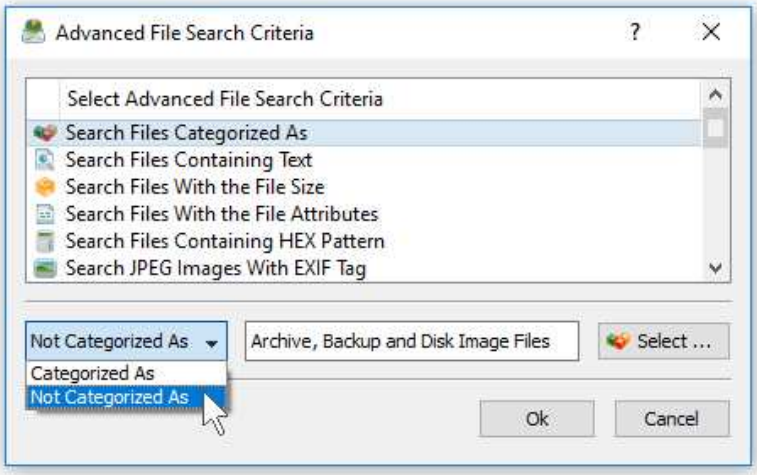
The '**Advanced**' tab allows one to change the number of parallel directory scanning threads, the directory scanning mode, the disk space analysis performance mode and the disk space counting mode. In addition, the user is provided with the ability to enable automatic generation of HTML, PDF, XML, Excel,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

4.15 Disk Space Analysis Rules

DiskSavvy Server provides the ability to analyze disk space usage for specific types of files or file categories using an extensive set of file matching rules capable of matching files by the file name, extension, directory, file type, file size, creation, last modification or last access dates, etc. In order to add one or more file matching rules to a disk space analysis command, open the disk space analysis command dialog, press the 'Options' button, select the 'Rules' tab and press the 'Add Rule' button.



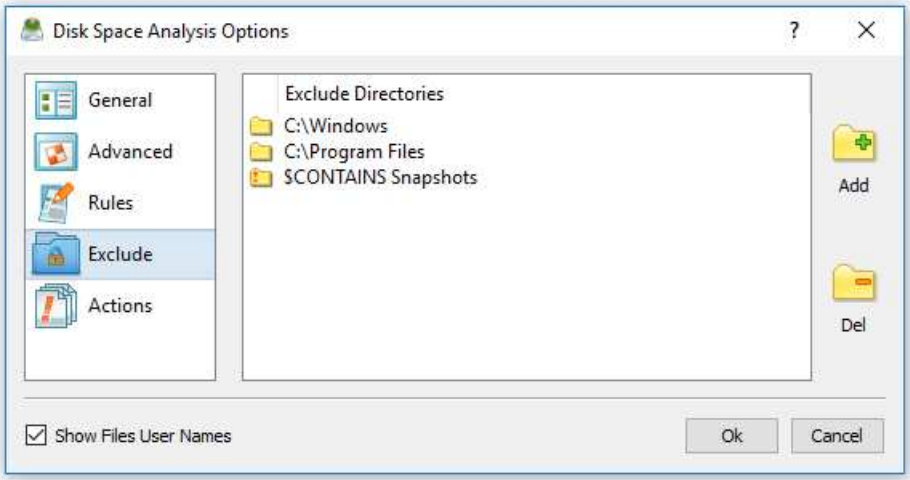
On the file matching rule dialog, select an appropriate rule type, select an operator, enter a rule value and press the 'Save' button. DiskSavvy Server allows one to add an unlimited number of file matching rules to each disk space analysis command and apply the (AND) or (OR) logical operators. For example, the user is provided with the ability to analyze all types of documents with the file size more than X MB that were modified during the last month.



In addition to positive file matching rules specifying which types of files to analyze, DiskSavvy Server provides negative file matching rules allowing one to exclude specific types or groups of files from the disk space analysis process. For example, in order to exclude all types of archive and backup files from the disk space analysis process, add a file category rule, set the rule operator to 'Not Categorized' and select the 'Archive and Backup Files' file category.

4.16 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 command dialog, press the 'Options' button, select the 'Exclude' tab and press the 'Add' button. All files and subdirectories located in the specified exclude directories will be excluded from the disk space 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.

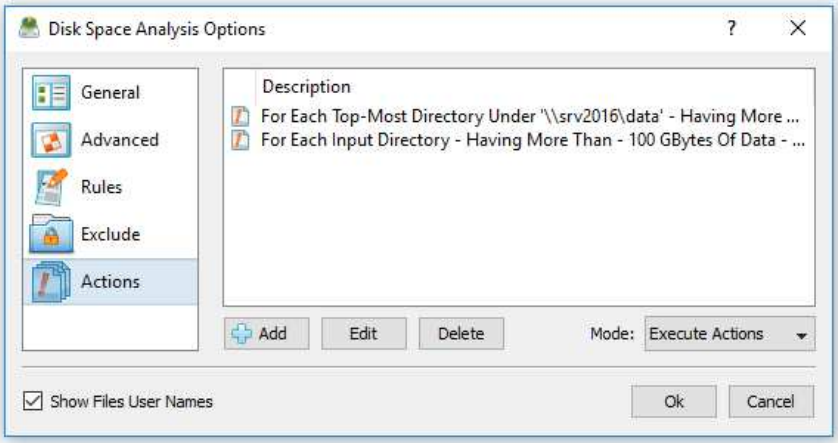
DiskSavvy Server provides the following exclude directories macro commands:

- **$BEGINS <Text String>** - this macro command excludes all directories beginning with the specified text string.
- **$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.

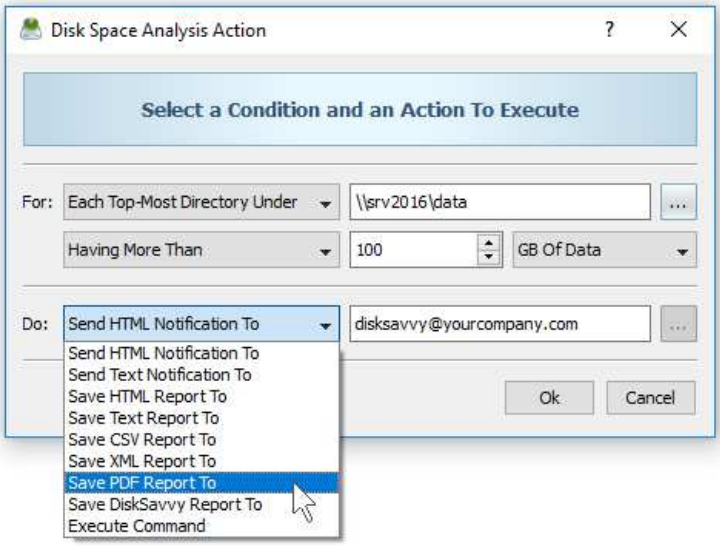
For example, the exclude macro command '$CONTAINS Temporary Files' will exclude all directories with 'Temporary Files' in the full directory path and the exclude macro command '$REGEX \.(TMP|TEMP)$' will exclude directories ending with '.TMP' or '.TEMP'.

4.17 Conditional Disk Space Analysis Actions

One of the most powerful capabilities of DiskSavvy Server is the ability to evaluate disk space analysis results and send E-Mail notifications and/or automatically generate reports for each disk or directory matching user-specified rules and conditions. For example, the user is provided with the ability to send E-Mail notifications and/or generate reports when too much data or too many files are detected in a disk or directory.



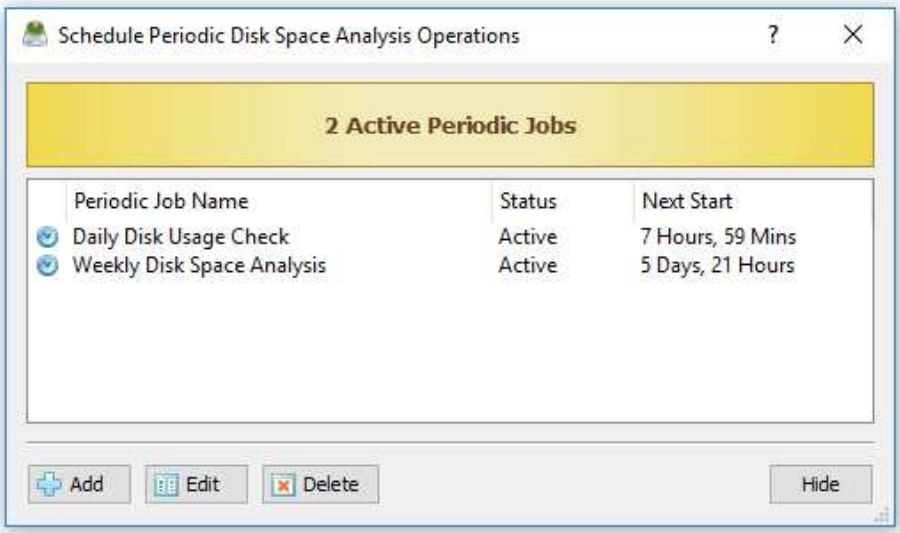
In order to add one or more disk space analysis actions, open the disk space analysis command dialog, press the 'Options' button, select the 'Actions' tab and press the 'Add Action' button. On the disk space analysis action dialog, specify a condition that should trigger the action and an operation to perform when the condition is met. Conditional disk space analysis actions are designed to be used with periodic disk space analysis operations allowing one to automatically perform disk space analysis operations, evaluate disk space analysis results and send E-Mail notifications and/or save reports if disk space analysis results for one or more disks, directories or network shares match user-specified rules and policies.



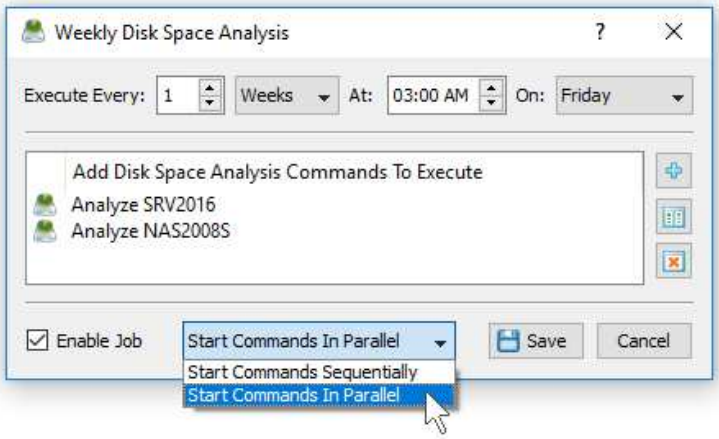
Conditional disk space analysis actions may be especially useful in conjunction with file matching rules allowing one to analyze specific types of files or file categories and send notifications and/or generate reports informing about abnormal or undesired patterns in disk space usage. For example, the user may define file matching rules specifying to analyze all types of images with the file size larger that X MB that were not accessed during the last Y months and send an E-Mail notification and/or generate a report for each directory containing a user-specified number of such files.

4.18 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.



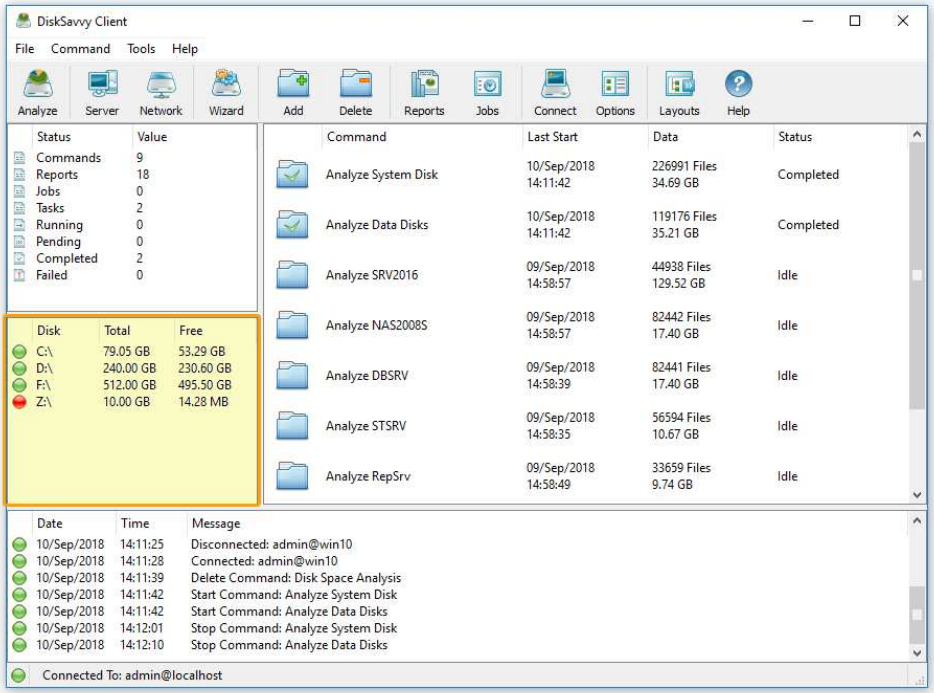
On the periodic job dialog, specify the time interval and select one or more disk space analysis commands to execute. By default, in order to reduce the CPU load and memory usage on the server, DiskSavvy Server performs scheduled disk space analysis operations sequentially, one after one while saving 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.

4.19 Using Built-In Disk Space Monitor

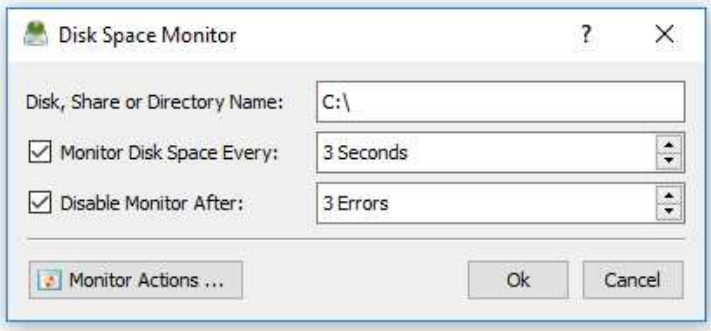
DiskSavvy Server and DiskSavvy Enterprise include a built-in disk space monitor allowing one to monitor the free disk space in a number of disks, directories or network shares and provides the ability to send E-Mail notifications including disk space analysis reports showing recently created or modified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



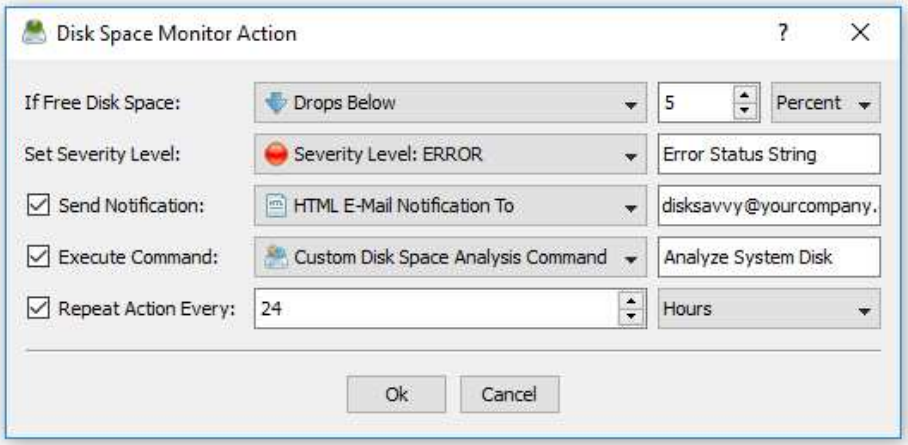
The disk space monitor is located in the bottom-right corner of the DiskSavvy client GUI application. By default, the disk space monitor shows the status of all local disks in the server. For each disk, the disk space monitor shows the disk name, the total amount of the disk space, the amount of the 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.

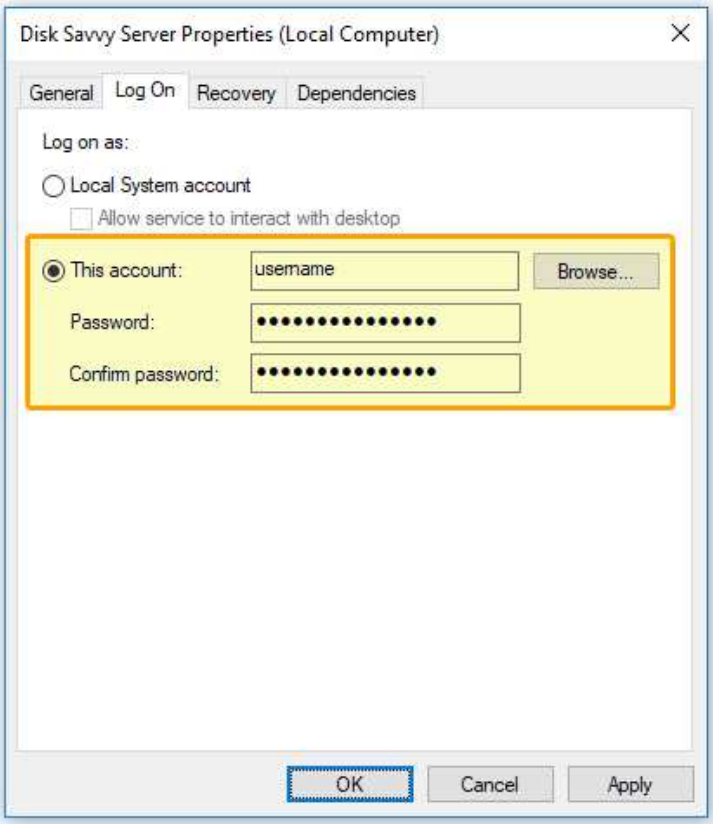


In addition to E-Mail notifications, the user is provided with the ability to automatically analyze files that were created or modified during the last 24 hours and send a disk space analysis report showing recent changes in the monitored disk to the specified E-Mail address. If the user selects the '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.

4.20 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.

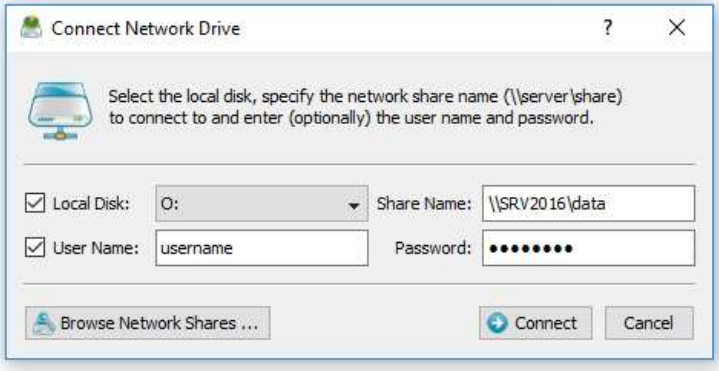


The configuration is very simple and may be performed within a couple of seconds using the following step-by-step guide:

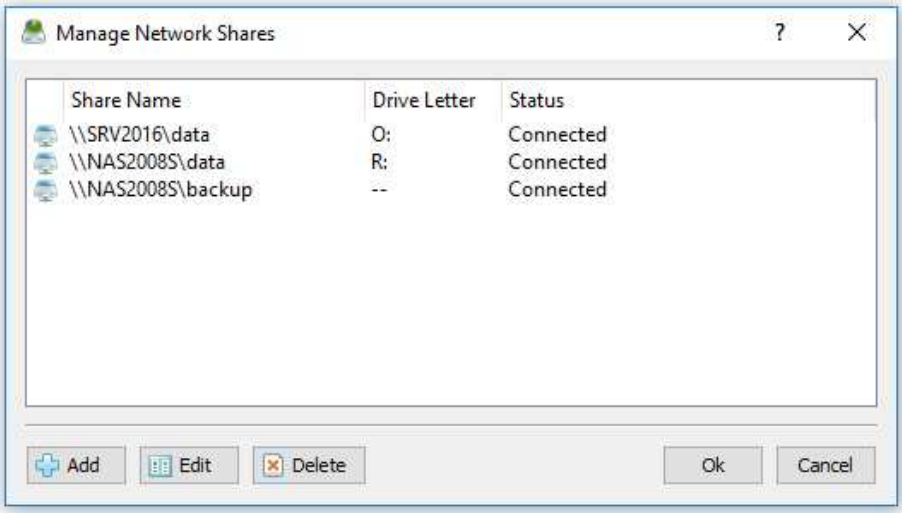
1. Open the Windows control panel and click on the 'Administrative Tools' utility.
2. Open the Services control center and find here the 'Disk Savvy Server' service.
3. Open the 'Disk Savvy Server' service, select the 'General' tab and stop the service.
4. Select the 'Log On' tab and specify a user account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



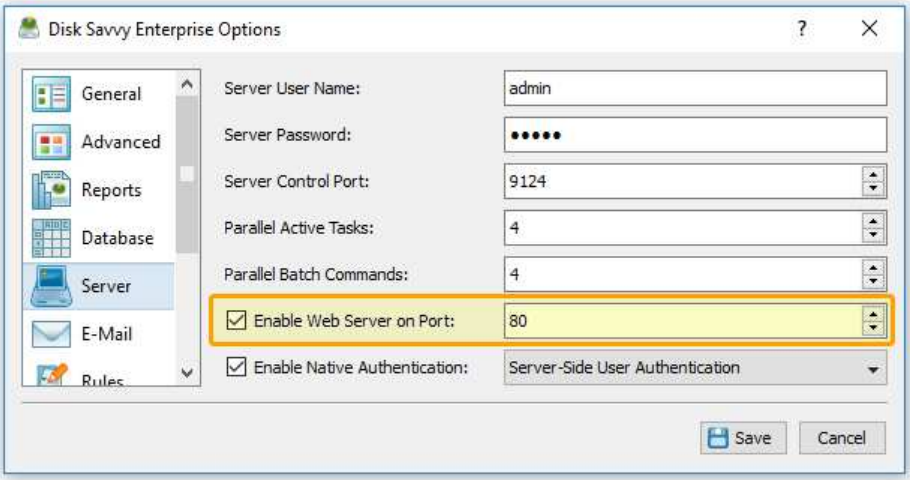
When analyzing tens of network shares and NAS storage devices, it may be not convenient to assign a drive letter for each connected network share just because there may be not enough letters to assign to all the required network shares. For such cases, the user is provided with the ability to connect 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.



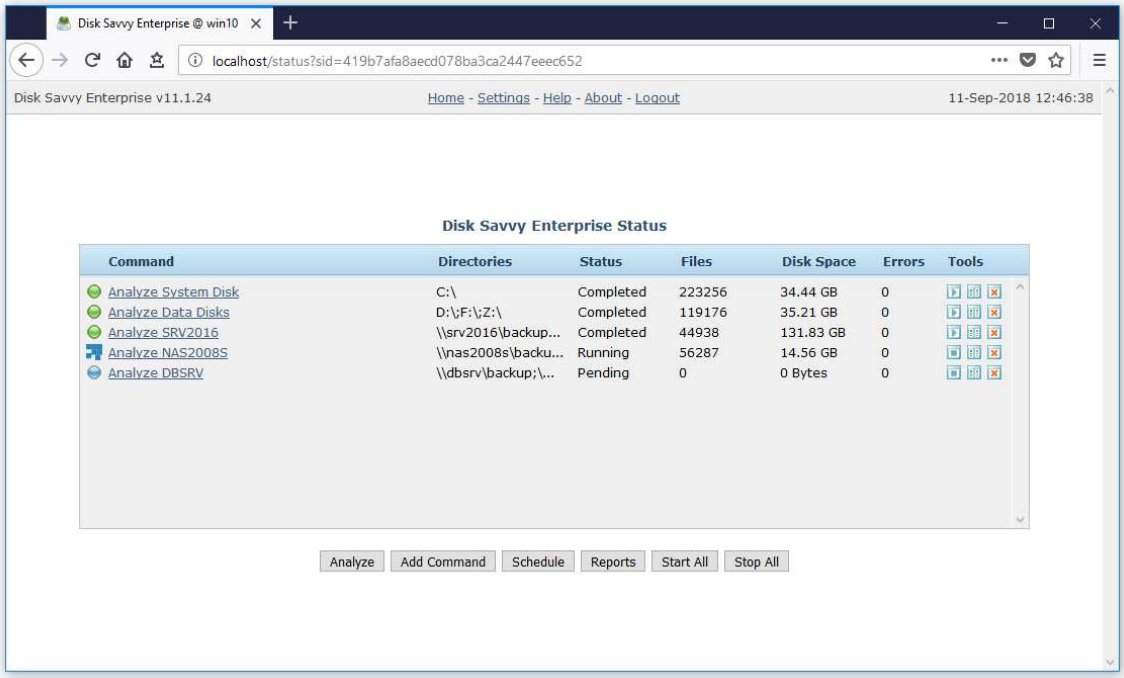
DiskSavvy Server provides the ability to configure periodic disk space analysis operations to be executed fully automatically in the background. In order to enable automated periodic analysis of network shares and NAS storage devices, DiskSavvy allows one to pre-configure a list of network shares to 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.

4.21 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.



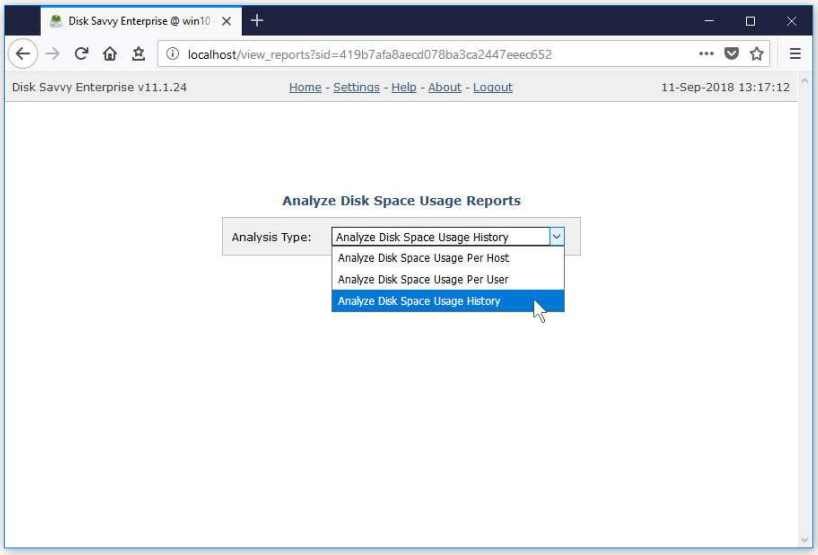
By default, the web-based management interface is disabled and in order to enable the web-based management interface, open the DiskSavvy client GUI application, connect to a server, open the 'Options' dialog, select the 'Server' tab, select the 'Enable Web Server' option and press the 'Save' button.



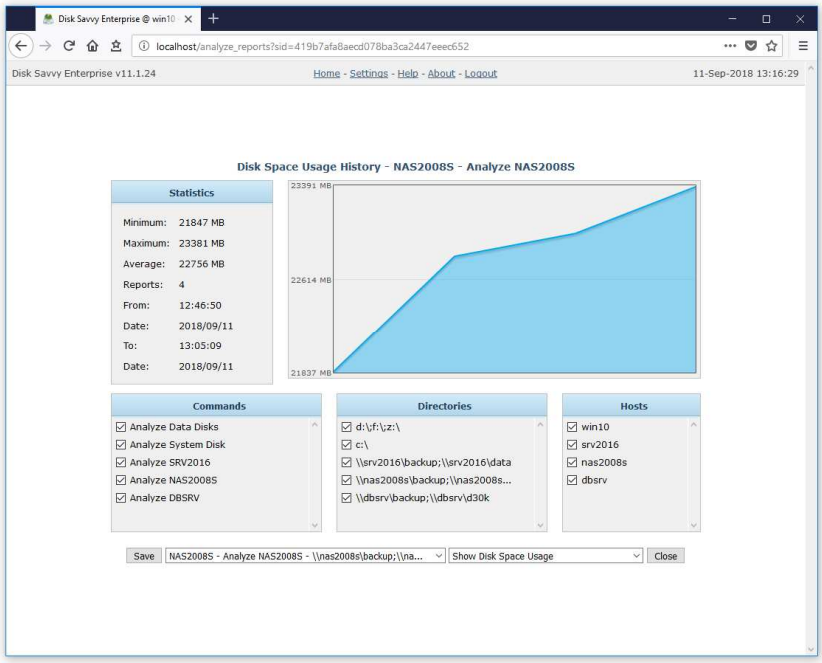
In order to connect to the DiskSavvy Enterprise web-based management interface, open a regular web browser, type the host name or an IP address of the server to connect to and login to the DiskSavvy Enterprise using the default (**admin**/**admin**) user name and password.

4.22 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.



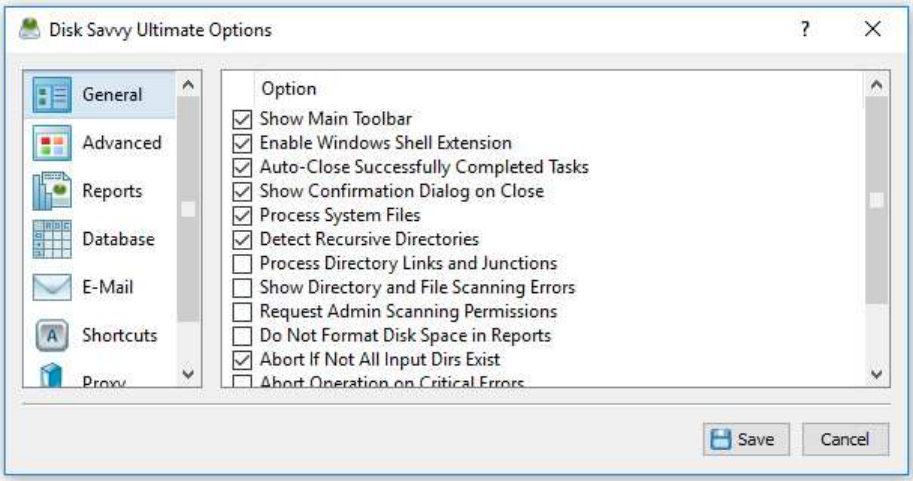
With multiple disk usage reports saved in the report database, press the 'Reports' button located on the main status page, press the 'Analyze' button, select the 'Analyze Disk Space Usage History' option and press the 'Analyze' button. DiskSavvy Server will generate a list of charts - one for each set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



The top-left side of the history analysis page shows the statistics for the currently selected history chart. The top-right side shows the history line chart according to the currently selected chart and chart units. The three bottom-side panes provide the ability to filter charts by the command name, processed directories and/or the host name of the server or NAS storage device. In order to save the currently displayed history chart to a graphical PDF report, press the 'Save' button and then click on the report file link to download the report file.

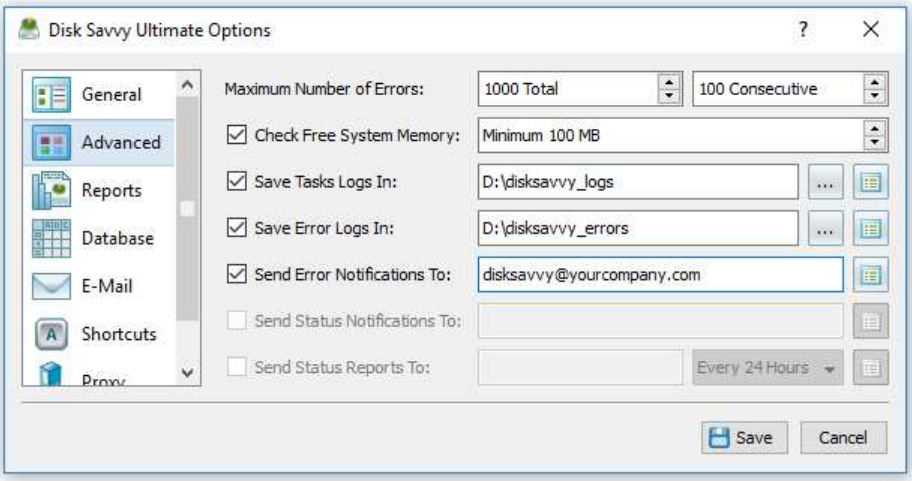
4.23 Configuring DiskSavvy Server

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.



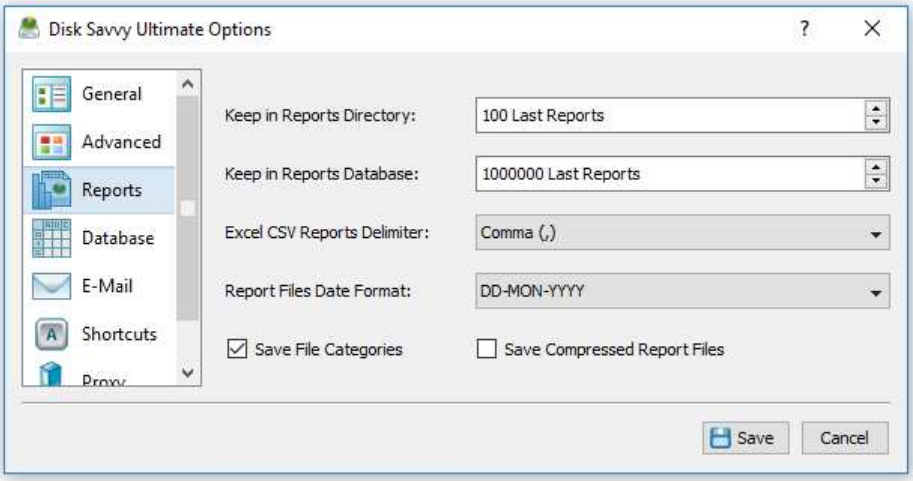
- **Process System Files** - this option enables scanning and analysis of system and hidden directories and files.
- **Detect Recursive Directories** - this option enables automatic detection of potentially recursive directory structures which can result in endless directory scanning loops.
- **Process 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.

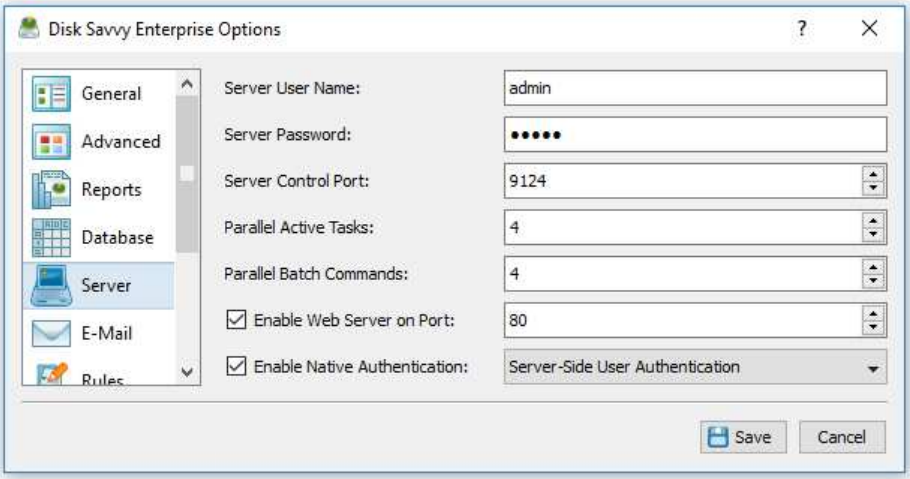


- **Maximum Number of Total Errors** - this option controls the maximum number of total directory and file scanning errors for a disk space analysis operation. If a disk space analysis operation will reach the maximum number of total errors, the analysis operation will be aborted.
- **Maximum Number 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.



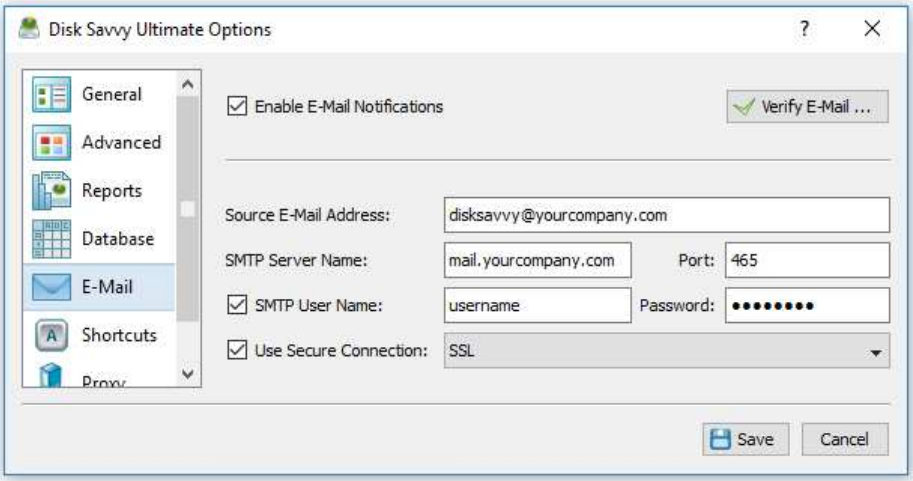
The 'Excel CSV Reports Delimiter' option provides the ability to set a custom field delimiter used to save Excel CSV reports. The 'Report Files Date Format' allows one to customize the date format used in disk space analysis reports. The 'Save File Categories' option enables export of second-level file 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.

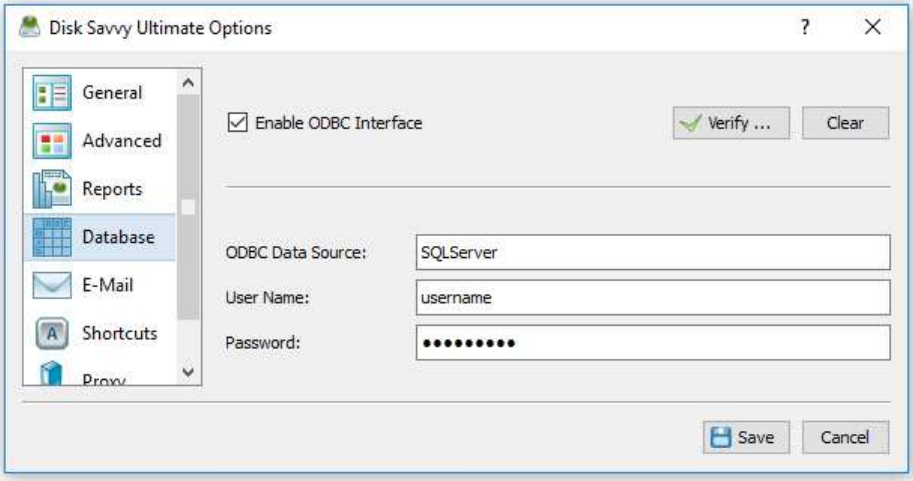
4.24 Configuring E-Mail Notifications

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.



4.25 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.

4.26 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>

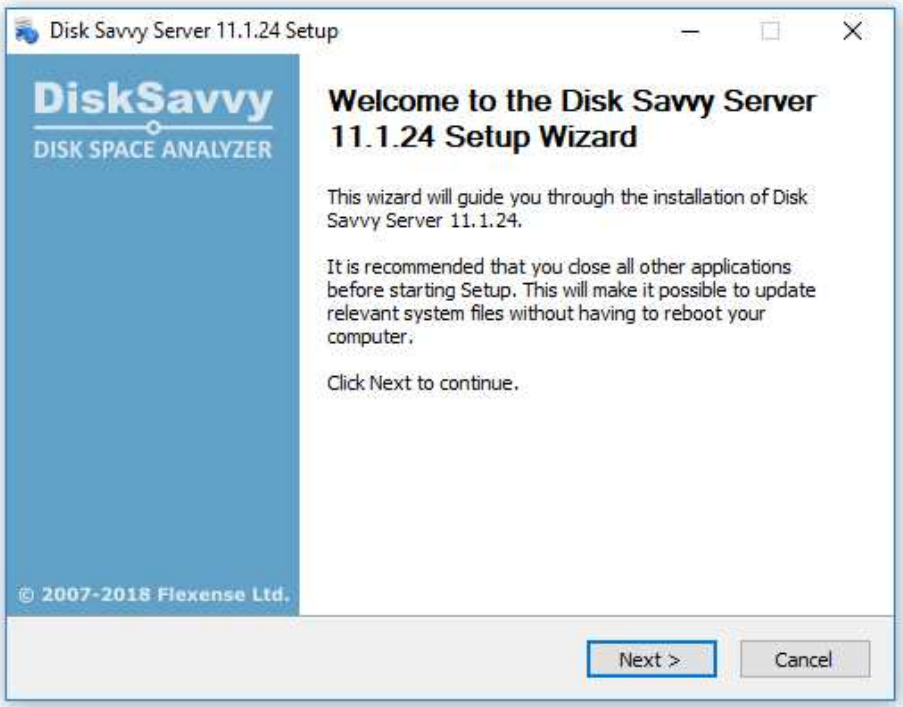
Specifies a user name to login to DiskSavvy Server. If not specified, the command line utility will login using the default "**admin**" user name.

-password <Password>

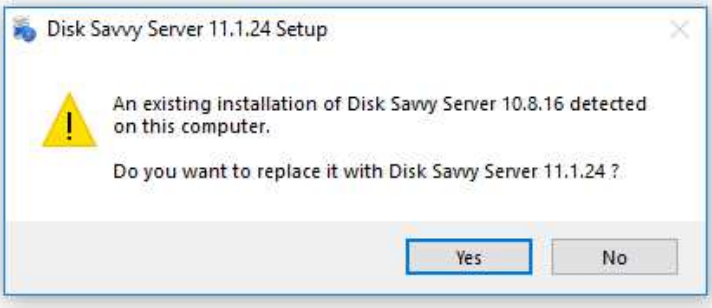
Specifies a password to login to DiskSavvy Server. If not specified, the command line utility will login using the default "**admin**" password.

4.27 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.

4.28 Registering DiskSavvy Server

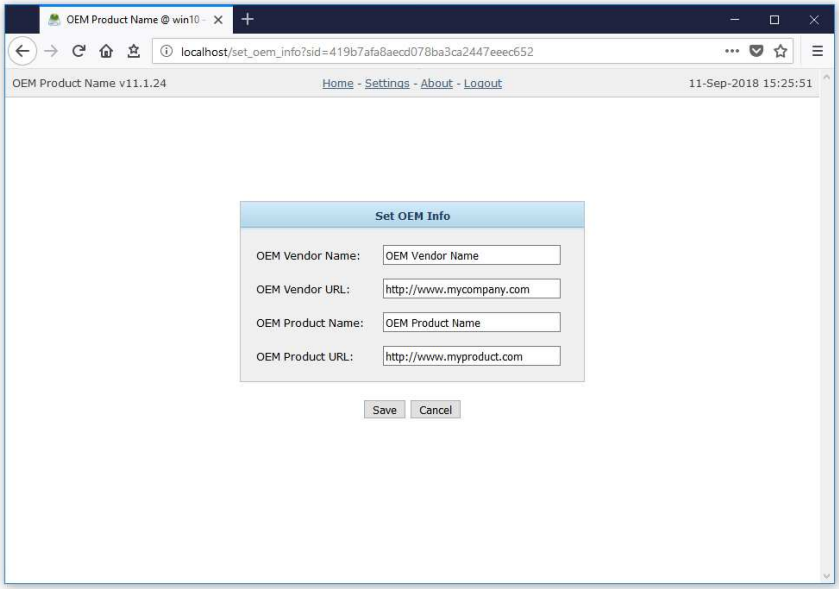
Within a couple of hours after purchasing a product license, the customer will receive two e-mail messages: the first one confirming the payment and the second one containing an unlock key, which should be used to register the product. If you will not receive your unlock key within 24 hours, please check 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.

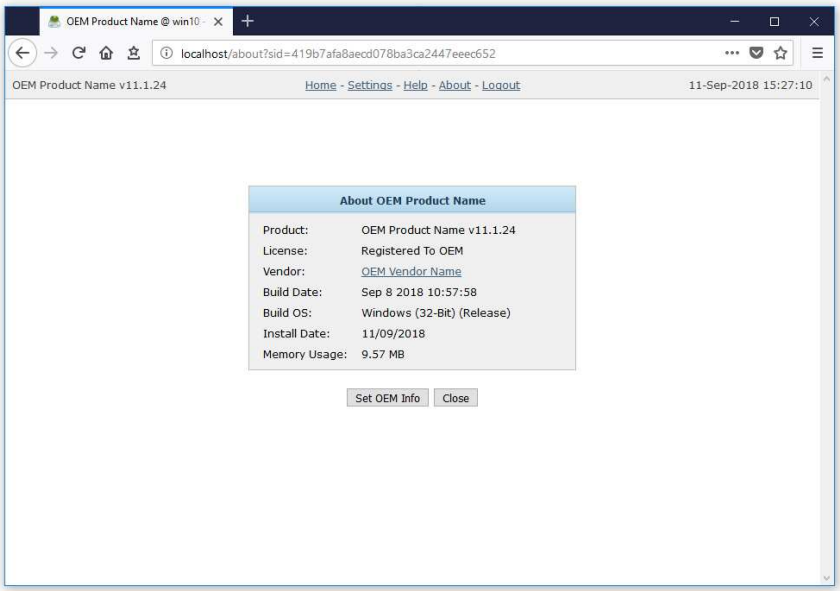
If the computer is not connected to the Internet, press the 'Manual Registration' button, export the product ID file and send the product ID file to **register@disksavvy.com** as an attachment. Within a couple of hours, you will receive an unlock file, which should be imported in order to finish the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

4.29 DiskSavvy Enterprise OEM Version

Flexense provides system integrators, value-added distributors and IT service providers with the ability to resell DiskSavvy Enterprise and/or provide services based on the product under third-party brand names. Resellers and integrators are provided with the ability to change the product name, the product web site address, the product vendor name and the product vendor web site address displayed in the web-based management interface.



In order to be able to set custom OEM product and vendor information, the user needs to register the product using a special OEM-Enabled unlock key, which may be purchased on the product purchase page. Once the product is registered using an OEM unlock key, open the 'About' page, press the 'Set OEM Info' button, specify your custom OEM product and vendor information and press the 'Save' button.



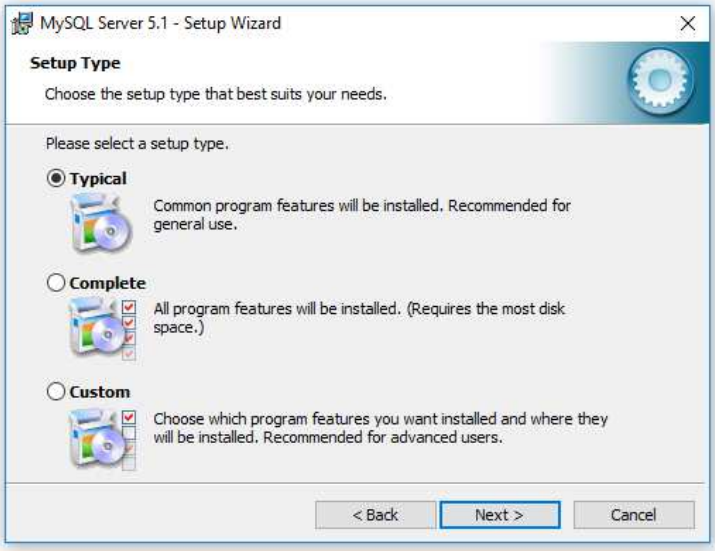
Custom OEM product and vendor information will be displayed on all pages of the DiskSavvy Enterprise web-based management interface, in all types of reports generated by the product and all notification E-Mail messages sent by DiskSavvy Enterprise.

5 Appendix

5.1 Installing MySQL Database

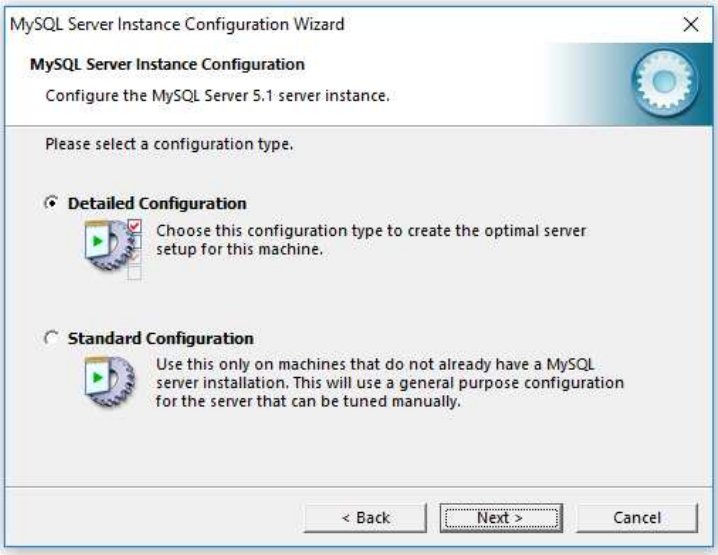
DiskSavvy Pro is capable of saving disk space analysis reports in an SQL database. Reports may be saved manually or automatically using the DiskSavvy command line utility periodically executed by the Windows built-in task scheduler.

In order to configure DiskSavvy to use the MySQL database, the user needs to install the following two components: the MySQL Server and the MySQL ODBC connector. First of all, let's install the MySQL Server. Download the latest version of the MySQL server from the MySQL web site and execute the setup program to start the installation procedure. On the setup type page, select the 'Typical' setup type and press the 'Next' button. By default, the setup will install the MySQL server and a command line utility, which will be used to configure the MySQL server.

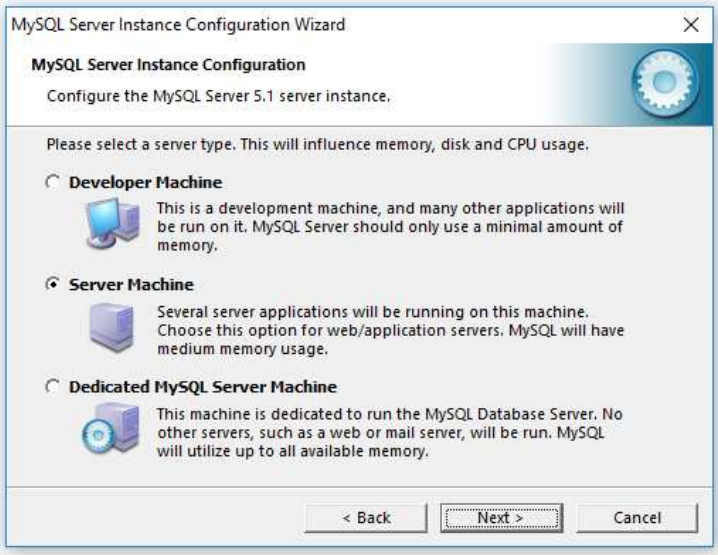


On the next setup page, select the 'Configure the MySQL Server now' option and press the 'Finish' button. The setup program will open a MySQL configuration wizard allowing one to configure basic server settings.

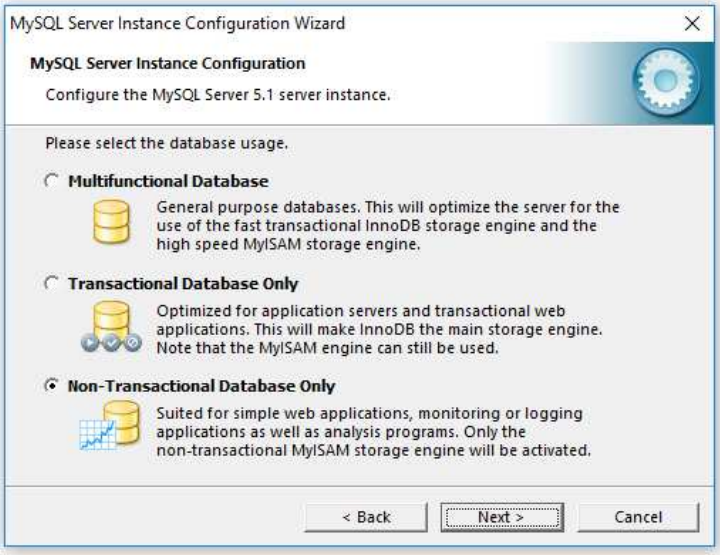
On the next setup page, select the 'Detailed Configuration' option and press the 'Next' button. The detailed configuration mode is required to configure the MySQL server for maximum database performance.



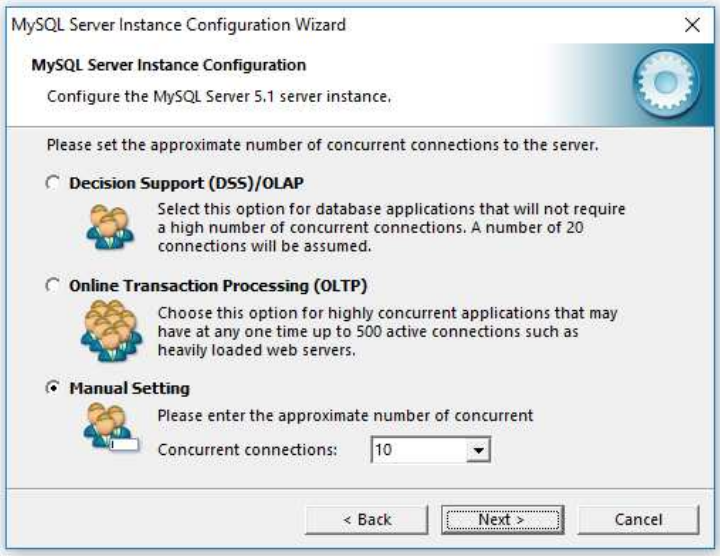
On the next page, select the 'Server Machine' option, which is the most balanced configuration for typical DiskSavvy workloads. If the server is intended to process large volumes of reports and is dedicated for DiskSavvy, select the 'Dedicated Server' configuration option.



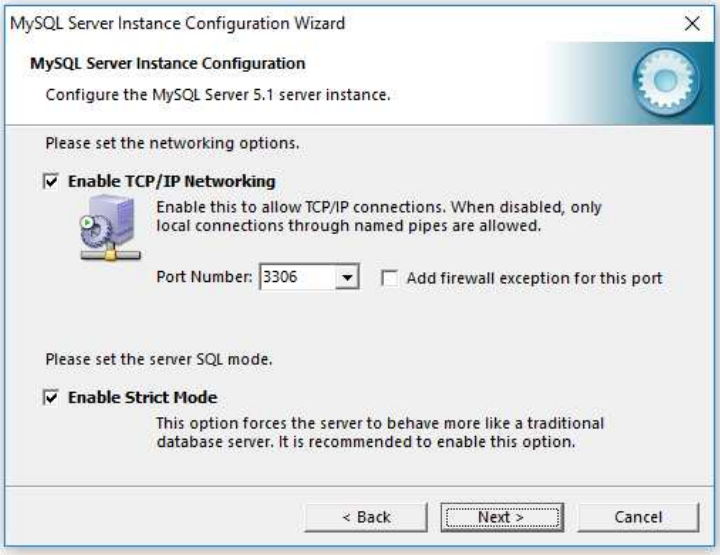
On the next page, select the 'Non-Transactional Database' option. DiskSavvy does not perform concurrent insert or modify operations on the database and a transactional database is not required. Moreover, configuring the MySQL server as a non-transactional database will significantly improve the performance of database import operations.



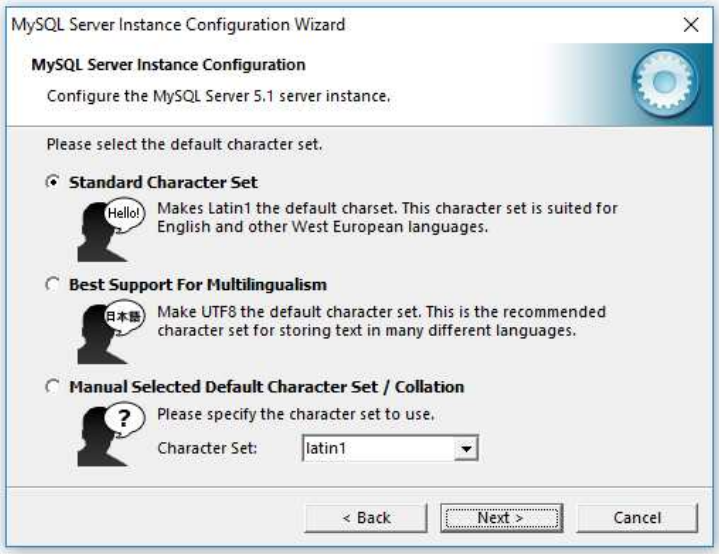
On the next page, select the 'Manual Setting' option and set the number of concurrent database connections to 5, which is the optimal number for typical DiskSavvy installations.



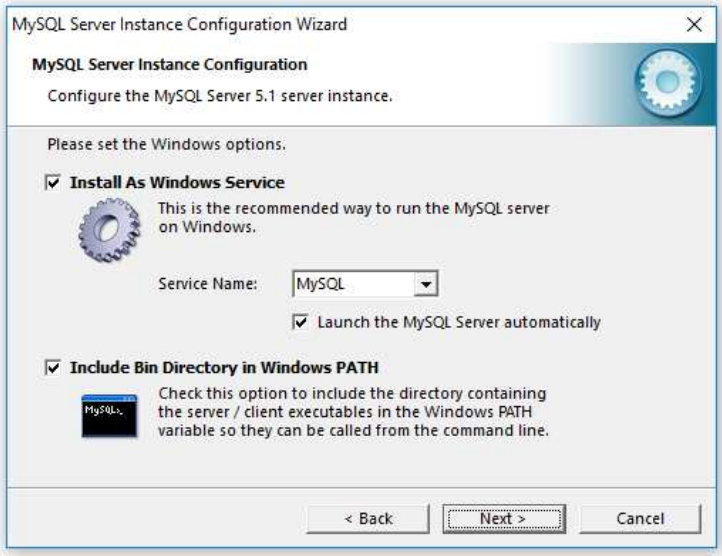
On the next page, enable TCP/IP networking and if the server will be accessed from other computers on the network, add a firewall exception for the MySQL server port. In general, a single MySQL server may be used to collect reports from multiple DiskSavvy installations using remote ODBC connections.



On the next page select an appropriate character set. By default, DiskSavvy uses the UTF-8 character set to store names of files and directories, but if there is no need to process Unicode file names, this option may be set to the standard Latin1 character set.



On the next page, select the 'Install as Windows Service' option and select the 'Include Bin Directory in Windows PATH' option. The PATH option will enable execution of the MySQL command line utility from any location.

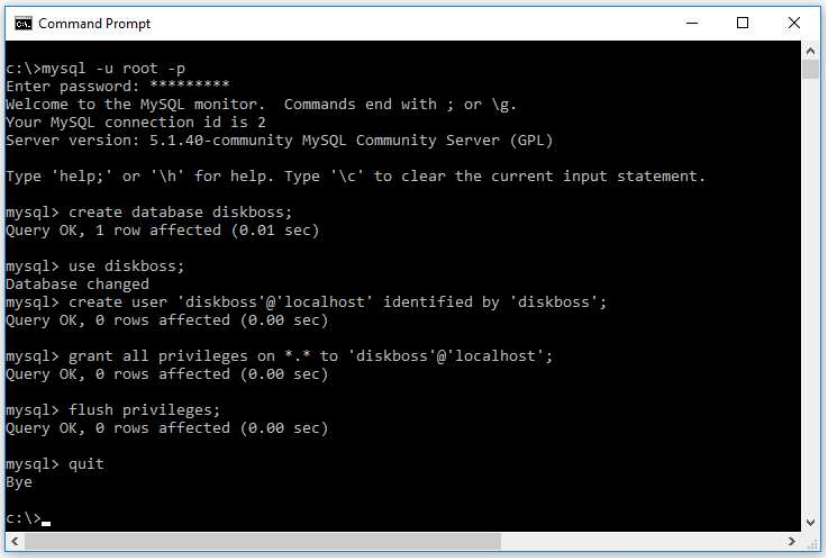


On the next page, select the 'Modify Security Settings' option and specify a root password for the MySQL server, which later will be used to configure regular MySQL users.

That's all. Press the 'Next' button to finish the installation procedure.

5.2 Configuring MySQL Database

The MySQL database provides the 'mysql' command line utility, which may be used to configure the database and the user account to be used by DiskSavvy.



In order to configure the MySQL database, open the command prompt window and type the following command:

mysql –u root –p

This command will start the 'mysql' command line utility and login to the MySQL server with root permissions. The user will be asked to provide the root password, which was specified during the MySQL server installation procedure.

Once logged in, the user needs to create a database that will be used by DiskSavvy to store disk space analysis reports. In order to do that, type the following command:

create database disksavvy;

Now, add a user account that will be used by DiskSavvy to submit reports to the database. Single quotes are required and should be specified exactly as displayed.

create user 'disksavvy'@'localhost' identified by 'password';

Now, grant permissions to the user account using the following command:

grant all privileges on *.* to 'disksavvy'@'localhost';

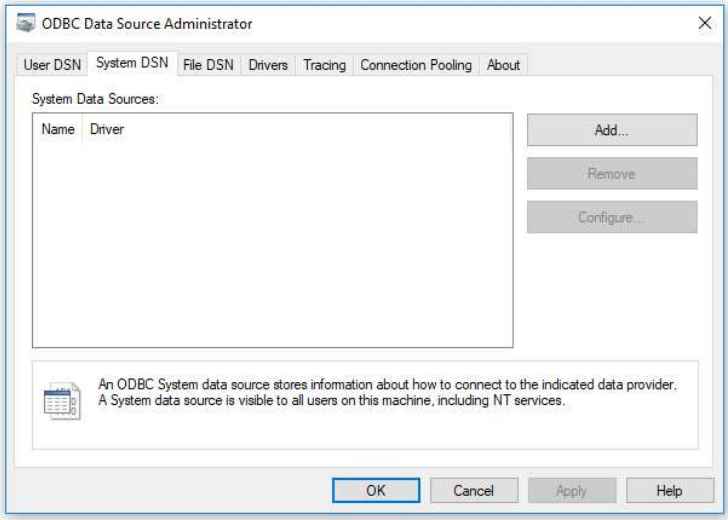
Finally, flush user privileges using the following command.

flush privileges;

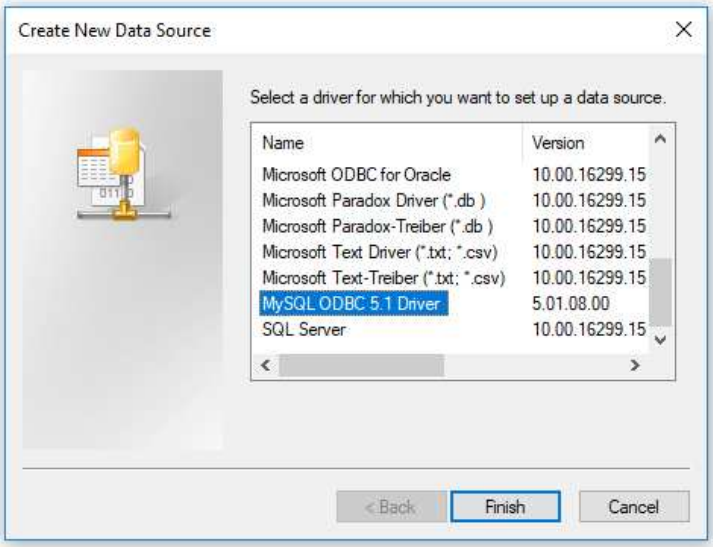
That's all. Now the MySQL server is fully configured. In order to disconnect from the MySQL database, just type '**quit**' in the command window.

5.3 Configuring MySQL ODBC Data Source

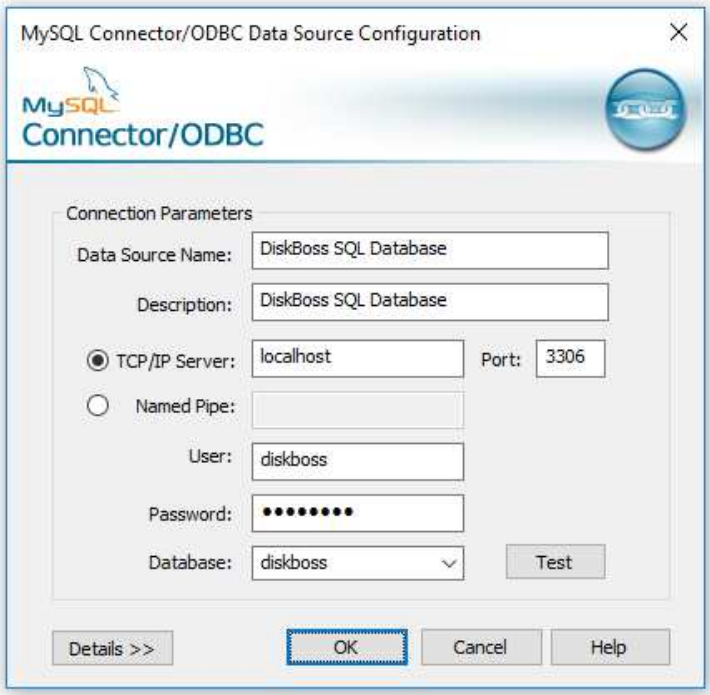
DiskSavvy connects to the MySQL database through the ODBC interface. Download an appropriate version of the MySQL ODBC connector from the MySQL web site and execute the setup program. There are no critical configuration options in the MySQL ODBC connector installation procedure and the user can just press the 'Next' button until the last page keeping the default configuration options.



After finished installing MySQL ODBC Connector, open the Windows control panel and select 'Administrative Tools – Data Sources (ODBC)'. On the ODBC Administrator window, select the 'System DSN' tab and press the 'Add' button. On the next page, select the 'MySQL ODBC Driver' and press the 'Finish' button.

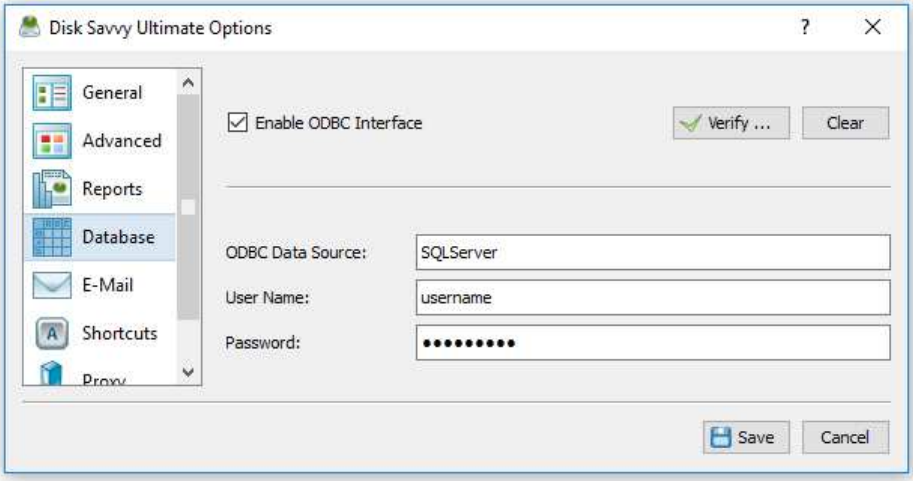


On the next page, enter a new data source name, which will be used by DiskSavvy to connect to the database. Specify the name of the host where the MySQL server is running on and enter the MySQL user name and password that should be used by DiskSavvy to connect to the database. Finally, select the name of the database that should be used to store disk space analysis reports. After finished specifying all the required information, press the 'Test' button to check the database connection.



Configuring DiskSavvy Database Connection

In order to configure DiskSavvy to use the installed MySQL database, open the options dialog and select the 'Database' tab. Enable the ODBC interface and enter the name of the ODBC data source, the database user name and password that were specified for the ODBC data source. Finally, press the 'Verify' button to check the DiskSavvy database connection.



5.4 Supported Operating Systems and System Requirements

Supported Operating Systems

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

Minimal System Requirements

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

Recommended System Configuration

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

DiskSavvy Enterprise System Requirements

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